Department of Veterans Affairs Decentralized Hospital Computer Program

KERNEL TOOLKIT USER MANUAL

Version 7.3 April 1995

Information Systems Center San Francisco, California

Preface

This manual provides descriptive information about the Kernel Toolkit (also referred to as "Toolkit") for use by the Information Resource Management (IRM) staff and the Decentralized Hospital Computer Program (DHCP) development community. A wider audience of technical personnel engaged in operating and maintaining VA software might also find it useful as a reference.

Toolkit provides software services in the following functional areas:

■ Development and Verification Tools

- Promotes standard programmer interface.
- Provides programmer and systems management.
- Checks adherence to programming standards and correct syntax with %INDEX.
- Provides standard error trapping, storing, and reporting.
- Supports verification tools for the comparison of routines and data dictionaries.
- Customizes and tunes site parameters for local requirements.
- Provides MUMPS (Massachusetts General Hospital Utility Multi-Programming System) function libraries.
- Provides a portable routine and global editor.
- Provides a Kermit file transfer utility.
- Provides a Multi-Term Look-Up (MTLU) utility for enhanced VA FileMan look-ups.
- Provides software project management utilities.
- Provides Duplicate Resolution utilities for the creation of file maintenance applications.

■ Performance & Capacity Management

Produces system status reports and usage statistics.

- Provides system response time logging for performance management.
- Provides automated performance analysis tools.
- Alerts system managers to dangerous or unusual conditions.
- Delivers reports automatically via MailMan.
- Provides tools for software optimization and application sizing.

Where applicable, each major area of Kernel Toolkit is described first in terms of its user interface. Issues of system management are then presented, with a focus on the menu that can be used to accomplish the task at hand. Finally, the Application Programming Interface (API) is addressed. Any callable entry points that are authorized for use in application programs are described. Direct mode utilities to support the writing and testing of software are also identified.

This manual is written with the assumption that the reader is familiar with the DHCP computing environment, understands VA FileMan data structures and terminology, and has some understanding of the Massachusetts General Hospital Utility Multiprogramming System (MUMPS) programming language. No attempt is made to explain how the overall DHCP programming system is integrated and maintained. Such methods and procedures are documented elsewhere. Suggested reading materials are referenced in the Introduction of this manual. This manual does provide, however, an explanation of the Kernel Toolkit utilities, describing how these tools can be used for the management and definition of development projects.

Table of Contents

Introduction	1
Orientation	3
Package Management	5
Package Operation	7
Multi-Term Look-Up (MTLU)	9
User Interface	15
Systems Management Issues	35
Programmer API	39
Duplicate Resolution Utilities	51
User Interface	54
Programmer API	87
Capacity Management	97
The Capacity Planning Suite of Tools	99
The VAX/Alpha Performance Monitor (VPM)	109
MSM Performance Monitoring (MPM)	129
Resource Usage	
User Interface	153
Systems Management Issues	
Response Time Measures	
User Interface	
System Management Issues	
Programmer API	
Tools	175
Routine Tools	
User Interface	178
Programmer API	
Verification Tools	
User Interface	
Programmer API	
Miscellaneous Programmer Tools/APIs	
Programmer Ontions Menu	201

Table of Contents

User Interface	201
Programmer API	203
Kermit	205
User Interface	205
System Management Issues	209
Programmer API	211
^%Z Editor	213
User Interface	213
Appendix A	219
Example of a Candidate Collection Routine for Patient Merge	219
Two Examples of Duplicate Test Routines	221
Appendix B	227
Last Routine Change Date Recorded (User interaction and resulting	
output)	227
Glossary	233
Index	253
Options	267

Introduction

The purpose of this manual is to provide information about the set of software utilities furnished by Kernel Toolkit Version 7.3. This manual is written with the assumption that the reader is familiar with the DHCP computing environment, understands VA FileMan data structures and terminology, and has some understanding of the MUMPS programming language. If you do not use the system on a regular basis, it is recommended that you review the *User's Guide to Computing*.

The four major areas of the Kernel Toolkit, that are described in this manual, are listed below:

1. Multi-Term Look-Up (MTLU)

DHCP Multi-Term Look-Up (MTLU) utilities provide a method of enhancing the look-up capabilities of associated VA FileMan files. Multi-Term Look-Up (MTLU) is an adaptation of a tool developed by the Indian Health Service (IHS) which was made generic by the Albany Information Systems Center (ISC).

2. Duplicate Resolution Utilities

Duplicate Resolution utilities give programmers a shell that allows their users to check their data files for duplicates and merge them if any are found. They provide the functionality of combining duplicate records based on conditions established in customized applications. The Merge Shell was developed by the IHS to support their Multi-Facility Integration project.

3. Capacity Management Tools

Capacity Management tools are provided in Kernel Toolkit to measure resource consumption by package and help identify and solve performance problems. In addition, new Capacity Management utilities have been created to utilize Virtual Memory Systems (VMS), MUMPS, and the latest VA Kernel utilities. These utilities sample running systems at regular intervals and store a key subset of system's metrics related to configuration, database activity, response time, CPU, memory, and I/O utilization.

4. Tools

A set of generic tools have been developed to aid the DHCP development community and IRM in writing, testing, and analysis of code. These tools are used by developers, documenters, verifiers, and packages to support distinct tasks.

Introduction

The instructions for installing Kernel Toolkit on different operating systems are provided in the *Kernel Toolkit Installation Guide Version 7.3*. Files, routines and options, along with other structural features, are documented in the *Kernel Toolkit Technical Manual V. 7.3*.

Kernel V. 7.1, VA FileMan V. 20.0, and MailMan V. 7.0 must be installed before installing Kernel Toolkit V. 7.3. For more information on installing Kernel refer to the *Kernel Installation Guide*.

If the reader is not already familiar with Kernel, the *Kernel Systems Manual* and the *Kernel Technical Manual* should be obtained and reviewed. Other documents describing overall DHCP policy are the VA *Programming Standards and Conventions (SAC)*, the *MIRMO/ISC Operations Document*, and the *National Verification Document*.

Orientation

This manual uses several methods to highlight different aspects of the material. Descriptive text is presented in a proportional font. "Snapshots" of computer dialogue (and other on-line displays) are shown in a non-proportional font and enclosed within a box. Process charts, used to illustrate option flow in step-by-step procedures, are also illustrated in a non-proportional font. Editor's comments within a dialogue are displayed in italics. Italics are also used to emphasize a particular word or phrase within a sentence. The user's responses to on-line prompts are highlighted in boldface. Boldface is also used to highlight a particular topic.

The Return key is used to terminate "reads". It is illustrated as **RET>** and is included in examples only when it might be unclear to the reader that such a keystroke must be entered. The following example indicates that you should enter two question marks followed by pressing the Return key when prompted to select a menu option:

Select Primary Menu option: ??

All uppercase is reserved for the representation of MUMPS code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).

After introducing the idea of a prompt and describing how it appears within the menu system, further references to that prompt might use an abbreviated form of the prompt name. For example, the "Select Primary Menu option:" prompt may be referred to as the select prompt after the initial description.

Programmer calls that are supported for use in application packages [on the Database Integration Committee (DBIC) list] are presented with a leading bullet, or indented, and include the up-arrow (^) used when calling the routine. The following is an example:

EN1^XOH

Direct mode utilities are prefaced with the MUMPS prompt to emphasize that the call is to be used *only in direct mode*. They also include the MUMPS command used to invoke the utility. The following is an example:

>D ^XUP

Orientation

Package Management

Throughout this manual, advice and instructions are offered about the numerous utilities the Kernel Toolkit provides for overall DHCP management. Site parameters, for example, are discussed in various chapters. The *Kernel Toolkit Installation Guide V. 7.3* also includes information about package management (such as recommended settings for site parameters).

There are no special legal requirements involved in the use of the Kernel Toolkit's utilities.

Package Management

Package Operation

The following chapters, contained in the *Kernel Toolkit User Manual V. 7.3*, provide the information necessary for the user to operate the package. On-line documentation is included where applicable.

Multi-Term Look-Up (MTLU)

Duplicate Resolution Utilities

Capacity Management Tools

Tools

Multi Term Look-Up (MTLU)

Multi-Term Look-Up (MTLU)

Multi Term Look-Up (MTLU)

Multi-Term Look-Up (MTLU)

Overview

This section contains an introduction and functional description, site implementation instructions for Multi-Term Look-Up (MTLU), the actual option documentation, and the Application Programming Interface (API) for MTLU.

Introduction to Multi-Term Look-Up (MTLU)

Many medical information systems depend on the standardized encoding of diagnoses and procedures for reports, searches, and statistics. The ICD DIAGNOSIS (#80), ICD OPERATION/PROCEDURE (#80.1), and CPT (#81) files are among some of the more critical files. The Multi-Term Look-Up utility increases the accessibility of the information in these files by associating user-supplied words or phrases with terms found in a more descriptive, free-text field.

Multi-Term Look-Up enables:

- Local set-up of virtually any reference file.
- Developers to modify the behavior of the "special" look-up by defining shortcuts, synonyms, or keywords.

MTLU integrates with any package that uses a reference file which has been entered in a site's LOCAL LOOKUP file (#8984.4). The only related manual is the *Kernel Toolkit Technical Manual V. 7.3*. It is intended for use by technical computer personnel and provides necessary information for technical operation of the software product.

Functional Description

The DHCP Multi-Term Look-Up (MTLU) utility provides a method of enhancing the look-up capabilities of associated software packages. This utility is comprised of the following options:

- The Multi-Term Lookup (MTLU) option [XTLKLKUP] is used to test ICD diagnosis and procedure codes, CPT codes, and other commonly used references that have been entered in the LOCAL LOOKUP file (#8984.4). Optionally, terms or phrases may be entered into the LOCAL KEYWORD (#8984.1), LOCAL SHORTCUT (#8984.2), or LOCAL SYNONYM (#8984.3), files.
- The Print Utility option [XTLKPRTUTL] is used to print a list of shortcuts, keywords, or synonyms from a specified reference file in the LOCAL LOOKUP file (#8984.4). This list can be sorted alphabetically by name or numerically by code.
- The Delete Entries from Look-Up option [XTLKMODPARK] is used to delete a reference file from a site's LOCAL LOOKUP file (#8984.4). This option should be used as an IRM/developer utility and can only be accessed by holders of the XTLKZMGR security key.
- The Add Entries to Look-Up File option [XTLKMODPARS] is used to add reference files to a site's LOCAL LOOKUP file (#8984.4). This option should be used as an IRM/developer utility and can only be accessed by holders of the XTLKZMGR security key. In order to add entries with this option, DUZ(0) must be set to an at-sign (@).
- The Add/Modify Utility option [XTLKMODUTL] is used to enter new or edit existing shortcuts, keywords, or synonyms to the LOCAL LOOKUP file (#8984.4) as described below:
 - The Shortcuts option [XTLKMODSH] is used to enter new or edit existing shortcuts to the LOCAL LOOKUP file (#8984.4).
 - The Keywords option [XTLKMODKY] is used to enter new or edit existing keywords to the LOCAL LOOKUP file (#8984.4).
 - The Synonyms option [XTLKMODSY] is used to enter new or edit existing synonyms to the LOCAL LOOKUP file (#8984.4).

Usage Considerations

MTLU provides users and programmers with the ability to perform specialized lookups on database files using standard VA FileMan calls. These files typically comprise a number or "term" in the .01 field and a longer description or definition in some other field.

In the simplest application of MTLU, a special look-up routine (XTLKDICL) is defined in the file's Data Dictionary (DD), then a MUMPS cross reference is applied to the description/definition field. Options are available to fully configure a file for use with MTLU. FileMan is used to create/build the cross reference. To set the cross reference, text from the selected field is passed to a tokenizing routine (XTLKTOKN). Trivial words are filtered by an expanded Key Word In Context (KWIC), then each remaining token is added to the cross reference.

To request a look-up, users and programmers can pass in words or phrases. Their input is similarly tokenized. However, only terms associated with *all* tokens entered are found. Input can be generalized using partial words or fewer words as well as lexical variants. For example, using the FileMan Inquire to File Entries option on the ICD DIAGNOSIS file (#80) one could first enter "MALIG". MTLU informs the user which terms apply to the search, "MALIG/MALIGNANT", and that 447 matches are found. To be more specific, the user might enter "MALIG LIP" to request all malignancies associated with the lip. In this case, only 12 matches are found. The user can further screen searches by using the Not-Sign (') before a word or phrase. To request all malignancies of the lip *except* those of the lower lip, one could enter "MALIG LIP 'LOWER" and obtain 10 matches. Though the term "malignancies" may not exist in the look-up file, MTLU might still produce a match. When a term contains a suffix that does not produce a match, MTLU removes the suffix and continues the search.

NOTE: See the "How to Display and Print File Data" chapter in the *VA FileMan User Manual* for more information on the Inquire to File Entries option.

Three additional files are supplied that can dramatically alter the predictable behavior described above. They are checked in the following order against the user's entry:

- 1. LOCAL SHORTCUT file (#8984.2): Shortcuts are used to point to a single term. They can be a word or phrase. MTLU checks the user's entry against this file first for an exact match. If found, the look-up displays only the associated entry. A single shortcut cannot point to multiple terms.
- 2. LOCAL SYNONYM file (#8984.3): Synonyms can be associated with many terms in a file because they can be associated with multiple "tokens" rather than a specific term. For example, CANCER can be defined as a synonym of "MALIG", "TUMOR", and "LEUKEMIA". When the user enters CANCER, the look-up finds *all* terms associated with the three tokens as if each had been entered separately. Compared with the example above, CANCER returns 534 matches. CANCER LIP returns the same 12 matches as MALIG LIP.
- 3. LOCAL KEYWORD file (#8984.1): A keyword or phrase can be associated with a single term, much like a shortcut. However, it can also be associated

with multiple terms, and multiple keywords can be associated with the same term.

The term SMOKER can be used as a synonym or keyword. As a keyword, one can associate it with a few *specific* diseases. As a synonym, properly selected tokens might result in a display of all smoking-related diseases.

Recall that MALIG results in 447 matches. If this were used as a shortcut to a single entry, MTLU would display only that entry and the remaining 446 would never be displayed.

These files add some control over the behavior of certain look-ups. However, developers should use extreme caution when placing entries in these files to ensure that results are predictable and appropriate for both users and other DHCP package developers.

The decision to populate them for a given look-up file depends on whether or not a commonly used word or phrase results in any matches during a look-up. If not, it is a candidate. The LOCAL KEYWORD (#8984.1), LOCAL SHORTCUT (#8984.2), and LOCAL SYNONYM (#8984.3) files should only be populated with common words or phrases.

In the event that a search produces no matches, MTLU continues with a standard FileMan search.

USER INTERFACE

Multi-Term Look-Up Menu Options

The following is a description of the Multi-Term Lookup Main Menu options [XTLKUSER2] which can be selected from the Application Utilities menu [XTMENU]. The options are described in the same order as they appear on the screen:

```
Application Utilities ... [XTMENU]

Multi-Term Lookup Main Menu ... [XTLKUSER2]

Multi-Term Lookup (MTLU) [XTLKLKUP]

Print Utility [XTLKPRTUTL]

Utilities for MTLU ... <Locked with XTLKZMGR> [XTLKUTILITIES]
```

Most options are described using the following methods:

- Introduction A detailed description of the option is given. The introduction usually contains any necessary special instructions.
- Process Chart The step-by-step flow of the option is illustrated, showing the various choices allowed at each prompt.
- Examples In most cases, there is an example of what might appear on the screen when using the particular option. If the option produces a hardcopy output, an example of the output is usually given.

The phrase "You will be prompted for a device at this step" appears in the process chart when a device is asked for. A Standard Device Chart is shown on the next page. It provides assistance in answering prompts related to device selection.

The MTLU Process Charts do not contain documentation of the system's response to erroneous input. In certain instances, in order to preserve the integrity of previously entered data, the system does not allow the entry of an up-arrow (^). This might not be documented.

The following chart provides assistance in answering prompts related to device selection:

Standard Device Chart

STEP	AT THIS PROMPT		THEN STEP
1	DEVICE:	Device name/number from your DEVICE file (#3.5) for report to print on 'Q'UEUE to have report queued to print at a Later date/time <ret> for report to Print on your screen Up-arrow <^></ret>	2
2	DEVICE:	Device name/number from your DEVICE file (#3.5) for report to print on	
3	RIGHT MARGIN: 132// *The next step	* <ret> to accept default, different RIGHT MARGIN Value, or up-arrow <^> depends on what you entered in Step Device name/number "Q"</ret>	1: 4 5
4	WANT TO FREE UP THIS TERMINAL? NO//	<pre><ret> to accept default 'Y'ES to free up terminal during report processing and to exit from the system</ret></pre>	5
5	REQUESTED TIME TO PRINT:	* <ret> to accept default *Later date/time for report process to begin Up-arrow <^></ret>	6
	*If <ret> or later date/time : message appears: "REQUEST Q</ret>		
6	Return to the menu.		

Using the Multi-Term Lookup (MTLU) Option

The Multi-Term Lookup (MTLU) option [XTLKLKUP] is used to test the ICD diagnosis and procedure codes, CPT codes, and other commonly used references that have been entered in the LOCAL LOOKUP file (#8984.4) and have been associated with a shortcut, synonym, or keyword.

The system searches for entries in the following order: shortcut, synonym, then keyword. If you are entering a multi-term narrative (phrase), you can enter double spaces between each term to avoid a search of the LOCAL SHORTCUT file (#8984.2). When searching for a keyword phrase, the system searches for each word in the phrase and then displays all common entries. For example, if the keyword is FRACTURE FEMUR, the system searches for FRACTURE and then FEMUR and displays only those codes with a diagnosis containing both keywords or synonyms of those words.

The following process chart shows the prompts and steps involved in using the Multi-Term Lookup (MTLU) option:

STEP	AT THIS PROMPT	IF USER THEN ANSWERS WITH STEP
1	Lookup on which file?:	Name of entry in LOCAL LOOKUP file (#8984.4)
2	NARRATIVE:	Existing shortcut, synonym, or keyword3
	If a word, phrase, or symbol identify, the following appear	is entered that the system cannot ars:
	"Narrative contained no usab	le words.
	The following word(s) was not	t used in this search: {word(s)}
	Search was unsuccessful."	
	in the following order: short one entry is found, they are	tion is displayed. The system searches tout, synonym, then keyword. If more than displayed, and you are prompted to y is found, the following appears:
3	OK? Y//	<pre><ret> to accept default4 'N'O4</ret></pre>
4	Return to the menu.	

The following is an example of what might appear on your screen when using the Multi-Term Lookup (MTLU) option:

Using the Print Utility Option

The Print Utility option [XTLKPRTUTL] is used to print a list of shortcuts, keywords, or synonyms from a specified reference file in the LOCAL LOOKUP file (#8984.4). Both the shortcut and keyword lists can be sorted alphabetically by name or numerically by code. The synonym list, however, only prints alphabetically.

Since these lists can be long and the generation time consuming, it is suggested you queue the report to a device during off hours.

The following process chart shows the prompts and steps involved in using the Print Utility option:

STEP	AT THIS PROMPT	IF USER THEN ANSWERS WITH STEP
1	Select one of the following:	
	SH Shortcuts KE Keyword SY Synonyms	
	Print which file?:	SH for Shortcuts
2	Select one of the following:	
	A Alphabetic C Code	
	Sort By?:	'A'lphabetic
3	Print {Shortcuts, Keywords, o Synonyms} for which file?:	Name of entry in LOCAL LOOKUP file (#8984.4)
4	You will be prompted for a de	vice at this step1
5	Return to the menu.	

The following is an example of what might appear on your screen when using the Print Utility option (an example of the output generated by this option is provided following the computer dialogue):

```
Select one of the following:
         SH Shortcuts
KE Keywords
SY Synonyms
     Print which file?: SH <RET> Shortcuts
    Select one of the following:
         A Alphabetic C Code
     Sort By?: Alphabetic
Print Shortcuts for which file?: CPT
DEVICE: HOME// <RET> RIGHT MARGIN: 80// <RET>
sample output
Shortcuts of the CPT file sorted by Name NOV 23, 1994 13:36 PAGE 1
FREQUENTLY USED NARRATIVE ENTRY
DREAM
                                       01200
NIGHT
                                       02400
SLEEP
                                       01100
```

Using the Utilities for MTLU Option

The following is a list of the options and their descriptions that comprise the Utilities for MTLU option [XTLKUTILITIES]. This option can only be accessed by holders of the XTLKZMGR security key:

- The Delete Entries From Look-Up option [XTLKMODPARK] deletes entries from the LOCAL LOOKUP file (#8984.4). In order to do this, there cannot be any shortcuts, synonyms, or keywords associated with the file to be deleted. This option should be used as an IRM/developer utility and can only be accessed by holders of the XTLKZMGR security key.
- The Add Entries To Look-up File option [XTLKMODPARS] sets entries in the LOCAL LOOKUP file (#8984.4). This option should be used as an IRM/developer utility and can only be accessed by holders of the XTLKZMGR security key. In order to add entries with this option, DUZ(0) must be set to an at-sign (@).
- The Add/Modify Utility option [XTLKMODUTL] is used to make or edit entries in the LOCAL KEYWORD (#8984.1), LOCAL SHORTCUT (#8984.2), and LOCAL SYNONYM (#8984.3) files.

```
Application Utilities ... [XTMENU]

Multi-Term Lookup Main Menu ... [XTLKUSER2]

Multi-Term Lookup (MTLU) [XTLKLUP]

Print Utility [XTLKPRTUTL]

Utilities for MTLU ... <Locked with XTLKZMGR> [XTLKUTILITIES]

KL Delete Entries From Look-up <Locked with XTLKZMGR> [XTLKMODPARK]

ST Add Entries To Look-Up File <Locked with XTLKZMGR> [XTLKMODPARS]

Add/Modify Utility... [XTLKMODUTL]
```

Delete Entries from Look-Up

The Delete Entries From Look-Up option [XTLKMODPARK] is used to delete a reference file from a site's LOCAL LOOKUP file (#8984.4).

All shortcuts, synonyms, and keywords associated with the reference file you wish to delete must be canceled before you attempt to delete the file.

It should be noted that when a reference file is "killed" through this option, all variable pointers from the LOCAL KEYWORD (#8984.1) and LOCAL SHORTCUT (#8984.2) files are deleted. The special look-up routine for the file is also deleted.

Only holders of security key, XTLKZMGR, can access this option.

Due to the brevity of this option, no process chart has been provided.

The following is an example of what might appear on your screen when using the Delete Entries From Look-Up option:

```
Select LOCAL LOOKUP NAME: PROCEDURE MODIFIERS

Are you sure you want to delete PROCEDURE MODIFIERS? YES

Deleting from Local Lookup file....

Deleting variable pointers from Local Keyword and Shortcut files.

Deleting special lookup routine from PROCEDURE MODIFIERS DD.
```

Add Entries to Look-up File

The Add Entries To Look-Up File option [XTLKMODPARS] is used to add/edit reference files to a site's LOCAL LOOKUP file (#8984.4). Examples of files that a site might wish to enter in their LOCAL LOOKUP file (#8984.4) include: ICD DIAGNOSIS (#80), ICD OPERATION/PROCEDURE (#80.1), and CPT (#81).

Only holders of security key, XTLKZMGR, can access this option. In order to add entries with this option, DUZ(0) must be set to an at-sign (@).

The process chart below shows the prompts and steps involved in using this option:

STEP	AT THIS PROMPT	IF USER ANSWERS WITH	THEN STEP
1	Select LOCAL LOOKUP NAME:	Name of new reference file you wish to enter in LOCAL LOOKUP file (#8984.4) for file list	1
2	ARE YOU ADDING {reference file name} AS A NEW LOCAL LOOKUP (THE nTH)?	'Y'ES'N'O	
3	LOCAL LOOKUP NAME: {reference file name}//	<pre><ret> to accept default Other file name</ret></pre>	4
4	LOCAL LOOKUP DISPLAY PROTOCOL:	Entry point for routine to determine the display format	
	If the entry made at this step cross reference in the descrip the software still functions, keywords entered in the LOCAL	tion field of the file, but it only uses the	
* 5	INDEX:	Cross reference to be used to create new key-words	6

*Required field

Add Entries To Look-Up File option process chart (continued):

STEP	AT THIS PROMPT		THEN STEP
	NOTE: The following message i	s displayed :	
	"Ok, will now setup terms for $\{reference\ fi$	KEYWORD and SHORTCUT file DD's to a le name} entries"	llow
* 6	PREFIX: M//:	Letter(s) to be used to identify a variable pointer	7
7	The following reminder message	is displayed:	
	<pre><reminder> Using 'Edit File', {reference file name} DD</reminder></pre>	set the lookup routine, XTLKDICL, is	
	The selected file is displayed		
8	OK? YES//	<pre><ret> to accept default</ret></pre>	
9	LOCAL LOOKUP NAME: {reference file name}//	<pre><ret> to accept default Correct file name</ret></pre>	.10
10	LOCAL LOOKUP DISPLAY PROTOCOL: {protocol}//	<pre><ret> to accept default Correct entry point for routine to set display format</ret></pre> <pre><ret> (no default) to accept the internal Default display format</ret></pre>	.11
11	INDEX: {index}//	<pre><ret> to accept default correct cross reference to be used to create new Keywords</ret></pre>	
12	Return to the menu.		

*Required field

The following is an example of what might appear on your screen when using the Add Entries To Look-Up File option:

Add/Modify Utility

The Add/Modify Utility option [XTLKMODUTL] is used to enter new or edit existing shortcuts, keywords, or synonyms to the LOCAL LOOKUP file (#8984.4).

A shortcut is a word or phrase which recognizes one specific code or procedure. If you are adding a shortcut whose text duplicates the first part of an existing entry, you must enclose the new shortcut word or phrase in double quotes to prevent the system from matching it to existing terms.

A keyword is a word or phrase which corresponds to several related codes or procedures. Keywords are typically terms commonly used to describe a clinical entity. Entering a series of keywords separated by single spaces results in all of the keywords being added to the specified code.

A synonym is a word entered to expand the look-up capability of an existing term or terms in the LOCAL LOOKUP file (#8984.4). Synonyms would be used in cases where several words within the text of codes or procedures have the same diagnostic meaning (e.g., CANCER and MALIGNANCY). A synonym can be entered for an existing keyword or for a word in the diagnostic description or procedure (e.g., the term CANCER might be matched to the synonyms MALIGNANCY, LEUKEMIA, and CARCINOMA). When CANCER is referenced in the Multi-Term Lookup (MTLU) option, it recognizes all the codes and descriptions associated with MALIGNANCY, LEUKEMIA, and CARCINOMA.

NOTE: A synonym replaces the original word in the look-up process. Therefore, to retain the original word in the search, it must be matched to itself as well as to other synonyms.

Words used as a shortcut should never be repeated as synonyms or keywords. Since the system searches for shortcuts first and stops when one is found, it cannot find duplicated words in the LOCAL SYNONYM (#8984.3) or LOCAL KEYWORD (#8984.1) files. Since searching all files for each word is time consuming, the search is done in this order so as to speedup the search process.

Since the add/modify functions for shortcuts, keywords, and synonyms are considered separate options, a process chart for each is provided. The charts on the following pages show the prompts and steps involved in using the following options:

Select A	Add/Modify Utility Option: ??	
SH	Shortcuts	[XTLKMODSH]
KE	Keywords	[XTLKMODKY]
SY	Synonyms	[XTLKMODSY]

The Shortcuts option [XTLKMODSH], one of the three selections within the Add/Modify Utility option, is described below.

The following process chart shows the prompts and steps involved in using the Add/Modify Utility option when adding or editing a shortcut:

STEP	AT THIS PROMPT	IF USER THEN ANSWERS WITH STEP
1	SH Shortcuts KE Keywords SY Synonyms	
	Select Add/Modify Utility Option:	SH for Shortcuts
2	Additions/Modifications to Shortcuts in which file?	Name of entry in local reference file
3	Select LOCAL SHORTCUT FREQUENTLY USED NARRATIVE:	New text you wish to use as a shortcut
4	ARE YOU ADDING {'text'} AS A NEW LOCAL SHORTCUT?	'Y'ES
	An at-sign (@) entered at this	step deletes the entire entry.
5	LOCAL SHORTCUT FREQUENTLY USED NARRATIVE: {shortcut}//	<pre><ret> to accept default6 Other text6</ret></pre>
6	LOCAL SHORTCUT ENTRY:	Name or number of entry in LOCAL LOOKUP file (#8984.4) you wish your shortcut to reference

Add/Modify Utility option when adding or editing a shortcut process chart (continued):

STEP	AT THIS PROMPT	IF USER ANSWERS WITH	THEN STEP
7	are shown and you are prompted	orresponds to more than one entry, to choose one. If there is only of splayed and the following appears:	
	"OK? YES//	<pre><ret> to accept default 'N'O</ret></pre>	
8	LOCAL SHORTCUT FREQUENTLY USED NARRATIVE: {shortcut}//	<ret> to accept default</ret>	
9	LOCAL SHORTCUT ENTRY: {code}//	<ret> to accept default Correct code</ret>	
	The selected code is displayed	1.	
10	OK? YES//	<pre><ret> to accept default</ret></pre>	
11	Return to the menu.		

The Keywords option [XTLKMODKY], one of the three selections within the Add/Modify Utility option, is described below.

The following process chart shows the prompts and steps involved in using the Add/Modify Utility option when adding or editing a keyword:

STEP	AT THIS PROMPT	IF USER THEN ANSWERS WITH STEP
1	SH Shortcuts KE Keywords SY Synonyms	
	Select Add/Modify Utility Option:	KE for Keywords
2	Additions/Modifications to Keywords in which file?	Name of entry in local reference file
3	Which code in the {file name} file?	Code for which you wish to enter a keyword4
4	Select LOCAL KEYWORD NAME:	New text you wish to use as a keyword
5	ARE YOU ADDING {'text'} AS A NEW LOCAL KEYWORD?	'Y'ES
	An at-sign (@) entered at this	step deletes the entire entry.
6	LOCAL KEYWORD NAME: {keyword}//	<pre><ret> to accept default</ret></pre>
7	Return to the menu.	

The Synonyms option [XTLKMODSY], one of the three selections within the Add/Modify Utility option, is described below.

The following process chart shows the prompts and steps involved in using the Add/Modify Utility option when adding or editing a synonym:

STEP	AT THIS PROMPT	IF USER THEN ANSWERS WITH STEP
1	SH Shortcuts KE Keywords SY Synonyms	
	Select Add/Modify Utility Option:	SY for Synonyms
2	Additions/Modifications to Synonyms in which file?	Name of entry in local reference file
	The entry made at this step must letters.	st be in all upper case
3	Select LOCAL SYNONYM TERM:	New text you wish to use as a synonym
4	ARE YOU ADDING {'text'} AS A NEW LOCAL SYNONYM?	'Y'ES
	An at-sign (@) entered at this	step deletes the entire entry.
5	LOCAL SYNONYM TERM: {synonym}//	<pre><ret> to accept default6 Other text6</ret></pre>
6	LOCAL SYNONYM Select SYNONYM:	Existing term in LOCAL LOOKUP file (#8984.4) for which you are entering a synonym

April 1995

Add/Modify Utility option when adding or editing a synonym process chart (continued):

STEP	AT THIS PROMPT	IF USER ANSWERS WITH	THEN STEP			
7	TERM: {term entered at Step 3}//	<pre><ret> to accept default</ret></pre>				
	The entry made at this step must be in all upper case letters.					
8	Select SYNONYM: {term synonym was entered for}//	<ret> to accept default</ret>				
9	Return to the menu.					

Multi Term Look-Up (MTLU)

The following are examples of what might appear on your screen when using the Add/Modify Utility option. The first example is for a new shortcut entry, the second example shows a new keyword entry, and the third shows the editing of an existing synonym entry.

Example 1: Illustration of a new Shortcut entry.

```
SH Shortcuts
KE Keywords
SY Synonyms

Select Add/Modify Utility Option: SH <RET> Shortcuts

Additions/Modifications to Shortcuts in which file? CPT

Select LOCAL SHORTCUT FREQUENTLY USED NARRATIVE: COUGH
ARE YOU ADDING 'COUGH' AS A NEW LOCAL SHORTCUT? Y <RET> (YES)
LOCAL SHORTCUT FREQUENTLY USED NARRATIVE: COUGH// <RET>
LOCAL SHORTCUT ENTRY: 31659

Searching for a CPT 31659
Searching for a CPT 31659
Searching for A CPT 31659
Searching for A CPT 31659
Searching for A CPT 31659
Searching for A CPT 31659
Searching for A CPT 31659
```

Example 2: Illustration of a new Keyword entry.

```
SH Shortcuts
KE Keywords
SY Synonyms

Select Add/Modify Utility Option: KE <RET> Keywords

Additions/Modifications to Keywords in which file?: CPT

Which code in the CPT file?: 11044 <RET> CLEANSING TISSUE/MUSCLE/BONE
Select LOCAL KEYWORD NAME: TISSUE SKIN
ARE YOU ADDING 'TISSUE SKIN' AS A NEW LOCAL KEYWORD? Y <RET> (YES)
LOCAL KEYWORD NAME: TISSUE SKIN// <RET>
```

Examples when using the Add/Modify Utility option (continued):

Example 3: Illustration of editing an existing Synonym entry.

```
SH Shortcuts
KE Keywords
SY Synonyms

Select Add/Modify Utility Option: SY <RET> Synonyms

Additions/Modifications to Synonyms in which file?: CPT

Select LOCAL SYNONYM TERM: SLEEP
TERM: SLEEP// <RET>
Select SYNONYM: DREAM// NIGHT
```

SYSTEMS MANAGEMENT ISSUES

Implementation of Multi-Term Look-Up (MTLU)

This is how the user would configure a new file to be used with MTLU. The file you select would typically contain a free text field that more completely describes the record entry. Users would then use a cross-reference on this text field to perform look-ups. MTLU is distinguished from FileMan in that users can enter a narrative or phrase, rather than a single term. The cross-reference can be either a FileMan KWIC cross-reference, or you can create a custom MUMPS cross-reference that calls the routine, ^XTLKWIC (shown below). The ICD DIAGNOSIS file (#80) is used as an example.

NOTE: Be sure to review the "Programmer API" at the end of this chapter to accomplish the same tasks.

Once you are in VA FileMan, do the following:

```
Select OPTION: UTILITY FUNCTIONS
Select UTILITY OPTION: CROSS-REFERENCE A FIELD
                                          ICD DIAGNOSIS
MODIFY WHAT FILE: ICD DIAGNOSIS// <RET>
                                          (12535 entries)
Select FIELD: DESCRIPTION
CURRENT CROSS-REFERENCE IS MUMPS 'D' INDEX OF FILE
CHOOSE E (EDIT)/D (DELETE)/C (CREATE): C
WANT TO CREATE A NEW CROSS-REFERENCE FOR THIS FIELD? NO// Y <RET> (YES)
CROSS-REFERENCE NUMBER: 2// <RET>
Select TYPE OF INDEXING: REGULAR// MUMPS
WANT CROSS-REFERENCE TO BE USED FOR LOOKUP AS WELL AS FOR SORTING? YES// N
    <RET> (NO)
SET STATEMENT: S %="'ICD9(""AIHS"",I,DA)" D S'XTLKWIC
KILL STATEMENT: S %="^ICD9(""AIHS"",I,DA)" D K^XTLKWIC
INDEX: AC// AIHS
NO-DELETION MESSAGE: <RET>
DESCRIPTION: <RET>
  Edit? NO// <RET>
DO YOU WANT TO CROSS-REFERENCE EXISTING DATA NOW? YES// Y <RET> (YES)
... EXCUSE ME, THIS MAY TAKE A FEW MOMENTS...
```

```
>D ^XUP
Setting up programmer environment
Terminal Type set to: C-VT100
Select OPTION NAME: APPLICATION UTILITIES XTMENU Application Utilities
         Multi-Term Lookup Main Menu ...
Select Application Utilities Option: Multi-Term Lookup Main Menu
          Multi-Term Lookup (MTLU)
          Print Utility
          Utilities for MTLU ...
Select Multi-Term Lookup Main Menu Option: Utilities for MTLU
   KL
         Delete Entries From Look-up
          Add Entries To Look-Up File
          Add/Modify Utility ...
Select Utilities for MTLU Option: ST <RET> Add Entries To Look-Up File
Select LOCAL LOOKUP NAME: ICD DIAGNOSIS
  ARE YOU ADDING 'ICD DIAGNOSIS' AS A NEW LOCAL LOOKUP (THE 3RD)? Y <RET>
 LOCAL LOOKUP NAME: ICD DIAGNOSIS// <RET>
 LOCAL LOOKUP DISPLAY PROTOCOL: DSPLYD^XTLKKWLD
INDEX: AIHS
...Ok, will now setup KEYWORD and SHORTCUT file DD's
   to allow terms for 'ICD DIAGNOSIS' entries...
PREFIX: M// ?
    Answer must be a unique prefix, 1-10 characters in length
PREFIX: M// D (NOTE: Enter the "Variable Pointer" prefix.)
  <REMINDER> Using 'Edit File', set the lookup routine, XTLKDICL, in ICD
    DIAGNOSIS DD
Select LOCAL LOOKUP NAME: <RET>
```

If *all* references to a file (by all packages) are to behave as MTLU look-ups, add the special look-up routine, ^XTLKDICL, to the file's DD using the FileMan Edit File option. (See the "Utility Functions" chapter in the *VA FileMan User Manual* for more information on the Edit File option.):

```
VAH, MTL>D Q^DI
VA FileMan 20.0
Select OPTION: UTILITY FUNCTIONS
Select UTILITY OPTION: EDIT FILE
MODIFY WHAT FILE: ICD DIAGNOSIS// <RET>
NAME: ICD DIAGNOSIS// <RET>
DESCRIPTION: <RET>
  1>Contains all valid ICD diagnosis codes.
EDIT Option: <RET>
Select APPLICATION GROUP: <RET>
DEVELOPER: <RET>
VERSION: 9// <RET>
DATA DICTIONARY ACCESS: <RET>
READ ACCESS: <RET>
WRITE ACCESS: <RET>
DELETE ACCESS: <RET>
LAYGO ACCESS: <RET>
AUDIT ACCESS: <RET>
DD AUDIT? NO// <RET>
ASK 'OK' WHEN LOOKING UP AN ENTRY? YES// <RET> (YES)
POST-SELECTION ACTION: <RET>
LOOK-UP PROGRAM: XTLKDICL
CROSS-REFERENCE ROUTINE: <RET>
Select UTILITY OPTION: < RET>
```

NOTE: The developer might elect to use MTLU only in selected instances. This is accomplished by *not* adding the special look-up routine to the file's DD. After the file has been added to the LOCAL LOOKUP file (#8984.4), you can make a programmer call to LKUP^XTLKMGR.

Multi Term Look-Up (MTLU)

PROGRAMMER API

How to Override MTLU

If files are fully configured for the special Multi-Term Look-Up, all standard FileMan look-ups invoke MTLU. The following are procedures one can take to override MTLU:

- Users can enter an accent grave (`) as a prefix to request a look-up by Internal Entry Number (IEN).
- Users can enter a tilde (~) as a prefix to force a standard FileMan look-up.

NOTE: In the event that a search produces no matches, MTLU continues with a standard FileMan search by default.

• Programmers can override MTLU by setting the variable XTLKUT="" prior to referencing the file and killing it upon exit, or set DIC(0) to include "I":

```
S DIC=81,DIC(0)="AEMQI",X="" D ^DIC
```

MTLU and VA FileMan Supported Calls

Developers can perform any supported VA FileMan calls on files fully configured for MTLU.

The preferred method of performing look-ups from programmer mode is to add the target file to the LOCAL LOOKUP file (#8984.4) and calling LKUP^XTLKMGR. However, Multi-Term Look-Ups can be performed on any VA FileMan file, even if it has not been configured for use by MTLU. Using the programmer API, the look-up can be performed using any index contained within the file, such as a FileMan KWIC cross-reference.

Entry point: XTLKKWL

Required input variables:

(XTLKGBL, XTLKKSCH("GBL")) = This is the global root (same as DIC).

XTLKKSCH("DSPLY") = This variable displays the routine. For example:

DGEN^XTLKKWLD

Required input variables (continued):

XTLKKSCH("INDEX") = Cross-reference selected by the developer for performing a MTLU.

XTLKX = This is the user input.

Optional input variables:

XTLKSAY = 1 or 0. If XTLKSAY = 1, MTLU displays details during the look-up.

NOTE: The purpose of XTLKSAY is to control the degree of output to the screen, not the amount of "file information" displayed.

XTLKHLP = Executable code to display custom help.

Toolkit V. 7.3 Enhanced API

Programmer calls to MTLU-configured files now return all standard FileMan variables, i.e., Y, DTOUT, DUOUT, DIROUT, and DIRUT.

The programmer's API for performing a look-up has been enhanced functionally, simplified, and converted to a procedure call.

A series of new procedure calls have been written to provide full, non-interactive management of the following MTLU control files: LOCAL KEYWORD (#8984.1), LOCAL SHORTCUT (#8984.2), LOCAL SYNONYM (#8984.3), and LOCAL LOOKUP (#8984.4).

All procedure calls are contained in the routine ^XTLKMGR.

Errors are returned in the XTLKER() array. Kill this array before calling any of these new procedure calls, and check the array after returning from the calls. All calls require that the target file be defined in the LOCAL LOOKUP file (#8984.4). If removing an entry from the LOCAL LOOKUP file (#8984.4), all shortcuts, synonyms, and keywords associated with that file must be deleted first.

The following is a list of the new procedure calls, including a brief description and the input and output variables associated with each call:

• K^XTLKMGR(XTLK1,XTLK2,XTLK3)

Add Keywords to the LOCAL KEYWORD file (#8984.1).

INPUT:

XTLK1=associated file

XTLK2=code in the associated file

XTLK3=keyword

OUTPUT:

XTLKER(1, filename) File not defined in the LOCAL LOOKUP file

(#8984.4).

XTLKER(2,code) The code is not in the associated file. XTLKER(3,synonym) The keyword could not be added.

SH^XTLKMGR(XTLK1,XTLK2,XTLK3)

Add Shortcuts to the LOCAL SHORTCUT file (#8984.2).

INPUT:

XTLK1=associated file

XTLK2=code in the associated file XTLK3=shortcut (word or phrase)

OUTPUT:

XTLKER(1, filename) File not defined in the LOCAL LOOKUP file

(#8984.4).

XTLKER(2,code) The code is not in the associated file. XTLKER(3,shortcut) The shortcut could not be added.

• SY^XTLKMGR(XTLK1,XTLK2,XTLK3)

Add Terms and Synonyms to the LOCAL SYNONYM file (#8984.3).

INPUT:

XTLK1=associated file

XTLK2=term

XTLK3=synonym (or optional array for multiple synonyms per term)

NOTE: Use one-dimensional arrays wherever supported in

^XTLKMGR as in the following example:

SYN(1)=<first synonym> SYN(2)=<second synonym> SYN(3)=<third synonym>

>D SY'ROUTINE(XTLK1,XTLK2,.SYN)

OUTPUT:

XTLKER(1, filename) File not defined in the LOCAL LOOKUP file

(#8984.4).

XTLKER(2,term) The term could not be added. XTLKER(3,synonym) The synonym could not be added.

•

L^XTLKMGR(XTLK1,XTLK2,XTLK3,XTLK4)

Define a file in the LOCAL LOOKUP file (#8984.4). Adding the target file here does *not* automatically place the special look-up routine, ^XTLKDICL, in the file's Data Dictionary (DD). Since use of this routine is at the discretion of the developer, it should be manually added via the Edit File option under VA FileMan's Utilities Menu. (See the "Utility Functions" chapter in the *VA FileMan User Manual* for information on the Edit File option.)

INPUT:

XTLK1=filename or number

XTLK2=application-specific display protocol (optional)

XTLK3=MTLU index to use for look-ups

XTLK4=variable pointer prefix

OUTPUT:

XTLKER(1,filename) File could not be added.

Examples (index and prefix can differ from actual implementation):

For the ICD DIAGNOSIS file (#80):

```
>K XTLKER
>D L^XTLKMGR(80,"DSPLYD^XTLKKWLD","AIHS","D")
```

For the ICD OPERATION/PROCEDURE file (#80.1):

```
>K XTLKER
```

>D L^XTLKMGR(80.1, "DSPLYO^XTLKKWLD", "KWIC", "O")

• DK^XTLKMGR(XTLK1,XTLK2)

Delete Keywords from the LOCAL KEYWORD file (#8984.1).

INPUT:

XTLK1=filename

XTLK2=leave undefined to delete all keywords for a given target file or pass in an array for selected keywords

• DSH^XTLKMGR(XTLK1,XTLK2)

Delete Shortcuts from the LOCAL SHORTCUT file (#8984.2).

INPUT:

XTLK1=filename

XTLK2=leave undefined to delete all shortcuts for a given target file or pass in an array for selected shortcuts

• DSY^XTLKMGR(XTLK1,XTLK2)

Delete Synonyms from the LOCAL SYNONYM file (#8984.3).

INPUT:

XTLK1=filename

XTLK2=leave undefined to delete all synonyms for a given target file or pass in an array for selected synonyms

• DLL^XTLKMGR(XTLK1)

Delete an entry from the LOCAL LOOKUP file (#8984.4).

INPUT:

XTLK1=associated filename or number

OUTPUT:

XTLKER(1, filename) File is not in the LOCAL LOOKUP file

(#8984.4)

XTLKER(2) Entries exist for keywords, shortcuts, or

synonyms for the associated file. These must

be deleted first.

• LKUP^XTLKMGR(FIL,XTLKX,XTLKSAY,XTLKHLP, XTLKMORE)

This is the new general look-up facility for MTLU. The target file must be properly cross-referenced and defined in the LOCAL LOOKUP file (#8984.4), but the routine ^XTLKDICL does *not* have to be defined in the target file's DD.

INPUT:

FIL=target file (must be defined in the LOCAL LOOKUP file, #8984.4)

XTLKX=word or phrase to use in look-up

XTLKSAY (optional)=-1, 0, or 1 (default=1). Set to "0" to minimize, "-1" to prevent screen display, "1" or "" for full screen (normal) display.

NOTE: The purpose of XTLKSAY is to control the degree of output to the screen, not the amount of "file information" displayed.

If screen displays are turned off, MTLU matches can be processed by checking the count in ^TMP("XTLKHITS",\$J). ^TMP("XTLKHITS",\$J,count)=IEN of the entry in the target file. ^TMP("XTLKHITS") should be killed after processing.

XTLKHLP (optional)=executable code to display application-specific help

XTLKMORE (optional) Set to "1" to continue with FileMan search (default=1)

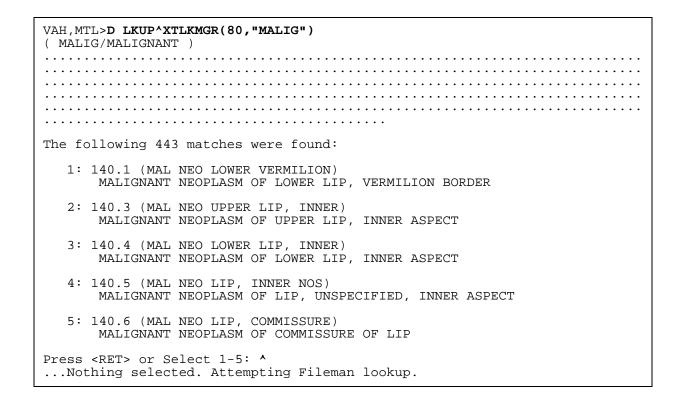
OUTPUT:

Y=-1 The Look-up was successful.

Y=N^S N is the internal number of the entry in the file and S is the value of the .01 field for that entry.

Y=N^S^1 N and S are defined as above and the 1 indicates that this entry has just been added to the file.

Example 1: Standard look-up, single term entered.



NOTE: Pressing the Return key continues listing the MTLU matches. If no selection is made, MTLU initiates a standard FileMan look-up (using all available cross-references).

46

Example 2: Standard look-up, multiple terms entered.

```
VAH, MTL>D LKUP'XTLKMGR(80, "MALIGNANCY OF THE LIP")
( LIP/LIPIDOSES/LIPODYSTROPHY/LIPOID/LIPOMA/LIPOPROTEIN/LIPOTROPIC/LIPS
MALIGNAN/MALIGNANT )
The following words were not used in this search:
     THE
. . . . . . . . . . . .
The following 12 matches were found:
   1: 140.1 (MAL NEO LOWER VERMILION)
       MALIGNANT NEOPLASM OF LOWER LIP, VERMILION BORDER
   2: 140.3 (MAL NEO UPPER LIP, INNER)
       MALIGNANT NEOPLASM OF UPPER LIP, INNER ASPECT
   3: 140.4 (MAL NEO LOWER LIP, INNER)
       MALIGNANT NEOPLASM OF LOWER LIP, INNER ASPECT
   4: 140.5 (MAL NEO LIP, INNER NOS)
      MALIGNANT NEOPLASM OF LIP, UNSPECIFIED, INNER ASPECT
   5: 140.6 (MAL NEO LIP, COMMISSURE)
      MALIGNANT NEOPLASM OF COMMISSURE OF LIP
Press <RET> or Select 1-5: ^
... Nothing selected. Attempting Fileman lookup. ??
```

Example 3: Display minimized by setting the 3rd parameter=0.

Example 4: MTLU with screen display turned off.

Multi Term Look-Up (MTLU)

Overview

The Duplicate Resolution Utilities provided by Toolkit allow programmers to combine duplicate records based on conditions established in application-specific comparison routines. The customized merge allows users to check their data files for duplicates and merge them if any are found. Two files are involved, the DUPLICATE RECORD file (#15) and the DUPLICATE RESOLUTION file (#15.1).

The potential duplicates are identified by comparing each record against other records and assigning a score to the pair of potential duplicate records. This score acts as a confidence factor and if it's greater than or equal to the POTENTIAL DUPLICATE THRESHOLD%, the pair is automatically entered into the DUPLICATE RECORD file (#15) and marked as Potential Duplicates, Unverified.

The person who is identified as in charge of the checking and merging of duplicates then starts reviewing all the potential duplicate pairs and verifies them as either a Verified Duplicate or Verified, Not A Duplicate.

Once a pair of records has been identified as a Verified Duplicate, the user selects which record is merged into the other record. The user can also select the field values to be retained. Any special merge routines from other packages that affect the file that the user is working with are executed at this time. During the merge process, all files that have records that point to the merged-from record are repointed to the retained, or merged-to, record. After the merge process is complete, a bulletin is sent to all members of the XDR mail group notifying them of the pair of records that were merged.

The DUPLICATE RECORD file (#15) stores all pairs of records that have been identified as Potential Duplicates, Unverified and the scores that they received by the duplicate checking algorithm.

The DUPLICATE RESOLUTION file (#15.1) stores all the control information about which file to check for duplicates, the routines to be run to gather potential duplicate candidates, and the tests that should be run with the scoring values. Further information about this control file can be found in the description of the DUPLICATE RESOLUTION file (#15.1) and from its Data Dictionary (DD) listing.

USER INTERFACE

Duplicate Resolution Utilities Menu Options

The following is a description of the Duplicate Resolution System menu options [XDR MAIN MENU]. The options are described in the same order as they appear on the screen:

```
Systems Manager Menu [EVE]
Application Utilities ... [XTMENU]
Duplicate Resolution System ... <Locked with XDR> [XDR MAIN MENU]
XDRO Operations ... [XDR OPERATIONS MENU]
XDRU Utilities ... [XDR UTILITIES MENU]
XDRM Manager Utilities ... <Locked with XDRMGR>[XDR MANAGER UTILITIES]
```

- The Operations menu [XDR OPERATIONS MENU] contains options for running duplicate check searches and verifying and merging duplicate pairs.
- The Utilities menu [XDR UTILITIES MENU] gives access to various Duplicate Resolution Utilities.
- The Manager Utilities option [XDR MANAGER UTILITIES] controls access to various manager utilities. These utilities include: automatically merging ready to merge duplicates, editing the DUPLICATE RESOLUTION file (#15.1), and purging the DUPLICATE RECORD file (#15).

OPERATIONS MENU

The following is a description of the Operations menu options on the Duplicate Resolution System menu. The options are described in the same order as they appear on the screen:

```
Application Utilities ...
                                                                       [XTMENU]
 Duplicate Resolution System ... < Locked with XDR>
                                                                [XDR MAIN MENU]
                                                         [XDR OPERATIONS MENU]
         Operations ...
   XDRO
         Display Search Status < Locked with XDR> [XDR DISPLAY SEARCH STATUS]
                                                               [XDR SEARCH ALL]
    SRCH Start/Halt Duplicate Search
          Verify Potential Duplicates
                                                               [XDR VERIFY ALL]
         Verify Selected Potential Duplicate Pair [XDR VERIFY SELECTED PAIR]
    SPD
    MVD
         Merge Ready to Merge Verified Duplicates[XDR MERGE READY DUPLICATES]
    SVD
         Merge Selected Verified Duplicate Pair
                                                     [XDR MERGE SELECTED PAIR]
```

How to Display the Search Status

Display Search Status Option

The Display Search Status option [XDR DISPLAY SEARCH STATUS] displays the status of a selected search for duplicates and is locked with the XDR security key.

The Status can be Running, Halted, or Completed. If you are checking the Status to make sure the duplicate checking software is Running, you must first make sure that not only is the Status stated to be Running, but also that the Count (which is the number of records that have been checked for duplicates) is also steadily increasing. If the Count is not increasing notify your site manager.

To see the Status for a particular duplicate search, choose the Display Search Status option from the Operations menu shown below:

```
Duplicate Resolution Operations Menu
             Display Search Status
             Start/Halt Duplicate Search
   SRCH
            Verify Potential Duplicates
Verify Selected Potential Duplicate Pair
Merge Ready to Merge Verified Duplicates
Merge Selected Verified Duplicate Pair
   VPD
   SPD
   MVD
   SVD
Select Operations Option: DSS <RET> Display Search Status
Select duplicate search file to check status for: 200 <RET> NEW PERSON
                          Duplicate NEW PERSON Search
Search Type
                 Date Started
                                                    Date Completed # Records Checked
                                    Status
BASIC
                 MAY 6, 1994
                                    COMPLETED
                                                    JUL 22, 1994
                                                                           521
```

How to Search For Duplicates

Start/Halt Duplicate Search Option

The Start/Halt Duplicate Search option [XDR SEARCH ALL] searches a selected file for potential duplicates. It provides a choice of two methods. This is a tasked job that can be started and halted until the entire file has been checked.

To Start a search for duplicates within a file, choose the Start/Halt Duplicate Search option from the Operations menu.

There are two types of searches that a user can run:

- 1. **Basic:** Checks all records, starting at the beginning of the file, regardless of whether a duplicate search was run before.
- 2. **New:** Checks only the records that have been added or edited since the last time a duplicate search was run. The New option uses a cross reference that must be setup and identified by a programmer for this purpose.

Since the search is started by TaskMan and run as a background process, the user needs to specify the Start time. The user also has an option to specify a Halt time at which point the search stops. This provides the capability to schedule and limit the search to off hours, which is what we recommend. By selecting the New option, each subsequent new search starts at the record immediately following the last record from the previous search. This prevents the entire file from being searched again at the beginning.

See the following page for a sample dialogue of a Basic search.

The following is an example of beginning a search for duplicate records on the NEW PERSON file (#200):

```
Duplicate Resolution Operations Menu
          Display Search Status
          Start/Halt Duplicate Search
   SRCH
          Verify Potential Duplicates
Verify Selected Potential Duplicate Pair
   VPD
   SPD
          Merge Ready to Merge Verified Duplicates
   MVD
   SVD
          Merge Selected Verified Duplicate Pair
Select Operations Option: SRCH <RET> Start/Halt Duplicate Search
Select file to be checked for duplicates: 200 <RET> NEW PERSON
                     Duplicate NEW PERSON Search
                                    Date Completed # Records Checked
Search Type Date Started Status
         MAY 6, 1994 COMPLETED MAY 7, 1994 521
BASIC
Do You wish to RUN a search? YES
Which type of Search do you wish to run ? ?
This is the type of search that is currently being run or has been
completed. Choose from:
        BASIC
n
        NEW
Which type of Search do you wish to run ? BASIC
Requested Start Time: NOW// <RET> (AUG 26, 1994@10:02:06)
Do You wish to schedule a time to HALT this search? NO
```

It is suggested, at this point, to use the Display Search Status option to make sure that the search has been started.

Duplicate Resolution Operations Menu							
DSS Display Search Status SRCH Start/Halt Duplicate Search VPD Verify Potential Duplicates SPD Verify Selected Potential Duplicate Pair MVD Merge Ready to Merge Verified Duplicates SVD Merge Selected Verified Duplicate Pair							
Select Operations Option: DSS <ret> Display Search Status</ret>							
Select duplicate search file to check status for: 200 <ret> NEW PERSON</ret>							
Duplicate NEW PERSON Search							
Search Typ	e Date Started	Status	Date Completed	# Records Checked			
BASIC	AUG 26, 1994	RUNNING		2			

To Halt a search for duplicates within a file, choose the Start/Halt Duplicate Search option from the Operations menu shown below:

```
Duplicate Resolution Operations Menu
            Display Search Status
            Start/Halt Duplicate Search
   SRCH
            Verify Potential Duplicates
Verify Selected Potential Duplicate Pair
Merge Ready to Merge Verified Duplicates
Merge Selected Verified Duplicate Pair
   VPD
   SPD
   MVD
   SVD
Select Operations Option: SRCH <RET> Start/Halt Duplicate Search
Select file to be checked for duplicates: NEW PERSON
                         Duplicate NEW PERSON Search
                                                Date Completed # Records Checked
Search Type Date Started
                                  Status
BASIC
                AUG 26, 1994
                                                                        6
                                  RUNNING
Do You wish to HALT this search? YES
Requested Start Time: NOW// <RET> (AUG 26, 1994@10:08:37)
```

60

Again, it is suggested, at this point, to use the Display Search Status option to make sure that the search has been halted.

```
Duplicate Resolution Operations Menu
            Display Search Status
            Start/Halt Duplicate Search
   SRCH
            Verify Potential Duplicates
Verify Selected Potential Duplicate Pair
Merge Ready to Merge Verified Duplicates
Merge Selected Verified Duplicate Pair
   VPD
   SPD
   MVD
   SVD
Select Operations Option: DSS <RET> Display Search Status
Select duplicate search file to check status for: NEW PERSON
                         Duplicate NEW PERSON Search
Search Type
                Date Started
                                   Status
                                                   Date Completed # Records Checked
                                                                       -----
BASIC
                AUG 26, 1994
                                   HALTED
                                                                          6
```

How to Verify Duplicate Pairs

Within the XDR system, three options allow you to decide whether a pair of records are duplicates and to change their STATUS within the DUPLICATE RECORD file (#15).

The Verify Potential Duplicates option loops through the DUPLICATE RECORD file (#15) entries that have a Potential Duplicate, Unverified STATUS, continuing to loop till you wish to stop. The Verify Selected Potential Duplicate Pair option allows you to select a duplicate pair from the DUPLICATE RECORD file (#15) that has a Potential Duplicate, Unverified STATUS. The Add Verified Duplicate Pair option allows you to select a pair of records from a file that are not in the DUPLICATE RECORD file (#15) and add them to the DUPLICATE RECORD file (#15) with a Verified Duplicate STATUS.;

Verify Potential Duplicates Option

The Verify Potential Duplicates option [XDR VERIFY ALL] is used to mark a Potential Duplicate, Unverified as an actual Verified Duplicate. The "from" and "to" records are identified and all top level patient file fields resolved and a bulletin generated informing the Verified Duplicate mailgroup of the actual Verified Duplicate.

The merge process is started when you verify them as duplicates and there are no interactive merges that need to occur.

Choosing this option from the Operations menu allows you to loop through the potential duplicates of the DUPLICATE RECORD file (#15) and change the duplicate pair STATUS from Potential Duplicate, Unverified to either Verified Duplicate or Verified, Not A Duplicate. The computer dialogue is shown on the next page.

The following is an example of the prompts and the computer dialogue involved with selecting the Verify Potential Duplicates option:

```
Duplicate Resolution Operations Menu
           Display Search Status
   SRCH
           Start/Halt Duplicate Search
   VPD
           Verify Potential Duplicates
   SPD
           Verify Selected Potential Duplicate Pair
           Merge Ready to Merge Verified Duplicates
Merge Selected Verified Duplicate Pair
   MVD
   SVD
Select Operations Option: VPD <RET> Verify Potential Duplicates
Select file to verify potential duplicates: 200 <RET> NEW PERSON
COMPARISON OF NEW PERSON FILE ENTRIES AUG 26, 1994@10:21 PAGE 1 NEW PERSON FREEMAN, JOHN FREEMAN, JOHN
*** NAME
                           FREEMAN, JON
                                                         FREEMAN, JOHN
    INITIAL
                           JF
                                                         JF
*** ACCESS CODE <Hidden>
*** DATE VERIFY CODE MAY 6,1992
    LAST CHANGED
*** DATE ENTERED
                          MAY 6, 1992
                                                        JUN 9, 1992
                           DOE, JANE
                                                        DOE, JANE
    CREATOR
*** LAST SIGN-ON DATE/ JUN 29, 1994@10:08:
    TIME
                            43
*** TERMINAL TYPE LAST C-VT100
    USED
          V VERIFIED DUPLICATE
N VERIFIED, NOT A DUPLICATE
U UNABLE TO MAKE DETERMINATION
Verification status of potential duplicate pair: VERIFIED DUPLICATE
MERGE DIRECTION: 2// ?
     Must be verified duplicate
     RECORD1=FREEMAN, JON
     RECORD2=FREEMAN, JOHN
     CHOOSE FROM:
       1 RECORD1 to RECORD2
2 RECORD2 to RECORD1
                RECORD2 to RECORD1
MERGE DIRECTION: 2// <RET> RECORD2 to RECORD1
```

Verify Potential Duplicates option (continued):

I will now merge the NEW PERSON file, this may take some time please be patient.							
COMPARING THE TWO ENTRIES							
COMPARISON OF NEW PERSON FILE ENTRIES AUG 26, 1994@10:22 PAGE 1 NEW PERSON FREEMAN, JOHN [FREEMAN, JON]							
1. NAME	FREEMAN, JOHN	[FREEMAN, JON]					
2. INITIAL	JF	JF					
3. ACCESS CODE		[<hidden>]</hidden>					
4. DATE VERIFY CODE LAST CHANGED		[MAY 6,1992]					
5. DATE ENTERED	JUN 9, 1992	[MAY 6, 1992]					
6. CREATOR	DOE, JANE	DOE, JANE					
7. LAST SIGN-ON DATE/ TIME		[JUN 29, 1994@10:08:] [43]					
8. TERMINAL TYPE LAST USED		[C-VT100]					
Default is enclosed in brackets, e.g., [FREEMAN,JON] Enter 1-8 to change default value, RETURN to continue, ^ to exit: <ret></ret>							
OK. I'M READY TO DO THE MERGE.							
Select one of the following:							
P PROCEED to merge the data S SUMMARIZE the modifications before proceeding E EDIT the data again before proceeding							
ACTION: PROCEED to merge the data							
NOTE: Multiples will be merged into the target record							
I will now merge all subfiles in this file This may take some time, please be patient.							
I will now merge all files that point to the NEW PERSON file that do not have a specific package merge This may take some time, please be patient.							
Gathering files and checking 'PT nodes							

Verify Potential Duplicates option (continued):

Verify Selected Potential Duplicate Pair Option

The Verify Selected Potential Duplicate Pair option [XDR VERIFY SELECTED PAIR] is used to select a potential duplicate pair that is already in the DUPLICATE RECORD file (#15) and verify that the pair is either Verified, Not A Duplicate or a Verified Duplicate pair. The option can be found on the Operations menu.

The merge process is started when you verify them as duplicates and there are no interactive merges that need to occur.

The following is an example of the prompts and the computer dialogue involved with selecting the Verify Selected Potential Duplicate Pair option:

```
Duplicate Resolution Operations Menu
  DSS
          Display Search Status
          Start/Halt Duplicate Search
  SRCH
          Verify Potential Duplicates
   VPD
          Verify Selected Potential Duplicate Pair
  SPD
  MVD
          Merge Ready to Merge Verified Duplicates
  SVD
          Merge Selected Verified Duplicate Pair
Select Operations Option: SPD <RET> Verify Selected Potential Duplicate
    Pair
Select file to verify potential duplicates: 200 <RET> NEW PERSON
```

Verify Selected Potential Duplicate Pair option (continued):

```
Select DUPLICATE RECORD RECORD1: ?
 ANSWER WITH DUPLICATE RECORD RECORD1
 DO YOU WANT THE ENTIRE DUPLICATE RECORD LIST? Y <RET> (YES)
CHOOSE FROM:
    TEST, TEST TEST, TESTC POTENTIAL DUPLICATE, UNVERIFIED TEST, USER TEST, USER1 POTENTIAL DUPLICATE, UNVERIFIED COLINS, PHIL POTENTIAL DUPLICATE, UNVERIFIED
    BAKER, JAMES BAKKER, JAMES POTENTIAL DUPLICATE, UNVERIFIED MONTOYA, CARL MONTOYA, CARLOS POTENTIAL DUPLICATE, UNVERIFIED
    FREEMAN, JON FREEMAN, JOHN POTENTIAL DUPLICATE, UNVERIFIED
Select DUPLICATE RECORD RECORD1: FREEM
     1 FREEMAN, JOHN FREEMAN, JOHN
         FREEMAN, JON FREEMAN, JON
CHOOSE 1-2: 1 FREEMAN, JOHN
                                         FREEMAN, JOHN POTENTIAL DUPLICATE,
                                                            UNVERIFIED
COMPARISON OF NEW PERSON FILE ENTRIES AUG 26, 1994@10:21 PAGE 1 NEW PERSON FREEMAN, JOHN FREEMAN, JOHN
*** NAME
                             FREEMAN, JON
                                                           FREEMAN, JOHN
    INITIAL
                            JF
                                                           JF
*** ACCESS CODE
                            <Hidden>
*** DATE VERIFY CODE MAY 6,1992
    LAST CHANGED
*** DATE ENTERED
                            MAY 6, 1992
                                                          JUN 9, 1992
    CREATOR
                            DOE, JANE
                                                           DOE, JANE
*** LAST SIGN-ON DATE/ JUN 29, 1994@10:08:
    TIME
                              43
*** TERMINAL TYPE LAST C-VT100
    USED
                      VERIFIED DUPLICATE
           N
                       VERIFIED, NOT A DUPLICATE
           U
                      UNABLE TO MAKE DETERMINATION
```

Verify Selected Potential Duplicate Pair option (continued):

```
Verification status of potential duplicate pair: VERIFIED DUPLICATE
MERGE DIRECTION: 2// ?
     Must be verified duplicate
     RECORD1=FREEMAN, JON
     RECORD2=FREEMAN, JOHN
     CHOOSE FROM:
       1 RECORD1 to RECORD2
       2
               RECORD2 to RECORD1
MERGE DIRECTION: 2// <RET> RECORD2 to RECORD1
I will now merge the NEW PERSON file, this may take some time please be
COMPARING THE TWO ENTRIES.....
COMPARISON OF NEW PERSON FILE ENTRIES AUG 26, 1994@10:22 PAGE 1 NEW PERSON FREEMAN, JOHN [FREEMAN, JON]
1. NAME
                         FREEMAN, JOHN
                                                    [FREEMAN, JON]
2. INITIAL
                          JF
3. ACCESS CODE
                                                    [<Hidden>]
4. DATE VERIFY CODE
                                                    [MAY 6,1992]
    LAST CHANGED
5. DATE ENTERED JUN 9, 1992
                                                    [MAY 6, 1992]
6. CREATOR
                         DOE, JANE
                                                    DOE, JANE
7. LAST SIGN-ON DATE/
                                                    [JUN 29, 1994@10:08:]
    TIME
                                                    [43]
8. TERMINAL TYPE LAST
                                                    [C-VT100]
Default is enclosed in brackets, e.g., [FREEMAN, JON]
Enter 1-8 to change default value, RETURN to continue, ^ to exit: ^
OK. I'M READY TO DO THE MERGE.
     Select one of the following:
                    PROCEED to merge the data
                    SUMMARIZE the modifications before proceeding
                    EDIT the data again before proceeding
ACTION: PROCEED to merge the data
```

Verify Selected Potential Duplicate Pair option (continued):

Duplicate Resolution Utilities

How to Merge Verified Duplicates

The merge process can be initiated several different ways. After selection of any of the options that verify duplicate pairs the merge process is automatically started. Along with the verification process, there are three other options for merging duplicate pairs.

The Merge Ready to Merge Verified Duplicates option and the Merge Selected Verified Duplicate Pair option can be selected from the Operations menu. The Automatically Merge Already Verified Duplicates option can only be accessed by the merge manager and is selected from the Manager Utilities menu.

MERGE PROCESS

The process of merging two records starts out with the selection of which way you want the merge to occur (i.e., merge Record 1 to Record 2 or Record 2 to Record 1).

If any other packages point to the file that you are merging, their files are checked to see if they have data for the merged-from record. If they do, the merge process checks to see if they have an interactive merge process or a special merge routine. If the package has an interactive merge process, the merge process is stopped until that package completes its interactive merge. If the process is stopped, a bulletin is sent to all members of the mail group notifying them of the two records that have been verified as duplicates.

Next, if no interactive merges need to be concluded, any pre-merging action that the file maintainer might wish to occur is done. This could include such things as the saving of any data before the merge, etc.

After any pre-merge processing, the two records are displayed on your screen side by side and you are allowed to choose certain field values from the merged-from record which you wish to replace in the merged-to records values. This process uses the Compare and Merge utility from FileMan.

After you have completed the field by field merging, all files with records that point to the merged-from record are re-pointed to the merged-to record.

If any packages have special merge routines in the PACKAGE file (#9.4), this processing would now be done.

The final part of the process is either the deletion of the merged-from record leaving only a trail stub, or the processing of any post-merge action that the file maintainer wished to have done. A bulletin is sent to all members of the mail group notifying them that the two duplicate records have been merged.

Verification Options

The merge process begins immediately after the verification of a pair of records as Verified Duplicates

Merge (Ready to Merge) Verified Duplicates Option

The Merge Ready to Merge Verified Duplicates option [XDR MERGE READY DUPLICATES] loops through the DUPLICATE RECORD file (#15, AMRG X-ref) for all duplicate record pairs and merges ready to merge verified duplicate pairs that were not merged during the verification process. These would include record pairs that had completed any needed package interactive merge processes. It would also include any record pairs for which you had stopped the merge process.

This process may or may not be interactive depending on the value of the MERGE STYLE field of the DUPLICATE RESOLUTION file (#15.1).

Merge Selected Verified Duplicate Pair Option

The Merge Selected Verified Duplicate Pair option [XDR MERGE SELECTED PAIR] is used to select a certain ready to merge verified duplicate pair for merging. You would use this option if you had a pair of records you wanted to merge but didn't have the time to merge all the ready to merge duplicate pairs before them.

NOTE: The Automatically Merge Already Verified Duplicates option [XDR AUTO MERGE] is a special option that is only available to the merge manager and is selected from the Manager Utilities menu. (The Manager Utilities menu is described later on in this chapter.)

If you choose this option, you loop through ready to merge duplicate pairs in the DUPLICATE RECORD file (#15) but without the ability to select on a field-by-field basis which field values to retain for the merged-to record. All of the other merge processes occur in the same way.

UTILITIES MENU

The following is a description of the Utilities menu options on the Duplicate Resolution System menu. The options are described in the same order as they appear on the screen:

```
Application Utilities ...
                                                                       [XTMENU]
 Duplicate Resolution System ... <Locked with XDR>
                                                               [XDR MAIN MENU]
          Utilities ...
                                                          [XDR UTILITIES MENU]
   XDRII
          Check Pair of Records to see if Duplicates
    CHCK
                                                              [XDR CHECK PAIR]
          Add Verified Duplicate Pair
                                                       [XDR ADD VERIFIED DUPS]
    ADD
    FIND
          Find Potential Duplicates for an Entry in a File
                                               [XDR FIND POTENTIAL DUPLICATES]
    EDIT
          Edit Duplicate Record Status
                                                  [XDR EDIT DUP RECORD STATUS]
    VIEW
          View Duplicate Record Entries
                                                   [XDR VIEW DUPLICATE RECORD]
                                                              [XDR PRINT LIST]
    PRNT
          Print List of File Duplicates
    TSF
          Tally STATUS and MERGE STATUS fields
                                                     [XDR TALLY STATUS FIELDS]
```

Check Pair of Records to see if Duplicates Option

To check a possible score for two records, should they have gone through the duplicate checking algorithm, select the Check Pair of Records to see if Duplicates option from the Utilities menu

The Check Pair of Records to see if Duplicates option [XDR CHECK PAIR] allows a user to input two records and then run them through the duplicate resolution software to see what their Match Score would be.

Once you have selected the file to be checked, you are asked to input the two records you wish to check. The two records are then displayed side by side using the Compare and Merge option of FileMan and then their test scores are also displayed. It is important to note that this pair of records cannot be added to the DUPLICATE RECORD file (#15) by checking them through this option. If the score is high enough and you are certain that they are duplicates, you can add them using the Add Verified Duplicate Pair option of the Utilities menu.

The following is an example of the prompts and the computer dialogue involved with selecting the Check Pair of Records to see if Duplicates option:

```
Duplicate Resolution Utilities Menu
   CHCK Check Pair of Records to see if Duplicates
   ADD Add Verified Duplicate Pair
FIND Find Potential Duplicates for an Entry in a File
EDIT Edit Duplicate Record Status
   VIEW View Duplicate Record Entries
   PRNT Print List of File Duplicates
TSF Tally STATUS and MERGE STATUS fields
Select Utilities Option: CHCK <RET> Check Pair of Records to see if
     Duplicates
COMPARE ENTRIES IN WHAT FILE: NEW PERSON
COMPARE NEW PERSON: COLINS, PHIL
    WITH NEW PERSON: COLLI
    1 COLLINS, PHIL 2 COLLINS, PHILLIS
CHOOSE 1-2: 1
DEVICE: HOME// <RET> DECSERVER RIGHT MARGIN: 80// <RET>
COMPARISON OF NEW PERSON FILE ENTRIES AUG 26, 1994@10:36 PAGE 1 NEW PERSON COLINS, PHIL COLLINS, PHIL
*** NAME
                           COLINS, PHIL
                                                        COLLINS, PHIL
*** INITIAL
                                                          РC
*** FILE MANAGER ACCESS Dd
    CODE
*** DATE VERIFY CODE OCT 24,1990
                                                        MAY 5,1994
    LAST CHANGED
 NOTE: Multiples will be merged into the target record
                           "26 entries" " ---"
    "KEYS"
    "ACCESSIBLE FILE" "72 entries"
                                           POTENTIAL DUPLICATE % 50
POINTS POSSIBLE: 60
POINTS POSSIBLE: 60
DUPLICATE SCORE: 36
NAME TEST SCORE: 36
                                            DUPLICATE SCORE % 60
                                          DOB TEST SCORE: 0
```

Add Verified Duplicate Pair Option

The Add Verified Duplicate Pair option [XDR ADD VERIFIED DUPS] allows you to add a pair of records that are not already identified as Potential Duplicates, Unverified or Verified Duplicates to the DUPLICATE RECORD file (#15). They are added as Verified Duplicates and the merge process begins if there are no interactive package merges that need to occur.

After you have entered the two records that are duplicates, the sequence is the same as it is for the Verify Selected Potential Duplicate Pair option.

Find Potential Duplicates for an Entry in a File Option

The Find Potential Duplicates for an Entry in a File option [XDR FIND POTENTIAL DUPLICATES] finds all potential duplicates for an entry in a file. Any potential duplicate pairs are then added to the DUPLICATE RECORD file (#15) with a STATUS of Potential Duplicates, Unverified. The user is prompted to enter the file, then to select an entry within that file. This option can be found on the Utilities menu.

The following is an example of the prompts and the computer dialogue involved with selecting the Find Potential Duplicates for an Entry in a File option:

```
Duplicate Resolution System Menu
  XDRO
          Operations ...
  XDRII
         Utilities
  XDRM
         Manager Utilities ...
Select Duplicate Resolution System Option: Utilities
Duplicate Resolution Utilities Menu
          Check Pair of Records to see if Duplicates
  CHCK
          Add Verified Duplicate Pair
  ADD
          Find Potential Duplicates for an Entry in a File
  FIND
  EDIT
          Edit Duplicate Record Status
          View Duplicate Record Entries
  WHTW
  PRNT
          Print List of File Duplicates
          Tally STATUS and MERGE STATUS fields
  TSF
Select Utilities Option: Find Potential Duplicates for an Entry in a File
This option will collect all Potential Duplicates for an entry in a file.
It will then add any pairs found to the Duplicate Record file.
Find Potential Duplicates for entry in what file:
                                                     NEW PERSON
```

Find Potential Duplicates for an Entry in a File option (continued):

```
Find Potential Duplicates for NEW PERSON: TEST, TEST

1 TEST, TESTA
2 TEST, TESTB
4 TEST, TESTC

CHOOSE 1-4: 1

Hold On... This may take a little while...

The following NEW PERSON entry(ies) are now in the Duplicate Record file as Potential Duplicates to NEW PERSON: TEST, TEST
TEST, TESTA
TEST, TESTB
TEST, TESTB
TEST, TESTC
```

Edit Duplicate Record Status Option

The Edit Duplicate Record Status option [XDR EDIT DUP RECORD STATUS] allows you to select a pair of records from the DUPLICATE RECORD file (#15) and change their STATUS field. You can change the STATUS from Verified Duplicate to Verified Not A Duplicate or Potential Duplicate, Unverified. However, once you have merged the records you cannot change the STATUS.

This option is used when a pair is identified as a Verified Duplicate and this turns out to be incorrect. It can be found on the Utilities menu.

The following is an example of the prompts and the computer dialogue involved with selecting the Edit Duplicate Record Status option:

```
Duplicate Resolution Utilities Menu
   CHCK
          Check Pair of Records to see if Duplicates
          Add Verified Duplicate Pair
  \DeltaDD
  FIND
          Find Potential Duplicates for an Entry in a File
  EDIT
          Edit Duplicate Record Status
          View Duplicate Record Entries
  VTEW
  PRNT
          Print List of File Duplicates
          Tally STATUS and MERGE STATUS fields
  TSF
Select Utilities Option: EDIT <RET> Edit Duplicate Record Status
Select DUPLICATE RECORD RECORD1: COL
        COLINS, PHIL
                        COLINS, PHIL
        COLLINS, PHIL
                        COLLINS, PHIL
        COLLINS, PHILLIS COLLINS, PHILLIS
CHOOSE 1-3: 1 <RET> COLINS, PHIL
                                                         VERIFIED DUPLICATE
                                       COLLINS, PHIL
STATUS: VERIFIED DUPLICATE// ?
     Cannot be modified once MERGE STATUS is set to 2=MERGED
     CHOOSE FROM:
               POTENTIAL DUPLICATE, UNVERIFIED
      Ρ
                VERIFIED, NOT A DUPLICATE
       Ν
                VERIFIED DUPLICATE
STATUS: VERIFIED DUPLICATE// P <RET> POTENTIAL DUPLICATE, UNVERIFIED
Select DUPLICATE RECORD RECORD1: COLINS, PHIL <RET>
                                                           COLLINS, PHIL
    POTENTIAL DUPLICATE, UNVERIFIED
STATUS: POTENTIAL DUPLICATE, UNVERIFIED// <RET>
Select DUPLICATE RECORD RECORD1: <RET>
```

View Duplicate Record Entries Option

The View Duplicate Record Entries option [XDR VIEW DUPLICATE RECORD] allows you to look at selected entries from the DUPLICATE RECORD file (#15) in a captioned format. This option can be found on the Utilities menu.

```
Duplicate Resolution Utilities Menu
           Check Pair of Records to see if Duplicates
   CHCK
          Add Verified Duplicate Pair
   ADD
   FIND
         Find Potential Duplicates for an Entry in a File
   EDIT Edit Duplicate Record Status
          View Duplicate Record Entries
   VIEW
           Print List of File Duplicates
   PRNT
         Tally STATUS and MERGE STATUS fields
Select Utilities Option: VIEW <RET> View Duplicate Record Entries
Select DUPLICATE RECORD RECORD1: COL
         COLINS, PHIL COLINS, PHIL COLLINS, PHIL
        COLLINS, PHILLIS COLLINS, PHILLIS
CHOOSE 1-3: 1 <RET> COLINS, PHIL COLINS, PHIL POTENTIAL DUPLICATE,
                                                           UNVERIFIED
DEVICE: <RET> DECSERVER RIGHT MARGIN: 80// <RET>
                                              AUG 26,1994 10:39 PAGE 1
DUPLICATE RECORD LIST
RECORD1: COLINS, PHIL
                                           RECORD2: COLLINS, PHIL
  STATUS: POTENTIAL DUPLICATE, UNVERIFIED
 DATE FOUND: APR 1, 1994 WHO CREATED: DOE, JOHN WHO CHANGED: DOE, JOHN DC TOTAL POSSIBLE SCORE: 60 DC POTENTIAL DUPE THRESHOLD %: 50 DC DUPE MATCH SCORE: 36
  DC DUPE MATCH PERCENTILE: 60
DUPLICATE TEST: NAME
                                           DUPLICATE SCORE: 36
DUPLICATE TEST: DOB
                                           DUPLICATE SCORE: 0
Select DUPLICATE RECORD RECORD1: <RET>
```

Print List of File Duplicates Option

If you select the Print List of File Duplicates option [XDR PRINT LIST] from the Utilities menu you are allowed to print different types of listings from the DUPLICATE RECORD file (#15).

You can choose to print entries of the DUPLICATE RECORD file (#15) that have a STATUS of Potential Duplicate, Unverified, or Verified Duplicate and a MERGE STATUS of Ready (to be merged), or a STATUS of Verified Not A Duplicate and a MERGE STATUS of Not Ready (to be merged). The printout is in captioned format.

```
Duplicate Resolution Utilities Menu
   CHCK
          Check Pair of Records to see if Duplicates
   ADD
          Add Verified Duplicate Pair
          Find Potential Duplicates for an Entry in a File
   FIND
          Edit Duplicate Record Status
View Duplicate Record Entries
   EDIT
   VIEW
          Print List of File Duplicates
   PRNT
   TSF
          Tally STATUS and MERGE STATUS fields
Select Utilities Option: PRNT <RET> Print List of File Duplicates
Select File you wish to list for:
                                      NEW PERSON
This utility provides reports on verified and unverified potential
duplicates.
     Select one of the following:
                    UNVERIFIED potential duplicates
                    READY TO MERGE VERIFIED duplicates
          3
                    NOT READY TO MERGE VERIFIED duplicates
                    MERGED VERIFIED duplicates
                                                      (AUG 26, 1994@10:43)
report: 1 <RET> UNVERIFIED potential duplicates
    FILE #15
  START WITH DATE FOUND: FIRST// <RET>
DEVICE: <RET> DECSERVER
                            RIGHT MARGIN: 80// <RET>
```

Print List of File Duplicates option (continued):

```
Univerified Potential Duplicates AUG 26,1994 10:43 PAGE 1
RECORD1: COLLINS, PHILLIS
                                                                                                                                          RECORD2: COLLINS, PHIL
       STATUS: POTENTIAL DUPLICATE, UNVERIFIED
     DATE FOUND: APR 1, 1994 WHO CREATED: DOE, JOHN
DC TOTAL POSSIBLE SCORE: 60 DC POTENTIAL DUPE THRESHOLD %: 50
DC DUPE MATCH SCORE: 36 DC DUPE MATCH PERCENTILE: 60
UPLICATE TEST: NAME DUPLICATE SCORE: 36
DUPLICATE TEST: NAME DUPLICATE TEST: DOB
                                                                                                                                       DUPLICATE SCORE: 36
DUPLICATE SCORE: 0
RECORD1: MOOREHEAD, AGATHA
                                                                                                                                         RECORD2: MOOREHEAD, AGNES
       STATUS: POTENTIAL DUPLICATE, UNVERIFIED
     DATE FOUND: APR 1, 1994 WHO CREATED: DOE, JOHN DC TOTAL POSSIBLE SCORE: 60 DC POTENTIAL DUPE THRE DC DUPE MATCH SCORE: 36 DC DUPE MATCH PERCENTE CORE CONTROL OF THE PROPERTY 
                                                                                                                                         DC POTENTIAL DUPE THRESHOLD %: 50
                                                                                                                                    DC DUPE MATCH PERCENTILE: 60
DUPLICATE TEST: NAME
DUPLICATE TEST: DOB
                                                                                                                                        DUPLICATE SCORE: 0
RECORD1: JACKSON, BILLY BOB JOE
                                                                                                                                        RECORD2: JACKSON, BO
       STATUS: POTENTIAL DUPLICATE, UNVERIFIED
      DATE FOUND: APR 1, 1994 WHO CREATED: DOE, JOHN
DC TOTAL POSSIBLE SCORE: 90 DC POTENTIAL DUPE THRESHOLD %: 50
DC DUPE MATCH SCORE: 48 DC DUPE MATCH PERCENTILE: 53
JPLICATE TEST: NAME DUPLICATE SCORE: 24
DUPLICATE TEST: NAME
DUPLICATE TEST: DOB
                                                                                                                                         DUPLICATE SCORE: 24
                 Select one of the following:
                                                                  UNVERIFIED potential duplicates
                                                                READY TO MERGE VERIFIED duplicates
                                                                 NOT READY TO MERGE VERIFIED duplicates MERGED VERIFIED duplicates
                                    3
report: ^
```

Tally STATUS and MERGE STATUS Fields Option

By selecting the Tally STATUS and MERGE STATUS fields option [XDR TALLY STATUS FIELDS] from the Utilities menu, a report is produced that tallies the STATUS and MERGE STATUS fields for all entries in the DUPLICATE RECORD file (#15) for the file that you select. In the example below, we selected the NEW PERSON file (#200):

Duplicate Resolution Utilities Menu		
ADD Add Verified Dominated FIND Find Potential EDIT Edit Duplicate VIEW View Duplicate PRNT Print List of D	Duplicates for an Entry in a File Record Status	
Select Utilities Option: TSF <ret> Tally STATUS and MERGE STATUS fields</ret>		
This report will tally the Status and Merge Status fields for all entries in the Duplicate record file for the file that you select.		
Tally duplicate entries for which file? 200 <ret> NEW PERSON</ret>		
DEVICE: HOME// <ret> DECSERVER RIGHT MARGIN: 80// <ret></ret></ret>		
SAN FRANCISCO	AUG 26, 1994	Page 1
TALLY OF DUPLICATE RECORDS' STATUS/MERGE STATUS FIELDS FILE: NEW PERSON		
Total Number of Duplicate Records for File NEW PERSON: 58		
STATUS field:	VERIFIED, NOT A DUPLICATE POTENTIAL DUPLICATE, UNVERIFIED VERIFIED DUPLICATE	2 53 3
MERGE STATUS field:	READY MERGED	0
End of Report. Press return to exit <ret></ret>		

Duplicate Resolution Utilities

MANAGER UTILITIES

The following is a description of the Manager Utilities menu options on the Duplicate Resolution System menu. The options are described in the same order as they appear on the screen:

```
Application Utilities ... [XTMENU]

Duplicate Resolution System ... <Locked with XDR> [XDR MAIN MENU]

XDRM Manager Utilities ... <Locked with XDRMGR>[XDR MANAGER UTILITIES]

AUTO Automatically Merge Already Verified Duplicates[XDR AUTO MERGE]

FILE Edit Duplicate Resolution File[XDR EDIT DUP RESOLUTION FILE]

PRGE Purge Duplicate Record File [XDR PURGE]
```

Automatically Merge Already Verified Duplicates Option

The Automatically Merge Already Verified Duplicates option [XDR AUTO MERGE] is used to non-interactively merge all Verified Duplicate pairs that are Ready (to be merged). This option might take some time depending on how many Verified Duplicate pairs there are. It can be found on the Manager Utilities menu.

```
Duplicate Resolution System Menu
   XDRO
          Operations ...
   XDRU
          Utilities
          Manager Utilities ...
   XDRM
Select Duplicate Resolution System Option: Manager Utilities
Duplicate Manager Utilities Menu
          Automatically Merge Already Verified Duplicates
   AUTO
   FILE
          Edit Duplicate Resolution File
   PRGE
          Purge Duplicate Record File
Select Manager Utilities Option: AUTO <RET> Automatically Merge Already
    Verified Duplicates
Select file to merge ready to merge duplicates:
                                                    NEW PERSON
```

This option is used to merge all Verified Duplicate pairs for a selected file that have a MERGE STATUS of Ready.

Duplicate Resolution Utilities

This merges all records that were not previously merged in the normal merge process due to special package merges that needed to occur before the final merge could occur.

When this option is used there is no interaction with the user and no messages written to the screen.

Some sites might choose to place this option in a TaskMan queue to run in the background, but it is not known what effect FileMan dictionaries that write messages to the screen have on this process.

The merge process might take quite some time depending on the amount of information and the number of files that have to be merged. This option, if not queued, should only be run on a terminal that can be dedicated to this task for a large amount of time.

Edit Duplicate Resolution File Option

The Edit Duplicate Resolution File option [XDR EDIT DUP RESOLUTION FILE] allows you to edit the values used to select potential duplicates.

This option is also used to change the POTENTIAL DUPLICATE THRESHOLD% which is used by the duplicate checking software to determine whether to add a pair of records to the DUPLICATE RECORD file (#15). This option can be selected only by the merge manager from the Manager Utilities menu.

```
Duplicate Manager Utilities Menu
   AUTO
          Automatically Merge Already Verified Duplicates
   FILE
          Edit Duplicate Resolution File
   PRGE
          Purge Duplicate Record File
Select Manager Utilities Option: Edit Duplicate Resolution File
Select DUPLICATE RESOLUTION FILE TO BE CHECKED:
                                                   NEW PERSON
FILE TO BE CHECKED: NEW PERSON// <RET>
CANDIDATE COLLECTION ROUTINE: Z2NPCAN// <RET>
Select DUPLICATE TEST: DOB// <RET>
  DUPLICATE TEST: DOB// <RET>
  ORDER OF TEST: 2// <RET>
  DUPLICATE TEST ROUTINE: Z2NPDOB// <RET>
  FILE FOR INFORMATION: <RET>
  FIELD TO BE CHECKED: 5// <RET>
  SUCCESSFUL MATCH WEIGHT: 30// <RET>
  UNSUCCESSFUL MATCH WEIGHT: -20// <RET>
Select DUPLICATE TEST: <RET>
POTENTIAL DUPLICATE THRESHOLD%: 50// <RET>
MERGE STYLE: INTERACTIVE// <RET>
DUPLICATE MANAGER MAIL GROUP: JOHN'S MAIL GROUP// <RET>
VERIFIED DUPLICATE MAIL GROUP: JOHN'S MAIL GROUP// <RET>
VERIFIED DUPLICATE MSG ROUTINE: <RET>
MERGE MAIL GROUP: JOHN'S MAIL GROUP// <RET>
MERGE MSG ROUTINE: <RET>
VERIFIED DUPLICATE THRESHOLD%: <RET>
```

Purge Duplicate Record File Option

The purging of the DUPLICATE RECORD file (#15) can only be done by the merge manager, and the Purge Duplicate Record File option [XDR PURGE] can only be selected from the Manager Utilities menu.

You can purge the Potential Duplicate, Unverified entries and Verified Not A Duplicate entries, or both, from the DUPLICATE RECORD file (#15). You cannot purge any records that have a STATUS of Verified Duplicate or a MERGE STATUS of Merged.

```
Duplicate Manager Utilities Menu
          Automatically Merge Already Verified Duplicates
  AUTO
  FILE
          Edit Duplicate Resolution File
  PRGE
          Purge Duplicate Record File
Select Manager Utilities Option: PRGE <RET> Purge Duplicate Record File
Select File to Be Checked to purge:
                                       NEW PERSON
     Select one of the following:
                    POTENTIAL DUPLICATES PURGE
          2
                    VERIFIED NOT DUPLICATES PURGE
                    ALL RECORDS EXCEPT VERIFIED DUPLICATES PURGE
Choice : ^
```

PROGRAMMER API

Developing a File Merge Capability

This topic provides developers with a set of instructions to follow in building a merge capability for a file. After a developer identifies a file that has a substantial number of duplicates and that the nature and use of the file warrants a merge utility, he/she then follows the steps outlined below in developing that merge capability.

Let us continue the rest of the discussion as a specific example of developing a Patient Merge using the Duplicate Resolution Utilities.

Step 1

Notify the Toolkit developers of the perceived need for a duplicate checking/merge capability for a particular file. The Toolkit development team then assists the developer in deciding whether there is indeed a need for a Duplicate Resolution Utility for this particular file. The Toolkit developers then add the file to the .01 and .02 variable pointer field definitions in the DUPLICATE RECORD file (#15). The Toolkit developer notifies the application developer when the modified dictionary is to be released to the field.

Step 2

The developer needs to now communicate to the larger development community his/her intention to develop a merge capability for this file. All developers need to determine if the merging and deleting of records in this file affects their package in such a way that they need to have their own unique merge routine that deals with only their package's files. A developer usually has to write their own unique merge routine if any of the following conditions exist:

- 1. The patient pointer field is defined as a numeric or free text field rather than a pointer.
- 2. The developer wants their end users to complete some task prior to the merge occurring.
- 3. They have compound cross references that include the patient pointer on another field but the cross reference is not triggered by the changing of the patient pointer.
- 4. The Merge (Duplicate Resolution Utilities) does not do what the package developer desires.

The Following is a Description of what Occurs During the Merge:

The base file (e.g., PATIENT file, #2) is checked to see if it exists. Then the PT nodes (e.g., ^DD(2,0,"PT",) are checked and any false positives are removed. It then creates a list of files and fields within those files that point to the file being merged (e.g., in this example the file being merged is the PATIENT file, #2). If a file is pointing to the file being merged by its .01 field, and if that .01 field is DINUM, then all files/fields that point to that file are also gathered. The DINUM rule also applies to that file and any files pointing to it, to any depth.

Each file/field is checked and re-pointed/merged as follows:

If the field pointing is not a .01 field, the "from entry" is changed to the "to entry".

If the field pointing is the .01 field but not DINUM, the "from entry" is changed to the "to entry".

Each pointing .01 DINUM field is handled as follows:

If the .01 DINUM field is at the file level, ^DIT0 is called to merge the "from entry" to the "to entry" and then the "from entry" is deleted. ^DIT0 merges field by field but does not change any value in the "to entry". That means that NULL fields in the "to entry" get the value from the same field in the "from entry" if it is not NULL, and valued fields in the "to entry" remain the same. ^DIT0 also merges multiples. If a multiple entry in the "from entry" cannot be found in the "to entry", it is added to the "to entry". If a multiple entry in the "from entry" can be found in the "to entry", then that multiple entry is merged field by field.

If the .01 DINUM field is at the subfile level (in a multiple), it is handled as follows:

If there is a "from entry" but no "to entry", the "from entry" is added to the "to entry", changing the .01 field value in the process, and the "from entry" is deleted.

If there is a "from entry" and also a "to entry", the "from entry" is deleted and the "to entry" remains unchanged.

If it is determined that a developer must have their own unique merge that deals with their files, they must make the appropriate entries in the PACKAGE file (#9.4). If they have to have some sort of action taken by end users prior to the merging of the records, they must update the MERGE PACKAGES multiple in the DUPLICATE RECORD file (#15) for that pair of records.

The following explains the entries that need to be made in the PACKAGE file (#9.4):

In your PACKAGE file (#9.4) make an entry in the AFFECTS RECORD MERGE field (#20).

In the .01 field, enter the file affected (e.g., PATIENT file, #2).

In the NAME OF MERGE ROUTINE field enter the name of your merge routine which is executed via indirection by Duplicate Resolution Utilities. If you leave this field blank but still place an entry in the PACKAGE file (#9.4), Duplicate Resolution Utilities assumes that you have some sort of interactive merge process that your end users must complete prior to the main merge occurring. It also assumes that this interactive merge process is on a separate option within the developer's package options. The values of the two records being merged are placed in:

```
^TMP("XDRMRGFR",$J,XDRMRG("FR"),
and
^TMP("XDRMRGTO",$J,XDRMRG("TO"),
```

These should be referenced by the developer if they need any certain field values since the values might have been changed prior to the execution of their merge routine.

In the RECORD HAS PACKAGE DATA field you would enter a string of MUMPS executable code that is passed the variable XDRMRG("FR") (the "from record" IEN) and set XDRZ to 0. The code should set XDRZ=1 if XDRMRG("FR") has data within your package files.

Remember to only make these entries in the PACKAGE file (#9.4) if the normal merge does not suffice for your package. If you have an entry in the PACKAGE file (#9.4) the repointing and merging as described above does not take place for those files within your Package entry.

If you leave the NAME OF MERGE ROUTINE field blank, it is assumed that you have some sort of interactive merge process that must occur prior to the main merging of the two records. At the completion of your interactive merge process the developer must set the STATUS field of the MERGE PACKAGES multiple for their package in the DUPLICATE RECORD file (#15) entry to Ready. This must be done using FileMan because of the trigger that is on the STATUS field. Once all of the MERGE PACKAGE entries have a STATUS of Ready, the main merging of the two records can occur.

Step 3

The developer now needs to add an entry in the DUPLICATE RESOLUTION file (#15.1) for the file being built. The following fields need to be updated in the DUPLICATE RESOLUTION file (#15.1) and data should be entered by the developer:

- .01 FILE TO BE CHECKED (required)
- .06 CROSS-REF FOR NEW SEARCH (optional)
- .09 CANDIDATE COLLECTION ROUTINE (required)
- .11 DUPLICATE MANAGER MAIL GROUP (optional)
- .15 POTENTIAL DUPLICATE THRESHOLD% (required)
- .16 VERIFIED DUPLICATE MAIL GROUP (optional)
- .17 VERIFIED DUPLICATE MSG ROUTINE (optional)
- .18 VERIFIED DUPLICATE THRESHOLD% (optional)
- .25 MERGE STYLE (required)
- .26 DELETE FROM ENTRY (optional)
- .27 PRE-MERGE ROUTINE (optional)
- .28 POST-MERGE ROUTINE (optional)
- .29 MERGE MAIL GROUP (optional)
- .31 MERGE MSG ROUTINE (optional)
- .33 MERGE DIRECTION INP TRANSFORM (optional)
- 1100 DUPLICATE TESTS (required)
 - .01 DUPLICATE TEST (required)
 - .02 ORDER OF TEST (required)
 - .03 DUPLICATE TEST ROUTINE (required)
 - .04 FILE FOR INFORMATION (optional)
 - .05 FIELD TO BE CHECKED (required)
 - .06 SUCCESSFUL MATCH WEIGHT (required)
 - .07 UNSUCCESSFUL MATCH WEIGHT (required)

1200 DINUM FILES FOR MERGE (optional)

.01 DINUM FILES FOR MERGE (optional)

EXPLANATION OF FIELDS IN LOGICAL ORDER OF ENTRY

Selected fields are now explained in the logical order of entry versus strict numeric field order as follows:

.01 FILE TO BE CHECKED

Enter the file for which the developer wants to check and merge duplicates. You can only enter files that are also defined in the .01 variable pointer field of the DUPLICATE RECORD file (#15). If the file you are interested in is not there, contact the Kernel Toolkit team for coordination.

.09 CANDIDATE COLLECTION ROUTINE

This field is updated with the name of the routine that the Duplicate Resolution Utilities executes to generate the list of potential duplicate candidates. The list of candidates is passed back to the merge shell in ^TMP("XDRD",\$J,file number. For example, if this is a patient merge utility, the candidate collection routine might pass back, to the merge shell, all patients who either have the same last name as the record being processed, the same DOB as the record being processed, or who have the same or similar SSN. This candidate collection routine is used to minimize the number of records the merge shell has to process in determining potential duplicates.

For an example of a Candidate Collection routine, see Appendix A.

Selecting Fields to Compare in Candidate Collection:

- The developer needs to give this considerable thought as selecting wrong fields for candidate collection results in either missed or many false potential duplicate candidates.
- The most important characteristic that a field should have is the probability of containing data. If a SSN field exists in a file but the field is rarely filled in, it would not be a good field to build candidates from.
- Since selection of candidates deals with minimizing the set of records to test further, we look at the whole file initially. It becomes desirable for the field to have a cross reference.
- Uniqueness of a field is also important. If all records contain one of two possible values, e.g., Male or Female, it makes little sense for us to select all records that are the same value as the record compared. However, such a field can be useful later in performing individual tests.

One final point to keep in mind is, if we finally come up with very few fields
to collect candidates on, we may need to be very liberal in the comparison.
Furthermore, we might want to make more than one pass through the same
field with a different comparison logic, hoping to find additional records that
we missed initially.

1100 DUPLICATE TESTS

The developer must identify data items/fields to be used to assist in determining if a pair of records are duplicates. These items/fields must be single valued fields (i.e., data in multiple fields is not supported), as follows:

.01 DUPLICATE TEST

This is a free text name for the test (e.g., Name, SSN, DOB).

.02 ORDER OF TEST

Enter in the numeric value of the order you want the tests executed.

.03 DUPLICATE TEST ROUTINE

Enter the name of the routine that is called to do the actual comparison of the two records for a specific field.

For examples of duplicate test routines, see Appendix A.

Variables passed to the test routine:

XDRCD=IEN of Record 1

XDRCD2=IEN of Record 2

XDRFL=file number being checked

XDRDTEST(XDRDTO)=zero node of test entry from the DUPLICATE RESOLUTION file (#15.1)

XDRDCD(XDRFL,XDRCD,field number,"I")=internal data value for this field for record 1

XDRDCD2(XDRFL,XDRCD2,field number,"I")=internal data value for this field for record 2

<code>XDRD("TEST SCORE")=0</code>, this variable is used to pass the test score back to <code>XDRDUP</code>

The successful maximum score can be obtained from:

```
$P(XDRDTEST(XDRDTO),U,6)
```

The unsuccessful score can be obtained from:

\$P(XDRDTEST(XDRDTO),U,7)

Within the duplicate test routine, the developer can assign the entire successful match weight if both records' data is exactly the same, or he can assign a percentage of the match score if the data is similar, but not exactly the same. For example, if record 1 has a NAME of Jones, Mary Ann and record 2 has a NAME of Jones, Mary and the successful match weight for NAME is 50 points, this pair might be assigned 90% of the total 50 points. The developers have to go through trial and error methods of changing and calculating the percent of the total match score that is assigned.

For examples of duplicate test routines, see Appendix A.

.04 FILE FOR INFORMATION

If the field that is being tested is not in the base file being checked, the developer must enter the file where the information is stored. For example, in the IHS Patient Merge, the TRIBE OF MEMBERSHIP is a field used for a duplicate test, and this data field is stored in the IHS PATIENT file (#2). If no entry is made in this field, the Merge (Duplicate Resolution Utilities) assumes the base file.

.05 FIELD TO BE CHECKED

This field contains the field number of the data being used for this test. The developer must be aware that multiple fields cannot be used for duplicate tests.

.06 SUCCESSFUL MATCH WEIGHT

This is the score or total number of points assigned when a match is made on the data item being checked. This score can be anywhere from 0 to 99. The development team needs to determine the level of confidence associated with each test. The higher confidence fields would be assigned a greater successful match score than the lower confidence fields. For example, in a Patient Merge, if NAME matches exactly, a total of 60 points might be given, but if SEX or TRIBE OF MEMBERSHIP match exactly only 10 points is given. The total number of points between all the tests does not have to equal 100. The calculations to determine whether or not the pair is a potential duplicate is

based on a percentage of the total possible score. If a data item is missing, it does not figure in the denominator in calculating the percentage.

.07 UNSUCCESSFUL MATCH WEIGHT

This is the score or total number of points assigned when the data items for the two records being checked do *not* match. This score is normally a negative number. For example, if the DOB for the two records is different, a score of 40 might be assigned. This score can be anywhere from 0 to -99. The development team needs to determine the level of confidence associated with each test. The higher confidence fields would be assigned a greater negative unsuccessful match score than the lower confidence fields.

.15 POTENTIAL DUPLICATE THRESHOLD%

This is the possible percentage out of 100 after the accumulation of the test scores. If the final accumulated test score is equal to or greater than this percentage of the total possible points, the record pair is added to the DUPLICATE RECORD file (#15) as a potential duplicate pair. The percentage has to be experimented with to find the best percentage to use. It is recommended that the percentage be set low at first and gradually increased to find the best possible percentage so that you don't have a large number of false negatives.

.25 MERGE STYLE

This determines whether or not the merge process is to be interactive or not. It is highly recommended that the merge be interactive. If it is interactive, the user is able to select fields from both the from and the target record. If non-interactive, all values are taken from the source record.

.11 DUPLICATE MANAGER MAIL GROUP

This field contains a pointer to the mail group that receives messages in cases when the duplicate checking process could not be started. Some examples of conditions that would generate bulletins include: the test routine is not present, no entry in the DUPLICATE RESOLUTION file (#15.1) for this field, the global root node in ^DIC is undefined, etc.

.16 VERIFIED DUPLICATE MAIL GROUP

This field contains a pointer to the mail group that receives messages when a pair of records have been verified as duplicates. For example, in the case of a

patient merge, there might be things that pharmacy or lab staff want to do before the two records are merged.

.17 VERIFIED DUPLICATE MSG ROUTINE

See a good description in the DD for this field in the DUPLICATE RESOLUTION file (#15.1).

.29 MERGE MAIL GROUP

This field contains a pointer to the mail group that receives messages when a pair of records have been merged. Generally this is the same mail group as the VERIFIED DUPLICATE MAIL GROUP (#.16). These recipients can examine the merged-to record to make sure that all data transferred from the merged-from record successfully.

.31 MERGE MSG ROUTINE

See a good description in the DD for this field in the DUPLICATE RESOLUTION file (#15.1). Also, this routine might very well need to be different than the VERIFIED DUPLICATE MSG ROUTINE (#.17), because the information that users need to see after the merge is different than before.

.18 VERIFIED DUPLICATE THRESHOLD%

If this field contains a percentage from 0 to 100, the XDR software automatically marks the two records as Verified Duplicates if the comparison score percentage is equal or greater to this value. This number, if entered, needs to be somewhat high, probably above 90% (e.g., IHS does not use this field in the case of the patient merge, because they would like human determination if the two records are indeed duplicates).

Duplicate Resolution Utilities

Capacity Management

Capacity Management

Capacity Management

THE CAPACITY PLANNING SUITE OF TOOLS

- Automated System Resource Monitoring
- Response Time Monitoring
- Performance Assurance

Introduction to Capacity Management

Performance management and capacity planning at the site, and for VA, necessitates the accurate characterization and quantification of workload and the demand it places on the configuration under normal conditions. In a multi-user environment, increasing demand for one or more resources may lead to degradation of performance. Given that hardware resources are finite, systems must be properly configured, workload must be properly distributed, and systems should be continuously monitored to maintain desirable response times. Clearly, this can involve a considerable investment in human resources as well.

An essential goal of the Capacity Management Program (CMP) has been to develop and distribute cost effective tools which would permit the automated collection of performance, workload, and resource utilization data on a continuous basis. In addition to a variety of on-line reports, this data can be easily exported to spreadsheets using the data export utilities of VA FileMan.

The CMP toolset frees the site manager of laborious data collection procedures, assists in normalizing the computing environment, and guides the site manager toward sound decisions in the areas of performance monitoring, system management, and planning for future capacity.

The following software products are part of the Capacity Management Toolset:

- VAX/Alpha Performance Monitor (VPM)
- VAX/Alpha Resource Consumption
- Micronetics Standard MUMPS (MSM) Performance Monitor (MPM)
- Response Time Measures

Performance Assurance for VA Computing Systems

OVERVIEW

Physical systems of most types tend to behave consistently over time until acted upon by some external force. Repeated, quantitative measurements of these systems yields a normal distribution of data which is fully described by its mean, or average, and its Standard Deviation (SD), a measure of variability. Systematically monitoring VA computing systems with respect to their *normal* or expected behavior allows one to clearly distinguish between normal and abnormal behavior, describe the causes of performance bottlenecks, and take corrective action. This is the basis for a sound quality control program. These principals have been applied to the Performance Assurance component of VPM in Toolkit version 7.3. A similar component is planned for the MSM systems in a future release.

STANDARD DEVIATION REVIEW

Standard deviation is a statistical tool used to describe the frequency distribution of data about a mean value. Most of the measurements tend to cluster around the average, while measurements far from the average occur less and less frequently until some point is reached where there are essentially *no* occurrences outside this normal distribution.

The VA's performance tools collect and file data at regular intervals. The average and standard deviation can then be computed for all or part of the database. Each value is then subtracted from the mean to yield the deviation. The deviation is then squared. From this, the standard deviation is calculated as the square root of the sum of the squared deviations divided by the count-1.

```
    n = number of observations
    Average = sum/n
    SD = square root(sum of squared differences from Average/(n-1))
```

Given a sufficient number of observations:

```
68% will be within ONE STANDARD DEVIATION 95% will be within TWO STANDARD DEVIATIONS 99.7% will be within THREE STANDARD DEVIATIONS
```

The Two Standard Deviation Rule

Sites should consider the mean +/- 2 SD (2*SD) as the limit of tolerance for evaluating performance data. A single observation outside of three SD is *abnormal*. If a group of observations fall outside of three SD, one can conclude that a clearly abnormal situation has developed. Observations that are between two and three SD are considered *suspect*. In any event, the cause of the change should be investigated and characterized. While evaluating suspect and abnormal conditions, site managers should consider the following:

- Does the abnormal observation appear to be isolated or reproducible?
- Do historical averages or raw data indicate a pattern of change that occurs suddenly but regularly, or gradual, as in a trend?
- Can you determine that the performance event(s) affected Response Time? Did the event influence other related metrics?
- Are the underlying assumptions for establishing your tolerance limits valid? The general environment for taking measurements should not change over time. This includes changes in your configuration as well as differences in processing requirements, say, between day and evening. Data should be collected for a sufficient length of time to include a large sample of "normal" day-to-day variations.

What is "Normal" is Strictly up to You

It is necessary for each site to measure and establish their own set of normal values and tolerance limits. Though the hardware may be the same among a group of sites, no two sites have the same working environments. The mix of workload and resource requirements and even the human perception of good vs. bad levels of performance make it virtually impossible to state an absolute range of reference. However, the CMP Directorate at ISC San Francisco attempts to approximate this absolute reference range by pooling your data with the universe of data from all participating sites. In support of this goal, sites are strongly encouraged to activate the performance monitoring software as soon as possible.

In summary, your system should be continuously monitored for deviations from what you have established as normal, and you should periodically review your tolerance limits in the context of the wider universe of data. Your performance means should fall within two standard deviations (95%) of all the sites having similar configurations.

PERFORMANCE ASSURANCE OPTIONS/SAMPLE REPORTS IN VPM

```
Select VAX/ALPHA Performance Monitor Option: performance Assurance
Select Performance Assurance Option: ??

EL Edit # Days to Compute Reference Ranges [XUCM EDIT REF THRESH]
ES Edit Volume Set Threshold [XUCM EDIT VOL SET THRESH]
EV Edit VMS Disk Space Threshold [XUCM EDIT DISK THRESHOLD]
Compute New Local References [XUCM COMPUTE LOCAL REFERENCES]
Enable Alerts for Selected Metrics [XUCM SET ALERTS]
Performance Analysis [XUCM ANALYSE]
```

Edit # Days to Compute Reference Ranges

The Edit # Days to Compute Reference Ranges option [XUCM EDIT REF THRESH] is used to control your local reference mean and standard deviation. For example, if 90 is entered, then each evening your reference range is re-computed based on the previous 90 days. This 90-day moving average is maintained by hardware-type in the CM METRICS file (#8986.4). In this scenario, current data is always compared with the last 90 days, regardless of how well the system performed during that period. If this field is blank, no updating occurs. If you enter "999", *all* data is used.

Suggested usage:

If your system appears to be functioning normally, enter "999" to include all data until the standard deviation appears to be stable and you are within 2 standard deviations of the VA reference mean. After a reasonable period of monitoring, set this field to null to "fix" your reference ranges on a period that you consider "normal" for that hardware. Your local standard deviation should be considerably smaller than those published by the VA and should be particularly useful for monitoring the affect of tuning or capacity changes.

Edit Volume Set Threshold

The Edit Volume Set Threshold option [XUCM EDIT VOL SET THRESH] is used to enter the percentage threshold of volume set blocks free that is tolerated before an alert should be fired. This is based on the totals for a complete volume set rather than a single volume.

Edit VMS Disk Space Threshold

The Edit VMS Disk Space Threshold option [XUCM EDIT DISK THRESHOLD] is used to enter the percentage of VMS blocks free (space remaining) that is tolerated before an alert should be fired. A null entry or 0 ignores this particular drive.

Compute New Local References

The Compute New Local References option [XUCM COMPUTE LOCAL REFERENCES] computes means and standard deviations using local historical data for a user-selected range of dates. You have the opportunity to review/print current data and the newly calculated data before allowing the routine to update your CM METRICS file (#8986.4). For a definition of the following metrics, see the topic entitled "The VAX/Alpha Performance Monitor (VPM)" in this chapter.

```
Select Performance Assurance Option: compute New Local References
Enter EARLIEST DATE: T-1// t-90 (APR 12, 1994)
Enter LATEST DATE: T-1@2400// t-30 (JUN 11, 1994)
I will print your current metric references and the new
ranges. You will be able to exit this routine if the new ranges
are unsatisfactory.
Print current references to which DEVICE? HOME// <RET> DECSERVER
>>Current entries in CM METRICS FILE<< JUL 11,1994 13:41 PAGE 1
HW TYPE LOC MEAN SD VA MEAN SD
______
      METRIC: ASTI
                      8.28
4200
              7.39
              6.13
6430
                         5.81
      METRIC: ASTL
      0.64 0.42
0.72 0.45
4200
6430
      METRIC: ASTO
              4.063.009.9215.83
4200
6430
      METRIC: AZS
              0.00
0.00
0.00
4200
6430
      METRIC: BIO
            18.37 11.63
27.47 13.46
4200
6430
etc...
```

Compute New Local References option (continued):

```
Computing new references. One Moment...
Print NEW references on which DEVICE? HOME// <RET>
Hardware
                     Metric
                                          New
                                                           New
Type
         Count
                     Name
                                          Mean
                                                           SD
                                                           10.42
4200
          52
                     ITM
                                          75.97
4200
          52
                     USR
                                          8.34
                                                           5.34
4200
          52
                     KRM
                                          7.47
                                                           3.29
4200
          52
                     IST
                                                           2.66
                                          6.74
4200
          52
                                                           8886.54
                     FLS
                                          55653.69
          52
                                                           716.98
4200
                     MLS
                                          2329.31
          52
4200
                     DIO
                                          6.18
                                                           3.32
4200
          52
                     BIO
                                          21.30
                                                           13.11
4200
          52
                                          24.33
                                                           10.32
                     PFR
          52
                                          1.07
                                                           0.48
4200
                     PRR
4200
          52
                     PRC
                                          64.13
                                                           12.08
4200
          50
                     IPC
                                          12.62
                                                           6.20
4200
          53
                                                           1.43
                     RLD
                                          2.78
4200
          48
                     MRL
                                          0.00
                                                           0.00
etc...
Your site parameters indicate that your new data will be overwritten
the next time the Morning Summary is generated.
To prevent this, you may delete the entry in the following field.
DAYS FOR COMPUTING REFERENCES: 999// <RET>
OK to file this data? YES// <RET>
```

Enable Alerts for Selected Metrics

When locally computed means and standard deviations are considered to be satisfactory, sites can use the Enable Alerts for Selected Metrics option [XUCM SET ALERTS] to enable the alert system for selected metrics. During each import of raw data (hourly is recommended), the local mean and standard deviation is checked for each metric. If the measured value is outside of *three* standard deviations, an alert is fired and the site may choose to initiate an investigation. When data falls outside of 3 SD it is outside of 99.7% of the population used to compute the mean. Though this indicates a significant change in the usual behavior of your system, it may not indicate a "critical" situation has developed. Alerts are sent to the local CMP mail group defined in your site parameters.

Enable Alerts for Selected Metrics option (continued):

```
Select Performance Assurance Option: enable Alerts for Selected Metrics

Select CM METRICS: bio <RET> Buffered IO

ALERT: YES// <RET>
ALERT RULE: ??

If ALERTING is enabled for this metric, '<' will fire alerts only if the value is LESS THAN 3 STANDARD DEVIATIONS, '>' will fire an alert when the result is GREATER THAN 3 STANDARD DEVIATIONS, and NO entry will alert you when the result is EITHER ABOVE OR BELOW 3 STANDARD DEVIATIONS.

CHOOSE FROM:

Alert if less than 3 SD

Alert if greater than 3 SD

ALERT RULE:
```

Performance Analysis

The Performance Analysis option [XUCM ANALYSE] provides a basic analysis of workday averages for a user-selected date. The usefulness of this analysis is dependent on the reliability of the site's local reference range. Data falling within *two* standard deviations of the local mean are considered normal. Commentary provided by the analysis is based on a subset of the data collected; though, all data collected is presented adjacent to its normal range and flagged when out of range.

```
Select Performance Assurance Option: Performance Analysis
Analysis of which DATE? T-1// t-4
DEVICE: HOME// <RET> DECSERVER
                                 RIGHT MARGIN: 80// <RET>
          PERFORMANCE ANALYSIS FOR DATE JUL 7,1994
                                                                         1
                                                                 PAGE:
PERFORMANCE ASSESSMENT OF DISK DRIVES
Disk drive utilization appears to be consistent with historical data.
PERFORMANCE ASSESSMENT ON NODE ISC6VO
>> MEMORY <<
Overall fault rate: 43.61
Maximum fault rate tolerated: 76.5
Memory usage is consistent with historical data.
>> IO <<
IO demand is consistent with previous data.
```

Performance Analysis option (continued):

```
Queue Length (COM+COMO): .29
CPU utilization is consistent with historical data.
PERFORMANCE ASSESSMENT ON NODE ISC6V2
>> MEMORY <<
Overall fault rate: 17.97
Maximum fault rate tolerated: 44.9
Memory usage is consistent with historical data.
IO demand is consistent with previous data.
Queue Length (COM+COMO): .31
CPU utilization is consistent with historical data.
PERFORMANCE ASSESSMENT ON NODE ISC6V4
>> MEMORY <<
Overall fault rate: 28.72
Maximum fault rate tolerated: 44.9
Memory usage is consistent with historical data.
IO demand is consistent with previous data.
Queue Length (COM+COMO): .37
CPU utilization is consistent with historical data.
      NODE
           HW TYPE
                       METRIC
                                       MEAN LOCAL RANGE (2 SD)
(EVIDENCE)
                                      5.2 (0-17.8)
    ISC6V0
                6430
                          ASTI
    ISC6V0
                6430
                          ASTL
                                      0.7 (0-1.6)
                                      7.4 (0-41.6)
    ISC6V0
                6430
                          ASTO
                                      0.0 (0.0 - 0.0)
    ISC6V0
                6430
                           AZS
    ISC6V0
                6430
                           BIO
                                     27.9 (0.6-54.4)
```

Capacity Management Menu Options

```
SYSTEMS MANAGER MENU [EVE]
Capacity Management ... [XTCM MAIN]
VPM VAX/ALPHA Capacity Management ... [XUCM MAIN]
Move Host File to Mailman [XTCM DISK2MAIL]
Response Time Log Options ... [XURTLM]
```

VAX/ALPHA Capacity Management

The VAX/ALPHA Capacity Management menu [XUCM MAIN] is the primary menu of the two VMS-specific capacity management components, VPM and Resource Consumption. These components are independently enabled or disabled.

Move Host File to MailMan

The Move Host File to MailMan option [XTCM DISK2MAIL] prompts you for a host file name and moves the file to a mail message. You must know the path/directory of the host file and have read access to the file before this can work. The option requires an *unsecured* Host File Server (HFS) device defined in the DEVICE file (#3.5). On VAX/Alpha systems, the HFS device must also be defined in the CM SITE PARAMETERS file (#8986.095).

From programmer mode:

- Set "%" equal to the file name, then D ^XTCMFILN. This moves your data to the global, ^TMP(\$J).
- To move the data from ^TMP to a mail message, D MAIL1^XTCMFILN.

Response Time Log Options

The Response Time Log Options menu [XURTLM] is the menu for System Response Time Logging. In order to generate Response Time (RT) data, it is necessary that calls to start and stop the RT clock be present in the routines to be monitored. Then enabling RT logging causes data to be collected.

Capacity Management

The VAX/Alpha Performance Monitor (VPM)

Select VAX/ALPHA Capacity Management Option: ??

Resource Usage Menu ... [XUCPMENU]
VAX/ALPHA Performance Monitor ... [XUCM PERFORMANCE MONITOR]

The VPM has been designed to utilize OpenVMS and Digital Standard MUMPS (DSM) monitoring utilities to sample running systems at regular intervals and store a key subset of data associated with configuration, database activity, response time, Central Processing Unit (CPU), memory, and I/O utilization.

Using VA FileMan, standard and ad hoc reports may be generated to facilitate the identification and investigation of major resource bottlenecks. Raw historical data and daily averages are maintained in VA FileMan compatible files allowing system managers to monitor trends and identify potential performance degradation that may result from configuration or workload changes. System alerts and the daily summary report can provide early notification of unexpected degradation in performance and influence the direction of further investigations when warranted.

Ongoing data collection is governed entirely by TaskMan. The data retention time and nodes to be monitored can be determined by the site. Each evening, raw data from the previous day is processed. Workday averages (8 a.m. to 4:30 p.m.) are computed and stored in the CM DAILY STATISTICS file (#8986.6), a workday summary report is sent through MailMan to the site manager and a server message is generated and sent through MailMan to the Capacity Management Program Directorate at the San Francisco ISC.

In addition to facilitating local management of system resources, data collection at the Directorate allows for timely, pro-active capacity management and permits VA to establish and publish meaningful, hardware-specific performance targets, comparative summaries, and site-specific commentaries. It provides an empirical basis for modifying current configurations and improves VA's ability to independently assess future hardware and capacity requirements.

All processes in a configuration should receive CPU, I/O, and memory services promptly, and terminal response times should average less than one second. Bottlenecks occur as demand for these services approaches capacity. They can usually be prevented or corrected simply by identifying underutilized resources and redistributing workload or adjusting appropriate system parameters. The appropriate course of action is determined by knowing how the system responds to current demand, what is the normal response, and how the system behavior changes after one changes the operating environment.

VPM for Toolkit V. 7.3 now permits, in addition to automated monitoring, the ability to establish criteria for normalizing your environment. A target mean and standard deviation is automatically recomputed each evening during the nightly

update for each of the elements monitored. The site may elect to update this information based on all data collected, the previous "n" days of data, or over a specific range of dates where performance was perceived to be acceptable. These target values can then be "fixed" so that updates are no longer automatically generated. These "local" references can be evaluated in terms of VA targets that can be published as data is accumulated from participating sites. Once reliable reference ranges have been established, VPM can produce a performance assessment of a given date as well as generate real-time alerts for selected metrics. VPM can also warn of disk and volume set space shortages based on thresholds determined by the site.

Each of the data elements (metrics) collected by VPM can be found in the CM METRICS file (#8986.4). This file also contains the reference ranges by hardware type and a flag to enable or disable sending alerts. The file is exported with data and the metric abbreviations should not be edited locally. The following is a brief listing of those metrics:

	CICS LIST	
METRIC	METRIC NAME	
ASTI	Blocking AST (Incomin	g)-Asynchronous system traps
ASTL	Blocking AST (Local)	
ASTO	Blocking AST (Outgoin	ug)
AZS	Active Zslots	
BIO	Buffered IO	Excessive buffered IO rates can be
		eflected in Interrupt stack time as well. ertain terminal controllers interrupt the
		PU for every character read or written.
		creen painting applications, and certain
		ine printers may do the same.
BRT	-	sured by the VAX Bernstein Response Time Monitor
COM	Compute State	
COMO	tl o: tl s: o: fa t:	Used to determine the average length of the compute queue. COM+COMO is a good measure of CPU responsiveness. Generally, the larger the queue, the longer response time will be ince only one process can acquire a quantum of CPU at a time. This is influenced by actors such as the amount of interrupt stack ime, CPU type, the process' computing equirements and scheduling priority.
CUR	Current Process	
DDP	DDP Transmits	3 1 1 1 1 C CDT 3 1 1 1
DIO	CI	A general indicator of CPU and disk tilization. Direct IO is costly in terms of PU cycles and can therefore have a ignificant impact on system response time.
DKIO	Disk IO Oper. Rate	
DKQ	Disk Queue Length	

CM METRICS LIST (continued):

ENQF	ENQ's Forced to Wai	
		that had to wait in the wait queue.
ENQI		ing) Lock request rate from remote nodes.
ENQL	New ENQ Rate (Local	,
ENQO		ing) Lock requests sent to remote nodes.
FREL	Free List Size:	An indicator of deficient memory if the
		average size is between the values of the
		FREELIM and FREEGOAL system parameters.
GGET	Global Gets	
GKIL	Global Kills	
GSET	Global Sets	
IPC	Interactive Process	Count
ISTK	Interrupt Stack	The amount of time the CPU spends
		processing interrupts from peripheral
		devices. Also, incoming and outgoing
		distributed lock manager activity is executed
		on the interrupt stack.
IDLE	Idle Time	A measure of available CPU cycles UNLESS
		processes are blocked because of insufficient
		memory or an overloaded disk IO subsystem.
IUSR	Interactive Users	
KRM	Kernel Mode	High kernel mode time can indicate a memory limitation when the system is found to
		be paging excessively , swapping or both.
		Excessive local locking may be confirmed by
		this indicator as well as file system
		activity and direct IO.
LGRD	Logical Reads	
LGWT	Logical Writes	
MODL	Modified List Size	
MPRL	Mapped Routine Load	
PGFR	Page Fault Rate	The average number of soft faults.
PRC	Total Process Count	
PHRD	Physical Reads	
PGIO	Page Read IO Rate	The average number of hard faults.
PHWT	Physical Writes	
RLD	Routine Loads	
USR	User Mode	If CPU utilization is excessive and most
		of that time is spent in SUPERVISOR, USER,
		and COMPATIBILITY MODE, the CPU is meeting
		user demand and there is probably not a
	Cat Dlaslas D	bottleneck other than the demand itself.
ARE. AOT	ume Set Blocks Free	

VPM Options

Select VAX/ALPHA Performance Monitor Option: ??

Enable/Disable VPM
Manual Purge of VPM Data
Performance Assurance ...
Setup Performance Monitor
VPM Reports ...

[XUCM ON/OFF]
[XUCM PURGE]
[XUCM PA]
[XUCM SETUP]
[XUCM REPORTS]

Enable/Disable VPM

Use the Enable/Disable VPM option [XUCM ON/OFF] to enable/disable *only* the VPM component of VAX/ALPHA capacity management tools. The Resource Usage options must be managed separately. Note that after disabling VPM, RTHIST continues running until the final scheduled collection; however, it is not rescheduled for the next day.

Manual Purge of VPM Data

The Manual Purge of VPM Data option [XUCM PURGE] allows you to manually purge data from the CM BERNSTEIN DATA (#8986.098), CM DISK DRIVE RAW DATA (#8986.5), CM NODENAME RAW DATA (#8986.51), and CM DAILY STATISTICS (#8986.6) files. The default values displayed are those defined in your site parameters. Entering a new value for the manual purge does not change your site settings.

Setup Performance Monitor

Use the Setup Performance Monitor option [XUCM SETUP] to configure the Performance Monitor site parameters, define nodenames, create the host directory, and install the Digital Command Language (DCL) files required for data collection.

NOTE: This option must be run during the initial setup and must be re-run each time nodes are added or deleted.

The Setup Performance Monitor option dialogue follows:

```
Select CM SITE PARAMETERS:
ANSWER WITH CM SITE PARAMETERS:
   ISC SAN FRANCISCO
     YOU MAY ENTER A NEW CM SITE PARAMETERS, IF YOU WISH
 ANSWER WITH INSTITUTION NAME
Select CM SITE PARAMETERS: ISC SAN FRANCISCO
                                                                        16000
                                                    CALIFORNIA
          ...OK? YES// <RET> (YES)
SITE: ISC SAN FRANCISCO// <RET>
CMP HOST FILE PATH: USERS: [CMP]// <RET>
MONITOR ENABLED/DISABLED: ENABLED// <RET>
HFS DEVICE: HFS// <RET>
DAYS TO KEEP RAW DATA: 90// <RET>
DAYS FOR COMPUTING REFERENCES: ??
     This field is used to control your local reference mean and standard
deviation. For example, if 90 is entered, then each evening your reference
range will be re-computed based on the previous 90 days. This 90-day
moving average is maintained by hardware-type in the CM METRICS file. In
this scenario, current data will always be compared with the last 90 days, regardless of how well the system performed during that period. If this
field is blank, no updating will occur. If you enter '999', ALL data will
be used. Suggested usage: If your system appears to be functioning
normally, enter 999 to include all data until the standard deviation appears to be stable and you are within 2 standard deviations of the VA
reference mean. After a reasonable period of monitoring, set this field to
null to 'fix' your reference ranges on a period that you consider 'normal'
for that hardware. Your local standard deviation should be considerably
smaller than those published by the VA and should be particularly useful
for monitoring the affect of tuning or capacity changes.
DAYS FOR COMPUTING REFERENCES: 999
MAILGROUP FOR REPORTS/ALERTS: VPM// <RET>
MAILGROUP FOR REMOTE XMITS: VPM// <RET>
DAYS TO KEEP DAILY AVERAGES: 999// <RET>
DAYS TO KEEP BRTL DATA: 365// <RET>
THRESHOLD (%) DSM BLOCKS FREE: 5// ??
     This field will be referenced each evening to determine if there is
sufficient space remaining in your volume sets. If the PERCENTAGE of DSM
blocks free drops below this threshold for a VOLUME SET an alert will be
fired.
THRESHOLD (%) DSM BLOCKS FREE: 5// <RET>
CONFIGURATION: LAVC// <RET>
CRT's IN SERVICE: 3// <RET>
PRINTERS IN SERVICE: 15// <RET>
NETWORKED WORKSTATIONS: 38// <RET>
STANDALONE WORKSTATIONS: 20// <RET>
HSC NAME(S): <RET>
```

Setup Performance Monitor option dialogue (continued):

```
NETWORK TOPOLOGY: <RET>
Edit? NO// <RET>
Select CM SITE NODENAMES: ISC
         ISC6V0
         ISC6V2
       ISC6V4
     3
CHOOSE 1-3: 1
NODENAME: ISC6V0// <RET>
NOTE: If you have already defined all nodes in version 7.2, be sure to
    update the new fields under this multiple for each node.
NODE-SPECIFIC BATCH QUEUE: ISC6V0$BATCH// ??
          Enter a node-specific batch queue for each node in this
     configuration. You must be running the 'SETUP...' option when defining
     this entry. If batch queues are defined for ALL nodes, com files will
     be built that submit jobs to these queues rather than using SYSMAN.
     An example of such a queue would be DSM$BATCH_<nodename>. For example:
     ISC6V0: sho que/full dsm$batch_isc6v0
     Batch queue DSM$BATCH_ISC6V0, idle, on ISC6V0::
       /BASE_PRIORITY=4 /JOB_LIMIT=1 /OWNER=[SYSTEM]
     /PROTECTION=(S:E,O:D,G:R,W:W)
     or
     ISC6V0: sho que/full sys$batch
     Batch queue ISC6V0$BATCH, available, on ISC6V0::
       /BASE PRIORITY=4 /JOB LIMIT=15 /OWNER=[SYSTEM]
     /PROTECTION=(S:E,O:D,G:R,W:RW)
     If Taskman is configured to run from a dcl context, you may enter the
     queue TM$nodename.
NODE-SPECIFIC BATCH QUEUE: ISC6V0$BATCH// <RET>
USERNAME: TASKMAN// ??
           Enter the name of a VMS user, such as TASKMAN, which has been
      previously added to UAF with sufficient privileges.
USERNAME: TASKMAN// <RET>
```

Setup Performance Monitor option dialogue (continued):

```
DSM ENVIRONMENT MANAGER: ISCMGR// ??
            The DSM ENVIRONMENT name will be that which is entered when
      logging into DSM. The name itself follows 'DSM/ENVIRONMENT=', ie,
      $ dsm/environment=ABCMGR
            If running taskman from a DCL context, this was defined in the
      TASKMAN SITE PARAMETERS as well. This field will be used by taskman
      when starting new RTHIST sessions.
DSM ENVIRONMENT MANAGER: ISCMGR// <RET>
Select CM SITE NODENAMES: <RET>
Requested Start Time: NOW// <RET>
One moment while I check/clean up MTLU variable pointers.
TO PROTECT THE SECURITY OF DHCP SYSTEMS, DISTRIBUTION OF THIS
SOFTWARE FOR USE ON ANY OTHER COMPUTER SYSTEM IS PROHIBITED.
ALL REQUESTS FOR COPIES OF THE KERNEL FOR NON-DHCP USE SHOULD
BE REFERRED TO YOUR LOCAL ISC.
NXT, KDE>
```

Using the TaskMan option, Schedule/Unschedule Options, queue XUCM TASK VPM to run hourly. This option is the data collection driver for the VMS monitor and checks for and loads new data into the CM DISK DRIVE RAW DATA (#8986.5) and CM NODENAME RAW DATA (#8986.51) files. Each data collection runs for 15 minutes. Queue the option XUCM TASK NIT to run in the early a.m., (e.g., 0001 hours). This option compiles workday averages, mails server messages, and collects "static" information such as node and hardware types. Finally, this option files selected RTHIST data and restarts RTHIST data collections for the next 24 hours.

VPM Reports

This VPM Reports option [XUCM REPORTS] provides the menu of VPM reports available. The report options are described in the topic that follows.

VPM Reports

The Hardware Performance Summary is a VPM report automatically generated by the TaskMan option XUCM TASK NIT. This option is scheduled to run nightly. The report generated is sent via MailMan to the local capacity management mail group. It summarizes the averages computed for the previous workday for system data (by node), disk utilization, DHCP database utilization, and RTHIST sessions. If reference ranges are available, they are displayed along with specific events that exceeded the site's tolerance limits. An asterisk is displayed following any average that falls outside of the two standard deviation range (2sd Range).

The following is an excerpt from such a report:

System Performance Summary for (Hourly collections of 15 min			e intervals)
For Node: ISC6A1 / Type: DEC	2000 Model	300S / Memory: 128 M	Mbytes
Metric	Average	High(Low)	2sd Range
Total Process Count:	88.8	98.6	
Interactive Process Count:	7.3	13.0	0-35.3
Active Zslots:	0.0	0.0(0.0)	0.0-0.0
CPU MODES			
Idle Time:	77.4	81.4(69.6)	74.2-106.6
User Mode:	12.2	17.7(9.5)	0-17.5
Kernel Mode:	4.9	* 5.9	0-4.3
Interrupt Stack:	4.4	5.8	0.1-4.7
COMPUTE OUEUES			
Current Process:	1.0	1.0	1.0-1.0
Compute State:	0.3	0.5	0-0.4
Compute (outswapped):	0.0	0.0	0.0-0.0
MEMORY/IO			
Free List Size:	2166.5	(1036.6)	1791.0-10240.4
Modified List Size:	140.1	,	88.4-226.6
Page Fault Rate:	171.9		0-144.3
Page Read IO Rate:	7.8	* 8.8	0-6.5
Direct IO Rate:	12.3	17.0	0-16.2
Buffered IO:	31.3	58.9	0-34.1

LOCKS			
New ENQ Rate (Local):	41.4 *	46.9	0-32.8
New ENQ Rate (Incoming):	13.2	18.8	0-17.2
New ENQ Rate (Outgoing):	3.5	4.2	0-5.8
Blocking AST (Local):	3.0 *	4.7	0-2.5
Blocking AST (Incoming):	10.1	35.7	0-14.0
Blocking AST (Outgoing):	12.4	15.0	0-16.9
ENQ's Forced to Wait:	11.6 *	16.9	0-10.9
ling b roreca to ware.	11.0	10.9	0 10.9
ALL EVENTS OUTSIDE 3 STANDARD	DEVIATIONS ON N	IODE ISC6A1	
Date	Metric Metric	Value	3sd Limits
Jan 10, 1995@08:33	ASTL	2.6	0.0-2.6
Jan 10, 1995@08:33	COMO	0.0	0.0-0.0
Jan 10, 1995@08:33	ENOL	36.5	0.0-29.1
Jan 10, 1995@08:33	KRM	4.2	0.0-4.0
Jan 10, 1995@08:33	PGFR	154.2	0.0-4.0
Jan 10, 1995@08:33	PGIO	7.1	0.0-106.3
Jan 10, 1995@08:33		0.0	0.0-0.0
Jan 10, 1995@09.33	COMO	0.0	0.0-0.0
			_
For Node: ISC6A2 / Type: DEC	2000 Model 300S	/ Memory: 128 M	bytes
Matri	7	II de la (Tarra)	Ord Dames
Metric	Average	High(Low)	2sd Range
Total Process Count:	82.6	91.9	30.7-94.0
Interactive Process Count:	39.5 *	51.0	0-35.3
Active Zslots:	0.0	0.0(0.0)	0.0-0.0
CDII MODEC			
CPU MODES	05.0	00 5 (70 4)	74 2 106 6
Idle Time:	85.8	90.5(79.4)	
User Mode:	7.3	13.1(4.4)	
Kernel Mode:	2.8	4.2	0-4.3
Interrupt Stack:	3.6	4.8	0.1-4.7
COMPUTE QUEUES			
Current Process:	1.0	1.0	1.0-1.0
Compute State:	0.2	0.3	0-0.4
Compute (outswapped):	0.0	0.0	0.0-0.0
MEMORY/IO	4404 -		4804 0
Free List Size:	4136.5	(3543.5)	
Modified List Size:	147.4	(119.7)	88.4-226.6
Page Fault Rate:	108.8	144.5	0-144.3
Page Read IO Rate:	3.6	4.1	0-6.5
Direct IO Rate:	13.4	28.7	0-16.2
Buffered IO:	26.4	37.0	0-34.1

LOCKS			
New ENQ Rate (Local):	9.8	22.9	0-32.8
New ENQ Rate (Incoming):	13.2	18.8	0-17.2
New ENQ Rate (Outgoing):	3.5	4.2	0-5.8
Blocking AST (Local):	1.1	1.3	0-2.5
Blocking AST (Incoming):	9.7	36.7	0-14.0
Blocking AST (Outgoing):	12.5	30.4	0-16.9
ENQ's Forced to Wait:	5.3	6.9	0-10.9
ALL EVENTS OUTSIDE 3 STANDARI	DEVIATIONS ON	NODE ISC6A2	
Date	Metric	Value	3sd Limits
Jan 10, 1995@08:33	PGFR	113.3	0.0-106.3
Jan 10, 1995@10:33	ASTI	13.7	
Jan 10, 1995@15:33	PGFR	117.7	0.0-106.3
For Node: ISC6A3 / Type: DEC	2000 Model 300	OS / Memory: 128 M	bytes
Metric	Average	High(Low)	2sd Range
Total Process Count:	51.3	52.9	30.7-94.0
Interactive Process Count:	13.4	15.0	
Active Zslots:	0.0	0.0(0.0)	0.0-0.0
Active Zsiots.	0.0	0.0(0.0)	0.0-0.0
CPU MODES			
Idle Time:	93.2	96.8(79.1)	74.2-106.6
User Mode:	2.3	9.6(0.4)	0-17.5
Kernel Mode:	1.5	5.8	0-4.3
Interrupt Stack:	2.9	5.4	0.1-4.7
Interrupe Seach	2.9	3.1	0.1 1.7
COMPUTE QUEUES			
Current Process:	1.0	1.0	1.0-1.0
Compute State:	0.1	0.4	0-0.4
Compute (outswapped):	0.0	0.0	0.0-0.0
MEMORY/IO			
1	7252 1	(7001 6)	1701 0 10240 4
Free List Size:	7252.1	(7081.6)	
Modified List Size:	121.3	(39.9)	88.4-226.6
Page Fault Rate:	34.9	105.8	0-144.3
Page Read IO Rate:	0.7	0.9	
Direct IO Rate:	12.7	69.9	0-16.2
Buffered IO:	9.1	15.4	0-34.1
LOCKS			
New ENQ Rate (Local):	11.3	65.9	0-32.8
1 -			
New ENQ Rate (Incoming):	13.2	18.8	0-17.2
New ENQ Rate (Outgoing):	3.5	4.2	0-5.8
Blocking AST (Local):	0.3	0.4	0-2.5
Blocking AST (Incoming):	9.5	16.0	0-14.0
Blocking AST (Outgoing):	16.6	97.8	0-16.9
ENQ's Forced to Wait:	2.7	3.3	0-10.9

ALL EVENTS OUTSIDE 3 STANDARI	O DEVIATIONS	ON NODE ISCEAS	
Date	Metri		3sd Limits
Jan 10, 1995@10:33	AST		0.0-10.1
For Node: ISC6A4 / Type: DEC			
Tor node Issuii , I/Fe Bis	2000 110001	sous , nemera rec	1127 332
Metric	Average	High(Low)	2sd Range
Total Process Count:	54.6	58.4	
Interactive Process Count:	12.4	16.0	
Active Zslots:	0.0	0.0(0.0)	
		(,	
CPU MODES			
Idle Time:	94.5	96.7(90.5)	74.2-106.6
User Mode:	2.0	5.7(0.7)	
Kernel Mode:	0.8	1.0	
Interrupt Stack:	2.6	3.2	
	2.0	3.2	· ·- /
COMPUTE QUEUES			
Current Process:	1.0	1.0	1.0-1.0
Compute State:	0.0	0.1	
Compute (outswapped):	0.0	0.0	
Compared (Careamarream)			
MEMORY/IO			
Free List Size:	7819.4	(7572.1)	1791.0-10240.4
Modified List Size:	163.9	(123.5)	88.4-226.6
Page Fault Rate:	29.9	49.3	0-144.3
Page Read IO Rate:	0.7	0.9	0-6.5
Direct IO Rate:	2.4	3.0	0-16.2
Buffered IO:	7.7	15.0	0-34.1
LOCKS			
New ENQ Rate (Local):	1.4	2.0	0-32.8
New ENQ Rate (Incoming):	13.2	18.8	
New ENQ Rate (Outgoing):	3.5	4.2	
Blocking AST (Local):	0.5	0.9	
Blocking AST (Incoming):	14.2	* 39.8	0-14.0
Blocking AST (Outgoing):	1.9	2.6	0-16.9
ENQ's Forced to Wait:	3.4	5.1	0-10.9
ALL EVENTS OUTSIDE 3 STANDARI) DEVIATIONS	S ON NODE ISC6A4	
Date	Metri Metri		3sd Limits
Jan 10, 1995@10:32	AST		0.0-10.1
Jan 10, 1995@11:32	AST		0.0-10.1
Jan 10, 1995@11:32	AST		0.0-10.1
Jan 10, 1995@13:32	ENC		0.0-10.1
UAII 10, 1773@13·32	E11/	21 10.0	0.0 10.0

Drive / Type	IO Rate	Q Length	VMS Blocks	Blocks	Resp. Time*
\$1\$DKA0: / RZ26L:	10.5	0.2	0	0	16
\$1\$DKA100: / RZ26L:	1.1	0.1	0	0	71
\$1\$DKA200: / RZ26L:	0.7	0.0	0	0	14
\$1\$DKB0: / RZ26L:	3.7	0.1	0	0	16
\$1\$DKB100: / RZ26L:	0.0	0.0	0	0	
\$1\$DKB200: / RZ26L:	1.0	0.0	0	0	10
\$1\$DKC0: / RZ26L:	0.3	0.0	0	0	0
\$1\$DKC100: / RZ26L:	0.0	0.0	0	0	
\$1\$DKC200: / RZ28:	0.0	0.0	0	0	
\$1\$DKC300: / RZ28:	0.0	0.0	0	0	
\$2\$DKA0: / RZ26L:	6.7	0.1	0	0	9
\$2\$DKA100: / RZ26L:	0.4	0.0	0	0	77
\$2\$DKA200: / RZ26L:	1.5	0.0	0	0	7
\$2\$DKB0: / RZ26L:	4.5	0.1	0	0	16
\$2\$DKB100: / RZ26L:	0.0	0.0	0	0	
\$2\$DKB200: / RZ26L:	1.3	0.0	0	0	8
\$2\$DKC0: / RZ26L:	0.6	0.0	0	0	0
\$2\$DKC100: / RZ26L:	0.0	0.0	0	0	
\$2\$DKC200: / RZ28:	0.0	0.0	0	0	
\$2\$DKC300: / RZ28:	0.0	0.0	0	0	
\$3\$DKA0: / RZ28:	0.0	0.0	0	0	
\$3\$DKA100: / RZ26L:	0.1	0.0	0	0	0
\$3\$DKA200: / RZ28:	0.0	0.0	0	0	
\$3\$DKB0: / RZ28:	0.0	0.0	0	0	
\$3\$DKB100: / RZ28:	3.5	0.0	0	0	12
\$3\$DKB200: / RZ28:	0.7	0.0	0	0	15
\$3\$DKC0: / RZ28:	1.0	0.0	0	0	19
\$3\$DKC100: / RZ28:	29.8	0.4	0	0	12
\$3\$DKC200: / RZ28:	1.7	0.0	0	0	11
\$4\$DKA0: / RZ28:	0.0	0.0	0	1200500	0.1
\$4\$DKA100: / RZ26L:	0.1	0.0	2050860	1300590	91
\$4\$DKA200: / RZ28:	0.0	0.0	0	0	
\$4\$DKB0: / RZ28:	0.0	0.0	0	0	0
\$4\$DKB100: / RZ28:	3.4	0.0	0	0	9 1 2
\$4\$DKB200: / RZ28:	0.8	0.0	0	0	13
\$4\$DKC0: / RZ28:	1.0	0.0	0	0	19
\$4\$DKC100: / RZ28:	19.1	0.3	0	0	16
\$4\$DKC200: / RZ28: \$4\$DKC600: / RRD44:	1.6	0.0	ū	· ·	12
·	0.0	0.0	1217280	148137 1	
\$4\$DVA0: / RX26:	0.0	5.0	5760	Τ.	

DSAO: / RZ26L:	17.2	0.2	2050860	869244	12
DSA10: / RZ28:	0.0	0.0	4110480	1596172	
DSA11: / RZ28:	2.4	0.0	4110480	1172464	8
DSA12: / RZ28:	0.5	0.0	4110480	944148	19
DSA13: / RZ28:	0.6	0.0	4110480	93956	18
DSA14: / RZ28:	26.1	0.3	4110480	160692	11
DSA15: / RZ28:	1.2	0.0	4110480	216176	17
DSA1: / RZ26L:	4.2	0.1	2050860	781122	12
DSA2: / RZ26L:	0.0	0.0	2050860	50223	
DSA3: / RZ26L:	0.9	0.0	2050860	46746	11
DSA4: / RZ26L:	0.7	0.0	2050860	1737672	0
DSA5: / RZ26L:	0.0	0.0	2050860	1581051	O
DSA6: / RZ28:	0.0	0.0	4110480	2510044	
DSA7: / RZ28:	0.0	0.0	4110480	3801784	
DSA7: / RZ20: DSA8: / RZ28:	0.0	0.0	4110480		
DSA900: / RZ26L:	0.7	0.0		210945	14
DSA9: / RZ28:	0.0	0.0	4110480		
*Disk Response Times are estimated:					
2 2 2 11 11 CO P CITAC C I I I I CO CO C C C I I I I I I I I	111 (1110)	(202 221	0111, 10 141		
DATABASE UTILIZATION					
			DSM Blk	s DSM Blks	 3
Volume	Total	 l Mb	DSM Blk In Us		
Volume DSA13:[]HIVVOL1.GLS;1	Total	 l Mb 586		e Free	2
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1	Total		In Us	e Free 0 (0 ())
DSA13:[]HIVVOL1.GLS;1		586	In Us 60000	e Free 0 (0 ())
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1		586 684	In Us 60000 70000	e Free 0 (0 (7 60683))) 3
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1		586 684 684 195	In Us 60000 70000 63931	e Free 0 0 0 7 60683 8 11172))) 3
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1		586 684 684 195	In Us 60000 70000 63931 18882	e Free 0 0 7 60683 8 11172 8 159472))) 3 2
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1		586 684 684 195 195 195	In Us 60000 70000 63931 18882 4052 15179 19974	e Free 0 0 0 0 7 60683 8 11172 8 159472 3 48207 8 252	2 2 7
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1		586 684 684 195 195 195 195	In Us 60000 70000 63931 18882 4052 15179	e Free 0	2 2 7
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1		586 684 684 195 195 195 195 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971	e Free 0 0 7 60683 8 11172 8 159472 3 48207 8 252 3 287	2 2 7 2 7
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1		586 684 684 195 195 195 195 195 195 342	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803	e Free 0	2 2 7 2
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1		586 684 684 195 195 195 195 195 195 342 537	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000	e Free 0	2 2 7 2 7
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1		586 684 684 195 195 195 195 195 195 342 537	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194	e Free 0	2 2 2 7 7 L L)
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL1.GLS;1		586 684 684 195 195 195 195 195 342 537 537	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007	e Free 0	2 2 2 7 7 2 L D D D D D D D D D D D D D D D D D D
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1		586 684 684 195 195 195 195 195 342 537 537 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007 19854	e Free 0	2 2 2 2 7 7 2 2 3 3 3 3 3 3 3 5 5 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1		586 684 684 195 195 195 195 195 342 537 537 195 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007 19854 18487	Free 0 0 0 7 60683 8 11172 8 159472 3 48207 8 252 3 9 7721 171961 0 0 5 348055 2 39928 7 1453 4 15126	2 2 2 2 7 7 2 2 3 3 3 3 3 5 5
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL3.GLS;1 DSA15:[]NRMVOL3.GLS;1		586 684 684 195 195 195 195 195 342 537 537 195 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007 19854 18487 2587	Free 0 0 0 7 60683 8 11172 8 159472 3 48207 8 252 3 9 7721 171961 0 0 348055 2 39928 7 1453 4 15126	2 2 2 2 7 7 2 2 2 7 7 4 4 4 4 5 5 5 5 4 5 5 5 6 5 6 6 6 6 6 6
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1		586 684 684 195 195 195 195 195 342 537 537 195 195 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007 19854 18487 2587	Free 0	2 2 2 2 7 7 2 2 3 3 3 3 5 5 4 4 4 4 4 4 4 4 4 4 4 4 4 4
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL2.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL2.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL3.GLS;1 DSA15:[]NRMVOL4.GLS;1 DSA15:[]RDOVOL1.GLS;1		586 684 684 195 195 195 195 195 342 537 537 195 195 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007 19854 18487 2587 19946 18346	Free 0 0 0 7 60683 8 11172 8 159472 3 48207 3 287 7721 9 171961 0 0 348055 2 39928 7 1453 4 15126 9 174121 9 531 2 16538	2 2 2 2 7 7 2 2 2 7 7 2 2 3 3 3 3 3 5 5 1 1 1 3 3 3 3 5 5 1 1 1 3 3 3 3
DSA13:[]HIVVOL1.GLS;1 DSA13:[]HIVVOL2.GLS;1 DSA13:[]HIVVOL3.GLS;1 DSA14:[]FCDVOL1.GLS;1 DSA14:[]FCDVOL2.GLS;1 DSA14:[]ISCVOL1.GLS;1 DSA14:[]ISCVOL3.GLS;1 DSA14:[]ISCVOL4.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA14:[]ISCVOL5.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MCRVOL1.GLS;1 DSA15:[]MRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1 DSA15:[]NRMVOL1.GLS;1		586 684 684 195 195 195 195 195 342 537 537 195 195 195	In Us 60000 70000 63931 18882 4052 15179 19974 19971 19227 17803 55000 20194 16007 19854 18487 2587	Free 0 0 0 7 60683 8 11172 8 159472 3 48207 3 287 7721 9 171961 0 0 348055 2 39928 7 1453 4 15126 9 174121 9 531 2 16538	2 2 2 2 7 7 2 2 2 7 7 2 2 3 3 3 3 3 5 5 1 1 1 3 3 3 3 5 5 1 1 1 3 3 3 3

April 1995

RTHIST SUMMARY			
ON NODE ISC6A1	Average	High(Low)	2SD Range
Routine Loads:	7.1	22.0	0.0-5.0
Mapped Routine Loads:	0.0	0.0	0.0-0.0
Global Gets:	8.2	26.3	0.0-8.2
Global Sets:	2.2	5.5	0.0-4.2
Global Kills:	0.6	1.3	0.0-0.7
Logical Reads:	78.3	201.1	0.0-68.8
Logical Writes:	3.1	7.7	0.0-6.4
Physical Reads:	1.3	2.1	0.0-2.7
Physical Writes:	0.8	1.4	0.0-0.5
DDP Transmits:	0.6	1.4	0.0-1.7
ON NODE ISC6A2	Average	High(Low)	2SD Range
ON NODE ISC6A3	Average	High(Low)	2SD Range
ON NODE ISC6A4	Average	High(Low)	2SD Range

The following is a description of the VPM Reports menu options. The options are described in the same order as they appear on the screen:

```
Select VPM Reports Option: ??
        Locking Data
                                                                 [XUCM LOCKS]
                                                                [XUCM MODES]
        CPU Modes/Compute States
  LM
        Raw Paging/BIO/DIO/FLS/MLS
                                                                 [XUCM PAGE]
        List Raw RTHIST Data for a Range of Dates
                                                      [XUCM RAW RTHIST DATA]
        List Raw System Data
                                                             [XUCM LIST RAW]
  LS
        List Volume Set Information
                                                    [XUCM LIST VOL SET INFO]
        List Workday Averages for Selected Metric(s)[XUCM LIST DAILY STATS]
  LW
        Bernstein Response Time Reports ...
                                                               [XUCMBR MENU]
            Average Response Time by Nodename
                                                                  [XUCMBR2B]
            Bernstein RT Statistics (detailed)
                                                                   [XUCMBR2]
            Nodename Average by Day of Week
                                                                  [XUCMBR2C]
            Site/Event Rate Summary
                                                                  [XUCMBR2A]
        Disk Drive Raw Data Statistics ...
                                                                 [XUCM DISK]
        Graph Workday Averages for Selected Metric
                                                         [XUCM GRAF MET AVE]
```

Locking Data

The Locking Data option [XUCM LOCKS] lists locking information for a range of dates in the CM NODENAME RAW DATA file (#8986.51). This list includes Local Enq, Incoming Enq, Outgoing Enq, Incoming Blast, Outgoing Blast, Local Blast, and Enq's Forced to Wait.

RAW LOCKING	DATA					JAN 24,199	5 09:20	PAGE 1
SAMPLE DATE		ENQ (LOCAL)	ENQ (INCOMING)	ENQ (OUTGOING)	BLOCKING AST (INCOMING)	BLOCKING AST (OUTGOING)	BLOCKING AST (LOCAL)	ENQ'S FORCED TO WAIT
NODE	NAME: ISC	6A1						
JAN 19,1995	10:30	67.4	40.0	5.2	6.0	11.2	11.4	48.7
JAN 19,1995	10:41	34.8	40.0	5.2	4.2	9.2	5.3	20.9
JAN 19,1995	11:33	25.4	22.6	3.6	16.8	6.1	4.3	16.3
JAN 19,1995	12:33	38.0	23.1	2.9	16.8	6.1	5.5	19.9
JAN 19,1995	13:33	29.6	16.1	2.0	16.1	12.0	3.9	13.0
JAN 19,1995	14:34	92.9	111.2	2.7	10.8	6.7	35.7	172.8
JAN 19,1995	15:42	32.7	18.4	4.7	0.8	7.2	3.9	16.4
JAN 19,1995	16:34	31.7	18.5	3.6	3.5	5.4	4.9	16.6
JAN 19,1995	17:33	44.7	10.4	2.4	0.3	8.6	3.5	12.5
JAN 19,1995	18:33	47.2	1.2	1.0	0.2	11.2	3.2	15.1
JAN 19,1995	19:33	13.0	1.2	1.0	0.0	3.9	0.1	0.8
JAN 19,1995	21:43	51.8	11.0	1.3	1.6	17.1	5.2	13.4
JAN 19,1995	22:33	111.6	16.1	2.7	0.5	107.0	5.4	17.4

CPU Modes/Compute States

The CPU Modes/Compute States option [XUCM MODES] lists raw data collected for Idle Time, User Mode, Kernel Mode, Interrupt Stack Time, Current Process State, Compute State, and Compute/Outswapped States for a range of dates within a nodename.

STA	RT WI	TH NOI	ports Or DENAME: SAMPLE I	FIRST/	/ <ret></ret>	1	J Modes	s/Comput	e State	es	
G	OTO :	SAMPLE	E DATE:	LAST//	<ret></ret>						
DEV	ICE:	:132	HOME								
		,									
CPU	Modes/St	ates							JUL 1,	1994 12:	20 PAGE 1
			PROCESS	ACTIVE	IDLE	USER	KERNEL	INTERRUPT		COMPUTE	COMPUTE
SAMP	LE DATE		COUNT	ZSLOTS	TIME	MODE	MODE	STACK	STATE	STATE	(OUTSWAPPED)
	NODE	NAME: 54	41701								
.TTTT.	1,1994		79.6	Ω	19.7	38.2	15.5	26.2	1.0	3.0	0.0
			93.7	0	40.7	24.9	13.3	20.2		1.6	0.0
002		NAME: 54		ŭ	10.7	21.7	13.5	20.7	1.0	1.0	0.0
JUL	1,1994	09:03	75.0	0	4.6	42.5	20.1	32.6	1.0	4.2	0.0
JUL	1,1994		81.6	0	19.0	39.8	14.7	26.2	1.0	3.1	0.0
		NAME: 54									
	1,1994		24.0	0	86.4	0.3	0.5	12.8	1.0	0.0	0.0
JUL	1,1994	10:03	24.0	0	91.2	0.3	0.5	8.1	1.0	0.0	0.0
		NAME: 54			10.4	40.4	14.0	21 -		0 0	
	1,1994	09:03	154.4	77 77	12.4	40.4	14.8	31.5	1.0	2.9	0.0
JUL	1,1994	10:03	154.0	77	20.4	40.4	13.7	24.7	1.0	2.7	0.0

Raw Paging/BIO/DIO/FLS/MLS

The Raw Paging/BIO/DIO/FLS/MLS option [XUCM PAGE] lists raw paging and IO data for a range of dates within a nodename. Includes Page Fault Rate, Page Read IO Rate (Hard Faults), Direct IO Rate, and Buffered IO Rate.

```
Select VPM Reports Option: LP <RET> Raw Paging/BIO/DIO/FLS/MLS
```

START WITH NODENAME: FIRST// <RET>
START WITH SAMPLE DATE: FIRST// T-1
GO TO SAMPLE DATE: LAST// <RET>

DEVICE: ;132 HOME

Raw Paging/BIO/DIO/FLS/MLS (continued):

VPM	Raw Pagi	ng/BIO/D	IO/FLS/MLS					JUL	1,1994 12:	21 PAGE 1
SAMP	LE DATE		PROCESS COUNT	ACTIVE ZSLOTS	PAGE FAULT RATE	PAGE READ I/O RATE	DIRECT I/O RATE	BUFFERED I/O RATE	AVE FREE LIST SIZE	AVE MOD LIST SIZE
	NODE	NAME: 54	1A01							
JUL	1,1994	09:03	79.6	0	11.1	2.0	150.7	106.2	4355.3	118.7
JUL	1,1994	10:03	93.7	0	12.2	2.2	127.7	73.9	2958.6	137.9
	NODE	NAME: 54	1A02							
JUL	1,1994	09:03	75.0	0	2.1	0.4	238.5	57.5	4382.9	154.3
JUL	1,1994	10:03	81.6	0	2.4	0.4	163.9	87.5	3587.0	175.8
	NODE	NAME: 54	1A03							
JUL	1,1994	09:03	24.0	0	0.1	0.0	0.0	0.0	9585.7	253.2
JUL	1,1994	10:03	24.0	0	0.0	0.0	0.0	0.0	9584.7	252.2
	NODE	NAME: 54	1A04							
JUL	1,1994	09:03	154.4	77	26.4	5.2	148.4	203.0	124.5	143.3
JUL	1,1994	10:03	154.0	77	25.0	4.4	121.4	286.5	132.5	144.8

List Raw RTHIST Data for a Range of Dates

The List Raw RTHIST Data for a Range of Dates option [XUCM RAW RTHIST DATA] produces a listing by nodename of raw RTHIST data in the CM NODENAME RAW DATA file (#8986.51) and should be displayed in 132 columnar format.

S' G(Date TART V O TO S		- AMPLE I DATE:	DATE: 1	FIRST/	/ T-1	st Raw	RTHIST	Data	for a	Range	of
RAW F	RTHIST D	ATA LISTI	NG RLD	MRL	GGT	GST 	GKL	LRD	JUL LWT	8,1994 PRD	11:34 PWT	PAGE 1 DDP
ANT	NODE 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994 7,1994	NAME: ISC 00:16 00:31 00:40 01:33 02:07 02:32 03:07 03:32 04:08 04:32 05:08 06:08 06:32 07:08 07:33 08:08	1.3 0.0 0.7 0.0 2.2 0.0 2.4 0.0 1.7 0.0 1.4 0.0 3.7 0.0 4.7 0.0 6.8	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1.8 0.0 1.1 0.0 2.6 0.0 2.6 0.0 2.6 0.0 3.9 0.0 6.2 0.0 9.4	0.5 0.0 0.2 0.0 0.7 0.6 0.0 0.6 0.0 0.4 0.0 0.0	0.1 0.0 0.1 0.0 0.2 0.0 0.2 0.0 0.1 0.0 0.2 0.0 0.1	17.5 0.0 10.5 0.0 25.3 0.0 25.9 0.0 20.0 0.0 17.2 0.0 39.5 0.0 67.8 0.0	0.7 0.0 0.3 0.0 0.9 0.0 0.8 0.0 0.6 0.0 1.3 0.0 1.4 0.0 2.9	0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.2 0.0 0.1 0.0 0.2 0.0 0.2 0.0 0.1 0.0 0.4 0.0 0.4	0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

List Raw System Data

The List Raw System Data option [XUCM LIST RAW] lists raw data from the CM SITE NODENAMES file (#8986.3) and should be displayed in *very wide* format.

List Volume Set Information

The List Volume Set Information option [XUCM LIST VOL SET INFO] option lists volume set block utilization for a range of dates.

```
Select VPM Reports Option: LV <RET> List Volume Set Information
  START WITH DATE: FIRST// T-10
  GO TO DATE: LAST// <RET>
               DECSERVER
                             RIGHT MARGIN: 80// <RET>
DEVICE: <RET>
VPM VOLUME SET INFORMATION
                                                JUL 8,1994 11:44
                                                                       PAGE 1
                           DSM
               TOTAL
                 DSM
                        BLOCKS
DATE
              BLOCKS
                       FREE
        VOLUME: ISCMAIL$:[DMANAGER.DATABASE]ISCVOL1.GLS;1
JUN 28,1994
              200000
                         48508
JUN 29,1994
              200000
                         48552
JUN 30,1994
              200000
                         48181
     1,1994
JUL
              200000
                         48483
     2,1994
JUL
              200000
                         47582
JUL
       1994
              200000
                         42926
       1994
              200000
JUL
                         47789
     5,1994
              200000
                         46494
JUL
JUL
     6,1994
              200000
                         46080
     7,1994
              200000
                         45893
JUL
        VOLUME: ISCMAIL$:[DMANAGER.DATABASE]ISCVOL2.GLS;1
JUN 28,1994
              200000
                         42312
```

List Workday Averages for Selected Metric(s)

The List Workday Averages for Selected Metric(s) option [XUCM LIST DAILY STATS] displays metric data over a range of dates sorted by Metric, Date, and Nodename.

Bernstein Response Time Reports

The Bernstein Response Time Reports menu option [XUCMBR MENU] is used when running VPM on a VAX in conjunction with the Bernstein Response time monitor. This menu is comprised of four report options:

- Average Response Time by Nodename [XUCMBR2B]
- Bernstein RT Statistics (detailed) [XUCMBR2]
- Nodename Average by Day of Week [XUCMBR2C]

• Site/Event Rate Summary [XUCMBR2A]

Disk Drive Raw Data Statistics

The Disk Drive Raw Data Statistics menu [XUCM DISK] is a menu containing disk drive report and graph options.

Graph Workday Averages for Selected Metric

The Graph Workday Averages for Selected Metric option [XUCM GRAF MET AVE] plots daily averages for a selected disk or system metric.

```
Select VPM Reports Option:
                               Graph Workday Averages for Selected Metric
Select a metric to plot: BIO <RET>
                                                Buffered IO
Enter EARLIEST DATE: T-1// T-30 (JUN 01, 1994)
Enter LATEST DATE: T-1@2400// <RET> (JUN 30, 1994@24:00:00)
To sort by a particular nodename, enter that node: <RET>
The MINIMUM and MAXIMUM values are normally used for scaling.
You can optionally change these values.
ENTER MINIMUM: // <RET>
ENTER MAXIMUM: // <RET>
DEVICE: HOME// <RET> HOME RIGHT MARGIN: 80// <RET>
           Buffered IO on 541A01
                From 6/1/94 to 6/30/94@24:00
Jun 02, 1994
Jun 08, 1994
                     ******
                     *****
                     *********
Jun 09, 1994
Jun 10, 1994
Jun 11, 1994
Jun 12, 1994
                     *****
                     ****
                     * * *
                    ****
Jun 28, 1994
                0.00 28.38 56.76 85.14 113.52 141.90 170.28 198.66 227.04
           Buffered IO on 541A02
                 From 6/1/94 to 6/30/94@24:00
Jun 02, 1994
Jun 08, 1994
Jun 09, 1994
                     *******
                     ******
Jun 10, 1994
Jun 11, 1994
Jun 12, 1994
                     ****
                    *********
Jun 28, 1994
                 0.00 \quad 28.38 \quad 56.76 \quad 85.14 \ 113.52 \ 141.90 \ 170.28 \ 198.66 \ 227.04
```

MSM Performance Monitoring (MPM)

Overview

MSM's RTHIST utility currently provides a wealth of performance data. This module automates the process of collecting and organizing the data into VA FileMan files at regularly scheduled intervals each day for each of the machines in your configuration. The historical database and reports created provide site managers with an improved ability to perform critical assessments of demand for system resources and workload distribution.

MPM uses TaskMan to perform the following functions:

- Initiates RTHIST runs on each machine defined in the MSM RTHIST SITE file (#8987.1). MPM does not start up RTHIST on weekends or holidays.
- Compiles the *previous* day's data for each CPU into the MSM RTHIST REPORT DATA file (#8987.2).
- Sends a mail message via MailMan with a summary of the *previous* day's data to the CMP Directorate at San Francisco ISC where it is included in a centralized performance database.

MPM Options

```
Select MSM Capacity Management Manager's Menu Option: ??
                                                             [XUCS MANAGER MENU]
MSM Capacity Management Manager's Menu
  CM Reports Menu ...
                                                            [XUCSR REPORTS MENU]
     DATE/VG MSM CM Reports ...
                                                  [XUCSRB REPORTS BY (DATE, VG)]
       CPU/DISK Utilization Report (By Date/VG)
                                                       [XUCSRB CPU/DISK REPORT]
       Global Reference Report (By Date/VG)
                                                            [XUCSRB GREF REPORT]
       Response Time Report (By Date/VG)
                                                        [XUCSRB RESPONSE REPORT]
       Routine CMNDS/GREF Report (by Date/VG) [XUCSRB ROU CMNDS/GREF REPORT]
       System Statistical Report (By Date/VG)
                                                        [XUCSRB SYS STAT REPORT]
     VG/DATE MSM CM Reports ...
                                                  [XUCSRA REPORTS BY (VG, DATE)]
       CPU/DISK Utilization Report (By VG/Date)
                                                       [XUCSRA CPU/DISK REPORT]
       Global Reference Report (By VG/Date)
                                                            [XUCSRA GREF REPORT]
       Response Time Report (By VG/Date)
                                                        [XUCSRA RESPONSE REPORT]
       Routine CMNDS/GREF Report (By VG/Date) [XUCSRA ROU CMNDS/GREF REPORT]
System Statistical Report (By VG/Date) [XUCSRA SYS STAT REPORT]
                                                            [XUCSRG GRAPHS MENU]
     Graph Menu ..
              Ave. %CPU & %DISK Graph
                                                         [XUCSRG CPU-DISK GRAPH]
                                                   [XUCSRG RESPONSE TIME GRAPH]
       ART
              Ave. Response Time Graph
  Manually Purge CM Data
                                                    [XUCS MANUAL PURGE OF DATA]
```

MPM Options (continued):

MSM Site	Parameters Enter/Edit Menu	[XUCS SITE EDIT MENU]
1	Edit MSM CM Site Parameters	[XUCS SITE EDIT]
2	Enter/Edit Volume Group (Node)	[XUCS VOL GROUP EDIT]
3	Print/Display System Configuration Parame	eters
	[XUCS SYS	CONFIG PARMS DISPLAY]

How to Configure the MPM

MSM Site Parameters Enter/Edit Menu

The MSM Site Parameters Enter/Edit Menu

```
Select MSM Capacity Management Manager's Menu Option: MSM Site Parameters
    Enter/Edit Menu
Select MSM Site Parameters Enter/Edit Menu Option: ?
          Edit MSM CM Site Parameters
          Enter/Edit Volume Group (Node)
          Print/Display System Configuration Parameters
Select MSM Site Parameters Enter/Edit Menu Option: 1
SITE NAME: CLARKSBURG VAMC// <RET>
SITE NUMBER: 540 ???
       This is your station number. For example, 662
SITE NUMBER: 540 <RET>
DFLT ROU NAME LENGTH: ???
       This is a required field that is used by the Routine Report so that
routines can be grouped by name. For example, if you enter a "3", then
routine commands and routine global accesses will be grouped together by
the first 3 characters of their name.
DFLT ROU NAME LENGTH: 4
DFLT GBL NAME LENGTH: ???
       This is a required field that is used by the Global Report so that
global accesses can be grouped. For example, if you enter a "3", then the
global names will be grouped together by the first 3 characters of their
name.
DFLT GBL NAME LENGTH: 4
<thresh ROU CMDS/SEC: ???</pre>
       Some DHCP routines are executed very briefly. Therefore, the number
of commands they execute are relativity very small for a RTHIST session. A
"bucket" called '<thresh' in the Routine command report is where all
command counts for these types of routine(s) will be collected. For
example, if routine ABC executes 976 commands for a RTHIST session and you
specify 1000 as the thresh hold value, then ABC's command count will be
placed in the '<thresh' bucket.
<thresh ROU CMDS/SEC: ?</pre>
       Type a Number between 1 and 999999, 0 Decimal Digits
<thresh ROU CMDS/SEC: 100
```

MSM Site Parameters Enter/Edit Menu (continued):

```
<thresh GBL GREFS/SEC: ???</pre>
           Some DHCP routines reference global(s) very little. Therefore, the
number of global references are relativity very small for a RTHIST session. A "bucket" called '<thresh' in the Global Access report is where all these type of global(s) will get placed. For example, if global ABC is
referenced 109 times from RTHIST session and you specify 300 as the thresh
hold, the ABC's reference count will be placed in the '<thresh' bucket.
<thresh GBL GREFS/SEC: ?</pre>
          Type a Number between 0 and 999999, 0 Decimal Digits
<thresh GBL GREFS/SEC: 100</pre>
DAYS TO KEEP DATA: ???
           This field represents the number of days data will be kept in File
#8987.2. If NULL, then 45 days is the used for the default.
DAYS TO KEEP DATA: <RET>
Select LOCAL CMP RECIPIENTS: DOE, JOHN Select LOCAL CMP RECIPIENTS: <RET>
Select REMOTE CMP RECIPIENTS:
                                                         (NOTE:
                                                                        Optional, enter a mail group
       for your ISC if required.)
Select MSM Site Parameters Enter/Edit Menu Option: 2 <RET> Enter/Edit
Volume Group (Node)
Select MSM RTHIST SITE SITE NAME: 1 CLARKSBURG VAMC
Select VOL GROUP (NODE): PSA
ARE YOU ADDING 'PSA' AS A NEW VOL GROUP (NODE) (THE 1ST FOR THIS MSM
       RTHIST SITE)? Y <RET> (YES)
   SERVER TYPE: Print
   NAME OF MANAGER UCI: MGR
   NAME OF PRODUCTION UCI: VAH
   AUTO ADJUST RTHIST TABLE SIZE: ???
           Leave this field blank to AUTOMATICALLY ADJUST THE RTHIST TABLE
Leave this field blank to AUTOMATICALLY ADJUST THE RTHIST TABLE SIZE. When the RTHIST job is started, it requires the number of table entries to be specified. If the entry for table size is too small, then a ~TABLE, FULL~ condition will occur. If you define this field (i.e. Not Null), then I will use this value for the MAXIMUM RTHIST table size. On the other hand, if you leave this field Null, then I will use the MAX AM TABLE SIZE field (#6) to adjust the AM RTHIST table size for the morning RTHIST session, or the MAX PM TABLE SIZE field (#7) to adjust the PM RTHIST table size for the afternoon RTHIST session.
   AUTO ADJUST RTHIST TABLE SIZE: ?
           Type a Number between 700 and 2300, 0 Decimal Digits
  AUTO ADJUST RTHIST TABLE SIZE: <RET>
Select MSM RTHIST SITE SITE NAME:
                                                          CLARKSBURG VAMC <RET>
Select VOL GROUP (NODE): PSA// CSA
ARE YOU ADDING 'CSA' AS A NEW VOL GROUP (NODE) (THE 2ND FOR THIS MSM
       RTHIST SITE)? Y <RET> (YES)
```

Use the TaskMan's Schedule/Unschedule Options [ZTMSCHEDULE], to schedule the following options:

- XUCSTASK AM RTHIST [XUCSTASK AM RTHIST]
- XUCSTASK PM RTHIST [XUCSTASK PM RTHIST]
- XUCSTASK FILE UPDATE AUTO [XUCSTASK FILE UPDATE AUTO]
- XUCSTASK PURGE CM DATA [XUCSTASK PURGE CM DATA]

AM MSM RTHIST Task Option [XUCSTASK AM RTHIST]

NAME: XUCSTASK AM RTHIST MENU TEXT: AM MSM RTHIST Task

Option

CREATOR: POSTMASTER TYPE: run routine

PACKAGE: MSM CAPACITY MANAGEMENT

DESCRIPTION: This option is scheduled thru TaskMan's [ZTMSCHEDULE] for the morning RTHIST data capture. It should be setup for a 1D rescheduling

frequency. NO output device is necessary.

ROUTINE: XUCSTM

OUEUED TO RUN AT WHAT TIME: MAY 3, 1994@08:30

SCHEDULING RECOMMENDED: YES RESCHEDULING FREQUENCY: 1D

UPPERCASE MENU TEXT: AM MSM RTHIST TASK OPTION

PM MSM RTHIST Task Option [XUCSTASK PM RTHIST]

NAME: XUCSTASK PM RTHIST MENU TEXT: PM MSM RTHIST Task

Option

TYPE: run routine CREATOR: POSTMASTER

PACKAGE: MSM CAPACITY MANAGEMENT

DESCRIPTION: This option is scheduled thru TaskMan's [ZTMSCHEDULE] for the afternoon RTHIST data capture. It should be setup as 1D rescheduling frequency. No output device is necessary. ROUTINE: \mathtt{XUCSTM}

QUEUED TO RUN AT WHAT TIME: MAY 2, 1994@14:30

RESCHEDULING FREQUENCY: 1D SCHEDULING RECOMMENDED: YES

UPPERCASE MENU TEXT: PM MSM RTHIST TASK OPTION

Tasked CM File Update [XUCSTASK FILE UPDATE AUTO]

NAME: XUCSTASK FILE UPDATE AUTO MENU TEXT: Tasked CM File Update TYPE: run routine CREATOR: POSTMASTER PACKAGE: MSM CAPACITY MANAGEMENT This option is scheduled thru TaskMan's [ZTMSCHEDULE]. It DESCRIPTION: gathers the data from each Vol. Group defined in the MSM Site Parameters file. It first transfers the PREVIOUS day's ARTHIST data to the %ZRTL("XUCS", nodes. It then formats the data into FileMan compatible data, moving the data into the MSM RTHIST Data file. Finally, it creates a server message to transmit a summary of the PREVIOUS day's data to the National Data Base. It should be setup with a 1 DAY rescheduling frequency. No output device is necessary, but you might want to consider using a RESOURCE device, so that option XUCSTASK PURGE CM DATA falls after this option. ROUTINE: XUCSTME QUEUED TO RUN AT WHAT TIME: MAY 3, 1994@01:00 DEVICE FOR QUEUED JOB OUTPUT: ZZRES;;132;66 RESCHEDULING FREQUENCY: 1D SCHEDULING RECOMMENDED: YES UPPERCASE MENU TEXT: TASKED CM FILE UPDATE

Auto Purge of CM Data [XUCSTASK PURGE CM DATA]

NAME: XUCSTASK PURGE CM DATA MENU TEXT: Auto Purge of CM Data TYPE: run routine CREATOR: POSTMASTER

PACKAGE: MSM CAPACITY MANAGEMENT

DESCRIPTION:

This is the schedulable TaskMan option to purge data from the MSM RTHIST Data file . A selectable range of days to keep old data is in the SITE file. If this is not filled in 45 days is the default. It is recommended to schedule this option so that it is run AFTER the option XUCSTASK FILE UPDATE AUTO. No output device is necessary, but might want to consider using a RESOURCE device for ease of scheduling.

ROUTINE: DEQUE^XUCSPRG

QUEUED TO RUN AT WHAT TIME: MAY 3, 1994@03:00 DEVICE FOR QUEUED JOB OUTPUT: ZZRES;;132;66

RESCHEDULING FREQUENCY: 1D SCHEDULING RECOMMENDED: YES

UPPERCASE MENU TEXT: AUTO PURGE OF CM DATA

NOTE: Any RTHIST that is *running* when either the AM or PM RTHIST is started will be stopped, as if it were stopped using the RTHIST - TERMINATE (SAVE).

Any RTHIST that is *scheduled* during the time period (1 hour) that is a scheduled AM or PM RTHIST will be unscheduled.

CM Reports Menu

The following are descriptions of the CM Reports menu options on the MSM Capacity Management Manager's Menu

```
CM Reports Menu ..
                                                            [XUCSR REPORTS MENU]
   DATE/VG MSM CM Reports ...
                                                 [XUCSRB REPORTS BY (DATE, VG)]
    CPU/DISK Utilization Report (By Date/VG)
                                                      [XUCSRB CPU/DISK REPORT]
    Global Reference Report (By Date/VG)
Response Time Report (By Date/VG)
                                                            [XUCSRB GREF REPORT]
                                                       [XUCSRB RESPONSE REPORT]
    Routine CMNDS/GREF Report (by Date/VG) [XUCSRB ROU CMNDS/GREF REPORT]
    System Statistical Report (By Date/VG)
                                                       [XUCSRB SYS STAT REPORT]
   VG/DATE MSM CM Reports ...
                                                 [XUCSRA REPORTS BY (VG, DATE)]
    CPU/DISK Utilization Report (By VG/Date) [XUCSRA CPU/DISK REPORT]
    Global Reference Report (By VG/Date)
                                                            [XUCSRA GREF REPORT]
    Response Time Report (By VG/Date)
                                                      [XUCSRA RESPONSE REPORT]
    Routine CMNDS/GREF Report (By VG/Date) [XUCSRA ROU CMNDS/GREF REPORT]
System Statistical Report (By VG/Date) [XUCSRA SYS STAT REPORT]
   Graph Menu ...
                                                            [XUCSRG GRAPHS MENU]
            Ave. %CPU & %DISK Graph
                                                        [XUCSRG CPU-DISK GRAPH]
    ACD
            Ave. Response Time Graph
                                                 [XUCSRG RESPONSE TIME GRAPH]
```

DATE/VG MSM CM REPORTS [XUCSRB REPORTS BY (DATE, VG)]:

CPU/DISK Utilization Report (By Date/VG)

```
CPU/DISK Utilization Report (By Date/VG)
Enter Beginning Date: (11/21/94 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
Enter Ending Date: (1/19/95 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)

Select one of the following:

A AM Reports Only
P PM Reports Only
B Both AM & PM Reports

Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE_VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
```

CPU/DISK Utilization Report (By Date/VG) (continued):

CPU/DIS	SK Util	lization Report	JAN 20, 1995@14:31	Page: 1
.тан 19	1995	(08:30-09:30)	540CSA.CLARKSBURG, WV	
Time	Jobs	%CPU	5 TOCDA: CHARREDORG, WV	%DISK
08:30	57	56.0%	++++++++	29.7%
08:35	53	24.2%	+++	19.8%
08:40	55	27.5%	++++	22.0%
08:45	50	29.7%	++++	16.5%
08:50	58	22.0%	+++	17.6%
08:55	52	28.6%	++++	28.6%
09:00	49	20.9%	+++	14.3%
09:05	48	19.8%	+++	15.4%
09:10	50	23.1%	+++	15.4%
09:15	50	22.0%	+++	24.2%
09:20	51	29.7%	++++	20.9%
09:25	50	25.3%	++++	16.5%
Ave.	52	27.4%	++++	20.1%

Global Reference Report (By Date/VG)

```
Global Reference Report (By Date/VG)
DFLT GBL NAME LENGTH: 4// <RET>
<thresh GBL GREFS/SEC: 1// ??</pre>
    Some DHCP routines reference global(s) very little. Therefore, the
    number of global references are relativity very small for a RTHIST
    session. A "bucket" called '<thresh' in the Global Access report is
    where all these type of global(s) will get placed. For example, if
    global ABC is referenced 109 times from RTHIST session and you specify
    300 as the thresh hold, the ABC's reference count will be placed in
    the '<thresh' bucket.
<thresh GBL GREFS/SEC: 1// <RET>
Enter Beginning Date: (11/21/94 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
  Enter Ending Date: (1/19/95 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
    Select one of the following:
                 AM Reports Only
                 PM Reports Only
                 Both AM & PM Reports
    Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE_VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
Global Reference Report JAN 20, 1995@14:35
                                                             Page: 1
______
JAN 19, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                Ave.# Jobs: 52
Global GREF/S
                UCI: MGR (MGR)
%ZOS*
        4.0
RTHI*
          1.6
<thresh 0.2
              # of Globals <thresh: 8
Tot. GREFs <thresh: 6768
```

Global Reference Report (By Date/VG) (continued):

```
JAN 19, 1995 (08:30-09:30)
                               540CSA.CLARKSBURG, WV
                                                                   Ave.# Jobs: 52
Global
          GREF/S
                                 UCI: VAH (PROD)
DD
            61.8
                  | * * * * * *
DG
             2.1
DGPM
             3.1
             7.1
DΙ
DIC
            14.9
             6.5
DIE
DIPT
             1.4
             3.3
DIST
DPT
            14.4
ENG
             3.0
GMR
             1.4
LAB
             3.6
LR
             1.7
LRO
             1.7
OR
             1.6
             5.9
ORD
             2.0
PRCA
PS
             3.3
PSDR*
             1.1
             1.6
RADP*
             1.8
RAMI*
RAO
             1.2
SC
             3.8
SCE
             1.0
SD
             1.5
SDV
             1.1
SRF
             1.8
                  * *
TMP
            27.8
VA
             1.1
             4.0
W
XMB
            11.2
XTV
            11.4
<thresh
             0.2
                  # of Globals <thresh:</pre>
                                                74
                                             52591
                 Tot. GREFs <thresh:
** Summary For This Session **
Total Global References:
                                                    831592
Average Global References per Second:
                                                     231.0
```

Response Time Report (By Date/VG)

```
Response Time Report (By Date/VG)
Enter Beginning Date: (11/21/94 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
    Enter Ending Date: (1/19/95 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
      Select one of the following:
                       AM Reports Only
            P
                      PM Reports Only
                      Both AM & PM Reports
      Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE_VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
Response Time Report JAN 20, 1995@14:36
                                                                               Page: 1
JAN 19, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                                       Ave.# Jobs: 52
 0- 0.99 Sec. 24626 79.6%
 1- 1.99 Sec. 5452 17.6%
 2- 2.99 Sec. 598 1.9%
 3- 3.99 Sec.
                   148 0.5%
3- 3.99 Sec. 148 0.5%

4- 4.99 Sec. 41 0.1%

5- 5.99 Sec. 25 0.1%

6- 6.99 Sec. 9 0.0%

7- 7.99 Sec. 8 0.0%

8- 8.99 Sec. 6 0.0%

9- 9.99 Sec. 2 0.0%

10-19.99 Sec. 4 0.0%

20-29.99 Sec. 21 0.1%
total<30 Sec. 30940
total>30 Sec. 36
Average RT for Responses between 0 and 30 Sec.: 0.51
```

Routine CMNDS/GREF Report (By Date/VG)

```
Routine CMNDS/GREF Report (By Date/VG)
DFLT ROU NAME LENGTH: 4// <RET>
<thresh ROU CMDS/SEC: .5// <RET>
Enter Beginning Date: (11/21/94 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
  Enter Ending Date: (1/19/95 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
    Select one of the following:
                AM Reports Only
        P
                PM Reports Only
                Both AM & PM Reports
    Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
CMNDs vs GREF By Routine JAN 20, 1995@14:38
                                                    Page: 1
______
Note: (???) indicates that NEGATIVE counts occur in the MSM-RTHIST global.
JAN 19, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                     Ave.# Jobs: 52
Routine CMND/S
                         UCI: MGR (MGR)
GREF/S
%ACT*
         1.2
                                                                0.0
%DT
        13.0
                                                                0.0
                                   ++++
%DTC
        42.6
                                                                0.0
%MER*
         2.9
                                                               1.9
%RCR
        33.4
                                                               6.7
                                   +++---
         2.6
%SS
                                                               0.0
         4.6
%VGU*
                                                               0.0
       30.6 |
90.0 | (???)
15.2 | (???)
%ZIS
                                                               10.1
                                   +++----
%ZIS*
                                                               10.0
                                      ----
%ZTL*
                                                               1.7
LATA*
        1.5
1.0
                                                                0.3
RTHI*
                                                                0.2
<thresh -2.4
                                                                0.0
              # of Routines <thresh: 10
              Tot. CMDS <thresh: -84797
                                  1241
              Tot. Grefs <thresh:
```

Routine CMNDS/GREF Report (By Date/VG) (continued):

Note: (??	??) indic	cates that	NEGATIVE	counts	occui	rin	the	MSM-RTHIST	global.
JAN 19, 1 Routine GREF/S	1995 (08: CMND/S	30-09:30)		CLARKSBU VAH (PRO		VV		Ave.#	Jobs: 52
#Pgm* ABSV* DDGL* DDS0*	1352.4 + 3.8 2.6 0.7	(???)	+++++++	++++++	+				0.0 0.1 0.3 0.0
DDS1* DDS4* DDS4* DDSR DDSR* DDW DDW1 DDW5 DDW6 DDWK	10.4 0.8 4.5 -0.1 0.8 0.9 2.2 2.8 2.0 6.8	(???)			+-				2.7 0.4 1.2 0.6 0.3 0.0 0.0 0.0 0.0
DDWT*	1.6								0.0
XQ12 XQ2 XQ71 XQ72 XQ75 XQ83 XQAL* XQCH* XQOR XQOR* XQOR* XQOR* XQSE* XUTO* XTER* XUS XUS1 XUS1 XUS1* XUSC* XUSH* ZU ZZDI* <thresh< td=""><td></td><td>(???)</td><td></td><td>+ sh:</td><td>+ +- - + +</td><td></td><td>-</td><td></td><td>11.6 0.18 0.55 0.53 0.60 1.53 0.60 1.00 0.00 0.4 0.00 0.00</td></thresh<>		(???)		+ sh:	+ +- - + +		-		11.6 0.18 0.55 0.53 0.60 1.53 0.60 1.00 0.00 0.4 0.00 0.00
Total Rou Average R Total Rou	T Ty For Th Itine Com Routine C Itine Glo	Tot. CMDS of the Cot. Grefs of the County of the County of the County of the Cot. Th	<thresh: **="" <thresh:="" cou<="" ences="" er="" nted:="" second="" td=""><td>67 22 : nted:</td><td>808 949</td><td>980</td><td>4.2</td><td></td><td></td></thresh:>	67 22 : nted:	808 949	980	4.2		

System Statistical Report (By Date/VG)

```
System Statistical Report (By Date/VG)
Enter Beginning Date: (11/21/94 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
   Enter Ending Date: (1/19/95 - 1/19/95): 01/19/95// <RET> (JAN 19, 1995)
     Select one of the following:
                     AM Reports Only
           P
                     PM Reports Only
                     Both AM & PM Reports
     Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
System Statistics JAN 20, 1995@14:39
                                                                          Page: 1
JAN 19, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                         Ave.# Jobs: 52
                                   Events/Sec
MUMPS Commands
                                    3023.8
                                     22.8
      Global Set Commands
      Global Set Commands
Global Kill Commands
Clobal Fotobox
                                      8.9
Global Fetches
TOTAL Global Accesses
                                    348.4
TOTAL Global Accesses

TOTAL Logical Read Operations 352.3

TOTAL Logical Write Operations 15.6

21.4
      Disk Writes
                                      3.0
TOTAL Disk I/O
TOTAL DDP Global Requests 13.3
305.4
                                     24.4
      INPUT From Terminals
OUTPUT To Terminals
                                     15.1
                                     718.5
TOTAL Terminal I/O
                                     733.6
```

VG/DATE MSM CM REPORTS [XUCSRA REPORTS BY (VG,DATE)]:

CPU/DISK Utilization Report (By VG/Date)

```
CPU/DISK Utilization Report (By VG/Date)
Enter Beginning Date: (11/28/94 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
    Enter Ending Date: (1/26/95 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
      Select one of the following:
                       AM Reports Only
            Α
            Ρ
                       PM Reports Only
                       Both AM & PM Reports
      Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE_VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
CPU/DISK Utilization Report JAN 27, 1995@09:55
                                                                                Page: 1
JAN 26, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
Time Jobs %CPU
                                                                                   %DISK
Time Jobs %CPU
08:30 56 30.8% |
08:35 45 36.3% |
08:40 51 22.0% |
08:45 48 20.9% |
08:50 51 26.4% |
08:55 46 24.2% |
09:00 44 22.0% |
09:05 46 22.0% |
09:10 39 16.5% |
09:15 43 24.2% |
09:20 49 38.5% |
09:25 48 22.0% |
                                             +++++----
                                                                                 27.5%
                                            ++++++----
                                                                                   34.1%
                                               ++++---
                                                                                  16.5%
                                                                                 13.2%
                                                                                  17.6%
                                                                                  17.6%
                                                                                  15.4%
                                                ++++---
                                                                                  19.8%
                                                                                  13.2%
                                               ++++---
                                                                                  18.7%
                                           ++++++-----
                                                                                   39.6%
                                               ++++---
                                                                                  23.1%
         47
Ave.
                   25.5%
                                               ++++---
                                                                                 | 21.3%
```

Global Reference Report (By VG/Date)

```
Global Reference Report (By VG/Date)
DFLT GBL NAME LENGTH: 4// <RET>
<thresh GBL GREFS/SEC: 1// <RET>
Enter Beginning Date: (11/28/94 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
  Enter Ending Date: (1/26/95 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
    Select one of the following:
               AM Reports Only
              PM Reports Only
Both AM & PM Reports
        P
    Report Type: Both// AM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
Global Reference Report JAN 27, 1995@09:58
                                                       Page: 1
_____
JAN 26, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                  Ave.# Jobs: 47
Global GREF/S UCI: MGR (MGR)
%ZIS
       11.9 |*
%ZOS*
        4.4
%ZTS*
         1.9
SYS
         1.0
<thresh
        0.1
             # of Globals <thresh: 6
             Tot. GREFs <thresh:
                                  2189
JAN 26, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                            Ave.# Jobs: 47
Global GREF/S
                 UCI: VAH (PROD)
       53.1 |****
DD
DG
         2.1
DGMT
         2.8
         3.4
DGPM
         7.9
DI
DIC
        16.6 |*
DTE
         5.4
DIST
         5.7
         2.0
DISV
DPT
        16.2
         7.9
ENG
         1.5
IBT
        6.3
LAB
LR
         3.2
LRO
         4.9
         1.7
OR
ORD
        10.0 | *
```

Global Reference Report (By VG/Date) (continued):

```
PRC
             5.9
             1.2
PRCD
PRCF
             1.3
PRCS
             4.3
PRSP*
             1.4
             2.2
PRST
             5.3
PS
PSDR*
             1.4
             2.3
PSRX
RADP*
             1.2
             2.6
RT
             2.1
RTV
             7.8
SC
SCE
             1.1
             2.6
SD
SDV
             1.3
TMP
            43.5
UTIL*
            16.7
             5.7
VA
XMB
            14.2
XTV
            16.9
XUSE*
             1.5
            28.7
XUTL
             0.2
<thresh
                                                70
                 # of Globals <thresh:
                 Tot. GREFs <thresh:
                                            56558
** Summary For This Session **
Total Global References:
                                                  1287071
Average Global References per Second:
                                                    357.5
```

Response Time Report (By VG/Date)

```
Response Time Report (By VG/Date)
Enter Beginning Date: (11/28/94 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
    Enter Ending Date: (1/26/95 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
       Select one of the following:
                          AM Reports Only
              P
                          PM Reports Only
                         Both AM & PM Reports
       Report Type: Both// aM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE_VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
Response Time Report JAN 27, 1995@10:00
                                                                                            Page: 1
JAN 26, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                                                  Ave.# Jobs: 47
 0- 0.99 Sec. 13115 73.6%
 1- 1.99 Sec. 4044 22.7%
 2- 2.99 Sec. 483 2.7%
                      90 0.5%
 3- 3.99 Sec.

      4- 4.99 Sec.
      41 0.2%

      5- 5.99 Sec.
      21 0.1%

      6- 6.99 Sec.
      11 0.1%

      7- 7.99 Sec.
      3 0.0%

      8- 8.99 Sec.
      0 0.0%

      9- 9.99 Sec.
      0 0.0%

      10-19.99 Sec.
      2 0.0%

      20-29.99 Sec.
      5 0.0%

 4- 4.99 Sec.
                      41 0.2%
total<30 Sec. 17815
total>30 Sec. 5
Average RT for Responses between 0 and 30 Sec.: 0.57
```

Routine CMNDS/GREF Report (By VG/Date)

```
Routine CMNDS/GREF Report (By VG/Date)
DFLT ROU NAME LENGTH: 4// <RET>
<thresh ROU CMDS/SEC: .5// <RET>
Enter Beginning Date: (11/28/94 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
  Enter Ending Date: (1/26/95 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
    Select one of the following:
                AM Reports Only
        P
                PM Reports Only
                Both AM & PM Reports
    Report Type: Both// aM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
CMNDs vs GREF By Routine JAN 27, 1995@10:01
                                                         Page: 1
_____
Note: (???) indicates that NEGATIVE counts occur in the MSM-RTHIST global.
JAN 26, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV
                                                    Ave.# Jobs: 47
Routine CMND/S
                         UCI: MGR (MGR)
GREF/S
%ACT*
         1.1
                                                               0.0
%DT
        16.0
                                                               0.0
%DTC
        61.8 l
                                                               0.0
                                 +++++
%RCR
        31.1
                                   +++-
                                                               3.1
%SS
         5.2
                                                              0.0
         4.2
%VGU*
                                                              0.0
      4.2 |
32.4 |
103.3 | (???)
                                                              9.6
%ZIS
                                   +++---
%ZIS*
                                                             11.5
                                     ----
%ZTE*
        0.8
                                                              0.2
LATA*
         1.7
                                                               0.3
         1.5
RTHI*
                                                               0.3
<thresh -1.0
                                                               0.0
             # of Routines <thresh: 12
              Tot. CMDS <thresh: -44828
                                   834
              Tot. GREFs <thresh:
```

Routine CMNDS/GREF Report (By VG/Date) (continued):

Note: (??	??) indi	cates that NEGATIVE counts occur in the MSM-RTHIST	global.						
JAN 26, 3	1995 (08	:30-09:30) 540CSA.CLARKSBURG, WV Ave.# 3	Jobs: 47						
Routine	CMND/S	UCI: VAH (PROD)							
GREF/S									
	1198.4	++++++	0.0						
ABSV*	1.8	(???)	0.1						
DDGL*	2.9		0.4						
DDS	0.9		0.1						
DDS0	1.3		0.2						
DDS0*	11.0	+	1.8						
DDS1	1.0		0.2						
DDS1*	17.4	+-	3.7						
DDS4	2.2		0.7						
DDS4*	7.6		1.9						
DDSR	11.2	+	1.6						
DDSR*	1.3		0.6						
DDSU	10.4	+	0.1						
DDW	1.0		0.0						
DDW1	2.2		0.1						
DDW5	3.7 1.2		0.0						
DDW6			0.0						
DDWK DDWT*	5.7 25.4	++	0.0						
	23.4	ΤΤ	0.0						
•									
•									
XQCH*	6.9		0.4						
XQH	0.6		0.1						
XQOR	13.7	+	9.1						
XQOR*	80.6	++++++	31.9						
XQSE*	16.9	+-	3.4						
XQTO*	1.1		0.3						
XUS	8.3		1.5						
XUS1	9.0		1.0						
XUS1*	5.3		1.2						
XUSC*	11.5	+	5.8						
XUSH*	29.4	++	0.0						
ZU	2.9		0.6						
<thresh< td=""><td>0.0</td><td>(???)</td><td>0.0</td></thresh<>	0.0	(???)	0.0						
		# of Routines <thresh: 315<="" td=""><td></td></thresh:>							
		Tot. CMDS <thresh: 56020<="" td=""><td></td></thresh:>							
* * C		Tot. GREFs <thresh: 24477<="" td=""><td></td></thresh:>							
** Summary For This Session ** Total Routine Commands Counted: 9934454									
	Average Routine Commands per Second: 9934454 2759.6								
Total Routine Global References Counted: 1161589									
Average Routine Global References per Second: 322.7									

System Statistical Report (By VG/Date)

```
System Statistical Report (By VG/Date)
Enter Beginning Date: (11/28/94 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
   Enter Ending Date: (1/26/95 - 1/26/95): 01/26/95// <RET> (JAN 26, 1995)
      Select one of the following:
                      AM Reports Only
           P
                      PM Reports Only
                      Both AM & PM Reports
      Report Type: Both// aM Reports Only
Select Site/Vol. Group: ALL// 540CSA
Select MSM RTHIST REPORT DATA SITE VOL GROUP: <RET>
DEVICE: HOME// <RET> VIRTUAL
System Statistics JAN 27, 1995@10:04
                                                                             Page: 1
JAN 26, 1995 (08:30-09:30) 540CSA.CLARKSBURG, WV Ave.# Jobs: 47
                                    Events/Sec
MUMPS Commands
                                     2857.4
Global Set Commands 24.3
Global Kill Commands 10.4
Global Fetches 325.7
TOTAL Global Accesses 360.4
TOTAL Global Accesses

TOTAL Logical Read Operations 396.7

TOTAL Logical Write Operations 0.0

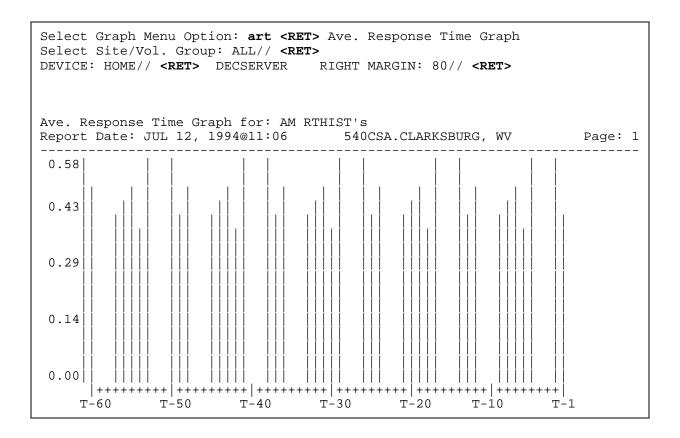
District Roads 19.9
       Disk Writes
                                         3.5
TOTAL Disk I/O
TOTAL DDP Global Requests 14.1 270.2
       INPUT From Terminals 9.0 OUTPUT To Terminals 741.2
TOTAL Terminal I/O
                                       750.2
```

GRAPH MENU [XUCSRG GRAPHS MENU]:

Ave. %CPU & %DISK Graph

Select Graph Menu Option: acd <ret> Ave. %CPU & %DISK Graph Select Site/Vol. Group: ALL// <ret> Select number of days to graph: 90// <ret> DEVICE: HOME// <ret> DECSERVER RIGHT MARGIN: 80// <ret></ret></ret></ret></ret></ret>								
Ave. %CPU	& %DIS	K Util	lization Graph JUL 12, 1994@11:01	Page: 1				
Date	Jobs		540CSA. (AM)	%Disk				
05/02/94			++++	16				
05/03/94	0	13	+++	10				
05/04/94	0	17	+++	14				
05/05/94	0	16	+++	12				
05/06/94	0	16	+++	10				
05/07/94-05/08/94 * No Data Recorded *								
05/09/94	0	26	++++	27				
05/10/94	0	21	++++	14				
05/11/94	0	18	++++	13				
05/12/94	0	15	+++	11				
05/13/94	0	20	++++	11				
05/14/94-05/15/94 * No Data Recorded *								
05/16/94		16	+++	11				
05/17/94		- 1	++++	16				
05/18/94		17	+++	12				
05/19/94			+++	11				
05/20/94		15	+++	10				
05/21/94-0	15/22/9	4	* No Data Recorded *					

Ave. Response Time Graph



MSM Performance Monitoring (MPM)

Resource Usage

Resource Usage is a capacity management tool available to IRM and application programmers. Its purpose is to measure resource consumption by package. Resource Usage groups data by application namespace and node/CPU. The current version of the Resource Usage module is intended only for VMS sites.

USER INTERFACE

The options provided with the Resource Usage module allow the IRM staff to do the following:

- Output raw data to any DHCP device (including host files).
- Sort data by namespace for any date range.
- Display on screen or print summary data in table or graph format.
- Purge raw data for any date range.
- Schedule the enabling and disabling of data collection by way of TaskMan.

SYSTEMS MANAGEMENT ISSUES

Data is gathered by means of hooks throughout the Kernel. Hooks exist in Sign-on, Menu Manager, and TaskMan. Every time an option is selected by a user or started by TaskMan, the corresponding hook is activated and a "snapshot" of the resources in use are recorded.

The LOG RESOURCE USAGE? field (#300) is found in the KERNEL SITE PARAMETERS file (#4.3). It controls resource monitoring. If this field contains "Y" (Yes response) data is collected. The value "N" inhibits resource data collection.

General Usage Information

Date Range

When the options Write Raw Resource Usage Data, Sort Resource Usage Data, or Kill Resource Usage Data are used the user can select the date range to process. The user may specify times with dates for more exact cut off points; however, time is not required.

Devices

All options that produce output prompt for the output device. First the user is asked if they want to output to a specific VMS file. The special name that is assigned to this file is created automatically and cannot be changed. If the user chooses not to output to this file, they are asked for a standard DHCP device.

It is important for each site to have a device called HFS. This is a Host File Server type of device and is necessary for Resource Usage output. Since Kernel does not distribute any entries in the DEVICE file (#3.5), the IRM Staff must set the configuration for the HFS device prior to using the Resource Usage module.

Sample configuration for HFS device:

NAME: HFS
ASK DEVICE: YES
ASK DEVICE: YES
ASK PARAMETERS: NO
LOCATION OF TERMINAL: DISK FILE
ASK HFS I/O OPERATION: YES
FORM FEED: #
BACK SPACE: \$C(8)
TYPE: HOST FILE SERVER

\$1: TMP.TMP
ASK PARAMETERS: NO
ASK PARAMETERS: NO
ASK HOST FILE: YES
MARGIN WIDTH: 132
PAGE LENGTH: 24
SUBTYPE: P-OTHER

NOTE: The printed output of graph formatted reports requires a page width of at least 132 columns.

Queuing

In all instances the user may choose to run the option "live" or schedule it for later execution by TaskMan.

Description of Options and Sample Sessions

RESOURCE USAGE MENU OPTIONS

The following are descriptions of the Resource Usage Menu options on the VAX/Alpha Performance Monitor menu. The options are described in the same order as they appear on the screen:

```
Capacity Management ...
                                                                 [XTCM MAIN]
   VAX/Alpha Performance Monitor ...
                                                                 [XUCM MAIN]
      Resource Usage Menu ...
                                                                  [XUCPMENU]
         Write raw Resource Usage data
                                                              [XUCPRAWPRINT]
         Sort raw Resource Usage data
                                                                  [XUCPSORT]
         Print formatted report (Table/Graph)
                                                             [XUCPFORMATTED]
         Kill raw Resource Usage data
                                                                  [XUCPKILL]
         Enable/Disable collection of Resource Usage data
                                                                [XUCPTOGGLE]
```

Write Raw Resource Usage Data

The Write Raw Resource Usage Data option [XUCPRAWPRINT] outputs the raw Resource Usage data. The output is usually directed to a host file for export or porting into other software.

Various hooks in DHCP collect data about each option used. Data is gathered on: CPU seconds, disk I/O, and buffered I/O. It is stored in the ^XTMP global. This option is used to output this raw, unformatted data. Even the header is not printed. For the most part this output should be routed to a predefined VMS file for possible export later. However, you may also direct output to any other valid device.

This report may be queued.

Examples can be found on the following pages.

Example 1: Illustration of the Write Raw Resource Usage Data option (Live execution).

```
Resource Usage Menu
     Write raw Resource Usage data
     Sort raw Resource Usage data
     Print formatted report (Table/Graph)
     Kill raw Resource Usage data
     Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: Write raw Resource Usage data
I will write raw Resource Usage data in the ^XTMP( global,
sorted by Node, Job, Date and Time
Please specify the date range to process.
            Date@Time: 4/1/94 <RET> (APR 01, 1994)
   Start
            Date@Time: 4/6/94 <RET> (APR 06, 1994)
Write to file (CUMC3PO_APR011994000001_APR0619942400.XUCP)? YES// NO
DEVICE: HOME// <RET> REMOTE CPU RIGHT MARGIN: 80// <RET>
sample output:
C3PO^538969286^54515^39255^11.51^433^989^1796^XMQUEUED^ 4-APR-1994 10:54:15.78
C3PO^538969286^54515^39263^12.12^495^1017^1802^XMQACTIVE^ 4-APR-1994 10:54:24.56
C3PO^538981939^54515^36873^2.43^67^124^1501^XMQUEUED^ 4-APR-1994 10:14:33.45
C3PO^538981939^54515^36892^2.8^69^150^1576^XMQSHOW^ 4-APR-1994 10:14:53.18
C3PO^538981939^54515^36959^3.44^102^203^1654^XMREAD^ 4-APR-1994 10:16:00.12
R2D2^549469872^54517^86171^2.13^31^69^985^DSMIN^ 6-APR-1994 23:56:12.23
R2D2^549469879^54517^58624^2.1^31^69^882^DSMIN^ 6-APR-1994 16:17:05.05
R2D2^549470007^54517^70759^2.21^31^69^1006^DSMIN^ 6-APR-1994 19:39:19.43
R2D3^545263190^54515^68547^1.63^42^58^991^DSMIN^ 4-APR-1994 19:02:28.46
R2D3^545263192^54515^73229^1.58^29^54^883^DSMIN^ 4-APR-1994 20:20:30.11
R2D3^545263319^54517^26540^1.91^43^58^976^DSMIN^ 6-APR-1994 07:22:20.81
I'm finished outputting the data.
```

Example 2: Illustration of the Write Raw Resource Usage Data option (Queued for background processing).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: Write raw Resource Usage data
I will write out raw Resource Usage data in the ^XTMP("XUCP", global,
sorted by Node, Job, Date and Time
Please specify the date range to process.
    Start Date@Time: 4/6/94 <RET> (APR 06, 1994)
    End Date@Time: 4/6/94 <RET> (APR 06, 1994)
Write to file (CUMC3P_APR061994000001_APR0619942400.XUCP)? YES// <RET>
Would you like to queue this job for background execution? YES// <RET>
Requested Start Time: NOW// <RET> (OCT 07, 1994@13:33:35)
Queued as task 164817
```

Sort Raw Resource Usage Data

The Sort Raw Resource Usage Data option [XUCPSORT] sorts some or all of the Resource Usage data by Option, Node, Job, Date, and Time. The table and graph reports are generated from this sorted data. Data is copied, specified by a date range, from ^XTMP("XUCP" global to the ^XTMP("XUCP","zzz" subtree. Data is stored subscripted (sorted) by Option, Node, Job, Date, and Time. This option simply copies the data, it does not delete it out of the global. Once the data is collected in the "zzz" subtree, it can be printed with the Print Formatted Report (Table/Graph) option.

You have a choice to specify whether or not you want to merge the new sort with previous sorts. If you do not choose to merge the new sort, the "zzz" subtree is cleaned (K ^XUCP("zzz")). If data is merged in a non-overlapping fashion, the date range specified in the Print Formatted Report (Table/Graph) option may not be representative of the data since there may be "holes" in the data set.

You may also write out the data after the sort. You get a prompt that asks you if you want to do that. If you choose to output the sorted data in its raw state, you are asked if you want to send it to a specific VMS file or to any valid device.

You may run this option repeatedly before printing a report in order to combine data from different date ranges.

This option may be queued.

Examples can be found on the following pages.

Example 1: Illustration of the Sort Raw Resource Usage Data option (Live execution).

```
Write raw Resource Usage data
Sort raw Resource Usage data
Print formatted report (Table/Graph)
Kill raw Resource Usage data
Enable/Disable collection of Resource Usage data

Select Resource Usage Menu Option: SORT raw Resource Usage data

I will copy raw Resource Usage data into ^XTMP("XUCP","zzz" subtree sorted by Option, Node, Job, Date and Time.

Merge with previous sort(s)? NO// <RET>
Output unformatted, sorted data after the sort? NO// <RET>
Please specify the date range to process.
Start Date@Time: 4/1/94 <RET> (APR 01, 1994)
End Date@Time: 4/30/94 <RET> (APR 30, 1994)

Would you like to queue this job for background execution? YES// NO
I'm finished sorting the data.
```

Example 2: Illustration of the Sort Raw Resource Usage Data option (Queued for background processing).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: SORT raw Resource Usage data
I will copy raw Resource Usage data into ^XTMP("XUCP","zzz" subtree
sorted by Option, Node, Job, Date and Time.
Merge with previous sort(s)? NO// <RET>
Output unformatted, sorted data after the sort? NO// <RET>
Please specify the date range to process.
    Start Date@Time: 4/1/94 <RET> (APR 01, 1994)
        Date@Time: 4/30/94 <RET> (APR 30, 1994)
Would you like to queue this job for background execution? YES// <RET>
Requested Start Time: NOW// <RET> (OCT 07, 1994@13:33:59)
Queued as task 164818
```

Example 3: Illustration of the Sort Raw Resource Usage Data option with output of sorted raw data (Live execution).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: SORT raw Resource Usage data
I will copy raw Resource Usage data into ^XTMP("XUCP", "zzz" subtree
sorted by Option, Node, Job, Date and Time.
Merge with previous sort(s)? NO// <RET>
Output unformatted, sorted data after the sort? NO// YES
Please specify the date range to process.
    Start Date@Time: 4/6/94 <RET> (APR 06, 1994)
         Date@Time: 4/6/94 <RET> (APR 06, 1994)
Write to file (CUMC3P_APR061994000001_APR0619942400.XUCPS)? YES// NO
DEVICE: HOME// <RET> REMOTE CPU RIGHT MARGIN: 80// <RET>
sample output:
DSMIN^C3PO^539004472^54517^36724^1.9^118^53^610^23^ 6-APR-1994 10:11:42.49
DSMIN^R2D2^549468974^54517^51262^1.77^77^20^628^24^ 6-APR-1994 14:13:59.08
XMSCRIPTPLAY^C3PO^539002620^54517^48468^9.4^274^717^241^133^ 6-APR-1994 13:25:36.16
XUEDITOPT^R2D2^549469404^54517^41176^.47^25^30^65^21^ 6-APR-1994 11:25:55.48
I'm finished sorting and outputting the data.
```

Print Formatted Report (Table/Graph)

The Print Formatted Report (Table/Graph) option [XUCPFORMATTED] is used to print Resource Usage data that was previously sorted using the Sort Raw Resource Usage Data option. You have a choice of two formats for the output (i.e., table or graph). These formats organize the raw data to produce more readable reports. Whether the graph or the table format is selected, you can choose to break down the output by specific nodes (CPUs), the cumulative totals, or both.

Table Format

The table format displays data values in columnar format in more detail than the graph format. You can print the reports on any valid device, but it must be at least 80 columns for the table format. For the table format, the columns are as follows:

- 1. CPU Elapsed CPU time in seconds
- 2. DIO Direct I/O count
- 3. SEC..... Elapsed time in seconds
- 4. N Number of occurrences
- 5. C/N..... CPU/N
- 6. D/N...... DIO/N
- 7. S/N SEC/N
- 8. C/S...... CPU/SEC
- 9. D/S DIO/SEC

Graph Format

The graph format gives a better visual representation of the data. You can print the reports on any valid device, but it must be at least 132 columns for the graph format.

This option may be queued.

Examples can be found on the following pages.

Example 1: Illustration of the Print Formatted Report (Table/Graph) option in Table format (subtotals printed by node and cumulative station totals).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: PRINT formatted report (Table/Graph)
I will write out Resource Usage by Namespace, based on the preceding sort.
Subtotal by Node? YES// <RET>
Would you also like cumulative by option for all nodes? YES// <RET>
Namespace length: 4// <RET>
Format for report (<T>able/<G>raph): T// <RET> able
Write to file (CUMC3P APR061994000001 APR0619942400.XUCPT)? YES// NO
DEVICE: HOME// <RET>
                      REMOTE CPU
                                     RIGHT MARGIN: 80// <RET>
sample output:
Node C3PO from APR 06, 1994@00:00:01 to APR 06, 1994@24:00
OPT CPU
          DIO
                SEC
                      Ν
                            C/N
                                  D/N
                                        S/N
                                              C/S
                                                    D/S
DSMI 2
          118
                23
                      1
                            1.90 118.0 23.0 0.08
                                                    5.1
XMSC 9
          274
                      1
                            9.40 274.0 133.0 0.07
                133
          11
                392
                            2
TOTAL
Node R2D2 from APR 06, 1994@00:00:01 to APR 06, 1994@24:00
                                              C/S
OPT CPU
          DIO
                SEC
                      Ν
                            C/N
                                  D/N
                                        S/N
                                                    D/S
          77
                            1.77
                                  77.0
DSMI 2
                24
                      1
                                        24.0
                                              0.07
                                                     3.2
                      1
XUED 0
          25
                21
                            0.47 25.0 21.0 0.02
TOTAL
          2
                102
Station C3P0 from APR 06, 1994@00:00:01 to APR 06, 1994@24:00
OPT CPU
          DIO
                      Ν
                SEC
                            C/N
                                  D/N
                                              C/S
                                        S/N
                                                     D/S
DSMI 4
          195
                47
                      2
                            1.83
                                  97.5
                                        23.5
                                              0.08
                                                     4.1
                            9.40
                                  274.0 133.0 0.07
XMSC 9
          274
                133
                      1
                                                     2.1
XUED 0
          25
                21
                      1
                            0.47
                                  25.0 21.0 0.02
                494
TOTAL
          13
```

Example 2: Illustration of the Print Formatted Report (Table/Graph) option in Table format (without subtotals).

```
Resource Usage Menu
     Write raw Resource Usage data
     Sort raw Resource Usage data
     Print formatted report (Table/Graph)
     Kill raw Resource Usage data
     Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: PRINT formatted report (Table/Graph)
I will write out Resource Usage by Namespace, based on the preceding sort.
Subtotal by Node? YES// NO
Namespace length: 4// 3
Format for report (<T>able/<G>raph): T// <RET>
                                                    able
Write to file (CUMC3P_APR011994000001_APR3019942400.XUCPT)? YES// NO
DEVICE: HOME// <RET>
                         REMOTE CPU RIGHT MARGIN: 80// <RET>
sample output:
Station C3P0 from APR 01, 1994@00:00:01 to APR 30, 1994@24:00
        CPU
                DIO
                        SEC
                                 Ν
                                       {\rm C/N}
                                                D/N
                                                                   C/S
                                                                             D/S
DII
          1
                 62
                          45
                                      1.08
                                               62.0
                                                        45.0
                                                                  0.02
                                                                              1.4
         54
               2091
                        735
                                 7
                                      7.64
                                                                  0.07
DIL
                                              298.7
                                                       105.0
                                                                              2.8
                       1175
                                 8
DIP
         28
               1131
                                      3.56
                                              141.3
                                                       146.8
                                                                  0.02
                                                                              1.0
DIT
                                 2
                                      0.99
                                               39.5
          2
                 79
                         96
                                                        48.0
                                                                  0.02
                                                                             0.8
               5318
                       2536
                                      1.41
                                               93.2
                                                        44.4
                                                                  0.03
DSM
         81
                                57
                                                                              2.1
XMC
                120
                         13
                                      1.64
                                              120.0
                                                        13.0
                                                                  0.13
                                                                              9.2
                                 1
                        173
          4
                 70
                                      4.16
                                               70.0
                                                                  0.02
                                                                             0.4
MX
                                 1
                                                       173.0
         15
                364
                       6495
                                 5
                                      2.98
                                               72.8
                                                      1299.0
                                                                  0.00
MMX
                                                                              0.1
MMX
         31
                827
                       2344
                                14
                                      2.21
                                               59.0
                                                       167.4
                                                                  0.01
                                                                              0.4
                190
                        195
                                 2
                                      1.54
                                               95.0
                                                        97.5
                                                                  0.02
                                                                             1.0
XMP
          3
                                 5
MX
                156
                        141
                                      0.48
                                               31.2
                                                         28.2
                                                                  0.02
                                                                              1.1
        140
                      16344
XMR
               2752
                                13
                                     10.74
                                              211.6
                                                      1257.2
                                                                  0.01
                                                                              0.2
                                      6.46
                                              189.2
XMS
         45
               1325
                       2207
                                                       315.2
                                                                  0.02
                                                                              0.6
                                      3.78
                                                      3637.5
                278
                       7275
                                 2
                                              139.0
                                                                  0.00
                                                                             0.0
TMX
          8
         17
                       2212
                                              221.3
                                                       737.3
XMU
                664
                                 3
                                      5.81
                                                                  0.01
                                                                             0.3
XQB
         28
                660
                        541
                                     28.31
                                              660.0
                                                       541.0
                                                                  0.05
                                                                              1.2
                       7043
                                 7
                                                      1006.1
                752
                                      7.30
                                              107.4
                                                                  0.01
                                                                             0.1
TQX
         51
XU-
         30
                772
                        514
                                29
                                      1.03
                                                        17.7
                                                                  0.06
                                                                             1.5
                                               26.6
XUE
               1771
                       2500
                                10
                                              177.1
                                                       250.0
                                                                  0.02
                                                                             0.7
         62
                                      6.22
                                      1.20
                275
                        483
                                               45.8
                                                        80.5
                                                                  0.01
                                                                             0.6
XUI
                                 6
        102
                       5799
XUP
               3129
                                12
                                      8.51
                                              260.7
                                                        483.2
                                                                  0.02
                                                                              0.5
          9
                        115
                                 8
                                      1.15
                                                                  0.08
                                                                             0.4
                 49
                                                        14.3
XUR
                                                6.1
                                                                   0.05
                                                                             2.5
XUS
          1
                 57
                          23
                                 1
                                      1.06
                                               57.0
                                                         23.0
```

Example 2: Illustration of the Print Formatted Report (Table/Graph) option in Table format (without subtotals) (continued):

XUT	1	25	62	2	0.54	12.5	31.0	0.02	0.4
XUU	7	568	106	2	3.73	284.0	53.0	0.07	5.4
XUX	1	67	30	1	0.78	67.0	30.0	0.03	2.2
ZIS	0	33	26	2	0.22	16.5	13.0	0.02	1.3
ZTM	19	677	999	12	1.60	56.4	83.2	0.02	0.7
ZZJ	41	709	2620	1	40.92	709.0	2620.0	0.02	0.3
ZZR	45	1012	5887	7	6.47	144.5	841.0	0.01	0.2
TOTAL	837	25983		229					

Example 3: Illustration of the Print Formatted Report (Table/Graph) option in Graph format (subtotaled by node).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: PRINT formatted report (Table/Graph)
I will write out Resource Usage by Namespace, based on the preceding sort.
Subtotal by Node? YES// <RET>
Would you also like cumulative by option for all nodes? YES// NO
Namespace length: 4// 2
Format for report (<T>able/<G>raph): T// G <RET> raph
Write to file (C3PO_APR011994000001_APR3019942400.XUCPG)? YES// NO
DEVICE: HOME// ;132 <RET> REMOTE CPU
sample output: (The actual size of this report is 132 columns)
                    Node C3PO from APR 01, 1994@00:00:01 to APR 30, 1994@24:00
OPT CPUSEC
                                                                  DIO SEC
                                                                           N
                                      _____
                                                                  3363 2051
DΤ
                                                                          18
                                      _____
XM
XQ
XU
ZI
     117
                                                                  3200 22334
                                                                  1412 7584
3845 3484
     79
107
                                                                          8
54
                                                                   33
                                                                     999
ZT
      19
                                                                  677
                                                                          12
                                                                  1012 5887
      45
TOTAL
                                                                 14202
     463
                                                                          144
                 Node R2D2 from APR 01, 1994@00:00:01 to APR 30, 1994@24:00
OPT CPUSEC
                                                                  DIO SEC
                                                                           N
     2830 1362
                                                                          28
                                                                  634 3389
                                                                          10
TOTAL
     209
                                                                  6194
                                                                          47
```

Kill Raw Resource Usage Data

The Kill Raw Resource Usage Data option [XUCPKILL] is used to delete (KILL) the raw Resource Usage data stored in ^XTMP("XUCP" global but not in ^XTMP("XUCP","zzz" subtree. You are asked for a date range to delete from, and only the data falling within that date range is deleted.

There is no output in this option.

This option may be queued.

Example: Illustration of the Kill Raw Resource Usage Data option (Live execution).

```
Resource Usage Menu

Write raw Resource Usage data
Sort raw Resource Usage data
Print formatted report (Table/Graph)
Kill raw Resource Usage data
Enable/Disable collection of Resource Usage data

Select Resource Usage Menu Option: Kill raw Resource Usage data

I will kill the raw Resource Usage data in the ^XTMP( global for the date range you specify. I will not touch the ^XTMP("XUCP","zzz" subtree.

Please specify the date range to process.
Start Date@Time: 4/1/94 <RET> (APR 01, 1994)
End Date@Time: 4/4/94 <RET> (APR 04, 1994)

Would you like to queue this job for background execution? YES// NO
I'm finished killing the data.
```

Enable/Disable Collection of Resource Usage Data

The Enable/Disable Collection of Resource Usage Data option [XUCPTOGGLE] may be used to start or stop collection of Resource Usage data. You are asked for the date/time of when to start and date/time of when to stop the collection. If you respond with date and time for only one of the two prompts, then only that action (start or stop) is done. To bypass a prompt, enter an "^". By taking the default of "NOW//" you enable or disable collection immediately. It is possible to schedule a whole series of start and stop times.

Whether you choose to start/stop collection now or some time in the future, you actually schedule a task to run at the date/time you've specified. This task simply sets a flag in the KERNEL SITE PARAMETERS file (#4.3) to "Y" or "N".

Example 1: Illustration of the Enable/Disable Collection of Resource Usage Data option; Enable collection of data (Queued for background processing).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: Enable /Disable collection of Resource
    Usage data
Currently collection of resource usage data is ENABLED.
Enter "^" to NOT START collecting resource usage data.
When do you want to START the collection: NOW// T@14:00 <RET> (OCT 07,
    1994@14:00)
Enter "^" to NOT STOP collecting resource usage data.
When do you want to STOP the collection: NOW// T+30 <RET> (NOV 06, 1994)
Collection will start OCT 7,1994@14:00 and stop NOV 6,1994.
Is that OK? YES// <RET>
START collecting resource usage data on OCT 7,1994@14:00
was scheduled as task: 164820
STOP collecting resource usage data on NOV 6,1994
was scheduled as task: 164821
```

Example 2: Illustration of the Enable/Disable Collection of Resource Usage Data option; Disable collection of data (Queued for background processing).

```
Resource Usage Menu
    Write raw Resource Usage data
    Sort raw Resource Usage data
    Print formatted report (Table/Graph)
    Kill raw Resource Usage data
    Enable/Disable collection of Resource Usage data
Select Resource Usage Menu Option: ENABLE /Disable collection of Resource
    Usage data
Currently collection of resource usage data is ENABLED.
Enter "^" to NOT START collecting resource usage data.
When do you want to START the collection: NOW// ^
Enter "^" to NOT STOP collecting resource usage data.
When do you want to STOP the collection: NOW// T@15:00 (OCT 07, 1994@15:00)
Collection will stop OCT 7,1994@15:00.
Is that OK? YES// <RET>
STOP collecting resource usage data on OCT 7,1994@15:00
was scheduled as task: 164819
```

Response Time Measures

USER INTERFACE

User perception of system efficiency is primarily influenced by response time. Response time is the time it takes for the system to respond with the next prompt after a user presses the Return key (termination of a MUMPS Read). They may also be concerned with the time it takes to receive output, such as a report that is sent directly or queued to a printer. There are many factors that influence response time and overall system performance. Capacity management tools are provided by Toolkit to help identify and solve performance problems.

SYSTEM MANAGEMENT ISSUES

Response Time Log Options

In order to generate Response Time (RT) data, it is necessary that calls to Start and Stop the RT clock be present in the routines to be monitored. Then enabling RT logging causes data to be collected. The Response Time Log Options menu is accessed through the Capacity Management menu.

```
SYSTEMS MANAGER MENU ...
                                                                         [EVE]
 Capacity Management ...
                                                                   [XTCM MAIN]
  Response Time Log Options ...
                                                                      [XURTLM]
    Enable/Disable RT Logging
                                                                       [XURTL]
    Print RT Report
                                                                      [XURTLP]
    Long RT Report Print
                                                                     [XURTLPL]
    Graphic RT Report Print
                                                                     [XURTLPG]
    Multiday RT Averages
                                                                     [XURTLMA]
    Kill Raw RT Data, Save Means
                                                                      [XURTLK]
    Copy RT Raw Data to FM File
                                                                      [XURTLC]
    Destroy FM Copy of Raw RT Data
                                                                     [XURTLCK]
```

Logging is enabled as a site parameter with the Enable/Disable RT Logging option [XURTL]. When response time logging is enabled (the LOG SYSTEM RT? Kernel Site Parameter is set to "Y") the XRTL local variable is set at user login, satisfying the START-test, and causing RTs to be collected.

The raw data is stored in the following form:

^%ZRTL(3,<UCI/volume set,stop date,routine name,stop time)=Start date,Time^#Jobs

Other Response Time Log options print reports, purge raw data, and move summary results to FileMan files:

- Print RT Report option [XURTLP]. This option prints System Response Time hourly averages from raw data.
- Long RT Report Print option [XURTLPL]. This option prints System Response Time hourly averages from raw data. It includes Highs, Lows, Counts, and Standard Deviations.
- Graphic RT Report Print option [XURTLPG]. This option prints a System Response Time bar graph of hourly averages over a selected range of dates.
- Multiday RT Averages option [XURTLMA]. This option prints System Response Time multiday hourly averages.
- Kill Raw RT Data, Save Means option [XURTLK]. This option kills System Response Time raw data and saves Means in a FileMan file.
- Copy RT Raw Data to FM File option [XURTLC]. This option queues a task to copy raw RT data to a FileMan (FM) file. It takes a long time and requires a lot of space if significant amounts of data is involved.
- Destroy FM Copy of Raw RT Data option [XURTLCK]. This option kills the FileMan file containing a copy of raw RT data.

A check point exists in the Kernel sign-on routine XUS so that initial response time logging can begin on all operating systems (OS). The check measures the elapsed time between the sign-on display of volume set, UCI, device, and the subsequent prompt for access code. There is no terminal IO between these two points, as there should not be when setting such RT check points. The start and stop entry points into ^%ZOSV are T0 and T1 respectively. The data stored in ^%ZRTL is the start and stop times.

For VAX DSM, the T0 and T1 entry points into ^%ZOSV also stores additional data that is available on such systems (e.g., CPU, DIO, and BIO). Toolkit also provides an additional check point to measure the time needed to create a VMS process and activate a DSM image. This check point is in the ZUVXD routine, the VAX-specific sign-on routine that is executed before the generic XUS sign-on routine. In this way, VMS logons and Kernel logons can be monitored independently.

Files

Data is stored in the ^%ZRTL global in the Manager account. It is first stored in ^%ZRTL(3,. This is a non-FileMan compatible global for which a Standards and Conventions Committee (SACC) exemption was granted. The format of this global is as follows:

^%ZRTL(3,UCI/volume set, stop date, routine name, stop time)=

DSM for OpenVMS: Start Date, Time^#Jobs^CPU^DIO^BIO

For all other OS: Start Date, Time^#Jobs

There are three other files in the ^%ZRTL global that are used for the summarization and reporting of response time data. They are as follows:

^%ZRTL(1, RESPONSE TIME (#3.091)

This file points to the RT DATE_UCI,VOL file (#3.092). It contains system response time averages by date, UCI/volume set, hour of day, and routine name. Data is moved into this file by the XURTLK routine which condenses and then purges raw Response Time (RT) data.

^%ZRTL(2, RT DATE_UCI,VOL (#3.092)

This file contains unique entries for each DATE_UCI,VOL combination as well as hourly active job averages if active job data is available. Data is moved into this file by the XURTLK routine.

^%ZRTL(4, RT RAWDATA (#3.094)

This file allows the optional storage of raw response time data in VA FileMan format. Data transfer is handled by the XURTLC routine. Creating this file greatly enlarges the size of the ^%ZRTL global. An option is available for killing this file when no longer needed.

RTHIST Summary Report for VAX DSM

Operating system utilities are available on DSM and MSM systems for logging CPU, disk, and routine usage. Toolkit utilities have been designed to enhance the OS utilities.

Operating System Utilities Toolkit Utilities

For VAX DSM: RTHIST ZTRTHV

Response Time Measures

PROGRAMMER API

In order to measure response times, it is necessary to have edited versions of routines that make calls to start and stop the response time clock and store elapsed times. The syntax of the calls is as follows:

```
D:$D(XRTL) T0^%ZOSV; START
S:$D(XRT0) XRTN=$T(+0) D:$D(XRT0) T1^%ZOSV; STOP
```

Callable Entry Points

A callable entry point is an authorized programmer call that may be used in any DHCP application package. The Database Administrator (DBA) maintains the list of entry points approved by the Database Integration Committee (DBIC).

T0^%ZOSV Start RT Measure

The Kernel site parameter flag to enable RT logging must be set for the volume set. The setting of this flag defines the XRTL variable. The call to this entry point should thus include a check for the existence of XRTL, such as the following:

```
D:$D(XRTL) T0^%ZOSV
```

This call should be placed just before a process that may take a few seconds before the system responds with another prompt. If the minimal pause is at least a half second, there is enough variability to notice changes as the load on the system is increased or decreased. There should be no terminal IOs between the T0 start point and the T1 stop point.

output: XRTO output variable (start time)

The T0 call sets the XRT0 variable to the start time. To discard a sample, the XRT0 variable should be killed. Such a kill would be appropriate if there is an exit path between the T0 and T1 check points that is circuitous or otherwise irrelevant to the normal execution of the code in question.

T1[^]%ZOSV Stop RT Measure

This call logs the elapsed time into the ^%ZRTL global. The call should include a check for the existence of XRT0 to confirm that the start time is available.

input: XRTN input variable (routine name)

The XRTN variable is normally set to the name of the routine being monitored via the command:

```
S XRTN=$T(+0)
```

To log more than one stop point in the same routine, a number or other characters may be concatenated (e.g., XRTN_1) so that a separate entry is made in the ^%ZRTL global (since the global is subscripted by routine name):

```
S:$D(XRT0) XRTN=$T(+0) D:$D(XRT0) T1^%ZOSV
```

Direct Mode Utility

Calls that are documented as direct mode utilities *cannot* be used in application package code.

The ZHDIF entry point into %ZOSV may be used on VAX DSM systems to display the amount of system resources used between two end points. This entry point is intended for interactive use to examine the effect of the execution of specific portions of code and is shown below:

```
>S %ZH0=$ZH
>F J=1:1:100 W "."
>S %ZH1=$ZH
>D ZHDIF^%ZOSV
CPU= 0.15 ET= 25.9 DIO= 0 BIO= 104
```

Tools

Tools

Routine Tools

OVERVIEW

Toolkit provides an Application Programming Interface (API) that includes programmer utilities for working with routines and globals. This chapter describes routine tools exported with Toolkit. These tools are useful to IRM staff, application developers, and package verifiers.

Most of the tools are available as options on the Programmer Options menu, locked with the XUPROG key. Some options are locked with the XUPROGMODE or XUPROG keys as an extra level of security. Your MUMPS vendor may supply other related tools that are direct mode only (not attached to any of the DHCP options).

Routines can be edited, analyzed by flow charting, printed, compared, deleted, and moved by using a direct mode utility or the corresponding option. The direct mode utilities are listed in the Programmer API at the end of this chapter. The Routine Tools menu, located on the Programmer Options menu, is shown below:

```
SYSTEMS MANAGER MENU ...
                                                                        [EVE]
                                                                     [XUPROG]
   Programmer Options ... <locked with XUPROG>
      Routine Tools ...
                                                         [XUPR-ROUTINE-TOOLS]
                                                                    [XUINDEX]
         %Index of Routines
         Compare routines on tape to disk
                                                          [XUPR-RTN-TAPE-CMP]
         Compare two routines
                                                         [XT-ROUTINE COMPARE]
         Delete Routines <Locked with XUPROGMODE>
                                                                     [XTRDEL]
         First Line Routine Print
                                                        [XU FIRST LINE PRINT]
         Flow Chart Entire Routine
                                                                      [XTFCR]
         Flow Chart from Entry Point
                                                                      [XTFCE]
         Group Routine Edit < Locked with XUPROGMODE>
                                                                    [XTRGRPE]
         Input routines <Locked with XUPROG>
                                                               [XUROUTINE IN]
         List Routines
                                                                    [XUPRROU]
                                                              [XUROUTINE OUT]
         Output routines
         Routine Edit <Locked with XUPROGMODE>
                                                              [XUPR RTN EDIT]
         Variable changer <Locked with XUPROGMODE>
                                                        [XT-VARIABLE CHANGER]
         Version number update <Locked with XUPROGMODE> [XT-VERSION NUMBER]
```

Each of these options on the Routine Tools menu are grouped together by type of routine and are described on the following pages.

USER INTERFACE

Analyzing Routines

Flow Chart Entire Routine

The Flow Chart Entire Routine option [XTFCR] generates a flow chart of an entire routine.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^XTFCR

Flow Chart from Entry Point

The Flow Chart from Entry Point option [XTFCE] generates a flow chart of the processing performed from a specified entry point to the termination of processing resulting from that entry point. It also permits the user to expand the code in other routines or entry points referenced by DO or GOTO commands.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^XTFCE

%INDEX

The Toolkit's %INDEX utility is a verification tool for programmers and verifiers. It reviews a routine according to the 1990 ANSI MUMPS Standard and according to the VA *Programming Standards and Conventions (SAC)*.

%INDEX reports any errors that it finds. The error flags are F for a fatal MUMPS error, S for a violation of VA Standards, and W (warning) for a violation of VA Conventions. The utility can be called directly (i.e., >D ^%INDEX) or via an option on the Programmer Options menu.

```
>D ^%INDEX
                  V. A. CROSSREFERENCER 7.3
UCI: NXT CPU: KDE FEB 21, 1995@10:12:25
routine(s) ?
                   XDRMAIN
routine(s) ?
                    <RET>
Select PACKAGE NAME: XT <RET> TOOLKIT
                                                XΤ
                                                       (Enter the package
                                                       name you want to
                                                       check with %INDEX)
Include the compiled template routines: N// <RET>
Print more than compiled errors and warnings? YES// <RET>
Print summary only? NO// <RET>
Print routines? YES// <RET>
Print (R)egular, (S)tructured or (B)oth? R// <RET>
                                                        (or enter S for an
                                                       indented report)
Print the DDs, Functions, and Options? YES// <RET>
Print errors and warnings with each routine? YES// <RET>
Save parameters in ROUTINE file? NO// <RET>
                                                       (or enter YES to
                                                       store documentation)
Index all called routines? NO// <RET>
```

%INDEX can also be used to verify parts of a package that contain MUMPS code. Compiled templates can be included. The MUMPS code used in data dictionaries, functions, and options can also be reviewed. When using %INDEX to review an entire package, it is best to queue the report for an off-peak time since processing is intensive.

The following is a list of the error conditions that the %INDEX utility flags. The 1990 ANSI MUMPS Standard is taken into account with new syntax and other checks.

The reported error codes (error flags) are as follows:

- S Standard (according to VA Standards)
- W Warning (according to VA Conventions)
- F Fatal Error (hard MUMPS error)

```
1
    F - UNDEFINED COMMAND (rest of line not checked).
                                                          (must be manually
                                                           checked by the
                                                           programmer or
                                                           verifier)
    F - Non-standard (Undefined) 'Z' command.
    F - Undefined Function.
    F - Undefined Special Variable.
    F - Unmatched Parenthesis.
    F - Unmatched Quotation Marks.
    F - ELSE Command followed by only one space.
    F - FOR Command did not contain '='.
    \ensuremath{\mathtt{W}} - QUIT Command followed by only one space.
   F - Unrecognized argument in SET command.
    W - Invalid local variable name.
11
12
    W - Invalid global variable name.
    F - Blank(s) at end of line.
14
    F - Missing LABEL, REFERENCED in this routine.
15
    W - Duplicate label.
    F - Error in pattern code.
16
17
    W - First line tag NOT routine name.
    W - Line contains a CONTROL (non-graphic) character.
18
    S - Line is longer than 245 bytes.
19
    S - View command used.
21
    F - General Syntax Error.
22
    S - Exclusive Kill.
23
    S - Unargumented Kill.
    S - Kill of an unsubscripted global.
24
    S - Break command used.
26
    S - Exclusive or Unargumented NEW command.
27
    S - $View function used.
28
    S - Non-standard $Z special variable used.
29
    S - 'Close' command should be invoked through 'D ^%ZISC'.
    S - TAG+OFFSET syntax.
31
    S - Non-standard $Z function used.
    S - 'HALT' command should be invoked through 'G ^XUSCLEAN'.
```

%INDEX Error Condition List (continued):

```
S - Read command doesn't have a timeout.
    S - 'OPEN' command should be invoked through ^%ZIS.
    S - Routine exceeds SACC maximum size of 5000 (|).
    S - Should use 'TASKMAN' instead of 'JOB' command.
F - Tag is not valid.
37
    F - Call to this MISSING LABEL (see INVOKED BY list).
38
    S - Kill of a protected variable (|).
40
    S - Space where a command should be.
    S - Star or pound READ used.
F - Null line (no commands or comment).
F - Invalid or wrong number of arguments to a function.
41
42
43
    S - Version number not found on 2nd line of routine.
45
    S - Set to a '%' global.
    F - Quoted string not followed by a separator.
S - Lowercase command(s) used in line.
46
47
48 F - Missing argument to a command post-conditional.
   F - Command missing an argument.
49
50 S - Extended reference.
    F - Block structure mismatch.
51
     F - Reference to routine '^|'. That isn't in this UCI.
53 F - Bad Number
```

The following is a list of the error conditions that the ^XINDEX utility flags. The 1990 ANSI MUMPS Standard is taken into account with new syntax and other checks.

The reported error codes (error flags) are as follows:

- S Standard (according to VA Standards)
- W Warning (according to VA Conventions)
- F Fatal Error (hard MUMPS error)

```
F - UNDEFINED COMMAND (rest of line not checked).
                                                          (must be manually
                                                           checked by the
                                                           programmer or
                                                           verifier)
    F - Non-standard (Undefined) 'Z' command.
    F - Undefined Function.
    F - Undefined Special Variable.
F - Unmatched Parenthesis.
    F - Unmatched Quotation Marks.
    F - ELSE Command followed by only one space.
    F - FOR Command did not contain '='.
    W - QUIT Command followed by only one space.
10
   F - Unrecognized argument in SET command.
    W - Invalid local variable name.
11
12
    W - Invalid global variable name.
13
    F - Blank(s) at end of line.
14
    F - Missing LABEL, REFERENCED in this routine.
    W - Duplicate label.
15
    F - Error in pattern code.
16
17
    W - First line tag NOT routine name.
18
    W - Line contains a CONTROL (non-graphic) character.
19
    S - Line is longer than 245 bytes.
    S - View command used.
20
    F - General Syntax Error.
21
22
    S - Exclusive Kill.
23
    S - Unargumented Kill.
24
    S - Kill of an unsubscripted global.
    S - Break command used.
25
    S - Exclusive or Unargumented NEW command.
    S - $View function used.
27
28
    S - Non-standard $Z special variable used.
29
    S - 'Close' command should be invoked through 'D ^%ZISC'.
    S - TAG+OFFSET syntax.
30
    S - Non-standard $Z function used.
31
    S - 'HALT' command should be invoked through 'G ^XUSCLEAN'.
32
33
    S - Read command doesn't have a timeout.
34
    S - 'OPEN' command should be invoked through ^%ZIS.
35
    S - Routine exceeds SACC maximum size of 5000 (|).
    S - Should use 'TASKMAN' instead of 'JOB' command.
37
    F - Tag is not valid.
    F - Call to this MISSING LABEL (see INVOKED BY list).
    S - Kill of a protected variable (|).
```

^XINDEX Error Condition List (continued):

```
S - Space where a command should be.
     S - Star or pound READ used.
41
    F - Null line (no commands or comment).
43 F - Invalid or wrong number of arguments to a function.
44 S - Version number not found on 2nd line of routine.
45 S - Set to a '%' global.
    F - Quoted string not followed by a separator.
    S - Lowercase command(s) used in line.
47
    F - Missing argument to a command post-conditional.
48
     F - Command missing an argument.
    S - Extended reference.
50
51
     F - Block structure mismatch
52
     F - Reference to routine '^|'. That isn't in this UCI.
53 F - Bad Number
     S - Access to SSVN's restricted to Kernel.
```

Editing Routines

Group Routine Edit

The Group Routine Edit option [XTRGRPE] calls the XTRGRPE routine to edit a group of routines. Once several routines are identified, the Toolkit ^%Z editor is called. This option is locked with XUPROGMODE.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^XTRGRPE

Routine Edit

The Routine Edit option [XUPR RTN EDIT] invokes the ^%Z editor. (See the "^%Z Editor" chapter in this manual for more detailed information.) The ^%Z editor can be used to edit a group of routines with the Group Routine Edit option. This allows programmers on the site manager's staff to edit MUMPS routines. This option is locked with XUPROGMODE.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>X ^%Z

Variable Changer

The Variable Changer option[XT-VARIABLE CHANGER] runs the XTVCHG routine which changes all occurrences of one variable to another. This option is locked with XUPROGMODE.

WARNING: This option changes DOs and GOTOs also, but it doesn't change the target of the DOs and GOTOs. For example, if you request to change all occurrences of "TAG" to "TAGS", "DO TAG" would be changed to "DO TAGS". However, the actual Line Label called TAG would not be changed.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^XTVCHG

Version Number Update

The Version Number Update option [XT-VERSION NUMBER] is used to update version numbers of one or more routines. This option runs the XTVNUM routine to update or set the version number into a set of routines. This option is locked with XUPROGMODE.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^XTVNUM

Printing Routines

First Line Routine Print

The First Line Routine Print option [XU FIRST LINE PRINT] is used to obtain a summary listing of the first, and optionally the second, line of one or more routines. This option uses the utility %ZTP1 to print the first line of user specified routines.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^%ZTP1

List Routines

The List Routines option [XUPRROU] uses the utility %ZTPP to print a listing of entire routines.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^%ZTPP

Comparing Routines

Compare Two Routines

The Compare Two Routines option [XT-ROUTINE COMPARE] is used to compare two routines with different names and display the differences (using MailMan's PackMan compare utilities). This option allows you to compare two routines located in the current account and print a list of differences.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^XTRCMP

Compare Routines on Tape to Disk

The Compare Routines on Tape to Disk option [XUPR-RTN-TAPE-CMP] compares routines on tape with those on disk and displays the differences. This option reads a standard DSM %RS tape or disk file, or M/SQL tape and compares the routines on the tape with a routine with the same name in the current account.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D TAPE^XTRCMP

Deleting Routines

The Delete Routines option [XTRDEL] can be used to delete one or more routines. The wildcard syntax can be used to delete a set, such as ABC* to delete all those routines beginning with the letters ABC. This option is locked with XUPROGMODE.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^%ZTRDEL

Load and Save Routines

The Input Routines and Output Routines options can be used to move routines from one UCI to another. These make use of operating system-specific utilities such as %RR for routine restore and %RS for routine save.

Input Routines

The Input Routines option [XUROUTINE IN] loads routines from an external device, such as magtape. This option is locked with XUPROG.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^%RR (OS-specific)

Output Routines

The Output Routines option [XUROUTINE OUT] outputs routines to an external device such as a magtape.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode as follows:

>D ^%RS (OS-specific)

Routine Tools

PROGRAMMER API

Direct Mode Utilities

Many options on the Programmer Options menu can also be run as direct mode utilities. Some tools are not available as options but only as direct mode utilities callable at the MUMPS prompt. Calls that are documented as direct mode utilities cannot be used in application package code. Illustrated below, are examples from this chapter, on how to run these utilities when working in programmer mode:

DIRECT MODE UTILITY	DESCRIPTION
>D ^XTFCR	Generate a flow chart of an entire routine.
>D ^XTFCE	Generate a flow chart of the processing performed from a specified entry point to the termination of processing resulting from that entry point.
>D ^%INDEX	To run %INDEX.
>X ^%Z	Invokes the ^%Z editor.
>D ^XTRGRPE	Edit a group of routines.
>D ^XTVCHG	Changes all occurrences of one variable to another.
>D ^XTVNUM	Update or set the version number into a set of routines.
>D ^%ZTP1	A summary listing of the first, and optionally the second, line of one or more routines can be obtained.
>D ^%ZTPP	Print a listing of entire routines.
>D ^XTRCMP	Compare two routines with different names and display the differences (using MailMan's PackMan compare utilities).

Direct Mode Utilities (continued):

DIRECT MODE UTILITY DESCRIPTION

>D TAPE^XTRCMP Compares routines on tape with those on disk and displays the differences.

>D ^%ZTRDEL Delete one or more routines.

>D ^%RR (OS-specific) Loads routines from an external device, such as magtape.

>D ^%RS (OS-specific) Output routines to an external device, such as a magtape.

Verification Tools

OVERVIEW

Toolkit provides an Application Programming Interface (API) that includes programmer utilities for working with routines and globals. This chapter describes verification tools exported with Toolkit that are available for reviewing a package. These tools are useful to IRM staff, application developers, and package verifiers.

Tools that have been written specifically for verifiers have been placed under the Verifier Tools Menu located on the Programmers Option menu. However, an understanding of other Kernel options may be important to the verifiers as well. Some of these options are locked with the XUPROG, XUPROGMODE, or XUMGR keys as an extra level of security. Please refer to the *Kernel Systems Manual* for descriptions of options not covered here.

Verification tools can be accessed through one of three methods:

- Programmer Options menu
- Operations Management menu
- Direct Mode utilities

USER INTERFACE

Verifier Tools Menu

The Verifier Tools Menu contains options which are available as tools for verification during program development. The Verifier Tools Menu option is located on the Programmer Options menu. Several tools are available for programmers and verifiers to compare different versions of routines and different states of Data Dictionaries. A routine or a Data Dictionary is first stored line-by-line in a VA FileMan file. After changes have been made, the new version can be compared with the one on file and any changed or deleted lines are recorded. For routines, the text of each line that differs is stored. For data dictionaries, changes in the data definition, not in the data values, are stored. Changes in templates and security protection are also stored.

There are several reasons for maintaining a record of changes to routines or Data Dictionaries. Verifiers could run comparisons when receiving a new version of a test package to confirm that only patches had been applied. Programmers could run comparisons each time they modify routines or Data Dictionaries as an internal monitor of changes.

The Verifier Tools Menu [XTV MENU] consists of the following options that are described below:

```
SYSTEMS MANAGER MENU ...
                                                                            [EVE]
 Programmer Options ... <locked with XUPROG> Verifier Tools Menu ...
                                                                        [XUPROG]
                                                                      [XTV MENU]
      Update with current routines
                                                                   [XTVR UPDATE]
      Routine Compare - Current with Previous
                                                                  [XTVR COMPARE]
      Accumulate Globals for Package
                                                                   [XTVG UPDATE]
      Edit Verification Package File
                                                       [XTV EDIT VERIF PACKAGE]
                                                                  [XTVG COMPARE]
      Global Compare for selected package
      Last Routine Change Date Recorded
                                                [XTVR MOST RECENT CHANGE DATE]
      UNDO Edits (Restore to Older Version of Routine)
         [XTVR RESTORE PREV ROUTINE]
```

Routine Compare Options

Update with Current Routines

The Update with Current Routines option [XTVR UPDATE] records the text of the routines indicated in the file used to maintain changes in routines. Only the last version entered is kept intact, previous entries reflect only the changes in lines added, and/or deleted, to make the next version. This option is used to record the current routine structure so that it can be compared with future versions of the routine using the Routine Compare - Current with Previous option.

After editing the routine, the Update with Current Routines option can again be used to store changes. Rather than storing all minor changes, the user can choose to wait and use the Update with Current Routines option only after extensive edits have been made. Lines are compared and changes, including inserted or deleted lines, are recorded. (Alteration of the routine's second line are usually insignificant and are ignored.) The Update with Current Routines option can be used whenever the programmer would like a new "snapshot" of the routine. The XTV ROUTINE CHANGES file (#8991) holds each new snapshot as a new version. This filing method does not, however, alter the actual version number of the routine itself.

Routine Compare - Current with Previous

The Routine Compare - Current with Previous option [XTVR COMPARE] is used to compare one or more current routines to previous versions. To use the routine compare utility, copies of the selected routines must first be stored in the XTV ROUTINE CHANGES file (#8991), stored in ^XTV(8991,. This is achieved by use of the Update with Current Routines option [XTVR UPDATE] on the Verifier Tools Menu. Routines can be specified one by one or as a group with the wildcard syntax (e.g., XQ*). Any initialize routines are automatically excluded. Differences between the current version and the indicated number of prior versions are noted. The user

is prompted for the number of previous versions from which to begin the listing. An entire history, or just a brief display of recent modifications, can thus be obtained.

Last Routine Change Date Recorded

The Last Routine Change Date Recorded option [XTVR MOST RECENT CHANGE DATE] generates a list of routines by the date of the last modification. The user is prompted for a date from which changes should be indicated. Routines which have not changed since the selected date are also included and are noted as not having changed. This option checks that the current version has been included within the file (eliminating the necessity to run the options Update with Current Routines [XTVR UPDATE] and Routine Compare - Current with Previous [XTVR COMPARE] as a separate step prior to running this option). Routines are selected that have been added to the file following the date indicated for new routines. After the specified routines have been processed all of the two letter namespaces, which were input for processing, are identified on the basis of the first two letters of the routines which were selected for comparison. The entries are then searched beginning with those namespaces which have been logged in the file, but are not present in the current account (basically deleted routines). A section total is printed following each section of the report.

The output identifies a routine which has another tag on the first line instead of the current routine name. The last date on which a change was recorded in the file, including more than a change in line 2, is printed along with the date piece (3rd ";"-piece) of the first line of the routine. Previously, only the version (3rd ";"-piece) and the patch indicator (4th ";"-piece) of the second line were listed. The second line from the 3rd ";" through the 6th ";"-piece is now shown including version number; package ID; patches; date of release.

(See Appendix B for a screen capture of a typical user interaction, and resulting output, from the option Last Routine Change Date Recorded [XTVR MOST RECENT CHANGE DATE].)

UNDO Edits (Restore to Older Version of Routine)

The UNDO Edits (Restore to Older Version of Routine) option [XTVR RESTORE PREV ROUTINE] is used to restore a routine back to its previous version which is available in the previous version edits shown by the Routine Compare - Current with Previous option. The user must specify a routine name to be used for the restored routine that is not currently used (so that no current routine is destroyed as a result of saving the newly restored routine). After checking that the restored routine is the desired version, the user can rename it as desired.

DATA DICTIONARY COMPARE OPTIONS

Accumulate Globals for Package

The Accumulate Globals for Package option [XTVG UPDATE] is used to accumulate the current globals for a package for comparison with subsequent versions. When first using the Accumulate Globals for Package option, a snapshot of the Data Dictionary structure is stored in the XTV GLOBAL CHANGES file (#8991.2), stored in ^XTV(8991.2). The global data is accumulated for the ^DIC(fn,0, the ^DD(fn, nodes, i.e., where fn is an included file number, and the Edit, Print, and Sort Templates for the file(s) indicated as related to the package in the XTV VERIFICATION PACKAGE file (#8991.19).

Edit Verification Package File

Before the current globals for a package are accumulated, the set of files and templates must first be defined as a Verification Package with the Edit Verification Package File option [XTV EDIT VERIF PACKAGE]. This option is used to enter or edit files and namespaces in the XTV VERIFICATION PACKAGE file (#8991.19).

Verification package specifications are stored in the XTV VERIFICATION PACKAGE file (#8991.19), stored in ^XTV(8991.19,. References are not made to the PACKAGE file (#9.4), stored in ^DIC(9.4,. A tailor-made package can instead be defined to compare the changing states of specified data dictionaries.

The data definition is retrieved from ^DIC(file number,0 and the attribute definition is retrieved from ^DD(file number. Subfiles are included so that the subsequent addition or deletion of a subfile can be detected. The structure of templates and the codes for file security are recorded as well.

Global Compare for Selected Package

The Global Compare for Selected Package option [XTVG COMPARE] is used to produce a listing of changes in the global structure, including file protection and templates, between a previously stored version of the package (using the Accumulate Globals for Package option).

Miscellaneous Verifier Tools

PROGRAMMER OPTIONS MENU

The Programmer Options menu consists of the following options:

```
SYSTEMS MANAGER MENU ...
                                                                               [EVE]
 Programmer Options ... <locked with XUPROG>
NTEG Build an 'NTEG' routine for a package
                                                                            [XUPROG]
                                                                          [XTSUMBLD]
         Programmer mode <Locked with XUPROGMODE>
                                                                       [XUPROGMODE]
         Calculate and Show Checksum Values
                                                                   [XTSUMBLD-CHECK]
         Delete Unreferenced Options
                                                              [XQ UNREF'D OPTIONS]
         Error Processing ...
                                                                            [XUERRS]
         Global Block Count
                                                                   [XU BLOCK COUNT]
         List Global <Locked with XUPROGMODE>
                                                                            [XUPRGL]
         Map Pointer Relations
         Number base changer <Locked with XUPROGMODE>[XT-NUMBER BASE CHANGER]
         Routine Tools ...
                                                              [XUPR-ROUTINE-TOOLS]
         Test an option not in your menu <Locked with XUMGR> [XT-OPTION TEST]
         Verifier Tools Menu ...
                                                                         [XTV MENU]
```

Tools found on the Programmer Options menu that can be of use to verifiers include:

- Calculate and Show Checksum Values [XTSUMBLD-CHECK]
- Error Processing [XUERRS]

These options are described below.

Calculate and Show Checksum Values

The Calculate and Show Checksum Values option [XTSUMBLD-CHECK] gives verifiers the ability to check the value of a routine at any given time. It does not regenerate NTEG routines and can safely be used anytime. This option is also on the Programmer Options menu.

This option calls CHECK^XTSUMBLD to calculate and show the checksum value for one or more routines in the current account. This value is referenced in the Patch Module description for routine patches.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utility can be used in programmer mode:

>D CHECK^XTSUMBLD

Error Processing (Kernel Error Trapping and Reporting)

If verifiers have entered programmer mode with D ^XUP, they might choose to record an error they encountered with D ^%ZTER. The error log can be displayed with D ^XTER, or with the corresponding option. Also, the error log can be purged with D ^XTERPUR. Errors can also be purged from within the menu system with an option that is locked with the XUPROGMODE security key.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utilities can be used in programmer mode as follows:

- Record an Error
 - >D ^%ZTER
- Display Error Trap
 - >D ^XTER
- Purge Error Log
 - >D ^XTERPUR

For more details on Error Processing, please refer to the Kernel Systems Manual.

OPERATIONS MANAGEMENT MENU

Another Kernel option that may be of use to verifiers is found on the Routine Management Menu [XUROUTINES] under the Operations Management menu [XUSITEMGR]. The Routine Management Menu consists of the following options:

```
SYSTEMS MANAGER MENU ...
                                                                         [EVE]
                                                                   [XUSITEMGR]
  Operations Management
      Routine Management Menu ...
                                                                  [XUROUTINES]
         Bring in Sent Routines < Locked with XUPROGMODE>
                                                                   [XTMOVE-IN]
         Delete Routines < Locked with XUPROGMODE>
                                                                      [XTRDEL]
         First Line Routine Print
                                                        [XU FIRST LINE PRINT]
                                                                     [XUPRROU]
         List Routines
         Move Routines across Volume Sets <Locked with XUPROGMODE>
                                                                      [XTMOVE]
         Program Integrity Checker
                                                                     [XUINTEG]
```

The Program Integrity Checker [XUINTEG] is a tool found on the Routine Management Menu that may be of use to verifiers.

Program Integrity Checker

The Program Integrity Checker option [XUINTEG] runs the XUGET routine in order to check the integrity of package routines. It allows the comparison of current and exported checksum values from within the menu system. This comparison can also be invoked directly by verifiers with a call to the package's <namespace>NTEG routine to identify changed routines within a package. The current checksum values are compared to the exported checksum values and any changed routines are flagged. For example, the following direct mode utility is used for the Toolkit (XT) namespace (ns):

```
>D ^XTNTEG
```

The ONE^<namespace>NTEG entry point can also be used to locate changes within a selected routine or namespace (ns). The namespace that is entered is case sensitive.

As is mentioned in the following description of the Programmer API, the corresponding direct mode utilities can be used in programmer mode:

```
>D ^nsNTEG
and
>D ONE^nsNTEG
```

NOTE: The Build an 'NTEG' Routine for a Package option [XTSUMBLD] is a developer tool that generates the exported checksum values for a package. It is on the Programmer Options menu. It gets a package namespace from the PACKAGE file (#9.4), and a list of routines from the user. It then builds a <namespace>NTEG routine that has a checksum for each of the routines. This option should not be run by verifiers.

PROGRAMMER API

Direct Mode Utilities

Some verification tools are not available as options but only as direct mode utilities callable at the MUMPS prompt, usually involving the DO command.

The %INDEX utility can be used to check a routine, or set of routines, against standards such as the 1990 ANSI MUMPS Standard syntax and VA *Programming Standards and Conventions (SAC)*. (See the "Routine Tools" chapter in this manual for more information on the %INDEX utility.) The corresponding direct mode utility can be used in programmer mode:

>D ^%INDEX

Calls that are documented as direct mode utilities cannot be used in application package code. Many of the options on the Programmer Options menu can also be run as direct mode utilities. Illustrated below, are examples from this chapter of how to run these utilities when working in programmer mode:

DIRECT MODE UTILITY DESCRIPTION >D CHECK^XTSUMBLD Check the value of a routine at any given time. >D ^nsNTEG Check Integrity of namespace (ns) Package. For example, D ^XTNTEG compares the Toolkit namespace (XT) checksums with expected values. >D ONE^nsNTEG Check Integrity Routine in namespace (ns) Package. >D ^%ZTER Record an Error. >D ^XTER Display Error Trap. >D ^XTERPUR Purge Error Log. >D ^%INDEX To run %INDEX. >D ^XINDEX Similar to %INDEX but supports the most current MUMPS standard.

Verification Tools

Miscellaneous Programmer Tools/APIs

Programmer Options Menu

USER INTERFACE

The List Global and Number Base Changer options are found on the Programmer Options menu, locked with the XUPROG key. These options are also locked with the XUPROGMODE key as an extra level of security. Your MUMPS vendor may supply other related tools that are direct mode only (not attached to any of the DHCP options).

```
SYSTEMS MANAGER MENU ...
Programmer Options ... <locked with XUPROG>
                                                                           [EVE]
                                                                        [XUPROG]
   NTEG Build an 'NTEG' routine for a package
                                                                     [XTSUMBLD]
        Programmer mode <Locked with XUPROGMODE>
                                                                   [XUPROGMODE]
                                                               [XTSUMBLD-CHECK]
        Calculate and Show Checksum Values
        Delete Unreferenced Options
                                                           [XO UNREF'D OPTIONS]
        Error Processing ...
                                                                        [XUERRS]
        Global Block Count
                                                               [XU BLOCK COUNT]
        List Global <Locked with XUPROGMODE>
                                                                        [XUPRGL]
        Map Pointer Relations
                                                                      [DI DDMAP]
        Number base changer <Locked with XUPROGMODE>[XT-NUMBER BASE CHANGE]
        Routine Tools ...
                                                           [XUPR-ROUTINE-TOOLS]
        Test an option not in your menu <Locked with XUMGR>[XT-OPTION TEST]
        Verifier Tools Menu ...
                                                                     [XTV MENU]
```

Listing Globals

The List Global option [XUPRGL] can be used to list the contents of a global to the screen. It makes use of operating system-specific utilities such as %G, the global lister. For MSM this is %GL, for other systems it is %G. This option is locked with XUPROGMODE.

The corresponding direct mode utility can be used in programmer mode. For example:

```
>D ^%G (OS-specific)
```

Number Base Changer

The Number Base Changer option [XT-NUMBER BASE CHANGER] runs a number base calculator. It allows input in base 2, 8, 10, and 16 and displays the number in all 4 bases. This option is locked with XUPROGMODE.

The corresponding direct mode utility can be used in programmer mode. For example:

>D ^XTBASE

PROGRAMMER API

Direct Mode Utilities

Many options on the Programmer Options menu can also be run as direct mode utilities. Some are not available as options, but only as direct mode utilities callable at the MUMPS prompt. Calls that are documented as direct mode utilities cannot be used in application package code. Illustrated below are examples from this chapter on how to run these utilities when working in programmer mode:

DIRECT MODE UTILITY	DESCRIPTION
>D ^%G (OS-specific)	List the contents of a global to the screen.
	NOTE: For MSM this is %GL for other systems it is %G.
>D ^XTBASE	Runs the number base calculator.

Miscellaneous Programmer Tools/API

Kermit

USER INTERFACE

Using Kermit as an Alternate Editor

Toolkit supports use of the Kermit file transfer protocol as an alternate editor. This allows the transfer of files from a PC or other system into a mail message or other VA FileMan word-processing field. The benefit of using the Kermit file transfer protocol is that large files can be sent faster and more easily due to the efficient Kermit error checking mechanism. The following steps illustrate the use of Kermit on a Macintosh:

- 1. Check your White Knight or other emulator's settings for Kermit preferences. The defaults are probably correct.
- 2. Check the Decserver's local switch. It cannot be a printable character like a tilde (~) or Kermit will not work. Change it to a control character by setting the local switch at the DECserver prompt. First, do the following: SHOW PORT CHARACTERISTICS to see its setting. Then set local switch XXX to change it to XXX.
- 3. Go to a word-processing field, such as a mail message.
- 4. At the Edit Option prompt, choose Utilities, then Editor Change and you see the "Select ALTERNATE EDITOR:" prompt; choose Kermit.
- 5. Go to White Knight's File menu and select the option: Send File Using. By selecting this option, a menu will appear to the right, at which point, you select SK:Kermit Protocol. You are then prompted to select one of your Microsoft Word, or other files. Be sure that it is a file that has been saved as "Text Only with Line Breaks".
- 6. If you found the file quickly enough, and didn't time out, the transfer takes place. You then see a chart that shows the processing and indication of when it is done.

Using the Toolkit's Kermit Options

If Kermit exists on an external PC or other computer, files may be sent back and forth (both directions) with use of the Toolkit's KERMIT HOLDING file (#8980). The options are on a stand-alone menu that is not tied to EVE, the System Manager Menu, as shown below:

```
KERMIT MENU ...[XT-KERMIT MENU]E Edit KERMIT holding file[XT-KERMIT EDIT]R Receive KERMIT file[XT-KERMIT RECEIVE]S Send KERMIT file[XT-KERMIT SEND]
```

Edit Kermit Holding File

```
Select Kermit menu Option: E <RET> Edit KERMIT holding file
Select KERMIT HOLDING NAME: DEMO
ARE YOU ADDING 'DEMO' AS A NEW KERMIT HOLDING (THE 2ND)? Y <RET> (YES)
NAME: DEMO// <RET>
Replace File Name: YES// <RET>
KERMIT transfer mode: TEXT// <RET>
Select ACCESS ALLOWED TO USER: ?
 ANSWER WITH ACCESS ALLOWED TO USER
     YOU MAY ENTER A NEW ACCESS ALLOWED TO USER, IF YOU WISH
     Add other users that can access these records.
 ANSWER WITH NEW PERSON NAME, OR INITIAL, OR SSN, OR NICK NAME
Want to edit the data?: YES
DATA:
  1>I am inputting text in a word <RET>
  2>processing field <RET>
  3> <RET>
EDIT Option: <RET>
```

Receive Kermit File

```
Select Kermit menu Option: R <RET> Receive KERMIT file

If you enter 'XXX' for the file name it will be replaced by the name sent.

RECEIVE TO KERMIT FILE: XXX

ARE YOU ADDING 'XXX' AS A NEW KERMIT HOLDING (THE 12TH)? Y <RET> (YES)

KERMIT HOLDING Replace File Name: YES// <RET>

KERMIT HOLDING KERMIT transfer mode: TEXT// <RET>

Starting KERMIT receive.N3

NOTE: This is where the computer sends a text file using KERMIT.

Done with received, File transfer was successful. (542 bytes)
```

Send Kermit File

```
Select Kermit menu Option: S <RET> Send KERMIT file
KERMIT FILE TO SEND: DEMO
KERMIT transfer mode: TEXT// <RET>
Starting KERMIT send.

NOTE: This is where the computer receives a text file using KERMIT.

Done with send, File transfer was successful. (542 bytes)
```

Kermit

System Management Issues

Kermit may be added to the ALTERNATE EDITOR file (#1.2) as shown below. Installing Kermit as an Alternate Editor permits users to import files into VA FileMan word processing fields, such as MailMan messages.

```
>D Q^DI
          (This entry point may be used to maintain device variables)
VA FileMan 20
Select OPTION: ENTER OR EDIT FILE ENTRIES
                                                          (2 entries)
INPUT TO WHAT FILE: 1.2 <RET> ALTERNATE EDITOR
EDIT WHICH FIELD: ALL// <RET>
Select ALTERNATE EDITOR: KERMIT LOAD
 ARE YOU ADDING 'KERMIT LOAD' AS A NEW ALTERNATE EDITOR? Y <RET> (YES)
ACTIVATION CODE FROM DIWE: S XTKDIC=DIC D RECEIVE^XTKERMIT
OK TO RUN TEST: <RET>
RETURN TO CALLING EDITOR: K XTKDIC
DESCRIPTION:
  1> This option uses the KERMIT protocol to load word-processing <RET>
  2> fields from another system. <RET>
  3> <RET>
EDIT Option: <RET>
Select ALTERNATE EDITOR:
```

To give users access to the Toolkit's Kermit options for bi-directional file transfer, the Kermit menu needs to be assigned, perhaps as a secondary menu, for those users. The Kermit menu is exported as a stand-alone menu without a parent option like EVE.

Kermit

PROGRAMMER API

Callable Entry Points

A callable entry point is an authorized programmer call that may be used in any DHCP application package. The DBA maintains the list of DBIC approved entry points. The two programmer calls that can be used in application code are listed below:

CALLABLE ENTRY POINT

DESCRIPTION

SEND^XTKERMIT

Send a File

RECEIVE^XTKERMIT

Receive a File

To call XTKERMIT:

Set XTKDIC = FileMan type global root, DWLC = last current data node. Set DWLC to append data to existing word processing multiple. Return DWLC = last data node, XTKDIC is killed.

Optional:

Set XTKMODE = 0 to send/receive in IMAGE mode (no conversion).

- 1 to send/receive in DATA mode (just convert control character).
- 2 to send/receive as TEXT (Mac, FM word-processing).
- 3 to send/receive as TEXT (PC).

Text mode sends a carriage return (CR) after each global node. Make a new global node for each CR received.

Kermit

^%Z Editor

USER INTERFACE

The Toolkit's routine editor is installed in the Manager account as the ^%Z global by ZTMGRSET during installation. (It can also be installed with D ^ZTEDIT.) To use the editor, load the routine (it must pre-exist) and then X ^%Z. The following example creates a one-line routine in VAX DSM and then calls the ^%Z Editor.

```
>ZZTEST <RET> ;ID/SITE;test routine; (The editor fills in the third "<space>;" piece with the date/time that the routine is filed.)
>ZS ZZTEST
>ZL ZZTEST X ^%Z
%Z Editing: ZZTEST Terminal type: C-VT100
Edit:
```

Enter ".F" (dot-file) at the edit prompt to change files. When saving with dot-file, an edit comment may be entered. This text is stored in the ROUTINE file's (#9.8) EDIT HISTORY multiple as programmer documentation. The following example shows how an entire routine can be displayed by entering the MUMPS print command ZP followed by a space. Dot-file (.File) is then used to file. A dot is then used to exit. (The dot exit does not automatically file changes.)

```
>ZL ZZTEST X ^%Z
%Z Editing: ZZTEST Terminal type: C-VT100
Edit: ZP<SPACE> <RET>
ZZTEST
         ;test routine
Length: 20 <RET> Line: ZZTEST
ZZTEST ; test routine
Edit: .Insert after: ZZTEST// <RET>
Line:
                       (First either a <tab> or line label is entered)
        next line;
Line:
         0
Line: <RET>
Edit: .File ZZTEST
Edit comment:
  1>This text is stored in the Routine file's Edit History multiple. <RET>
  2> <RET>
EDIT Option: <RET>
Edit: . <RET>
```

Routines are filed by the name used when loading, not by the first line tag. If a ROUTINE file (#9.8) exists, then the routine is added if not already there, and an entry is made of the date/time and DUZ of the user that filed it. When filing, the editor updates the third piece of the first line of the routine with the date/time.

When editing, a question mark can be entered to provide help. The dot commands are listed first. They provide the usual break, join, insert, and remove functions. The +n method of selecting lines to edit is also noted. The line tag can be used along with a number (e.g., TAG+3) to reach a particular line. A minus sign will backup lines. And the asterisk can be entered to reach the last line.

```
>X ^%Z
Edit: ?
                          .BREAK line
.ACTION menu
                                                    .CHANGE every
                          .INSERT after
                                                   .JOIN lines
.FILE routine
                          .REMOVE lines
                                                   .SEARCH for
.MOVE lines
                          .XY change to/from replace-with
.TERMinal type
 -TO EXIT THE EDITOR
""+n Absolute line n
                        +n To advance n lines
                                                -n To backup n lines
use '*' to get last line
^NAME - to edit a GLOBAL node
                                     *NAME - to edit a LOCAL variable
MUMPS command line (mumps command <space> or Z command <space>)
```

Help displays information about editing in line mode. A complete line is displayed and various keys can be used to navigate. The spacebar moves forward by words, the period moves forward by characters, and the <CTRL H> command key sequence moves backwards by characters. Upon reaching the desired location, the delete key may be used to remove characters. To enter characters, the character "E" must first be entered as an insert/delete toggle. Pressing the Return key reverses the toggle and allows navigation. Pressing the Return key again moves back to the beginning of the line.

```
In the line mode,
Spacebar moves to the next space or comma. Dot to the next char.
'>' To move forward 80 char or to end of line.
Backspace to back up one char. E to enter new char's at the cursor.
CR to exit enter mode, return to start of line or EDIT prompt.
D to delete from the cursor to the next space or comma.
Delete (Rub) to delete the char under the cursor.
CTRL-R to restore line and start back at the beginning.
```

Replace mode editing can be invoked by entering dot-XY at the edit prompt. This method allows easy string substitution, as in the VA FileMan line editor. Entering a question mark at the next edit prompt displays the following help:

```
In the replace/with mode,
SPECIAL <REPLACE> STRINGS:
END -to add to the END of a line
... -to replace a line
A...B -to specify a string that begins with "A" and ends with "B"
A... -to specify a string that begins with "A" to the end of the line
CTRL-R to restore line.
```

The ACTION menu provides additional functions. Save and restore lines can be used to move lines within one routine, or from one routine to another. To copy lines to another routine first save the lines, then load and edit the other routine, and restore the lines.

When patching a routine, the ACTION menu can be used to calculate checksums. Before filing changes, the new checksum can be displayed and compared with the patch report for verification of editing. The following shows how to reach the ACTION menu with dot-A (.A).

Edit: .A
Action: ?
Bytes in routine Checksum Restore lines
Save lines Version #
Action: C
Checksum is 4971725
Action: <RET>
Edit: <RET>

Global nodes and local variables may also be edited with the ^%Z editor. Editing occurs directly, so the idea of filing does not apply. The editor must then be exited with a dot, not with a dot-file, since filing should not take place.

Appendix A

Appendix A

Example of a Candidate Collection Routine for Patient Merge

```
DPTDCAN
            ; IHS/OHPRD/JCM - GETS POSSIBLE DUPLICATE CANDIDATES ; 09/16/93/
08:19
      ;;1.0;DPTD;;
      ; Calls: EN^DIQ1
START ;
     K ^TMP("XDRD", $J, XDRFL), DPTDCAN
      Q:$P(^DPT(XDRCD,0),U,19)
      D VALUE
     D NAME
     D SSN
     D DOB
     D EOJ
END
      Q
VALUE ;
      S DIC=2,DA=XDRCD,DIQ(0)="I",DIQ="DPTDCAN",DR=".01;.03;.09"
      D EN^DIQ1 K DIC, DA, DR, DIQ
NAME
     ;Get patients with the same last name and first initial
      G:DPTDCAN(XDRFL,XDRCD,.01,"I")']"" NAMEX
      S DPTDCAN("NAME") = DPTDCAN(XDRFL, XDRCD, .01, "I")
      S DPTDCAN("LNAME&FI")=$P(DPTDCAN("NAME"),",",1) "," $E($P(DPTDCAN("NAME"
),",",2),1)_"AAA"
      S DPTDCAN("BNAME")=DPTDCAN("LNAME&FI")
      F I=0:0 S DPTDCAN("BNAME")=$O(^DPT("B",DPTDCAN("BNAME"))) Q:DPTDCAN("BNA
ME")=""!(($P(DPTDCAN("NAME"),",",1)_","_$E($P(DPTDCAN("NAME"),",",2),1)
)'=($P(DPTDCAN("BNAME"),",",1)_","_$E($P(DPTDCAN("BNAME"),",",2),1)))
. S DPTDCAN("BNAMEDFN")=0 F S DPTDCAN("BNAMEDFN")=$0(^DPT("B",DPTDCAN("
EDFN")'=XDRCD ^TMP("XDRD", $J, XDRFL, DPTDCAN("BNAMEDFN"))="".
ONAMEX
           0
      ;Get patients with same last four digits of ssn
SSN
      G:DPTDCAN(XDRFL,XDRCD,.09,"I")']"" SSNX
      S DPTDCAN("SSN")=DPTDCAN(XDRFL,XDRCD,.09,"I")
      S DPTDCAN("L4SSN")=$E(DPTDCAN("SSN"),6,9)
      S DPTDCAN("BL4SSN")=XDRCD
      F %=0:0 S DPTDCAN("BL4SSN")=$O(^DPT("BS",DPTDCAN("L4SSN"),DPTDCAN("BL4SS
N"))) Q:'DPTDCAN("BL4SSN") S ^TMP("XDRD", $J, XDRFL, DPTDCAN("BL4SSN"))=""
      ; Check SSNS with same first five digits
      ; Commented out the following line, is not specific enough for IHS
      ; but would be useful for the VA
      ;S DPTDCAN("F5SSN")=$E(DPTDCAN("SSN"),1,5) "0000",DPTDCAN("5SSN")=DPTDCA
N("F5SSN") D
      . F %=0:0 S DPTDCAN("5SSN")=$O(^DPT("SSN",DPTDCAN("5SSN"))) Q:DPTDCAN("5
SSN")'=+DPTDCAN("5SSN")!($E(DPTDCAN("5SSN"),1,5)'=$E(DPTDCAN("SSN"),1,5)
)) S ^TMP("DPTDCAN", $J, XDRFL, $O(^DPT("SSN", DPTDCAN("5SSN"), ""))) = ""
```

Appendix A

```
. Q
SSNX
      Q
DOB
      ;Get patients with same date of birth
      G:DPTDCAN(XDRFL,XDRCD,.03,"I")']"" DOBX
      S DPTDCAN("DOB")=DPTDCAN(XDRFL,XDRCD,.03,"I")
      S DPTDCAN("BDOB")=XDRCD
      F %=0:0 S DPTDCAN("BDOB")=$O(^DPT("ADOB",DPTDCAN("DOB"),DPTDCAN("BDOB"))
) Q: 'DPTDCAN("BDOB") S ^TMP("XDRD", $J, XDRFL, DPTDCAN("BDOB")) = ""
      ;Transpose day of birth and get patients with same date of birth
      S DPTDCAN("TDOB")=$E(DPTDCAN("DOB"),1,5)_$E(DPTDCAN("DOB"),7)_$E(DPTDCAN
("DOB"),6)
      S DPTDCAN("BDOB")=XDRCD
      F %=0:0 S DPTDCAN("BDOB")=$O(^DPT("ADOB",DPTDCAN("TDOB"),DPTDCAN("BDOB")
)) Q:'DPTDCAN("BDOB") S ^TMP("XDRD", $J, XDRFL, DPTDCAN("BDOB"))=""
DOBX O
EOJ
      K DPTDCAN, %
```

Two Examples of Duplicate Test Routines

1. Name Test Routine for a Patient Merge

```
DPTDN ;IHS/OHPRD/JCM;COMPARES NAMES; [ 06/08/92 12:14 PM ]
      ;;1.0;DPTD;;AUG 13, 1991
      ; Calls: SOU^DICM1
START ;
      D TNTT
      D NAME
      I $O(^DPT(XDRCD,.01,0)) D OTHER
END
      Q
      ; EP - Entry Point for any routines comparing names
EN
      D INIT1
      D COMPARE
      D EOJ
      Q
TNTT
      ;
      D EOJ
      S DPTDN("MATCH")=$P(XDRDTEST(XDRDTO),U,6)
      S DPTDN("NO MATCH")=$P(XDRDTEST(XDRDTO),U,7)
      S DPTDN=$G(XDRCD(XDRFL,XDRCD,.01,"I")),DPTDN2=$G(XDRCD2(XDRFL,XDRCD2,.01
,"I"))
INIT1 S DPTDNL=$P(DPTDN,","),DPTDNF=$P($P(DPTDN,",",2)," "),DPTDNFI=$E(DPTDNF)
      ,DPTDNM=$P($P(DPTDN,",",2)," ",2),DPTDNMI=$E(DPTDNM)
INIT2 S DPTDNL2=$P(DPTDN2,","),DPTDNF2=$P($P(DPTDN2,",",2)," "),DPTDNF12=$E(DP
TDNF2),DPTDNM2=$P($P(DPTDN2,",",2)," ",2),DPTDNM12=$E(DPTDNM2)
      Q
NAME
     ;
      D COMPARE
      D:$O(^DPT(XDRCD2,.01,0)) OTHER2
      Q
OTHER ;
      F DPTDNO=0:0 S DPTDNO=$O(^DPT(XDRCD,.01,DPTDNO)) Q:'DPTDNO S DPTDN=$P(^
DPT(XDRCD,.01,DPTDNO,0),U,1) S:'$D(DPTDN2) DPTDN2=XDRCD2(XDRFL,XDRCD2,.01,"I")
D INIT1, NAME
      Q
OTHER 2
      F DPTDNO2=0:0 S DPTDNO2=$0(^DPT(XDRCD2,.01,DPTDNO2)) Q:'DPTDNO2 S DPTDN
2=$P(^DPT(XDRCD2,.01,DPTDNO2,0),U,1) D INIT2,COMPARE
      Q
COMPARE
      S: '$D(DPTDN("TEST SCORE")) DPTDN("TEST SCORE")=DPTDN("NO MATCH")
      I DPTDN=DPTDN2 S DPTDN("TEST SCORE2")=DPTDN("MATCH") G COMPAREX
```

```
I DPTDNF=DPTDNF2,DPTDNL=DPTDNL2 S DPTDN("TEST SCORE2")=DPTDN("MATCH")*.8
 G COMPAREX
      I DPTDNFI=DPTDNF12, DPTDNL=DPTDNL2 S DPTDN("TEST SCORE2")=DPTDN("MATCH")*
.6 G COMPAREX
      I DPTDNL=DPTDNL2 S DPTDN("TEST SCORE2")=DPTDN("MATCH")*.4 G COMPAREX
      S X=DPTDNL D SOU^DICM1 S DPTDNLS=X S X=DPTDNL2 D SOU^DICM1 S DPTDNL2S=X
      S X=DPTDNF D SOU^DICM1 S DPTDNFS=X S X=DPTDNF2 D SOU^DICM1 S DPTDNF2S=X
      I DPTDNLS=DPTDNL2S, DPTDNFS=DPTDNF2S S DPTDN("TEST SCORE2")=DPTDN("MATCH"
)*.6 G COMPAREX
      I DPTDNFS=DPTDNF2S S DPTDN("TEST SCORE2")=DPTDN("MATCH")*.2 G COMPAREX
      S DPTDN("TEST SCORE2")=DPTDN("NO MATCH")
      S:DPTDN("TEST SCORE2")>(DPTDN("TEST SCORE")) DPTDN("TEST SCORE")=DPTDN("
TEST SCORE2")
      K X, DPTDNLS, DPTDNL2S, DPTDNFS, DPTDNF2S, DPTDN("TEST SCORE2")
EOJ
      S:SD(DPTDN("TEST SCORE")) XDRD("TEST SCORE")=DPTDN("TEST SCORE")
      K DPTDN.DPTDN2.DPTDNF.DPTDNF2.DPTDNL.DPTDNL2.DPTDNM.DPTDNM2
      K DPTDNMI, DPTDNMI2, DPTDNFI, DPTDNFI2, DPTDNO, DPTDNO2
```

2. Date of Birth test Routine for a Patient Merge

```
;IHS/OHPRD/JCM;COMPARES DATE OF BIRTHS; [ 06/08/92 12:10 PM ]
      ;;1.0;DPTD;;AUG 13, 1991
START ;
      D INIT
      ; EP - Entry point for comparing dates
EN
      D COMPARE
END
     D EOJ
INIT
     K DPTDOB, DPTDOB2
      S DPTDOB=$G(XDRCD(XDRFL,XDRCD,.03,"I")),DPTDOB2=$G(XDRCD2(XDRFL,XDRCD2,.
      S DPTDOB("MATCH")=$P(XDRDTEST(XDRDTO),U,6)
      S DPTDOB("NO MATCH")=$P(XDRDTEST(XDRDTO),U,7)
COMPARE
      I DPTDOB']""!(DPTDOB2']"") G COMPAREX
      I DPTDOB=DPTDOB2 S XDRD("TEST SCORE")=DPTDOB("MATCH") G COMPAREX
      S DPTDOB("CNT")=0
     F DPTDOBI=1:1:7 Q:DPTDOB("CNT")>2 I $E(DPTDOB,DPTDOBI)'=$E(DPTDOB2,DPTD
OBI) S DPTDOB("CNT")=DPTDOB("CNT")+1
      K DPTDOBI
      S XDRD("TEST SCORE")=$S(DPTDOB("CNT")>2:DPTDOB("NO MATCH"),1:(DPTDOB("MA
TCH")*.8))
COMPAREX Q
EOJ
      K DPTDOB, DPTDOB2
      0
```

Appendix B

Appendix B

Last Routine Change Date Recorded (User interaction and resulting output)

The following screen capture illustrates a typical user interaction and resulting output from the option Last Routine Change Date Recorded [XTVR MOST RECENT CHANGE DATE]:

```
>D ^XTVRC1A
routine(s) ? >
                  XT*
searching directory ...
routine(s) ? > -XTIN*
routine(s) ?
List CHANGES since DATE: T-100
DEVICE: HOME// <RET> DECSERVER
The following routines have been logged as NEW ROUTINES since 11/15/94
No NEW routines were logged
The following routines have logged CHANGES since 11/15/94
XTNTEG
         02/23/95 11:26
                            2950223.101309
                                            7.3;TOOLKIT;;Feb 23, 1995
XTNTEG0
         02/23/95 11:26
                            2950223.101309
                                            7.3;TOOLKIT;;Feb 23, 1995
XTNTEG01 02/23/95 11:26
                            2950223.101309
                                            7.3;TOOLKIT;;Feb 23, 1995
XTLKEFOP
         02/17/95 00:15
                            02/16/95 16:05 7.3;TOOLKIT;;Feb 23, 1995
XTSUMBLD 02/15/95 00:15
                            8/25/94 13:39
                                            7.3;TOOLKIT;;Feb 23, 1995
XTVNUM
         02/15/95 00:15
                            11/22/94 15:44 7.3;TOOLKIT;;Feb 23, 1995
XTLKMGR
         02/14/95 00:15
                            02/13/95 11:52 7.3;TOOLKIT;;Feb 23, 1995
XTLKPST
         02/11/95 00:15
                            FIX DD OF 8984.1, 8984.2 7.3; TOOLKIT; ; Feb 23,
1995
XTVGC2
         02/11/95 00:15
                            12/13/93 13:38 7.3;TOOLKIT;;Feb 23, 1995
XTVGC2A
         02/11/95 00:15
                            12/13/93 15:18 7.3;TOOLKIT;;Feb 23, 1995
XTLKKWL1
         01/21/95 00:15
                            01/20/95 10:27 7.3;TOOLKIT;;Feb 23, 1995
XTCMFILN 01/20/95 00:15
                            01/19/95 10:15 7.3;TOOLKIT;;Feb 23, 1995
```

XTRTHV

01/19/95 00:15

01/18/95 13:46 7.3;TOOLKIT;;Feb 23, 1995

XTLKDICL	01/05/95	00:15	10/11/94 14:4:	7.3;TOOLKIT;;Feb	23, 1995
XTVRC1	01/05/95	00:15	12/7/93 13:56	7.3;TOOLKIT;;Feb	23, 1995
XTKERMIT XTLKTICD XTVCHG	11/23/94	00:15	07/22/93 15:50	7.3;TOOLKIT;;Feb 7.3;TOOLKIT;;Feb 7.3;TOOLKIT;;Feb	23, 1995

18 old routines were CHANGED

The following routines have NOT LOGGED CHANGES since 11/15/94

XTVRC1A	11/10/94	10:19	12/8/93	14:52	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKKWL	11/10/94	10:18	07/22/93			OLKIT;;Feb			
XTBASE	11/09/94	00:15		07:31		DLKIT;;Feb			
XTEDTVXD	11/09/94	00:15	10/31/94	08:32		DLKIT;;Feb			
XTER1	11/09/94	00:15	8/26/94	10:32	7.3;TOC	DLKIT;;Dec	06,	1994	
XTER1A	11/09/94	00:15	8/19/94	13:37		DLKIT;;Dec			
XTER2	11/09/94	00:15	9/10/93	12:57		DLKIT;;Dec			
XTFC0	11/09/94	00:15	9/21/93	09:44		DLKIT;;Feb			
XTFC1	11/09/94	00:15	9/21/93	09:46		DLKIT;;Feb			
XTFCR1	11/09/94	00:15	9/21/93	09:58	7.3;TOC	DLKIT;;Feb	23,	1995	
XTKERM1	11/09/94	00:15	8/30/94	10:52		DLKIT;;Feb			
XTKERM2	11/09/94	00:15	11/8/93	11:50	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLATSET	11/09/94	00:15	11/03/94	16:32	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKKSCH	11/09/94	00:15	07/22/93	15:45	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKPRT	11/09/94	00:15	PRINT RO	JTINE	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKTOKN	11/09/94	00:15	07/22/93	15:51	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKWIC	11/09/94	00:15	07/22/93	15:52	7.3;TOC	DLKIT;;Feb	23,	1995	
XTVGC1	11/09/94	00:15	12/16/93	14:06	7.3;TOC	DLKIT;;Feb	23,	1995	
XTVGC1A	11/09/94	00:15	12/13/93	13:45	7.3;TOC	DLKIT;;Feb	23,	1995	
XTVGC2A1	11/09/94	00:15	5/10/93	13.06	7.3;TOC	DLKIT;;Feb	23,	1995	
XTVRC1Z	11/09/94	00:15	9/29/92	14:50	7.3;TOC	DLKIT;;Feb	23,	1995	
XTVRC2	11/09/94	00:15	12/7/93	15:20	7.3;TOC	DLKIT;;Feb	23,	1995	
XTER	11/05/94	00:15	8/11/94	10:33		DLKIT;;Dec			
XTER1B	11/05/94	00:15		15:41		DLKIT;;Dec			
XTFCE	11/05/94	00:15	11/18/93	09:29	7.3;TOC	DLKIT;;Feb	23,	1995	
XTFN	11/05/94	00:15	3/14/89	11:05	7.3;TOC	DLKIT;;Feb	10,	1995	
XTKERM3	11/05/94	00:15	8/19/92	11:19	7.3;TOC	DLKIT;;Feb	23,	1995	
XTKERM4	11/05/94	00:15	11/8/93	11:46	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKKWLD	11/05/94	00:15	07/22/93	15:48	7.3;TOC	DLKIT;;Feb	23,	1995	
XTER1A1	11/04/94	00:15	12/7/93	14:16	7.3;TOC	DLKIT;;Dec	06,	1994	
XTRCMP	10/28/94	13:32	1/28/92	09:33		DLKIT;;Feb			
XTFCR	10/28/94	13:21	9/21/93	09:53	7.3;TOC	DLKIT;;Feb	23,	1995	
XTERPUR	09/02/94	00:15	8/26/94	14:52	7.3;TOC	DLKIT;;Dec	06,	1994	
XTLKKWL2	06/21/94	10:47	07/22/93	15:47	7.3;TOC	DLKIT;;Feb	23,	1995	
XTLKPACH	05/03/94	00:05	FIX DD O	F 8984.1	, 8984.2	2 7.3;TOO	LKIT	;;Feb	23,
1995									
XTPDUTL	05/03/94	00:05	11/2/92	13:54	7.3;TOC	DLKIT;;Feb	23,	1995	

XTFCE1	09/21/93	09:47	9/21/93	09:47	7.3;TOOLKIT;;Feb 23, 1995
XTVRCRES	09/15/93	00:05	8/24/93	14:53	7.3;TOOLKIT;;Feb 23, 1995
XTSPING	10/21/92	00:05	8/11/92	15:02	7.3;TOOLKIT;;Feb 23, 1995
XTRGRPE	10/14/92	09:25	12/21/8	8 14:49	7.3;TOOLKIT;;Feb 23, 1995

41 UNCHANGED routines were included

The following routines were previously LOGGED BUT NOT IN THE ACCOUNT Routines were searched for using 2 letter namespaces from routines originally specified.

XTLKNTEG XTNTEG02

2 DELETED routines identified using 2 letter namespaces input

ABBREVIATED RESPONSE This feature allows you to enter data by typing only the first few characters for the desired response. This feature will not work unless the information is already stored in the computer.

ACCESS CODE

A code that, along with the verify code, allows the computer to identify you as a user authorized to gain access to the computer. Your code is greater than six and less than twenty characters long; can be numeric, alphabetic, or a combination of both; and is usually assigned by a site manager or application coordinator . It is used by the Kernel's Sign-on/Security system to identify the user (see Verify Code).

ALERTS

Brief on-line notices that are issued to users as they complete a cycle through the menu system. Alerts are designed to provide interactive notification of pending computing activities, such as the need to reorder supplies or review a patient's clinical test results. Along with the alert message is an indication that the View Alerts common option should be chosen to take further action.

ANS MUMPS

The MUMPS programming language is a standard, that is an American National Standard (ANS). MUMPS stands for Massachusetts Utility Multi-programming System.

ANSI

American National Standards Institute

APPLICATION PACKAGE

In DHCP, software and documentation that support the automation of a service, such as Laboratory or Pharmacy within VA medical centers (see Package). The Kernel is like an operating system relative to other DHCP applications.

APPLICATION PROGRAMMER The person who writes code for application packages. The Kernel provides tools to facilitate package development.

APPLICATION PROGRAMMING INTERFACE (API) Programmer calls provided by the Kernel for use by application programmers. APIs allow programmers to carry out standard computing activities without needing to duplicate Kernel utilities in their own packages. APIs also further DBA goals of system integration by channeling activities, such as adding new users, through a limited number of callable entry points.

ARRAY An arrangement of elements in one or more dimensions. A

MUMPS array is a set of nodes referenced by subscripts

which share the same variable name.

BULLETINS Electronic mail messages that are automatically delivered

by MailMan under certain conditions. For example, a bulletin can be set up to fire when database changes occur, such as adding a record to the file of users. Bulletins are

fired by bulletin-type cross references.

CALLABLE ENTRY

POINT

An authorized programmer call that may be used in any DHCP application package. The DBA maintains the list of

DBIC-approved entry points.

CAPACITY MANAGEMENT The process of assessing a system's capacity and evaluating its efficiency relative to workload in an attempt to optimize system performance. The Kernel Toolkit provides several utilities which aid in the short and long term decision process of hardware and application code optimization.

New Capacity Management Utilities have been created to utilize VMS, MUMPS and the latest VA Kernel Utilities. These utilities sample running systems at regular intervals and store a key subset of systems metrics related to configuration, database activity, response time, CPU,

memory, and I/O utilization.

CARET A symbol expressed as up caret (^), left caret (<), or right

caret (>). In many M systems, a right caret is used as a system prompt and an up caret as an exiting tool from an option. Also known as the up-arrow symbol or shift–6 key.

COMMAND A combination of characters that instruct the computer to

perform a specific operation.

COMMON MENU Options that are available to all users. Entering two

question marks at the menu's select prompt displays any secondary menu options available to the signed-on user along with the common options available to all users.

COMPILED MENU SYSTEM (^XUTL

GLOBAL)

Job-specific information that is kept on each CPU so that it is readily available during the user's session. It is stored in the ^XUTL global, which is maintained by the menu

system to hold commonly referenced information. The user's

place within the menu trees is stored, for example, to

enable navigation via menu jumping.

CPT Current Procedural Terminology

CROSS REFERENCE An indexing method whereby files can include pre-sorted lists of entries as part of the stored database. Cross references (x-refs) facilitate look-ups and reporting.

> A cross reference is also referred to as an index or cross index.

DATA

A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. The information you enter for the computer to store and retrieve. Characters that are stored in the computer system as the values of local or global variables. VA FileMan fields hold data values for file entries.

DATA ATTRIBUTE

A characteristic of a unit of data such as length, value, or method of representation. VA FileMan field definitions specify data attributes.

DATA DICTIONARY

The Data Dictionary is a global containing a description of what kind of data is stored in the global corresponding to a particular file. The data is used internally by FileMan for interpreting and processing files.

A Data Dictionary (DD) contains the definitions of a file's elements (fields or data attributes), relationships to other files, and structure or design. Users generally review the definitions of a file's elements or data attributes; programmers review the definitions of a file's internal structure.

DATABASE

A set of data, consisting of at least one file, that is sufficient for a given purpose. The Kernel database is composed of a number of VA FileMan files.

DBA

Database Administrator. In DHCP, the person who monitors namespacing conventions and other procedures that enable various DHCP packages to coexist within an integrated database system.

DBIA

Database Integration Agreement, a formal understanding between two or more DHCP packages which describes how data is shared or how packages interact. The DBA maintains a list of DBIAs between package developers allowing the use of internal entry points or other packagespecific features that are not available to the general programming public.

DBIC Database Integration Committee. Within the purview of

the DBA, the committee maintains a list of DBIC-approved callable entry points and publishes the list on FORUM for

reference by application programmers and verifiers.

DEFAULT A response the computer considers the most probable

answer to the prompt being given. It is identified by double slash marks (//) immediately following it. This allows you the option of accepting the default answer or entering your own answer. To accept the default you simply press the enter (or return) key. To change the default answer, type in

your response.

DELETE The key on your keyboard (may also be called rubout or

backspace on some terminals) which allows you to delete individual characters working backwards by placing the cursor immediately after the last character of the string of characters you wish to delete. The @ sign (uppercase of the

attribute value. The computer asks "Are you sure you want to delete this entry?" to insure you do not delete an entry by

2 key) may also be used to delete a file entry or data

mistake.

DELIMITER A special character used to separate a field, record or string.

VA FileMan uses the ^ character as the delimiter within

strings.

DEVICE A peripheral connected to the host computer, such as a

printer, terminal, disk drive, modem, and other types of hardware and equipment associated with a computer. The host files of underlying operating systems may be treated

like devices in that they may be written to (e.g., for

spooling).

DEVICE HANDLER The Kernel module that provides a mechanism for

accessing peripherals and using them in controlled ways

(e.g., user access to printers or other output devices).

DHCP The Decentralized Hospital Computer Program of the

Veterans Health Administration (VHA), Department of Veterans Affairs (VA). DHCP software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in MUMPS and, via the Kernel, runs on all major MUMPS implementations regardless of vendor. DHCP is composed of packages which undergo a verification process to ensure conformity with namespacing and other DHCP standards and conventions.

DICTIONARY A database of specifications of data and information

processing resources. VA FileMan's database of data

dictionaries is stored in the FILE of files (#1).

DIFROM VA FileMan utility that gathers all package components

and changes them into routines (namespaceI* routines) so that they can be exported and installed in another VA

FileMan environment.

DIRECT MODE UTILITY

A programmer call that is made when working in direct programmer mode. A direct mode utility is entered at the

MUMPS prompt (e.g., >D **^XUP**). Calls that are documented as direct mode utilities *cannot* be used in

application package code.

DOUBLE QUOTE (") A symbol used in front of a Common option's menu text or

synonym to select it from the Common menu. For example, the five character string "TBOX" selects the User's Toolbox

Common option.

DR STRING The set of characters used to define the variable DR when

calling VA FileMan. Since a series of parameters may be included within quotes as a literal string, the variable's definition is often called the DR string. To define the fields within an edit sequence, for example, the programmer may specify the fields using a DR string rather than an input

template.

DUPLICATE RESOLUTION UTILITIES The Merge Shell was developed by the Indian Health Service (IHS) to support their Multi-Facility Integration project. Duplicate Resolution Utilities provide the functionality of combining duplicate records based on conditions established in customized applications.

DUZ A local variable holding the user number that identifies the

signed-on user.

DUZ(0) A local variable that holds the File Manager Access Code of

the signed-on user.

ELECTRONIC SIGNATURE CODE A secret password that some users may need to establish in

order to sign documents via the computer.

ENTRY A VA FileMan record. It is uniquely identified by an

internal entry number (the .001 field) in a file.

ERROR TRAP A mechanism to capture system errors and record facts

about the computing context such as the local symbol table, last global reference, and routine in use. Operating systems provide tools such as the %ER utility. The Kernel provides a generic error trapping mechanism with use of the ^%ZTER global and ^XTER* routines. Errors can be

trapped and, when possible, the user is returned to the menu system.

EXTRINSIC An extrinsic function is an expression that accepts

FUNCTION parameters as input and returns a value as output that can

be directly assigned.

FIELD In a record, a specified area used for the value of a data

attribute. The data specifications of each VA FileMan field are documented in the file's Data Dictionary. A field is similar to blanks on forms. It is preceded by words that tell you what information goes in that particular field. The blank, marked by the cursor on your terminal screen, is

where you enter the information.

FILE A set of related records treated as a unit. VA FileMan files

maintain a count of the number of entries or records.

FILE MANAGER (VA

FILEMAN)

The DHCP's Database Management System (DBMS). The central component of the Kernel that defines the way standard DHCP files are structured and manipulated.

FORCED QUEUING A device attribute indicating that the device can only accept

queued tasks. If a job is sent for foreground processing, the device rejects it and prompts the user to queue the task

instead.

FORM A screen-oriented display (see ScreenMan Forms).

FORUM The central E-mail system within DHCP. It is used by

developers to communicate at a national level about programming and other issues. FORUM is located at the

Washington, DC ISC (162-2).

FREE TEXT The use of any combination of numbers, letters, and

symbols when entering data.

GLOBAL VARIABLE A variable that is stored on disk (MUMPS usage).

GO-HOME JUMP A menu jump that returns the user to the Primary menu

presented at sign-on. It is specified by entering two uparrows (^^) at the menu's select prompt. It resembles the rubber band jump but without an option specification after

the up-arrows.

HELP FRAMES Entries in the HELP FRAME file (#9.2) that may be

distributed with application packages to provide on-line documentation. Frames may be linked with other related

frames to form a nested structure.

HELP PROCESSOR A Kernel module that provides a system for creating and

displaying on-line documentation. It is integrated within the menu system so that help frames associated with options can be displayed with a standard query at the

menu's select prompt.

HOOK OR LINK Non-specific terms referring to ways in which files may be

related (via pointer links) or can be accessed (via hooks).

HOST FILE SERVER

(HFS)

A procedure available on layered systems whereby a file on the host system can be identified to receive output. It is implemented by the Device Handler's **H**ost **F**ile **S**erver

(HFS) device type.

HUNT GROUP An attribute of an entry in the DEVICE file (#3.5) that

allows several devices to be used interchangeably; useful for sending network mail or printing reports. If the first hunt group member is busy, another member may stand in as a

substitute.

ICD International Classification of Diseases

IDCU The Integrated Data Communications Utility which is a

wide area network used by VA for transmitting data

between VA sites.

IHS Indian Health Service

INDEX (%INDEX) A Kernel utility used to verify routines and other MUMPS

code associated with a package. Checking is done according

to current ANSI MUMPS standards and DHCP

programming standards (see SAC). This tool can be invoked

through an option or from direct mode (>D ^%INDEX).

INIT Initialization of an application package. INIT* routines are

built by VA FileMan's DIFROM and, when run, recreate a

set of files and other package components.

INTERNAL ENTRY NUMBER (IEN) The number used to identify an entry within a file. Every record has a unique internal entry number.

IRM

Information Resource Management. A service at VA medical centers responsible for computer management and system security.

JUMP START

A logon procedure whereby the user enters the "access code; verify code; option" to go immediately to the target option, indicated by its menu text or synonym. The jump syntax can be used to reach an option within the menu trees by entering "access; verify; option".

KERMIT

A standard file transfer protocol. It is supported by the Kernel and can be set up as an alternate editor.

KERNEL

A set of DHCP MUMPS software routines that function as an intermediary between the host operating system and the DHCP application packages enabling packages to coexist in a standard OS-independent computing environment. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying MUMPS implementations.

KEY

The purpose of Security Keys is to set a layer of protection on the range of computing capabilities available with a particular software package. The availability of options is based on the level of system access granted to each user.

KEYWORD

A word or phrase used to call up several codes from the reference files in the LOCAL LOOKUP file (#8984.4). One specific code may be called up by several different keywords.

LINK

Non-specific term referring to ways in which files may be related (via pointer links). Files have links into other files.

LOCAL LOOKUP FILE The file into which sites enter selected reference files to be used in the look-up process.

MAIL MESSAGE

An entry in the MESSAGE file (#3.9). The DHCP electronic mail system (MailMan) supports local and remote networking of messages.

MAILMAN

The Kernel module that provides a mechanism for handling electronic communication, whether it is user-oriented mail messages, automatic firing of bulletins, or initiation of server-handled data transmissions.

MANAGER ACCOUNT A UCI that can be referenced by non-manager accounts such as production accounts. Like a library, the MGR UCI holds percent routines and globals (e.g., ^%ZOSF) for shared use by other UCIs.

shared use by other UCIs.

MENU

A list of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).

MENU CYCLE

The process of first visiting a menu option by picking it from a menu's list of choices and then returning to the menu's select prompt. Menu Manager keeps track of information, such as the user's place in the menu trees, according to the completion of a cycle through the menu system.

MENU MANAGER

The Kernel module that controls the presentation of user activities such as menu choices or options. Information about each user's menu choices is stored in the Compiled Menu System, the ^XUTL global, for easy and efficient access.

MENU SYSTEM

The overall Menu Manager logic as it functions within the Kernel framework.

MENU TEMPLATE

An association of options as pathway specifications to reach one or more final destination options. The final options must be executable activities and not merely menus for the template to function. Any user may define user-specific menu templates via the corresponding Common option.

MENU TEXT

The descriptive words that appear when a list of option choices is displayed; specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.

MENU TREES

The menu system's hierarchical tree-like structures that can be traversed or navigated, like pathways, to give users easy access to various options. MULTI-TERM LOOK-UP (MTLU) Multi-Term Look-Up (MTLU) is an adaptation of a tool developed by the Indian Health Service (IHS) which was made generic by the Albany ISC. Multi-Term Look-Up provides a method of enhancing the look-up capabilities of associated VA FileMan files.

MULTIPLE

A multiple-valued field; a subfile. In many respects, a multiple is structured like a file.

MUMPS (ANSI STANDARD)

A programming language recognized by the American National Standards Institute (ANSI). The acronym MUMPS stands for Massachusetts General Hospital Utility Multi-programming System.

NAMESPACING

A convention for naming DHCP package elements. The DBA assigns unique character strings for package developers to use in naming routines, options, and other package elements so that packages may coexist. The DBA also assigns a separate range of file numbers to each package.

NODE

In a tree structure, a point at which subordinate items of data originate. A MUMPS array element is characterized by a name and a unique subscript. Thus the terms: node, array element, and subscripted variable are synonymous. In a global array, each node might have specific fields or "pieces" reserved for data attributes such as name.

OPERATING SYSTEM (OS)

A basic program that runs on the computer, controls the peripherals, allocates computing time to each user, and communicates with terminals.

OPERATING SYSTEM INDEPENDENCE (OS-INDEPENDENT) A key goal of DHCP. An insulation from specific features of the underlying operating system that allows application packages to run in different OS environments. The Kernel provides the interface mainly with use of the ^%ZOSF global.

OPTION

An entry in the OPTION file (#19). As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.

OPTION NAME

The Name field in the OPTION file (#19) (e.g., XUMAINT for the option that has the menu text "Menu Management"). Options are namespaced according to DHCP conventions monitored by the DBA.

PAC

Programmer Access Code. An optional user attribute that may function as a second level password into programmer mode.

The set of programs, files, documentation, help prompts,

PACKAGE

and installation procedures required for a given software application. A DHCP software environment composed of elements specified via the Kernel's PACKAGE file (#9.4). Elements include files and associated templates, namespaced routines, and namespaced file entries from the OPTION (#19), SECURITY KEY (#19.1), HELP FRAME (#9.2), BULLETIN (#3.6), and FUNCTION (#.5) files. Packages are transported using VA FileMan's DIFROM routine that creates initialization routines to bundle the files and records for export. Installing a package involves the running of the installation routines that create the required software environment. Verified packages include documentation. As public domain software, verified packages may be requested through the Freedom of Information Act (FOIA).

PERIPHERAL DEVICE Any hardware device other than the computer itself (central processing unit plus internal memory). Typical examples include card readers, printers, CRT units, and disk drives.

PHANTOM JUMP

Menu jumping in the background. Used by the menu system to check menu pathway restrictions.

POINTER

A relationship between two VA FileMan files that makes navigation possible via the pointer (forward or backward).

PRIMARY MENUS

The list of options presented at sign-on. Each user must have a primary menu in order to sign-on and reach Menu Manager. Users are given primary menus by IRM. This menu should include most of the computing activities the user needs.

PRODUCTION ACCOUNT

The UCI where users log on and carry out their work, as opposed to the Manager, or Library, account.

PROGRAMMER ACCESS The ability to use DHCP features reserved for programmers. Having the programmer's at-sign, when DUZ(0)=@, enables programmer access.

PROMPT

The computer interacts with the user by issuing questions called *prompts*, to which the user issues a response.

PROTOCOL An entry in the PROTOCOL file (#101). Used by the Order

Entry/Results Reporting (OE/RR) package to support the ordering of medical tests and other activities. The Kernel includes several protocol-type options for enhanced menu

displays within the OE/RR package.

QUEUING Requesting that a job be processed in the background

rather than in the foreground within the current session. Jobs are processed sequentially (first-in, first-out). The Karnel's Task Manager handles the quoying of tasks

Kernel's Task Manager handles the queuing of tasks.

QUEUING An option attribute that specifies that the option must be REQUIRED processed by TaskMan (the option can only be queued). The

option may be invoked and the job prepared for processing, but the output can only be generated during the specified

time periods.

RECORD A set of related data treated as a unit. An entry in a VA

FileMan file constitutes a record. A collection of data items that refer to a specific entity (e.g., in a name-address-phone number file, each record would contain a collection of data

relating to one person).

RESOURCE A method that enables sequential processing of tasks. The

processing is accomplished with a RES device type designed by the application programmer and implemented by IRM. The process is controlled via the RESOURCE file (#3.54).

On the computer keyboard, the key located where the carriage return is on an electric typewriter. It is used in

DHCP to terminate "reads" and is symbolized by <RET>.

ROUTINE A program or a sequence of instructions called by a

program, that may have some general or frequent use. MUMPS routines are groups of program lines which are saved, loaded, and called as a single unit via a specific

name.

RUBBER BAND

JUMP

RETURN

A menu jump used to go out to an option and then return, in a bouncing motion. The syntax of the jump is two uparrows followed by an option's menu text or synonym (e.g., ^^Print Option File). If the two up-arrows are not followed

by an option specification, the user is returned to the

primary menu (see Go-home Jump).

SAC

Standards and Conventions. Through a process of verification, DHCP packages are reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC). Package documentation is similarly reviewed in terms of standards set by the Documentation Standards and Conventions Committee (DSCC).

SACC

DHCP's Standards and Conventions Committee. This Committee is responsible for maintaining the document called SAC.

SCHEDULING OPTIONS This is a technique of requesting that TaskMan run an option at a given time, perhaps with a given rescheduling frequency, such as once per week.

SCREENMAN FORMS A screen-oriented display of fields, for editing or simply for reading. VA FileMan's Screen Manager is used to create forms that are stored in the FORM file (#.403) and exported with a package. Forms are composed of blocks [stored in the BLOCK file (#.404)] and can be regular, full screen pages or smaller, pop-up pages for multiples.

SECONDARY MENUS Options assigned to individual users to tailor their menu choices. If a user needs a few options in addition to those available on the Primary menu, the options can be assigned as secondary options. To facilitate menu jumping, secondary menus should be specific activities, not elaborate and deep menu trees.

SECURITY KEY

The purpose of Security Keys is to set a layer of protection on the range of computing capabilities available with a particular software package. The availability of options is based on the level of system access granted to each user.

SERVER

An entry in the OPTION file (#19). An automated mail protocol that is activated by sending a message to a server at another location with the "S.server" syntax. A server's activity is specified in the OPTION file (#19) and can be the running of a routine or the placement of data into a file.

SET OF CODES

Usually a preset code with one or two characters. The computer may require capital letters as a response (e.g., M for male and F for female). If anything other than the acceptable code is entered, the computer rejects the response.

SHORTCUT A word used to call up one specific code from the reference

files in the LOCAL LOOKUP file (#8984.4).

SIGN-ON/SECURITY The Kernel module that regulates access to the menu

system. It performs a number of checks to determine whether access can be permitted at a particular time. A log

of sign-ons is maintained.

SITE MANAGER/

IRM CHIEF

At each site, the individual who is responsible for managing

computer systems, installing and maintaining new

modules, and serving as liaison to the ISCs.

SPECIAL QUEUING An option attribute indicating that TaskMan should

automatically run the option whenever the system reboots.

SPOOLER An entry in the DEVICE file (#3.5). It uses the associated

operating system's spool facility, whether it is a global, device, or host file. The Kernel manages spooling so that the underlying OS mechanism is transparent. In any environment, the same method can be used to send output to the spooler. The Kernel subsequently transfers the text to the ^XMBS global for subsequent despooling (printing).

Spooling (under any system) provides an intermediate storage location for files (or program output) for printing at

a later time.

SUBSCRIPT A symbol that is associated with the name of a set to

identify a particular subset or element. In MUMPS, a numeric or string value that: Is enclosed in parentheses, is appended to the name of a local or global variable, and

identifies a specific node within an array.

SYNONYM A field in the OPTION file (#19). Options may be selected

by their menu text or synonym (see Menu Text).

In the case of Multi-Term Look-Up (MTLU), it is a word used to expand the call-up capability of existing terms in

the LOCAL LOOKUP file (#8984.4).

TASKMAN The Kernel module that schedules and processes

background tasks (also called Task Manager).

TEMPLATES

In VA FileMan, a means of storing report formats, data entry formats, and sorted entry sequences. A template is a permanent place to store selected fields for use at a later time. Edit sequences are stored in the INPUT TEMPLATE file (#.402), print specifications are stored in the PRINT TEMPLATE file (#.4), and search or sort specifications are stored in the SORT TEMPLATE file (#.401).

TIMED-READ

The amount of time the Kernel waits for a user response to an interactive READ command before starting to halt the process (times out).

TOOLKIT

Toolkit is a robust set of tools developed to aid the Decentralized Hospital Computer Program (DHCP) development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. It is a set of generic tools that are used by developers, documenters, verifiers, and packages to support distinct tasks.

Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the San Francisco Information Systems Center (ISC) for internal management and have proven valuable. Toolkit also includes tools provided by other ISCs based on their proven utility.

TREE STRUCTURE

A term sometimes used to describe the structure of a MUMPS array. This has the same structure as a family tree, with the root at the top, and ancestor nodes arranged below, according to their depth of subscripting. All nodes with one subscript are at the first level, all nodes with two subscripts at the second level, and so on.

TRIGGER

A type of VA FileMan cross reference. Often used to update values in the database given certain conditions (as specified in the trigger logic). For example, whenever an entry is made in a file, a trigger could automatically enter the current date into another field holding the creation date.

TYPE-AHEAD

A buffer used to store characters that are entered before the corresponding prompt appears. Type-ahead is a shortcut for experienced users who can anticipate an expected sequence of prompts.

UCI

User Class Identification, a computing area. The MGR UCI is typically the Manager's account, while VAH or ROU may be Production accounts.

UP-ARROW JUMP

In the menu system, entering an up-arrow (^) followed by an option name accomplishes a jump to the target option without needing to take the usual steps through the menu pathway.

USER ACCESS

This term is used to refer to a limited level of access to a computer system which is sufficient for using/operating a package, but does not allow programming, modification to data dictionaries, or other operations that require programmer access. Any option, for example, can be locked with the key XUPROGMODE, which means that invoking that option requires programmer access.

The user's access level determines the degree of computer use and the types of computer programs available. The Systems Manager assigns the user an access level.

USER INTERFACE

The way the package is presented to the user such as issuing of prompts, help messages, menu choices, etc. A standard user interface can be achieved by using VA FileMan for data manipulation, the menu system to provide option choices, and VA FileMan's Reader, the ^DIR utility, to present interactive dialogue.

VA FILEMAN

A set of programs used to enter, maintain, access, and manipulate a database management system consisting of files. A package of on-line computer routines written in the MUMPS language which can be used as a stand-alone database system or as a set of application utilities. In either form, such routines can be used to define, enter, edit, and retrieve information from a set of computer stored files.

VARIABLE

A character, or group of characters, that refer to a value. MUMPS recognizes three types of variables:

- 1. local variables
- 2. global variables
- 3. special variables

Local variables exist in a partition of main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays. The term "global" may refer either to a global variable or a global array. A special variable is defined by systems operations (e.g., \$TEST).

VENDOR

A goal of DHCP: to develop a system that does not assume INDEPENDENCE the existence of a particular hardware/software platform supplied by a particular vendor. (See Operating System

Independence.)

VERIFICATION

A process of DHCP package review carried out by technical staff not directly involved in the development of the package. Software and associated documentation are reviewed in terms of the *Programming Standards and* Conventions (SAC).

VERIFY CODE

The Kernel's Sign-on/Security system uses the verify code to validate the user's identity. This is an additional security precaution used in conjunction with the Access Code. Like the Access Code, it is also 6 to 20 characters in length. If entered incorrectly, it does not allow the user to access the computer. To protect the user, both codes are invisible on the terminal screen.

Z EDITOR (^%Z)

A Kernel tool used to edit routines or globals. It can be invoked with an option, or from direct mode after loading a routine with $> X ^{\circ} Z$.

ZOSF GLOBAL (^%ZOSF)

The MUMPS OPERATING SYSTEM File (#.7) is a Manager account global distributed with the Kernel to provide an interface between DHCP application packages and the underlying operating system. This global is built during Kernel installation when running the manager setup routine (ZTMGRSET). The nodes of the global are filled-in with operating system-specific code to enable interaction with the operating system. Nodes in the ^%ZOSF global may be referenced by programmers so that separate versions of the package need not be written for each operating system (see Operating System Independence).

Glossary

Index

Index

Index	[XTFCE], 178
	[XTFCR], 178
•	[XT-KERMIT EDIT], 206
A	[XT-KERMIT MENU], 206
	[XT-KERMIT RECEIVE], 207
%G, 201	[XT-KERMIT SEND], 207
%GL, 201	[XTLKLKUP], 12, 17
%INDEX of Routines option, 179	[XTLKMODKY], 12, 29
%INDEX Utility, 179, 180, 199	[XTLKMODPARK], 12, 21, 22
%RR, 186	[XTLKMODPARS], 12, 21, 23
%RS, 186, 187	[XTLKMODSH], 12, 27
%ZTER, 196	[XTLKMODSY], 12, 30
%ZTP1, 185	[XTLKMODUTL], 12, 21, 25
%ZTPP, 185	[XTLKPRTUTL], 12, 19
%ZTRDEL, 186	[XTLKUSER2], 15, 21
[XDR ADD VERIFIED DUPS], 75	[XTLKUTILITIES], 21
[XDR AUTO MERGE], 72, 83	[XTMENU], 15, 21, 54
[XDR CHECK PAIR], 73	[XT-NUMBER BASE CHANGER], 202
[XDR DISPLAY SEARCH STATUS],	[XTRDEL], 186
55	[XTRGRPE], 184
[XDR EDIT DUP RECORD STATUS],	[XT-ROUTINE COMPARE], 185
77	[XTSUMBLD], 198
[XDR EDIT DUP RESOLUTION	[XTSUMBLD-CHECK], 195
FILE], 85	[XTV EDIT VERIF PACKAGE], 194
[XDR FIND POTENTIAL	[XTV MENU], 192
DUPLICATES], 75	[XT-VARIABLE CHANGER], 184
[XDR MAIN MENU], 54	[XT-VERSION NUMBER], 185
[XDR MANAGER UTILITIES], 54	[XTVG COMPARE], 194
[XDR MERGE READY	[XTVG UPDATE], 194
DUPLICATES], 72	[XTVR COMPARE], 192, 193
[XDR MERGE SELECTED PAIR], 72	[XTVR MOST RECENT CHANGE
[XDR OPERATIONS MENU], 54	DATE], 193, 227
[XDR PRINT LIST], 79	[XTVR RESTORE PREV ROUTINE],
[XDR PURGE], 86	193
[XDR SEARCH ALL], 57	[XTVR UPDATE], 192, 193
[XDR TALLY STATUS FIELDS], 81	[XU FIRST LINE PRINT], 185
[XDR UTILITIES MENU], 54	[XUCM ANALYSE], 105
[XDR VERIFY ALL], 63	XUCM COMPUTE LOCAL
[XDR VERIFY SELECTED PAIR], 66	REFERENCES], 103
[XDR VIEW DUPLICATE RECORD],	[XUCM DISK], 128
78	[XUCM EDIT DISK THRESHOLD],
[XTCM DISK2MAIL], 107	102
[XTCM MAIN], 107, 155	[XUCM EDIT REF THRESH], 102
[XTCM], 169	[XUCM EDIT VOL SET THRESH],
[221 (211], 100	102

[XUCM GRAF MET AVE], 128	[XURTLK], 170
[XUCM LIST DAILY STATS], 127	[XURTLM], 107, 169
[XUCM LIST RAW], 126	[XURTLMA], 170
[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE, VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198

Calculate and Show Checksum Values	RESPONSE TIME
option, 195	GRAPH] ;, 151
Callable Entry Points	CPU/DISK Utilization
Kermit, 211	Report (By
RECEIVE^XTKERMIT, 211	Date/VG);.i.[XUCSRB
SEND^XTKERMIT, 211	REPORTS BY
T0^%ZOSV Start RT Measure, 173	(DATE,VG)];.i.[XUCSRB
T1^%ZOSV Stop RT Measure, 174	CPU/DISK REPORT];,
XRT0 Output Variable, Start Time,	135, 136
173	CPU/DISK Utilization
XRTN Input Variable, Routine	Report (By
Name, 174	VG/Date);.i.[XUCSRA
XTLKKWL, 39	REPORTS BY
Candidate Collection Routine for	(VG,DATE)];.i.[XUCSRA
Patient Merge	CPU/DISK REPORT];, 143
Example, 219	Global Reference Report (By
Candidate Collection, Selecting Fields	Date/VG);.i.[XUCSRB
to Compare in, 91	REPORTS BY
Capacity Management	(DATE,VG)];.i.[XUCSRB
Capacity Management menu	GREF REPORT];, 137, 138
Move Host File to MailMan	Global Reference Report (By
option, 107	VG/Date);.i.[XUCSRA
Response Time Log Options,	REPORTS BY
107	(VG,DATE)];.i.[XUCSRA
VAX/ALPHA Capacity	GREF REPORT];, 144, 145
Management menu, 107	Response Time Report (By
Direct Mode Utility, Resource	Date/VG);.i.[XUCSRB
Usage	REPORTS BY
D ZHDIF^%ZOSV, 174	(DATE,VG)];.i.[XUCSRB
Hardware Performance Summary	RESPONSE REPORT];,
Example, 117	139
MSM Capacity Management	Response Time Report (By
Manager's Menu	VG/Date);,i.[XUCSRA
CM Reports Menu	REPORTS BY
Ave. %CPU & %DISK	(VG,DATE)];.i.[XUCSRA
Graph;.i.[XUCSRG	RESPONSE REPORT];,
GRAPHS	146
MENU];.i.[XUCSRG CPU-	Routine CMNDS/GREF
DISK GRAPH];, 150	Report (By
Ave. Response Time	Date/VG);.i.[XUCSRB
Graph;.i.[XUCSRG	REPORTS BY
GRAPHS	(DATE,VG)];.i.[XUCSRB
MENU];.i.[XUCSRG	ROU CMNDS/GREF
	REPORT];, 140, 141

Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor
ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu; i. Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option
Enter/Edit Menu; option	170
[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU].i.[XUCS SITE EDIT	option, 170
MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(. 3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173

T1^%ZOSV Stop RT	Example, Table format
Measure, 174	with subtotals printed
XRT0 Output Variable,	by node and cumulative
Start Time, 173	station totals (Live
XRTN Input Variable,	execution), 162
Routine Name, 174	Example, Table format
Logging is Enabled, 169	without subtotals (Live
MUMPS Read, 169	execution), 163
Performance Problems, 169	option, 161
Response Time, 169, 173	Sort Raw Resource Usage
RT logging, 173, 174	Data
System Performance, 169	Example, Live execution,
User Termination, 169	159
XRTL variable, 173	Example, Live execution
System Performance Summary	with output of sorted
Example, 117	raw data, 160
VAX/ALPHA Performance Monitor	Example, Queued for
menu	background processing,
Enable/Disable VPM option,	159
112	option, 158
Manual Purge of VPM Data	Write Raw Resource Usage
option, 112	Data
Resource Usage Menu	Example, Live execution,
Enable/Disable Collection of	156
Resource Usage Data	Example, Queued for
Example, Disable	background processing,
collection of data	157
(Queued for background	option, 155
processing), 168	Setup Performance Monitor
Example, Enable	option, 112
collection of data	VPM Reports option, 115
(Queued for background	VPM Reports menu
processing), 167	Bernstein Response Time
option, 167	Reports menu option, 127
Kill Raw Resource Usage	CPU Modes/Compute States
Data	option, 125
Example, Live execution,	Disk Drive Raw Data Statistics
166	menu, 128
option, 166	Graph Workday Averages for
options, 155	Selected Metric option, 128
Print Formatted Report	List Raw RTHIST Data for a
(Table/Graph)	Range of Dates option, 126
Example, Graph format	List Raw System Data option,
subtotaled by node	126
(Live execution), 165	
` '/'	

List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), 201, 203
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	>D ^%RR (OS-specific), 186
CM DAILY STATISTICS file, 109	>D ^%RS (OS-specific), 187,
CM DISK DRIVE RAW DATA file,	190
115	>D ^%ZTER, 199
CM METRICS file, 103, 110	>D ^% ZTP1, 185, 189
CM METRICS List, 110	>D ^% ZTPP, 185, 189
CM NODENAME RAW DATA file,	•
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D ^nsNTEG, 199
Compare Routines on Tape to Disk	>D ^XINDEX, 199
option, 186	>D ^XTBASE, 202, 203
Compare Two Routines option, 185	>D ^XTCMFILN, 107
Compute New Local References	>D ^XTER, 199
option, 103	>D ^XTERPUR, 199
Configuring the MPM, 131	$>$ D $^{\circ}$ X T F C E , 178, 189
Control File	$>$ D $^{\wedge}$ X T F C R , 178, 189
(See also DUPLICATE	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
, ,	<u> - </u>

DK^XTLKMGR, 43	DUPLICATE RECORD file, 53, 54,
DLL^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
DSH^XTLKMGR, 44	86, 87, 88, 91, 94
DSY^XTLKMGR, 44	DUPLICATE RECORD File, 79
Duplicate Checker, How to check a	Duplicate Records, 53
pair of records using the., 73	DUPLICATE RESOLUTION file,
Duplicate Checking Algorithm, 53	53, 72, 90, 92, 94
Duplicate Pairs, Duplicate Resolution	Duplicate Threshold%, 53, 85, 94
Utilities	Edit Duplicate Record Status
How to Verify Duplicate Pairs, 63	Example, 77
Duplicate Pairs, How to Verify, 63	option, 77
DUPLICATE RECORD file, 53, 54, 63,	Edit Duplicate Resolution File
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	Example, 85
88, 89, 91, 94	option, 85
DUPLICATE RECORD File, 79	Find Potential Duplicates for an
Duplicate Records, 53	Entry in a File
DUPLICATE RESOLUTION file, 53,	Example, 75
72, 90, 92, 94	option, 75
Duplicate Resolution System menu	Manager Utilities menu
Manager Utilities menu, 54, 83	AUTO Automatically Merge
Operations menu, 54, 55	Already Verified Duplicates
options, 54	option, 72, 83
Utilities menu, 54, 73	FILE Edit Duplicate
Duplicate Resolution Utilities	Resolution File option, 85
Add Verified Duplicate Pair option,	PRGE Purge Duplicate Record
75	File option, 86
Automatically Merge Already	Merge (Ready to Merge) Verified
Verified Duplicates	Duplicates option, 72
Example, 83	Merge Capability, Developing, 87
option, 72, 83	Merge Process, 53, 71
Candidate Collection, Selecting	Merge Process, Interactive, 71
Fields to Compare in, 91	Merge Selected Verified Duplicate
Check Pair of Records to see if	Pair option, 72
Duplicates	Merge, Customized, 53
Example, 74	Merged-From Record, 53
option, 73	Merged-To Record, 53
Control File	Operations menu
(See also DUPLICATE	DSS Display Search Status
RESOLUTION file), 53	option, 55
Customized Merge, 53, 87	MVD Merge (Ready to Merge)
Display Search Status	Verified Duplicates option, 72
Example, 56	SPD Verify Selected Potential
option, 55	Duplicate Pair option, 66
Duplicate Checking Algorithm, 53	SRCH Start/Halt Duplicate
	Search option, 57

SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63
POTENTIAL DUPLICATE	Verify Selected Potential Duplicate
THRESHOLD%, 53, 85, 94	Pair
Potential Duplicates, 53, 85, 94	Example, 66
Print List of File Duplicates	option, 66
Example, 79	View Duplicate Record Entries
option, 79	Example, 78
Purge Duplicate Record File	option, 78
Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option,
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option
Tally STATUS and MERGE	Edit Duplicate Record Status
STATUS fields	Example, 77
Example, 81	option, 77
Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167

option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option,
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	

Manual Purge of VPM Data option, 112	XTLKZMGR Security Key, 12,
Merge (Ready to Merge) Verified	21, 23 Add/Modify Utility
Duplicates option, 72	Examples, 33
Merge Capability, Duplicate	Keywords example, 33
Resolution Utilities	÷ :
	Keywords option, 12, 25, 29
Developing, 87	option, 21, 25
Merge Process, 53, 71	Shortcuts example, 33
Merge Process, Interactive, 71	Shortcuts option, 12, 25
Merge Process, Verified Duplicates, 71	Synonyms example, 34
Merge Routines, 53	Synonyms option, 12, 25, 30
Merge Selected Verified Duplicate	Callable Entry Point
Pair option, 72	XTLKKWL, 39
Merge Verified Duplicates, Duplicate	Delete Entries From Look-Up
Resolution Utilities	Example, 22
Merge Process, 71	IRM/Developer Utility, 12
Merge, Customized, 53	option, 12, 21, 22
Merging of Duplicates, 53	XTLKZMGR Security Key, 12
Merging Of Duplicates, 53	Direct Mode Utilities
Morning RTHIST Data Capture, 133	>D ^XTLKKWL, 39
Move Host File to MailMan option,	Enhanced API
107	DK^XTLKMGR, 43
MPM Schedule/Unschedule options,	DLL^XTLKMGR, 44
133	DSH^XTLKMGR, 44
MPM, How to configure the, 131	DSY^XTLKMGR, 44
MSM Capacity Management	K^XTLKMGR, 41
Manager's Menu	L^XTLKMGR, 43
options;, 129	LKUP^XTLKMGR, 45
MSM RTHIST REPORT DATA file,	SH^XTLKMGR, 42
129	SY^XTLKMGR, 42
MSM RTHIST SITE file, 129	Example, 18
MSM Site Parameters Enter/Edit	Functional Description, 12
Menu, 131	Keywords, 11, 25
Multiday RT Averages option, 170	Associated with a Single Term
Multi-Term Lookup (MTLU)	and Multiple Terms, 14
option, 17	Example, 33
Multi-Term Look-Up (MTLU), 12	option, 29
Add Entries To Look-Up File	Lexical Variants, 13
Example, 25	LOCAL KEYWORD file, 12, 14, 21
IRM/Developer Utility, 12, 21,	22, 26, 41, 43
23	LOCAL LOOKUP file, 11, 12, 17,
option, 12, 21, 23	19,21,25,37,39,41,43,44,45
Set Entries in the LOCAL	LOCAL LOOKUP File, 23
LOOKUP file, 21, 23	LOCAL SHORTCUT file, 12, 13,
	14, 17, 21, 22, 42, 44

LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	Associated with Multiple
MTLU, How to Override	Terms, 13
FileMan look-ups and MTLU,	Example, 34
39	Multiple Tokens, 13
Multi-Term Lookup (MTLU)	option, 30
option, 12, 17	Utilities for MTLU option
Multi-Term Lookup (MTLU) Main	Add Entries To Look-Up File
Menu	option
Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	$New\ Fields,\ 114$
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	

Print Formatted Report (Table/Graph)	Response Time Log Options menu,
Example, Graph format subtotaled	107
by node (Live execution), 165	Response Time Report (By Date/VG),
Example, Table format with	139
subtotals printed by node and	Response Time Report (By VG/Date),
cumulative station totals (Live	146
execution), 162	Routine Changes File, 192
Example, Table format without	Routine CMNDS/GREF Report (By
subtotals (Live execution), 163	Date/VG), 140, 141
option, 161	Routine CMNDS/GREF Report (By
Print List of File Duplicates	VG/Date), 147, 148
Example, 79	Routine Compare - Current with
option, 79	Previous option, 192, 193
Print RT Report option, 170	Routine Compare Utility, 192
Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178
List Global option <locked td="" with<=""><td>Group Routine Edit option, 184</td></locked>	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184
option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	

Selecting Fields to Compare in	Stop RT Measure, 174
Candidate Collection, Duplicate	Tally STATUS and MERGE STATUS
Resolution Utilities, 91	fields
Send Kermit File option, 207	Example, 81
Setup Performance Monitor option,	option, 81
112	TAPE^XTRCMP, 186
SH^XTLKMGR, 42	Tasked CM File Update, 134
Shortcuts, Multi-Term Look-Up	Tokenizing Routine, 13
(MTLU), 11, 12, 25	Two Standard Deviation Rule, 101
Example, 33, 42, 44	UNDO Edits (Restore to Older Version
Point to a Single Word or Phrase,	of Routine) option, 193
13	Update with Current Routines option,
Site/Event Rate Summary	192, 193
[XUCMBR2A], 128	User Termination, 169
Sort Raw Resource Usage Data	Utilities For MTLU option, 21
Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	

Verify Selected Potential Duplicate	В
Pair	
Example, 66	%G, 201
option, 66	%GL, 201
Version Number Update option, 185	%INDEX of Routines option, 179
VG/DATE MSM CM Reports, 143	%INDEX Utility, 179, 180, 199
View Duplicate Record Entries	%RR, 186
Example, 78	%RS, 186, 187
option, 78	%ZTER, 196
VMS monitor, 115	%ZTP1, 185
VPM Reports option, 115	%ZTPP, 185
VPM Schedule/Unschedule options,	%ZTRDEL, 186
114	[XDR ADD VERIFIED DUPS], 75
Write Raw Resource Usage Data	[XDR AUTO MERGE], 72, 83
Example, Live execution, 156	[XDR CHECK PAIR], 73
Example, Queued for background	[XDR DISPLAY SEARCH STATUS],
processing, 157	55
option, 155	[XDR EDIT DUP RECORD STATUS]
XRTL variable, 169, 173	77
XTBASE, 202	XDR EDIT DUP RESOLUTION
XTER, 196	FILE], 85
XTERPUR, 196	XDR FIND POTENTIAL
XTLKER() array, 41	DUPLICATES], 75
XTLKTOKN, 13	[XDR MAIN MENU], 54
XTLKZMGR, 12, 21	[XDR MANAGER UTILITIES], 54
XTRCMP, 186	XDR MERGE READY
XTSUMBLD, 195	DUPLICATES], 72
XTV ROUTINE CHANGES file, 192	[XDR MERGE SELECTED PAIR], 72
XTV VERIFICATION PACKAGE file,	[XDR OPERATIONS MENU], 54
194	[XDR PRINT LIST], 79
XTVCHG, 184	[XDR PURGE], 86
XTVNUM, 185	[XDR SEARCH ALL], 57
XUCM TASK NIT, 115, 117	[XDR TALLY STATUS FIELDS], 81
XUCM TASK VPM, 115	[XDR UTILITIES MENU], 54
XUGET, 197	[XDR VERIFY ALL], 63
XUMGR key, 191	[XDR VERIFY SELECTED PAIR], 66
XUPROG key, 177, 186, 191, 201	[XDR VIEW DUPLICATE RECORD],
XUPROGMODE key, 177, 184, 185,	78
186, 191, 196, 201, 202	[XTCM DISK2MAIL], 107
XURTLC, 171	[XTCM MAIN], 107, 155
XURTLK, 171	[XTCM], 169
	[XTFCE], 178
	[XTFCR], 178
	[XT-KERMIT EDIT], 206

[XT-KERMIT MENU], 206 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XUCM PERFORMANCE MONITOR], [XTLKMODPARS], 12, 21, 23 [XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XUCPMENU], 109, 155 [XTSUMBLD-CHECK], 195 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XUCSR REPORTS MENU], 135 [XT-VERSION NUMBER], 185 [XUCSRA REPORTS BY (VG,DATE)], [XTVG COMPARE], 194 [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** 135 [XUCSRG GRAPHS MENU], 150 DATE], 193, 227 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 193 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES, 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 [XUROUTINES], 197 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XURTLC], 170 [XUCM EDIT VOL SET THRESH], [XURTLCK], 170 102 [XUCM GRAF MET AVE], 128 [XURTLK], 170 [XUCM LIST DAILY STATS], 127 [XURTLM], 107, 169 [XUCM LIST RAW], 126 [XURTLMA], 170

[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	D ZHDIF^%ZOSV, 174
AM MSM RTHIST Task Option,	Hardware Performance Summary
133	Example, 117
Application Utilities menu, 15	MSM Capacity Management
Auto Purge of CM Data, 134	Manager's Menu
Automatically Merge Already Verified	CM Reports Menu
Duplicates	Ave. %CPU & %DISK
Example, 83	Graph;.i.[XUCSRG
option, 72, 83	GRAPHS
Ave. %CPU & %DISK Graph, 150	MENU];.i.[XUCSRG CPU-
Ave. Response Time Graph, 151	DISK GRAPH];, 150
Bernstein Response Time Reports	Ave. Response Time
menu option, 127	Graph;.i.[XUCSRG
Bernstein RT Statistics (detailed) [XUCMBR2], 127	GRAPHS MENH : PALCORO
Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH]; , 151 CPU/DISK Utilization
option, 195	
Callable Entry Points	Report (By
Carranto mining i Orinoo	

Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	System Statistical Report
REPORTS BY	(By VG/Date);.i.[XUCSRA
(VG,DATE)];.i.[XUCSRA	REPORTS BY
CPU/DISK REPORT];, 143	(VG,DATE)];.i.[XUCSRA
Global Reference Report (By	SYS STAT REPORT];, 149
Date/VG);.i.[XUCSRB	CM Reports Menu;. The options
REPORTS BY	are described in the same
(DATE,VG)];.i.[XUCSRB	order as they appear on the
GREF REPORT];, 137, 138	screen., 135
Global Reference Report (By	CM Reports Menu;.i.Capacity
VG/Date);.i.[XUCSRA	Management
REPORTS BY	MSM Capacity Management
(VG,DATE)];.i.[XUCSRA	Manager's Menu
GREF REPORT];, 144, 145	options, 129
Response Time Report (By	MSM Site Parameters
Date/VG);.i.[XUCSRB	Enter/Edit Menu; option
REPORTS BY	[XUCS SITE EDIT
(DATE,VG)];.i.[XUCSRB	MENU].i.[XUCS SITE EDIT
RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);.i.[XUCSRA	options;.i.MSM Capacity
REPORTS BY	Management Manager's Menu
(VG,DATE)];.i.[XUCSRA	options, 130
RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);.i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102
Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor

Configuring, 112	XRTN Input Variable,
PERFORMANCE MONITOR	Routine Name, 174
Configuring, 131	Logging is Enabled, 169
Resource Usage	MUMPS Read, 169
^XTMP Global, 155, 158, 166	Performance Problems, 169
Date Range, 154	Response Time, 169, 173
Devices, 154	RT logging, 173, 174
Host File Server (HFS)	System Performance, 169
Device, 154	User Termination, 169
LOG RESOURCE USAGE?	XRTL variable, 173
field, 153	System Performance Summary
Measure Resource Consumption	Example, 117
by Package, 153	VAX/ALPHA Performance Monitor
Queuing, 154	menu
Response Time Log Options, 169	Enable/Disable VPM option,
Copy RT Raw Data to FM File	112
option, 170	Manual Purge of VPM Data
Destroy FM Copy of Raw RT	option, 112
Data option, 170	Resource Usage Menu
Enable/Disable RT Logging	Enable/Disable Collection of
option, 169	Resource Usage Data
Graphic RT Report Print option,	Example, Disable
170	collection of data
Kill Raw RT Data, Save Means	(Queued for background
option, 170	processing), 168
Long RT Report Print option,	Example, Enable
170	collection of data
Multiday RT Averages option,	(Queued for background
170	processing), 167
Print RT Report option, 170	option, 167
Response Time Measures, 169	Kill Raw Resource Usage
^%ZRTL global, 171, 174	Data
^%ZRTL(1, RESPONSE TIME	Example, Live execution,
(.3.091)	166
^%ZRTL(2, RT	option, 166
DATE_UCI,VOL, 171	options, 155
^%ZRTL(4, RT RAWDATA, 171	Print Formatted Report
Callable Entry Points	(Table/Graph)
T0^%ZOSV Start RT	Example, Graph format
Measure, 173	subtotaled by node
T1^%ZOSV Stop RT	(Live execution), 165
Measure, 174	Example, Table format
XRT0 Output Variable,	with subtotals printed
Start Time, 173	by node and cumulative

station totals (Live	Locking Data option, 124
execution), 162	Raw Paging/BIO/DIO/FLS/MLS
Example, Table format	option, 125
without subtotals (Live	Check Pair of Records to see if
execution), 163	Duplicates
option, 161	Example, 74
Sort Raw Resource Usage	option, 73
Data	CHECK^XTSUMBLD, 195
Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186
Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16

DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), 201, 203	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63,
>D ^%RR (OS-specific), 186	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D ^%RS (OS-specific), 187,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ATOMITEN, 107 >D ATTER, 199	Duplicate Resolution Utilities
>D ^XTER, 199	Add Verified Duplicate Pair option,
>D ^ X T F C E , 178, 189	75
	Automatically Merge Already
> D ^ X T F C R , 178, 189	Verified Duplicates
>D ^XTLKKWL, 39	Example, 83
>D ^XTRCMP, 186, 189	option, 72, 83
>D ^XTRGRPE, 184, 189	Candidate Collection, Selecting
>D ^XTVCHG, 184, 189	Fields to Compare in, 91
>D ^XTVNUM, 185, 189	Check Pair of Records to see if
>D CHECK^XTSUMBLD, 195, 199	Duplicates
>D MAIL1^XTCMFILN, 107	Example, 74
>D nsNTEG, 197	option, 73
>D ONE^nsNTEG, 197, 199	Control File
>D TAPE^XTRCMP, 186, 190	(See also DUPLICATE
>D^ %RR (OS-specific), 190	RESOLUTION file), 53
>X ^%Z, 184, 189	Customized Merge, 53, 87
Disk Drive Raw Data Statistics menu,	Display Search Status
128	Example, 56
Display Search Status	option, 55
Example, 56	Duplicate Checking Algorithm, 53
option, 55	DUPLICATE RECORD file, 53, 54,
DK^XTLKMGR, 43	63, 66, 72, 73, 75, 77, 78, 81, 85,
DLL^XTLKMGR, 44	86, 87, 88, 91, 94
DSH^XTLKMGR, 44	DUPLICATE RECORD File, 79
DSY^XTLKMGR, 44	Duplicate Records, 53

DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File
Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	TSF Tally STATUS and
Verified Duplicates option, 72	MERGE STATUS fields
SPD Verify Selected Potential	option, 81
Duplicate Pair option, 66	VIEW View Duplicate Record
SRCH Start/Halt Duplicate	Entries
Search option, 57	option, 78
SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63

Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option, 57	Global Compare for Selected Package option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	GRAPHS MENU MSM CM Reports,
Edit Duplicate Resolution File	150
Example, 85	Group Routine Edit option, 184
option, 85	Hardware Performance Summary
Edit Kermit Holding File option, 206	Example, 117
Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background processing), 167	Edit Kermit Holding File option, 206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35

Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72
Example, Live execution, 166	Merge Verified Duplicates, Duplicate
option, 166	Resolution Utilities
Kill Raw RT Data, Save Means option,	Merge Process, 71
170	Merge, Customized, 53
KWIC, 13, 35	Merging of Duplicates, 53
L^XTLKMGR, 43	Merging Of Duplicates, 53
Last Routine Change Date Recorded	Morning RTHIST Data Capture, 133
option, 193, 227	Move Host File to MailMan option,
Line Mode Editing Help, 214	107
List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131
List Raw System Data option, 126	MSM Capacity Management
List Routines option, 185	Manager's Menu
List Volume Set Information option,	options;, 129
127	MSM RTHIST REPORT DATA file,
List Workday Averages for Selected	129
Metric(s) option, 127	MSM RTHIST SITE file, 129
LKUP^XTLKMGR, 37, 39, 45	MSM Site Parameters Enter/Edit
LOCAL KEYWORD file, 12, 14, 21,	Menu, 131
22, 26, 41, 43	Multiday RT Averages option, 170
LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25

Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
	option, 23
Associated with a Single Term and Multiple Terms, 14	<u>-</u>
· ,	Add/Modify Utility option,
Example, 33	21, 25 SV. Symanyma, 20
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL CHOPTOLT (1 12 12	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25
LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	

Associated with Multiple	cumulative station totals (Live
Terms, 13	execution), 162
Example, 34	Example, Table format without
Multiple Tokens, 13	subtotals (Live execution), 163
option, 30	option, 161
Utilities for MTLU option	Print List of File Duplicates
Add Entries To Look-Up File	Example, 79
option	option, 79
Example, 25	Print RT Report option, 170
Add/Modify Utility option	Print Utility, MTLU
Example, Keywords, 33	Example, 20
Example, Shortcuts, 33	option, 12, 19
Example, Synonyms, 34	Producing Reports, Searches, and
Delete Entries From Look-Up	Statistics Through Standardized
option	Encoding of Diagnoses and
Example, 22	Procedures, 11
MUMPS error, 179	Program Integrity Checker option, 197
MUMPS Read, 169	Programmer Options menu, 177, 195,
Name Test Routine for a Patient	201
Merge	Build an 'NTEG' Routine for a
Example, 221	Package option, 198
New Fields, 114	Calculate and Show Checksum
Nodename Average by Day of Week	Values option, 195
[XUCMBR2C], 127	List Global option, 201
NTEG, 197, 198	List Global option <locked td="" with<=""></locked>
Number Base Changer option < Locked	XUPROGMODE>, 201
with XUPROGMODE>, 202	Number Base Changer option, 202
Operations Management menu, 197	Purge Duplicate Record File
Output Routines option, 187	Example, 86
Performance Analysis option, 105	option, 86
Performance Monitor, 112	Raw Paging/BIO/DIO/FLS/MLS
PERFORMANCE MONITOR, 131	option, 125
Performance Problems, 169	Receive Kermit File option, 207
PM MSM RTHIST Task Option,	Resource Consumption Measured by
133	Package, 153
Potential Duplicate Pairs, 53	Resource Usage Menu
POTENTIAL DUPLICATE	options, 155
THRESHOLD%, 53, 85, 94	Resource Usage, Capacity
Print Formatted Report (Table/Graph)	Management, 153
Example, Graph format subtotaled	Response Time, 169
by node (Live execution), 165	Response Time Log Options menu,
Example, Table format with	107
subtotals printed by node and	Response Time Report (By Date/VG), 139

Response Time Report (By VG/Date), 146	Setup Performance Monitor option, 112
Routine Changes File, 192	SH^XTLKMGR, 42
Routine CMNDS/GREF Report (By	Shortcuts, Multi-Term Look-Up
Date/VG), 140, 141	(MTLU), 11, 12, 25
Routine CMNDS/GREF Report (By	Example, 33, 42, 44
VG/Date), 147, 148	Point to a Single Word or Phrase,
Routine Compare - Current with	13
Previous option, 192, 193	Site/Event Rate Summary
Routine Compare Utility, 192	[XUCMBR2A], 128
Routine Edit option, 184	Sort Raw Resource Usage Data
Routine Editor, 213, 215	Example, Live execution, 159
Routine Management Menu, 197	Example, Live execution with
Routine Tools menu	output of sorted raw data, 160
%INDEX of Routines option, 179	Example, Queued for background
Compare Routines on Tape to Disk	processing, 159
option, 186	option, 158
Compare Two Routines option, 185	Standard Device Chart, 16
Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
Flow Chart Entire Routine option,	Example, Halting a search, 60
178	Example, Starting a search, 58
Flow Chart from Entry Point	option, 57
option, 178	SY^XTLKMGR, 42
Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	$T0^{SV}$
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	T1^%ZOSV
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
	Example, 81

option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41
Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195
Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
Accumulate Globals for Package	XTV VERIFICATION PACKAGE file,
option, 194	194
Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	
Verify Potential Duplicates	~
Example, 64	${f C}$
option, 63	
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186

%RS, 186, 187	[XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKPRTUTL], 12, 19
%ZTPP, 185	[XTLKUSER2], 15, 21
%ZTRDEL, 186	[XTLKUTILITIES], 21
[XDR ADD VERIFIED DUPS], 75	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83	[XT-NUMBER BASE CHANGER], 202
[XDR CHECK PAIR], 73	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185
[XDR EDIT DUP RECORD STATUS],	[XTSUMBLD], 198
77	[XTSUMBLD-CHECK], 195
[XDR EDIT DUP RESOLUTION	[XTV EDIT VERIF PACKAGE], 194
FILE], 85	[XTV MENU], 192
[XDR FIND POTENTIAL	[XT-VARIABLE CHANGER], 184
DUPLICATES], 75	[XT-VERSION NUMBER], 185
[XDR MAIN MENU], 54	[XTVG COMPARE], 194
[XDR MANAGER UTILITIES], 54	[XTVG UPDATE], 194
[XDR MERGE READY	[XTVR COMPARE], 192, 193
DUPLICATES], 72	XTVR MOST RECENT CHANGE
[XDR MERGE SELECTED PAIR], 72	DATE], 193, 227
[XDR OPERATIONS MENU], 54	[XTVR RESTORE PREV ROUTINE],
[XDR PRINT LIST], 79	193
[XDR PURGE], 86	[XTVR UPDATE], 192, 193
[XDR SEARCH ALL], 57	[XU FIRST LINE PRINT], 185
[XDR TALLY STATUS FIELDS], 81	[XUCM ANALYSE], 105
[XDR UTILITIES MENU], 54	XUCM COMPUTE LOCAL
[XDR VERIFY ALL], 63	REFERENCES], 103
[XDR VERIFY SELECTED PAIR], 66	[XUCM DISK], 128
[XDR VIEW DUPLICATE RECORD],	[XUCM EDIT DISK THRESHOLD],
78	102
[XTCM DISK2MAIL], 107	[XUCM EDIT REF THRESH], 102
[XTCM MAIN], 107, 155	[XUCM EDIT VOL SET THRESH],
[XTCM], 169	102
[XTFCE], 178	[XUCM GRAF MET AVE], 128
[XTFCR], 178	[XUCM LIST DAILY STATS], 127
[XT-KERMIT EDIT], 206	[XUCM LIST RAW], 126
[XT-KERMIT MENU], 206	[XUCM LIST VOL SET INFO], 127
[XT-KERMIT RECEIVE], 207	[XUCM LOCKS], 124
[XT-KERMIT SEND], 207	[XUCM MAIN], 107, 155
[XTLKLKUP], 12, 17	[XUCM MODES], 125
[XTLKMODKY], 12, 29	[XUCM ON/OFF], 112
[XTLKMODPARK], 12, 21, 22	[XUCM PAGE], 125
[XTLKMODPARS], 12, 21, 23	[XUCM PERFORMANCE MONITOR]
[XTLKMODSH], 12, 27	109

[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	

XRTN Input Variable, Routine	REPORTS BY
Name, 174	(VG,DATE)];.i.[XUCSRA
XTLKKWL, 39	CPU/DISK REPORT];, 143
Candidate Collection Routine for	Global Reference Report (By
Patient Merge	Date/VG);.i.[XUCSRB
Example, 219	REPORTS BY
Candidate Collection, Selecting Fields	(DATE,VG)];.i.[XUCSRB
to Compare in, 91	GREF REPORT];, 137, 138
Capacity Management	Global Reference Report (By
Capacity Management menu	VG/Date);.i.[XUCSRA
Move Host File to MailMan	REPORTS BY
option, 107	(VG,DATE)];.i.[XUCSRA
Response Time Log Options,	GREF REPORT];, 144, 145
107	Response Time Report (By
VAX/ALPHA Capacity	Date/VG);.i.[XUCSRB
Management menu, 107	REPORTS BY
Direct Mode Utility, Resource	(DATE,VG)];.i.[XUCSRB
Usage	RESPONSE REPORT];,
D ZHDIF^%ZOSV, 174	139
Hardware Performance Summary	Response Time Report (By
Example, 117	VG/Date);.i.[XUCSRA
MSM Capacity Management	REPORTS BY
Manager's Menu	(VG,DATE)];.i.[XUCSRA
CM Reports Menu	RESPONSE REPORT];,
Ave. %CPU & %DISK	146
Graph;.i.[XUCSRG	Routine CMNDS/GREF
GRAPHS	Report (By
MENU];.i.[XUCSRG CPU-	Date/VG);.i.[XUCSRB
DISK GRAPH];, 150	REPORTS BY
Ave. Response Time	(DATE,VG)];.i.[XUCSRB
Graph;.i.[XUCSRG	ROU CMNDS/GREF
GRAPHS	REPORT];, 140, 141
MENU];.i.[XUCSRG	Routine CMNDS/GREF
RESPONSE TIME	Report (By
GRAPH]; , 151	VG/Date);.i.[XUCSRA
CPU/DISK Utilization	REPORTS BY
Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	

System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu;.i.Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option,
Enter/Edit Menu; option	170
XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU].i.[XUCS SITE EDIT	option, 170
MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(. 3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169

User Termination, 169	Example, Live execution,
XRTL variable, 173	159
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155
Example, Enable	Setup Performance Monitor
collection of data	option, 112
(Queued for background	VPM Reports option, 115
processing), 167	VPM Reports menu
option, 167	Bernstein Response Time
Kill Raw Resource Usage	Reports menu option, 127
Data	CPU Modes/Compute States
Example, Live execution,	option, 125
166	Disk Drive Raw Data Statistics
option, 166	menu, 128
options, 155	Graph Workday Averages for
Print Formatted Report	Selected Metric option, 128
(Table/Graph)	List Raw RTHIST Data for a
Example, Graph format	Range of Dates option, 126
subtotaled by node	List Raw System Data option,
(Live execution), 165	126
Example, Table format	List Volume Set Information
with subtotals printed	option, 127
by node and cumulative	List Workday Averages for
station totals (Live	Selected Metric(s) option, 127
execution), 162	Locking Data option, 124
Example, Table format	Raw Paging/BIO/DIO/FLS/MLS
without subtotals (Live	option, 125
execution), 163	Check Pair of Records to see if
option, 161	Duplicates
Sort Raw Resource Usage	Example, 74
Data	option, 73
	CHECK^XTSUMBLD, 195

Checksum, 215	>D ^%INDEX, 179, 189, 199
CM DAILY STATISTICS file, 109	>D ^%RR (OS-specific), 186
CM DISK DRIVE RAW DATA file,	>D ^%RS (OS-specific), 187,
115 CM MEDDICS \$1, 102, 110	190
CM METRICS file, 103, 110	>D ^%ZTER, 199
CM METRICS List, 110	$>$ D $^{\circ}$ % Z T P 1 , 185, 189
CM NODENAME RAW DATA file,	$>$ D $^{\circ}$ % Z T P P , 185 , 189
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D n sNTEG, 199
Compare Routines on Tape to Disk	>D ^XINDEX, 199
option, 186	>D ^XTBASE, 202, 203
Compare Two Routines option, 185	>D ^XTCMFILN, 107
Compute New Local References	>D ^XTER, 199
option, 103	>D ^XTERPUR, 199
Configuring the MPM, 131	> D ^ X T F C E , 178, 189
Control File	> D ^ X T F C R , 178, 189
(See also DUPLICATE	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), $201, 203$	Duplicate Pairs, How to Verify, 63

DUPLICATE RECORD file, 53, 54, 63,	Example, 85
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	option, 85
88, 89, 91, 94	Find Potential Duplicates for an
DUPLICATE RECORD File, 79	Entry in a File
Duplicate Records, 53	Example, 75
DUPLICATE RESOLUTION file, 53,	option, 75
72, 90, 92, 94	Manager Utilities menu
Duplicate Resolution System menu	AUTO Automatically Merge
Manager Utilities menu, 54, 83	Already Verified Duplicates
Operations menu, 54, 55	option, 72, 83
options, 54	FILE Edit Duplicate
Utilities menu, 54, 73	Resolution File option, 85
Duplicate Resolution Utilities	PRGE Purge Duplicate Record
Add Verified Duplicate Pair option,	File option, 86
75	Merge (Ready to Merge) Verified
Automatically Merge Already	Duplicates option, 72
Verified Duplicates	Merge Capability, Developing, 87
Example, 83	Merge Process, 53, 71
option, 72, 83	Merge Process, Interactive, 71
Candidate Collection, Selecting	Merge Selected Verified Duplicate
Fields to Compare in, 91	Pair option, 72
Check Pair of Records to see if	Merge, Customized, 53
Duplicates	Merged-From Record, 53
Example, 74	Merged-To Record, 53
option, 73	Operations menu
Control File	DSS Display Search Status
(See also DUPLICATE	option, 55
RESOLUTION file), 53	MVD Merge (Ready to Merge)
Customized Merge, 53, 87	Verified Duplicates option, 72
Display Search Status	SPD Verify Selected Potential
Example, 56	Duplicate Pair option, 66
option, 55	SRCH Start/Halt Duplicate
Duplicate Checking Algorithm, 53	Search option, 57
DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53
DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File

Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option,
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option
Tally STATUS and MERGE	Edit Duplicate Record Status
STATUS fields	Example, 77
Example, 81	option, 77
Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185

Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option,
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	Manual Purge of VPM Data option,
Receive Kermit File option, 207	112
Send Kermit File option, 207	Merge (Ready to Merge) Verified
KERNEL SITE PARAMETERS file,	Duplicates option, 72
153	Merge Capability, Duplicate
Key Word In Context (KWIC), 13, 35	Resolution Utilities
Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72
Tarra and a troposition of bugo Dutu	- AII OPUICII, I =

Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44
MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41
MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu

Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	New Fields, 114
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	Print Formatted Report (Table/Graph)
Example, 33	Example, Graph format subtotaled
Point to a Single Word or	by node (Live execution), 165
Phrase, 13	Example, Table format with
Site Implementation, 35	subtotals printed by node and
Standard Device Chart, 16	cumulative station totals (Live
Synonyms, 11, 25	execution), 162
Associated with Multiple	Example, Table format without
Terms, 13	subtotals (Live execution), 163
Example, 34	option, 161
Multiple Tokens, 13	Print List of File Duplicates
option, 30	Example, 79
Utilities for MTLU option	option, 79
Add Entries To Look-Up File	Print RT Report option, 170
option	

Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178
List Global option <locked td="" with<=""><td>Group Routine Edit option, 184</td></locked>	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184
option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	Selecting Fields to Compare in
Response Time Log Options menu,	Candidate Collection, Duplicate
107	Resolution Utilities, 91
Response Time Report (By Date/VG),	Send Kermit File option, 207
139	Setup Performance Monitor option,
Response Time Report (By VG/Date),	112
146	SH^XTLKMGR, 42
Routine Changes File, 192	Shortcuts, Multi-Term Look-Up
Routine CMNDS/GREF Report (By	(MTLU), 11, 12, 25
Date/VG), 140, 141	Example, 33, 42, 44
Routine CMNDS/GREF Report (By	Point to a Single Word or Phrase,
VG/Date), 147, 148	13
Routine Compare - Current with	Site/Event Rate Summary
Previous option, 192, 193	[XUCMBR2A], 128
Routine Compare Utility, 192	Sort Raw Resource Usage Data

Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up (MTLU), 11, 12, 25, 42, 44	Edit Verification Package File option, 194
	Global Compare for Selected
Associated with Multiple Terms, 13 Example, 34	Package option, 194
± '	
Multiple Tokens, 13	Last Routine Change Date Recorded option, 193
option, 30 System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117 System Statistical Papert (Pro	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149 T0^%ZOSV	Verify Potential Duplicates
	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	

Example, Queued for background	[XDR EDIT DUP RECORD STATUS],
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54
XTLKTOKN, 13	XDR MERGE READY
XTLKZMGR, 12, 21	DUPLICATES], 72
XTRCMP, 186	[XDR MERGE SELECTED PAIR], 72
XTSUMBLD, 195	[XDR OPERATIONS MENU], 54
XTV ROUTINE CHANGES file, 192	[XDR PRINT LIST], 79
XTV VERIFICATION PACKAGE file,	[XDR PURGE], 86
194	[XDR SEARCH ALL], 57
XTVCHG, 184	[XDR TALLY STATUS FIELDS], 81
XTVNUM, 185	[XDR UTILITIES MENU], 54
XUCM TASK NIT, 115, 117	[XDR VERIFY ALL], 63
XUCM TASK VPM, 115	[XDR VERIFY SELECTED PAIR], 66
XUGET, 197	[XDR VIEW DUPLICATE RECORD],
XUMGR key, 191	78
XUPROG key, 177, 186, 191, 201	[XTCM DISK2MAIL], 107
XUPROGMODE key, 177, 184, 185,	[XTCM MAIN], 107, 155
186, 191, 196, 201, 202	[XTCM], 169
XURTLC, 171	[XTFCE], 178
XURTLK, 171	[XTFCR], 178
,	[XT-KERMIT EDIT], 206
	[XT-KERMIT MENU], 206
D	[XT-KERMIT RECEIVE], 207
	[XT-KERMIT SEND], 207
%G, 201	[XTLKLKUP], 12, 17
%GL, 201	[XTLKMODKY], 12, 29
%INDEX of Routines option, 179	[XTLKMODPARK], 12, 21, 22
%INDEX Utility, 179, 180, 199	[XTLKMODPARS], 12, 21, 23
%RR, 186	[XTLKMODSH], 12, 27
%RS, 186, 187	[XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKPRTUTL], 12, 19
%ZTPP, 185	[XTLKUSER2], 15, 21
%ZTRDEL, 186	[XTLKUTILITIES], 21
[XDR ADD VERIFIED DUPS], 75	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83	[XT-NUMBER BASE CHANGER], 202
[XDR CHECK PAIR], 73	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185

[XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XUCPSORT], 158 [XTV MENU], 192 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XT-VERSION NUMBER], 185 [XUCSR REPORTS MENU], 135 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** DATE], 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 193 [XUINTEG], 197 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 [XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES, 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 102 [XUROUTINES], 197 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XUCM EDIT VOL SET THRESH], [XURTLC], 170 [XURTLCK], 170 102 [XUCM GRAF MET AVE], 128 [XURTLK], 170 [XUCM LIST DAILY STATS], 127 [XURTLM], 107, 169 [XUCM LIST RAW], 126 [XURTLMA], 170 [XUCM LIST VOL SET INFO], 127 [XURTLP], 170 [XUCM LOCKS], 124 [XURTLPG], 170 [XURTLPL], 170 [XUCM MAIN], 107, 155 [XUSITEMGR], 197 [XUCM MODES], 125 [XUCM ON/OFF], 112 ^%Z Editor, 184, 213, 215 [XUCM PAGE], 125 ^%Z Global, 213 [XUCM PERFORMANCE MONITOR], ^%ZOSV, 170, 174 ^%ZRTL, 169, 170, 171, 174 109 [XUCM PURGE], 112 ^%ZRTL(1, RESPONSE TIME (. [XUCM RAW RTHIST DATA], 126 3.091) [XUCM REPORTS], 115 ^%ZRTL(2, RT DATE UCI, VOL, 171 [XUCM SET ALERTS], 104 ^%ZRTL(4, RT RAWDATA, 171 [XUCM SETUP], 112 ^XINDEX, 182 ^XTLKDICL, 13, 37, 43, 45 [XUCMBR MENU], 127 [XUCMBR2], 127 ^XTLKMGR, 41, 42 [XUCMBR2A], 128 ^XTLKWIC, 35 [XUCMBR2C], 127 ^XTMP Global, 155, 158, 166 [XUCPFORMATTED], 161 ^XUP, 196

Accumulate Globals for Package	Move Host File to MailMan
option, 194	option, 107
ACTION menu, 215	Response Time Log Options,
Add Entries To Look-Up File option,	107
12, 21, 23	VAX/ALPHA Capacity
Add Verified Duplicate Pair option, 75	Management menu, 107
Add/Modify Utility option, 12, 21, 25	Direct Mode Utility, Resource
ALTERNATE EDITOR file, 209	Usage
AM MSM RTHIST Task Option,	D ZHDIF^%ZOSV, 174
133	Hardware Performance Summary
Application Utilities menu, 15	Example, 117
Auto Purge of CM Data, 134	MSM Capacity Management
Autoratically Merge Already Verified	Manager's Menu
Duplicates Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
± '	
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	Ave. Response Time
Bernstein RT Statistics (detailed)	Graph;.i.[XUCSRG GRAPHS
[XUCMBR2], 127	
Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG RESPONSE TIME
Package option, 198	
Calculate and Show Checksum Values	GRAPH];, 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];,i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];,i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);.i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];,i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
	VG/Date);.i.[XUCSRA

REPORTS BY	MSM Capacity Management
(VG,DATE)];.i.[XUCSRA	Manager's Menu
GREF REPORT];, 144, 145	options, 129
Response Time Report (By	MSM Site Parameters
Date/VG);.i.[XUCSRB	Enter/Edit Menu; option
REPORTS BY	[XUCS SITE EDIT
(DATE,VG)];.i.[XUCSRB	MENU].i.[XUCS SITE EDIT
RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);,i.[XUCSRA	options;.i.MSM Capacity
REPORTS BY	Management Manager's Menu
(VG,DATE)];.i.[XUCSRA	options, 130
RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);,i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102
Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);,i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor
ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu;.i.Capacity	option, 170
Management	

Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	Example, Enable
Long RT Report Print option,	collection of data
170	(Queued for background
Multiday RT Averages option,	processing), 167
170	option, 167
Print RT Report option, 170	Kill Raw Resource Usage
Response Time Measures, 169	Data
^%ZRTL global, 171, 174	Example, Live execution,
^%ZRTL(1, RESPONSE TIME	166
(. 3.091)	option, 166
^%ZRTL(2, RT	options, 155
DATE_UCI,VOL, 171	Print Formatted Report
^%ZRTL(4, RT RAWDATA, 171	(Table/Graph)
Callable Entry Points	Example, Graph format
T0^%ZOSV Start RT	subtotaled by node
Measure, 173	(Live execution), 165
T1^%ZOSV Stop RT	Example, Table format
Measure, 174	with subtotals printed
XRT0 Output Variable,	by node and cumulative
Start Time, 173	station totals (Live
XRTN Input Variable,	execution), 162
Routine Name, 174	Example, Table format
Logging is Enabled, 169	without subtotals (Live
MUMPS Read, 169	execution), 163
Performance Problems, 169	option, 161
Response Time, 169, 173	Sort Raw Resource Usage
RT logging, 173, 174	Data
System Performance, 169	Example, Live execution,
User Termination, 169	159
XRTL variable, 173	Example, Live execution
System Performance Summary	with output of sorted
Example, 117	raw data, 160
VAX/ALPHA Performance Monitor	Example, Queued for
menu	background processing,
Enable/Disable VPM option,	159
112	option, 158
Manual Purge of VPM Data	Write Raw Resource Usage
option, 112	Data

Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), 201, 203
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	>D ^%RR (OS-specific), 186
CM DAILY STATISTICS file, 109	>D %RS (OS-specific), 187,
CM DISK DRIVE RAW DATA file,	190
115	>D ^%ZTER, 199
CM METRICS file, 103, 110	>D ^%ZTER, 133
CM METRICS List, 110	
CM NODENAME RAW DATA file,	> D ^ % Z T P P , 185, 189
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D ^nsNTEG, 199
Compare Routines on Tape to Disk	>D ^XINDEX, 199
option, 186	>D ^XTBASE, 202, 203

>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ^XTER, 199	Duplicate Resolution Utilities
>D ^XTERPUR, 199	Add Verified Duplicate Pair option,
> D ^ X T F C E , 178, 189	75
> D ^ X T F C R , 178, 189	Automatically Merge Already
>D ^XTLKKWL, 39	Verified Duplicates
>D ^XTRCMP, 186, 189	Example, 83
>D ^XTRGRPE, 184, 189	option, 72, 83
>D ^XTVCHG, 184, 189	Candidate Collection, Selecting
>D ^XTVNUM, 185, 189	Fields to Compare in, 91
>D CHECK^XTSUMBLD, 195, 199	Check Pair of Records to see if
>D MAIL1^XTCMFILN, 107	Duplicates
>D MAILT ATCMPTEN, 107 >D nsNTEG, 197	Example, 74
>D IISNIEG, 137 >D ONE^nsNTEG, 197, 199	option, 73
>D TAPE^XTRCMP, 186, 190	Control File
>D TAPE XIRCMF, 100, 130 >D^ %RR (OS-specific), 190	(See also DUPLICATE
——————————————————————————————————————	RESOLUTION file), 53
>X ^%Z, 184, 189	Customized Merge, 53, 87
Disk Drive Raw Data Statistics menu,	Display Search Status
128 Diamlar Canada Chatra	Example, 56
Display Search Status	option, 55
Example, 56	Duplicate Checking Algorithm, 53
option, 55	DUPLICATE RECORD file, 53, 54,
DK^XTLKMGR, 43	63, 66, 72, 73, 75, 77, 78, 81, 85,
DLL^XTLKMGR, 44	86, 87, 88, 91, 94
DSH^XTLKMGR, 44	DUPLICATE RECORD File, 79
DSY^XTLKMGR, 44	Duplicate Records, 53
Duplicate Checker, How to check a	DUPLICATE RESOLUTION file,
pair of records using the., 73	53, 72, 90, 92, 94
Duplicate Checking Algorithm, 53	Duplicate Threshold%, 53, 85, 94
Duplicate Pairs, Duplicate Resolution	Edit Duplicate Record Status
Utilities How to Varify Dynlicate Pains 62	Example, 77
How to Verify Duplicate Pairs, 63	option, 77
Duplicate Pairs, How to Verify, 63	Edit Duplicate Resolution File
DUPLICATE RECORD file, 53, 54, 63,	Example, 85
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	option, 85
88, 89, 91, 94	Find Potential Duplicates for an
DUPLICATE RECORD File, 79	Entry in a File
Duplicate Records, 53	Example, 75
DUPLICATE RESOLUTION file, 53,	option, 75
72, 90, 92, 94	Manager Utilities menu
Duplicate Resolution System menu	AUTO Automatically Merge
Manager Utilities menu, 54, 83	Already Verified Duplicates
Operations menu, 54, 55	option, 72, 83
options, 54	i , ,

FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	TSF Tally STATUS and
Verified Duplicates option, 72	MERGE STATUS fields
SPD Verify Selected Potential	option, 81
Duplicate Pair option, 66	VIEW View Duplicate Record
SRCH Start/Halt Duplicate	Entries
Search option, 57	option, 78
SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63
POTENTIAL DUPLICATE	Verify Selected Potential Duplicate
THRESHOLD%, 53, 85, 94	Pair
Potential Duplicates, 53, 85, 94	Example, 66
Print List of File Duplicates	option, 66
Example, 79	View Duplicate Record Entries
option, 79	Example, 78
Purge Duplicate Record File	option, 78
Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option

Graph Workday Averages for Selected
Metric option, 128
Graphic RT Report Print option, 170
GRAPHS MENU MSM CM Reports, 150
Group Routine Edit option, 184
Hardware Performance Summary
Example, 117
Help
Line Mode Editing, 214
HFS, 154
How to Configure the MPM, 131
Implementation of MTLU, 35
Input Routines option, 186
<u>-</u>
K^XTLKMGR, 41 Kermit
Callable Entry Points, 211
Kermit as an Alternate Editor, 205
Kermit file transfer protocol, 205
Macintosh steps, 205
KERMIT HOLDING file, 206
Kermit Menu, 206, 209
Edit Kermit Holding File option,
206
Receive Kermit File option, 207
Send Kermit File option, 207
KERNEL SITE PARAMETERS file,
153
Key Word In Context (KWIC), 13, 35
Keywords, Multi-Term Look-Up
(MTLU), 11, 12, 25, 41, 43
Associated with a Single Term and
Multiple Terms, 14
Example, 33
option, 29
Kill Raw Resource Usage Data
Example, Live execution, 166
option, 166
Kill Raw RT Data, Save Means option 170
KWIC, 13, 35
L^XTLKMGR, 43
Last Routine Change Date Recorded option, 193, 227
Line Mode Editing Help, 214

List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131
List Raw System Data option, 126	MSM Capacity Management
List Routines option, 185	Manager's Menu
List Volume Set Information option,	options;, 129
127	MSM RTHIST REPORT DATA file,
List Workday Averages for Selected	129
Metric(s) option, 127	MSM RTHIST SITE file, 129
LKUP^XTLKMGR, 37, 39, 45	MSM Site Parameters Enter/Edit
LOCAL KEYWORD file, 12, 14, 21,	Menu, 131
22, 26, 41, 43	Multiday RT Averages option, 170
LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25
Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWĽ, 39
Pair option, 72	Delete Entries From Look-Up
Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44

DSH^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSY^XTLKMGR, 44	option, 12, 17
K^XTLKMGR, 41	Print Utility option, 12, 19
L^XTLKMGR, 43	Utilities for MTLU option, 21
LKUP^XTLKMGR, 45	Add Entries To Look-Up File
SH^XTLKMGR, 42	option, 21
SY^XTLKMGR, 42	Add/Modify Utility option
Example, 18	Examples, 33
Functional Description, 12	KE Keywords, 29
Keywords, 11, 25	Utilities For MTLU option
Associated with a Single Term	Add Entries To Look-Up File
and Multiple Terms, 14	option, 23
Example, 33	Add/Modify Utility option,
option, 29	21, 25
Lexical Variants, 13	SY Synonyms, 30
LOCAL KEYWORD file, 12, 14, 21,	Delete Entries From Look-
22, 26, 41, 43	Up option, 21, 22
LOCAL LOOKUP file, 11, 12, 17,	Multi-Term Lookup (MTLU) Main
19, 21, 25, 37, 39, 41, 43, 44, 45	Menu options, 15, 21
LOCAL LOOKUP File, 23	Print Utility
LOCAL SHORTCUT file, 12, 13,	Example, 20
14, 17, 21, 22, 42, 44	option, 12, 19
LOCAL SYNONYM file, 12, 13, 14,	Shortcuts, 11, 25
21, 26, 42, 44	Example, 33
Look-up, How to Request a, 13	Point to a Single Word or
Look-ups on Database Files, 13	Phrase, 13
MTLU and FileMan look-ups, 39	Site Implementation, 35
MTLU and VA FileMan Supported	Standard Device Chart, 16
Calls, 39	Synonyms, 11, 25
MTLU, How to Override	Associated with Multiple
FileMan look-ups and MTLU,	Terms, 13
39	Example, 34
Multi-Term Lookup (MTLU)	Multiple Tokens, 13
option, 12, 17	option, 30
Multi-Term Lookup (MTLU) Main	Utilities for MTLU option
Menu	Add Entries To Look-Up File
Add Entries To Look-Up File	option
option, 12, 21, 23	Example, 25
Add/Modify Utility option, 12	Add/Modify Utility option
Keywords option, 12	Example, Keywords, 33
Shortcuts option, 12	Example, Shortcuts, 33
Synonyms option, 12	Example, Synonyms, 34
Delete Entries From Look-Up	Delete Entries From Look-Up
option, 12	option
	Example, 22

MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option <locked td="" with<=""></locked>
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
Operations Management menu, 197	Example, 86
Output Routines option, 187	option, 86
Performance Analysis option, 105	Raw Paging/BIO/DIO/FLS/MLS
Performance Monitor, 112	option, 125
PERFORMANCE MONITOR, 131	Receive Kermit File option, 207
Performance Problems, 169	Resource Consumption Measured by
PM MSM RTHIST Task Option,	Package, 153
133	Resource Usage Menu
Potential Duplicate Pairs, 53	options, 155
POTENTIAL DUPLICATE	Resource Usage, Capacity
THRESHOLD%, 53, 85, 94	Management, 153
Print Formatted Report (Table/Graph)	Response Time, 169
Example, Graph format subtotaled	Response Time Log Options menu,
by node (Live execution), 165	107
Example, Table format with	Response Time Report (By Date/VG),
subtotals printed by node and	139
cumulative station totals (Live	Response Time Report (By VG/Date),
execution), 162	146
Example, Table format without	Routine Changes File, 192
subtotals (Live execution), 163	Routine CMNDS/GREF Report (By
option, 161	Date/VG), 140, 141
Print List of File Duplicates	Routine CMNDS/GREF Report (By
Example, 79	VG/Date), 147, 148
option, 79	Routine Compare - Current with
Print RT Report option, 170	Previous option, 192, 193
Print Utility, MTLU	Routine Compare Utility, 192
Example, 20	Routine Edit option, 184
option, 12, 19	Routine Editor, 213, 215
Producing Reports, Searches, and	Routine Management Menu, 197
Statistics Through Standardized	Routine Tools menu
Encoding of Diagnoses and	%INDEX of Routines option, 179
Procedures, 11 Program Integrity Checker entire 197	Compare Routines on Tape to Disk
Program Integrity Checker option, 197	option, 186
	Compare Two Routines option, 185

Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
Flow Chart Entire Routine option,	Example, Halting a search, 60
178	Example, Starting a search, 58
Flow Chart from Entry Point	option, 57
option, 178	SY^XTLKMGR, 42
Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	T0^%ZOSV
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	$T1^{S}$
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
Setup Performance Monitor option,	Example, 81
112	option, 81
SH^XTLKMGR, 42	TAPE^XTRCMP, 186
Shortcuts, Multi-Term Look-Up	Tasked CM File Update, 134
(MTLU), 11, 12, 25	Tokenizing Routine, 13
Example, 33, 42, 44	Two Standard Deviation Rule, 101
Point to a Single Word or Phrase,	UNDO Edits (Restore to Older Version
13	of Routine) option, 193
Site/Event Rate Summary	Update with Current Routines option,
[XUCMBR2A], 128	192, 193
Sort Raw Resource Usage Data	User Termination, 169
Example, Live execution, 159	Utilities For MTLU option, 21
Example, Live execution with	VA Programming Standards and
output of sorted raw data, 160	Conventions (SAC), 179, 199
Example, Queued for background	Variable Changer option, 184
processing, 159	VAX/ALPHA Capacity Management
option, 158	menu, 107
Standard Device Chart, 16	VAX/ALPHA Performance Monitor
	(VPM), 109

Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195
Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
Accumulate Globals for Package	XTV VERIFICATION PACKAGE file,
option, 194	194
Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	
Verify Potential Duplicates	
Example, 64	\mathbf{E}
option, 63	
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186
VG/DATE MSM CM Reports, 143	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
Example, 78	%ZTP1, 185
option, 78	%ZTPP, 185
VMS monitor, 115	%ZTRDEL, 186
VPM Reports option, 115	[XDR ADD VERIFIED DUPS], 75
VPM Schedule/Unschedule options,	[XDR AUTO MERGE], 72, 83
114	[XDR CHECK PAIR], 73
Write Raw Resource Usage Data	[XDR DISPLAY SEARCH STATUS],
Example, Live execution, 156	55
Example, Queued for background	[XDR EDIT DUP RECORD STATUS],
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54

[XDR MERGE READY [XTVR COMPARE], 192, 193 DUPLICATES], 72 **IXTVR MOST RECENT CHANGE** [XDR MERGE SELECTED PAIR], 72 DATE], 193, 227 [XDR OPERATIONS MENU], 54 [XTVR RESTORE PREV ROUTINE], [XDR PRINT LIST], 79 [XDR PURGE], 86 [XTVR UPDATE], 192, 193 [XDR SEARCH ALL], 57 [XU FIRST LINE PRINT], 185 [XDR TALLY STATUS FIELDS], 81 [XUCM ANALYSE], 105 [XDR UTILITIES MENU], 54 XUCM COMPUTE LOCAL [XDR VERIFY ALL], 63 REFERENCES], 103 [XUCM DISK], 128 [XDR VERIFY SELECTED PAIR], 66 [XDR VIEW DUPLICATE RECORD], [XUCM EDIT DISK THRESHOLD], 102 [XTCM DISK2MAIL], 107 [XUCM EDIT REF THRESH], 102 [XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 102 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT MENU], 206 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XUCM SETUP], 112 [XTLKUTILITIES], 21 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XUCPSORT], 158 [XTV MENU], 192 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XT-VERSION NUMBER], 185 [XUCSR REPORTS MENU], 135 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 143

[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time,
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	

D ZHDIF^%ZOSV, 174	RESPONSE REPORT];,
Hardware Performance Summary	139
Example, 117	Response Time Report (By
MSM Capacity Management	VG/Date);.i.[XUCSRA
Manager's Menu	REPORTS BY
CM Reports Menu	(VG,DATE)];.i.[XUCSRA
Ave. %CPU & %DISK	RESPONSE REPORT];,
Graph;.i.[XUCSRG	146
GRAPHS	Routine CMNDS/GREF
MENU];.i.[XUCSRG CPU-	Report (By
DISK GRAPH];, 150	Date/VG);.i.[XUCSRB
Ave. Response Time	REPORTS BY
Graph;.i.[XUCSRG	(DATE,VG)];.i.[XUCSRB
GRAPHS	ROU CMNDS/GREF
MENU];.i.[XUCSRG	REPORT];, 140, 141
RESPONSE TIME	Routine CMNDS/GREF
GRAPH]; , 151	Report (By
CPU/DISK Utilization	VG/Date);.i.[XUCSRA
Report (By	REPORTS BY
Date/VG);,i.[XUCSRB	(VG,DATE)];.i.[XUCSRA
REPORTS BY	ROU CMNDS/GREF
(DATE,VG)];.i.[XUCSRB	REPORT];, 147, 148
CPU/DISK REPORT];,	System Statistical Report
135, 136	(By Date/VG);.i.[XUCSRB
CPU/DISK Utilization	REPORTS BY
Report (By	(DATE,VG)];.i.[XUCSRB
VG/Date);,i.[XUCSRA	SYS STAT REPORT];, 142
REPORTS BY	System Statistical Report
(VG,DATE)];.i.[XUCSRA	(By VG/Date);.i.[XUCSRA
CPU/DISK REPORT];, 143	RÉPORTS BY
Global Reference Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	SYS STAT REPORT];, 149
REPORTS BY	CM Reports Menu;. The options
(DATE,VG)];.i.[XUCSRB	are described in the same
GREF REPORT];, 137, 138	order as they appear on the
Global Reference Report (By	screen., 135
VG/Date);.i.[XUCSRA	CM Reports Menu; i. Capacity
REPORTS BY	Management
(VG,DATE)];.i.[XUCSRA	MSM Capacity Management
GREF REPORT];, 144, 145	Manager's Menu
Response Time Report (By	options, 129
Date/VG);.i.[XUCSRB	MSM Site Parameters
REPORTS BY	Enter/Edit Menu; option
(DATE,VG)];.i.[XUCSRB	XUCS SITE EDIT
, , , , , , , , , , , , , , , , , , ,	MENU].i.[XUCS SITE EDIT

MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(.3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169
Host File Server (HFS)	User Termination, 169
Device, 154	XRTL variable, 173
LOG RESOURCE USAGE?	System Performance Summary
field, 153	Example, 117
Measure Resource Consumption	VAX/ALPHA Performance Monitor
by Package, 153	menu
Queuing, 154	Enable/Disable VPM option,
Response Time Log Options, 169	112
Copy RT Raw Data to FM File	Manual Purge of VPM Data
	option, 112
option, 170 Destroy FM Copy of Raw RT	± ′
	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	

Example, Enable	Setup Performance Monitor
collection of data	option, 112
(Queued for background	VPM Reports option, 115
processing), 167	VPM Reports menu
option, 167	Bernstein Response Time
Kill Raw Resource Usage	Reports menu option, 127
Data	CPU Modes/Compute States
Example, Live execution,	option, 125
166	Disk Drive Raw Data Statistics
option, 166	menu, 128
options, 155	Graph Workday Averages for
Print Formatted Report	Selected Metric option, 128
(Table/Graph)	List Raw RTHIST Data for a
Example, Graph format	Range of Dates option, 126
subtotaled by node	List Raw System Data option,
(Live execution), 165	126
Example, Table format	List Volume Set Information
with subtotals printed	option, 127
by node and cumulative	List Workday Averages for
station totals (Live	Selected Metric(s) option, 127
execution), 162	Locking Data option, 124
Example, Table format	Raw Paging/BIO/DIO/FLS/MLS
without subtotals (Live	option, 125
execution), 163	Check Pair of Records to see if
option, 161	Duplicates
Sort Raw Resource Usage	Example, 74
Data	option, 73
Example, Live execution,	CHECK^XTSUMBLD, 195
159	Checksum, 215
Example, Live execution	CM DAILY STATISTICS file, 109
with output of sorted	CM DISK DRIVE RAW DATA file,
raw data, 160	115
Example, Queued for	CM METRICS file, 103, 110
	CM METRICS lie, 103, 110 CM METRICS List, 110
background processing, 159	CM NODENAME RAW DATA file,
option, 158	
± ,	115, 124
Write Raw Resource Usage	CM SITE PARAMETERS file, 107
Data	Compare Routines on Tape to Disk
Example, Live execution,	option, 186
156	Compare Two Routines option, 185
Example, Queued for	Compute New Local References
background processing,	option, 103
157	Configuring the MPM, 131
option, 155	Control File

(See also DUPLICATE	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	
>D ^%ZTER, 196	pair of records using the., 73
>D ^XTER, 196	Duplicate Checking Algorithm, 53
>D ^XTERPUR, 196	Duplicate Pairs, Duplicate Resolution Utilities
>D ^XTNTEG, 197	
>D ^%G (OS-specific), 201, 203	How to Verify Duplicate Pairs, 63
>D ^%INDEX, 179, 189, 199	Duplicate Pairs, How to Verify, 63
>D ^%RR (OS-specific), 186	DUPLICATE RECORD file, 53, 54, 63
>D ^%RS (OS-specific), 187,	66, 72, 73, 75, 77, 78, 81, 85, 86, 87, 88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
>D ^%ZTER, 133 >D ^%ZTP1, 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94 Duplicate Pacalutian System many
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ^XTER, 199	Duplicate Resolution Utilities
>D ^XTERPUR, 199	Add Verified Duplicate Pair option,
$>$ D $^{\circ}$ X T F C E , 178, 189	75
$>$ D $^{\circ}$ X T F C R , 178, 189	

Automatically Merge Already	Merge (Ready to Merge) Verified
Verified Duplicates	Duplicates option, 72
Example, 83	Merge Capability, Developing, 87
option, 72, 83	Merge Process, 53, 71
Candidate Collection, Selecting	Merge Process, Interactive, 71
Fields to Compare in, 91	Merge Selected Verified Duplicate
Check Pair of Records to see if	Pair option, 72
Duplicates	Merge, Customized, 53
Example, 74	Merged-From Record, 53
option, 73	Merged-To Record, 53
Control File	Operations menu
(See also DUPLICATE	DSS Display Search Status
RESOLUTION file), 53	option, 55
Customized Merge, 53, 87	MVD Merge (Ready to Merge)
Display Search Status	Verified Duplicates option, 72
Example, 56	SPD Verify Selected Potential
option, 55	Duplicate Pair option, 66
Duplicate Checking Algorithm, 53	SRCH Start/Halt Duplicate
DUPLICATE RECORD file, 53, 54,	Search option, 57
63, 66, 72, 73, 75, 77, 78, 81, 85,	SVD Merge Selected Verified
86, 87, 88, 91, 94	Duplicate Pair option, 72
DUPLICATE RECORD File, 79	VPD Verify Potential
Duplicate Records, 53	Duplicates option, 63
DUPLICATE RESOLUTION file,	Potential Duplicate Pairs, 53
53, 72, 90, 92, 94	POTENTIAL DUPLICATE
Duplicate Threshold%, 53, 85, 94	THRESHOLD%, 53, 85, 94
Edit Duplicate Record Status	Potential Duplicates, 53, 85, 94
Example, 77	Print List of File Duplicates
option, 77	Example, 79
Edit Duplicate Resolution File	option, 79
Example, 85	Purge Duplicate Record File
option, 85	Example, 86
Find Potential Duplicates for an	option, 86
Entry in a File	Selecting Fields to Compare in
Example, 75	Candidate Collection, 91
option, 75	Start or Halt a Search for
Manager Utilities menu	Duplicate Records, 57
AUTO Automatically Merge	Start/Halt Duplicate Search
Already Verified Duplicates	Example, Halting a search, 60
option, 72, 83	Example, Starting a search, 58
FILE Edit Duplicate	option, 57
Resolution File option, 85	Tally STATUS and MERGE
PRGE Purge Duplicate Record	STATUS fields
File option, 86	Example, 81

Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	

GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	Manual Purge of VPM Data option,
Receive Kermit File option, 207	112
Send Kermit File option, 207	Merge (Ready to Merge) Verified
KERNEL SITE PARAMETERS file,	Duplicates option, 72
153	Merge Capability, Duplicate
Key Word In Context (KWIC), 13, 35	Resolution Utilities
Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72
Example, Live execution, 166	Merge Verified Duplicates, Duplicate
option, 166	Resolution Utilities
Kill Raw RT Data, Save Means option,	Merge Process, 71
170	Merge, Customized, 53
KWIC, 13, 35	Merging of Duplicates, 53
L^XTLKMGR, 43	Merging Of Duplicates, 53
Last Routine Change Date Recorded	Morning RTHIST Data Capture, 133
option, 193, 227	Move Host File to MailMan option,
Line Mode Editing Help, 214	107
List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131

MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
·· -·	

Add Entries To Look-Up File	Example, 221
option, 21	$New\ Fields,114$
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	Print Formatted Report (Table/Graph)
Example, 33	Example, Graph format subtotaled
Point to a Single Word or	by node (Live execution), 165
Phrase, 13	Example, Table format with
Site Implementation, 35	subtotals printed by node and
Standard Device Chart, 16	cumulative station totals (Live
Synonyms, 11, 25	execution), 162
Associated with Multiple	Example, Table format without
Terms, 13	subtotals (Live execution), 163
Example, 34	option, 161
Multiple Tokens, 13	Print List of File Duplicates
option, 30	Example, 79
Utilities for MTLU option	option, 79
Add Entries To Look-Up File	Print RT Report option, 170
option	Print Utility, MTLU
Example, 25	Example, 20
Add/Modify Utility option	option, 12, 19
Example, Keywords, 33	Producing Reports, Searches, and
Example, Shortcuts, 33	Statistics Through Standardized
Example, Synonyms, 34	Encoding of Diagnoses and
Delete Entries From Look-Up	Procedures, 11
option	Program Integrity Checker option, 197
Example, 22	Programmer Options menu, 177, 195,
MUMPS error, 179	201
MUMPS Read, 169	Build an 'NTEG' Routine for a
Name Test Routine for a Patient	Package option, 198
Merge	

Calculate and Show Checksum Values option, 195	Flow Chart Entire Routine option, 178
List Global option, 201	Flow Chart from Entry Point
List Global option <locked td="" with<=""><td>option, 178</td></locked>	option, 178
XUPROGMODE>, 201	Group Routine Edit option, 184
Number Base Changer option, 202	Input Routines option, 186
Purge Duplicate Record File	List Routines option, 185
Example, 86	Output Routines option, 187
option, 86	Routine Edit option, 184
Raw Paging/BIO/DIO/FLS/MLS	Variable Changer option, 184
option, 125	Version Number Update option,
Receive Kermit File option, 207	185
Resource Consumption Measured by	RT logging, 173
Package, 153	RTHIST, 112, 115, 117, 126, 129, 134
Resource Usage Menu	171
options, 155	Search Status option, Display the, 55
Resource Usage, Capacity	Search Status, Duplicate Resolution
Management, 153	Utilities Utilities
Response Time, 169	Display Search Status option, 55
Response Time Log Options menu,	Selecting Fields to Compare in
107	Candidate Collection, Duplicate
Response Time Report (By Date/VG),	Resolution Utilities, 91
139	Send Kermit File option, 207
Response Time Report (By VG/Date),	Setup Performance Monitor option,
146	112
Routine Changes File, 192	SH^XTLKMGR, 42
Routine CMNDS/GREF Report (By	Shortcuts, Multi-Term Look-Up
Date/VG), 140, 141	(MTLU), 11, 12, 25
Routine CMNDS/GREF Report (By	Example, 33, 42, 44
VG/Date), 147, 148	Point to a Single Word or Phrase,
Routine Compare - Current with	13
Previous option, 192, 193	Site/Event Rate Summary
Routine Compare Utility, 192	[XUCMBR2A], 128
Routine Edit option, 184	Sort Raw Resource Usage Data
Routine Editor, 213, 215	Example, Live execution, 159
Routine Management Menu, 197	Example, Live execution with
Routine Tools menu	output of sorted raw data, 160
%INDEX of Routines option, 179	Example, Queued for background
Compare Routines on Tape to Disk	processing, 159
option, 186	option, 158
Compare Two Routines option, 185	Standard Device Chart, 16
Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
	Example, Halting a search, 60

Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
$T0^{S}$	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41
Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195

XTV ROUTINE CHANGES file, 192 [XDR PRINT LIST], 79 XTV VERIFICATION PACKAGE file, [XDR PURGE], 86 194 [XDR SEARCH ALL], 57 XTVCHG, 184 [XDR TALLY STATUS FIELDS], 81 XTVNUM, 185 [XDR UTILITIES MENU], 54 XUCM TASK NIT, 115, 117 [XDR VERIFY ALL], 63 XUCM TASK VPM, 115 [XDR VERIFY SELECTED PAIR], 66 XUGET, 197 [XDR VIEW DUPLICATE RECORD], XUMGR key, 191 78 XUPROG key, 177, 186, 191, 201 [XTCM DISK2MAIL], 107 XUPROGMODE key, 177, 184, 185, [XTCM MAIN], 107, 155 186, 191, 196, 201, 202 [XTCM], 169 XURTLC, 171 [XTFCE], 178 XURTLK, 171 [XTFCR], 178 [XT-KERMIT EDIT], 206 [XT-KERMIT MENU], 206 F [XT-KERMIT RECEIVE], 207 [XT-KERMIT SEND], 207 %G, 201 [XTLKLKUP], 12, 17 %GL, 201 [XTLKMODKY], 12, 29 %INDEX of Routines option, 179 [XTLKMODPARK], 12, 21, 22 %INDEX Utility, 179, 180, 199 [XTLKMODPARS], 12, 21, 23 %RR, 186 [XTLKMODSH], 12, 27 %RS, 186, 187 [XTLKMODSY], 12, 30 %ZTER, 196 [XTLKMODUTL], 12, 21, 25 %ZTP1, 185 [XTLKPRTUTL], 12, 19 %ZTPP, 185 [XTLKUSER2], 15, 21 %ZTRDEL, 186 [XTLKUTILITIES], 21 [XDR ADD VERIFIED DUPS], 75 [XTMENU], 15, 21, 54 [XDR AUTO MERGE], 72, 83 [XT-NUMBER BASE CHANGER], 202 [XDR CHECK PAIR], 73 [XTRDEL], 186 [XDR DISPLAY SEARCH STATUS], [XTRGRPE], 184 [XT-ROUTINE COMPARE], 185 [XDR EDIT DUP RECORD STATUS], [XTSUMBLD], 198 [XTSUMBLD-CHECK], 195 XDR EDIT DUP RESOLUTION [XTV EDIT VERIF PACKAGE], 194 FILE, 85 [XTV MENU], 192 [XDR FIND POTENTIAL [XT-VARIABLE CHANGER], 184 DUPLICATES, 75 [XT-VERSION NUMBER], 185 [XDR MAIN MENU], 54 [XTVG COMPARE], 194 [XDR MANAGER UTILITIES], 54 [XTVG UPDATE], 194 XDR MERGE READY [XTVR COMPARE], 192, 193 DUPLICATES, 72 **IXTVR MOST RECENT CHANGE** [XDR MERGE SELECTED PAIR], 72 DATE, 193, 227

[XDR OPERATIONS MENU], 54

[XTVR RESTORE PREV ROUTINE],	[XUINDEX], 179
193	[XUINTEG], 197
[XTVR UPDATE], 192, 193	[XUPR RTN EDIT], 184
[XU FIRST LINE PRINT], 185	[XUPRGL], 201
[XUCM ANALYSE], 105	[XUPROG], 177, 192, 195, 201
[XUCM COMPUTE LOCAL	[XUPRROU], 185
REFERENCES], 103	[XUPR-RTN-TAPE-CMP], 186
[XUCM DISK], 128	[XUROUTINE IN], 186
[XUCM EDIT DISK THRESHOLD],	[XUROUTINE OUT], 187
102	[XUROUTINES], 197
[XUCM EDIT REF THRESH], 102	[XURTL], 169
[XUCM EDIT VOL SET THRESH],	[XURTLC], 170
102	[XURTLCK], 170
[XUCM GRAF MET AVE], 128	[XURTLK], 170
[XUCM LIST DAILY STATS], 127	[XURTLM], 107, 169
[XUCM LIST RAW], 126	[XURTLMA], 170
[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15

Auto Purge of CM Data, 134	MSM Capacity Management
Automatically Merge Already Verified	Manager's Menu
Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	Ave. Response Time
Bernstein RT Statistics (detailed)	Graph;.i.[XUCSRG
[XUCMBR2], 127	\mathbf{GRAPHS}
Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH]; , 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE * XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];.i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);.i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];.i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
Move Host File to MailMan	VG/Date);.i.[XUCSRA
option, 107	REPORTS BY
Response Time Log Options,	(VG,DATE)];.i.[XUCSRA
107	GREF REPORT];, 144, 145
VAX/ALPHA Capacity	Response Time Report (By
Management menu, 107	Date/VG);.i.[XUCSRB
Direct Mode Utility, Resource	REPORTS BY
Usage	(DATE,VG)];.i.[XUCSRB
D ZHDIF^%ZOSV, 174	RESPONSE REPORT];,
Hardware Performance Summary	139 Pagnanga Tima Panart (Pr
Example, 117	Response Time Report (By VG/Date);.i.[XUCSRA

REPORTS BY	options;.i.MSM Capacity
(VG,DATE)];.i.[XUCSRA	Management Manager's Menu
RESPONSE REPORT];,	options, 130
146	Performance Assurance menu
Routine CMNDS/GREF	Compute New Local References
Report (By	option, 103
Date/VG);.i.[XUCSRB	Edit. Days to Compute
REPORTS BY	Reference Ranges option
(DATE,VG)];.i.[XUCSRB	Edit VMS Disk Space Threshold
ROU CMNDS/GREF	option, 102
REPORT];, 140, 141	Edit Volume Set Threshold
Routine CMNDS/GREF	option, 102
Report (By	Enable Alerts for Selected
VG/Date);.i.[XUCSRA	Metrics option, 104
REPORTS BY	Performance Analysis option,
(VG,DATE)];.i.[XUCSRA	105
ROU CMNDS/GREF	Performance Monitor
REPORT];, 147, 148	Configuring, 112
System Statistical Report	PERFORMANCE MONITOR
(By Date/VG);.i.[XUCSRB	Configuring, 131
REPORTS BY	Resource Usage
(DATE,VG)];.i.[XUCSRB	^XTMP Global, 155, 158, 166
SYS STAT REPORT];, 142	Date Range, 154
System Statistical Report	Devices, 154
(By VG/Date);.i.[XUCSRA	Host File Server (HFS)
REPORTS BY	Device, 154
(VG,DATE)];.i.[XUCSRA	LOG RESOURCE USAGE?
SYS STAT REPORT];, 149	field, 153
CM Reports Menu;. The options	Measure Resource Consumption
are described in the same	by Package, 153
order as they appear on the	Queuing, 154
screen., 135	Response Time Log Options, 169
CM Reports Menu;.i.Capacity	Copy RT Raw Data to FM File
Management	option, 170
MSM Capacity Management	Destroy FM Copy of Raw RT
Manager's Menu	Data option, 170
options, 129	Enable/Disable RT Logging
MSM Site Parameters	option, 169
Enter/Edit Menu; option	Graphic RT Report Print option,
[XUCS SITE EDIT	170
MENU].i.[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU]; is used to configure	option, 170
the MPM after installation.,	Long RT Report Print option,
131	170

Multiday RT Averages option,	(Queued for background
170	processing), 167
Print RT Report option, 170	option, 167
Response Time Measures, 169	Kill Raw Resource Usage
^%ZRTL global, 171, 174	Data
^%ZRTL(1, RESPONSE TIME	Example, Live execution,
(.3.091)	166
^%ZRTL(2, RT	option, 166
DATE_UCI,VOL, 171	options, 155
^%ZRTL(4, RT RAWDATA, 171	Print Formatted Report
Callable Entry Points	(Table/Graph)
T0^%ZOSV Start RT	Example, Graph format
Measure, 173	subtotaled by node
T1^%ZOSV Stop RT	(Live execution), 165
Measure, 174	Example, Table format
XRT0 Output Variable,	with subtotals printed
Start Time, 173	by node and cumulative
XRTN Input Variable,	station totals (Live
Routine Name, 174	execution), 162
Logging is Enabled, 169	Example, Table format
MUMPS Read, 169	without subtotals (Live
Performance Problems, 169	execution), 163
Response Time, 169, 173	option, 161
RT logging, 173, 174	Sort Raw Resource Usage
System Performance, 169	Data
User Termination, 169	Example, Live execution,
XRTL variable, 173	159
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155
Example, Enable	Setup Performance Monitor
collection of data	option, 112
	VPM Reports option, 115

VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), $201,203$
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	>D $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
CM DAILY STATISTICS file, 109	>D $\$RS (OS-specific), 187,$
CM DISK DRIVE RAW DATA file,	190
115	>D ^%ZTER, 199
CM METRICS file, 103, 110	> D ^ % Z T P 1 , 185, 189
CM METRICS List, 110	> D ^ % Z T P P , 185, 189
CM NODENAME RAW DATA file,	>D ^%ZTRDEL, 186, 190
115, 124	>D ^nsNTEG, 199
CM SITE PARAMETERS file, 107	>D ^XINDEX, 199
Compare Routines on Tape to Disk	>D ^XTBASE, 202, 203
option, 186	>D ^XTCMFILN, 107
Compare Two Routines option, 185	>D ^XTER, 199
Compute New Local References	>D ^XTERPUR, 199
option, 103	> D ^ X T F C E , 178, 189
Configuring the MPM, 131	> D ^ X T F C R , 178, 189
Control File	>D ^XTLKKWL, 39
(See also DUPLICATE	>D ^XTEKKWE, 65
RESOLUTION file), 53	>D ^XTRGRPE, 184, 189
Copy RT Raw Data to FM File option,	>D ^XTVCHG, 184, 189
170	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~

>D ^XTVNUM, 185, 189	Candidate Collection, Selecting
>D CHECK^XTSUMBLD, 195, 199	Fields to Compare in, 91
>D MAIL1^XTCMFILN, 107	Check Pair of Records to see if
>D nsNTEG, 197	Duplicates
>D ONE^nsNTEG, 197, 199	Example, 74
>D TAPE^XTRCMP, 186, 190	option, 73
<pre>>D^ %RR (OS-specific), 190</pre>	Control File
>X ^%Z, 184, 189	(See also DUPLICATE
Disk Drive Raw Data Statistics menu,	RESOLUTION file), 53
128	Customized Merge, 53, 87
Display Search Status	Display Search Status
Example, 56	Example, 56
option, 55	option, 55
DK^XTLKMGR, 43	Duplicate Checking Algorithm, 53
DLL^XTLKMGR, 44	DUPLICATE RECORD file, 53, 54,
DSH^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
DSY^XTLKMGR, 44	86, 87, 88, 91, 94
Duplicate Checker, How to check a	DUPLICATE RECORD File, 79
pair of records using the., 73	Duplicate Records, 53
Duplicate Checking Algorithm, 53	DUPLICATE RESOLUTION file,
Duplicate Pairs, Duplicate Resolution	53, 72, 90, 92, 94
Utilities	Duplicate Threshold%, 53, 85, 94
How to Verify Duplicate Pairs, 63	Edit Duplicate Record Status
Duplicate Pairs, How to Verify, 63	Example, 77
DUPLICATE RECORD file, 53, 54, 63,	option, 77
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	Edit Duplicate Resolution File
88, 89, 91, 94	Example, 85
DUPLICATE RECORD File, 79	option, 85
Duplicate Records, 53	Find Potential Duplicates for an
DUPLICATE RESOLUTION file, 53,	Entry in a File
72, 90, 92, 94	Example, 75
Duplicate Resolution System menu	option, 75
Manager Utilities menu, 54, 83	Manager Utilities menu
Operations menu, 54, 55	AUTO Automatically Merge
options, 54	Already Verified Duplicates
Utilities menu, 54, 73	option, 72, 83
Duplicate Resolution Utilities	FILE Edit Duplicate
Add Verified Duplicate Pair option,	Resolution File option, 85
75	PRGE Purge Duplicate Record
Automatically Merge Already	File option, 86
Verified Duplicates	Merge (Ready to Merge) Verified
Example, 83	Duplicates option, 72
option, 72, 83	Merge Capability, Developing, 87
	Merge Process, 53, 71
	Merge Process, Interactive, 71

Merge Selected Verified Duplicate	CHCK Check Pair of Records to
Pair option, 72	see if Duplicates option, 73
Merge, Customized, 53	EDIT Edit Duplicate Record
Merged-From Record, 53	Status option, 77
Merged-To Record, 53	FIND Find Potential
Operations menu	Duplicates for an Entry in a
DSS Display Search Status	File option, 75
option, 55	PRNT Print List of File
MVD Merge (Ready to Merge)	Duplicates option, 79
Verified Duplicates option, 72	TSF Tally STATUS and
SPD Verify Selected Potential	MERGE STATUS fields
Duplicate Pair option, 66	option, 81
SRCH Start/Halt Duplicate	VIEW View Duplicate Record
Search option, 57	Entries
SVD Merge Selected Verified	option, 78
Duplicate Pair option, 72	Verified Duplicates, 53, 66
VPD Verify Potential	Verified Non-Duplicates, 53, 66
Duplicates option, 63	Verify Potential Duplicates
Potential Duplicate Pairs, 53	Example, 64
POTENTIAL DUPLICATE	option, 63
THRESHOLD%, 53, 85, 94	Verify Selected Potential Duplicate
Potential Duplicates, 53, 85, 94	Pair
Print List of File Duplicates	Example, 66
Example, 79	option, 66
option, 79	View Duplicate Record Entries
Purge Duplicate Record File	Example, 78
Example, 86	option, 78
option, 86	Duplicate Resolution Utilities,, 89
Selecting Fields to Compare in	Duplicate Search, Duplicate
Candidate Collection, 91	Resolution Utilities
Start or Halt a Search for	Start/Halt Duplicate Search option,
Duplicate Records, 57	57
Start/Halt Duplicate Search	Duplicate Test Routines
Example, Halting a search, 60	Examples, 221
Example, Starting a search, 58	Duplicate Threshold%, 53, 85, 94
option, 57	Edit. Days to Compute Reference
Tally STATUS and MERGE	Ranges option
STATUS fields	Edit Duplicate Record Status
Example, 81	Example, 77
Tally STATUS and MERGE	option, 77
STATUS fields option, 81	Edit Duplicate Resolution File
Utilities menu	Example, 85
ADD Add Verified Duplicate	option, 85
Pair option, 75	Edit Kermit Holding File option, 206

Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background	Edit Kermit Holding File option,
processing), 167	206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option,
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	

List Workday Averages for Selected	MSM RTHIST REPORT DATA file,
Metric(s) option, 127	129
LKUP^XTLKMGR, 37, 39, 45	MSM RTHIST SITE file, 129
LOCAL KEYWORD file, 12, 14, 21,	MSM Site Parameters Enter/Edit
22, 26, 41, 43	Menu, 131
LOCAL LOOKUP file, 11, 12, 17, 19,	Multiday RT Averages option, 170
21, 25, 37, 39, 41, 43, 44, 45	Multi-Term Lookup (MTLU)
LOCAL LOOKUP File, 23	option, 17
LOCAL SHORTCUT file, 12, 13, 14,	Multi-Term Look-Up (MTLU), 12
17, 21, 22, 42, 44	Add Entries To Look-Up File
LOCAL SYNONYM file, 12, 13, 14, 21,	Example, 25
26, 42, 44	IRM/Developer Utility, 12, 21,
Locking Data option, 124	23
LOG RESOURCE USAGE? field, 153	option, 12, 21, 23
Logging is Enabled, 169	Set Entries in the LOCAL
Long RT Report Print option, 170	LOOKUP file, 21, 23
Manual Purge of VPM Data option,	XTLKZMGR Security Key, 12,
112	21, 23
Merge (Ready to Merge) Verified	Add/Modify Utility
Duplicates option, 72	Examples, 33
Merge Capability, Duplicate	Keywords example, 33
Resolution Utilities	Keywords option, 12, 25, 29
Developing, 87	option, 21, 25
Merge Process, 53, 71	Shortcuts example, 33
Merge Process, Interactive, 71	Shortcuts option, 12, 25
Merge Process, Verified Duplicates, 71	Synonyms example, 34
Merge Routines, 53	Synonyms option, 12, 25, 30
Merge Selected Verified Duplicate	Callable Entry Point
Pair option, 72	XTLKKWL, 39
Merge Verified Duplicates, Duplicate	Delete Entries From Look-Up
Resolution Utilities	Example, 22
Merge Process, 71	IRM/Developer Utility, 12
Merge, Customized, 53	option, 12, 21, 22
Merging of Duplicates, 53	XTLKZMGR Security Key, 12
Merging Of Duplicates, 53	Direct Mode Utilities
Morning RTHIST Data Capture, 133	>D ^XTLKKWL, 39
Move Host File to MailMan option,	Enhanced API
107	DK^XTLKMGR, 43
MPM Schedule/Unschedule options,	DLL^XTLKMGR, 44
133	DSH^XTLKMGR, 44
MPM, How to configure the, 131	DSY^XTLKMGR, 44
MSM Capacity Management	K^XTLKMGR, 41
Manager's Menu	L^XTLKMGR, 43
options;, 129	LKUP^XTLKMGR, 45
	SH^XTLKMGR, 42

SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL LOOKUP File, 23	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25
LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	Associated with Multiple
MTLU, How to Override	Terms, 13
FileMan look-ups and MTLU,	Example, 34
39	Multiple Tokens, 13
Multi-Term Lookup (MTLU)	option, 30
option, 12, 17	Utilities for MTLU option
Multi-Term Lookup (MTLU) Main	Add Entries To Look-Up File
Menu	option
Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	$New\ Fields,114$
Add/Modify Utility option	

Nodename Average by Day of Week	List Global option < Locked with
[XUCMBR2C], 127	XUPROGMODE>, 201
NTEG, 197, 198	Number Base Changer option, 202
Number Base Changer option < Locked	Purge Duplicate Record File
with XUPROGMODE>, 202	Example, 86
Operations Management menu, 197	option, 86
Output Routines option, 187	Raw Paging/BIO/DIO/FLS/MLS
Performance Analysis option, 105	option, 125
Performance Monitor, 112	Receive Kermit File option, 207
PERFORMANCE MONITOR, 131	Resource Consumption Measured by
Performance Problems, 169	Package, 153
PM MSM RTHIST Task Option,	Resource Usage Menu
133	options, 155
Potential Duplicate Pairs, 53	Resource Usage, Capacity
POTENTIAL DUPLICATE	Management, 153
THRESHOLD%, 53, 85, 94	Response Time, 169
Print Formatted Report (Table/Graph)	Response Time Log Options menu,
Example, Graph format subtotaled	107
by node (Live execution), 165	Response Time Report (By Date/VG),
Example, Table format with	139
subtotals printed by node and	Response Time Report (By VG/Date),
cumulative station totals (Live	146
execution), 162	Routine Changes File, 192
Example, Table format without	Routine CMNDS/GREF Report (By
subtotals (Live execution), 163	Date/VG), 140, 141
option, 161	Routine CMNDS/GREF Report (By
Print List of File Duplicates	VG/Date), 147, 148
Example, 79	Routine Compare - Current with
option, 79	Previous option, 192, 193
Print RT Report option, 170	Routine Compare Utility, 192
Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178

Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	T0^%ZOSV
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	T1^%ZOSV
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
Setup Performance Monitor option,	Example, 81
112	option, 81
SH^XTLKMGR, 42	TAPE^XTRCMP, 186
Shortcuts, Multi-Term Look-Up	Tasked CM File Update, 134
(MTLU), 11, 12, 25	Tokenizing Routine, 13
Example, 33, 42, 44	Two Standard Deviation Rule, 101
Point to a Single Word or Phrase,	UNDO Edits (Restore to Older Version
13	of Routine) option, 193
Site/Event Rate Summary	Update with Current Routines option,
[XUCMBR2A], 128	192, 193
Sort Raw Resource Usage Data	User Termination, 169
Example, Live execution, 159	Utilities For MTLU option, 21
Example, Live execution with	VA Programming Standards and
output of sorted raw data, 160	Conventions (SAC), 179, 199
Example, Queued for background	Variable Changer option, 184
processing, 159	VAX/ALPHA Capacity Management
option, 158	menu, 107
Standard Device Chart, 16	VAX/ALPHA Performance Monitor
Start or Halt a Search for Duplicates	(VPM), 109
Within a File, 57	Verified Duplicates, Duplicate
Start/Halt Duplicate Search	Resolution Utilities, 53, 66
Example, Halting a search, 60	Verified Non-Duplicates, Duplicate
Example, Starting a search, 58	Resolution Utilities, 53, 66
option, 57	Verifier Tools Menu, 192
SY^XTLKMGR, 42	Accumulate Globals for Package
	option, 194

Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	
Verify Potential Duplicates	
Example, 64	\mathbf{G}
option, 63	
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186
VG/DATE MSM CM Reports, 143	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
Example, 78	%ZTP1, 185
option, 78	%ZTPP, 185
VMS monitor, 115	%ZTRDEL, 186
VPM Reports option, 115	[XDR ADD VERIFIED DUPS], 75
VPM Schedule/Unschedule options,	[XDR AUTO MERGE], 72, 83
114	[XDR CHECK PAIR], 73
Write Raw Resource Usage Data	[XDR DISPLAY SEARCH STATUS],
Example, Live execution, 156	55
Example, Queued for background	[XDR EDIT DUP RECORD STATUS],
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54
XTLKTOKN, 13	[XDR MERGE READY
XTLKZMGR, 12, 21	DUPLICATES], 72
XTRCMP, 186	[XDR MERGE SELECTED PAIR], 72
XTSUMBLD, 195	[XDR OPERATIONS MENU], 54
XTV ROUTINE CHANGES file, 192	[XDR PRINT LIST], 79
XTV VERIFICATION PACKAGE file,	[XDR PURGE], 86
194	[XDR SEARCH ALL], 57

[XDR TALLY STATUS FIELDS], 81 [XUCM ANALYSE], 105 [XDR UTILITIES MENU], 54 IXUCM COMPUTE LOCAL REFERENCES], 103 [XDR VERIFY ALL], 63 [XDR VERIFY SELECTED PAIR], 66 [XUCM DISK], 128 [XDR VIEW DUPLICATE RECORD], [XUCM EDIT DISK THRESHOLD], 78 102 [XUCM EDIT REF THRESH], 102 [XTCM DISK2MAIL], 107 [XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 102 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XT-KERMIT MENU], 206 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 109 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XUCPTOGGLE], 167 [XT-VARIABLE CHANGER], 184 [XUCSR REPORTS MENU], 135 [XT-VERSION NUMBER], 185 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 143 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], XTVR MOST RECENT CHANGE DATE, 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 193 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201

[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time,
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	D ZHDIF^%ZOSV, 174
AM MSM RTHIST Task Option,	Hardware Performance Summary
133	Example, 117
Application Utilities menu, 15	MSM Capacity Management
Auto Purge of CM Data, 134	Manager's Menu
Automatically Merge Already Verified	CM Reports Menu
Duplicates	
Example, 83	

Ave. %CPU & %DISK RESPONSE REPORT: Graph;.i.[XUCSRG 146 GRAPHS Routine CMNDS/GREF MENU]:.i.[XUCSRG CPU-Report (By DISK GRAPH];, 150 Date/VG);.i.[XUCSRB REPORTS BY Ave. Response Time Graph;.i. XUCSRG (DATE,VG)];.i.[XUCSRB **GRAPHS** ROU CMNDS/GREF REPORT];, 140, 141 MENUI:.i.IXUCSRG **RESPONSE TIME** Routine CMNDS/GREF **GRAPH]:**, 151 Report (By CPU/DISK Utilization VG/Date);.i.[XUCSRA Report (By REPORTS BY Date/VG);.i.[XUCSRB] (VG,DATE)];.i.[XUCSRA REPORTS BY ROU CMNDS/GREF (DATE, VG)];.i.[XUCSRB REPORT];, 147, 148 CPU/DISK REPORT];, System Statistical Report 135, 136 (By Date/VG);.i.[XUCSRB **CPU/DISK Utilization** REPORTS BY (DATE,VG)];.i.[XUCSRB Report (By VG/Date);.i.[XUCSRA SYS STAT REPORT];, 142 REPORTS BY System Statistical Report (VG,DATE)];.i.[XUCSRA (By VG/Date);.i.[XUCSRA REPORTS BY CPU/DISK REPORT];, 143 (VG,DATE)];.i.[XUCSRA Global Reference Report (By Date/VG);.i.[XUCSRB SYS STAT REPORT];, 149 REPORTS BY CM Reports Menu;. The options (DATE,VG)];.i.[XUCSRB are described in the same GREF REPORT];, 137, 138 order as they appear on the Global Reference Report (By screen., 135 VG/Date);.i.[XUCSRA CM Reports Menu; i. Capacity REPORTS BY Management (VG,DATE)];.i.[XUCSRA MSM Capacity Management GREF REPORT];, 144, 145 Manager's Menu Response Time Report (By options, 129 Date/VG);.i.[XUCSRB MSM Site Parameters REPORTS BY Enter/Edit Menu; option (DATE, VG)];.i.[XUCSRB XUCS SITE EDIT RESPONSE REPORT];, MENU].i.[XUCS SITE EDIT 139 MENU]; is used to configure the MPM after installation., Response Time Report (By VG/Date);.i.[XUCSRA 131 REPORTS BY options; i.MSM Capacity (VG,DATE)]:.i.[XUCSRA Management Manager's Menu options, 130

Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(.3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169
Host File Server (HFS)	User Termination, 169
Device, 154	XRTL variable, 173
LOG RESOURCE USAGE?	System Performance Summary
field, 153	Example, 117
Measure Resource Consumption	VAX/ALPHA Performance Monitor
by Package, 153	menu
Queuing, 154	Enable/Disable VPM option,
Response Time Log Options, 169	112
Copy RT Raw Data to FM File	Manual Purge of VPM Data
option, 170	option, 112
Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	Example, Enable
Long RT Report Print option,	collection of data
170	(Queued for background
Multiday RT Averages option,	processing), 167
170	option, 167
Print RT Report option, 170	Kill Raw Resource Usage
Response Time Measures, 169	Data

Example, Live execution,	Disk Drive Raw Data Statistics
166	menu, 128
option, 166	Graph Workday Averages for
options, 155	Selected Metric option, 128
Print Formatted Report	List Raw RTHIST Data for a
(Table/Graph)	Range of Dates option, 126
Example, Graph format	List Raw System Data option,
subtotaled by node	126
(Live execution), 165	List Volume Set Information
Example, Table format	option, 127
with subtotals printed	List Workday Averages for
by node and cumulative	Selected Metric(s) option, 127
station totals (Live	Locking Data option, 124
execution), 162	Raw Paging/BIO/DIO/FLS/MLS
Example, Table format	option, 125
without subtotals (Live	Check Pair of Records to see if
execution), 163	Duplicates
option, 161	Example, 74
Sort Raw Resource Usage	option, 73
Data	CHECK^XTSUMBLD, 195
Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186
Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125 CPH/DISK Htilization Report (By
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States option, 125	Date/VG), 135, 136
opuon, 140	

CPU/DISK Utilization Report (By	>D ONE n sNTEG, 197 , 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>x ^%z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), $201,203$	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63
>D $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
$>$ D $^{\circ}$ % Z T P P , 185 , 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ^XTER, 199	Duplicate Resolution Utilities
>D ^XTERPUR, 199	Add Verified Duplicate Pair option,
$>$ D $^{\circ}$ X T F C E , 178, 189	75
$>$ D $^{\circ}$ X T F C R , 178, 189	Automatically Merge Already Verified Duplicates
>D ^XTLKKWL, 39	Example, 83
>D ^XTRCMP, 186, 189	option, 72, 83
>D ^XTRGRPE, 184, 189	Candidate Collection, Selecting
>D ^XTVCHG, 184, 189	Fields to Compare in, 91
>D ^XTVNUM, 185, 189	Check Pair of Records to see if
>D CHECK^XTSUMBLD, 195, 199	Duplicates
>D MAIL1^XTCMFILN, 107	Example, 74
>D nsNTEG, 197	

option, 73	Operations menu
Control File	DSS Display Search Status
(See also DUPLICATE	option, 55
RESOLUTION file), 53	MVD Merge (Ready to Merge)
Customized Merge, 53, 87	Verified Duplicates option, 72
Display Search Status	SPD Verify Selected Potential
Example, 56	Duplicate Pair option, 66
option, 55	SRCH Start/Halt Duplicate
Duplicate Checking Algorithm, 53	Search option, 57
DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53
DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File
Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	
Merged-To Record, 53	

FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	GRAPHS MENU MSM CM Reports,
Edit Duplicate Resolution File	150
Example, 85	Group Routine Edit option, 184
option, 85	Hardware Performance Summary
Edit Kermit Holding File option, 206	Example, 117
Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35

Input Routines option, 186	LOCAL LOOKUP file, 11, 12, 17, 19,
K^XTLKMGR, 41	21, 25, 37, 39, 41, 43, 44, 45
Kermit	LOCAL LOOKUP File, 23
Callable Entry Points, 211	LOCAL SHORTCUT file, 12, 13, 14,
Kermit as an Alternate Editor, 205	17, 21, 22, 42, 44
Kermit file transfer protocol, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Macintosh steps, 205	26, 42, 44
KERMIT HOLDING file, 206	Locking Data option, 124
Kermit Menu, 206, 209	LOG RESOURCE USAGE? field, 153
Edit Kermit Holding File option,	Logging is Enabled, 169
206	Long RT Report Print option, 170
Receive Kermit File option, 207	Manual Purge of VPM Data option,
Send Kermit File option, 207	112
KERNEL SITE PARAMETERS file,	Merge (Ready to Merge) Verified
153	Duplicates option, 72
Key Word In Context (KWIC), 13, 35	Merge Capability, Duplicate
Keywords, Multi-Term Look-Up	Resolution Utilities
(MTLU), 11, 12, 25, 41, 43	Developing, 87
Associated with a Single Term and	Merge Process, 53, 71
Multiple Terms, 14	Merge Process, Interactive, 71
Example, 33	Merge Process, Verified Duplicates, 71
option, 29	Merge Routines, 53
Kill Raw Resource Usage Data	Merge Selected Verified Duplicate
Example, Live execution, 166	Pair option, 72
option, 166	Merge Verified Duplicates, Duplicate
Kill Raw RT Data, Save Means option,	Resolution Utilities
170	Merge Process, 71
KWIC, 13, 35	Merge, Customized, 53
L^XTLKMGR, 43	Merging of Duplicates, 53
Last Routine Change Date Recorded	Merging Of Duplicates, 53
option, 193, 227	Morning RTHIST Data Capture, 133
Line Mode Editing Help, 214	Move Host File to MailMan option,
List Global option, 201	107
List Raw RTHIST Data for a Range of	MPM Schedule/Unschedule options,
Dates option, 126	133
List Raw System Data option, 126	MPM, How to configure the, 131
List Routines option, 185	MSM Capacity Management
List Volume Set Information option,	Manager's Menu
127	options;, 129
List Workday Averages for Selected	MSM RTHIST REPORT DATA file,
Metric(s) option, 127	129
LKUP^XTLKMGR, 37, 39, 45	MSM RTHIST SITE file, 129
LOCAL KEYWORD file, 12, 14, 21, 22, 26, 41, 43	MSM Site Parameters Enter/Edit Menu, 131
	Multiday RT Averages option, 170

Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21,
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	

Add/Modify Utility option,	Operations Management menu, 197
21, 25	Output Routines option, 187
SY Synonyms, 30	Performance Analysis option, 105
Delete Entries From Look-	Performance Monitor, 112
Up option, 21, 22	PERFORMANCE MONITOR, 131
Multi-Term Lookup (MTLU) Main	Performance Problems, 169
Menu options, 15, 21	PM MSM RTHIST Task Option,
Print Utility	133
Example, 20	Potential Duplicate Pairs, 53
option, 12, 19	POTENTIAL DUPLICATE
Shortcuts, 11, 25	THRESHOLD%, 53, 85, 94
Example, 33	Print Formatted Report (Table/Graph)
Point to a Single Word or	Example, Graph format subtotaled
Phrase, 13	by node (Live execution), 165
Site Implementation, 35	Example, Table format with
Standard Device Chart, 16	subtotals printed by node and
Synonyms, 11, 25	cumulative station totals (Live
Associated with Multiple	execution), 162
Terms, 13	Example, Table format without
Example, 34	subtotals (Live execution), 163
Multiple Tokens, 13	option, 161
option, 30	Print List of File Duplicates
Utilities for MTLU option	Example, 79
Add Entries To Look-Up File	option, 79
option	Print RT Report option, 170
Example, 25	Print Utility, MTLU
Add/Modify Utility option	Example, 20
Example, Keywords, 33	option, 12, 19
Example, Shortcuts, 33	Producing Reports, Searches, and
Example, Synonyms, 34	Statistics Through Standardized
Delete Entries From Look-Up	Encoding of Diagnoses and
option	Procedures, 11
Example, 22	Program Integrity Checker option, 197
MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option <locked td="" with<=""></locked>
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
	Example, 86

option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	Selecting Fields to Compare in
Response Time Log Options menu,	Candidate Collection, Duplicate
107	Resolution Utilities, 91
Response Time Report (By Date/VG),	Send Kermit File option, 207
139	Setup Performance Monitor option,
Response Time Report (By VG/Date),	112
146	SH^XTLKMGR, 42
Routine Changes File, 192	Shortcuts, Multi-Term Look-Up
Routine CMNDS/GREF Report (By	(MTLU), 11, 12, 25
Date/VG), 140, 141	Example, 33, 42, 44
Routine CMNDS/GREF Report (By	Point to a Single Word or Phrase,
VG/Date), 147, 148	13
Routine Compare - Current with	Site/Event Rate Summary
Previous option, 192, 193	[XUCMBR2A], 128
Routine Compare Utility, 192	Sort Raw Resource Usage Data
Routine Edit option, 184	Example, Live execution, 159
Routine Editor, 213, 215	Example, Live execution with
Routine Management Menu, 197	output of sorted raw data, 160
Routine Tools menu	Example, Queued for background
%INDEX of Routines option, 179	processing, 159
Compare Routines on Tape to Disk	option, 158
option, 186	Standard Device Chart, 16
Compare Two Routines option, 185	Start or Halt a Search for Duplicates
Delete Routines option, 186	Within a File, 57
First Line Routine Print option,	Start/Halt Duplicate Search
185	Example, Halting a search, 60
Flow Chart Entire Routine option,	Example, Starting a search, 58
178	option, 57
Flow Chart from Entry Point	SY^XTLKMGR, 42
option, 178	Synonyms, Multi-Term Look-Up
Group Routine Edit option, 184	(MTLU), 11, 12, 25, 42, 44
Input Routines option, 186	Associated with Multiple Terms, 13
List Routines option, 185	Example, 34
Output Routines option, 187	Multiple Tokens, 13
Routine Edit option, 184	option, 30
1 - / -	1 /

System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41
Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195
Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
Accumulate Globals for Package	XTV VERIFICATION PACKAGE file
option, 194	194
Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191

XUPROG key, 177, 186, 191, 201	[XTCM DISK2MAIL], 107
XUPROGMODE key, 177, 184, 185,	[XTCM MAIN], 107, 155
186, 191, 196, 201, 202	[XTCM], 169
XURTLC, 171	[XTFCE], 178
XURTLK, 171	[XTFCR], 178
,	[XT-KERMIT EDIT], 206
	[XT-KERMIT MENU], 206
H	[XT-KERMIT RECEIVE], 207
	[XT-KERMIT SEND], 207
%G, 201	[XTLKLKUP], 12, 17
%GL, 201	[XTLKMODKY], 12, 29
%INDEX of Routines option, 179	[XTLKMODPARK], 12, 21, 22
%INDEX Utility, 179, 180, 199	[XTLKMODPARS], 12, 21, 23
%RR, 186	[XTLKMODSH], 12, 27
%RS, 186, 187	[XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKPRTUTL], 12, 19
%ZTPP, 185	[XTLKUSER2], 15, 21
%ZTRDEL, 186	[XTLKUTILITIES], 21
[XDR ADD VERIFIED DUPS], 75	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83	[XT-NUMBER BASE CHANGER], 202
[XDR CHECK PAIR], 73	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185
[XDR EDIT DUP RECORD STATUS],	[XTSUMBLD], 198
77	[XTSUMBLD-CHECK], 195
[XDR EDIT DUP RESOLUTION	[XTV EDIT VERIF PACKAGE], 194
FILE], 85	[XTV MENU], 192
[XDR FIND POTENTIAL	[XT-VARIABLE CHANGER], 184
DUPLICATES], 75	[XT-VERSION NUMBER], 185
[XDR MAIN MENU], 54	[XTVG COMPARE], 194
[XDR MANAGER UTILITIES], 54	[XTVG UPDATE], 194
[XDR MERGE READY	[XTVR COMPARE], 192, 193
DUPLICATES], 72	[XTVR MOST RECENT CHANGE
[XDR MERGE SELECTED PAIR], 72	DATE], 193, 227
[XDR OPERATIONS MENU], 54	[XTVR RESTORE PREV ROUTINE],
[XDR PRINT LIST], 79	193
[XDR PURGE], 86	[XTVR UPDATE], 192, 193
[XDR SEARCH ALL], 57	[XU FIRST LINE PRINT], 185
[XDR TALLY STATUS FIELDS], 81	[XUCM ANALYSE], 105
[XDR UTILITIES MENU], 54	[XUCM COMPUTE LOCAL
[XDR VERIFY ALL], 63	REFERENCES], 103
[XDR VERIFY SELECTED PAIR], 66	[XUCM DISK], 128
[XDR VIEW DUPLICATE RECORD],	[XUCM EDIT DISK THRESHOLD],
78	102

[XUCM EDIT REF THRESH], 102	[XURTL], 169
[XUCM EDIT VOL SET THRESH],	[XURTLC], 170
102	[XURTLCK], 170
[XUCM GRAF MET AVE], 128	[XURTLK], 170
[XUCM LIST DAILY STATS], 127	[XURTLM], 107, 169
[XUCM LIST RAW], 126	[XURTLMA], 170
[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	

Bernstein RT Statistics (detailed)	Ave. Response Time
[XUCMBR2], 127	Graph;.i.[XUCSRG
Build an 'NTEG' Routine for a	GRAPHS
Package option, 198	MENU];.i.[XUCSRG
Calculate and Show Checksum Values	RESPONSE TIME
option, 195	GRAPH]; , 151
Callable Entry Points	CPU/DISK Utilization
Kermit, 211	Report (By
RECEIVE^XTKERMIT, 211	Date/VG);,i.[XUCSRB
SEND^XTKERMIT, 211	REPORTS BY
T0^%ZOSV Start RT Measure, 173	(DATE,VG)];.i.[XUCSRB
T1^%ZOSV Stop RT Measure, 174	CPU/DISK REPORT];,
XRT0 Output Variable, Start Time,	135, 136
173	CPU/DISK Utilization
XRTN Input Variable, Routine	Report (By
Name, 174	VG/Date);,i.[XUCSRA
XTLKKWL, 39	REPORTS BY
Candidate Collection Routine for	(VG,DATE)];.i.[XUCSRA
Patient Merge	CPU/DISK REPORT];, 143
Example, 219	Global Reference Report (By
Candidate Collection, Selecting Fields	Date/VG);,i.[XUCSRB
to Compare in, 91	REPORTS BY
Capacity Management	(DATE,VG)];.i.[XUCSRB
Capacity Management menu	GREF REPORT];, 137, 138
Move Host File to MailMan	Global Reference Report (By
option, 107	VG/Date);,i.[XUCSRA
Response Time Log Options,	REPORTS BY
107	(VG,DATE)];.i.[XUCSRA
VAX/ALPHA Capacity	GREF REPORT];, 144, 145
Management menu, 107	Response Time Report (By
Direct Mode Utility, Resource	Date/VG);,i.[XUCSRB
Usage	REPORTS BY
D ZHDIF^%ZOSV, 174	(DATE,VG)];.i.[XUCSRB
Hardware Performance Summary	RESPONSE REPORT];,
Example, 117	139
MSM Capacity Management	Response Time Report (By
Manager's Menu	VG/Date);,i.[XUCSRA
CM Reports Menu	REPORTS BY
Ave. %CPU & %DISK	(VG,DATE)];.i.[XUCSRA
Graph;.i.[XUCSRG	RESPONSE REPORT];,
GRAPHS	146
MENU];.i.[XUCSRG CPU-	Routine CMNDS/GREF
DISK GRAPH];, 150	Report (By
1//	Date/VG);,i.[XUCSRB
	REPORTS BY

(DATE,VG)];.i.[XUCSRB	Edit VMS Disk Space Threshold
ROU CMNDS/GREF	option, 102
REPORT];, 140, 141	Edit Volume Set Threshold
Routine CMNDS/GREF	option, 102
Report (By	Enable Alerts for Selected
VG/Date);.i.[XUCSRA	Metrics option, 104
REPORTS BY	Performance Analysis option,
(VG,DATE)];.i.[XUCSRA	105
ROU CMNDS/GREF	Performance Monitor
REPORT];, 147, 148	Configuring, 112
System Statistical Report	PERFORMANCE MONITOR
(By Date/VG);.i.[XUCSRB	Configuring, 131
REPORTS BY	Resource Usage
(DATE,VG)];.i.[XUCSRB	^XTMP Global, 155, 158, 166
SYS STAT REPORT];, 142	Date Range, 154
System Statistical Report	Devices, 154
(By VG/Date);.i.[XUCSRA	Host File Server (HFS)
REPORTS BY	Device, 154
(VG,DATE)];.i.[XUCSRA	LOG RESOURCE USAGE?
SYS STAT REPORT];, 149	field, 153
CM Reports Menu;. The options	Measure Resource Consumption
are described in the same	by Package, 153
order as they appear on the	Queuing, 154
screen., 135	Response Time Log Options, 169
CM Reports Menu; i. Capacity	Copy RT Raw Data to FM File
Management	option, 170
MSM Capacity Management	Destroy FM Copy of Raw RT
Manager's Menu	Data option, 170
options, 129	Enable/Disable RT Logging
MSM Site Parameters	option, 169
Enter/Edit Menu; option	Graphic RT Report Print option,
[XUCS SITE EDIT	170
MENU].i.[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU]; is used to configure	option, 170
the MPM after installation.,	Long RT Report Print option,
131	170
options;.i.MSM Capacity	Multiday RT Averages option,
Management Manager's Menu	170
options, 130	Print RT Report option, 170
Performance Assurance menu	Response Time Measures, 169
Compute New Local References	^%ZRTL global, 171, 174
option, 103	^%ZRTL(1, RESPONSE TIME
Edit. Days to Compute	(. 3.091)
Reference Ranges option	^%ZRTL(2, RT
	DATE_UCI,VOL, 171

^%ZRTL(4, RT RAWDATA, 171	Print Formatted Report
Callable Entry Points	(Table/Graph)
T0^%ZOSV Start RT	Example, Graph format
Measure, 173	subtotaled by node
T1^%ZOSV Stop RT	(Live execution), 165
Measure, 174	Example, Table format
XRT0 Output Variable,	with subtotals printed
Start Time, 173	by node and cumulative
XRTN Input Variable,	station totals (Live
Routine Name, 174	execution), 162
Logging is Enabled, 169	Example, Table format
MUMPS Read, 169	without subtotals (Live
Performance Problems, 169	execution), 163
Response Time, 169, 173	option, 161
RT logging, 173, 174	Sort Raw Resource Usage
System Performance, 169	Data
User Termination, 169	Example, Live execution,
XRTL variable, 173	159
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155
Example, Enable	Setup Performance Monitor
collection of data	option, 112
(Queued for background	VPM Reports option, 115
processing), 167	VPM Reports menu
option, 167	Bernstein Response Time
Kill Raw Resource Usage	Reports menu option, 127
Data	CPU Modes/Compute States
Example, Live execution,	option, 125
166	Disk Drive Raw Data Statistics
option, 166	menu, 128
options, 155	Graph Workday Averages for
	Selected Metric option, 128

List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), $201,203$
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	>D $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
CM DAILY STATISTICS file, 109	>D $\$RS$ (OS-specific), 187 ,
CM DISK DRIVE RAW DATA file,	190
115	>D ^%ZTER, 199
CM METRICS file, 103, 110	> D ^ % Z T P 1 , 185, 189
CM METRICS List, 110	> D ^ % Z T P P , 185, 189
CM NODENAME RAW DATA file,	>D ^%ZTRDEL, 186, 190
115, 124	>D ^nsNTEG, 199
CM SITE PARAMETERS file, 107	>D ^XINDEX, 199
Compare Routines on Tape to Disk	>D ^XTBASE, 202, 203
option, 186	>D ^XTCMFILN, 107
Compare Two Routines option, 185	>D ^XTER, 199
Compute New Local References	>D ^XTERPUR, 199
option, 103	> D ^ X T F C E , 178, 189
Configuring the MPM, 131	>D ^XTFCE, 176, 160
Control File	>D ^XTLKKWL, 39
(See also DUPLICATE	>D ATERWE, 39 >D ^XTRCMP, 186, 189
RESOLUTION file), 53	
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a Patient Merge	>x ^%z, 184, 189

Disk Drive Raw Data Statistics menu,	Display Search Status
128	Example, 56
Display Search Status	option, 55
Example, 56	Duplicate Checking Algorithm, 53
option, 55	DUPLICATE RECORD file, 53, 54,
DK^XTLKMGR, 43	63, 66, 72, 73, 75, 77, 78, 81, 85,
DLL^XTLKMGR, 44	86, 87, 88, 91, 94
DSH^XTLKMGR, 44	DUPLICATE RECORD File, 79
DSY^XTLKMGR, 44	Duplicate Records, 53
Duplicate Checker, How to check a	DUPLICATE RESOLUTION file,
pair of records using the., 73	53, 72, 90, 92, 94
Duplicate Checking Algorithm, 53	Duplicate Threshold%, 53, 85, 94
Duplicate Pairs, Duplicate Resolution	Edit Duplicate Record Status
Utilities	Example, 77
How to Verify Duplicate Pairs, 63	option, 77
Duplicate Pairs, How to Verify, 63	Edit Duplicate Resolution File
DUPLICATE RECORD file, 53, 54, 63,	Example, 85
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	option, 85
88, 89, 91, 94	Find Potential Duplicates for an
DUPLICATE RECORD File, 79	Entry in a File
Duplicate Records, 53	Example, 75
DUPLICATE RESOLUTION file, 53,	option, 75
72, 90, 92, 94	Manager Utilities menu
Duplicate Resolution System menu	AUTO Automatically Merge
Manager Utilities menu, 54, 83	Already Verified Duplicates
Operations menu, 54, 55	option, 72, 83
options, 54	FILE Edit Duplicate
Utilities menu, 54, 73	Resolution File option, 85
Duplicate Resolution Utilities	PRGE Purge Duplicate Record
Add Verified Duplicate Pair option,	File option, 86
75	Merge (Ready to Merge) Verified
Automatically Merge Already	Duplicates option, 72
Verified Duplicates	Merge Capability, Developing, 87
Example, 83	Merge Process, 53, 71
option, 72, 83	Merge Process, Interactive, 71
Candidate Collection, Selecting	Merge Selected Verified Duplicate
Fields to Compare in, 91	Pair option, 72
Check Pair of Records to see if	Merge, Customized, 53
Duplicates	Merged-From Record, 53
Example, 74	Merged-To Record, 53
option, 73	Operations menu
Control File	DSS Display Search Status
(See also DUPLICATE	option, 55
RESOLUTION file), 53	MVD Merge (Ready to Merge)
Customized Merge, 53, 87	Verified Duplicates option, 72

SPD Verify Selected Potential	TSF Tally STATUS and
Duplicate Pair option, 66	MERGE STATUS fields
SRCH Start/Halt Duplicate	option, 81
Search option, 57	VIEW View Duplicate Record
SVD Merge Selected Verified	Entries
Duplicate Pair option, 72	option, 78
VPD Verify Potential	Verified Duplicates, 53, 66
Duplicates option, 63	Verified Non-Duplicates, 53, 66
Potential Duplicate Pairs, 53	Verify Potential Duplicates
POTENTIAL DUPLICATE	Example, 64
THRESHOLD%, 53, 85, 94	option, 63
Potential Duplicates, 53, 85, 94	Verify Selected Potential Duplicate
Print List of File Duplicates	Pair
Example, 79	Example, 66
option, 79	option, 66
Purge Duplicate Record File	View Duplicate Record Entries
Example, 86	Example, 78
option, 86	option, 78
Selecting Fields to Compare in	Duplicate Resolution Utilities,, 89
Candidate Collection, 91	Duplicate Search, Duplicate
Start or Halt a Search for	Resolution Utilities
Duplicate Records, 57	Start/Halt Duplicate Search option
Start/Halt Duplicate Search	57
Example, Halting a search, 60	Duplicate Test Routines
Example, Starting a search, 58	Examples, 221
option, 57	Duplicate Threshold%, 53, 85, 94
Tally STATUS and MERGE	Edit. Days to Compute Reference
STATUS fields	Ranges option
Example, 81	Edit Duplicate Record Status
Tally STATUS and MERGE	Example, 77
STATUS fields option, 81	option, 77
Utilities menu	Edit Duplicate Resolution File
ADD Add Verified Duplicate	Example, 85
Pair option, 75	option, 85
CHCK Check Pair of Records to	Edit Kermit Holding File option, 206
see if Duplicates option, 73	Edit Verification Package File option,
EDIT Edit Duplicate Record	194
Status option, 77	Edit VMS Disk Space Threshold
FIND Find Potential	option, 102
Duplicates for an Entry in a	Edit Volume Set Threshold option, 102
File option, 75	Editing in Line Mode, Help, 214
PRNT Print List of File	Enable Alerts for Selected Metrics
Duplicates option, 79	option, 104
	Enable/Disable Collection of Resource
	Usage Data

Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background	Edit Kermit Holding File option,
processing), 167	206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	

LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25
Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWĽ, 39
Pair option, 72	Delete Entries From Look-Up
Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44
MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41
MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21
Example, 25	22, 26, 41, 43

LOCAL LOOKUP file, 11, 12, 17,	Multi-Term Lookup (MTLU) Main
19, 21, 25, 37, 39, 41, 43, 44, 45	Menu options, 15, 21
LOCAL LOOKUP File, 23	Print Utility
LOCAL SHORTCUT file, 12, 13,	Example, 20
14, 17, 21, 22, 42, 44	option, 12, 19
LOCAL SYNONYM file, 12, 13, 14,	Shortcuts, 11, 25
21, 26, 42, 44	Example, 33
Look-up, How to Request a, 13	Point to a Single Word or
Look-ups on Database Files, 13	Phrase, 13
MTLU and FileMan look-ups, 39	Site Implementation, 35
MTLU and VA FileMan Supported	Standard Device Chart, 16
Calls, 39	Synonyms, 11, 25
MTLU, How to Override	Associated with Multiple
FileMan look-ups and MTLU,	Terms, 13
39	Example, 34
Multi-Term Lookup (MTLU)	Multiple Tokens, 13
option, 12, 17	option, 30
Multi-Term Lookup (MTLU) Main	Utilities for MTLU option
Menu	Add Entries To Look-Up File
Add Entries To Look-Up File	option
option, 12, 21, 23	Example, 25
Add/Modify Utility option, 12	Add/Modify Utility option
Keywords option, 12	Example, Keywords, 33
Shortcuts option, 12	Example, Shortcuts, 33
Synonyms option, 12	Example, Synonyms, 34
Delete Entries From Look-Up	Delete Entries From Look-Up
option, 12	option
Multi-Term Lookup (MTLU)	Example, 22
option, 12, 17	MUMPS error, 179
Print Utility option, 12, 19	MUMPS Read, 169
Utilities for MTLU option, 21	Name Test Routine for a Patient
Add Entries To Look-Up File	Merge
option, 21	Example, 221
Add/Modify Utility option	New Fields, 114
Examples, 33	Nodename Average by Day of Week
KE Keywords, 29	[XUCMBR2C], 127
Utilities For MTLU option	NTEG, 197, 198
Add Entries To Look-Up File	Number Base Changer option <locked< td=""></locked<>
option, 23	with XUPROGMODE>, 202
Add/Modify Utility option,	Operations Management menu, 197
21, 25	Output Routines option, 187
SY Synonyms, 30	Performance Analysis option, 105
Delete Entries From Look-	Performance Monitor, 112
Up option, 21, 22	PERFORMANCE MONITOR, 131
CP CP 00011, 21, 22	

Performance Problems, 169	Resource Consumption Measured by
PM MSM RTHIST Task Option,	Package, 153
133	Resource Usage Menu
Potential Duplicate Pairs, 53	options, 155
POTENTIAL DUPLICATE	Resource Usage, Capacity
THRESHOLD%, 53, 85, 94	Management, 153
Print Formatted Report (Table/Graph)	Response Time, 169
Example, Graph format subtotaled	Response Time Log Options menu,
by node (Live execution), 165	107
Example, Table format with	Response Time Report (By Date/VG),
subtotals printed by node and	139
cumulative station totals (Live	Response Time Report (By VG/Date),
execution), 162	$1\overline{4}6$
Example, Table format without	Routine Changes File, 192
subtotals (Live execution), 163	Routine CMNDS/GREF Report (By
option, 161	Date/VG), 140, 141
Print List of File Duplicates	Routine CMNDS/GREF Report (By
Example, 79	VG/Date), 147, 148
option, 79	Routine Compare - Current with
Print RT Report option, 170	Previous option, 192, 193
Print Utility, MTLU	Routine Compare Utility, 192
Example, 20	Routine Edit option, 184
option, 12, 19	Routine Editor, 213, 215
Producing Reports, Searches, and	Routine Management Menu, 197
Statistics Through Standardized	Routine Tools menu
Encoding of Diagnoses and	%INDEX of Routines option, 179
Procedures, 11	Compare Routines on Tape to Disk
Program Integrity Checker option, 197	option, 186
Programmer Options menu, 177, 195,	Compare Two Routines option, 185
201	Delete Routines option, 186
Build an 'NTEG' Routine for a	First Line Routine Print option,
Package option, 198	185
Calculate and Show Checksum	Flow Chart Entire Routine option,
Values option, 195	178
List Global option, 201	Flow Chart from Entry Point
List Global option <locked td="" with<=""><td>option, 178</td></locked>	option, 178
XUPROGMODE>, 201	Group Routine Edit option, 184
Number Base Changer option, 202	Input Routines option, 186
Purge Duplicate Record File	List Routines option, 185
Example, 86	Output Routines option, 187
option, 86	Routine Edit option, 184
Raw Paging/BIO/DIO/FLS/MLS	Variable Changer option, 184
option, 125	Version Number Update option,
Receive Kermit File option, 207	185
	RT logging, 173

RTHIST, 112, 115, 117, 126, 129, 134, 171	System Statistical Report (By Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities Utilities	T0^%ZOSV
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	T1^%ZOSV
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
Setup Performance Monitor option,	Example, 81
112	option, 81
SH^XTLKMGR, 42	TAPE^XTRCMP, 186
Shortcuts, Multi-Term Look-Up	Tasked CM File Update, 134
(MTLU), 11, 12, 25	Tokenizing Routine, 13
Example, 33, 42, 44	Two Standard Deviation Rule, 101
Point to a Single Word or Phrase,	UNDO Edits (Restore to Older Version
13	of Routine) option, 193
Site/Event Rate Summary	Update with Current Routines option,
[XUCMBR2A], 128	192, 193
Sort Raw Resource Usage Data	User Termination, 169
Example, Live execution, 159	Utilities For MTLU option, 21
Example, Live execution with	VA Programming Standards and
output of sorted raw data, 160	Conventions (SAC), 179, 199
Example, Queued for background	Variable Changer option, 184
processing, 159	VAX/ALPHA Capacity Management
option, 158	menu, 107
Standard Device Chart, 16	VAX/ALPHA Performance Monitor
Start or Halt a Search for Duplicates	(VPM), 109
Within a File, 57	Verified Duplicates, Duplicate
Start/Halt Duplicate Search	Resolution Utilities, 53, 66
Example, Halting a search, 60	Verified Non-Duplicates, Duplicate
Example, Starting a search, 58	Resolution Utilities, 53, 66
option, 57	Verifier Tools Menu, 192
SY^XTLKMGR, 42	Accumulate Globals for Package
Synonyms, Multi-Term Look-Up	option, 194
(MTLU), 11, 12, 25, 42, 44	Edit Verification Package File
Associated with Multiple Terms, 13	option, 194
Example, 34	Global Compare for Selected
Multiple Tokens, 13	Package option, 194
option, 30	Last Routine Change Date
System Performance, 169	Recorded option, 193
System Performance Summary	Routine Compare - Current with
Example, 117	Previous option, 192, 193

UNDO Edits (Restore to Older	XUPROGMODE key, 177, 184, 185,
Version of Routine) option, 193	186, 191, 196, 201, 202
Update with Current Routines	XURTLC, 171
option, 192, 193	XURTLK, 171
Verify Potential Duplicates	,
Example, 64	
option, 63	I
Verify Selected Potential Duplicate	
Pair	%G, 201
Example, 66	%GL, 201
option, 66	%INDEX of Routines option, 179
Version Number Update option, 185	%INDEX Utility, 179, 180, 199
VG/DATE MSM CM Reports, 143	%RR, 186
	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
Example, 78	%ZTP1, 185
option, 78	%ZTPP, 185
VMS monitor, 115	,
VPM Reports option, 115	%ZTRDEL, 186
VPM Schedule/Unschedule options,	[XDR ADD VERIFIED DUPS], 75
114	[XDR AUTO MERGE], 72, 83
Write Raw Resource Usage Data	[XDR CHECK PAIR], 73
Example, Live execution, 156	[XDR DISPLAY SEARCH STATUS],
Example, Queued for background	55
processing, 157	[XDR EDIT DUP RECORD STATUS]
option, 155	77
XRTL variable, 169, 173	[XDR EDIT DUP RESOLUTION
XTBASE, 202	FILE], 85
XTER, 196	[XDR FIND POTENTIAL
XTERPUR, 196	DUPLICATES], 75
XTLKER() array, 41	[XDR MAIN MENU], 54
XTLKTOKN, 13	[XDR MANAGER UTILITIES], 54
XTLKZMGR, 12, 21	[XDR MERGE READY
XTRCMP, 186	DUPLICATES], 72
XTSUMBLD, 195	[XDR MERGE SELECTED PAIR], 72
XTV ROUTINE CHANGES file, 192	[XDR OPERATIONS MENU], 54
XTV VERIFICATION PACKAGE file,	[XDR PRINT LIST], 79
194	[XDR PURGE], 86
XTVCHG, 184	[XDR SEARCH ALL], 57
XTVNUM, 185	[XDR TALLY STATUS FIELDS], 81
XUCM TASK NIT, 115, 117	[XDR UTILITIES MENU], 54
XUCM TASK VPM, 115	[XDR VERIFY ALL], 63
XUGET, 197	[XDR VERIFY SELECTED PAIR], 66
XUMGR key, 191	[XDR VIEW DUPLICATE RECORD],
XUPROG key, 177, 186, 191, 201	78
ACT 1000 Acy, 177, 100, 131, 201	[XTCM DISK2MAIL], 107

[XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 102 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XT-KERMIT MENU], 206 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 109 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 IXUCMBR2Cl. 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XUCPKILL], 166 [XTSUMBLD], 198 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XUCPSORT], 158 [XTV MENU], 192 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XUCSR REPORTS MENU], 135 [XT-VERSION NUMBER], 185 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 143 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** DATE], 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES], 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 [XUROUTINES], 197 102 [XUCM EDIT REF THRESH], 102 [XURTL], 169

[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time.
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	D ZHDIF^%ZOSV, 174
AM MSM RTHIST Task Option,	Hardware Performance Summary
133	Example, 117
Application Utilities menu, 15	MSM Capacity Management
Auto Purge of CM Data, 134	Manager's Menu
Automatically Merge Already Verified	CM Reports Menu
Duplicates	Ave. %CPU & %DISK
Example, 83	Graph;.i.[XUCSRG
option, 72, 83	GRAPHS
Ave. %CPU & %DISK Graph, 150	MENU];.i.[XUCSRG CPU-
Ave. Response Time Graph, 151	DISK GRAPH];, 150
Bernstein Response Time Reports	Ave. Response Time
menu option, 127	Graph;.i.[XUCSRG
Bernstein RT Statistics (detailed)	GRAPHS
[XUCMBR2], 127	

MENU];.i.[XUCSRG	Routine CMNDS/GREF
RESPONSE TIME	Report (By
GRAPH]; , 151	VG/Date);.i.[XUCSRA
CPU/DISK Utilization	REPORTS BY
Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	System Statistical Report
REPORTS BY	(By VG/Date);.i.[XUCSRA
(VG,DATE)];.i.[XUCSRA	REPORTS BY
CPU/DISK REPORT];, 143	(VG,DATE)];.i.[XUCSRA
Global Reference Report (By	SYS STAT REPORT];, 149
Date/VG);.i.[XUCSRB	CM Reports Menu;. The options
REPORTS BY	are described in the same
(DATE,VG)];.i.[XUCSRB	order as they appear on the
GREF REPORT];, 137, 138	screen., 135
Global Reference Report (By	CM Reports Menu; i. Capacity
VG/Date);.i.[XUCSRA	Management
REPORTS BY	MSM Capacity Management
(VG,DATE)];.i.[XUCSRA	Manager's Menu
GREF REPORT];, 144, 145	options, 129
Response Time Report (By	MSM Site Parameters
Date/VG);.i.[XUCSRB	Enter/Edit Menu; option
REPORTS BY	[XUCS SITE EDIT
(DATE,VG)];.i.[XUCSRB	MENU].i.[XUCS SITE EDIT
RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);.i.[XUCSRA	options;.i.MSM Capacity
REPORTS BY	Management Manager's Menu
(VG,DATE)];.i.[XUCSRA	options, 130
RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);.i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102

Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169
Host File Server (HFS)	User Termination, 169
Device, 154	XRTL variable, 173
LOG RESOURCE USAGE?	System Performance Summary
field, 153	Example, 117
Measure Resource Consumption	VAX/ALPHA Performance Monitor
by Package, 153	menu
Queuing, 154	Enable/Disable VPM option,
Response Time Log Options, 169	112
Copy RT Raw Data to FM File	Manual Purge of VPM Data
option, 170	option, 112
Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	
	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	Example, Enable
Long RT Report Print option,	collection of data
170	(Queued for background
Multiday RT Averages option,	processing), 167
170	option, 167
Print RT Report option, 170	Kill Raw Resource Usage
Response Time Measures, 169	Data
^%ZRTL global, 171, 174	Example, Live execution,
^%ZRTL(1, RESPONSE TIME	166
$(.\ 3.091)$	option, 166
^%ZRTL(2, RT	options, 155
DATE_UCI,VOL, 171	Print Formatted Report
^%ZRTL(4, RT RAWDATA, 171	(Table/Graph)
Callable Entry Points	Example, Graph format
T0^%ZOSV Start RT	subtotaled by node
Measure, 173	(Live execution), 165

Example, Table format	List Volume Set Information
with subtotals printed	option, 127
by node and cumulative	List Workday Averages for
station totals (Live	Selected Metric(s) option, 127
execution), 162	Locking Data option, 124
Example, Table format	Raw Paging/BIO/DIO/FLS/MLS
without subtotals (Live	option, 125
execution), 163	Check Pair of Records to see if
option, 161	Duplicates
Sort Raw Resource Usage	Example, 74
Data	option, 73
Example, Live execution,	CHECK^XTSUMBLD, 195
159	Checksum, 215
Example, Live execution	CM DAILY STATISTICS file, 109
with output of sorted	CM DISK DRIVE RAW DATA file,
raw data, 160	115
Example, Queued for	CM METRICS file, 103, 110
background processing,	CM METRICS List, 110
159	CM NODENAME RAW DATA file,
option, 158	115, 124
Write Raw Resource Usage	CM SITE PARAMETERS file, 107
Data	Compare Routines on Tape to Disk
Example, Live execution,	option, 186
156	Compare Two Routines option, 185
Example, Queued for	Compute New Local References
background processing,	option, 103
157	Configuring the MPM, 131
option, 155	Control File
Setup Performance Monitor	(See also DUPLICATE
option, 112	RESOLUTION file), 53
VPM Reports option, 115	Copy RT Raw Data to FM File option,
VPM Reports menu	170
Bernstein Response Time	CPU Modes/Compute States option,
Reports menu option, 127	125
CPU Modes/Compute States	CPU/DISK Utilization Report (By
option, 125	Date/VG), 135, 136
Disk Drive Raw Data Statistics	CPU/DISK Utilization Report (By
menu, 128	VG/Date), 143
Graph Workday Averages for	Customized Merge, 53, 87
Selected Metric option, 128	Date of Birth test Routine for a
List Raw RTHIST Data for a	Patient Merge
Range of Dates option, 126	Example, 223
List Raw System Data option,	DATE/VG MSM CM Reports, 135
126	Delete Entries From Look-Up option,
	12, 21, 22

Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), 201, 203	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63
>D ^%RR (OS-specific), 186	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D ^%RS (OS-specific), 187,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ^XTER, 199	Duplicate Resolution Utilities
>D ^XTERPUR, 199	Add Verified Duplicate Pair option,
> D ^ X T F C E , 178, 189	75
> D ^ X T F C R , 178, 189	Automatically Merge Already
>D ^XTLKKWL, 39	Verified Duplicates
>D ATERIXWE, 33 >D ATERIXWE, 186, 189	Example, 83
>D ^XTRGRPE, 184, 189	option, 72, 83
	Candidate Collection, Selecting
>D ^XTVCHG, 184, 189	Fields to Compare in, 91
>D ^XTVNUM, 185, 189	Check Pair of Records to see if
>D CHECK^XTSUMBLD, 195, 199	Duplicates
>D MAIL1^XTCMFILN, 107	Example, 74
>D nsnteg, 197	option, 73
>D ONE^nsNTEG, 197, 199	Control File
>D TAPE^XTRCMP, 186, 190	(See also DUPLICATE
>D^ %RR (OS-specific), 190	RESOLUTION file), 53
>X ^%Z, 184, 189	Customized Merge, 53, 87
Disk Drive Raw Data Statistics menu,	Display Search Status
128 Dignley Seemb Status	Example, 56
Display Search Status	option, 55
Example, 56	Duplicate Checking Algorithm, 53
option, 55	

DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53
DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File
Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
	Utilities menu
Duplicates option, 72	
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	TSF Tally STATUS and
Verified Duplicates option, 72	MERGE STATUS fields
SPD Verify Selected Potential	option, 81
Duplicate Pair option, 66	VIEW View Duplicate Record
SRCH Start/Halt Duplicate	Entries
Search option, 57	option, 78

Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	GRAPHS MENU MSM CM Reports,
Edit Duplicate Resolution File	150
Example, 85	Group Routine Edit option, 184
option, 85	Hardware Performance Summary
Edit Kermit Holding File option, 206	Example, 117
Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background	Edit Kermit Holding File option,
processing), 167	206

Receive Kermit File option, 207	Manual Purge of VPM Data option,
Send Kermit File option, 207	112
KERNEL SITE PARAMETERS file,	Merge (Ready to Merge) Verified
153	Duplicates option, 72
Key Word In Context (KWIC), 13, 35	Merge Capability, Duplicate
Keywords, Multi-Term Look-Up	Resolution Utilities
(MTLU), 11, 12, 25, 41, 43	Developing, 87
Associated with a Single Term and	Merge Process, 53, 71
Multiple Terms, 14	Merge Process, Interactive, 71
Example, 33	Merge Process, Verified Duplicates, 71
option, 29	Merge Routines, 53
Kill Raw Resource Usage Data	Merge Selected Verified Duplicate
Example, Live execution, 166	Pair option, 72
option, 166	Merge Verified Duplicates, Duplicate
Kill Raw RT Data, Save Means option,	Resolution Utilities
170	Merge Process, 71
KWIC, 13, 35	Merge, Customized, 53
L^XTLKMGR, 43	Merging of Duplicates, 53
Last Routine Change Date Recorded	Merging Of Duplicates, 53
option, 193, 227	Morning RTHIST Data Capture, 133
Line Mode Editing Help, 214	Move Host File to MailMan option,
List Global option, 201	107
List Raw RTHIST Data for a Range of	MPM Schedule/Unschedule options,
Dates option, 126	133
List Raw System Data option, 126	MPM, How to configure the, 131
List Routines option, 185	MSM Capacity Management
List Volume Set Information option,	Manager's Menu
127	options;, 129
List Workday Averages for Selected	MSM RTHIST REPORT DATA file,
Metric(s) option, 127	129
LKUP^XTLKMGR, 37, 39, 45	MSM RTHIST SITE file, 129
LOCAL KEYWORD file, 12, 14, 21,	MSM Site Parameters Enter/Edit
22, 26, 41, 43	Menu, 131
LOCAL LOOKUP file, 11, 12, 17, 19,	Multiday RT Averages option, 170
21, 25, 37, 39, 41, 43, 44, 45	Multi-Term Lookup (MTLU)
LOCAL LOOKUP File, 23	option, 17
LOCAL SHORTCUT file, 12, 13, 14,	Multi-Term Look-Up (MTLU), 12
17, 21, 22, 42, 44	Add Entries To Look-Up File
LOCAL SYNONYM file, 12, 13, 14, 21,	Example, 25
26, 42, 44	IRM/Developer Utility, 12, 21,
Locking Data option, 124	23
LOG RESOURCE USAGE? field, 153	option, 12, 21, 23
Logging is Enabled, 169	Set Entries in the LOCAL
Long RT Report Print option, 170	LOOKUP file, 21, 23

XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL LOOKUP File, 23	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25

Example, 33	Print Formatted Report (Table/Graph)
Point to a Single Word or	Example, Graph format subtotaled
Phrase, 13	by node (Live execution), 165
Site Implementation, 35	Example, Table format with
Standard Device Chart, 16	subtotals printed by node and
Synonyms, 11, 25	cumulative station totals (Live
Associated with Multiple	execution), 162
Terms, 13	Example, Table format without
Example, 34	subtotals (Live execution), 163
Multiple Tokens, 13	option, 161
option, 30	Print List of File Duplicates
Utilities for MTLU option	Example, 79
Add Entries To Look-Up File	option, 79
option	Print RT Report option, 170
Example, 25	Print Utility, MTLU
Add/Modify Utility option	Example, 20
Example, Keywords, 33	option, 12, 19
Example, Shortcuts, 33	Producing Reports, Searches, and
Example, Synonyms, 34	Statistics Through Standardized
Delete Entries From Look-Up	Encoding of Diagnoses and
option	Procedures, 11
Example, 22	Program Integrity Checker option, 197
MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option < Locked with
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
Operations Management menu, 197	Example, 86
Output Routines option, 187	option, 86
Performance Analysis option, 105	Raw Paging/BIO/DIO/FLS/MLS
Performance Monitor, 112	option, 125
PERFORMANCE MONITOR, 131	Receive Kermit File option, 207
Performance Problems, 169	Resource Consumption Measured by
PM MSM RTHIST Task Option,	Package, 153
133	Resource Usage Menu
Potential Duplicate Pairs, 53	options, 155
POTENTIAL DUPLICATE	Resource Usage, Capacity
THRESHOLD%, 53, 85, 94	Management, 153
	Response Time, 169

Response Time Log Options menu,	Selecting Fields to Compare in
107	Candidate Collection, Duplicate
Response Time Report (By Date/VG),	Resolution Utilities, 91
139	Send Kermit File option, 207
Response Time Report (By VG/Date), 146	Setup Performance Monitor option, 112
Routine Changes File, 192	SH^XTLKMGR, 42
Routine CMNDS/GREF Report (By	Shortcuts, Multi-Term Look-Up
Date/VG), 140, 141	(MTLU), 11, 12, 25
Routine CMNDS/GREF Report (By	Example, 33, 42, 44
VG/Date), 147, 148	Point to a Single Word or Phrase,
Routine Compare - Current with	13
Previous option, 192, 193	Site/Event Rate Summary
Routine Compare Utility, 192	[XUCMBR2A], 128
Routine Edit option, 184	Sort Raw Resource Usage Data
Routine Editor, 213, 215	Example, Live execution, 159
Routine Management Menu, 197	Example, Live execution with
Routine Tools menu	output of sorted raw data, 160
%INDEX of Routines option, 179	Example, Queued for background
Compare Routines on Tape to Disk	processing, 159
option, 186	option, 158
Compare Two Routines option, 185	Standard Device Chart, 16
Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
Flow Chart Entire Routine option,	Example, Halting a search, 60
178	Example, Starting a search, 58
Flow Chart from Entry Point	option, 57
option, 178	SY^XTLKMGR, 42
Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	$T0^{S}$
Display Search Status option, 55	Start RT Measure, 173
	$T1^{S}$ ZOSV

Stop RT Measure, 174	Verify Selected Potential Duplicate
Tally STATUS and MERGE STATUS	Pair
fields	Example, 66
Example, 81	option, 66
option, 81	Version Number Update option, 185
TAPE^XTRCMP, 186	VG/DATE MSM CM Reports, 143
Tasked CM File Update, 134	View Duplicate Record Entries
Tokenizing Routine, 13	Example, 78
Two Standard Deviation Rule, 101	option, 78
UNDO Edits (Restore to Older Version	VMS monitor, 115
of Routine) option, 193	VPM Reports option, 115
Update with Current Routines option,	VPM Schedule/Unschedule options,
192, 193	114
User Termination, 169	Write Raw Resource Usage Data
Utilities For MTLU option, 21	Example, Live execution, 156
VA Programming Standards and	Example, Queued for background
Conventions (SAC), 179, 199	processing, 157
Variable Changer option, 184	option, 155
VAX/ALPHA Capacity Management	XRTL variable, 169, 173
menu, 107	XTBASE, 202
VAX/ALPHA Performance Monitor	XTER, 196
(VPM), 109	XTERPUR, 196
Verified Duplicates, Duplicate	XTLKER() array, 41
Resolution Utilities, 53, 66	XTLKTOKN, 13
Verified Non-Duplicates, Duplicate	XTLKZMGR, 12, 21
Resolution Utilities, 53, 66	XTRCMP, 186
Verifier Tools Menu, 192	XTSUMBLD, 195
Accumulate Globals for Package	XTV ROUTINE CHANGES file, 192
option, 194	XTV VERIFICATION PACKAGE file,
Edit Verification Package File	194
option, 194	XTVCHG, 184
Global Compare for Selected	XTVNUM, 185
Package option, 194	XUCM TASK NIT, 115, 117
Last Routine Change Date	XUCM TASK VPM, 115
Recorded option, 193	XUGET, 197
Routine Compare - Current with	XUMGR key, 191
Previous option, 192, 193	XUPROG key, 177, 186, 191, 201
UNDO Edits (Restore to Older	XUPROGMODE key, 177, 184, 185,
Version of Routine) option, 193	186, 191, 196, 201, 202
Update with Current Routines	XURTLC, 171
option, 192, 193	XURTLK, 171
Verify Potential Duplicates	•
Example, 64	
option, 63	

K	[XT-KERMIT MENU], 206
	[XT-KERMIT RECEIVE], 207
%G, 201	[XT-KERMIT SEND], 207
%GL, 201	[XTLKLKUP], 12, 17
%INDEX of Routines option, 179	[XTLKMODKY], 12, 29
%INDEX Utility, 179, 180, 199	[XTLKMODPARK], 12, 21, 22
%RR, 186	[XTLKMODPARS], 12, 21, 23
%RS, 186, 187	[XTLKMODSH], 12, 27
%ZTER, 196	[XTLKMODSY], 12, 30
%ZTP1, 185	[XTLKMODUTL], 12, 21, 25
%ZTPP, 185	[XTLKPRTUTL], 12, 19
%ZTRDEL, 186	[XTLKUSER2], 15, 21
[XDR ADD VERIFIED DUPS], 75	[XTLKUTILITIES], 21
[XDR AUTO MERGE], 72, 83	[XTMENU], 15, 21, 54
[XDR CHECK PAIR], 73	[XT-NUMBER BASE CHANGER], 202
[XDR DISPLAY SEARCH STATUS],	[XTRDEL], 186
55	[XTRGRPE], 184
[XDR EDIT DUP RECORD STATUS],	[XT-ROUTINE COMPARE], 185
77	[XTSUMBLD], 198
XDR EDIT DUP RESOLUTION	[XTSUMBLD-CHECK], 195
FILE], 85	[XTV EDIT VERIF PACKAGE], 194
[XDR FIND POTENTIAL	[XTV MENU], 192
DUPLICATES], 75	[XT-VARIABLE CHANGER], 184
[XDR MAIN MENU], 54	[XT-VERSION NUMBER], 185
[XDR MANAGER UTILITIES], 54	[XTVG COMPARE], 194
[XDR MERGE READY	[XTVG UPDATE], 194
DUPLICATES], 72	[XTVR COMPARE], 192, 193
[XDR MERGE SELECTED PAIR], 72	[XTVR MOST RECENT CHANGE
[XDR OPERATIONS MENU], 54	DATE], 193, 227
[XDR PRINT LIST], 79	[XTVR RESTORE PREV ROUTINE],
[XDR PURGE], 86	193
[XDR SEARCH ALL], 57	[XTVR UPDATE], 192, 193
[XDR TALLY STATUS FIELDS], 81	[XU FIRST LINE PRINT], 185
[XDR UTILITIES MENU], 54	[XUCM ANALYSE], 105
[XDR VERIFY ALL], 63	[XUCM COMPUTE LOCAL
[XDR VERIFY SELECTED PAIR], 66	REFERENCES], 103
[XDR VIEW DUPLICATE RECORD],	[XUCM DISK], 128
78	[XUCM EDIT DISK THRESHOLD],
[XTCM DISK2MAIL], 107	102
[XTCM MAIN], 107, 155	[XUCM EDIT REF THRESH], 102
[XTCM], 169	[XUCM EDIT VOL SET THRESH],
[XTFCE], 178	102
[XTFCR], 178	[XUCM GRAF MET AVE], 128
[XT-KERMIT EDIT], 206	[XUCM LIST DAILY STATS], 127
	[XUCM LIST RAW], 126

[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points

Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];.i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);,i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];.i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
Move Host File to MailMan	VG/Date);.i.[XUCSRA
option, 107	REPORTS BY
Response Time Log Options,	(VG,DATE)];.i.[XUCSRA
107	GREF REPORT];, 144, 145
VAX/ALPHA Capacity	Response Time Report (By
Management menu, 107	Date/VG);.i.[XUCSRB
Direct Mode Utility, Resource	REPORTS BY
Usage	(DATE,VG)];.i.[XUCSRB
D ZHDIF^%ZOSV, 174	RESPONSE REPORT];,
Hardware Performance Summary	139
Example, 117	Response Time Report (By
MSM Capacity Management	VG/Date);.i.[XUCSRA
Manager's Menu	REPORTS BY
CM Reports Menu	(VG,DATE)];.i.[XUCSRA
Ave. %CPU & %DISK	RESPONSE REPORT];,
Graph;.i.[XUCSRG	146
GRAPHS	Routine CMNDS/GREF
MENU];.i.[XUCSRG CPU-	Report (By
DISK GRAPH];, 150	Date/VG);.i.[XUCSRB
Ave. Response Time	REPORTS BY
Graph;.i.[XUCSRG	(DATE,VG)];.i.[XUCSRB
GRAPHS	ROU CMNDS/GREF
MENU];.i.[XUCSRG	REPORT];, 140, 141
RESPONSE TIME	Routine CMNDS/GREF
GRAPH];, 151	Report (By
CPU/DISK Utilization	VG/Date);.i.[XUCSRA
Report (By	REPORTS BY
	(VG,DATE)];.i.[XUCSRA
	\ / / / L

ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);,i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu; i. Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option,
Enter/Edit Menu; option	170
[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU].i.[XUCS SITE EDIT	option, 170
MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(.3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105 Deuf was a Manitan	Start Time, 173
Performance Monitor	

XRTN Input Variable,	station totals (Live
Routine Name, 174	execution), 162
Logging is Enabled, 169	Example, Table format
MUMPS Read, 169	without subtotals (Live
Performance Problems, 169	execution), 163
Response Time, 169, 173	option, 161
RT logging, 173, 174	Sort Raw Resource Usage
System Performance, 169	Data
User Termination, 169	Example, Live execution,
XRTL variable, 173	159
· · · · · · · · · · · · · · · · · · ·	
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155
Example, Enable	Setup Performance Monitor
collection of data	option, 112
(Queued for background	VPM Reports option, 115
processing), 167	VPM Reports menu
option, 167	Bernstein Response Time
Kill Raw Resource Usage	Reports menu option, 127
Data	CPU Modes/Compute States
Example, Live execution,	option, 125
166	Disk Drive Raw Data Statistics
option, 166	menu, 128
options, 155	Graph Workday Averages for
Print Formatted Report	Selected Metric option, 128
(Table/Graph)	List Raw RTHIST Data for a
Example, Graph format	Range of Dates option, 126
subtotaled by node	List Raw System Data option,
(Live execution), 165	126
Example, Table format	List Volume Set Information
-	
with subtotals printed	option, 127
by node and cumulative	List Workday Averages for Selected Metric(s) option, 127
	selected Metric(s) obtion. 127

Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), 201, 203
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	>D ^%RR (OS-specific), 186
CM DAILY STATISTICS file, 109	>D ^%RS (OS-specific), 187,
CM DISK DRIVE RAW DATA file,	190
115	>D ^%ZTER, 199
CM METRICS file, 103, 110	> D ^ % Z T P 1 , 185, 189
CM METRICS List, 110	> D ^ % Z T P P , 185, 189
CM NODENAME RAW DATA file,	>D ^%ZTRDEL, 186, 190
115, 124	>D ^nsNTEG, 199
CM SITE PARAMETERS file, 107	>D AXINDEX, 199
Compare Routines on Tape to Disk	•
option, 186	>D ^XTBASE, 202, 203 >D ^XTCMFILN, 107
Compare Two Routines option, 185	•
Compute New Local References	>D ^XTER, 199
option, 103	>D ^XTERPUR, 199
Configuring the MPM, 131	> D ^ X T F C E , 178, 189
Control File	> D ^ X T F C R , 178, 189
(See also DUPLICATE	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44

Duplicate Checker, How to check a	DUPLICATE RESOLUTION file,
pair of records using the., 73	53, 72, 90, 92, 94
Duplicate Checking Algorithm, 53	Duplicate Threshold%, 53, 85, 94
Duplicate Pairs, Duplicate Resolution	Edit Duplicate Record Status
Utilities	Example, 77
How to Verify Duplicate Pairs, 63	option, 77
Duplicate Pairs, How to Verify, 63	Edit Duplicate Resolution File
DUPLICATE RECORD file, 53, 54, 63,	Example, 85
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	option, 85
88, 89, 91, 94	Find Potential Duplicates for an
DUPLICATE RECORD File, 79	Entry in a File
Duplicate Records, 53	Example, 75
DUPLICATE RESOLUTION file, 53,	option, 75
72, 90, 92, 94	Manager Utilities menu
Duplicate Resolution System menu	AUTO Automatically Merge
Manager Utilities menu, 54, 83	Already Verified Duplicates
Operations menu, 54, 55	option, 72, 83
options, 54	FILE Edit Duplicate
Utilities menu, 54, 73	Resolution File option, 85
Duplicate Resolution Utilities	PRGE Purge Duplicate Record
Add Verified Duplicate Pair option,	File option, 86
75	Merge (Ready to Merge) Verified
Automatically Merge Already	Duplicates option, 72
Verified Duplicates	Merge Capability, Developing, 87
Example, 83	Merge Process, 53, 71
option, 72, 83	Merge Process, Interactive, 71
Candidate Collection, Selecting	Merge Selected Verified Duplicate
Fields to Compare in, 91	Pair option, 72
Check Pair of Records to see if	Merge, Customized, 53
Duplicates	Merged-From Record, 53
Example, 74	Merged-To Record, 53
option, 73	Operations menu
Control File	DSS Display Search Status
(See also DUPLICATE	option, 55
RESOLUTION file), 53	MVD Merge (Ready to Merge)
Customized Merge, 53, 87	Verified Duplicates option, 72
Display Search Status	SPD Verify Selected Potential
Example, 56	Duplicate Pair option, 66
option, 55	SRCH Start/Halt Duplicate
Duplicate Checking Algorithm, 53	Search option, 57
DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53

POTENTIAL DUPLICATE	Verify Selected Potential Duplicate
THRESHOLD%, 53, 85, 94	Pair
Potential Duplicates, 53, 85, 94	Example, 66
Print List of File Duplicates	option, 66
Example, 79	View Duplicate Record Entries
option, 79	Example, 78
Purge Duplicate Record File	option, 78
Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option,
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option
Tally STATUS and MERGE	Edit Duplicate Record Status
STATUS fields	Example, 77
Example, 81	option, 77
Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196

File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option,
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	Manual Purge of VPM Data option,
Receive Kermit File option, 207	112 Manga (Pandy to Manga) Vanified
Send Kermit File option, 207	Merge (Ready to Merge) Verified
KERNEL SITE PARAMETERS file,	Duplicates option, 72
153 Key Word In Context (KWIC), 13, 35	Merge Capability, Duplicate Resolution Utilities
IZEV WOLU III COILLEXT (IZWIC), 15. 50	nesolution Othlities

Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWL, 39
Pair option, 72	Delete Entries From Look-Up
Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44
MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41
MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21,
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39

MTLU, How to Override	Associated with Multiple
FileMan look-ups and MTLU,	Terms, 13
39	Example, 34
Multi-Term Lookup (MTLU)	Multiple Tokens, 13
option, 12, 17	option, 30
Multi-Term Lookup (MTLU) Main	Utilities for MTLU option
Menu	Add Entries To Look-Up File
Add Entries To Look-Up File	option
option, 12, 21, 23	Example, 25
Add/Modify Utility option, 12	Add/Modify Utility option
Keywords option, 12	Example, Keywords, 33
Shortcuts option, 12	Example, Shortcuts, 33
Synonyms option, 12	Example, Synonyms, 34
Delete Entries From Look-Up	Delete Entries From Look-Up
option, 12	option
Multi-Term Lookup (MTLU)	Example, 22
option, 12, 17	MUMPS error, 179
Print Utility option, 12, 19	MUMPS Read, 169
Utilities for MTLU option, 21	Name Test Routine for a Patient
Add Entries To Look-Up File	Merge
option, 21	Example, 221
Add/Modify Utility option	New Fields, 114
Examples, 33	Nodename Average by Day of Week
KE Keywords, 29	[XUCMBR2C], 127
Utilities For MTLU option	NTEG, 197, 198
Add Entries To Look-Up File	Number Base Changer option < Locked
option, 23	with XUPROGMODE>, 202
Add/Modify Utility option,	Operations Management menu, 197
21, 25	Output Routines option, 187
SY Synonyms, 30	Performance Analysis option, 105
Delete Entries From Look-	Performance Monitor, 112
Up option, 21, 22	PERFORMANCE MONITOR, 131
Multi-Term Lookup (MTLU) Main	Performance Problems, 169
Menu options, 15, 21	PM MSM RTHIST Task Option,
Print Utility	133
Example, 20	Potential Duplicate Pairs, 53
option, 12, 19	POTENTIAL DUPLICATE
Shortcuts, 11, 25	THRESHOLD%, 53, 85, 94
Example, 33	Print Formatted Report (Table/Graph)
Point to a Single Word or	Example, Graph format subtotaled
Phrase, 13	by node (Live execution), 165
Site Implementation, 35	Example, Table format with
Standard Device Chart, 16	subtotals printed by node and
Synonyms, 11, 25	<u>-</u>

cumulative station totals (Live	Response Time Report (By VG/Date),
execution), 162	146
Example, Table format without	Routine Changes File, 192
subtotals (Live execution), 163	Routine CMNDS/GREF Report (By
option, 161	Date/VG), 140, 141
Print List of File Duplicates	Routine CMNDS/GREF Report (By
Example, 79	VG/Date), 147, 148
option, 79	Routine Compare - Current with
Print RT Report option, 170	Previous option, 192, 193
Print Utility, MTLU	Routine Compare Utility, 192
Example, 20	Routine Edit option, 184
option, 12, 19	Routine Editor, 213, 215
Producing Reports, Searches, and	Routine Management Menu, 197
Statistics Through Standardized	Routine Tools menu
Encoding of Diagnoses and	%INDEX of Routines option, 179
Procedures, 11	Compare Routines on Tape to Disk
Program Integrity Checker option, 197	option, 186
Programmer Options menu, 177, 195,	Compare Two Routines option, 185
201	Delete Routines option, 186
Build an 'NTEG' Routine for a	First Line Routine Print option,
Package option, 198	185
Calculate and Show Checksum	Flow Chart Entire Routine option,
Values option, 195	178
List Global option, 201	Flow Chart from Entry Point
List Global option <locked td="" with<=""><td>option, 178</td></locked>	option, 178
XUPROGMODE>, 201	Group Routine Edit option, 184
Number Base Changer option, 202	Input Routines option, 186
Purge Duplicate Record File	List Routines option, 185
Example, 86	Output Routines option, 187
option, 86	Routine Edit option, 184
Raw Paging/BIO/DIO/FLS/MLS	Variable Changer option, 184
option, 125	Version Number Update option,
Receive Kermit File option, 207	185
Resource Consumption Measured by	RT logging, 173
Package, 153	RTHIST, 112, 115, 117, 126, 129, 134,
Resource Usage Menu	171
options, 155	Search Status option, Display the, 55
Resource Usage, Capacity	Search Status, Duplicate Resolution
Management, 153	Utilities
Response Time, 169	Display Search Status option, 55
Response Time Log Options menu,	Selecting Fields to Compare in
107	Candidate Collection, Duplicate
Response Time Report (By Date/VG),	Resolution Utilities, 91
139	Send Kermit File option, 207

Setup Performance Monitor option,	option, 81
112	TAPE^XTRCMP, 186
SH^XTLKMGR, 42	Tasked CM File Update, 134
Shortcuts, Multi-Term Look-Up	Tokenizing Routine, 13
(MTLU), 11, 12, 25	Two Standard Deviation Rule, 101
Example, 33, 42, 44	UNDO Edits (Restore to Older Version
Point to a Single Word or Phrase,	of Routine) option, 193
13	Update with Current Routines option,
Site/Event Rate Summary	192, 193
[XUCMBR2A], 128	User Termination, 169
Sort Raw Resource Usage Data	Utilities For MTLU option, 21
Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185

VG/DATE MSM CM Reports, 143	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
Example, 78	%ZTP1, 185
option, 78	%ZTPP, 185
VMS monitor, 115	%ZTRDEL, 186
VPM Reports option, 115	[XDR ADD VERIFIED DUPS], 75
VPM Schedule/Unschedule options,	[XDR AUTO MERGE], 72, 83
114	[XDR CHECK PAIR], 73
Write Raw Resource Usage Data	[XDR DISPLAY SEARCH STATUS],
Example, Live execution, 156	55
Example, Queued for background	[XDR EDIT DUP RECORD STATUS].
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54
XTLKTOKN, 13	[XDR MERGE READY
XTLKZMGR, 12, 21	DUPLICATES], 72
XTRCMP, 186	[XDR MERGE SELECTED PAIR], 72
XTSUMBLD, 195	[XDR OPERATIONS MENU], 54
XTV ROUTINE CHANGES file, 192	[XDR PRINT LIST], 79
XTV VERIFICATION PACKAGE file,	[XDR PURGE], 86
194	[XDR SEARCH ALL], 57
XTVCHG, 184	[XDR TALLY STATUS FIELDS], 81
XTVNUM, 185	[XDR UTILITIES MENU], 54
XUCM TASK NIT, 115, 117	[XDR VERIFY ALL], 63
XUCM TASK VPM, 115	[XDR VERIFY SELECTED PAIR], 66
XUGET, 197	[XDR VIEW DUPLICATE RECORD],
XUMGR key, 191	78
XUPROG key, 177, 186, 191, 201	[XTCM DISK2MAIL], 107
XUPROGMODE key, 177, 184, 185,	[XTCM MAIN], 107, 155
186, 191, 196, 201, 202	[XTCM], 169
XURTLC, 171	[XTFCE], 178
XURTLK, 171	[XTFCR], 178
	[XT-KERMIT EDIT], 206
т	[XT-KERMIT MENU], 206
L	[XT-KERMIT RECEIVE], 207
0/C 201	[XT-KERMIT SEND], 207
%G, 201 %GL, 201	[XTLKLKUP], 12, 17
•	[XTLKMODKY], 12, 29
%INDEX of Routines option, 179 %INDEX Utility, 179, 180, 199	[XTLKMODPARK], 12, 21, 22
• • • • • • • • • • • • • • • • • • • •	[XTLKMODPARS], 12, 21, 23
%RR, 186	[XTLKMODSH], 12, 27

[XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XT-VERSION NUMBER], 185 [XUCSR REPORTS MENU], 135 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** DATE], 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 193 [XUPR RTN EDIT], 184 [XTVR UPDATE], 192, 193 [XUPRGL], 201 [XU FIRST LINE PRINT], 185 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 [XUPRROU], 185 XUCM COMPUTE LOCAL REFERENCES, 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 [XUROUTINES], 197 102 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XUCM EDIT VOL SET THRESH], [XURTLC], 170 102 [XURTLCK], 170 [XURTLK], 170 [XUCM GRAF MET AVE], 128 [XUCM LIST DAILY STATS], 127 [XURTLM], 107, 169 [XUCM LIST RAW], 126 [XURTLMA], 170 [XUCM LIST VOL SET INFO], 127 [XURTLP], 170 [XUCM LOCKS], 124 [XURTLPG], 170 [XUCM MAIN], 107, 155 [XURTLPL], 170 [XUCM MODES], 125 [XUSITEMGR], 197 [XUCM ON/OFF], 112 ^%Z Editor, 184, 213, 215 [XUCM PAGE], 125 ^%Z Global, 213 [XUCM PERFORMANCE MONITOR], ^%ZOSV, 170, 174 109 ^%ZRTL, 169, 170, 171, 174

^%ZRTL(1, RESPONSE TIME (.	XRTN Input Variable, Routine
3.091)	Name, 174
^%ZRTL(2, RT DATE_UCI,VOL, 171	XTLKKWL, 39
^%ZRTL(4, RT RAWDATA, 171	Candidate Collection Routine for
^XINDEX, 182	Patient Merge
^XTLKDICL, 13, 37, 43, 45	Example, 219
^XTLKMGR, 41, 42	Candidate Collection, Selecting Fields
^XTLKWIC, 35	to Compare in, 91
^XTMP Global, 155, 158, 166	Capacity Management
^XUP, 196	Capacity Management menu
Accumulate Globals for Package	Move Host File to MailMan
option, 194	option, 107
ACTION menu, 215	Response Time Log Options,
Add Entries To Look-Up File option,	107
12, 21, 23	VAX/ALPHA Capacity
Add Verified Duplicate Pair option, 75	Management menu, 107
Add/Modify Utility option, 12, 21, 25	Direct Mode Utility, Resource
ALTERNATE EDITOR file, 209	Usage
AM MSM RTHIST Task Option,	D ZHDIF^%ZOSV, 174
133	Hardware Performance Summary
Application Utilities menu, 15	Example, 117
Auto Purge of CM Data, 134	MSM Capacity Management
Automatically Merge Already Verified	Manager's Menu
Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	Ave. Response Time
Bernstein RT Statistics (detailed)	Graph;.i.[XUCSRG
[XUCMBR2], 127	GRAPHS
Build an 'NTEG' Routine for a	MENU];,i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH]; , 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
To^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
	VG/Date);,i.[XUCSRA

REPORTS BY	System Statistical Report
(VG,DATE)];.i.[XUCSRA	(By VG/Date);.i.[XUCSRA
CPU/DISK REPORT];, 143	REPORTS BY
Global Reference Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	SYS STAT REPORT];, 149
REPORTS BY	CM Reports Menu;. The options
(DATE,VG)];.i.[XUCSRB	are described in the same
GREF REPORT];, 137, 138	order as they appear on the
Global Reference Report (By	screen., 135
VG/Date);.i.[XUCSRA	CM Reports Menu; i. Capacity
REPORTS BY	Management
(VG,DATE)];.i.[XUCSRA	MSM Capacity Management
GREF REPORT];, 144, 145	Manager's Menu
Response Time Report (By	options, 129
Date/VG);.i.[XUCSRB	MSM Site Parameters
REPORTS BY	Enter/Edit Menu; option
(DATE,VG)];.i.[XUCSRB	XUCS SITE EDIT
RESPONSE REPORT];,	MENU].i.[XUCS SITE EDIT
139	MENU]; is used to configure
Response Time Report (By	the MPM after installation.,
VG/Date);.i.[XUCSRA	131
REPORTS BY	options;.i.MSM Capacity
(VG,DATE)];.i.[XUCSRA	Management Manager's Menu
RESPONSE REPORT];,	options, 130
146	Performance Assurance menu
Routine CMNDS/GREF	Compute New Local References
Report (By	option, 103
Date/VG);.i.[XUCSRB	Edit. Days to Compute
REPORTS BY	Reference Ranges option
(DATE,VG)];.i.[XUCSRB	Edit VMS Disk Space Threshold
ROU CMNDS/GREF	option, 102
REPORT];, 140, 141	Edit Volume Set Threshold
Routine CMNDS/GREF	option, 102
Report (By	Enable Alerts for Selected
VG/Date);.i.[XUCSRA	Metrics option, 104
REPORTS BY	Performance Analysis option,
(VG,DATE)];.i.[XUCSRA	105
ROU CMNDS/GREF	Performance Monitor
REPORT];, 147, 148	Configuring, 112
System Statistical Report	PERFORMANCE MONITOR
(By Date/VG);.i.[XUCSRB	Configuring, 131
REPORTS BY	Resource Usage
(DATE,VG)];.i.[XUCSRB	^XTMP Global, 155, 158, 166
SYS STAT REPORT];, 142	Date Range, 154
	Devices, 154

Host File Server (HFS)	User Termination, 169
Device, 154	XRTL variable, 173
LOG RESOURCE USAGE?	System Performance Summary
field, 153	Example, 117
Measure Resource Consumption	VAX/ALPHA Performance Monitor
by Package, 153	menu
Queuing, 154	Enable/Disable VPM option,
Response Time Log Options, 169	112
Copy RT Raw Data to FM File	Manual Purge of VPM Data
option, 170	option, 112
Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	Example, Enable
Long RT Report Print option,	collection of data
170	(Queued for background
Multiday RT Averages option,	processing), 167
170	option, 167
Print RT Report option, 170	Kill Raw Resource Usage
Response Time Measures, 169	Data
^%ZRTL global, 171, 174	Example, Live execution,
^%ZRTL(1, RESPONSE TIME	166
(. 3.091)	option, 166
^%ZRTL(2, RT	options, 155
DATE_UCI,VOL, 171	Print Formatted Report
^%ZRTL(4, RT RAWDATA, 171	(Table/Graph)
Callable Entry Points	Example, Graph format
T0^%ZOSV Start RT	subtotaled by node
Measure, 173	(Live execution), 165
T1^%ZOSV Stop RT	Example, Table format
Measure, 174	with subtotals printed
XRT0 Output Variable,	by node and cumulative
Start Time, 173	station totals (Live
XRTN Input Variable,	execution), 162
Routine Name, 174	Example, Table format
Logging is Enabled, 169	without subtotals (Live
MUMPS Read, 169	execution), 163
Performance Problems, 169	option, 161
Response Time, 169, 173	Sort Raw Resource Usage
RT logging, 173, 174	Data
System Performance, 169	

Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186
Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), $201,203$
CHECK^XTSUMBLD, 195	

>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63
>D ^%RR (OS-specific), 186	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D ^%RS (OS-specific), 187,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D AINDEA, 133 >D AXTBASE, 202, 203	options, 54
	Utilities menu, 54, 73
>D ^XTCMFILN, 107	Duplicate Resolution Utilities
>D ^XTER, 199	Add Verified Duplicate Pair option
>D ^XTERPUR, 199	75
> D ^ X T F C E , 178, 189	Automatically Merge Already
> D ^ X T F C R , 178, 189	Verified Duplicates
>D ^XTLKKWL, 39	Example, 83
>D ^XTRCMP, 186, 189	option, 72, 83
>D ^XTRGRPE, 184, 189	Candidate Collection, Selecting
>D ^XTVCHG, 184, 189	Fields to Compare in, 91
>D ^XTVNUM, 185, 189	Check Pair of Records to see if
>D CHECK^XTSUMBLD, 195 , 199	Duplicates
>D MAIL1^XTCMFILN, 107	Example, 74
>D nsNTEG, 197	option, 73
$>$ D ONE n sNTEG, 197 , 199	Control File
>D TAPE^XTRCMP, 186, 190	(See also DUPLICATE
>D^ %RR (OS-specific), 190	RESOLUTION file), 53
>X ^%Z, 184, 189	Customized Merge, 53, 87
Disk Drive Raw Data Statistics menu,	Display Search Status
128	Example, 56
Display Search Status	option, 55
Example, 56	Duplicate Checking Algorithm, 53
option, 55	DUPLICATE RECORD file, 53, 54.
DK^XTLKMGR, 43	63, 66, 72, 73, 75, 77, 78, 81, 85,
DLL^XTLKMGR, 44	86, 87, 88, 91, 94
DSH^XTLKMGR, 44	DUPLICATE RECORD File, 79
DSY^XTLKMGR, 44	Duplicate Records, 53
Duplicate Checker, How to check a	DUPLICATE RESOLUTION file,
pair of records using the., 73	53, 72, 90, 92, 94
Duplicate Checking Algorithm, 53	Duplicate Threshold%, 53, 85, 94
Duplicate Pairs, Duplicate Resolution	Edit Duplicate Record Status
Utilities	Example, 77
How to Verify Duplicate Pairs, 63	option, 77
Duplicate Pairs, How to Verify, 63	Edit Duplicate Resolution File

Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	TSF Tally STATUS and
Verified Duplicates option, 72	MERGE STATUS fields
SPD Verify Selected Potential	option, 81
Duplicate Pair option, 66	VIEW View Duplicate Record
SRCH Start/Halt Duplicate	Entries
Search option, 57	option, 78
SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63
POTENTIAL DUPLICATE	Verify Selected Potential Duplicate
THRESHOLD%, 53, 85, 94	Pair
Potential Duplicates, 53, 85, 94	Example, 66
Print List of File Duplicates	option, 66
Example, 79	View Duplicate Record Entries
option, 79	Example, 78
Purge Duplicate Record File	option, 78

Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option, 57	Global Compare for Selected Package option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	GRAPHS MENU MSM CM Reports,
Edit Duplicate Resolution File	150
Example, 85	Group Routine Edit option, 184
option, 85	Hardware Performance Summary
Edit Kermit Holding File option, 206	Example, 117
Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background	Edit Kermit Holding File option,
processing), 167	206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data

Example, Live execution, 166	Merge Verified Duplicates, Duplicate
option, 166	Resolution Utilities
Kill Raw RT Data, Save Means option,	Merge Process, 71
170	Merge, Customized, 53
KWIC, 13, 35	Merging of Duplicates, 53
L^XTLKMGR, 43	Merging Of Duplicates, 53
Last Routine Change Date Recorded	Morning RTHIST Data Capture, 133
option, 193, 227	Move Host File to MailMan option,
Line Mode Editing Help, 214	107
List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131
List Raw System Data option, 126	MSM Capacity Management
List Routines option, 185	Manager's Menu
List Volume Set Information option,	options;, 129
127	MSM RTHIST REPORT DATA file,
List Workday Averages for Selected	129
Metric(s) option, 127	MSM RTHIST SITE file, 129
LKUP^XTLKMGR, 37, 39, 45	MSM Site Parameters Enter/Edit
LOCAL KEYWORD file, 12, 14, 21,	Menu, 131
22, 26, 41, 43	Multiday RT Averages option, 170
LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
	23
26, 42, 44 Looking Data ention, 124	
Locking Data option, 124	option, 12, 21, 23
Log RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25
Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWL, 39
Pair option, 72	Delete Entries From Look-Up

Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL LOOKUP File, 23	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25
LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	Associated with Multiple
MTLU, How to Override	Terms, 13
FileMan look-ups and MTLU,	Example, 34
39	Multiple Tokens, 13
Multi-Term Lookup (MTLU)	option, 30
option, 12, 17	Utilities for MTLU option
Multi-Term Lookup (MTLU) Main	Add Entries To Look-Up File
Menu	option

Example, 25	Print Utility, MTLU
Add/Modify Utility option	Example, 20
Example, Keywords, 33	option, 12, 19
Example, Shortcuts, 33	Producing Reports, Searches, and
Example, Synonyms, 34	Statistics Through Standardized
Delete Entries From Look-Up	Encoding of Diagnoses and
option	Procedures, 11
Example, 22	Program Integrity Checker option, 197
MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option <locked td="" with<=""></locked>
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
Operations Management menu, 197	Example, 86
Output Routines option, 187	option, 86
Performance Analysis option, 105	Raw Paging/BIO/DIO/FLS/MLS
Performance Monitor, 112	option, 125
PERFORMANCE MONITOR, 131	Receive Kermit File option, 207
Performance Problems, 169	Resource Consumption Measured by
PM MSM RTHIST Task Option,	Package, 153
133	Resource Usage Menu
Potential Duplicate Pairs, 53	options, 155
POTENTIAL DUPLICATE	Resource Usage, Capacity
THRESHOLD%, 53, 85, 94	Management, 153
Print Formatted Report (Table/Graph)	Response Time, 169
Example, Graph format subtotaled	Response Time Log Options menu,
by node (Live execution), 165	107
Example, Table format with	Response Time Report (By Date/VG),
subtotals printed by node and	139
cumulative station totals (Live	Response Time Report (By VG/Date),
execution), 162	146
Example, Table format without	Routine Changes File, 192
subtotals (Live execution), 163	Routine CMNDS/GREF Report (By
option, 161	Date/VG), 140, 141
Print List of File Duplicates	Routine CMNDS/GREF Report (By
Example, 79	VG/Date), 147, 148
option, 79	Routine Compare - Current with
Print RT Report option, 170	Previous option, 192, 193
	Routine Compare Utility, 192

Routine Edit option, 184	Example, Live execution, 159
Routine Editor, 213, 215	Example, Live execution with
Routine Management Menu, 197	output of sorted raw data, 160
Routine Tools menu	Example, Queued for background
%INDEX of Routines option, 179	processing, 159
Compare Routines on Tape to Disk	option, 158
option, 186	Standard Device Chart, 16
Compare Two Routines option, 185	Start or Halt a Search for Duplicates
Delete Routines option, 186	Within a File, 57
First Line Routine Print option,	Start/Halt Duplicate Search
185	Example, Halting a search, 60
Flow Chart Entire Routine option,	Example, Starting a search, 58
178	option, 57
Flow Chart from Entry Point	SY^XTLKMGR, 42
option, 178	Synonyms, Multi-Term Look-Up
Group Routine Edit option, 184	(MTLU), 11, 12, 25, 42, 44
Input Routines option, 186	Associated with Multiple Terms, 13
List Routines option, 185	Example, 34
Output Routines option, 187	Multiple Tokens, 13
Routine Edit option, 184	option, 30
Variable Changer option, 184	System Performance, 169
Version Number Update option,	System Performance Summary
185	Example, 117
RT logging, 173	System Statistical Report (By
RTHIST, 112, 115, 117, 126, 129, 134,	Date/VG), 142
171	System Statistical Report (By
Search Status option, Display the, 55	VG/Date), 149
Search Status, Duplicate Resolution	T0^%ZOSV
Utilities	Start RT Measure, 173
Display Search Status option, 55	T1^%ZOSV
Selecting Fields to Compare in	Stop RT Measure, 174
Candidate Collection, Duplicate	Tally STATUS and MERGE STATUS
Resolution Utilities, 91	fields
Send Kermit File option, 207	Example, 81
Setup Performance Monitor option,	option, 81
112	TAPE^XTRCMP, 186
SH^XTLKMGR, 42	Tasked CM File Update, 134
Shortcuts, Multi-Term Look-Up	Tokenizing Routine, 13
(MTLU), 11, 12, 25	Two Standard Deviation Rule, 101
Example, 33, 42, 44	UNDO Edits (Restore to Older Version
Point to a Single Word or Phrase,	of Routine) option, 193
13	Update with Current Routines option,
Site/Event Rate Summary	192, 193
[XUCMBR2A], 128	User Termination, 169
Sort Raw Resource Usage Data	Utilities For MTLU option, 21
<u> </u>	/

VA Programming Standards and	Example, Queued for background
Conventions (SAC), 179, 199	processing, 157
Variable Changer option, 184	option, 155
VAX/ALPHA Capacity Management	XRTL variable, 169, 173
menu, 107	XTBASE, 202
VAX/ALPHA Performance Monitor	XTER, 196
(VPM), 109	XTERPUR, 196
Verified Duplicates, Duplicate	XTLKER() array, 41
Resolution Utilities, 53, 66	XTLKTOKN, 13
Verified Non-Duplicates, Duplicate	XTLKZMGR, 12, 21
Resolution Utilities, 53, 66	XTRCMP, 186
Verifier Tools Menu, 192	XTSUMBLD, 195
Accumulate Globals for Package	XTV ROUTINE CHANGES file, 192
option, 194	XTV VERIFICATION PACKAGE file,
Edit Verification Package File	194
option, 194	XTVCHG, 184
Global Compare for Selected	XTVNUM, 185
Package option, 194	XUCM TASK NIT, 115, 117
Last Routine Change Date	XUCM TASK VPM, 115
Recorded option, 193	XUGET, 197
Routine Compare - Current with	XUMGR key, 191
Previous option, 192, 193	XUPROG key, 177, 186, 191, 201
UNDO Edits (Restore to Older	XUPROGMODE key, 177, 184, 185,
Version of Routine) option, 193	186, 191, 196, 201, 202
Update with Current Routines	XURTLC, 171
option, 192, 193	XURTLK, 171
Verify Potential Duplicates	
Example, 64	
option, 63	M
Verify Selected Potential Duplicate	-
Pair	%G, 201
Example, 66	%GL, 201
option, 66	%INDEX of Routines option, 179
Version Number Update option, 185	%INDEX Utility, 179, 180, 199
VG/DATE MSM CM Reports, 143	%RR, 186
View Duplicate Record Entries	%RS, 186, 187
Example, 78	%ZTER, 196
option, 78	%ZTP1, 185
VMS monitor, 115	%ZTPP, 185
VPM Reports option, 115	%ZTRDEL, 186
VPM Schedule/Unschedule options,	[XDR ADD VERIFIED DUPS], 75
114	[XDR AUTO MERGE], 72, 83
Write Raw Resource Usage Data	[XDR CHECK PAIR], 73
Example, Live execution, 156	[XDR DISPLAY SEARCH STATUS],
	55

[XDR EDIT DUP RECORD STATUS], [XTSUMBLD], 198 77 [XTSUMBLD-CHECK], 195 XDR EDIT DUP RESOLUTION [XTV EDIT VERIF PACKAGE], 194 FILE, 85 [XTV MENU], 192 [XDR FIND POTENTIAL [XT-VARIABLE CHANGER], 184 DUPLICATES, 75 [XT-VERSION NUMBER], 185 [XDR MAIN MENU], 54 [XTVG COMPARE], 194 [XDR MANAGER UTILITIES], 54 [XTVG UPDATE], 194 [XDR MERGE READY [XTVR COMPARE], 192, 193 XTVR MOST RECENT CHANGE DUPLICATES, 72 [XDR MERGE SELECTED PAIR], 72 DATE, 193, 227 [XDR OPERATIONS MENU], 54 [XTVR RESTORE PREV ROUTINE], [XDR PRINT LIST], 79 [XDR PURGE], 86 [XTVR UPDATE], 192, 193 [XDR SEARCH ALL], 57 [XU FIRST LINE PRINT], 185 [XDR TALLY STATUS FIELDS], 81 [XUCM ANALYSE], 105 [XDR UTILITIES MENU], 54 XUCM COMPUTE LOCAL [XDR VERIFY ALL], 63 REFERENCES, 103 [XDR VERIFY SELECTED PAIR], 66 [XUCM DISK], 128 [XDR VIEW DUPLICATE RECORD], [XUCM EDIT DISK THRESHOLD], 78 102 [XTCM DISK2MAIL], 107 [XUCM EDIT REF THRESH], 102 [XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XT-KERMIT MENU], 206 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 109 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161

[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE, VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time,
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	

Move Host File to MailMan	REPORTS BY
option, 107	(VG,DATE)];.i.[XUCSRA
Response Time Log Options,	GREF REPORT];, 144, 145
107	Response Time Report (By
VAX/ALPHA Capacity	Date/VG);.i.[XUCSRB]
Management menu, 107	REPORTS BY
Direct Mode Utility, Resource	(DATE,VG)];,i.[XUCSRB
Usage	RESPONSE REPORT];,
D ZHDIF^%ZOSV, 174	139
Hardware Performance Summary	Response Time Report (By
Example, 117	VG/Date);.i.[XUCSRA]
MSM Capacity Management	REPORTS BY
Manager's Menu	(VG,DATE)];,i.[XUCSRA
CM Reports Menu	RESPONSE REPORT];,
Ave. %CPU & %DISK	146
Graph;.i.[XUCSRG	Routine CMNDS/GREF
GRAPHS	Report (By
MENU];.i.[XUCSRG CPU-	Date/VG);.i.[XUCSRB
DISK GRAPH];, 150	REPORTS BY
Ave. Response Time	(DATE,VG)];.i.[XUCSRB
Graph;.i.[XUCSRG	ROU CMNDS/GREF
GRAPHS	REPORT];, 140, 141
MENU];.i.[XUCSRG	Routine CMNDS/GREF
RESPONSE TIME	Report (By
GRAPH]; , 151	VG/Date);.i.[XUCSRA
CPU/DISK Utilization	REPORTS BY
Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	System Statistical Report
REPORTS BY	(By VG/Date);.i.[XUCSRA
(VG,DATE)];.i.[XUCSRA	REPORTS BY
CPU/DISK REPORT];, 143	(VG,DATE)];.i.[XUCSRA
Global Reference Report (By	SYS STAT REPORT];, 149
Date/VG);.i.[XUCSRB	CM Reports Menu;. The options
REPORTS BY	are described in the same
(DATE,VG)];.i.[XUCSRB	order as they appear on the
GREF REPORT];, 137, 138	screen., 135
Global Reference Report (By	CM Reports Menu;.i.Capacity
VG/Date);,i.[XUCSRA	Management

MSM Capacity Management	Destroy FM Copy of Raw RT
Manager's Menu	Data option, 170
options, 129	Enable/Disable RT Logging
MSM Site Parameters	option, 169
Enter/Edit Menu; option	Graphic RT Report Print option,
[XUCS SITE EDIT	170
MENU].i.[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU]; is used to configure	option, 170
the MPM after installation.,	Long RT Report Print option,
131	170
options;.i.MSM Capacity	Multiday RT Averages option,
Management Manager's Menu	170
options, 130	Print RT Report option, 170
Performance Assurance menu	Response Time Measures, 169
Compute New Local References	^%ZRTL global, 171, 174
option, 103	^%ZRTL(1, RESPONSE TIME
Edit. Days to Compute	(. 3.091)
Reference Ranges option	^%ZRTL(2, RT
Edit VMS Disk Space Threshold	DATE_UCI,VOL, 171
option, 102	^%ZRTL(4, RT RAWDATA, 171
Edit Volume Set Threshold	Callable Entry Points
option, 102	T0^%ZOSV Start RT
Enable Alerts for Selected	Measure, 173
Metrics option, 104	T1^%ZOSV Stop RT
Performance Analysis option,	Measure, 174
105	XRT0 Output Variable,
Performance Monitor	Start Time, 173
Configuring, 112	XRTN Input Variable,
PERFORMANCE MONITOR	Routine Name, 174
Configuring, 131	Logging is Enabled, 169
Resource Usage	MUMPS Read, 169
^XTMP Global, 155, 158, 166	Performance Problems, 169
Date Range, 154	Response Time, 169, 173
Devices, 154	RT logging, 173, 174
Host File Server (HFS)	System Performance, 169
Device, 154	User Termination, 169
LOG RESOURCE USAGE?	XRTL variable, 173
field, 153	System Performance Summary
Measure Resource Consumption	Example, 117
by Package, 153	VAX/ALPHA Performance Monitor
Queuing, 154	menu
Response Time Log Options, 169	Enable/Disable VPM option,
Copy RT Raw Data to FM File	112
option, 170	Manual Purge of VPM Data option, 112

Resource Usage Menu	Example, Live execution,
Enable/Disable Collection of	156
Resource Usage Data	Example, Queued for
Example, Disable	background processing,
collection of data	157
(Queued for background	option, 155
processing), 168	Setup Performance Monitor
Example, Enable	option, 112
collection of data	VPM Reports option, 115
(Queued for background	VPM Reports menu
processing), 167	Bernstein Response Time
option, 167	Reports menu option, 127
Kill Raw Resource Usage	CPU Modes/Compute States
Data	option, 125
Example, Live execution,	Disk Drive Raw Data Statistics
166	menu, 128
option, 166	Graph Workday Averages for
options, 155	Selected Metric option, 128
Print Formatted Report	List Raw RTHIST Data for a
(Table/Graph)	Range of Dates option, 126
Example, Graph format	List Raw System Data option,
subtotaled by node	126
(Live execution), 165	List Volume Set Information
Example, Table format	option, 127
with subtotals printed	List Workday Averages for
by node and cumulative	Selected Metric(s) option, 127
station totals (Live	Locking Data option, 124
execution), 162	Raw Paging/BIO/DIO/FLS/MLS
Example, Table format	option, 125
without subtotals (Live	Check Pair of Records to see if
execution), 163	Duplicates
option, 161	Example, 74
Sort Raw Resource Usage	option, 73
Data	CHECK^XTSUMBLD, 195
Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186

Compare Two Routines option, 185	>D ^XTCMFILN, 107
Compute New Local References	>D ATCMITIEN, 107 >D AXTER, 199
option, 103	•
Configuring the MPM, 131	>D ^XTERPUR, 199
Control File	> D ^ X T F C E , 178, 189
(See also DUPLICATE	> D ^ X T F C R , 178, 189
· ·	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125 CDI/DICK Htiligation Deport (Pro	>D CHECK^XTSUMBLD, 195 , 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	$>$ D ONE n sNTEG, 197 , 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), $201,203$	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63,
>D $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D $%RS$ (OS-specific), 187 ,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
- , - , ,	r / -

Utilities menu, 54, 73	FILE Edit Duplicate
Duplicate Resolution Utilities	Resolution File option, 85
Add Verified Duplicate Pair option,	PRGE Purge Duplicate Record
75	File option, 86
Automatically Merge Already	Merge (Ready to Merge) Verified
Verified Duplicates	Duplicates option, 72
Example, 83	Merge Capability, Developing, 87
option, 72, 83	Merge Process, 53, 71
Candidate Collection, Selecting	Merge Process, Interactive, 71
Fields to Compare in, 91	Merge Selected Verified Duplicate
Check Pair of Records to see if	Pair option, 72
Duplicates	Merge, Customized, 53
Example, 74	Merged-From Record, 53
option, 73	Merged-To Record, 53
Control File	Operations menu
(See also DUPLICATE	DSS Display Search Status
RESOLUTION file), 53	option, 55
Customized Merge, 53, 87	MVD Merge (Ready to Merge)
Display Search Status	Verified Duplicates option, 72
Example, 56	SPD Verify Selected Potential
option, 55	Duplicate Pair option, 66
Duplicate Checking Algorithm, 53	SRCH Start/Halt Duplicate
DUPLICATE RECORD file, 53, 54,	Search option, 57
63, 66, 72, 73, 75, 77, 78, 81, 85,	SVD Merge Selected Verified
86, 87, 88, 91, 94	Duplicate Pair option, 72
DUPLICATE RECORD File, 79	VPD Verify Potential
Duplicate Records, 53	Duplicates option, 63
DUPLICATE RESOLUTION file,	Potential Duplicate Pairs, 53
53, 72, 90, 92, 94	POTENTIAL DUPLICATE
Duplicate Threshold%, 53, 85, 94	THRESHOLD%, 53, 85, 94
Edit Duplicate Record Status	Potential Duplicates, 53, 85, 94
Example, 77	Print List of File Duplicates
option, 77	Example, 79
Edit Duplicate Resolution File	option, 79
Example, 85	Purge Duplicate Record File
option, 85	Example, 86
Find Potential Duplicates for an	option, 86
Entry in a File	Selecting Fields to Compare in
Example, 75	Candidate Collection, 91
option, 75	Start or Halt a Search for
Manager Utilities menu	Duplicate Records, 57
AUTO Automatically Merge	Start/Halt Duplicate Search
Already Verified Duplicates	Example, Halting a search, 60
option, 72, 83	Example, Starting a search, 58
	option, 57

Tally STATUS and MERGE	Edit Duplicate Record Status
STATUS fields	Example, 77
Example, 81	option, 77
Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	

Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	Manual Purge of VPM Data option,
Receive Kermit File option, 207	112
Send Kermit File option, 207	Merge (Ready to Merge) Verified
KERNEL SITE PARAMETERS file,	Duplicates option, 72
153	Merge Capability, Duplicate
Key Word In Context (KWIC), 13, 35	Resolution Utilities
Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72
Example, Live execution, 166	Merge Verified Duplicates, Duplicate
option, 166	Resolution Utilities
Kill Raw RT Data, Save Means option,	Merge Process, 71
170	Merge, Customized, 53
KWIC, 13, 35	Merging of Duplicates, 53
L^XTLKMGR, 43	Merging Of Duplicates, 53
Last Routine Change Date Recorded	Morning RTHIST Data Capture, 133
option, 193, 227	Move Host File to MailMan option,
Line Mode Editing Help, 214	107

MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41
MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR_44	

Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	New Fields, 114
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	Print Formatted Report (Table/Graph)
Example, 33	Example, Graph format subtotaled
Point to a Single Word or	by node (Live execution), 165
Phrase, 13	Example, Table format with
Site Implementation, 35	subtotals printed by node and
Standard Device Chart, 16	cumulative station totals (Live
Synonyms, 11, 25	execution), 162
Associated with Multiple	Example, Table format without
Terms, 13	subtotals (Live execution), 163
Example, 34	option, 161
Multiple Tokens, 13	Print List of File Duplicates
option, 30	Example, 79
Utilities for MTLU option	option, 79
Add Entries To Look-Up File	Print RT Report option, 170
option	Print Utility, MTLU
Example, 25	Example, 20
Add/Modify Utility option	option, 12, 19
Example, Keywords, 33	Producing Reports, Searches, and
Example, Shortcuts, 33	Statistics Through Standardized
Example, Synonyms, 34	Encoding of Diagnoses and
Delete Entries From Look-Up	Procedures, 11
option	Program Integrity Checker option, 197
Example, 22	

Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178
List Global option <locked td="" with<=""><td>Group Routine Edit option, 184</td></locked>	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184
option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	Selecting Fields to Compare in
Response Time Log Options menu,	Candidate Collection, Duplicate
107	Resolution Utilities, 91
Response Time Report (By Date/VG),	Send Kermit File option, 207
139	Setup Performance Monitor option,
Response Time Report (By VG/Date),	112
146	SH^XTLKMGR, 42
Routine Changes File, 192	Shortcuts, Multi-Term Look-Up
Routine CMNDS/GREF Report (By	(MTLU), 11, 12, 25
Date/VG), 140, 141	Example, 33, 42, 44
Routine CMNDS/GREF Report (By	Point to a Single Word or Phrase,
VG/Date), 147, 148	13
Routine Compare - Current with	Site/Event Rate Summary
Previous option, 192, 193	[XUCMBR2A], 128
Routine Compare Utility, 192	Sort Raw Resource Usage Data
Routine Edit option, 184	Example, Live execution, 159
Routine Editor, 213, 215	Example, Live execution with
Routine Management Menu, 197	output of sorted raw data, 160
Routine Tools menu	Example, Queued for background
%INDEX of Routines option, 179	processing, 159
Compare Routines on Tape to Disk	option, 158
option, 186	Standard Device Chart, 16
Compare Two Routines option, 185	

Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41

XTLKTOKN, 13 [XDR MERGE READY XTLKZMGR, 12, 21 DUPLICATES], 72 [XDR MERGE SELECTED PAIR], 72 XTRCMP, 186 XTSUMBLD, 195 [XDR OPERATIONS MENU], 54 XTV ROUTINE CHANGES file, 192 [XDR PRINT LIST], 79 XTV VERIFICATION PACKAGE file, [XDR PURGE], 86 194 [XDR SEARCH ALL], 57 XTVCHG, 184 [XDR TALLY STATUS FIELDS], 81 XTVNUM, 185 [XDR UTILITIES MENU], 54 XUCM TASK NIT, 115, 117 [XDR VERIFY ALL], 63 [XDR VERIFY SELECTED PAIR], 66 XUCM TASK VPM, 115 [XDR VIEW DUPLICATE RECORD], XUGET, 197 XUMGR key, 191 78 XUPROG key, 177, 186, 191, 201 [XTCM DISK2MAIL], 107 [XTCM MAIN], 107, 155 XUPROGMODE key, 177, 184, 185, 186, 191, 196, 201, 202 [XTCM], 169 [XTFCE], 178 XURTLC, 171 XURTLK, 171 [XTFCR], 178 [XT-KERMIT EDIT], 206 [XT-KERMIT MENU], 206 N [XT-KERMIT RECEIVE], 207 [XT-KERMIT SEND], 207 %G, 201 [XTLKLKUP], 12, 17 %GL, 201 [XTLKMODKY], 12, 29 %INDEX of Routines option, 179 [XTLKMODPARK], 12, 21, 22 %INDEX Utility, 179, 180, 199 [XTLKMODPARS], 12, 21, 23 %RR, 186 [XTLKMODSH], 12, 27 %RS, 186, 187 [XTLKMODSY], 12, 30 %ZTER, 196 [XTLKMODUTL], 12, 21, 25 %ZTP1, 185 [XTLKPRTUTL], 12, 19 %ZTPP, 185 [XTLKUSER2], 15, 21 %ZTRDEL, 186 [XTLKUTILITIES], 21 [XDR ADD VERIFIED DUPS], 75 [XTMENU], 15, 21, 54 [XDR AUTO MERGE], 72, 83 [XT-NUMBER BASE CHANGER], 202 [XDR CHECK PAIR], 73 [XTRDEL], 186 [XDR DISPLAY SEARCH STATUS], [XTRGRPE], 184 [XT-ROUTINE COMPARE], 185 [XDR EDIT DUP RECORD STATUS], [XTSUMBLD], 198 [XTSUMBLD-CHECK], 195 XDR EDIT DUP RESOLUTION [XTV EDIT VERIF PACKAGE], 194 FILE], 85 [XTV MENU], 192 XDR FIND POTENTIAL [XT-VARIABLE CHANGER], 184 DUPLICATES], 75 [XT-VERSION NUMBER], 185 [XDR MAIN MENU], 54 [XTVG COMPARE], 194 [XDR MANAGER UTILITIES], 54 [XTVG UPDATE], 194

[XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** 135 DATE], 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 193 [XUINTEG], 197 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES], 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 102 [XUROUTINES], 197 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XUCM EDIT VOL SET THRESH], [XURTLC], 170 [XURTLCK], 170 102 [XUCM GRAF MET AVE], 128 [XURTLK], 170 [XUCM LIST DAILY STATS], 127 [XURTLM], 107, 169 [XUCM LIST RAW], 126 [XURTLMA], 170 [XURTLP], 170 [XUCM LIST VOL SET INFO], 127 [XUCM LOCKS], 124 [XURTLPG], 170 [XURTLPL], 170 [XUCM MAIN], 107, 155 [XUCM MODES], 125 [XUSITEMGR], 197 [XUCM ON/OFF], 112 ^%Z Editor, 184, 213, 215 [XUCM PAGE], 125 ^%Z Global, 213 [XUCM PERFORMANCE MONITOR], ^%ZOSV, 170, 174 ^%ZRTL, 169, 170, 171, 174 109 [XUCM PURGE], 112 ^%ZRTL(1, RESPONSE TIME (. [XUCM RAW RTHIST DATA], 126 3.091) [XUCM REPORTS], 115 ^%ZRTL(2, RT DATE_UCI,VOL, 171 [XUCM SET ALERTS], 104 ^%ZRTL(4, RT RAWDATA, 171 [XUCM SETUP], 112 ^XINDEX, 182 [XUCMBR MENU], 127 ^XTLKDICL, 13, 37, 43, 45 [XUCMBR2], 127 ^XTLKMGR, 41, 42 [XUCMBR2A], 128 ^XTLKWIC, 35 [XUCMBR2C], 127 ^XTMP Global, 155, 158, 166 [XUCPFORMATTED], 161 ^XUP, 196 [XUCPKILL], 166 Accumulate Globals for Package [XUCPMENU], 109, 155 option, 194 [XUCPRAWPRINT], 155 ACTION menu, 215 Add Entries To Look-Up File option, [XUCPSORT], 158 [XUCPTOGGLE], 167 12, 21, 23 [XUCSR REPORTS MENU], 135 Add Verified Duplicate Pair option, 75 [XUCSRA REPORTS BY (VG,DATE)], Add/Modify Utility option, 12, 21, 25 143 ALTERNATE EDITOR file, 209

AM MSM RTHIST Task Option,	D ZHDIF^%ZOSV, 174
133	Hardware Performance Summary
Application Utilities menu, 15	Example, 117
Auto Purge of CM Data, 134	MSM Capacity Management
Automatically Merge Already Verified	Manager's Menu
Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	Ave. Response Time
Bernstein RT Statistics (detailed)	Graph;.i.[XUCSRG
[XUCMBR2], 127	\mathbf{GRAPHS}
Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH]; , 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];.i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);.i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];.i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
Move Host File to MailMan	VG/Date);.i.[XUCSRA
option, 107	REPORTS BY
Response Time Log Options,	(VG,DATE)];.i.[XUCSRA
107	GREF REPORT];, 144, 145
VAX/ALPHA Capacity	Response Time Report (By
Management menu, 107	Date/VG);.i.[XUCSRB
Direct Mode Utility, Resource	REPORTS BY
Usage	(DATE,VG)];.i.[XUCSRB

RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);,i.[XUCSRA	options; i.MSM Capacity
REPORTS BY	Management Manager's Menu
(VG,DATE)];.i.[XUCSRA	options, 130
RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);.i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102
Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor
ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu;.i.Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option,
Enter/Edit Menu; option	170
[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENUL i IXUCS SITE EDIT	ontion 170

Long RT Report Print option,	Example, Enable
170	collection of data
Multiday RT Averages option,	(Queued for background
170	processing), 167
Print RT Report option, 170	option, 167
Response Time Measures, 169	Kill Raw Resource Usage
^%ZRTL global, 171, 174	Data
^%ZRTL(1, RESPONSE TIME	Example, Live execution,
(.3.091)	166
^%ZRTL(2, RT	option, 166
DATE_UCI,VOL, 171	options, 155
^%ZRTL(4, RT RAWDATA, 171	Print Formatted Report
Callable Entry Points	(Table/Graph)
T0^%ZOSV Start RT	Example, Graph format
Measure, 173	subtotaled by node
T1^%ZOSV Stop RT	(Live execution), 165
Measure, 174	Example, Table format
XRT0 Output Variable,	with subtotals printed
Start Time, 173	by node and cumulative
XRTN Input Variable,	station totals (Live
Routine Name, 174	execution), 162
Logging is Enabled, 169	Example, Table format
MUMPS Read, 169	without subtotals (Live
Performance Problems, 169	execution), 163
Response Time, 169, 173	option, 161
RT logging, 173, 174	Sort Raw Resource Usage
System Performance, 169	Data
User Termination, 169	Example, Live execution,
XRTL variable, 173	159
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155

Setup Performance Monitor	(See also DUPLICATE
option, 112	RESOLUTION file), 53
VPM Reports option, 115	Copy RT Raw Data to FM File option,
VPM Reports menu	170
Bernstein Response Time	CPU Modes/Compute States option,
Reports menu option, 127	125
CPU Modes/Compute States	CPU/DISK Utilization Report (By
option, 125	Date/VG), 135, 136
Disk Drive Raw Data Statistics	CPU/DISK Utilization Report (By
menu, 128	VG/Date), 143
Graph Workday Averages for	Customized Merge, 53, 87
Selected Metric option, 128	Date of Birth test Routine for a
List Raw RTHIST Data for a	Patient Merge
Range of Dates option, 126	Example, 223
List Raw System Data option,	DATE/VG MSM CM Reports, 135
126	Delete Entries From Look-Up option,
List Volume Set Information	12, 21, 22
option, 127	Delete Routines option, 186
List Workday Averages for	Destroy FM Copy of Raw RT Data
Selected Metric(s) option, 127	option, 170
Locking Data option, 124	Device Chart, 16
Raw Paging/BIO/DIO/FLS/MLS	DEVICE file, 107
option, 125	Direct Mode Utilities
Check Pair of Records to see if	>D ^%ZTER, 196
Duplicates	>D ^XTER, 196
Example, 74	>D ^XTERPUR, 196
option, 73	>D ^XTNTEG, 197
CHECK^XTSUMBLD, 195	>D ^%G (OS-specific), $201,203$
Checksum, 215	>D ^%INDEX, 179, 189, 199
CM DAILY STATISTICS file, 109	>D $\$RR (OS-specific), 186$
CM DISK DRIVE RAW DATA file,	<pre>>D ^%RS (OS-specific), 187,</pre>
115	190
CM METRICS file, 103, 110	>D ^%ZTER, 199
CM METRICS List, 110	> D ^ % Z T P 1 , 185, 189
CM NODENAME RAW DATA file,	> D ^ % Z T P P , 185, 189
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D ^nsNTEG, 199
Compare Routines on Tape to Disk	>D ^XINDEX, 199
option, 186	>D ^XTBASE, 202, 203
Compare Two Routines option, 185	>D ^XTCMFILN, 107
Compute New Local References	>D ^XTER, 199
option, 103	>D ^XTERPUR, 199
Configuring the MPM, 131	>D ^ X T F C E , 178, 189
Control File	> D ^ X T F C R , 178, 189
	- 2 1 1 0 10, 100

>D ^XTLKKWL, 39	Automatically Merge Already
>D ^XTRCMP, 186, 189	Verified Duplicates
>D ^XTRGRPE, 184, 189	Example, 83
>D ^XTVCHG, 184, 189	option, 72, 83
>D ^XTVNUM, 185, 189	Candidate Collection, Selecting
>D CHECK^XTSUMBLD, 195, 199	Fields to Compare in, 91
>D MAIL1^XTCMFILN, 107	Check Pair of Records to see if
>D nsnteg, 197	Duplicates
>D ONE^nsNTEG, 197, 199	Example, 74
>D TAPE^XTRCMP, 186, 190	option, 73
>D^ %RR (OS-specific), 190	Control File
>X ^%Z, 184, 189	(See also DUPLICATE
Disk Drive Raw Data Statistics menu,	RESOLUTION file), 53
128	Customized Merge, 53, 87
	Display Search Status
Display Search Status	Example, 56
Example, 56	option, 55
option, 55 DK^XTLKMGR, 43	Duplicate Checking Algorithm, 53
DLL^XTLKMGR, 43	DUPLICATE RECORD file, 53, 54
DSH^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
·	86, 87, 88, 91, 94
DSY^XTLKMGR, 44	DUPLICATE RECORD File, 79
Duplicate Checker, How to check a	Duplicate Records, 53
pair of records using the., 73	DUPLICATE RESOLUTION file,
Duplicate Checking Algorithm, 53 Duplicate Pairs, Duplicate Resolution	53, 72, 90, 92, 94
Utilities Utilities	Duplicate Threshold%, 53, 85, 94
How to Verify Duplicate Pairs, 63	Edit Duplicate Record Status
· -	Example, 77
Duplicate Pairs, How to Verify, 63	option, 77
DUPLICATE RECORD file, 53, 54, 63,	Edit Duplicate Resolution File
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	Example, 85
88, 89, 91, 94	option, 85
DUPLICATE RECORD File, 79 Duplicate Records, 53	Find Potential Duplicates for an
DUPLICATE RESOLUTION file, 53,	Entry in a File
72, 90, 92, 94	Example, 75
Duplicate Resolution System menu	option, 75
Manager Utilities menu, 54, 83	Manager Utilities menu
Operations menu, 54, 55	AUTO Automatically Merge
options, 54	Already Verified Duplicates
Utilities menu, 54, 73	option, 72, 83
Duplicate Resolution Utilities	FILE Edit Duplicate
Add Verified Duplicate Pair option,	Resolution File option, 85
75	PRGE Purge Duplicate Record
10	File option, 86
	<u>*</u>

Merge (Ready to Merge) Verified	Tally STATUS and MERGE
Duplicates option, 72	STATUS fields option, 81
Merge Capability, Developing, 87	Utilities menu
Merge Process, 53, 71	ADD Add Verified Duplicate
Merge Process, Interactive, 71	Pair option, 75
Merge Selected Verified Duplicate	CHCK Check Pair of Records to
Pair option, 72	see if Duplicates option, 73
Merge, Customized, 53	EDIT Edit Duplicate Record
Merged-From Record, 53	Status option, 77
Merged-To Record, 53	FIND Find Potential
Operations menu	Duplicates for an Entry in a
DSS Display Search Status	File option, 75
option, 55	PRNT Print List of File
MVD Merge (Ready to Merge)	Duplicates option, 79
Verified Duplicates option, 72	TSF Tally STATUS and
SPD Verify Selected Potential	MERGE STATUS fields
Duplicate Pair option, 66	option, 81
SRCH Start/Halt Duplicate	VIEW View Duplicate Record
Search option, 57	Entries
SVD Merge Selected Verified	option, 78
Duplicate Pair option, 72	Verified Duplicates, 53, 66
VPD Verify Potential	Verified Non-Duplicates, 53, 66
Duplicates option, 63	Verify Potential Duplicates
Potential Duplicate Pairs, 53	Example, 64
POTENTIAL DUPLICATE	option, 63
THRESHOLD%, 53, 85, 94	Verify Selected Potential Duplicate
Potential Duplicates, 53, 85, 94	Pair
Print List of File Duplicates	Example, 66
Example, 79	option, 66
option, 79	View Duplicate Record Entries
Purge Duplicate Record File	Example, 78
Example, 86	option, 78
option, 86	Duplicate Resolution Utilities,, 89
Selecting Fields to Compare in	Duplicate Search, Duplicate
Candidate Collection, 91	Resolution Utilities
Start or Halt a Search for	Start/Halt Duplicate Search option,
Duplicate Records, 57	57
Start/Halt Duplicate Search	Duplicate Test Routines
Example, Halting a search, 60	Examples, 221
Example, Starting a search, 58	Duplicate Threshold%, 53, 85, 94
option, 57	Edit. Days to Compute Reference
Tally STATUS and MERGE	Ranges option
STATUS fields	Edit Duplicate Record Status
Example, 81	Example, 77
	option, 77

Edit Duplicate Resolution File	GRAPHS MENU MSM CM Reports,
Example, 85	150
option, 85	Group Routine Edit option, 184
Edit Kermit Holding File option, 206	Hardware Performance Summary
Edit Verification Package File option,	Example, 117
194	Help
Edit VMS Disk Space Threshold	Line Mode Editing, 214
option, 102	HFS, 154
Edit Volume Set Threshold option, 102	How to Configure the MPM, 131
Editing in Line Mode, Help, 214	Implementation of MTLU, 35
Enable Alerts for Selected Metrics	Input Routines option, 186
option, 104	K^XTLKMGR, 41
Enable/Disable Collection of Resource	Kermit
Usage Data	Callable Entry Points, 211
Example, Disable collection of data	Kermit as an Alternate Editor, 205
(Queued for background	Kermit file transfer protocol, 205
processing), 168	Macintosh steps, 205
Example, Enable collection of data	KERMIT HOLDING file, 206
(Queued for background	Kermit Menu, 206, 209
processing), 167	Edit Kermit Holding File option,
option, 167	206
Enable/Disable RT Logging option,	Receive Kermit File option, 207
169	Send Kermit File option, 207
Enable/Disable VPM option, 112	KERNEL SITE PARAMETERS file,
Error Log, 196	153
File Merge Capability, Developing, 87	Key Word In Context (KWIC), 13, 35
FileMan look-ups and MTLU, 39	Keywords, Multi-Term Look-Up
Find Potential Duplicates for an Entry	(MTLU), 11, 12, 25, 41, 43
in a File	Associated with a Single Term and
Example, 75	Multiple Terms, 14
option, 75	Example, 33
First Line Routine Print option, 185	option, 29
Flow Chart Entire Routine option, 178	Kill Raw Resource Usage Data
Flow Chart from Entry Point option, 178	Example, Live execution, 166 option, 166
Global Compare for Selected Package	Kill Raw RT Data, Save Means option,
option, 194	170
Global Reference Report (By	KWIC, 13, 35
Date/VG), 137, 138	L^XTLKMGR, 43
Global Reference Report (By	Last Routine Change Date Recorded
VG/Date), 144, 145	option, 193, 227
Graph Workday Averages for Selected	Line Mode Editing Help, 214
Metric option, 128	List Global option, 201
Graphic RT Report Print option, 170	List Raw RTHIST Data for a Range of
	Dates option, 126

List Raw System Data option, 126	MSM Capacity Management
List Routines option, 185	Manager's Menu
List Volume Set Information option,	options;, 129
127	MSM RTHIST REPORT DATA file,
List Workday Averages for Selected	129
Metric(s) option, 127	MSM RTHIST SITE file, 129
LKUP^XTLKMGR, 37, 39, 45	MSM Site Parameters Enter/Edit
LOCAL KEYWORD file, 12, 14, 21,	Menu, 131
22, 26, 41, 43	Multiday RT Averages option, 170
LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25
Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWL, 39
Pair option, 72	Delete Entries From Look-Up
Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44
MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41

L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL LOOKUP File, 23	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25
LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	Associated with Multiple
MTLU, How to Override	Terms, 13
FileMan look-ups and MTLU,	Example, 34
39	Multiple Tokens, 13
Multi-Term Lookup (MTLU)	option, 30
option, 12, 17	Utilities for MTLU option
Multi-Term Lookup (MTLU) Main	Add Entries To Look-Up File
Menu	option
Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge

Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option <locked td="" with<=""></locked>
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
Operations Management menu, 197	Example, 86
Output Routines option, 187	option, 86
Performance Analysis option, 105	Raw Paging/BIO/DIO/FLS/MLS
Performance Monitor, 112	option, 125
PERFORMANCE MONITOR, 131	Receive Kermit File option, 207
Performance Problems, 169	Resource Consumption Measured by
PM MSM RTHIST Task Option,	Package, 153
133	Resource Usage Menu
Potential Duplicate Pairs, 53	options, 155
POTENTIAL DUPLICATE	Resource Usage, Capacity
THRESHOLD%, 53, 85, 94	Management, 153
Print Formatted Report (Table/Graph)	Response Time, 169
Example, Graph format subtotaled	Response Time Log Options menu,
by node (Live execution), 165	107
Example, Table format with	Response Time Report (By Date/VG),
subtotals printed by node and	139
cumulative station totals (Live	Response Time Report (By VG/Date),
execution), 162	146
Example, Table format without	Routine Changes File, 192
subtotals (Live execution), 163	Routine CMNDS/GREF Report (By
option, 161	Date/VG), 140, 141
Print List of File Duplicates	Routine CMNDS/GREF Report (By
Example, 79	VG/Date), 147, 148
option, 79	Routine Compare - Current with
Print RT Report option, 170	Previous option, 192, 193
Print Utility, MTLU	Routine Compare Utility, 192
Example, 20	Routine Edit option, 184
option, 12, 19	Routine Editor, 213, 215
Producing Reports, Searches, and	Routine Management Menu, 197
Statistics Through Standardized	Routine Tools menu
Encoding of Diagnoses and	%INDEX of Routines option, 179
Procedures, 11	Compare Routines on Tape to Disk
Program Integrity Checker option, 197	option, 186
Programmer Options menu, 177, 195,	Compare Two Routines option, 185
201	Delete Routines option, 186
Build an 'NTEG' Routine for a	First Line Routine Print option,
Package option, 198	185

Flow Chart Entire Routine option,	Example, Starting a search, 58
178	option, 57
Flow Chart from Entry Point	SY^XTLKMGR, 42
option, 178	Synonyms, Multi-Term Look-Up
Group Routine Edit option, 184	(MTLU), 11, 12, 25, 42, 44
Input Routines option, 186	Associated with Multiple Terms, 13
List Routines option, 185	Example, 34
Output Routines option, 187	Multiple Tokens, 13
Routine Edit option, 184	option, 30
Variable Changer option, 184	System Performance, 169
Version Number Update option,	System Performance Summary
185	Example, 117
RT logging, 173	System Statistical Report (By
RTHIST, 112, 115, 117, 126, 129, 134,	Date/VG), 142
171	System Statistical Report (By
Search Status option, Display the, 55	VG/Date), 149
Search Status, Duplicate Resolution	T0^%ZOSV
Utilities	Start RT Measure, 173
Display Search Status option, 55	T1^%ZOSV
Selecting Fields to Compare in	Stop RT Measure, 174
Candidate Collection, Duplicate	Tally STATUS and MERGE STATUS
Resolution Utilities, 91	fields
Send Kermit File option, 207	Example, 81
Setup Performance Monitor option,	option, 81
112	TAPE^XTRCMP, 186
SH^XTLKMGR, 42	Tasked CM File Update, 134
Shortcuts, Multi-Term Look-Up	Tokenizing Routine, 13
(MTLU), 11, 12, 25	Two Standard Deviation Rule, 101
Example, 33, 42, 44	UNDO Edits (Restore to Older Version
Point to a Single Word or Phrase,	of Routine) option, 193
13	Update with Current Routines option,
Site/Event Rate Summary	192, 193
[XUCMBR2A], 128	User Termination, 169
Sort Raw Resource Usage Data	Utilities For MTLU option, 21
Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66

Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
Accumulate Globals for Package	XTV VERIFICATION PACKAGE file,
option, 194	194
Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	nowing, ivi
Verify Potential Duplicates	
Example, 64	0
option, 63	
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186
VG/DATE MSM CM Reports, 143	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
Example, 78	%ZTP1, 185
option, 78	%ZTPP, 185
VMS monitor, 115	%ZTRDEL, 186
VPM Reports option, 115	[XDR ADD VERIFIED DUPS], 75
VPM Schedule/Unschedule options,	[XDR AUTO MERGE], 72, 83
114	[XDR CHECK PAIR], 73
Write Raw Resource Usage Data	[XDR DISPLAY SEARCH STATUS],
Example, Live execution, 156	55
Example, Queued for background	[XDR EDIT DUP RECORD STATUS],
processing, 157	77
option, 155	XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
·	[XDR MANAGER UTILITIES], 54
XTLKER() array, 41	[XDR MERGE READY
XTLKTOKN, 13	DUPLICATES], 72
XTLKZMGR, 12, 21	[XDR MERGE SELECTED PAIR], 72
XTRCMP, 186	2,
XTSUMBLD, 195	[XDR OPERATIONS MENU], 54

[XDR PRINT LIST], 79 [XTVR RESTORE PREV ROUTINE], [XDR PURGE], 86 193 [XDR SEARCH ALL], 57 [XTVR UPDATE], 192, 193 [XDR TALLY STATUS FIELDS], 81 [XU FIRST LINE PRINT], 185 [XDR UTILITIES MENU], 54 [XUCM ANALYSE], 105 [XDR VERIFY ALL], 63 XUCM COMPUTE LOCAL [XDR VERIFY SELECTED PAIR], 66 REFERENCES, 103 [XDR VIEW DUPLICATE RECORD], [XUCM DISK], 128 78 [XUCM EDIT DISK THRESHOLD], [XTCM DISK2MAIL], 107 [XTCM MAIN], 107, 155 [XUCM EDIT REF THRESH], 102 [XUCM EDIT VOL SET THRESH], [XTCM], 169 [XTFCE], 178 102 [XTFCR], 178 [XUCM GRAF MET AVE], 128 [XT-KERMIT EDIT], 206 [XUCM LIST DAILY STATS], 127 [XT-KERMIT MENU], 206 [XUCM LIST RAW], 126 [XT-KERMIT RECEIVE], 207 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT SEND], 207 [XUCM LOCKS], 124 [XTLKLKUP], 12, 17 [XUCM MAIN], 107, 155 [XTLKMODKY], 12, 29 [XUCM MODES], 125 [XTLKMODPARK], 12, 21, 22 [XUCM ON/OFF], 112 [XTLKMODPARS], 12, 21, 23 IXUCM PAGEI, 125 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30 [XTLKMODUTL], 12, 21, 25 [XUCM PURGE], 112 [XTLKPRTUTL], 12, 19 [XUCM RAW RTHIST DATA], 126 [XTLKUSER2], 15, 21 [XUCM REPORTS], 115 [XTLKUTILITIES], 21 [XUCM SET ALERTS], 104 [XTMENU], 15, 21, 54 [XUCM SETUP], 112 [XT-NUMBER BASE CHANGER], 202 [XUCMBR MENU], 127 [XTRDEL], 186 [XUCMBR2], 127 [XTRGRPE], 184 [XUCMBR2A], 128 [XT-ROUTINE COMPARE], 185 [XUCMBR2C], 127 [XTSUMBLD], 198 [XUCPFORMATTED], 161 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XTV EDIT VERIF PACKAGE], 194 [XUCPMENU], 109, 155 [XTV MENU], 192 [XUCPRAWPRINT], 155 [XT-VARIABLE CHANGER], 184 [XUCPSORT], 158 [XT-VERSION NUMBER], 185 [XUCPTOGGLE], 167 [XTVG COMPARE], 194 [XUCSR REPORTS MENU], 135 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 **IXTVR MOST RECENT CHANGE** [XUCSRB REPORTS BY (DATE, VG)], DATE, 193, 227 135 [XUCSRG GRAPHS MENU], 150

[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	D ZHDIF^%ZOSV, 174
AM MSM RTHIST Task Option,	Hardware Performance Summary
133	Example, 117
Application Utilities menu, 15	

MSM Capacity Management	REPORTS BY
Manager's Menu	(VG,DATE)];.i.[XUCSRA
CM Reports Menu	RESPONSE REPORT];,
Ave. %CPU & %DISK	146
Graph;.i.[XUCSRG	Routine CMNDS/GREF
GRAPHS	Report (By
MENU];.i.[XUCSRG CPU-	Date/VG);.i.[XUCSRB
DISK GRAPH];, 150	REPORTS BY
Ave. Response Time	(DATE,VG)];.i.[XUCSRB
Graph; i. [XUCSRG	ROU CMNDS/GREF
GRAPHS	REPORT];, 140, 141
MENU];.i.[XUCSRG	Routine CMNDS/GREF
RESPONSE TIME	Report (By
GRAPH] ;, 151	VG/Date);.i.[XUCSRA
CPU/DISK Utilization	REPORTS BY
Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	System Statistical Report
REPORTS BY	(By VG/Date);.i.[XUCSRA
(VG,DATE)];.i.[XUCSRA	REPORTS BY
CPU/DISK REPORT];, 143	(VG,DATE)];.i.[XUCSRA
Global Reference Report (By	SYS STAT REPORT];, 149
Date/VG);.i.[XUCSRB	CM Reports Menu;. The options
REPORTS BY	are described in the same
(DATE,VG)];.i.[XUCSRB	order as they appear on the
GREF REPORT];, 137, 138	screen., 135
Global Reference Report (By	CM Reports Menu;.i.Capacity
VG/Date);.i.[XUCSRA	Management
REPORTS BY	MSM Capacity Management
(VG,DATE)];.i.[XUCSRA	Manager's Menu
GREF REPORT];, 144, 145	options, 129
Response Time Report (By	MSM Site Parameters
Date/VG);.i.[XUCSRB	Enter/Edit Menu; option
REPORTS BY	[XUCS SITE EDIT
(DATE,VG)];.i.[XUCSRB	MENU].i.[XUCS SITE EDIT
RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);.i.[XUCSRA	

options;.i.MSM Capacity	Multiday RT Averages option,
Management Manager's Menu	170
options, 130	Print RT Report option, 170
Performance Assurance menu	Response Time Measures, 169
Compute New Local References	^%ZRTL global, 171, 174
option, 103	^%ZRTL(1, RESPONSE TIME
Edit. Days to Compute	(. 3.091)
Reference Ranges option	^%ZRTL(2, RT
Edit VMS Disk Space Threshold	DATE_UCI,VOL, 171
option, 102	^%ZRTL(4, RT RAWDATA, 171
Edit Volume Set Threshold	Callable Entry Points
option, 102	T0^%ZOSV Start RT
Enable Alerts for Selected	Measure, 173
Metrics option, 104	T1^%ZOSV Stop RT
Performance Analysis option,	Measure, 174
105	XRT0 Output Variable,
Performance Monitor	Start Time, 173
Configuring, 112	XRTN Input Variable,
PERFORMANCE MONITOR	Routine Name, 174
Configuring, 131	Logging is Enabled, 169
Resource Usage	MUMPS Read, 169
^XTMP Global, 155, 158, 166	Performance Problems, 169
Date Range, 154	Response Time, 169, 173
Devices, 154	RT logging, 173, 174
Host File Server (HFS)	System Performance, 169
Device, 154	User Termination, 169
LOG RESOURCE USAGE?	XRTL variable, 173
field, 153	System Performance Summary
Measure Resource Consumption	Example, 117
by Package, 153	VAX/ALPHA Performance Monitor
Queuing, 154	menu
Response Time Log Options, 169	Enable/Disable VPM option,
Copy RT Raw Data to FM File	112
option, 170	Manual Purge of VPM Data
Destroy FM Copy of Raw RT	option, 112
Data option, 170	Resource Usage Menu
Enable/Disable RT Logging	Enable/Disable Collection of
option, 169	Resource Usage Data
Graphic RT Report Print option,	Example, Disable
170	collection of data
Kill Raw RT Data, Save Means	(Queued for background
option, 170	processing), 168
Long RT Report Print option,	Example, Enable
170	collection of data

(Queued for background	VPM Reports menu
processing), 167	Bernstein Response Time
option, 167	Reports menu option, 127
Kill Raw Resource Usage	CPU Modes/Compute States
Data	option, 125
Example, Live execution,	Disk Drive Raw Data Statistics
166	menu, 128
option, 166	Graph Workday Averages for
options, 155	Selected Metric option, 128
Print Formatted Report	List Raw RTHIST Data for a
(Table/Graph)	Range of Dates option, 126
Example, Graph format	List Raw System Data option,
subtotaled by node	126
(Live execution), 165	List Volume Set Information
Example, Table format	option, 127
with subtotals printed	List Workday Averages for
by node and cumulative	Selected Metric(s) option, 127
station totals (Live	Locking Data option, 124
execution), 162	Raw Paging/BIO/DIO/FLS/MLS
Example, Table format	option, 125
without subtotals (Live	Check Pair of Records to see if
execution), 163	Duplicates
option, 161	Example, 74
Sort Raw Resource Usage	option, 73
Data	CHECK^XTSUMBLD, 195
Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186
Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170

CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195 , 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	$>$ D ONE n sNTEG, 197 , 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), 201, 203	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63
>D ^%RR (OS-specific), 186	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D ^%RS (OS-specific), 187,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
>D ^%ZTEK, 133 >D ^%ZTP1, 185, 189	DUPLICATE RESOLUTION file, 53,
	72, 90, 92, 94
> D ^ % Z T P P , 185, 189	Duplicate Resolution System menu
>D ^%ZTRDEL, 186, 190	Manager Utilities menu, 54, 83
>D ^nsNTEG, 199	Operations menu, 54, 55
>D ^XINDEX, 199	options, 54
>D ^XTBASE, 202, 203	Utilities menu, 54, 73
>D ^XTCMFILN, 107	Duplicate Resolution Utilities
>D ^XTER, 199	Add Verified Duplicate Pair option,
>D ^XTERPUR, 199	75
$>$ D $^{\circ}$ X T F C E , 178, 189	
$>$ D ^ X T F C R , 178, 189	Automatically Merge Already Varified Duplicates
>D ^XTLKKWL, 39	Verified Duplicates
>D ^XTRCMP, 186, 189	Example, 83
>D ^XTRGRPE, 184, 189	option, 72, 83
>D ^XTVCHG, 184, 189	

Candidate Collection, Selecting	Merge Selected Verified Duplicate
Fields to Compare in, 91	Pair option, 72
Check Pair of Records to see if	Merge, Customized, 53
Duplicates	Merged-From Record, 53
Example, 74	Merged-To Record, 53
option, 73	Operations menu
Control File	DSS Display Search Status
(See also DUPLICATE	option, 55
RESOLUTION file), 53	MVD Merge (Ready to Merge)
Customized Merge, 53, 87	Verified Duplicates option, 72
Display Search Status	SPD Verify Selected Potential
Example, 56	Duplicate Pair option, 66
option, 55	SRCH Start/Halt Duplicate
Duplicate Checking Algorithm, 53	Search option, 57
DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53
DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File
Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	

CHCK Check Pair of Records to	Edit Verification Package File option,
see if Duplicates option, 73	194
EDIT Edit Duplicate Record	Edit VMS Disk Space Threshold
Status option, 77	option, 102
FIND Find Potential	Edit Volume Set Threshold option, 102
Duplicates for an Entry in a	Editing in Line Mode, Help, 214
File option, 75	Enable Alerts for Selected Metrics
PRNT Print List of File	option, 104
Duplicates option, 79	Enable/Disable Collection of Resource
TSF Tally STATUS and	Usage Data
MERGE STATUS fields	Example, Disable collection of data
option, 81	(Queued for background
VIEW View Duplicate Record	processing), 168
Entries	Example, Enable collection of data
option, 78	(Queued for background
Verified Duplicates, 53, 66	processing), 167
Verified Non-Duplicates, 53, 66	option, 167
Verify Potential Duplicates	Enable/Disable RT Logging option,
Example, 64	169
option, 63	Enable/Disable VPM option, 112
Verify Selected Potential Duplicate	Error Log, 196
Pair	File Merge Capability, Developing, 87
Example, 66	FileMan look-ups and MTLU, 39
option, 66	Find Potential Duplicates for an Entry
View Duplicate Record Entries	in a File
Example, 78	Example, 75
option, 78	option, 75
Duplicate Resolution Utilities,, 89	First Line Routine Print option, 185
Duplicate Search, Duplicate	Flow Chart Entire Routine option, 178
Resolution Utilities	Flow Chart from Entry Point option,
Start/Halt Duplicate Search option,	178
57	Global Compare for Selected Package
Duplicate Test Routines	option, 194
Examples, 221	Global Reference Report (By
Duplicate Threshold%, 53, 85, 94	Date/VG), 137, 138
Edit. Days to Compute Reference	Global Reference Report (By
Ranges option	VG/Date), 144, 145
Edit Duplicate Record Status	Graph Workday Averages for Selected
Example, 77	Metric option, 128
option, 77	Graphic RT Report Print option, 170
Edit Duplicate Resolution File	GRAPHS MENU MSM CM Reports,
Example, 85	150
option, 85	Group Routine Edit option, 184
Edit Kermit Holding File option, 206	Hardware Performance Summary
2 12 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Example, 117

Help	List Workday Averages for Selected
Line Mode Editing, 214	Metric(s) option, 127
HFS, 154	LKUP^XTLKMGR, 37, 39, 45
How to Configure the MPM, 131	LOCAL KEYWORD file, 12, 14, 21,
Implementation of MTLU, 35	22, 26, 41, 43
Input Routines option, 186	LOCAL LOOKUP file, 11, 12, 17, 19,
K^XTLKMGR, 41	21, 25, 37, 39, 41, 43, 44, 45
Kermit	LOCAL LOOKUP File, 23
Callable Entry Points, 211	LOCAL SHORTCUT file, 12, 13, 14,
Kermit as an Alternate Editor, 205	17, 21, 22, 42, 44
Kermit file transfer protocol, 205	LOCAL SYNONYM file, 12, 13, 14, 21
Macintosh steps, 205	26, 42, 44
KERMIT HOLDING file, 206	Locking Data option, 124
Kermit Menu, 206, 209	LOG RESOURCE USAGE? field, 153
Edit Kermit Holding File option,	Logging is Enabled, 169
206	Long RT Report Print option, 170
Receive Kermit File option, 207	Manual Purge of VPM Data option,
Send Kermit File option, 207	112
KERNEL SITE PARAMETERS file,	Merge (Ready to Merge) Verified
153	Duplicates option, 72
Key Word In Context (KWIC), 13, 35	Merge Capability, Duplicate
Keywords, Multi-Term Look-Up	Resolution Utilities
(MTLU), 11, 12, 25, 41, 43	Developing, 87
Associated with a Single Term and	Merge Process, 53, 71
Multiple Terms, 14	Merge Process, Interactive, 71
Example, 33	Merge Process, Verified Duplicates, 71
option, 29	Merge Routines, 53
Kill Raw Resource Usage Data	Merge Selected Verified Duplicate
Example, Live execution, 166	Pair option, 72
option, 166	Merge Verified Duplicates, Duplicate
Kill Raw RT Data, Save Means option,	Resolution Utilities
170	Merge Process, 71
KWIC, 13, 35	Merge, Customized, 53
L^XTLKMGR, 43	Merging of Duplicates, 53
Last Routine Change Date Recorded	Merging Of Duplicates, 53
option, 193, 227	Morning RTHIST Data Capture, 133
Line Mode Editing Help, 214	Move Host File to MailMan option,
List Global option, 201	107
List Raw RTHIST Data for a Range of	MPM Schedule/Unschedule options,
Dates option, 126	133
List Raw System Data option, 126	MPM, How to configure the, 131
List Routines option, 185	MSM Capacity Management
List Volume Set Information option,	Manager's Menu
127	options;, 129

MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21,
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option

Examples, 33	Nodename Average by Day of Week
KE Keywords, 29	[XUCMBR2C], 127
Utilities For MTLU option	NTEG, 197, 198
Add Entries To Look-Up File	Number Base Changer option < Locked
option, 23	with XUPROGMODE>, 202
Add/Modify Utility option,	Operations Management menu, 197
21, 25	Output Routines option, 187
SY Synonyms, 30	Performance Analysis option, 105
Delete Entries From Look-	Performance Monitor, 112
Up option, 21, 22	PERFORMANCE MONITOR, 131
Multi-Term Lookup (MTLU) Main	Performance Problems, 169
Menu options, 15, 21	PM MSM RTHIST Task Option,
Print Utility	133
Example, 20	Potential Duplicate Pairs, 53
option, 12, 19	POTENTIAL DUPLICATE
Shortcuts, 11, 25	THRESHOLD%, 53, 85, 94
Example, 33	Print Formatted Report (Table/Graph)
Point to a Single Word or	Example, Graph format subtotaled
Phrase, 13	by node (Live execution), 165
Site Implementation, 35	Example, Table format with
Standard Device Chart, 16	subtotals printed by node and
Synonyms, 11, 25	cumulative station totals (Live
Associated with Multiple	execution), 162
Terms, 13	Example, Table format without
Example, 34	subtotals (Live execution), 163
Multiple Tokens, 13	option, 161
option, 30	Print List of File Duplicates
Utilities for MTLU option	Example, 79
Add Entries To Look-Up File	option, 79
option	Print RT Report option, 170
Example, 25	Print Utility, MTLU
Add/Modify Utility option	Example, 20
Example, Keywords, 33	option, 12, 19
Example, Shortcuts, 33	Producing Reports, Searches, and
Example, Synonyms, 34	Statistics Through Standardized
Delete Entries From Look-Up	Encoding of Diagnoses and
option	Procedures, 11
Example, 22	Program Integrity Checker option, 197
MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
	List Global option, 201

List Global option <locked th="" with<=""><th>Group Routine Edit option, 184</th></locked>	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184
option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	Selecting Fields to Compare in
Response Time Log Options menu,	Candidate Collection, Duplicate
107	Resolution Utilities, 91
Response Time Report (By Date/VG),	Send Kermit File option, 207
139	Setup Performance Monitor option,
Response Time Report (By VG/Date),	112
146	SH^XTLKMGR, 42
Routine Changes File, 192	Shortcuts, Multi-Term Look-Up
Routine CMNDS/GREF Report (By	(MTLU), 11, 12, 25
Date/VG), 140, 141	Example, 33, 42, 44
Routine CMNDS/GREF Report (By	Point to a Single Word or Phrase,
VG/Date), 147, 148	13
Routine Compare - Current with	Site/Event Rate Summary
Previous option, 192, 193	[XUCMBR2A], 128
Routine Compare Utility, 192	Sort Raw Resource Usage Data
Routine Edit option, 184	Example, Live execution, 159
Routine Editor, 213, 215	Example, Live execution with
Routine Management Menu, 197	output of sorted raw data, 160
Routine Tools menu	Example, Queued for background
%INDEX of Routines option, 179	processing, 159
Compare Routines on Tape to Disk	option, 158
option, 186	Standard Device Chart, 16
Compare Two Routines option, 185	Start or Halt a Search for Duplicates
Delete Routines option, 186	Within a File, 57
First Line Routine Print option,	Start/Halt Duplicate Search
185	Example, Halting a search, 60
Flow Chart Entire Routine option,	Example, Starting a search, 58
178	option, 57
Flow Chart from Entry Point option, 178	SY^XTLKMGR, 42

Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41
Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTRUMIT, 180 XTSUMBLD, 195
Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
·	XTV VERIFICATION PACKAGE file
Accumulate Globals for Package	
option, 194	194

XTVCHG, 184	[XDR TALLY STATUS FIELDS], 81
XTVNUM, 185	[XDR UTILITIES MENU], 54
XUCM TASK NIT, 115, 117	[XDR VERIFY ALL], 63
XUCM TASK VPM, 115	[XDR VERIFY SELECTED PAIR], 66
XUGET, 197	[XDR VIEW DUPLICATE RECORD],
XUMGR key, 191	78
XUPROG key, 177, 186, 191, 201	[XTCM DISK2MAIL], 107
XUPROGMODE key, 177, 184, 185,	[XTCM MAIN], 107, 155
186, 191, 196, 201, 202	[XTCM], 169
XURTLC, 171	[XTFCE], 178
XURTLK, 171	[XTFCR], 178
, - ;	[XT-KERMIT EDIT], 206
	[XT-KERMIT MENU], 206
P	[XT-KERMIT RECEIVE], 207
	[XT-KERMIT SEND], 207
%G, 201	[XTLKLKUP], 12, 17
%GL, 201	[XTLKMODKY], 12, 29
%INDEX of Routines option, 179	[XTLKMODPARK], 12, 21, 22
%INDEX Utility, 179, 180, 199	[XTLKMODPARS], 12, 21, 23
%RR, 186	[XTLKMODSH], 12, 27
%RS, 186, 187	[XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKPRTUTL], 12, 19
%ZTPP, 185	[XTLKUSER2], 15, 21
%ZTRDEL, 186	[XTLKUTILITIES], 21
[XDR ADD VERIFIED DUPS], 75	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83	[XT-NUMBER BASE CHANGER], 202
[XDR CHECK PAIR], 73	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185
[XDR EDIT DUP RECORD STATUS],	[XTSUMBLD], 198
77	[XTSUMBLD-CHECK], 195
XDR EDIT DUP RESOLUTION	[XTV EDIT VERIF PACKAGE], 194
FILE], 85	[XTV MENU], 192
XDR FIND POTENTIAL	[XT-VARIABLE CHANGER], 184
DUPLICATES], 75	[XT-VERSION NUMBER], 185
[XDR MAIN MENU], 54	[XTVG COMPARE], 194
[XDR MANAGER UTILITIES], 54	[XTVG UPDATE], 194
XDR MERGE READY	[XTVR COMPARE], 192, 193
DUPLICATES], 72	[XTVR MOST RECENT CHANGE
[XDR MERGE SELECTED PAIR], 72	DATE], 193, 227
[XDR OPERATIONS MENU], 54	[XTVR RESTORE PREV ROUTINE],
[XDR PRINT LIST], 79	193
[XDR PURGE], 86	[XTVR UPDATE], 192, 193
[XDR SEARCH ALL], 57	[XU FIRST LINE PRINT], 185
	[

[XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES], 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 102 [XUROUTINES], 197 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XUCM EDIT VOL SET THRESH], [XURTLC], 170 102 [XURTLCK], 170 [XUCM GRAF MET AVE], 128 [XURTLK], 170 [XURTLM], 107, 169 [XUCM LIST DAILY STATS], 127 [XUCM LIST RAW], 126 [XURTLMA], 170 [XUCM LIST VOL SET INFO], 127 [XURTLP], 170 [XUCM LOCKS], 124 [XURTLPG], 170 [XUCM MAIN], 107, 155 [XURTLPL], 170 [XUCM MODES], 125 [XUSITEMGR], 197 [XUCM ON/OFF], 112 ^%Z Editor, 184, 213, 215 [XUCM PAGE], 125 ^%Z Global, 213 ^%ZOSV, 170, 174 [XUCM PERFORMANCE MONITOR], ^%ZRTL, 169, 170, 171, 174 109 [XUCM PURGE], 112 ^%ZRTL(1, RESPONSE TIME (. [XUCM RAW RTHIST DATA], 126 3.091) ^%ZRTL(2, RT DATE UCI, VOL, 171 [XUCM REPORTS], 115 [XUCM SET ALERTS], 104 ^%ZRTL(4, RT RAWDATA, 171 [XUCM SETUP], 112 ^XINDEX, 182 [XUCMBR MENU], 127 ^XTLKDICL, 13, 37, 43, 45 [XUCMBR2], 127 ^XTLKMGR, 41, 42 [XUCMBR2A], 128 ^XTLKWIC, 35 [XUCMBR2C], 127 ^XTMP Global, 155, 158, 166 ^XUP, 196 [XUCPFORMATTED], 161 [XUCPKILL], 166 Accumulate Globals for Package [XUCPMENU], 109, 155 option, 194 [XUCPRAWPRINT], 155 ACTION menu, 215 [XUCPSORT], 158 Add Entries To Look-Up File option, [XUCPTOGGLE], 167 12, 21, 23 [XUCSR REPORTS MENU], 135 Add Verified Duplicate Pair option, 75 [XUCSRA REPORTS BY (VG,DATE)], Add/Modify Utility option, 12, 21, 25 ALTERNATE EDITOR file, 209 [XUCSRB REPORTS BY (DATE, VG)], AM MSM RTHIST Task Option, 133 [XUCSRG GRAPHS MENU], 150 Application Utilities menu, 15 [XUINDEX], 179 Auto Purge of CM Data, 134 [XUINTEG], 197 Automatically Merge Already Verified [XUPR RTN EDIT], 184 **Duplicates** [XUPRGL], 201 Example, 83

option, 72, 83	Ave. %CPU & %DISK
Ave. %CPU & %DISK Graph, 150	Graph;.i.[XUCSRG
Ave. Response Time Graph, 151	GRAPHS
Bernstein Response Time Reports	MENU];.i.[XUCSRG CPU-
menu option, 127	DISK GRAPH];, 150
Bernstein RT Statistics (detailed)	Ave. Response Time
[XUCMBR2], 127	Graph;.i.[XUCSRG
Build an 'NTEG' Routine for a	GRAPHS
Package option, 198	MENU];.i.[XUCSRG
Calculate and Show Checksum Values	RESPONSE TIME
option, 195	GRAPH]; , 151
Callable Entry Points	CPU/DISK Utilization
Kermit, 211	Report (By
RECEIVE^XTKERMIT, 211	Date/VG);.i.[XUCSRB
SEND^XTKERMIT, 211	REPORTS BY
T0^%ZOSV Start RT Measure, 173	(DATE,VG)];.i.[XUCSRB
T1^%ZOSV Stop RT Measure, 174	CPU/DISK REPORT];,
XRT0 Output Variable, Start Time,	135, 136
173	CPU/DISK Utilization
XRTN Input Variable, Routine	Report (By
Name, 174	VG/Date);.i.[XUCSRA
XTLKKWL, 39	REPORTS BY
Candidate Collection Routine for	(VG,DATE)];.i.[XUCSRA
Patient Merge	CPU/DISK REPORT];, 143
Example, 219	Global Reference Report (By
Candidate Collection, Selecting Fields	Date/VG);.i.[XUCSRB
to Compare in, 91	REPORTS BY
Capacity Management	(DATE,VG)];.i.[XUCSRB
Capacity Management menu	GREF REPORT];, 137, 138
Move Host File to MailMan	Global Reference Report (By
option, 107	VG/Date);.i.[XUCSRA
Response Time Log Options,	REPORTS BY
107	(VG,DATE)];.i.[XUCSRA
VAX/ALPHA Capacity	GREF REPORT];, 144, 145
Management menu, 107	Response Time Report (By
Direct Mode Utility, Resource	Date/VG);.i.[XUCSRB
Usage	REPORTS BY
D ZHDIF^%ZOSV, 174	(DATE,VG)];.i.[XUCSRB
Hardware Performance Summary	RESPONSE REPORT];,
Example, 117	139
MSM Capacity Management	Response Time Report (By
Manager's Menu	VG/Date);,i.[XUCSRA
CM Reports Menu	REPORTS BY
	(VG,DATE)];.i.[XUCSRA

RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);.i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102
Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor
ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu;.i.Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option,
Enter/Edit Menu; option	170
[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU].i.[XUCS SITE EDIT	option, 170
MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169

^%ZRTL global, 171, 174	Example, Live execution,
^%ZRTL(1, RESPONSE TIME	166
(. 3.091)	option, 166
^%ZRTL(2, RT	options, 155
DATE_UCI,VOL, 171	Print Formatted Report
^%ZRTL(4, RT RAWDATA, 171	(Table/Graph)
Callable Entry Points	Example, Graph format
T0^%ZOSV Start RT	subtotaled by node
Measure, 173	(Live execution), 165
T1^%ZOSV Stop RT	Example, Table format
Measure, 174	with subtotals printed
XRT0 Output Variable,	by node and cumulative
Start Time, 173	station totals (Live
XRTN Input Variable,	execution), 162
Routine Name, 174	Example, Table format
Logging is Enabled, 169	without subtotals (Live
MUMPS Read, 169	execution), 163
Performance Problems, 169	option, 161
Response Time, 169, 173	Sort Raw Resource Usage
RT logging, 173, 174	Data
System Performance, 169	Example, Live execution,
User Termination, 169	159
XRTL variable, 173	Example, Live execution
System Performance Summary	with output of sorted
Example, 117	raw data, 160
VAX/ALPHA Performance Monitor	Example, Queued for
menu	background processing,
Enable/Disable VPM option,	159
112	option, 158
Manual Purge of VPM Data	Write Raw Resource Usage
option, 112	Data
Resource Usage Menu	Example, Live execution,
Enable/Disable Collection of	156
Resource Usage Data	Example, Queued for
Example, Disable	background processing,
collection of data	157
(Queued for background	option, 155
processing), 168	Setup Performance Monitor
Example, Enable	option, 112
collection of data	VPM Reports option, 115
(Queued for background	VPM Reports menu
processing), 167	Bernstein Response Time
option, 167	Reports menu option, 127
Kill Raw Resource Usage	CPU Modes/Compute States
Data	option, 125

Disk Drive Raw Data Statistics	CPU/DISK Utilization Report (By
menu, 128	VG/Date), 143
Graph Workday Averages for	Customized Merge, 53, 87
Selected Metric option, 128	Date of Birth test Routine for a
List Raw RTHIST Data for a	Patient Merge
Range of Dates option, 126	Example, 223
List Raw System Data option,	DATE/VG MSM CM Reports, 135
126	Delete Entries From Look-Up option,
List Volume Set Information	12, 21, 22
option, 127	Delete Routines option, 186
List Workday Averages for	Destroy FM Copy of Raw RT Data
Selected Metric(s) option, 127	option, 170
Locking Data option, 124	Device Chart, 16
Raw Paging/BIO/DIO/FLS/MLS	DEVICE file, 107
option, 125	Direct Mode Utilities
Check Pair of Records to see if	>D ^%ZTER, 196
Duplicates	>D ^XTER, 196
Example, 74	>D ^XTERPUR, 196
option, 73	>D ^XTNTEG, 197
CHECK^XTSUMBLD, 195	>D ^%G (OS-specific), $201,203$
Checksum, 215	>D ^%INDEX, 179, 189, 199
CM DAILY STATISTICS file, 109	>D ^%RR (OS-specific), 186
CM DISK DRIVE RAW DATA file,	>D $\$RS$ (OS-specific), 187 ,
115	190
CM METRICS file, 103, 110	>D ^%ZTER, 199
CM METRICS List, 110	> D ^ % Z T P 1 , 185, 189
CM NODENAME RAW DATA file,	> D ^ % Z T P P , 185, 189
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D ^nsNTEG, 199
Compare Routines on Tape to Disk	>D ^XINDEX, 199
option, 186	>D ^XTBASE, 202, 203
Compare Two Routines option, 185	>D ^XTCMFILN, 107
Compute New Local References	>D ^XTER, 199
option, 103	>D ^XTERPUR, 199
Configuring the MPM, 131	> D ^ X T F C E , 178, 189
Control File	> D ^ X T F C R , 178, 189
(See also DUPLICATE	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option, 170	>D ^XTRGRPE, 184, 189
CPU Modes/Compute States option,	>D ^XTVCHG, 184, 189
125	>D ^XTVNUM, 185, 189
CPU/DISK Utilization Report (By	>D CHECK^XTSUMBLD, 195, 199
Date/VG), 135, 136	>D MAIL1^XTCMFILN, 107
<i>Davo,</i> 100, 100	>D nsNTEG, 197

>D ONE^nsNTEG, 197, 199	option, 73
>D TAPE^XTRCMP, 186, 190	Control File
>D^ %RR (OS-specific), 190	(See also DUPLICATE
>X ^%Z, 184, 189	RESOLUTION file), 53
Disk Drive Raw Data Statistics menu,	Customized Merge, 53, 87
128	Display Search Status
Display Search Status	Example, 56
Example, 56	option, 55
option, 55	Duplicate Checking Algorithm, 53
DK^XTLKMGR, 43	DUPLICATE RECORD file, 53, 54
DLL^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
DSH^XTLKMGR, 44	86, 87, 88, 91, 94
DSY^XTLKMGR, 44	DUPLICATE RECORD File, 79
Duplicate Checker, How to check a	Duplicate Records, 53
pair of records using the., 73	DUPLICATE RESOLUTION file,
Duplicate Checking Algorithm, 53	53, 72, 90, 92, 94
Duplicate Pairs, Duplicate Resolution	Duplicate Threshold%, 53, 85, 94
Utilities	Edit Duplicate Record Status
How to Verify Duplicate Pairs, 63	Example, 77
Duplicate Pairs, How to Verify, 63	option, 77
DUPLICATE RECORD file, 53, 54, 63,	Edit Duplicate Resolution File
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	Example, 85
88, 89, 91, 94	option, 85
DUPLICATE RECORD File, 79	Find Potential Duplicates for an
Duplicate Records, 53	Entry in a File
DUPLICATE RESOLUTION file, 53,	Example, 75
72, 90, 92, 94	option, 75
Duplicate Resolution System menu	Manager Utilities menu
Manager Utilities menu, 54, 83	AUTO Automatically Merge
Operations menu, 54, 55	Already Verified Duplicates
options, 54	option, 72, 83
Utilities menu, 54, 73	FILE Edit Duplicate
Duplicate Resolution Utilities	Resolution File option, 85
Add Verified Duplicate Pair option,	PRGE Purge Duplicate Record
75	File option, 86
Automatically Merge Already	Merge (Ready to Merge) Verified
Verified Duplicates	Duplicates option, 72
Example, 83	Merge Capability, Developing, 87
option, 72, 83	Merge Process, 53, 71
Candidate Collection, Selecting	Merge Process, Interactive, 71
Fields to Compare in, 91	Merge Selected Verified Duplicate
Check Pair of Records to see if	Pair option, 72
Duplicates	Merged Erom Record 53
Example, 74	Merged To Record, 53
	Merged-To Record, 53

Operations menu	FIND Find Potential
DSS Display Search Status	Duplicates for an Entry in a
option, 55	File option, 75
MVD Merge (Ready to Merge)	PRNT Print List of File
Verified Duplicates option, 72	Duplicates option, 79
SPD Verify Selected Potential	TSF Tally STATUS and
Duplicate Pair option, 66	MERGE STATUS fields
SRCH Start/Halt Duplicate	option, 81
Search option, 57	VIEW View Duplicate Record
SVD Merge Selected Verified	Entries
Duplicate Pair option, 72	option, 78
VPD Verify Potential	Verified Duplicates, 53, 66
Duplicates option, 63	Verified Non-Duplicates, 53, 66
Potential Duplicate Pairs, 53	Verify Potential Duplicates
POTENTIAL DUPLICATE	Example, 64
THRESHOLD%, 53, 85, 94	option, 63
Potential Duplicates, 53, 85, 94	Verify Selected Potential Duplicate
Print List of File Duplicates	Pair
Example, 79	Example, 66
option, 79	option, 66
Purge Duplicate Record File	View Duplicate Record Entries
Example, 86	Example, 78
option, 86	option, 78
Selecting Fields to Compare in	Duplicate Resolution Utilities,, 89
Candidate Collection, 91	Duplicate Search, Duplicate
Start or Halt a Search for	Resolution Utilities
Duplicate Records, 57	Start/Halt Duplicate Search option,
Start/Halt Duplicate Search	57
Example, Halting a search, 60	Duplicate Test Routines
Example, Starting a search, 58	Examples, 221
option, 57	Duplicate Threshold%, 53, 85, 94
Tally STATUS and MERGE	Edit. Days to Compute Reference
STATUS fields	Ranges option
Example, 81	Edit Duplicate Record Status
Tally STATUS and MERGE	Example, 77
STATUS fields option, 81	option, 77
Utilities menu	Edit Duplicate Resolution File
ADD Add Verified Duplicate	Example, 85
Pair option, 75	option, 85
CHCK Check Pair of Records to	Edit Kermit Holding File option, 206
see if Duplicates option, 73	Edit Verification Package File option,
EDIT Edit Duplicate Record	194
Status option, 77	Edit VMS Disk Space Threshold
	option, 102
	Edit Volume Set Threshold option, 102

Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background	Edit Kermit Holding File option,
processing), 167	206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	

LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25
Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWL, 39
Pair option, 72	Delete Entries From Look-Up
Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44
MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41
MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14

Example, 33	Add/Modify Utility option,
option, 29	21, 25
Lexical Variants, 13	SY Synonyms, 30
LOCAL KEYWORD file, 12, 14, 21,	Delete Entries From Look-
22, 26, 41, 43	Up option, 21, 22
LOCAL LOOKUP file, 11, 12, 17,	Multi-Term Lookup (MTLU) Main
19, 21, 25, 37, 39, 41, 43, 44, 45	Menu options, 15, 21
LOCAL LOOKUP File, 23	Print Utility
LOCAL SHORTCUT file, 12, 13,	Example, 20
14, 17, 21, 22, 42, 44	option, 12, 19
LOCAL SYNONYM file, 12, 13, 14,	Shortcuts, 11, 25
21, 26, 42, 44	Example, 33
Look-up, How to Request a, 13	Point to a Single Word or
Look-ups on Database Files, 13	Phrase, 13
MTLU and FileMan look-ups, 39	Site Implementation, 35
MTLU and VA FileMan Supported	Standard Device Chart, 16
Calls, 39	Synonyms, 11, 25
MTLU, How to Override	Associated with Multiple
FileMan look-ups and MTLU,	Terms, 13
39	Example, 34
Multi-Term Lookup (MTLU)	Multiple Tokens, 13
option, 12, 17	option, 30
Multi-Term Lookup (MTLU) Main	Utilities for MTLU option
Menu	Add Entries To Look-Up File
Add Entries To Look-Up File	option
option, 12, 21, 23	Example, 25
Add/Modify Utility option, 12	Add/Modify Utility option
Keywords option, 12	Example, Keywords, 33
Shortcuts option, 12	Example, Shortcuts, 33
Synonyms option, 12	Example, Synonyms, 34
Delete Entries From Look-Up	Delete Entries From Look-Up
option, 12	option
Multi-Term Lookup (MTLU)	Example, 22
option, 12, 17	MUMPS error, 179
Print Utility option, 12, 19	MUMPS Read, 169
Utilities for MTLU option, 21	Name Test Routine for a Patient
Add Entries To Look-Up File	Merge
option, 21	Example, 221
Add/Modify Utility option	New Fields, 114
Examples, 33	Nodename Average by Day of Week
KE Keywords, 29	[XUCMBR2C], 127
Utilities For MTLU option	NTEG, 197, 198
Add Entries To Look-Up File	Number Base Changer option < Locked
option, 23	with XUPROGMODE>, 202

Operations Management menu, 197	option, 86
Output Routines option, 187	Raw Paging/BIO/DIO/FLS/MLS
Performance Analysis option, 105	option, 125
Performance Monitor, 112	Receive Kermit File option, 207
PERFORMANCE MONITOR, 131	Resource Consumption Measured by
Performance Problems, 169	Package, 153
PM MSM RTHIST Task Option,	Resource Usage Menu
133	options, 155
Potential Duplicate Pairs, 53	Resource Usage, Capacity
POTENTIAL DUPLICATE	Management, 153
THRESHOLD%, 53, 85, 94	Response Time, 169
Print Formatted Report (Table/Graph)	Response Time Log Options menu,
Example, Graph format subtotaled	107
by node (Live execution), 165	Response Time Report (By Date/VG),
Example, Table format with	139
subtotals printed by node and	Response Time Report (By VG/Date),
cumulative station totals (Live	146
execution), 162	Routine Changes File, 192
Example, Table format without	Routine CMNDS/GREF Report (By
subtotals (Live execution), 163	Date/VG), 140, 141
option, 161	Routine CMNDS/GREF Report (By
Print List of File Duplicates	VG/Date), 147, 148
Example, 79	Routine Compare - Current with
option, 79	Previous option, 192, 193
Print RT Report option, 170	Routine Compare Utility, 192
Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178
List Global option < Locked with	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184

Variable Changer option, 184	System Performance, 169
Version Number Update option,	System Performance Summary
185	Example, 117
RT logging, 173	System Statistical Report (By
RTHIST, 112, 115, 117, 126, 129, 134,	Date/VG), 142
171	System Statistical Report (By
Search Status option, Display the, 55	VG/Date), 149
Search Status, Duplicate Resolution	T0^%ZOSV
Utilities	Start RT Measure, 173
Display Search Status option, 55	T1^%ZOSV
Selecting Fields to Compare in	Stop RT Measure, 174
Candidate Collection, Duplicate	Tally STATUS and MERGE STATUS
Resolution Utilities, 91	fields
Send Kermit File option, 207	Example, 81
Setup Performance Monitor option,	option, 81
112	TAPE^XTRCMP, 186
SH^XTLKMGR, 42	Tasked CM File Update, 134
Shortcuts, Multi-Term Look-Up	Tokenizing Routine, 13
(MTLU), 11, 12, 25	Two Standard Deviation Rule, 101
Example, 33, 42, 44	UNDO Edits (Restore to Older Version
Point to a Single Word or Phrase,	of Routine) option, 193
13	Update with Current Routines option,
Site/Event Rate Summary	192, 193
[XUCMBR2A], 128	User Termination, 169
Sort Raw Resource Usage Data	Utilities For MTLU option, 21
Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193

XUPROG key, 177, 186, 191, 201
XUPROGMODE key, 177, 184, 185,
186, 191, 196, 201, 202
XURTLC, 171
XURTLK, 171
,
\mathbf{R}
%G, 201
%GL, 201
%INDEX of Routines option, 179
%INDEX Utility, 179, 180, 199
%RR, 186
%RS, 186, 187
%ZTER, 196
%ZTP1, 185
%ZTPP, 185
%ZTRDEL, 186
[XDR ADD VERIFIED DUPS], 75
[XDR AUTO MERGE], 72, 83
[XDR CHECK PAIR], 73
[XDR DISPLAY SEARCH STATUS],
55
[XDR EDIT DUP RECORD STATUS],
77
[XDR EDIT DUP RESOLUTION
FILE], 85
[XDR FIND POTENTIAL
DUPLICATES], 75
[XDR MAIN MENU], 54
[XDR MANAGER UTILITIES], 54
[XDR MERGE READY
DUPLICATES], 72
[XDR MERGE SELECTED PAIR], 72
[XDR OPERATIONS MENU], 54
[XDR PRINT LIST], 79
[XDR PURGE], 86
[XDR SEARCH ALL], 57
[XDR TALLY STATUS FIELDS], 81
[XDR UTILITIES MENU], 54
[XDR VERIFY ALL], 63
[XDR VERIFY SELECTED PAIR], 66
[XDR VIEW DUPLICATE RECORD],
78

454

[XTCM DISK2MAIL], 107 [XUCM EDIT REF THRESH], 102 [XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 102 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT MENU], 206 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 IXUCMBR2Al, 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XUCSR REPORTS MENU], 135 [XT-VERSION NUMBER], 185 [XUCSRA REPORTS BY (VG,DATE)], [XTVG COMPARE], 194 [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** 135 DATE, 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 193 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 [XUPRROU], 185 [XUCM COMPUTE LOCAL REFERENCES, 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD]. [XUROUTINE OUT], 187 102 [XUROUTINES], 197

[XURTL], 169	Bernstein RT Statistics (detailed)
[XURTLC], 170	[XUCMBR2], 127
[XURTLCK], 170	Build an 'NTEG' Routine for a
[XURTLK], 170	Package option, 198
[XURTLM], 107, 169	Calculate and Show Checksum Values
[XURTLMA], 170	option, 195
[XURTLP], 170	Callable Entry Points
[XURTLPG], 170	Kermit, 211
[XURTLPL], 170	RECEIVE^XTKERMIT, 211
[XUSITEMGR], 197	SEND^XTKERMIT, 211
^%Z Editor, 184, 213, 215	T0^%ZOSV Start RT Measure, 173
^%Z Global, 213	T1^%ZOSV Stop RT Measure, 174
^%ZOSV, 170, 174	XRT0 Output Variable, Start Time
^%ZRTL, 169, 170, 171, 174	173
^%ZRTL(1, RESPONSE TIME (.	XRTN Input Variable, Routine
3.091)	Name, 174
^%ZRTL(2, RT DATE_UCI,VOL, 171	XTLKKWL, 39
^%ZRTL(4, RT RAWDATA, 171	Candidate Collection Routine for
^XINDEX, 182	Patient Merge
^XTLKDICL, 13, 37, 43, 45	Example, 219
^XTLKMGR, 41, 42	Candidate Collection, Selecting Fields
^XTLKWIC, 35	to Compare in, 91
^XTMP Global, 155, 158, 166	Capacity Management
^XUP, 196	Capacity Management menu
Accumulate Globals for Package	Move Host File to MailMan
option, 194	option, 107
ACTION menu, 215	Response Time Log Options,
Add Entries To Look-Up File option,	107
12, 21, 23	VAX/ALPHA Capacity
Add Verified Duplicate Pair option, 75	Management menu, 107
Add/Modify Utility option, 12, 21, 25	Direct Mode Utility, Resource
ALTERNATE EDITOR file, 209	Usage
AM MSM RTHIST Task Option,	D ZHDIF^%ZOSV, 174
133	Hardware Performance Summary
Application Utilities menu, 15	Example, 117
Auto Purge of CM Data, 134	MSM Capacity Management
Automatically Merge Already Verified	Manager's Menu
Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	1//

Ave. Response Time (DATE, VG)];.i.[XUCSRB Graph;.i. XUCSRG ROU CMNDS/GREF GRAPHS REPORT];, 140, 141 MENU];.i.[XUCSRG Routine CMNDS/GREF **RESPONSE TIME** Report (By VG/Date);.i.[XUCSRA **GRAPH]:**, 151 CPU/DISK Utilization REPORTS BY Report (By (VG,DATE)];.i.[XUCSRA Date/VG);.i.[XUCSRB ROU CMNDS/GREF REPORTS BY REPORT];, 147, 148 (DATE,VG)];.i.[XUCSRB System Statistical Report CPU/DISK REPORT];, (By Date/VG);.i.[XUCSRB REPORTS BY 135, 136 CPU/DISK Utilization (DATE,VG)];.i.[XUCSRB Report (By SYS STAT REPORT]:, 142 VG/Date);.i.[XUCSRA System Statistical Report REPORTS BY (By VG/Date);.i.[XUCSRA (VG,DATE)];.i.[XUCSRA REPORTS BY CPU/DISK REPORT];, 143 (VG,DATE)];.i.[XUCSRA Global Reference Report (By SYS STAT REPORT];, 149 Date/VG);.i.[XUCSRB] CM Reports Menu;. The options REPORTS BY are described in the same (DATE, VG)];.i.[XUCSRB order as they appear on the GREF REPORT];, 137, 138 screen., 135 CM Reports Menu; i. Capacity Global Reference Report (By VG/Date);.i.[XUCSRA Management REPORTS BY MSM Capacity Management (VG,DATE)];.i.[XUCSRA Manager's Menu GREF REPORT];, 144, 145 options, 129 MSM Site Parameters Response Time Report (By Date/VG);.i.[XUCSRB Enter/Edit Menu; option REPORTS BY XUCS SITE EDIT MENU].i.[XUCS SITE EDIT (DATE,VG)];.i.[XUCSRB RESPONSE REPORT];, MENU]; is used to configure the MPM after installation.. 139 Response Time Report (By VG/Date);.i.[XUCSRA options; i.MSM Capacity REPORTS BY Management Manager's Menu (VG,DATE)];.i.[XUCSRA options, 130 RESPONSE REPORT];, Performance Assurance menu 146 Compute New Local References Routine CMNDS/GREF option, 103 Report (By Edit. Days to Compute Date/VG);.i.[XUCSRB] Reference Ranges option REPORTS BY

Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169
Host File Server (HFS)	User Termination, 169
Device, 154	XRTL variable, 173
LOG RESOURCE USAGE?	System Performance Summary
field, 153	Example, 117
Measure Resource Consumption	VAX/ALPHA Performance Monitor
by Package, 153	menu
Queuing, 154	Enable/Disable VPM option,
Response Time Log Options, 169	112
Copy RT Raw Data to FM File	Manual Purge of VPM Data
option, 170	option, 112
Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	Example, Enable
Long RT Report Print option,	collection of data
170	(Queued for background
Multiday RT Averages option,	processing), 167
170	option, 167
Print RT Report option, 170	Kill Raw Resource Usage
Response Time Measures, 169	Data
^%ZRTL global, 171, 174	
	Example, Live execution,
^%ZRTL(1, RESPONSE TIME	166
(. 3.091)	option, 166
^%ZRTL(2, RT	options, 155
DATE_UCI,VOL, 171	

Print Formatted Report	List Raw RTHIST Data for a
(Table/Graph)	Range of Dates option, 126
Example, Graph format	List Raw System Data option,
subtotaled by node	126
(Live execution), 165	List Volume Set Information
Example, Table format	option, 127
with subtotals printed	List Workday Averages for
by node and cumulative	Selected Metric(s) option, 127
station totals (Live	Locking Data option, 124
execution), 162	Raw Paging/BIO/DIO/FLS/MLS
Example, Table format	option, 125
without subtotals (Live	Check Pair of Records to see if
execution), 163	Duplicates
option, 161	Example, 74
Sort Raw Resource Usage	option, 73
Data	CHECK^XTSUMBLD, 195
Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186
Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option, 125
Bernstein Response Time Reports menu option, 127	
CPU Modes/Compute States	CPU/DISK Utilization Report (By
option, 125	Date/VG), 135, 136
Disk Drive Raw Data Statistics	CPU/DISK Utilization Report (By VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
Soloco A Lieutio Opuloii, 120	- automo mitorgo

Example, 223	Disk Drive Raw Data Statistics menu,
DATE/VG MSM CM Reports, 135	128
Delete Entries From Look-Up option,	Display Search Status
12, 21, 22	Example, 56
Delete Routines option, 186	option, 55
Destroy FM Copy of Raw RT Data	DK^XTLKMGR, 43
option, 170	DLL^XTLKMGR, 44
Device Chart, 16	DSH^XTLKMGR, 44
DEVICE file, 107	DSY^XTLKMGR, 44
Direct Mode Utilities	Duplicate Checker, How to check a
>D ^%ZTER, 196	pair of records using the., 73
>D ^XTER, 196	Duplicate Checking Algorithm, 53
>D ^XTERPUR, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTNTEG, 197	Utilities
>D ^%G (OS-specific), 201, 203	How to Verify Duplicate Pairs, 63
>D ^%INDEX, 179, 189, 199	Duplicate Pairs, How to Verify, 63
>D ^%RR (OS-specific), 186	DUPLICATE RECORD file, 53, 54, 63
>D ^%RS (OS-specific), 187,	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
190	88, 89, 91, 94
>D ^%ZTER, 199	DUPLICATE RECORD File, 79
>D ^% ZTP1, 185, 189	Duplicate Records, 53
> D ^ % Z T P P , 185, 189	DUPLICATE RESOLUTION file, 53,
>D ^%ZTRDEL, 186, 190	72, 90, 92, 94
	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ^XTER, 199	Duplicate Resolution Utilities
>D ^XTERPUR, 199	Add Verified Duplicate Pair option,
> D ^ X T F C E , 178, 189	75
> D ^ X T F C R , 178, 189	Automatically Merge Already
>D ^XTLKKWL, 39	Verified Duplicates
>D ^XTRCMP, 186, 189	Example, 83
>D ^XTRGRPE, 184, 189	option, 72, 83
>D ^XTVCHG, 184, 189	Candidate Collection, Selecting
>D ^XTVNUM, 185, 189	Fields to Compare in, 91
$>$ D CHECK * XTSUMBLD, $195, 199$	Check Pair of Records to see if
>D MAIL1^XTCMFILN, 107	Duplicates
>D nsNTEG, 197	Example, 74
>D ONE^nsNTEG, 197, 199	option, 73
>D TAPE^XTRCMP, 186, 190	Control File
>D^ %RR (OS-specific), 190	(See also DUPLICATE
>X ^%Z, 184, 189	RESOLUTION file), 53
	Customized Merge, 53, 87

Display Search Status	SPD Verify Selected Potential
Example, 56	Duplicate Pair option, 66
option, 55	SRCH Start/Halt Duplicate
Duplicate Checking Algorithm, 53	Search option, 57
DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53
DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File
Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	
Verified Duplicates option, 72	

TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	GRAPHS MENU MSM CM Reports,
Edit Duplicate Resolution File	150
Example, 85	Group Routine Edit option, 184
option, 85	Hardware Performance Summary
Edit Kermit Holding File option, 206	Example, 117
Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
U	

Kermit file transfer protocol, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Macintosh steps, 205	26, 42, 44
KERMIT HOLDING file, 206	Locking Data option, 124
Kermit Menu, 206, 209	LOG RESOURCE USAGE? field, 153
Edit Kermit Holding File option,	Logging is Enabled, 169
206	Long RT Report Print option, 170
Receive Kermit File option, 207	Manual Purge of VPM Data option,
Send Kermit File option, 207	112
KERNEL SITE PARAMETERS file,	Merge (Ready to Merge) Verified
153	Duplicates option, 72
Key Word In Context (KWIC), 13, 35	Merge Capability, Duplicate
Keywords, Multi-Term Look-Up	Resolution Utilities
(MTLU), 11, 12, 25, 41, 43	Developing, 87
Associated with a Single Term and	Merge Process, 53, 71
Multiple Terms, 14	Merge Process, Interactive, 71
Example, 33	Merge Process, Verified Duplicates, 71
option, 29	Merge Routines, 53
Kill Raw Resource Usage Data	Merge Selected Verified Duplicate
Example, Live execution, 166	Pair option, 72
option, 166	Merge Verified Duplicates, Duplicate
Kill Raw RT Data, Save Means option,	Resolution Utilities
170	Merge Process, 71
KWIC, 13, 35	Merge, Customized, 53
L^XTLKMGR, 43	Merging of Duplicates, 53
Last Routine Change Date Recorded	Merging Of Duplicates, 53
option, 193, 227	Morning RTHIST Data Capture, 133
Line Mode Editing Help, 214	Move Host File to MailMan option,
List Global option, 201	107
List Raw RTHIST Data for a Range of	MPM Schedule/Unschedule options,
Dates option, 126	133
List Raw System Data option, 126	MPM, How to configure the, 131
List Routines option, 185	MSM Capacity Management
List Volume Set Information option,	Manager's Menu
127	options;, 129
List Workday Averages for Selected	MSM RTHIST REPORT DATA file,
Metric(s) option, 127	129
LKUP^XTLKMGR, 37, 39, 45	MSM RTHIST SITE file, 129
LOCAL KEYWORD file, 12, 14, 21,	MSM Site Parameters Enter/Edit
22, 26, 41, 43	Menu, 131
LOCAL LOOKUP file, 11, 12, 17, 19,	Multiday RT Averages option, 170
21, 25, 37, 39, 41, 43, 44, 45	Multi-Term Lookup (MTLU)
LOCAL LOOKUP File, 23	option, 17
LOCAL SHORTCUT file, 12, 13, 14,	Multi-Term Look-Up (MTLU), 12
17, 21, 22, 42, 44	Add Entries To Look-Up File
	Example, 25

IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22 26 41 43	op op 11011, 21 , 22

Multi-Term Lookup (MTLU) Main	Performance Problems, 169
Menu options, 15, 21	PM MSM RTHIST Task Option,
Print Utility	133
Example, 20	Potential Duplicate Pairs, 53
option, 12, 19	POTENTIAL DUPLICATE
Shortcuts, 11, 25	THRESHOLD%, 53, 85, 94
Example, 33	Print Formatted Report (Table/Graph)
Point to a Single Word or	Example, Graph format subtotaled
Phrase, 13	by node (Live execution), 165
Site Implementation, 35	Example, Table format with
Standard Device Chart, 16	subtotals printed by node and
Synonyms, 11, 25	cumulative station totals (Live
Associated with Multiple	execution), 162
Terms, 13	Example, Table format without
Example, 34	subtotals (Live execution), 163
Multiple Tokens, 13	option, 161
option, 30	Print List of File Duplicates
Utilities for MTLU option	Example, 79
Add Entries To Look-Up File	option, 79
option	Print RT Report option, 170
Example, 25	Print Utility, MTLU
Add/Modify Utility option	Example, 20
Example, Keywords, 33	option, 12, 19
Example, Shortcuts, 33	Producing Reports, Searches, and
Example, Synonyms, 34	Statistics Through Standardized
Delete Entries From Look-Up	Encoding of Diagnoses and
option	Procedures, 11
Example, 22	Program Integrity Checker option, 197
MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option <locked td="" with<=""></locked>
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
Operations Management menu, 197	Example, 86
Output Routines option, 187	option, 86
Performance Analysis option, 105	Raw Paging/BIO/DIO/FLS/MLS
Performance Monitor, 112	option, 125
PERFORMANCE MONITOR, 131	Receive Kermit File option, 207

Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	Selecting Fields to Compare in
Response Time Log Options menu,	Candidate Collection, Duplicate
107	Resolution Utilities, 91
Response Time Report (By Date/VG),	Send Kermit File option, 207
139	Setup Performance Monitor option,
Response Time Report (By VG/Date),	112
146	SH^XTLKMGR, 42
Routine Changes File, 192	Shortcuts, Multi-Term Look-Up
Routine CMNDS/GREF Report (By	(MTLU), 11, 12, 25
Date/VG), 140, 141	Example, 33, 42, 44
Routine CMNDS/GREF Report (By	Point to a Single Word or Phrase,
VG/Date), 147, 148	13
Routine Compare - Current with	Site/Event Rate Summary
Previous option, 192, 193	[XUCMBR2A], 128
Routine Compare Utility, 192	Sort Raw Resource Usage Data
Routine Edit option, 184	Example, Live execution, 159
Routine Editor, 213, 215	Example, Live execution with
Routine Management Menu, 197	output of sorted raw data, 160
Routine Tools menu	Example, Queued for background
%INDEX of Routines option, 179	processing, 159
Compare Routines on Tape to Disk	option, 158
option, 186	Standard Device Chart, 16
Compare Two Routines option, 185	Start or Halt a Search for Duplicates
Delete Routines option, 186	Within a File, 57
First Line Routine Print option,	Start/Halt Duplicate Search
185	Example, Halting a search, 60
Flow Chart Entire Routine option,	Example, Starting a search, 58
178	option, 57
Flow Chart from Entry Point	SY^XTLKMGR, 42
option, 178	Synonyms, Multi-Term Look-Up
Group Routine Edit option, 184	(MTLU), 11, 12, 25, 42, 44
Input Routines option, 186	Associated with Multiple Terms, 13
List Routines option, 185	Example, 34
Output Routines option, 187	Multiple Tokens, 13
Routine Edit option, 184	option, 30
Variable Changer option, 184	System Performance, 169
Version Number Update option,	System Performance Summary
185	Example, 117
RT logging, 173	

System Statistical Report (By	UNDO Edits (Restore to Older
Date/VG), 142	Version of Routine) option, 193
System Statistical Report (By	Update with Current Routines
VG/Date), 149	option, 192, 193
T0^%ZOSV	Verify Potential Duplicates
Start RT Measure, 173	Example, 64
T1^%ZOSV	option, 63
Stop RT Measure, 174	Verify Selected Potential Duplicate
Tally STATUS and MERGE STATUS	Pair
fields	Example, 66
Example, 81	option, 66
option, 81	Version Number Update option, 185
TAPE^XTRCMP, 186	VG/DATE MSM CM Reports, 143
Tasked CM File Update, 134	View Duplicate Record Entries
Tokenizing Routine, 13	Example, 78
Two Standard Deviation Rule, 101	option, 78
UNDO Edits (Restore to Older Version	VMS monitor, 115
of Routine) option, 193	VPM Reports option, 115
Update with Current Routines option,	VPM Schedule/Unschedule options,
192, 193	114
User Termination, 169	Write Raw Resource Usage Data
Utilities For MTLU option, 21	Example, Live execution, 156
VA Programming Standards and	Example, Queued for background
Conventions (SAC), 179, 199	processing, 157
Variable Changer option, 184	option, 155
VAX/ALPHA Capacity Management	XRTL variable, 169, 173
menu, 107	XTBASE, 202
VAX/ALPHA Performance Monitor	XTER, 196
(VPM), 109	XTERPUR, 196
Verified Duplicates, Duplicate	XTLKER() array, 41
Resolution Utilities, 53, 66	XTLKTOKN, 13
Verified Non-Duplicates, Duplicate	XTLKZMGR, 12, 21
Resolution Utilities, 53, 66	XTRCMP, 186
Verifier Tools Menu, 192	XTSUMBLD, 195
Accumulate Globals for Package	XTV ROUTINE CHANGES file, 192
option, 194	XTV VERIFICATION PACKAGE file,
Edit Verification Package File	194
option, 194	XTVCHG, 184
Global Compare for Selected	XTVNUM, 185
Package option, 194	XUCM TASK NIT, 115, 117
Last Routine Change Date	XUCM TASK VPM, 115
Recorded option, 193	XUGET, 197
Routine Compare - Current with	XUMGR key, 191
Previous option, 192, 193	XUPROG key, 177, 186, 191, 201

XUPROGMODE key, 177, 184, 185,	[XTCM MAIN], 107, 155
186, 191, 196, 201, 202	[XTCM], 169
XURTLC, 171	[XTFCE], 178
XURTLK, 171	[XTFCR], 178
,	[XT-KERMIT EDIT], 206
	[XT-KERMIT MENU], 206
\mathbf{S}	[XT-KERMIT RECEIVE], 207
	[XT-KERMIT SEND], 207
%G, 201	[XTLKLKUP], 12, 17
%GL, 201	[XTLKMODKY], 12, 29
%INDEX of Routines option, 179	[XTLKMODPARK], 12, 21, 22
%INDEX Utility, 179, 180, 199	[XTLKMODPARS], 12, 21, 23
%RR, 186	[XTLKMODSH], 12, 27
%RS, 186, 187	[XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKPRTUTL], 12, 19
%ZTPP, 185	[XTLKUSER2], 15, 21
%ZTRDEL, 186	[XTLKUTILITIES], 21
[XDR ADD VERIFIED DUPS], 75	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83	[XT-NUMBER BASE CHANGER], 202
[XDR CHECK PAIR], 73	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185
[XDR EDIT DUP RECORD STATUS],	[XTSUMBLD], 198
77	[XTSUMBLD-CHECK], 195
[XDR EDIT DUP RESOLUTION	[XTV EDIT VERIF PACKAGE], 194
FILE], 85	[XTV MENU], 192
[XDR FIND POTENTIAL	[XT-VARIABLE CHANGER], 184
DUPLICATES], 75	[XT-VERSION NUMBER], 185
[XDR MAIN MENU], 54	[XTVG COMPARE], 194
[XDR MANAGER UTILITIES], 54	[XTVG UPDATE], 194
[XDR MERGE READY	[XTVR COMPARE], 192, 193
DUPLICATES], 72	XTVR MOST RECENT CHANGE
[XDR MERGE SELECTED PAIR], 72	DATE], 193, 227
[XDR OPERATIONS MENU], 54	[XTVR RESTORE PREV ROUTINE],
[XDR PRINT LIST], 79	193
[XDR PURGE], 86	[XTVR UPDATE], 192, 193
[XDR SEARCH ALL], 57	[XU FIRST LINE PRINT], 185
[XDR TALLY STATUS FIELDS], 81	[XUCM ANALYSE], 105
[XDR UTILITIES MENU], 54	XUCM COMPUTE LOCAL
[XDR VERIFY ALL], 63	REFERENCES], 103
[XDR VERIFY SELECTED PAIR], 66	[XUCM DISK], 128
[XDR VIEW DUPLICATE RECORD],	[XUCM EDIT DISK THRESHOLD],
78	102
[XTCM DISK2MAIL], 107	IXUCM EDIT REF THRESHL 102

[XUCM EDIT VOL SET THRESH],	[XURTLC], 170
102	[XURTLCK], 170
[XUCM GRAF MET AVE], 128	[XURTLK], 170
[XUCM LIST DAILY STATS], 127	[XURTLM], 107, 169
[XUCM LIST RAW], 126	[XURTLMA], 170
[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127

Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH]; , 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];.i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);.i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];.i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
Move Host File to MailMan	VG/Date);.i.[XUCSRA
option, 107	REPORTS BY
Response Time Log Options,	(VG,DATE)];.i.[XUCSRA
107	GREF REPORT];, 144, 145
VAX/ALPHA Capacity	Response Time Report (By
Management menu, 107	Date/VG);.i.[XUCSRB
Direct Mode Utility, Resource	REPORTS BY
Usage	(DATE,VG)];.i.[XUCSRB
D ZHDIF^%ZOSV, 174	RESPONSE REPORT];,
Hardware Performance Summary	139
Example, 117	Response Time Report (By
MSM Capacity Management	VG/Date);.i.[XUCSRA REPORTS BY
Manager's Menu	
CM Reports Menu	(VG,DATE)];.i.[XUCSRA
Ave. %CPU & %DISK	RESPONSE REPORT];, 146
Graph;.i.[XUCSRG GRAPHS	Routine CMNDS/GREF
	Report (By
MENU];.i.[XUCSRG CPU-	Date/VG);.i.[XUCSRB
DISK GRAPH];, 150	REPORTS BY
Ave. Response Time Graph;.i.[XUCSRG	(DATE,VG)];.i.[XUCSRB
GRAPHS	ROU CMNDS/GREF
GIVII IID	REPORT];, 140, 141

Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor
ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu; i. Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option,
Enter/Edit Menu; option	170
[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU].i.[XUCS SITE EDIT	option, 170
MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(.3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173

T1^%ZOSV Stop RT	Example, Table format
Measure, 174	with subtotals printed
XRT0 Output Variable,	by node and cumulative
Start Time, 173	station totals (Live
XRTN Input Variable,	execution), 162
Routine Name, 174	Example, Table format
Logging is Enabled, 169	without subtotals (Live
MUMPS Read, 169	execution), 163
Performance Problems, 169	option, 161
Response Time, 169, 173	Sort Raw Resource Usage
RT logging, 173, 174	Data
System Performance, 169	Example, Live execution,
User Termination, 169	159
XRTL variable, 173	Example, Live execution
System Performance Summary	with output of sorted
Example, 117	raw data, 160
VAX/ALPHA Performance Monitor	Example, Queued for
menu	background processing,
Enable/Disable VPM option,	159
112	option, 158
Manual Purge of VPM Data	Write Raw Resource Usage
option, 112	Data
Resource Usage Menu	Example, Live execution,
Enable/Disable Collection of	156
Resource Usage Data	Example, Queued for
Example, Disable	background processing,
collection of data	157
(Queued for background	option, 155
processing), 168	Setup Performance Monitor
Example, Enable	option, 112
collection of data	VPM Reports option, 115
(Queued for background	VPM Reports menu
processing), 167	Bernstein Response Time
option, 167	Reports menu option, 127
Kill Raw Resource Usage	CPU Modes/Compute States
Data	option, 125
Example, Live execution,	Disk Drive Raw Data Statistics
166	menu, 128
option, 166	Graph Workday Averages for
options, 155	Selected Metric option, 128
Print Formatted Report	List Raw RTHIST Data for a
(Table/Graph)	Range of Dates option, 126
Example, Graph format	List Raw System Data option,
subtotaled by node	126
(Live execution), 165	

List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), 201, 203
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	
CM DAILY STATISTICS file, 109	>D ^%RR (OS-specific), 186
CM DISK DRIVE RAW DATA file,	>D ^%RS (OS-specific), 187,
115	190
CM METRICS file, 103, 110	>D ^%ZTER, 199
CM METRICS List, 110	> D ^ % Z T P 1 , 185, 189
CM NODENAME RAW DATA file,	$>$ D $^{\circ}$ % Z T P P , 185 , 189
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D ^nsNTEG, 199
•	>D ^XINDEX, 199
Compare Routines on Tape to Disk	>D ^XTBASE, 202, 203
option, 186	>D ^XTCMFILN, 107
Compare Two Routines option, 185	>D ^XTER, 199
Compute New Local References	>D ^XTERPUR, 199
option, 103	> D ^ X T F C E , 178, 189
Configuring the MPM, 131	> D ^ X T F C R , 178, 189
Control File	>D ^XTLKKWL, 39
(See also DUPLICATE	>D ^XTRCMP, 186, 189
RESOLUTION file), 53	>D ^XTRGRPE, 184, 189
Copy RT Raw Data to FM File option,	· · · · · · · · · · · · · · · · · · ·
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55

DK^XTLKMGR, 43	DUPLICATE RECORD file, 53, 54
DLL^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
DSH^XTLKMGR, 44	86, 87, 88, 91, 94
DSY^XTLKMGR, 44	DUPLICATE RECORD File, 79
Duplicate Checker, How to check a	Duplicate Records, 53
pair of records using the., 73	DUPLICATE RESOLUTION file,
Duplicate Checking Algorithm, 53	53, 72, 90, 92, 94
Duplicate Pairs, Duplicate Resolution	Duplicate Threshold%, 53, 85, 94
Utilities	Edit Duplicate Record Status
How to Verify Duplicate Pairs, 63	Example, 77
Duplicate Pairs, How to Verify, 63	option, 77
DUPLICATE RECORD file, 53, 54, 63,	Edit Duplicate Resolution File
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	Example, 85
88, 89, 91, 94	option, 85
DUPLICATE RECORD File, 79	Find Potential Duplicates for an
Duplicate Records, 53	Entry in a File
DUPLICATE RESOLUTION file, 53,	Example, 75
72, 90, 92, 94	option, 75
Duplicate Resolution System menu	Manager Utilities menu
Manager Utilities menu, 54, 83	AUTO Automatically Merge
Operations menu, 54, 55	Already Verified Duplicates
options, 54	option, 72, 83
Utilities menu, 54, 73	FILE Edit Duplicate
Duplicate Resolution Utilities	Resolution File option, 85
Add Verified Duplicate Pair option,	PRGE Purge Duplicate Record
75	File option, 86
Automatically Merge Already	Merge (Ready to Merge) Verified
Verified Duplicates	Duplicates option, 72
Example, 83	Merge Capability, Developing, 87
option, 72, 83	Merge Process, 53, 71
Candidate Collection, Selecting	Merge Process, Interactive, 71
Fields to Compare in, 91	Merge Selected Verified Duplicate
Check Pair of Records to see if	Pair option, 72
Duplicates	Merge, Customized, 53
Example, 74	Merged-From Record, 53
option, 73	Merged-To Record, 53
Control File	Operations menu
(See also DUPLICATE	DSS Display Search Status
RESOLUTION file), 53	option, 55
Customized Merge, 53, 87	MVD Merge (Ready to Merge)
Display Search Status	Verified Duplicates option, 72
Example, 56	SPD Verify Selected Potential
option, 55	Duplicate Pair option, 66
Duplicate Checking Algorithm, 53	SRCH Start/Halt Duplicate
	Search option, 57

SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63
POTENTIAL DUPLICATE	Verify Selected Potential Duplicate
THRESHOLD%, 53, 85, 94	Pair
Potential Duplicates, 53, 85, 94	Example, 66
Print List of File Duplicates	option, 66
Example, 79	View Duplicate Record Entries
option, 79	Example, 78
Purge Duplicate Record File	option, 78
Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option,
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option
Tally STATUS and MERGE	Edit Duplicate Record Status
STATUS fields	Example, 77
Example, 81	option, 77
Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167

option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option, 206	Long RT Report Print option, 170

Manual Purge of VPM Data option,	XTLKZMGR Security Key, 12,
112	21, 23
Merge (Ready to Merge) Verified	Add/Modify Utility
Duplicates option, 72	Examples, 33
Merge Capability, Duplicate	Keywords example, 33
Resolution Utilities	Keywords option, 12, 25, 29
Developing, 87	option, 21, 25
Merge Process, 53, 71	Shortcuts example, 33
Merge Process, Interactive, 71	Shortcuts option, 12, 25
Merge Process, Verified Duplicates, 71	Synonyms example, 34
Merge Routines, 53	Synonyms option, 12, 25, 30
Merge Selected Verified Duplicate	Callable Entry Point
Pair option, 72	XTLKKWL, 39
Merge Verified Duplicates, Duplicate	Delete Entries From Look-Up
Resolution Utilities	Example, 22
Merge Process, 71	IRM/Developer Utility, 12
Merge, Customized, 53	option, 12, 21, 22
Merging of Duplicates, 53	XTLKZMGR Security Key, 12
Merging Of Duplicates, 53	Direct Mode Utilities
Morning RTHIST Data Capture, 133	>D ^XTLKKWL, 39
Move Host File to MailMan option,	Enhanced API
107	DK^XTLKMGR, 43
MPM Schedule/Unschedule options,	DLL^XTLKMGR, 44
133	DSH^XTLKMGR, 44
MPM, How to configure the, 131	DSY^XTLKMGR, 44
MSM Capacity Management	K^XTLKMGR, 41
Manager's Menu	L^XTLKMGR, 43
options;, 129	LKUP^XTLKMGR, 45
MSM RTHIST REPORT DATA file,	SH^XTLKMGR, 42
129	SY^XTLKMGR, 42
MSM RTHIST SITE file, 129	Example, 18
MSM Site Parameters Enter/Edit	Functional Description, 12
Menu, 131	Keywords, 11, 25
Multiday RT Averages option, 170	Associated with a Single Term
Multi-Term Lookup (MTLU)	and Multiple Terms, 14
option, 17	Example, 33
Multi-Term Look-Up (MTLU), 12	option, 29
Add Entries To Look-Up File	Lexical Variants, 13
Example, 25	LOCAL KEYWORD file, 12, 14, 21,
IRM/Developer Utility, 12, 21,	22, 26, 41, 43
23	LOCAL LOOKUP file, 11, 12, 17,
option, 12, 21, 23	19,21,25,37,39,41,43,44,45
Set Entries in the LOCAL	LOCAL LOOKUP File, 23
LOOKUP file, 21, 23	LOCAL SHORTCUT file, 12, 13,
	14, 17, 21, 22, 42, 44

LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	Associated with Multiple
MTLU, How to Override	Terms, 13
FileMan look-ups and MTLU,	Example, 34
39	Multiple Tokens, 13
Multi-Term Lookup (MTLU)	option, 30
option, 12, 17	Utilities for MTLU option
Multi-Term Lookup (MTLU) Main	Add Entries To Look-Up File
Menu	option
Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	New Fields, 114
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	

Print Formatted Report (Table/Graph)	Response Time Log Options menu,
Example, Graph format subtotaled	107
by node (Live execution), 165	Response Time Report (By Date/VG),
Example, Table format with	139
subtotals printed by node and	Response Time Report (By VG/Date),
cumulative station totals (Live	146
execution), 162	Routine Changes File, 192
Example, Table format without	Routine CMNDS/GREF Report (By
subtotals (Live execution), 163	Date/VG), 140, 141
option, 161	Routine CMNDS/GREF Report (By
Print List of File Duplicates	VG/Date), 147, 148
Example, 79	Routine Compare - Current with
option, 79	Previous option, 192, 193
Print RT Report option, 170	Routine Compare Utility, 192
Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178
List Global option <locked td="" with<=""><td>Group Routine Edit option, 184</td></locked>	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184
option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	

Selecting Fields to Compare in	Stop RT Measure, 174
Candidate Collection, Duplicate	Tally STATUS and MERGE STATUS
Resolution Utilities, 91	fields
Send Kermit File option, 207	Example, 81
Setup Performance Monitor option,	option, 81
112	TAPE^XTRCMP, 186
SH^XTLKMGR, 42	Tasked CM File Update, 134
Shortcuts, Multi-Term Look-Up	Tokenizing Routine, 13
(MTLU), 11, 12, 25	Two Standard Deviation Rule, 101
Example, 33, 42, 44	UNDO Edits (Restore to Older Version
Point to a Single Word or Phrase,	of Routine) option, 193
13	Update with Current Routines option,
Site/Event Rate Summary	192, 193
[XUCMBR2A], 128	User Termination, 169
Sort Raw Resource Usage Data	Utilities For MTLU option, 21
Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	• /

Verify Selected Potential Duplicate	${f T}$
Pair	
Example, 66	%G, 201
option, 66	%GL, 201
Version Number Update option, 185	%INDEX of Routines option, 179
VG/DATE MSM CM Reports, 143	%INDEX Utility, 179, 180, 199
View Duplicate Record Entries	%RR, 186
Example, 78	%RS, 186, 187
option, 78	%ZTER, 196
VMS monitor, 115	%ZTP1, 185
VPM Reports option, 115	%ZTPP, 185
VPM Schedule/Unschedule options,	%ZTRDEL, 186
114	[XDR ADD VERIFIED DUPS], 75
Write Raw Resource Usage Data	[XDR AUTO MERGE], 72, 83
Example, Live execution, 156	[XDR CHECK PAIR], 73
Example, Queued for background	[XDR DISPLAY SEARCH STATUS],
processing, 157	55
option, 155	[XDR EDIT DUP RECORD STATUS].
XRTL variable, 169, 173	77
XTBASE, 202	XDR EDIT DUP RESOLUTION
XTER, 196	FILE], 85
XTERPUR, 196	XDR FIND POTENTIAL
XTLKER() array, 41	DUPLICATES], 75
XTLKTOKN, 13	[XDR MAIN MENU], 54
XTLKZMGR, 12, 21	[XDR MANAGER UTILITIES], 54
XTRCMP, 186	XDR MERGE READY
XTSUMBLD, 195	DUPLICATES], 72
XTV ROUTINE CHANGES file, 192	[XDR MERGE SELECTED PAIR], 72
XTV VERIFICATION PACKAGE file,	[XDR OPERATIONS MENU], 54
194	[XDR PRINT LIST], 79
XTVCHG, 184	[XDR PURGE], 86
XTVNUM, 185	[XDR SEARCH ALL], 57
XUCM TASK NIT, 115, 117	[XDR TALLY STATUS FIELDS], 81
XUCM TASK VPM, 115	[XDR UTILITIES MENU], 54
XUGET, 197	[XDR VERIFY ALL], 63
XUMGR key, 191	[XDR VERIFY SELECTED PAIR], 66
XUPROG key, 177, 186, 191, 201	[XDR VIEW DUPLICATE RECORD],
XUPROGMODE key, 177, 184, 185,	78
186, 191, 196, 201, 202	[XTCM DISK2MAIL], 107
XURTLC, 171	[XTCM MAIN], 107, 155
XURTLK, 171	[XTCM], 169
	[XTFCE], 178
	[XTFCR], 178
	[XT-KERMIT EDIT], 206

[XUCM LIST VOL SET INFO], 127 [XT-KERMIT MENU], 206 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XUCM PERFORMANCE MONITOR], [XTLKMODPARS], 12, 21, 23 [XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XUCSR REPORTS MENU], 135 [XT-VERSION NUMBER], 185 [XUCSRA REPORTS BY (VG,DATE)], [XTVG COMPARE], 194 [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], **IXTVR MOST RECENT CHANGE** 135 DATE, 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 193 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES, 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 [XUROUTINES], 197 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XURTLC], 170 [XUCM EDIT VOL SET THRESH], [XURTLCK], 170 102 [XUCM GRAF MET AVE], 128 [XURTLK], 170 [XUCM LIST DAILY STATS], 127 [XURTLM], 107, 169 [XUCM LIST RAW], 126 [XURTLMA], 170

[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	D ZHDIF^%ZOSV, 174
AM MSM RTHIST Task Option,	Hardware Performance Summary
133	Example, 117
Application Utilities menu, 15	MSM Capacity Management
Auto Purge of CM Data, 134	Manager's Menu
Automatically Merge Already Verified	CM Reports Menu
Duplicates	Ave. %CPU & %DISK
Example, 83	Graph;.i.[XUCSRG
option, 72, 83	GRAPHS
Ave. %CPU & %DISK Graph, 150	MENU];.i.[XUCSRG CPU-
Ave. Response Time Graph, 151	DISK GRAPH];, 150
Bernstein Response Time Reports	Ave. Response Time
menu option, 127	Graph;.i.[XUCSRG
Bernstein RT Statistics (detailed)	GRAPHS
[XUCMBR2], 127	MENU];.i.[XUCSRG
Build an 'NTEG' Routine for a	RESPONSE TIME
Package option, 198	GRAPH]; , 151
Calculate and Show Checksum Values	CPU/DISK Utilization
option, 195	Report (By
Callable Entry Points	

Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	System Statistical Report
REPORTS BY	(By VG/Date);.i.[XUCSRA
(VG,DATE)];.i.[XUCSRA	REPORTS BY
CPU/DISK REPORT];, 143	(VG,DATE)];.i.[XUCSRA
Global Reference Report (By	SYS STAT REPORT];, 149
Date/VG);.i.[XUCSRB	CM Reports Menu;. The options
REPORTS BY	are described in the same
(DATE,VG)];.i.[XUCSRB	order as they appear on the
GREF REPORT];, 137, 138	screen., 135
Global Reference Report (By	CM Reports Menu; i. Capacity
VG/Date);.i.[XUCSRA	Management
REPORTS BY	MSM Capacity Management
(VG,DATE)];.i.[XUCSRA	Manager's Menu
GREF REPORT];, 144, 145	options, 129
Response Time Report (By	MSM Site Parameters
Date/VG);.i.[XUCSRB	Enter/Edit Menu; option
REPORTS BY	[XUCS SITE EDIT
(DATE,VG)];.i.[XUCSRB	MENU].i.[XUCS SITE EDIT
RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);.i.[XUCSRA	options;.i.MSM Capacity
REPORTS BY	Management Manager's Menu
(VG,DATE)];.i.[XUCSRA	options, 130
RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);.i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102
Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor

Configuring, 112	XRTN Input Variable,
PERFORMANCE MONITOR	Routine Name, 174
Configuring, 131	Logging is Enabled, 169
Resource Usage	MUMPS Read, 169
^XTMP Global, 155, 158, 166	Performance Problems, 169
Date Range, 154	Response Time, 169, 173
Devices, 154	RT logging, 173, 174
Host File Server (HFS)	System Performance, 169
Device, 154	User Termination, 169
LOG RESOURCE USAGE?	XRTL variable, 173
field, 153	System Performance Summary
Measure Resource Consumption	Example, 117
by Package, 153	VAX/ALPHA Performance Monitor
Queuing, 154	menu
Response Time Log Options, 169	Enable/Disable VPM option,
Copy RT Raw Data to FM File	112
option, 170	Manual Purge of VPM Data
Destroy FM Copy of Raw RT	option, 112
Data option, 170	Resource Usage Menu
Enable/Disable RT Logging	Enable/Disable Collection of
option, 169	Resource Usage Data
Graphic RT Report Print option,	Example, Disable
170	collection of data
Kill Raw RT Data, Save Means	(Queued for background
option, 170	processing), 168
Long RT Report Print option,	Example, Enable
170	collection of data
Multiday RT Averages option,	(Queued for background
170	processing), 167
Print RT Report option, 170	option, 167
Response Time Measures, 169	Kill Raw Resource Usage
^%ZRTL global, 171, 174	Data
^%ZRTL(1, RESPONSE TIME	Example, Live execution,
(. 3.091)	166
^%ZRTL(2, RT	option, 166
DATE_UCI,VOL, 171	options, 155
^%ZRTL(4, RT RAWDATA, 171	Print Formatted Report
Callable Entry Points	(Table/Graph)
T0^%ZOSV Start RT	Example, Graph format
Measure, 173	subtotaled by node
T1^%ZOSV Stop RT	(Live execution), 165
Measure, 174	Example, Table format
XRT0 Output Variable,	with subtotals printed
Start Time, 173	by node and cumulative

station totals (Live	Locking Data option, 124
execution), 162	Raw Paging/BIO/DIO/FLS/MLS
Example, Table format	option, 125
without subtotals (Live	Check Pair of Records to see if
execution), 163	Duplicates
option, 161	Example, 74
Sort Raw Resource Usage	option, 73
Data	CHECK^XTSUMBLD, 195
Example, Live execution,	Checksum, 215
159	CM DAILY STATISTICS file, 109
Example, Live execution	CM DISK DRIVE RAW DATA file,
with output of sorted	115
raw data, 160	CM METRICS file, 103, 110
Example, Queued for	CM METRICS List, 110
background processing,	CM NODENAME RAW DATA file,
159	115, 124
option, 158	CM SITE PARAMETERS file, 107
Write Raw Resource Usage	Compare Routines on Tape to Disk
Data	option, 186
Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
· · · · · · · · · · · · · · · · · · ·	- :,

DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), 201, 203	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63,
>D ^%RR (OS-specific), 186	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D ^%RS (OS-specific), 187,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D 'NSN'EG, 133 >D 'XINDEX, 199	Operations menu, 54, 55
>D AINDEA, 199 >D ^XTBASE, 202, 203	options, 54
>D ^XTBASE, 202, 203 >D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ATCMPTEN, 107 >D ^XTER, 199	Duplicate Resolution Utilities
•	Add Verified Duplicate Pair option,
>D ^XTERPUR, 199	75
> D ^ X T F C E , 178, 189	Automatically Merge Already
> D ^ X T F C R , 178, 189	Verified Duplicates
>D ^XTLKKWL, 39	Example, 83
>D ^XTRCMP, 186, 189	option, 72, 83
>D ^XTRGRPE, 184, 189	Candidate Collection, Selecting
>D ^XTVCHG, 184, 189	Fields to Compare in, 91
>D ^XTVNUM, 185, 189	Check Pair of Records to see if
>D CHECK^XTSUMBLD, 195, 199	Duplicates
>D MAIL1^XTCMFILN, 107	Example, 74
>D nsNTEG, 197	option, 73
>D ONE^nsNTEG, 197, 199	Control File
>D TAPE^XTRCMP, 186, 190	(See also DUPLICATE
>D^ %RR (OS-specific), 190	RESOLUTION file), 53
>X ^%Z, 184, 189	Customized Merge, 53, 87
Disk Drive Raw Data Statistics menu,	Display Search Status
128	Example, 56
Display Search Status	option, 55
Example, 56	Duplicate Checking Algorithm, 53
option, 55	DUPLICATE RECORD file, 53, 54,
DK^XTLKMGR, 43	63, 66, 72, 73, 75, 77, 78, 81, 85,
DLL^XTLKMGR, 44	86, 87, 88, 91, 94
DSH^XTLKMGR, 44	DUPLICATE RECORD File, 79
DSY^XTLKMGR, 44	Duplicate Records, 53

DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File
Example, 85	Example, 86
option, 85	option, 86
Find Potential Duplicates for an	Selecting Fields to Compare in
Entry in a File	Candidate Collection, 91
Example, 75	Start or Halt a Search for
option, 75	Duplicate Records, 57
Manager Utilities menu	Start/Halt Duplicate Search
AUTO Automatically Merge	Example, Halting a search, 60
Already Verified Duplicates	Example, Starting a search, 58
option, 72, 83	option, 57
FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	TSF Tally STATUS and
Verified Duplicates option, 72	MERGE STATUS fields
SPD Verify Selected Potential	option, 81
Duplicate Pair option, 66	VIEW View Duplicate Record
SRCH Start/Halt Duplicate	Entries
Search option, 57	option, 78
SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63

Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	GRAPHS MENU MSM CM Reports,
Edit Duplicate Resolution File	150
Example, 85	Group Routine Edit option, 184
option, 85	Hardware Performance Summary
Edit Kermit Holding File option, 206	Example, 117
Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background	Edit Kermit Holding File option,
processing), 167	206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35

Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72
Example, Live execution, 166	Merge Verified Duplicates, Duplicate
option, 166	Resolution Utilities
Kill Raw RT Data, Save Means option,	Merge Process, 71
170	Merge, Customized, 53
KWIC, 13, 35	Merging of Duplicates, 53
L^XTLKMGR, 43	Merging Of Duplicates, 53
Last Routine Change Date Recorded	Morning RTHIST Data Capture, 133
option, 193, 227	Move Host File to MailMan option,
Line Mode Editing Help, 214	107
List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131
List Raw System Data option, 126	MSM Capacity Management
List Routines option, 185	Manager's Menu
List Volume Set Information option,	options;, 129
127	MSM RTHIST REPORT DATA file,
List Workday Averages for Selected	129
Metric(s) option, 127	MSM RTHIST SITE file, 129
LKUP^XTLKMGR, 37, 39, 45	MSM Site Parameters Enter/Edit
LOCAL KEYWORD file, 12, 14, 21,	Menu, 131
22, 26, 41, 43	Multiday RT Averages option, 170
LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44 Looking Data antion, 194	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, $21, 25$

Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWĽ, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
L^XTLKMGR, 43	Add Entries To Look-Up File
LKUP^XTLKMGR, 45	option, 21
SH^XTLKMGR, 42	Add/Modify Utility option
SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL LOOKUP File, 23	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25
LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	

Associated with Multiple	cumulative station totals (Live
Terms, 13	execution), 162
Example, 34	Example, Table format without
Multiple Tokens, 13	subtotals (Live execution), 163
option, 30	option, 161
Utilities for MTLU option	Print List of File Duplicates
Add Entries To Look-Up File	Example, 79
option	option, 79
Example, 25	Print RT Report option, 170
Add/Modify Utility option	Print Utility, MTLU
Example, Keywords, 33	Example, 20
Example, Shortcuts, 33	option, 12, 19
Example, Synonyms, 34	Producing Reports, Searches, and
Delete Entries From Look-Up	Statistics Through Standardized
option	Encoding of Diagnoses and
Example, 22	Procedures, 11
MUMPS error, 179	Program Integrity Checker option, 197
MUMPS Read, 169	Programmer Options menu, 177, 195,
Name Test Routine for a Patient	201
Merge	Build an 'NTEG' Routine for a
Example, 221	Package option, 198
New Fields, 114	Calculate and Show Checksum
Nodename Average by Day of Week	Values option, 195
[XUCMBR2C], 127	List Global option, 201
NTEG, 197, 198	List Global option < Locked with
Number Base Changer option <locked< td=""><td>XUPROGMODE>, 201</td></locked<>	XUPROGMODE>, 201
with XUPROGMODE>, 202	Number Base Changer option, 202
Operations Management menu, 197	Purge Duplicate Record File
Output Routines option, 187	Example, 86
Performance Analysis option, 105	option, 86
Performance Monitor, 112	Raw Paging/BIO/DIO/FLS/MLS
PERFORMANCE MONITOR, 131	option, 125
Performance Problems, 169	Receive Kermit File option, 207
PM MSM RTHIST Task Option,	Resource Consumption Measured by
133	Package, 153
Potential Duplicate Pairs, 53	Resource Usage Menu
POTENTIAL DUPLICATE	options, 155
THRESHOLD%, 53, 85, 94	Resource Usage, Capacity
Print Formatted Report (Table/Graph)	Management, 153
Example, Graph format subtotaled	Response Time, 169
by node (Live execution), 165	Response Time Log Options menu,
Example, Table format with	107
subtotals printed by node and	Response Time Report (By Date/VG), 139

Response Time Report (By VG/Date),	Setup Performance Monitor option,
146	112
Routine Changes File, 192	SH^XTLKMGR, 42
Routine CMNDS/GREF Report (By	Shortcuts, Multi-Term Look-Up
Date/VG), 140, 141	(MTLU), 11, 12, 25
Routine CMNDS/GREF Report (By	Example, 33, 42, 44
VG/Date), 147, 148	Point to a Single Word or Phrase,
Routine Compare - Current with	13
Previous option, 192, 193	Site/Event Rate Summary
Routine Compare Utility, 192	[XUCMBR2A], 128
Routine Edit option, 184	Sort Raw Resource Usage Data
Routine Editor, 213, 215	Example, Live execution, 159
Routine Management Menu, 197	Example, Live execution with
Routine Tools menu	output of sorted raw data, 160
%INDEX of Routines option, 179	Example, Queued for background
Compare Routines on Tape to Disk	processing, 159
option, 186	option, 158
Compare Two Routines option, 185	Standard Device Chart, 16
Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
Flow Chart Entire Routine option,	Example, Halting a search, 60
178	Example, Starting a search, 58
Flow Chart from Entry Point	option, 57
option, 178	SY^XTLKMGR, 42
Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	$T0^{SV}$
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	T1^%ZOSV
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
	Example, 81

option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41
Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195
Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
Accumulate Globals for Package	XTV VERIFICATION PACKAGE file,
option, 194	194
Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	
Verify Potential Duplicates	
Example, 64	U
option, 63	
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186

%RS, 186, 187	[XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKPRTUTL], 12, 19
%ZTPP, 185	[XTLKUSER2], 15, 21
%ZTRDEL, 186	[XTLKUTILITIES], 21
[XDR ADD VERIFIED DUPS], 75	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83	[XT-NUMBER BASE CHANGER], 202
[XDR CHECK PAIR], 73	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185
[XDR EDIT DUP RECORD STATUS],	[XTSUMBLD], 198
77	[XTSUMBLD-CHECK], 195
[XDR EDIT DUP RESOLUTION	[XTV EDIT VERIF PACKAGE], 194
FILE], 85	[XTV MENU], 192
[XDR FIND POTENTIAL	[XT-VARIABLE CHANGER], 184
DUPLICATES], 75	[XT-VERSION NUMBER], 185
[XDR MAIN MENU], 54	[XTVG COMPARE], 194
[XDR MANAGER UTILITIES], 54	[XTVG UPDATE], 194
[XDR MERGE READY	[XTVR COMPARE], 192, 193
DUPLICATES], 72	XTVR MOST RECENT CHANGE
[XDR MERGE SELECTED PAIR], 72	DATE], 193, 227
[XDR OPERATIONS MENU], 54	[XTVR RESTORE PREV ROUTINE],
[XDR PRINT LIST], 79	193
[XDR PURGE], 86	[XTVR UPDATE], 192, 193
[XDR SEARCH ALL], 57	[XU FIRST LINE PRINT], 185
[XDR TALLY STATUS FIELDS], 81	[XUCM ANALYSE], 105
[XDR UTILITIES MENU], 54	[XUCM COMPUTE LOCAL
[XDR VERIFY ALL], 63	REFERENCES], 103
[XDR VERIFY SELECTED PAIR], 66	[XUCM DISK], 128
[XDR VIEW DUPLICATE RECORD],	[XUCM EDIT DISK THRESHOLD],
78	102
[XTCM DISK2MAIL], 107	[XUCM EDIT REF THRESH], 102
[XTCM MAIN], 107, 155	[XUCM EDIT VOL SET THRESH],
[XTCM], 169	102
[XTFCE], 178	[XUCM GRAF MET AVE], 128
[XTFCR], 178	[XUCM LIST DAILY STATS], 127
[XT-KERMIT EDIT], 206	[XUCM LIST RAW], 126
[XT-KERMIT MENU], 206	[XUCM LIST VOL SET INFO], 127
[XT-KERMIT RECEIVE], 207	[XUCM LOCKS], 124
[XT-KERMIT SEND], 207	[XUCM MAIN], 107, 155
[XTLKLKUP], 12, 17	[XUCM MODES], 125
[XTLKMODKY], 12, 29	[XUCM ON/OFF], 112
[XTLKMODPARK], 12, 21, 22	[XUCM PAGE], 125
[XTLKMODPARS], 12, 21, 23	[XUCM PERFORMANCE MONITOR],
[XTLKMODSH], 12, 27	109

[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE, VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	

XRTN Input Variable, Routine	REPORTS BY
Name, 174	(VG,DATE)];.i.[XUCSRA
XTLKKWL, 39	CPU/DISK REPORT];, 143
Candidate Collection Routine for	Global Reference Report (By
Patient Merge	Date/VG);.i.[XUCSRB
Example, 219	REPORTS BY
Candidate Collection, Selecting Fields	(DATE,VG)];.i.[XUCSRB
to Compare in, 91	GREF REPORT];, 137, 138
Capacity Management	Global Reference Report (By
Capacity Management menu	VG/Date);.i.[XUCSRA
Move Host File to MailMan	REPORTS BY
option, 107	(VG,DATE)];.i.[XUCSRA
Response Time Log Options,	GREF REPORT];, 144, 145
107	Response Time Report (By
VAX/ALPHA Capacity	Date/VG);.i.[XUCSRB
Management menu, 107	REPORTS BY
Direct Mode Utility, Resource	(DATE,VG)];.i.[XUCSRB
Usage	RESPONSE REPORT];,
D ZHDIF^%ZOSV, 174	139
Hardware Performance Summary	Response Time Report (By
Example, 117	VG/Date);.i.[XUCSRA
MSM Capacity Management	REPORTS BY
Manager's Menu	(VG,DATE)];.i.[XUCSRA
CM Reports Menu	RESPONSE REPORT];,
Ave. %CPU & %DISK	146
Graph;.i.[XUCSRG	Routine CMNDS/GREF
GRAPHS	Report (By
MENU];.i.[XUCSRG CPU-	Date/VG);.i.[XUCSRB
DISK GRAPH];, 150	REPORTS BY
Ave. Response Time	(DATE,VG)];.i.[XUCSRB
Graph;.i.[XUCSRG	ROU CMNDS/GREF
GRAPHS	REPORT];, 140, 141
MENU];.i.[XUCSRG	Routine CMNDS/GREF
RESPONSE TIME	Report (By
GRAPH]; , 151	VG/Date);.i.[XUCSRA
CPU/DISK Utilization	REPORTS BY
Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	ROU CMNDS/GREF
REPORTS BY	REPORT];, 147, 148
(DATE,VG)];.i.[XUCSRB	System Statistical Report
CPU/DISK REPORT];,	(By Date/VG);.i.[XUCSRB
135, 136	REPORTS BY
CPU/DISK Utilization	(DATE,VG)];.i.[XUCSRB
Report (By	SYS STAT REPORT];, 142
VG/Date);.i.[XUCSRA	

System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
order as they appear on the	Response Time Log Options, 169
screen., 135	Copy RT Raw Data to FM File
CM Reports Menu; i. Capacity	option, 170
Management	Destroy FM Copy of Raw RT
MSM Capacity Management	Data option, 170
Manager's Menu	Enable/Disable RT Logging
options, 129	option, 169
MSM Site Parameters	Graphic RT Report Print option,
Enter/Edit Menu; option	170
XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU].i.[XUCS SITE EDIT	option, 170
MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(.3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169

User Termination, 169	Example, Live execution,
XRTL variable, 173	159
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155
Example, Enable	Setup Performance Monitor
collection of data	option, 112
(Queued for background	VPM Reports option, 115
processing), 167	VPM Reports menu
option, 167	Bernstein Response Time
Kill Raw Resource Usage	Reports menu option, 127
Data	CPU Modes/Compute States
Example, Live execution,	option, 125
166	Disk Drive Raw Data Statistics
option, 166	menu, 128
options, 155	Graph Workday Averages for
Print Formatted Report	Selected Metric option, 128
(Table/Graph)	List Raw RTHIST Data for a
Example, Graph format	Range of Dates option, 126
subtotaled by node	List Raw System Data option,
(Live execution), 165	126
Example, Table format	List Volume Set Information
with subtotals printed	option, 127
by node and cumulative	List Workday Averages for
station totals (Live	Selected Metric(s) option, 127
execution), 162	Locking Data option, 124
Example, Table format	Raw Paging/BIO/DIO/FLS/MLS
without subtotals (Live	option, 125
execution), 163	Check Pair of Records to see if
option, 161	Duplicates
Sort Raw Resource Usage	Example, 74
Data	option, 73
	CHECK^XTSUMBLD, 195

Checksum, 215	>D ^%INDEX, 179, 189, 199
CM DAILY STATISTICS file, 109	>D ^%RR (OS-specific), 186
CM DISK DRIVE RAW DATA file,	>D ^%RS (OS-specific), 187,
115	190
CM METRICS file, 103, 110	>D ^%ZTER, 199
CM METRICS List, 110	> D ^ % Z T P 1 , 185, 189
CM NODENAME RAW DATA file,	> D ^ % Z T P P , 185, 189
115, 124	>D ^%ZTRDEL, 186, 190
CM SITE PARAMETERS file, 107	>D ^nsNTEG, 199
Compare Routines on Tape to Disk	>D ^XINDEX, 199
option, 186	>D ^XTBASE, 202, 203
Compare Two Routines option, 185	D ^XTCMFILN, 107
Compute New Local References	•
option, 103	>D ^XTER, 199
Configuring the MPM, 131	>D ^XTERPUR, 199
Control File	> D ^ X T F C E , 178, 189
(See also DUPLICATE	> D ^ X T F C R , 178, 189
RESOLUTION file), 53	>D ^XTLKKWL, 39
Copy RT Raw Data to FM File option,	>D ^XTRCMP, 186, 189
170	>D ^XTRGRPE, 184, 189
CPU Modes/Compute States option,	>D ^XTVCHG, 184, 189
125	>D ^XTVNUM, 185, 189
CPU/DISK Utilization Report (By	>D CHECK^XTSUMBLD, 195, 199
Date/VG), 135, 136	>D MAIL1^XTCMFILN, 107
CPU/DISK Utilization Report (By	>D nsNTEG, 197
VG/Date), 143	$>$ D ONE n sNTEG, 197 , 199
Customized Merge, 53, 87	>D TAPE^XTRCMP, 186, 190
Date of Birth test Routine for a	>D^ %RR (OS-specific), 190
Patient Merge	>x ^%z, 184, 189
Example, 223	Disk Drive Raw Data Statistics menu,
DATE/VG MSM CM Reports, 135	128
Delete Entries From Look-Up option,	Display Search Status
12, 21, 22	Example, 56
Delete Routines option, 186	option, 55
Destroy FM Copy of Raw RT Data	DK^XTLKMGR, 43
option, 170	DLL^XTLKMGR, 44
Device Chart, 16	DSH^XTLKMGR, 44
DEVICE file, 107	DSY^XTLKMGR, 44
Direct Mode Utilities	Duplicate Checker, How to check a
>D ^%ZTER, 196	pair of records using the., 73
>D ^XTER, 196	Duplicate Checking Algorithm, 53
>D ^XTERPUR, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPOR, 190 >D ^XTNTEG, 197	Utilities
>D ^%G (OS-specific), 201, 203	How to Verify Duplicate Pairs, 63
>D %G (OB-SPECIFIC), 201, 200	Duplicate Pairs, How to Verify, 63

DUPLICATE RECORD file, 53, 54, 63,	Example, 85
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	option, 85
88, 89, 91, 94	Find Potential Duplicates for an
DUPLICATE RECORD File, 79	Entry in a File
Duplicate Records, 53	Example, 75
DUPLICATE RESOLUTION file, 53,	option, 75
72, 90, 92, 94	Manager Utilities menu
Duplicate Resolution System menu	AUTO Automatically Merge
Manager Utilities menu, 54, 83	Already Verified Duplicates
Operations menu, 54, 55	option, 72, 83
options, 54	FILE Edit Duplicate
Utilities menu, 54, 73	Resolution File option, 85
Duplicate Resolution Utilities	PRGE Purge Duplicate Record
Add Verified Duplicate Pair option,	File option, 86
75	Merge (Ready to Merge) Verified
Automatically Merge Already	Duplicates option, 72
Verified Duplicates	Merge Capability, Developing, 87
Example, 83	Merge Process, 53, 71
option, 72, 83	Merge Process, Interactive, 71
Candidate Collection, Selecting	Merge Selected Verified Duplicate
Fields to Compare in, 91	Pair option, 72
Check Pair of Records to see if	Merge, Customized, 53
Duplicates	Merged-From Record, 53
Example, 74	Merged-To Record, 53
option, 73	Operations menu
Control File	DSS Display Search Status
(See also DUPLICATE	option, 55
RESOLUTION file), 53	MVD Merge (Ready to Merge)
Customized Merge, 53, 87	Verified Duplicates option, 72
Display Search Status	SPD Verify Selected Potential
Example, 56	Duplicate Pair option, 66
option, 55	SRCH Start/Halt Duplicate
Duplicate Checking Algorithm, 53	Search option, 57
DUPLICATE RECORD file, 53, 54,	SVD Merge Selected Verified
63, 66, 72, 73, 75, 77, 78, 81, 85,	Duplicate Pair option, 72
86, 87, 88, 91, 94	VPD Verify Potential
DUPLICATE RECORD File, 79	Duplicates option, 63
Duplicate Records, 53	Potential Duplicate Pairs, 53
DUPLICATE RESOLUTION file,	POTENTIAL DUPLICATE
53, 72, 90, 92, 94	THRESHOLD%, 53, 85, 94
Duplicate Threshold%, 53, 85, 94	Potential Duplicates, 53, 85, 94
Edit Duplicate Record Status	Print List of File Duplicates
Example, 77	Example, 79
option, 77	option, 79
Edit Duplicate Resolution File	Purge Duplicate Record File

Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option,
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option
Tally STATUS and MERGE	Edit Duplicate Record Status
STATUS fields	Example, 77
Example, 81	option, 77
Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
	2 0, 1
-	-
<u>-</u>	169
	Enable/Disable VPM option, 112
± ′	
-	9.
	-
_	in a File
	-
option, 78 Verified Duplicates, 53, 66 Verified Non-Duplicates, 53, 66 Verify Potential Duplicates Example, 64 option, 63 Verify Selected Potential Duplicate Pair Example, 66 option, 66 View Duplicate Record Entries Example, 78 option, 78	option, 167 Enable/Disable RT Logging option, 169 Enable/Disable VPM option, 112 Error Log, 196 File Merge Capability, Developing, 87 FileMan look-ups and MTLU, 39 Find Potential Duplicates for an Entry

Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option,
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	Manual Purge of VPM Data option,
Receive Kermit File option, 207	112
Send Kermit File option, 207	Merge (Ready to Merge) Verified
KERNEL SITE PARAMETERS file,	Duplicates option, 72
153	Merge Capability, Duplicate
Key Word In Context (KWIC), 13, 35	Resolution Utilities
Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72

Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44
MPM Schedule/Unschedule options,	DSH^XTLKMGR, 44
133	DSY^XTLKMGR, 44
MPM, How to configure the, 131	K^XTLKMGR, 41
MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21,
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu

Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	New Fields, 114
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	Print Formatted Report (Table/Graph)
Example, 33	Example, Graph format subtotaled
Point to a Single Word or	by node (Live execution), 165
Phrase, 13	Example, Table format with
Site Implementation, 35	subtotals printed by node and
Standard Device Chart, 16	cumulative station totals (Live
Synonyms, 11, 25	execution), 162
Associated with Multiple	Example, Table format without
Terms, 13	subtotals (Live execution), 163
Example, 34	option, 161
Multiple Tokens, 13	Print List of File Duplicates
option, 30	Example, 79
Utilities for MTLU option	option, 79
Add Entries To Look-Up File	Print RT Report option, 170
option	

Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178
List Global option < Locked with	Group Routine Edit option, 184
XUPROGMODE>, 201	Input Routines option, 186
Number Base Changer option, 202	List Routines option, 185
Purge Duplicate Record File	Output Routines option, 187
Example, 86	Routine Edit option, 184
option, 86	Variable Changer option, 184
Raw Paging/BIO/DIO/FLS/MLS	Version Number Update option,
option, 125	185
Receive Kermit File option, 207	RT logging, 173
Resource Consumption Measured by	RTHIST, 112, 115, 117, 126, 129, 134,
Package, 153	171
Resource Usage Menu	Search Status option, Display the, 55
options, 155	Search Status, Duplicate Resolution
Resource Usage, Capacity	Utilities
Management, 153	Display Search Status option, 55
Response Time, 169	Selecting Fields to Compare in
Response Time Log Options menu,	Candidate Collection, Duplicate
107	Resolution Utilities, 91
Response Time Report (By Date/VG),	Send Kermit File option, 207
139	Setup Performance Monitor option,
Response Time Report (By VG/Date),	112
146	SH^XTLKMGR, 42
Routine Changes File, 192	Shortcuts, Multi-Term Look-Up
Routine CMNDS/GREF Report (By	(MTLU), 11, 12, 25
Date/VG), 140, 141	Example, 33, 42, 44
Routine CMNDS/GREF Report (By	Point to a Single Word or Phrase,
VG/Date), 147, 148	13
Routine Compare - Current with	Site/Event Rate Summary
Previous option, 192, 193	[XUCMBR2A], 128
Routine Compare Utility, 192	Sort Raw Resource Usage Data

Example, Live execution, 159	VA Programming Standards and
Example, Live execution with	Conventions (SAC), 179, 199
output of sorted raw data, 160	Variable Changer option, 184
Example, Queued for background	VAX/ALPHA Capacity Management
processing, 159	menu, 107
option, 158	VAX/ALPHA Performance Monitor
Standard Device Chart, 16	(VPM), 109
Start or Halt a Search for Duplicates	Verified Duplicates, Duplicate
Within a File, 57	Resolution Utilities, 53, 66
Start/Halt Duplicate Search	Verified Non-Duplicates, Duplicate
Example, Halting a search, 60	Resolution Utilities, 53, 66
Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	r , , , , , , , , , , , , , , , , , , ,
1 /	

Example, Queued for background	[XDR EDIT DUP RECORD STATUS],
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54
XTLKTOKN, 13	XDR MERGE READY
XTLKZMGR, 12, 21	DUPLICATES], 72
XTRCMP, 186	[XDR MERGE SELECTED PAIR], 72
XTSUMBLD, 195	[XDR OPERATIONS MENU], 54
XTV ROUTINE CHANGES file, 192	[XDR PRINT LIST], 79
XTV VERIFICATION PACKAGE file,	[XDR PURGE], 86
194	[XDR SEARCH ALL], 57
XTVCHG, 184	[XDR TALLY STATUS FIELDS], 81
XTVNUM, 185	[XDR UTILITIES MENU], 54
XUCM TASK NIT, 115, 117	[XDR VERIFY ALL], 63
XUCM TASK VPM, 115	[XDR VERIFY SELECTED PAIR], 66
XUGET, 197	[XDR VIEW DUPLICATE RECORD],
XUMGR key, 191	78
XUPROG key, 177, 186, 191, 201	[XTCM DISK2MAIL], 107
XUPROGMODE key, 177, 184, 185,	[XTCM MAIN], 107, 155
186, 191, 196, 201, 202	[XTCM], 169
XURTLC, 171	[XTFCE], 178
XURTLK, 171	[XTFCR], 178
MOIVIDIX, 171	[XT-KERMIT EDIT], 206
	[XT-KERMIT EDIT], 200
\mathbf{V}	[XT-KERMIT RECEIVE], 207
	[XT-KERMIT RECEIVE], 207
%G, 201	[XTLKLKUP], 12, 17
%GL, 201	[XTLKMODKY], 12, 17
%INDEX of Routines option, 179	[XTLKMODK1], 12, 23 [XTLKMODPARK], 12, 21, 22
%INDEX Utility, 179, 180, 199	[XTLKMODPARS], 12, 21, 22
%RR, 186	[XTLKMODI ARS], 12, 21, 23 [XTLKMODSH], 12, 27
%RS, 186, 187	[XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30
%ZTER, 196	[XTLKMODS1], 12, 30 [XTLKMODUTL], 12, 21, 25
%ZTP1, 185	[XTLKMODUTL], 12, 21, 25 [XTLKPRTUTL], 12, 19
%ZTPP, 185	1 , ,
%ZTRDEL, 186	[XTLKUSER2], 15, 21
[XDR ADD VERIFIED DUPS], 75	[XTLKUTILITIES], 21
	[XTMENU], 15, 21, 54
[XDR AUTO MERGE], 72, 83 [XDR CHECK PAIR], 73	[XT-NUMBER BASE CHANGER], 202
-	[XTRDEL], 186
[XDR DISPLAY SEARCH STATUS],	[XTRGRPE], 184
55	[XT-ROUTINE COMPARE], 185

[XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XUCPSORT], 158 [XTV MENU], 192 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XT-VERSION NUMBER], 185 [XUCSR REPORTS MENU], 135 IXTVG COMPAREL 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], XTVR MOST RECENT CHANGE DATE], 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 193 [XUINTEG], 197 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201 [XUCM ANALYSE], 105 [XUPROG], 177, 192, 195, 201 XUCM COMPUTE LOCAL [XUPRROU], 185 REFERENCES, 103 [XUPR-RTN-TAPE-CMP], 186 [XUCM DISK], 128 [XUROUTINE IN], 186 [XUCM EDIT DISK THRESHOLD], [XUROUTINE OUT], 187 102 [XUROUTINES], 197 [XUCM EDIT REF THRESH], 102 [XURTL], 169 [XUCM EDIT VOL SET THRESH], [XURTLC], 170 102 [XURTLCK], 170 [XUCM GRAF MET AVE], 128 [XURTLK], 170 [XUCM LIST DAILY STATS], 127 [XURTLM], 107, 169 [XUCM LIST RAW], 126 [XURTLMA], 170 [XUCM LIST VOL SET INFO], 127 [XURTLP], 170 [XUCM LOCKS], 124 [XURTLPG], 170 [XURTLPL], 170 [XUCM MAIN], 107, 155 [XUSITEMGR], 197 [XUCM MODES], 125 [XUCM ON/OFF], 112 ^%Z Editor, 184, 213, 215 [XUCM PAGE], 125 ^%Z Global, 213 [XUCM PERFORMANCE MONITOR], ^%ZOSV, 170, 174 ^%ZRTL, 169, 170, 171, 174 109 [XUCM PURGE], 112 ^%ZRTL(1, RESPONSE TIME (. [XUCM RAW RTHIST DATA], 126 3.091) [XUCM REPORTS], 115 ^%ZRTL(2, RT DATE UCI, VOL, 171 [XUCM SET ALERTS], 104 ^%ZRTL(4, RT RAWDATA, 171 [XUCM SETUP], 112 ^XINDEX, 182 ^XTLKDICL, 13, 37, 43, 45 [XUCMBR MENU], 127 [XUCMBR2], 127 ^XTLKMGR, 41, 42 [XUCMBR2A], 128 ^XTLKWIC, 35 [XUCMBR2C], 127 ^XTMP Global, 155, 158, 166 [XUCPFORMATTED], 161 ^XUP, 196

Accumulate Globals for Package	Move Host File to MailMan
option, 194	option, 107
ACTION menu, 215	Response Time Log Options,
Add Entries To Look-Up File option,	107
12, 21, 23	VAX/ALPHA Capacity
Add Verified Duplicate Pair option, 75	Management menu, 107
Add/Modify Utility option, 12, 21, 25	Direct Mode Utility, Resource
ALTERNATE EDITOR file, 209	Usage
AM MSM RTHIST Task Option,	D ZHDIF^%ZOSV, 174
133	Hardware Performance Summary
Application Utilities menu, 15	Example, 117
Auto Purge of CM Data, 134	MSM Capacity Management
Autoratically Merge Already Verified	Manager's Menu
Duplicates Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	Ave. Response Time
Bernstein RT Statistics (detailed)	Graph;.i.[XUCSRG
[XUCMBR2], 127	GRAPHS
Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH];, 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Start RT Measure, 175	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];.i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);.i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];.i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
1 0	VG/Date);.i.[XUCSRA

REPORTS BY	MSM Capacity Management
(VG,DATE)];.i.[XUCSRA	Manager's Menu
GREF REPORT];, 144, 145	options, 129
Response Time Report (By	MSM Site Parameters
Date/VG);,i.[XUCSRB	Enter/Edit Menu; option
REPORTS BY	XUCS SITE EDIT
(DATE,VG)];.i.[XUCSRB	MENU].i.[XUCS SITE EDIT
RESPONSE REPORT];,	MENU]; is used to configure
139	the MPM after installation.,
Response Time Report (By	131
VG/Date);.i.[XUCSRA	options;.i.MSM Capacity
REPORTS BY	Management Manager's Menu
(VG,DATE)];.i.[XUCSRA	options, 130
RESPONSE REPORT];,	Performance Assurance menu
146	Compute New Local References
Routine CMNDS/GREF	option, 103
Report (By	Edit. Days to Compute
Date/VG);.i.[XUCSRB	Reference Ranges option
REPORTS BY	Edit VMS Disk Space Threshold
(DATE,VG)];.i.[XUCSRB	option, 102
ROU CMNDS/GREF	Edit Volume Set Threshold
REPORT];, 140, 141	option, 102
Routine CMNDS/GREF	Enable Alerts for Selected
Report (By	Metrics option, 104
VG/Date);.i.[XUCSRA	Performance Analysis option,
REPORTS BY	105
(VG,DATE)];.i.[XUCSRA	Performance Monitor
ROU CMNDS/GREF	Configuring, 112
REPORT];, 147, 148	PERFORMANCE MONITOR
System Statistical Report	Configuring, 131
(By Date/VG);.i.[XUCSRB	Resource Usage
REPORTS BY	^XTMP Global, 155, 158, 166
(DATE,VG)];.i.[XUCSRB	Date Range, 154
SYS STAT REPORT];, 142	Devices, 154
System Statistical Report	Host File Server (HFS)
(By VG/Date);.i.[XUCSRA	Device, 154
REPORTS BY	LOG RESOURCE USAGE?
(VG,DATE)];.i.[XUCSRA	field, 153
SYS STAT REPORT];, 149	Measure Resource Consumption
CM Reports Menu;. The options	by Package, 153
are described in the same	Queuing, 154
	Response Time Log Options, 169
order as they appear on the screen., 135	Copy RT Raw Data to FM File
·	
CM Reports Menu;.i.Capacity	option, 170
Management	

Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	Example, Enable
Long RT Report Print option,	collection of data
170	(Queued for background
Multiday RT Averages option,	processing), 167
170	option, 167
Print RT Report option, 170	Kill Raw Resource Usage
Response Time Measures, 169	Data
^%ZRTL global, 171, 174	Example, Live execution,
^%ZRTL(1, RESPONSE TIME	166
(.3.091)	option, 166
^%ZRTL(2, RT	options, 155
DATE_UCI,VOL, 171	Print Formatted Report
^%ZRTL(4, RT RAWDATA, 171	(Table/Graph)
Callable Entry Points	Example, Graph format
T0^%ZOSV Start RT	subtotaled by node
Measure, 173	(Live execution), 165
T1^%ZOSV Stop RT	Example, Table format
Measure, 174	with subtotals printed
XRT0 Output Variable,	by node and cumulative
Start Time, 173	station totals (Live
XRTN Input Variable,	execution), 162
Routine Name, 174	Example, Table format
Logging is Enabled, 169	without subtotals (Live
MUMPS Read, 169	execution), 163
Performance Problems, 169	option, 161
Response Time, 169, 173	Sort Raw Resource Usage
RT logging, 173, 174	Data
System Performance, 169	Example, Live execution,
User Termination, 169	159
XRTL variable, 173	Example, Live execution
System Performance Summary	with output of sorted
Example, 117	raw data, 160
VAX/ALPHA Performance Monitor	Example, Queued for
menu	background processing,
Enable/Disable VPM option,	159
112	option, 158
Manual Purge of VPM Data	Write Raw Resource Usage
option, 112	Data

Example, Live execution,	Compare Two Routines option, 185
156	Compute New Local References
Example, Queued for	option, 103
background processing,	Configuring the MPM, 131
157	Control File
option, 155	(See also DUPLICATE
Setup Performance Monitor	RESOLUTION file), 53
option, 112	Copy RT Raw Data to FM File option,
VPM Reports option, 115	170
VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	4.0.0
Duplicates	·
Example, 74	>D ^XTERPUR, 196
option, 73	>D ^XTNTEG, 197
± '	>D ^%G (OS-specific), 201, 203
Checkeym 215	>D ^%INDEX, 179, 189, 199
CM DAILY STATISTICS file 100	>D ^%RR (OS-specific), 186
CM DISK DRIVE DAW DATA 510	>D ^%RS (OS-specific), 187,
CM DISK DRIVE RAW DATA file,	190
115 CM METRICS \$1, 102, 110	>D ^%ZTER, 199
CM METRICS file, 103, 110	$>$ D $^{\circ}$ % Z T P 1 , 185, 189
CM METRICS List, 110	$>$ D ^ % Z T P P , 185, 189
CM NODENAME RAW DATA file,	>D ^%ZTRDEL, 186, 190
115, 124	>D ^nsNTEG, 199
CM SITE PARAMETERS file, 107	>D ^XINDEX, 199
Compare Routines on Tape to Disk option, 186	>D ^XTBASE, 202, 203

>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ATOMITIEN, 107 >D AXTER, 199	Duplicate Resolution Utilities
>D ATER, 133 >D ATERPUR, 199	Add Verified Duplicate Pair option
>D ^XTERPOR, 199 >D ^XTFCE, 178, 189	75
	Automatically Merge Already
> D ^ X T F C R , 178, 189	Verified Duplicates
>D ^XTLKKWL, 39	-
>D ^XTRCMP, 186, 189	Example, 83
>D ^XTRGRPE, 184, 189	option, 72, 83
>D ^XTVCHG, 184, 189	Candidate Collection, Selecting
>D ^XTVNUM, 185, 189	Fields to Compare in, 91
>D CHECK^XTSUMBLD, 195, 199	Check Pair of Records to see if
>D MAIL1^XTCMFILN, 107	Duplicates
>D nsNTEG, 197	Example, 74
>D ONE^nsNTEG, 197, 199	option, 73
>D TAPE^XTRCMP, 186, 190	Control File
>D^ %RR (OS-specific), 190	(See also DUPLICATE
>X ^%Z, 184, 189	RESOLUTION file), 53
Disk Drive Raw Data Statistics menu,	Customized Merge, 53, 87
128	Display Search Status
Display Search Status	Example, 56
Example, 56	option, 55
option, 55	Duplicate Checking Algorithm, 53
DK^XTLKMGR, 43	DUPLICATE RECORD file, 53, 54
DLL^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
·	86, 87, 88, 91, 94
DSH^XTLKMGR, 44 DSY^XTLKMGR, 44	DUPLICATE RECORD File, 79
	Duplicate Records, 53
Duplicate Checker, How to check a	DUPLICATE RESOLUTION file,
pair of records using the., 73	53, 72, 90, 92, 94
Duplicate Checking Algorithm, 53	Duplicate Threshold%, 53, 85, 94
Duplicate Pairs, Duplicate Resolution	Edit Duplicate Record Status
Utilities	Example, 77
How to Verify Duplicate Pairs, 63	option, 77
Duplicate Pairs, How to Verify, 63	Edit Duplicate Resolution File
DUPLICATE RECORD file, 53, 54, 63,	Example, 85
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	option, 85
88, 89, 91, 94	Find Potential Duplicates for an
DUPLICATE RECORD File, 79	Entry in a File
Duplicate Records, 53	Example, 75
DUPLICATE RESOLUTION file, 53,	option, 75
72, 90, 92, 94	Manager Utilities menu
Duplicate Resolution System menu	AUTO Automatically Merge
Manager Utilities menu, 54, 83	•
Operations menu, 54, 55	Already Verified Duplicates
options, 54	option, 72, 83

FILE Edit Duplicate	Tally STATUS and MERGE
Resolution File option, 85	STATUS fields
PRGE Purge Duplicate Record	Example, 81
File option, 86	Tally STATUS and MERGE
Merge (Ready to Merge) Verified	STATUS fields option, 81
Duplicates option, 72	Utilities menu
Merge Capability, Developing, 87	ADD Add Verified Duplicate
Merge Process, 53, 71	Pair option, 75
Merge Process, Interactive, 71	CHCK Check Pair of Records to
Merge Selected Verified Duplicate	see if Duplicates option, 73
Pair option, 72	EDIT Edit Duplicate Record
Merge, Customized, 53	Status option, 77
Merged-From Record, 53	FIND Find Potential
Merged-To Record, 53	Duplicates for an Entry in a
Operations menu	File option, 75
DSS Display Search Status	PRNT Print List of File
option, 55	Duplicates option, 79
MVD Merge (Ready to Merge)	TSF Tally STATUS and
Verified Duplicates option, 72	MERGE STATUS fields
SPD Verify Selected Potential	option, 81
Duplicate Pair option, 66	VIEW View Duplicate Record
SRCH Start/Halt Duplicate	Entries
Search option, 57	option, 78
SVD Merge Selected Verified	Verified Duplicates, 53, 66
Duplicate Pair option, 72	Verified Non-Duplicates, 53, 66
VPD Verify Potential	Verify Potential Duplicates
Duplicates option, 63	Example, 64
Potential Duplicate Pairs, 53	option, 63
POTENTIAL DUPLICATE	Verify Selected Potential Duplicate
THRESHOLD%, 53, 85, 94	Pair
Potential Duplicates, 53, 85, 94	Example, 66
Print List of File Duplicates	option, 66
Example, 79	View Duplicate Record Entries
option, 79	Example, 78
Purge Duplicate Record File	option, 78
Example, 86	Duplicate Resolution Utilities,, 89
option, 86	Duplicate Search, Duplicate
Selecting Fields to Compare in	Resolution Utilities
Candidate Collection, 91	Start/Halt Duplicate Search option,
Start or Halt a Search for	57
Duplicate Records, 57	Duplicate Test Routines
Start/Halt Duplicate Search	Examples, 221
Example, Halting a search, 60	Duplicate Threshold%, 53, 85, 94
Example, Starting a search, 58	Edit. Days to Compute Reference
option, 57	Ranges option

Edit Duplicate Record Status	Graph Workday Averages for Selected
Example, 77	Metric option, 128
option, 77	Graphic RT Report Print option, 170
Edit Duplicate Resolution File	GRAPHS MENU MSM CM Reports,
Example, 85	150
option, 85	Group Routine Edit option, 184
Edit Kermit Holding File option, 206	Hardware Performance Summary
Edit Verification Package File option,	Example, 117
194	Help
Edit VMS Disk Space Threshold	Line Mode Editing, 214
option, 102	HFS, 154
Edit Volume Set Threshold option, 102	How to Configure the MPM, 131
Editing in Line Mode, Help, 214	Implementation of MTLU, 35
Enable Alerts for Selected Metrics	Input Routines option, 186
option, 104	K^XTLKMGR, 41
Enable/Disable Collection of Resource	Kermit
Usage Data	Callable Entry Points, 211
Example, Disable collection of data	Kermit as an Alternate Editor, 205
(Queued for background	Kermit file transfer protocol, 205
processing), 168	Macintosh steps, 205
Example, Enable collection of data	KERMIT HOLDING file, 206
(Queued for background	Kermit Menu, 206, 209
processing), 167	Edit Kermit Holding File option,
option, 167	206
Enable/Disable RT Logging option,	Receive Kermit File option, 207
169	Send Kermit File option, 207
	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112 Error Log, 196	153
<u> </u>	
File Merge Capability, Developing, 87	Key Word In Context (KWIC), 13, 35
FileMan look-ups and MTLU, 39	Keywords, Multi-Term Look-Up
Find Potential Duplicates for an Entry	(MTLU), 11, 12, 25, 41, 43
in a File	Associated with a Single Term and
Example, 75	Multiple Terms, 14
option, 75	Example, 33
First Line Routine Print option, 185	option, 29
Flow Chart Entire Routine option, 178	Kill Raw Resource Usage Data
Flow Chart from Entry Point option, 178	Example, Live execution, 166 option, 166
Global Compare for Selected Package	Kill Raw RT Data, Save Means option
option, 194	170
Global Reference Report (By	KWIC, 13, 35
Date/VG), 137, 138	L^XTLKMGR, 43
Global Reference Report (By	Last Routine Change Date Recorded
VG/Date), 144, 145	option, 193, 227
	Line Mode Editing Help, 214

List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131
List Raw System Data option, 126	MSM Capacity Management
List Routines option, 185	Manager's Menu
List Volume Set Information option,	options;, 129
127	MSM RTHIST REPORT DATA file,
List Workday Averages for Selected	129
Metric(s) option, 127	MSM RTHIST SITE file, 129
LKUP^XTLKMGR, 37, 39, 45	MSM Site Parameters Enter/Edit
LOCAL KEYWORD file, 12, 14, 21,	Menu, 131
22, 26, 41, 43	Multiday RT Averages option, 170
LOCAL LOOKUP file, 11, 12, 17, 19,	Multi-Term Lookup (MTLU)
21, 25, 37, 39, 41, 43, 44, 45	option, 17
LOCAL LOOKUP File, 23	Multi-Term Look-Up (MTLU), 12
LOCAL SHORTCUT file, 12, 13, 14,	Add Entries To Look-Up File
17, 21, 22, 42, 44	Example, 25
LOCAL SYNONYM file, 12, 13, 14, 21,	IRM/Developer Utility, 12, 21,
26, 42, 44	23
Locking Data option, 124	option, 12, 21, 23
LOG RESOURCE USAGE? field, 153	Set Entries in the LOCAL
Logging is Enabled, 169	LOOKUP file, 21, 23
Long RT Report Print option, 170	XTLKZMGR Security Key, 12,
Manual Purge of VPM Data option,	21, 23
112	Add/Modify Utility
Merge (Ready to Merge) Verified	Examples, 33
Duplicates option, 72	Keywords example, 33
Merge Capability, Duplicate	Keywords option, 12, 25, 29
Resolution Utilities	option, 21, 25
Developing, 87	Shortcuts example, 33
Merge Process, 53, 71	Shortcuts option, 12, 25
Merge Process, Interactive, 71	Synonyms example, 34
Merge Process, Verified Duplicates, 71	Synonyms option, 12, 25, 30
Merge Routines, 53	Callable Entry Point
Merge Selected Verified Duplicate	XTLKKWL, 39
Pair option, 72	Delete Entries From Look-Up
Merge Verified Duplicates, Duplicate	Example, 22
Resolution Utilities	IRM/Developer Utility, 12
Merge Process, 71	option, 12, 21, 22
Merge, Customized, 53	XTLKZMGR Security Key, 12
Merging of Duplicates, 53	Direct Mode Utilities
Merging Of Duplicates, 53	>D ^XTLKKWL, 39
Morning RTHIST Data Capture, 133	Enhanced API
Move Host File to MailMan option,	DK^XTLKMGR, 43
107	DLL^XTLKMGR, 44

DSH^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSY^XTLKMGR, 44	option, 12, 17
K^XTLKMGR, 41	Print Utility option, 12, 19
L^XTLKMGR, 43	Utilities for MTLU option, 21
LKUP^XTLKMGR, 45	Add Entries To Look-Up File
SH^XTLKMGR, 42	option, 21
SY^XTLKMGR, 42	Add/Modify Utility option
Example, 18	Examples, 33
Functional Description, 12	KE Keywords, 29
Keywords, 11, 25	Utilities For MTLU option
Associated with a Single Term	Add Entries To Look-Up File
and Multiple Terms, 14	option, 23
Example, 33	Add/Modify Utility option,
option, 29	21, 25
Lexical Variants, 13	SY Synonyms, 30
LOCAL KEYWORD file, 12, 14, 21,	Delete Entries From Look-
22, 26, 41, 43	Up option, 21, 22
LOCAL LOOKUP file, 11, 12, 17,	Multi-Term Lookup (MTLU) Main
19,21,25,37,39,41,43,44,45	Menu options, 15, 21
LOCAL LOOKUP File, 23	Print Utility
LOCAL SHORTCUT file, 12, 13,	Example, 20
14, 17, 21, 22, 42, 44	option, 12, 19
LOCAL SYNONYM file, 12, 13, 14,	Shortcuts, 11, 25
21, 26, 42, 44	Example, 33
Look-up, How to Request a, 13	Point to a Single Word or
Look-ups on Database Files, 13	Phrase, 13
MTLU and FileMan look-ups, 39	Site Implementation, 35
MTLU and VA FileMan Supported	Standard Device Chart, 16
Calls, 39	Synonyms, 11, 25
MTLU, How to Override	Associated with Multiple
FileMan look-ups and MTLU,	Terms, 13
39	Example, 34
Multi-Term Lookup (MTLU)	Multiple Tokens, 13
option, 12, 17	option, 30
Multi-Term Lookup (MTLU) Main	Utilities for MTLU option
Menu	Add Entries To Look-Up File
Add Entries To Look-Up File	option
option, 12, 21, 23	Example, 25
Add/Modify Utility option, 12	Add/Modify Utility option
Keywords option, 12	Example, Keywords, 33
Shortcuts option, 12	Example, Shortcuts, 33
Synonyms option, 12	Example, Synonyms, 34
Delete Entries From Look-Up	Delete Entries From Look-Up
option, 12	option
	Example, 22

MUMPS error, 179	Programmer Options menu, 177, 195,
MUMPS Read, 169	201
Name Test Routine for a Patient	Build an 'NTEG' Routine for a
Merge	Package option, 198
Example, 221	Calculate and Show Checksum
New Fields, 114	Values option, 195
Nodename Average by Day of Week	List Global option, 201
[XUCMBR2C], 127	List Global option <locked td="" with<=""></locked>
NTEG, 197, 198	XUPROGMODE>, 201
Number Base Changer option < Locked	Number Base Changer option, 202
with XUPROGMODE>, 202	Purge Duplicate Record File
Operations Management menu, 197	Example, 86
Output Routines option, 187	option, 86
Performance Analysis option, 105	Raw Paging/BIO/DIO/FLS/MLS
Performance Monitor, 112	option, 125
PERFORMANCE MONITOR, 131	Receive Kermit File option, 207
Performance Problems, 169	Resource Consumption Measured by
PM MSM RTHIST Task Option,	Package, 153
133	Resource Usage Menu
Potential Duplicate Pairs, 53	options, 155
POTENTIAL DUPLICATE	Resource Usage, Capacity
THRESHOLD%, 53, 85, 94	Management, 153
Print Formatted Report (Table/Graph)	Response Time, 169
Example, Graph format subtotaled	Response Time Log Options menu,
by node (Live execution), 165	107
Example, Table format with	Response Time Report (By Date/VG),
subtotals printed by node and	139
cumulative station totals (Live	Response Time Report (By VG/Date),
execution), 162	146
Example, Table format without	Routine Changes File, 192
subtotals (Live execution), 163	Routine CMNDS/GREF Report (By
option, 161	Date/VG), 140, 141
Print List of File Duplicates	Routine CMNDS/GREF Report (By
Example, 79	VG/Date), 147, 148
option, 79	Routine Compare - Current with
Print RT Report option, 170	Previous option, 192, 193
Print Utility, MTLU	Routine Compare Utility, 192
Example, 20	Routine Edit option, 184
option, 12, 19	Routine Editor, 213, 215
Producing Reports, Searches, and	Routine Management Menu, 197
Statistics Through Standardized	Routine Tools menu
Encoding of Diagnoses and	%INDEX of Routines option, 179
Procedures, 11	Compare Routines on Tape to Disk
Program Integrity Checker option, 197	option, 186
	Compare Two Routines option, 185

Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
Flow Chart Entire Routine option,	Example, Halting a search, 60
178	Example, Starting a search, 58
Flow Chart from Entry Point	option, 57
option, 178	SY^XTLKMGR, 42
Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	T0^%ZOSV
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	T1^%ZOSV
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
Setup Performance Monitor option,	Example, 81
112	option, 81
SH^XTLKMGR, 42	TAPE^XTRCMP, 186
Shortcuts, Multi-Term Look-Up	Tasked CM File Update, 134
(MTLU), 11, 12, 25	Tokenizing Routine, 13
Example, 33, 42, 44	Two Standard Deviation Rule, 101
Point to a Single Word or Phrase,	UNDO Edits (Restore to Older Version
13	of Routine) option, 193
Site/Event Rate Summary	Update with Current Routines option,
[XUCMBR2A], 128	192, 193
Sort Raw Resource Usage Data	User Termination, 169
Example, Live execution, 159	Utilities For MTLU option, 21
Example, Live execution with	VA Programming Standards and
output of sorted raw data, 160	Conventions (SAC), 179, 199
Example, Queued for background	Variable Changer option, 184
processing, 159	VAX/ALPHA Capacity Management
option, 158	menu, 107
Standard Device Chart, 16	VAX/ALPHA Performance Monitor
	(VPM), 109

Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195
Verifier Tools Menu, 192	XTV ROUTINE CHANGES file, 192
Accumulate Globals for Package	XTV VERIFICATION PACKAGE file,
option, 194	194
Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	MOIVILIX, 171
Verify Potential Duplicates	
Example, 64	W
option, 63	•
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186
VG/DATE MSM CM Reports, 143	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
±	%ZTP1, 185
Example, 78	%ZTPP, 185
option, 78	%ZTRDEL, 186
VMS monitor, 115	[XDR ADD VERIFIED DUPS], 75
VPM Reports option, 115	[XDR AUTO MERGE], 72, 83
VPM Schedule/Unschedule options,	[XDR CHECK PAIR], 73
114 Write Daw Describes Heads Date	[XDR DISPLAY SEARCH STATUS],
Write Raw Resource Usage Data	55
Example, Live execution, 156	[XDR EDIT DUP RECORD STATUS],
Example, Queued for background	-
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54

[XDR MERGE READY [XTVR COMPARE], 192, 193 DUPLICATES], 72 IXTVR MOST RECENT CHANGE [XDR MERGE SELECTED PAIR], 72 DATE], 193, 227 [XDR OPERATIONS MENU], 54 [XTVR RESTORE PREV ROUTINE], [XDR PRINT LIST], 79 [XTVR UPDATE], 192, 193 [XDR PURGE], 86 [XDR SEARCH ALL], 57 [XU FIRST LINE PRINT], 185 [XDR TALLY STATUS FIELDS], 81 [XUCM ANALYSE], 105 [XDR UTILITIES MENU], 54 XUCM COMPUTE LOCAL [XDR VERIFY ALL], 63 REFERENCES], 103 [XDR VERIFY SELECTED PAIR], 66 [XUCM DISK], 128 [XDR VIEW DUPLICATE RECORD], [XUCM EDIT DISK THRESHOLD], 78 102 [XTCM DISK2MAIL], 107 [XUCM EDIT REF THRESH], 102 [XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 102 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XT-KERMIT MENU], 206 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XUCM ON/OFF], 112 [XTLKMODKY], 12, 29 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XUCM RAW RTHIST DATA], 126 [XTLKMODUTL], 12, 21, 25 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XUCMBR2A], 128 [XTRDEL], 186 [XUCMBR2C], 127 [XTRGRPE], 184 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XT-VARIABLE CHANGER], 184 [XUCPTOGGLE], 167 [XT-VERSION NUMBER], 185 [XUCSR REPORTS MENU], 135 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 143

[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates
[XUPRGL], 201	Example, 83
[XUPROG], 177, 192, 195, 201	option, 72, 83
[XUPRROU], 185	Ave. %CPU & %DISK Graph, 150
[XUPR-RTN-TAPE-CMP], 186	Ave. Response Time Graph, 151
[XUROUTINE IN], 186	Bernstein Response Time Reports
[XUROUTINE OUT], 187	menu option, 127
[XUROUTINES], 197	Bernstein RT Statistics (detailed)
[XURTL], 169	[XUCMBR2], 127
[XURTLC], 170	Build an 'NTEG' Routine for a
[XURTLCK], 170	Package option, 198
[XURTLK], 170	Calculate and Show Checksum Values
[XURTLM], 107, 169	option, 195
[XURTLMA], 170	Callable Entry Points
[XURTLP], 170	Kermit, 211
[XURTLPG], 170	RECEIVE^XTKERMIT, 211
[XURTLPL], 170	SEND^XTKERMIT, 211
[XUSITEMGR], 197	T0^%ZOSV Start RT Measure, 173
^%Z Editor, 184, 213, 215	T1^%ZOSV Stop RT Measure, 174
^%Z Global, 213	XRT0 Output Variable, Start Time,
^%ZOSV, 170, 174	173
^%ZRTL, 169, 170, 171, 174	XRTN Input Variable, Routine
^%ZRTL(1, RESPONSE TIME (.	Name, 174
3.091)	XTLKKWL, 39
^%ZRTL(2, RT DATE_UCI,VOL, 171	Candidate Collection Routine for
^%ZRTL(4, RT RAWDATA, 171	Patient Merge
^XINDEX, 182	Example, 219
^XTLKDICL, 13, 37, 43, 45	Candidate Collection, Selecting Fields
^XTLKMGR, 41, 42	to Compare in, 91
^XTLKWIC, 35	Capacity Management
^XTMP Global, 155, 158, 166	Capacity Management menu
^XUP, 196	Move Host File to MailMan
Accumulate Globals for Package	option, 107
option, 194	Response Time Log Options,
ACTION menu, 215	107
Add Entries To Look-Up File option,	VAX/ALPHA Capacity
12, 21, 23	Management menu, 107
Add Verified Duplicate Pair option, 75	Direct Mode Utility, Resource
Add/Modify Utility option, 12, 21, 25	Usage
ALTERNATE EDITOR file, 209	

D ZHDIF^%ZOSV, 174	RESPONSE REPORT];,
Hardware Performance Summary	139
Example, 117	Response Time Report (By
MSM Capacity Management	VG/Date);.i.[XUCSRA
Manager's Menu	REPORTS BY
CM Reports Menu	(VG,DATE)];.i.[XUCSRA
Ave. %CPU & %DISK	RESPONSE REPORT];,
Graph;.i.[XUCSRG	146
GRAPHS	Routine CMNDS/GREF
MENU];.i.[XUCSRG CPU-	Report (By
DISK GRAPH];, 150	Date/VG);.i.[XUCSRB
Ave. Response Time	REPORTS BY
Graph;.i.[XUCSRG	(DATE,VG)];.i.[XUCSRB
GRAPHS	ROU CMNDS/GREF
MENU];.i.[XUCSRG	REPORT];, 140, 141
RESPONSE TIME	Routine CMNDS/GREF
GRAPH];, 151	Report (By
CPU/DISK Utilization	VG/Date);.i.[XUCSRA
Report (By	REPORTS BY
Date/VG);.i.[XUCSRB	(VG,DATE)];.i.[XUCSRA
REPORTS BY	ROU CMNDS/GREF
(DATE,VG)];.i.[XUCSRB	REPORT];, 147, 148
CPU/DISK REPORT];,	System Statistical Report
135, 136	(By Date/VG);.i.[XUCSRB
CPU/DISK Utilization	REPORTS BY
Report (By	(DATE,VG)];.i.[XUCSRB
VG/Date);.i.[XUCSRA	SYS STAT REPORT];, 142
REPORTS BY	System Statistical Report
(VG,DATE)];.i.[XUCSRA	(By VG/Date);.i.[XUCSRA
CPU/DISK REPORT];, 143	REPORTS BY
Global Reference Report (By	(VG,DATE)];.i.[XUCSRA
Date/VG);.i.[XUCSRB	SYS STAT REPORT];, 149
REPORTS BY	CM Reports Menu;. The options
(DATE,VG)];.i.[XUCSRB	are described in the same
GREF REPORT];, 137, 138	order as they appear on the
Global Reference Report (By	screen., 135
VG/Date);.i.[XUCSRA	CM Reports Menu; i. Capacity
REPORTS BY	Management
(VG,DATE)];.i.[XUCSRA	MSM Capacity Management
GREF REPORT];, 144, 145	Manager's Menu
Response Time Report (By	options, 129
Date/VG);.i.[XUCSRB	MSM Site Parameters
REPORTS BY	Enter/Edit Menu; option
(DATE,VG)];.i.[XUCSRB	XUCS SITE EDIT
, , , , , , , L	MENULI.IXUCS SITE EDIT

MENU]; is used to configure	Long RT Report Print option,
the MPM after installation.,	170
131	Multiday RT Averages option,
options;.i.MSM Capacity	170
Management Manager's Menu	Print RT Report option, 170
options, 130	Response Time Measures, 169
Performance Assurance menu	^%ZRTL global, 171, 174
Compute New Local References	^%ZRTL(1, RESPONSE TIME
option, 103	(. 3.091)
Edit. Days to Compute	^%ZRTL(2, RT
Reference Ranges option	DATE_UCI,VOL, 171
Edit VMS Disk Space Threshold	^%ZRTL(4, RT RAWDATA, 171
option, 102	Callable Entry Points
Edit Volume Set Threshold	T0^%ZOSV Start RT
option, 102	Measure, 173
Enable Alerts for Selected	T1^%ZOSV Stop RT
Metrics option, 104	Measure, 174
Performance Analysis option,	XRT0 Output Variable,
105	Start Time, 173
Performance Monitor	XRTN Input Variable,
Configuring, 112	Routine Name, 174
PERFORMANCE MONITOR	Logging is Enabled, 169
Configuring, 131	MUMPS Read, 169
Resource Usage	Performance Problems, 169
^XTMP Global, 155, 158, 166	Response Time, 169, 173
Date Range, 154	RT logging, 173, 174
Devices, 154	System Performance, 169
Host File Server (HFS)	User Termination, 169
Device, 154	XRTL variable, 173
LOG RESOURCE USAGE?	System Performance Summary
field, 153	Example, 117
Measure Resource Consumption	VAX/ALPHA Performance Monitor
by Package, 153	menu
Queuing, 154	Enable/Disable VPM option,
Response Time Log Options, 169	112
Copy RT Raw Data to FM File	Manual Purge of VPM Data
option, 170	option, 112
Destroy FM Copy of Raw RT	Resource Usage Menu
Data option, 170	Enable/Disable Collection of
Enable/Disable RT Logging	Resource Usage Data
option, 169	Example, Disable
Graphic RT Report Print option,	collection of data
170	(Queued for background
Kill Raw RT Data, Save Means	processing), 168
option, 170	- -

Example, Enable	Setup Performance Monitor
collection of data	option, 112
(Queued for background	VPM Reports option, 115
processing), 167	VPM Reports menu
option, 167	Bernstein Response Time
Kill Raw Resource Usage	Reports menu option, 127
Data	CPU Modes/Compute States
Example, Live execution,	option, 125
166	Disk Drive Raw Data Statistics
option, 166	menu, 128
options, 155	Graph Workday Averages for
Print Formatted Report	Selected Metric option, 128
(Table/Graph)	List Raw RTHIST Data for a
Example, Graph format	Range of Dates option, 126
subtotaled by node	List Raw System Data option,
(Live execution), 165	126
Example, Table format	List Volume Set Information
with subtotals printed	option, 127
by node and cumulative	List Workday Averages for
station totals (Live	Selected Metric(s) option, 127
execution), 162	Locking Data option, 124
Example, Table format	Raw Paging/BIO/DIO/FLS/MLS
without subtotals (Live	option, 125
•	Check Pair of Records to see if
execution), 163	
option, 161	Duplicates
Sort Raw Resource Usage	Example, 74
Data	option, 73
Example, Live execution,	CHECK^XTSUMBLD, 195
159	Checksum, 215
Example, Live execution	CM DAILY STATISTICS file, 109
with output of sorted	CM DISK DRIVE RAW DATA file,
raw data, 160	115 CM METERICS C1 100 110
Example, Queued for	CM METRICS file, 103, 110
background processing,	CM METRICS List, 110
159	CM NODENAME RAW DATA file,
option, 158	115, 124
Write Raw Resource Usage	CM SITE PARAMETERS file, 107
Data	Compare Routines on Tape to Disk
Example, Live execution,	option, 186
156	Compare Two Routines option, 185
Example, Queued for	Compute New Local References
background processing,	option, 103
157	Configuring the MPM, 131
option, 155	Control File

(See also DUPLICATE	>D ^XTLKKWL, 39
RESOLUTION file), 53	>D ^XTRCMP, 186, 189
Copy RT Raw Data to FM File option,	>D ^XTRGRPE, 184, 189
170	>D ^XTVCHG, 184, 189
CPU Modes/Compute States option,	>D ^XTVNUM, 185, 189
125	>D CHECK^XTSUMBLD, 195, 199
CPU/DISK Utilization Report (By	>D MAIL1^XTCMFILN, 107
Date/VG), 135, 136	>D nsNTEG, 197
CPU/DISK Utilization Report (By	>D ONE^nsNTEG, 197, 199
VG/Date), 143	>D TAPE^XTRCMP, 186, 190
Customized Merge, 53, 87	>D^ %RR (OS-specific), 190
Date of Birth test Routine for a	>X ^%Z, 184, 189
Patient Merge	Disk Drive Raw Data Statistics menu,
Example, 223	128
DATE/VG MSM CM Reports, 135	Display Search Status
Delete Entries From Look-Up option,	Example, 56
12, 21, 22	option, 55
Delete Routines option, 186	DK^XTLKMGR, 43
Destroy FM Copy of Raw RT Data	DLL^XTLKMGR, 44
option, 170	DSH^XTLKMGR, 44
Device Chart, 16	DSY^XTLKMGR, 44
DEVICE file, 107	Duplicate Checker, How to check a
Direct Mode Utilities	pair of records using the., 73
>D ^%ZTER, 196	Duplicate Checking Algorithm, 53
>D ^XTER, 196	Duplicate Pairs, Duplicate Resolution
>D ^XTERPUR, 196	Utilities
>D ^XTNTEG, 197	How to Verify Duplicate Pairs, 63
>D ^%G (OS-specific), $201,203$	Duplicate Pairs, How to Verify, 63
>D ^%INDEX, 179, 189, 199	DUPLICATE RECORD file, 53, 54, 63
>D $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	66, 72, 73, 75, 77, 78, 81, 85, 86, 87,
>D ^%RS (OS-specific), 187,	88, 89, 91, 94
190	DUPLICATE RECORD File, 79
>D ^%ZTER, 199	Duplicate Records, 53
> D ^ % Z T P 1 , 185, 189	DUPLICATE RESOLUTION file, 53,
> D ^ % Z T P P , 185, 189	72, 90, 92, 94
>D ^%ZTRDEL, 186, 190	Duplicate Resolution System menu
>D ^nsNTEG, 199	Manager Utilities menu, 54, 83
>D ^XINDEX, 199	Operations menu, 54, 55
>D ^XTBASE, 202, 203	options, 54
>D ^XTCMFILN, 107	Utilities menu, 54, 73
>D ^XTER, 199	Duplicate Resolution Utilities
>D ^XTERPUR, 199	Add Verified Duplicate Pair option,
> D ^ X T F C E , 178, 189	75
> D ^ X T F C R , 178, 189	
2 2 2 2 2 3 1 1 0 , 1 0 0	

Automatically Merge Already	Merge (Ready to Merge) Verified
Verified Duplicates	Duplicates option, 72
Example, 83	Merge Capability, Developing, 87
option, 72, 83	Merge Process, 53, 71
Candidate Collection, Selecting	Merge Process, Interactive, 71
Fields to Compare in, 91	Merge Selected Verified Duplicate
Check Pair of Records to see if	Pair option, 72
Duplicates	Merge, Customized, 53
Example, 74	Merged-From Record, 53
option, 73	Merged-To Record, 53
Control File	Operations menu
(See also DUPLICATE	DSS Display Search Status
RESOLUTION file), 53	option, 55
Customized Merge, 53, 87	MVD Merge (Ready to Merge)
Display Search Status	Verified Duplicates option, 72
Example, 56	SPD Verify Selected Potential
option, 55	Duplicate Pair option, 66
Duplicate Checking Algorithm, 53	SRCH Start/Halt Duplicate
DUPLICATE RECORD file, 53, 54,	Search option, 57
63, 66, 72, 73, 75, 77, 78, 81, 85,	SVD Merge Selected Verified
86, 87, 88, 91, 94	Duplicate Pair option, 72
DUPLICATE RECORD File, 79	VPD Verify Potential
Duplicate Records, 53	Duplicates option, 63
DUPLICATE RESOLUTION file,	Potential Duplicate Pairs, 53
53, 72, 90, 92, 94	POTENTIAL DUPLICATE
Duplicate Threshold%, 53, 85, 94	THRESHOLD%, 53, 85, 94
Edit Duplicate Record Status	Potential Duplicates, 53, 85, 94
Example, 77	Print List of File Duplicates
option, 77	Example, 79
Edit Duplicate Resolution File	option, 79
Example, 85	Purge Duplicate Record File
option, 85	Example, 86
Find Potential Duplicates for an	option, 86
Entry in a File	Selecting Fields to Compare in
Example, 75	Candidate Collection, 91
option, 75	Start or Halt a Search for
Manager Utilities menu	Duplicate Records, 57
AUTO Automatically Merge	Start/Halt Duplicate Search
Already Verified Duplicates	Example, Halting a search, 60
option, 72, 83	Example, Starting a search, 58
FILE Edit Duplicate	option, 57
Resolution File option, 85	Tally STATUS and MERGE
PRGE Purge Duplicate Record	STATUS fields
File option, 86	Example, 81

Tally STATUS and MERGE	Edit Duplicate Resolution File
STATUS fields option, 81	Example, 85
Utilities menu	option, 85
ADD Add Verified Duplicate	Edit Kermit Holding File option, 206
Pair option, 75	Edit Verification Package File option,
CHCK Check Pair of Records to	194
see if Duplicates option, 73	Edit VMS Disk Space Threshold
EDIT Edit Duplicate Record	option, 102
Status option, 77	Edit Volume Set Threshold option, 102
FIND Find Potential	Editing in Line Mode, Help, 214
Duplicates for an Entry in a	Enable Alerts for Selected Metrics
File option, 75	option, 104
PRNT Print List of File	Enable/Disable Collection of Resource
Duplicates option, 79	Usage Data
TSF Tally STATUS and	Example, Disable collection of data
MERGE STATUS fields	(Queued for background
option, 81	processing), 168
VIEW View Duplicate Record	Example, Enable collection of data
Entries	(Queued for background
option, 78	processing), 167
Verified Duplicates, 53, 66	option, 167
Verified Non-Duplicates, 53, 66	Enable/Disable RT Logging option,
Verify Potential Duplicates	169
Example, 64	Enable/Disable VPM option, 112
option, 63	Error Log, 196
Verify Selected Potential Duplicate	File Merge Capability, Developing, 87
Pair	FileMan look-ups and MTLU, 39
Example, 66	Find Potential Duplicates for an Entry
option, 66	in a File
View Duplicate Record Entries	Example, 75
Example, 78	option, 75
option, 78	First Line Routine Print option, 185
Duplicate Resolution Utilities,, 89	Flow Chart Entire Routine option, 178
Duplicate Search, Duplicate	Flow Chart from Entry Point option,
Resolution Utilities	178
Start/Halt Duplicate Search option,	Global Compare for Selected Package
57	option, 194
Duplicate Test Routines	Global Reference Report (By
Examples, 221	Date/VG), 137, 138
Duplicate Threshold%, 53, 85, 94	Global Reference Report (By
Edit. Days to Compute Reference	VG/Date), 144, 145
Ranges option	Graph Workday Averages for Selected
Edit Duplicate Record Status	Metric option, 128
Example, 77	Graphic RT Report Print option, 170
option, 77	-

GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	List Workday Averages for Selected
Help	Metric(s) option, 127
Line Mode Editing, 214	LKUP^XTLKMGR, 37, 39, 45
HFS, 154	LOCAL KEYWORD file, 12, 14, 21,
How to Configure the MPM, 131	22, 26, 41, 43
Implementation of MTLU, 35	LOCAL LOOKUP file, 11, 12, 17, 19,
Input Routines option, 186	21, 25, 37, 39, 41, 43, 44, 45
K^XTLKMGR, 41	LOCAL LOOKUP File, 23
Kermit	LOCAL SHORTCUT file, 12, 13, 14,
Callable Entry Points, 211	17, 21, 22, 42, 44
Kermit as an Alternate Editor, 205	LOCAL SYNONYM file, 12, 13, 14, 21,
Kermit file transfer protocol, 205	26, 42, 44
Macintosh steps, 205	Locking Data option, 124
KERMIT HOLDING file, 206	LOG RESOURCE USAGE? field, 153
Kermit Menu, 206, 209	Logging is Enabled, 169
Edit Kermit Holding File option,	Long RT Report Print option, 170
206	Manual Purge of VPM Data option,
Receive Kermit File option, 207	112
Send Kermit File option, 207	Merge (Ready to Merge) Verified
KERNEL SITE PARAMETERS file,	Duplicates option, 72
153	Merge Capability, Duplicate
Key Word In Context (KWIC), 13, 35	Resolution Utilities
Keywords, Multi-Term Look-Up	Developing, 87
(MTLU), 11, 12, 25, 41, 43	Merge Process, 53, 71
Associated with a Single Term and	Merge Process, Interactive, 71
Multiple Terms, 14	Merge Process, Verified Duplicates, 71
Example, 33	Merge Routines, 53
option, 29	Merge Selected Verified Duplicate
Kill Raw Resource Usage Data	Pair option, 72
Example, Live execution, 166	Merge Verified Duplicates, Duplicate
option, 166	Resolution Utilities
Kill Raw RT Data, Save Means option,	Merge Process, 71
170	Merge, Customized, 53
KWIC, 13, 35	Merging of Duplicates, 53
L^XTLKMGR, 43	Merging Of Duplicates, 53
Last Routine Change Date Recorded	Morning RTHIST Data Capture, 133
option, 193, 227	Move Host File to MailMan option,
Line Mode Editing Help, 214	107
List Global option, 201	MPM Schedule/Unschedule options,
List Raw RTHIST Data for a Range of	133
Dates option, 126	MPM, How to configure the, 131

MSM Capacity Management	L^XTLKMGR, 43
Manager's Menu	LKUP^XTLKMGR, 45
options;, 129	SH^XTLKMGR, 42
MSM RTHIST REPORT DATA file,	SY^XTLKMGR, 42
129	Example, 18
MSM RTHIST SITE file, 129	Functional Description, 12
MSM Site Parameters Enter/Edit	Keywords, 11, 25
Menu, 131	Associated with a Single Term
Multiday RT Averages option, 170	and Multiple Terms, 14
Multi-Term Lookup (MTLU)	Example, 33
option, 17	option, 29
Multi-Term Look-Up (MTLU), 12	Lexical Variants, 13
Add Entries To Look-Up File	LOCAL KEYWORD file, 12, 14, 21,
Example, 25	22, 26, 41, 43
IRM/Developer Utility, 12, 21,	LOCAL LOOKUP file, 11, 12, 17,
23	19, 21, 25, 37, 39, 41, 43, 44, 45
option, 12, 21, 23	LOCAL LOOKUP File, 23
Set Entries in the LOCAL	LOCAL SHORTCUT file, 12, 13,
LOOKUP file, 21, 23	14, 17, 21, 22, 42, 44
XTLKZMGR Security Key, 12,	LOCAL SYNONYM file, 12, 13, 14,
21, 23	21, 26, 42, 44
Add/Modify Utility	Look-up, How to Request a, 13
Examples, 33	Look-ups on Database Files, 13
Keywords example, 33	MTLU and FileMan look-ups, 39
Keywords option, 12, 25, 29	MTLU and VA FileMan Supported
option, 21, 25	Calls, 39
Shortcuts example, 33	MTLU, How to Override
Shortcuts option, 12, 25	FileMan look-ups and MTLU,
Synonyms example, 34	39
Synonyms option, 12, 25, 30	Multi-Term Lookup (MTLU)
Callable Entry Point	option, 12, 17
XTLKKWL, 39	Multi-Term Lookup (MTLU) Main
Delete Entries From Look-Up	Menu
Example, 22	Add Entries To Look-Up File
IRM/Developer Utility, 12	option, 12, 21, 23
option, 12, 21, 22	Add/Modify Utility option, 12
XTLKZMGR Security Key, 12	Keywords option, 12
Direct Mode Utilities	Shortcuts option, 12
>D ^XTLKKWL, 39	Synonyms option, 12
Enhanced API	Delete Entries From Look-Up
DK^XTLKMGR, 43	option, 12
DLL^XTLKMGR, 44	Multi-Term Lookup (MTLU)
DSH^XTLKMGR, 44	option, 12, 17
DSY^XTLKMGR, 44	Print Utility option, 12, 19
K^XTLKMGR, 41	Utilities for MTLU option, 21
	Culture 101 III II Opiion, 21

Add Entries To Look-Up File	Example, 221
option, 21	New Fields, 114
Add/Modify Utility option	Nodename Average by Day of Week
Examples, 33	[XUCMBR2C], 127
KE Keywords, 29	NTEG, 197, 198
Utilities For MTLU option	Number Base Changer option < Locked
Add Entries To Look-Up File	with XUPROGMODE>, 202
option, 23	Operations Management menu, 197
Add/Modify Utility option,	Output Routines option, 187
21, 25	Performance Analysis option, 105
SY Synonyms, 30	Performance Monitor, 112
Delete Entries From Look-	PERFORMANCE MONITOR, 131
Up option, 21, 22	Performance Problems, 169
Multi-Term Lookup (MTLU) Main	PM MSM RTHIST Task Option,
Menu options, 15, 21	133
Print Utility	Potential Duplicate Pairs, 53
Example, 20	POTENTIAL DUPLICATE
option, 12, 19	THRESHOLD%, 53, 85, 94
Shortcuts, 11, 25	Print Formatted Report (Table/Graph)
Example, 33	Example, Graph format subtotaled
Point to a Single Word or	by node (Live execution), 165
Phrase, 13	Example, Table format with
Site Implementation, 35	subtotals printed by node and
Standard Device Chart, 16	cumulative station totals (Live
Synonyms, 11, 25	execution), 162
Associated with Multiple	Example, Table format without
Terms, 13	subtotals (Live execution), 163
Example, 34	option, 161
Multiple Tokens, 13	Print List of File Duplicates
option, 30	Example, 79
Utilities for MTLU option	option, 79
Add Entries To Look-Up File	Print RT Report option, 170
option	Print Utility, MTLU
Example, 25	Example, 20
Add/Modify Utility option	option, 12, 19
Example, Keywords, 33	Producing Reports, Searches, and
Example, Shortcuts, 33	Statistics Through Standardized
Example, Synonyms, 34	Encoding of Diagnoses and
Delete Entries From Look-Up	Procedures, 11
option	Program Integrity Checker option, 197
Example, 22	Programmer Options menu, 177, 195,
MUMPS error, 179	201
MUMPS Read, 169	Build an 'NTEG' Routine for a
Name Test Routine for a Patient	Package option, 198
Merge	

Calculate and Show Checksum	Flow Chart Entire Routine option,
Values option, 195	178
List Global option, 201	Flow Chart from Entry Point
List Global option <locked td="" with<=""><td>option, 178</td></locked>	option, 178
XUPROGMODE>, 201	Group Routine Edit option, 184
Number Base Changer option, 202	Input Routines option, 186
Purge Duplicate Record File	List Routines option, 185
Example, 86	Output Routines option, 187
option, 86	Routine Edit option, 184
Raw Paging/BIO/DIO/FLS/MLS	Variable Changer option, 184
option, 125	Version Number Update option,
Receive Kermit File option, 207	185
Resource Consumption Measured by	RT logging, 173
Package, 153	RTHIST, 112, 115, 117, 126, 129, 134
Resource Usage Menu	171
options, 155	Search Status option, Display the, 55
Resource Usage, Capacity	Search Status, Duplicate Resolution
Management, 153	Utilities
Response Time, 169	Display Search Status option, 55
Response Time Log Options menu,	Selecting Fields to Compare in
107	Candidate Collection, Duplicate
Response Time Report (By Date/VG),	Resolution Utilities, 91
139	Send Kermit File option, 207
Response Time Report (By VG/Date),	Setup Performance Monitor option,
146	112
Routine Changes File, 192	SH^XTLKMGR, 42
Routine CMNDS/GREF Report (By	Shortcuts, Multi-Term Look-Up
Date/VG), 140, 141	(MTLU), 11, 12, 25
Routine CMNDS/GREF Report (By	Example, 33, 42, 44
VG/Date), 147, 148	Point to a Single Word or Phrase,
Routine Compare - Current with	13
Previous option, 192, 193	Site/Event Rate Summary
Routine Compare Utility, 192	[XUCMBR2A], 128
Routine Edit option, 184	Sort Raw Resource Usage Data
Routine Editor, 213, 215	Example, Live execution, 159
Routine Management Menu, 197	Example, Live execution with
Routine Tools menu	output of sorted raw data, 160
%INDEX of Routines option, 179	Example, Queued for background
Compare Routines on Tape to Disk	processing, 159
option, 186	option, 158
Compare Two Routines option, 185	Standard Device Chart, 16
Delete Routines option, 186	Start or Halt a Search for Duplicates
First Line Routine Print option,	Within a File, 57
185	Start/Halt Duplicate Search
	Example, Halting a search, 60

Example, Starting a search, 58	Verifier Tools Menu, 192
option, 57	Accumulate Globals for Package
SY^XTLKMGR, 42	option, 194
Synonyms, Multi-Term Look-Up	Edit Verification Package File
(MTLU), 11, 12, 25, 42, 44	option, 194
Associated with Multiple Terms, 13	Global Compare for Selected
Example, 34	Package option, 194
Multiple Tokens, 13	Last Routine Change Date
option, 30	Recorded option, 193
System Performance, 169	Routine Compare - Current with
System Performance Summary	Previous option, 192, 193
Example, 117	UNDO Edits (Restore to Older
System Statistical Report (By	Version of Routine) option, 193
Date/VG), 142	Update with Current Routines
System Statistical Report (By	option, 192, 193
VG/Date), 149	Verify Potential Duplicates
T0^%ZOSV	Example, 64
Start RT Measure, 173	option, 63
T1^%ZOSV	Verify Selected Potential Duplicate
Stop RT Measure, 174	Pair
Tally STATUS and MERGE STATUS	Example, 66
fields	option, 66
Example, 81	Version Number Update option, 185
option, 81	VG/DATE MSM CM Reports, 143
TAPE^XTRCMP, 186	View Duplicate Record Entries
Tasked CM File Update, 134	Example, 78
Tokenizing Routine, 13	option, 78
Two Standard Deviation Rule, 101	VMS monitor, 115
UNDO Edits (Restore to Older Version	VPM Reports option, 115
of Routine) option, 193	VPM Schedule/Unschedule options,
Update with Current Routines option,	114
192, 193	Write Raw Resource Usage Data
User Termination, 169	Example, Live execution, 156
Utilities For MTLU option, 21	Example, Queued for background
VA Programming Standards and	processing, 157
Conventions (SAC), 179, 199	option, 155
Variable Changer option, 184	XRTL variable, 169, 173
VAX/ALPHA Capacity Management	XTBASE, 202
menu, 107	XTER, 196
VAX/ALPHA Performance Monitor	XTERPUR, 196
(VPM), 109	XTLKER() array, 41
Verified Duplicates, Duplicate	XTLKTOKN, 13
Resolution Utilities, 53, 66	XTLKZMGR, 12, 21
Verified Non-Duplicates, Duplicate	XTRCMP, 186
Resolution Utilities, 53, 66	XTSUMBLD, 195

XTV ROUTINE CHANGES file, 192 [XDR PRINT LIST], 79 XTV VERIFICATION PACKAGE file, [XDR PURGE], 86 194 [XDR SEARCH ALL], 57 XTVCHG, 184 [XDR TALLY STATUS FIELDS], 81 XTVNUM, 185 [XDR UTILITIES MENU], 54 XUCM TASK NIT, 115, 117 [XDR VERIFY ALL], 63 XUCM TASK VPM, 115 [XDR VERIFY SELECTED PAIR], 66 XUGET, 197 [XDR VIEW DUPLICATE RECORD], XUMGR key, 191 78 XUPROG key, 177, 186, 191, 201 [XTCM DISK2MAIL], 107 XUPROGMODE key, 177, 184, 185, [XTCM MAIN], 107, 155 [XTCM], 169 186, 191, 196, 201, 202 XURTLC, 171 [XTFCE], 178 XURTLK, 171 [XTFCR], 178 [XT-KERMIT EDIT], 206 [XT-KERMIT MENU], 206 \mathbf{X} [XT-KERMIT RECEIVE], 207 [XT-KERMIT SEND], 207 %G, 201 [XTLKLKUP], 12, 17 %GL, 201 [XTLKMODKY], 12, 29 %INDEX of Routines option, 179 [XTLKMODPARK], 12, 21, 22 %INDEX Utility, 179, 180, 199 [XTLKMODPARS], 12, 21, 23 %RR, 186 [XTLKMODSH], 12, 27 %RS, 186, 187 [XTLKMODSY], 12, 30 %ZTER, 196 [XTLKMODUTL], 12, 21, 25 %ZTP1, 185 [XTLKPRTUTL], 12, 19 %ZTPP, 185 [XTLKUSER2], 15, 21 %ZTRDEL, 186 [XTLKUTILITIES], 21 [XDR ADD VERIFIED DUPS], 75 [XTMENU], 15, 21, 54 [XDR AUTO MERGE], 72, 83 [XT-NUMBER BASE CHANGER], 202 [XDR CHECK PAIR], 73 [XTRDEL], 186 [XDR DISPLAY SEARCH STATUS], [XTRGRPE], 184 [XT-ROUTINE COMPARE], 185 [XDR EDIT DUP RECORD STATUS], [XTSUMBLD], 198 [XTSUMBLD-CHECK], 195 XDR EDIT DUP RESOLUTION [XTV EDIT VERIF PACKAGE], 194 FILE], 85 [XTV MENU], 192 [XDR FIND POTENTIAL [XT-VARIABLE CHANGER], 184 DUPLICATES, 75 [XT-VERSION NUMBER], 185 [XDR MAIN MENU], 54 [XTVG COMPARE], 194 [XDR MANAGER UTILITIES], 54 [XTVG UPDATE], 194 XDR MERGE READY [XTVR COMPARE], 192, 193 DUPLICATES, 72 **IXTVR MOST RECENT CHANGE** [XDR MERGE SELECTED PAIR], 72 DATE, 193, 227

[XDR OPERATIONS MENU], 54

[XTVR RESTORE PREV ROUTINE],	[XUINDEX], 179
193	[XUINTEG], 197
[XTVR UPDATE], 192, 193	[XUPR RTN EDIT], 184
[XU FIRST LINE PRINT], 185	[XUPRGL], 201
[XUCM ANALYSE], 105	[XUPROG], 177, 192, 195, 201
XUCM COMPUTE LOCAL	[XUPRROU], 185
REFERENCES], 103	[XUPR-RTN-TAPE-CMP], 186
[XUCM DISK], 128	[XUROUTINE IN], 186
[XUCM EDIT DISK THRESHOLD],	[XUROUTINE OUT], 187
102	[XUROUTINES], 197
[XUCM EDIT REF THRESH], 102	[XURTL], 169
[XUCM EDIT VOL SET THRESH],	[XURTLC], 170
102	[XURTLCK], 170
[XUCM GRAF MET AVE], 128	[XURTLK], 170
[XUCM LIST DAILY STATS], 127	[XURTLM], 107, 169
[XUCM LIST RAW], 126	[XURTLMA], 170
[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15

Auto Purge of CM Data, 134	MSM Capacity Management
Automatically Merge Already Verified	Manager's Menu
Duplicates	CM Reports Menu
Example, 83	Ave. %CPU & %DISK
option, 72, 83	Graph;.i.[XUCSRG
Ave. %CPU & %DISK Graph, 150	GRAPHS
Ave. Response Time Graph, 151	MENU];.i.[XUCSRG CPU-
Bernstein Response Time Reports	DISK GRAPH];, 150
menu option, 127	Ave. Response Time
Bernstein RT Statistics (detailed)	Graph;.i.[XUCSRG
[XUCMBR2], 127	\mathbf{GRAPHS}
Build an 'NTEG' Routine for a	MENU];.i.[XUCSRG
Package option, 198	RESPONSE TIME
Calculate and Show Checksum Values	GRAPH]; , 151
option, 195	CPU/DISK Utilization
Callable Entry Points	Report (By
Kermit, 211	Date/VG);.i.[XUCSRB
RECEIVE^XTKERMIT, 211	REPORTS BY
SEND^XTKERMIT, 211	(DATE,VG)];.i.[XUCSRB
T0^%ZOSV Start RT Measure, 173	CPU/DISK REPORT];,
T1^%ZOSV Stop RT Measure, 174	135, 136
XRT0 Output Variable, Start Time,	CPU/DISK Utilization
173	Report (By
XRTN Input Variable, Routine	VG/Date);.i.[XUCSRA
Name, 174	REPORTS BY
XTLKKWL, 39	(VG,DATE)];.i.[XUCSRA
Candidate Collection Routine for	CPU/DISK REPORT];, 143
Patient Merge	Global Reference Report (By
Example, 219	Date/VG);.i.[XUCSRB
Candidate Collection, Selecting Fields	REPORTS BY
to Compare in, 91	(DATE,VG)];.i.[XUCSRB
Capacity Management	GREF REPORT];, 137, 138
Capacity Management menu	Global Reference Report (By
Move Host File to MailMan	VG/Date);.i.[XUCSRA
option, 107	REPORTS BY
Response Time Log Options,	(VG,DATE)];.i.[XUCSRA
107	GREF REPORT];, 144, 145
VAX/ALPHA Capacity	Response Time Report (By
Management menu, 107	Date/VG);.i.[XUCSRB
Direct Mode Utility, Resource	REPORTS BY
Usage	(DATE,VG)];.i.[XUCSRB
D ZHDIF^%ZOSV, 174	RESPONSE REPORT];,
Hardware Performance Summary	139
Example, 117	Response Time Report (By VG/Date);.i.[XUCSRA

REPORTS BY	options;.i.MSM Capacity
(VG,DATE)];.i.[XUCSRA	Management Manager's Menu
RESPONSE REPORT];,	options, 130
146	Performance Assurance menu
Routine CMNDS/GREF	Compute New Local References
Report (By	option, 103
Date/VG);.i.[XUCSRB	Edit. Days to Compute
REPORTS BY	Reference Ranges option
(DATE,VG)];.i.[XUCSRB	Edit VMS Disk Space Threshold
ROU CMNDS/GREF	option, 102
REPORT];, 140, 141	Edit Volume Set Threshold
Routine CMNDS/GREF	option, 102
Report (By	Enable Alerts for Selected
VG/Date);.i.[XUCSRA	Metrics option, 104
REPORTS BY	Performance Analysis option,
(VG,DATE)];.i.[XUCSRA	105
ROU CMNDS/GREF	Performance Monitor
REPORT];, 147, 148	Configuring, 112
System Statistical Report	PERFORMANCE MONITOR
(By Date/VG);.i.[XUCSRB	Configuring, 131
REPORTS BY	Resource Usage
(DATE,VG)];.i.[XUCSRB	^XTMP Global, 155, 158, 166
SYS STAT REPORT];, 142	Date Range, 154
System Statistical Report	Devices, 154
(By VG/Date);.i.[XUCSRA	Host File Server (HFS)
REPORTS BY	Device, 154
(VG,DATE)];.i.[XUCSRA	LOG RESOURCE USAGE?
SYS STAT REPORT];, 149	field, 153
CM Reports Menu;. The options	Measure Resource Consumption
are described in the same	by Package, 153
order as they appear on the	Queuing, 154
screen., 135	Response Time Log Options, 169
CM Reports Menu; i. Capacity	Copy RT Raw Data to FM File
Management	option, 170
MSM Capacity Management	Destroy FM Copy of Raw RT
Manager's Menu	Data option, 170
options, 129	Enable/Disable RT Logging
MSM Site Parameters	option, 169
Enter/Edit Menu; option	Graphic RT Report Print option
[XUCS SITE EDIT	170
MENU].i.[XUCS SITE EDIT	Kill Raw RT Data, Save Means
MENU]; is used to configure	option, 170
the MPM after installation.,	Long RT Report Print option,
131	170

Multiday RT Averages option,	(Queued for background
170	processing), 167
Print RT Report option, 170	option, 167
Response Time Measures, 169	Kill Raw Resource Usage
^%ZRTL global, 171, 174	Data
^%ZRTL(1, RESPONSE TIME	Example, Live execution,
(.3.091)	166
^%ZRTL(2, RT	option, 166
DATE_UCI,VOL, 171	options, 155
^%ZRTL(4, RT RAWDATA, 171	Print Formatted Report
Callable Entry Points	(Table/Graph)
T0^%ZOSV Start RT	Example, Graph format
Measure, 173	subtotaled by node
T1^%ZOSV Stop RT	(Live execution), 165
Measure, 174	Example, Table format
XRT0 Output Variable,	with subtotals printed
Start Time, 173	by node and cumulative
XRTN Input Variable,	station totals (Live
Routine Name, 174	execution), 162
Logging is Enabled, 169	Example, Table format
MUMPS Read, 169	without subtotals (Live
Performance Problems, 169	execution), 163
Response Time, 169, 173	option, 161
RT logging, 173, 174	Sort Raw Resource Usage
System Performance, 169	Data
User Termination, 169	Example, Live execution,
XRTL variable, 173	159
System Performance Summary	Example, Live execution
Example, 117	with output of sorted
VAX/ALPHA Performance Monitor	raw data, 160
menu	Example, Queued for
Enable/Disable VPM option,	background processing,
112	159
Manual Purge of VPM Data	option, 158
option, 112	Write Raw Resource Usage
Resource Usage Menu	Data
Enable/Disable Collection of	Example, Live execution,
Resource Usage Data	156
Example, Disable	Example, Queued for
collection of data	background processing,
(Queued for background	157
processing), 168	option, 155
Example, Enable	Setup Performance Monitor
collection of data	option, 112
	VPM Reports option, 115

VPM Reports menu	CPU Modes/Compute States option,
Bernstein Response Time	125
Reports menu option, 127	CPU/DISK Utilization Report (By
CPU Modes/Compute States	Date/VG), 135, 136
option, 125	CPU/DISK Utilization Report (By
Disk Drive Raw Data Statistics	VG/Date), 143
menu, 128	Customized Merge, 53, 87
Graph Workday Averages for	Date of Birth test Routine for a
Selected Metric option, 128	Patient Merge
List Raw RTHIST Data for a	Example, 223
Range of Dates option, 126	DATE/VG MSM CM Reports, 135
List Raw System Data option,	Delete Entries From Look-Up option,
126	12, 21, 22
List Volume Set Information	Delete Routines option, 186
option, 127	Destroy FM Copy of Raw RT Data
List Workday Averages for	option, 170
Selected Metric(s) option, 127	Device Chart, 16
Locking Data option, 124	DEVICE file, 107
Raw Paging/BIO/DIO/FLS/MLS	Direct Mode Utilities
option, 125	>D ^%ZTER, 196
Check Pair of Records to see if	>D ^XTER, 196
Duplicates	>D ^XTERPUR, 196
Example, 74	>D ^XTNTEG, 197
option, 73	>D ^%G (OS-specific), $201,203$
CHECK^XTSUMBLD, 195	>D ^%INDEX, 179, 189, 199
Checksum, 215	>D ^%RR (OS-specific), 186
CM DAILY STATISTICS file, 109	>D $\$RS$ (OS-specific), 187 ,
CM DISK DRIVE RAW DATA file,	190
115	>D ^%ZTER, 199
CM METRICS file, 103, 110	> D ^ % Z T P 1 , 185, 189
CM METRICS List, 110	> D ^ % Z T P P , 185, 189
CM NODENAME RAW DATA file,	>D ^%ZTRDEL, 186, 190
115, 124	>D ^nsNTEG, 199
CM SITE PARAMETERS file, 107	>D ^XINDEX, 199
Compare Routines on Tape to Disk	>D ^XTBASE, 202, 203
option, 186	>D ^XTCMFILN, 107
Compare Two Routines option, 185	>D ^XTER, 199
Compute New Local References	>D ^XTERPUR, 199
option, 103	> D ^ X T F C E , 178, 189
Configuring the MPM, 131	> D ^ X T F C R , 178, 189
Control File	>D ^XTLKKWL, 39
(See also DUPLICATE	>D ^XTRCMP, 186, 189
RESOLUTION file), 53	>D ^XTRGRPE, 184, 189
Copy RT Raw Data to FM File option, 170	>D ^XTVCHG, 184, 189
170	, ,

>D ^XTVNUM, 185, 189	Candidate Collection, Selecting
>D CHECK^XTSUMBLD, 195, 199	Fields to Compare in, 91
>D MAIL1^XTCMFILN, 107	Check Pair of Records to see if
>D nsNTEG, 197	Duplicates
>D ONE^nsNTEG, 197, 199	Example, 74
>D TAPE^XTRCMP, 186, 190	option, 73
>D^ %RR (OS-specific), 190	Control File
>X ^%Z, 184, 189	(See also DUPLICATE
Disk Drive Raw Data Statistics menu,	RESOLUTION file), 53
128	Customized Merge, 53, 87
Display Search Status	Display Search Status
Example, 56	Example, 56
option, 55	option, 55
DK^XTLKMGR, 43	Duplicate Checking Algorithm, 53
DLL^XTLKMGR, 44	DUPLICATE RECORD file, 53, 54,
DSH^XTLKMGR, 44	63, 66, 72, 73, 75, 77, 78, 81, 85,
DSY^XTLKMGR, 44	86, 87, 88, 91, 94
Duplicate Checker, How to check a	DUPLICATE RECORD File, 79
pair of records using the., 73	Duplicate Records, 53
Duplicate Checking Algorithm, 53	DUPLICATE RESOLUTION file,
Duplicate Pairs, Duplicate Resolution	53, 72, 90, 92, 94
Utilities	Duplicate Threshold%, 53, 85, 94
How to Verify Duplicate Pairs, 63	Edit Duplicate Record Status
Duplicate Pairs, How to Verify, 63	Example, 77
DUPLICATE RECORD file, 53, 54, 63,	option, 77
66, 72, 73, 75, 77, 78, 81, 85, 86, 87,	Edit Duplicate Resolution File
88, 89, 91, 94	Example, 85
DUPLICATE RECORD File, 79	option, 85
Duplicate Records, 53	Find Potential Duplicates for an
DUPLICATE RESOLUTION file, 53,	Entry in a File
72, 90, 92, 94	Example, 75
Duplicate Resolution System menu	option, 75
Manager Utilities menu, 54, 83	Manager Utilities menu
Operations menu, 54, 55	AUTO Automatically Merge
options, 54	Already Verified Duplicates
Utilities menu, 54, 73	option, 72, 83
Duplicate Resolution Utilities	FILE Edit Duplicate
Add Verified Duplicate Pair option,	Resolution File option, 85
75	PRGE Purge Duplicate Record
Automatically Merge Already	File option, 86
Verified Duplicates	Merge (Ready to Merge) Verified
Example, 83	Duplicates option, 72
option, 72, 83	Merge Capability, Developing, 87
	Merge Process, 53, 71
	Merge Process, Interactive, 71

Merge Selected Verified Duplicate	CHCK Check Pair of Records to
Pair option, 72	see if Duplicates option, 73
Merge, Customized, 53	EDIT Edit Duplicate Record
Merged-From Record, 53	Status option, 77
Merged-To Record, 53	FIND Find Potential
Operations menu	Duplicates for an Entry in a
DSS Display Search Status	File option, 75
option, 55	PRNT Print List of File
MVD Merge (Ready to Merge)	Duplicates option, 79
Verified Duplicates option, 72	TSF Tally STATUS and
SPD Verify Selected Potential	MERGE STATUS fields
Duplicate Pair option, 66	option, 81
SRCH Start/Halt Duplicate	VIEW View Duplicate Record
Search option, 57	Entries
SVD Merge Selected Verified	option, 78
Duplicate Pair option, 72	Verified Duplicates, 53, 66
VPD Verify Potential	Verified Non-Duplicates, 53, 66
Duplicates option, 63	Verify Potential Duplicates
Potential Duplicate Pairs, 53	Example, 64
POTENTIAL DUPLICATE	option, 63
THRESHOLD%, 53, 85, 94	Verify Selected Potential Duplicate
Potential Duplicates, 53, 85, 94	Pair
Print List of File Duplicates	Example, 66
Example, 79	option, 66
option, 79	View Duplicate Record Entries
Purge Duplicate Record File	Example, 78
Example, 86	option, 78
option, 86	Duplicate Resolution Utilities,, 89
Selecting Fields to Compare in	Duplicate Search, Duplicate
Candidate Collection, 91	Resolution Utilities
Start or Halt a Search for	Start/Halt Duplicate Search option
Duplicate Records, 57	57
Start/Halt Duplicate Search	Duplicate Test Routines
Example, Halting a search, 60	Examples, 221
Example, Starting a search, 58	Duplicate Threshold%, 53, 85, 94
option, 57	Edit. Days to Compute Reference
Tally STATUS and MERGE	Ranges option
STATUS fields	Edit Duplicate Record Status
Example, 81	Example, 77
Tally STATUS and MERGE	option, 77
STATUS fields option, 81	Edit Duplicate Resolution File
Utilities menu	Example, 85
ADD Add Verified Duplicate	option, 85
Pair option, 75	Edit Kermit Holding File option, 206
=	

Edit Verification Package File option,	Help
194	Line Mode Editing, 214
Edit VMS Disk Space Threshold	HFS, 154
option, 102	How to Configure the MPM, 131
Edit Volume Set Threshold option, 102	Implementation of MTLU, 35
Editing in Line Mode, Help, 214	Input Routines option, 186
Enable Alerts for Selected Metrics	K^XTLKMGR, 41
option, 104	Kermit
Enable/Disable Collection of Resource	Callable Entry Points, 211
Usage Data	Kermit as an Alternate Editor, 205
Example, Disable collection of data	Kermit file transfer protocol, 205
(Queued for background	Macintosh steps, 205
processing), 168	KERMIT HOLDING file, 206
Example, Enable collection of data	Kermit Menu, 206, 209
(Queued for background processing), 167	Edit Kermit Holding File option, 206
option, 167	Receive Kermit File option, 207
Enable/Disable RT Logging option,	Send Kermit File option, 207
169	KERNEL SITE PARAMETERS file,
Enable/Disable VPM option, 112	153
Error Log, 196	Key Word In Context (KWIC), 13, 35
File Merge Capability, Developing, 87	Keywords, Multi-Term Look-Up
FileMan look-ups and MTLU, 39	(MTLU), 11, 12, 25, 41, 43
Find Potential Duplicates for an Entry	Associated with a Single Term and
in a File	Multiple Terms, 14
Example, 75	Example, 33
option, 75	option, 29
First Line Routine Print option, 185	Kill Raw Resource Usage Data
Flow Chart Entire Routine option, 178	Example, Live execution, 166
Flow Chart from Entry Point option,	option, 166
178	Kill Raw RT Data, Save Means option,
Global Compare for Selected Package	170
option, 194	KWIC, 13, 35
Global Reference Report (By	L^XTLKMGR, 43
Date/VG), 137, 138	Last Routine Change Date Recorded
Global Reference Report (By	option, 193, 227
VG/Date), 144, 145	Line Mode Editing Help, 214
Graph Workday Averages for Selected	List Global option, 201
Metric option, 128	List Raw RTHIST Data for a Range of
Graphic RT Report Print option, 170	Dates option, 126
GRAPHS MENU MSM CM Reports,	List Raw System Data option, 126
150	List Routines option, 185
Group Routine Edit option, 184	List Volume Set Information option,
Hardware Performance Summary	127
Example, 117	

List Workday Averages for Selected	MSM RTHIST REPORT DATA file,
Metric(s) option, 127	129
LKUP^XTLKMGR, 37, 39, 45	MSM RTHIST SITE file, 129
LOCAL KEYWORD file, 12, 14, 21,	MSM Site Parameters Enter/Edit
22, 26, 41, 43	Menu, 131
LOCAL LOOKUP file, 11, 12, 17, 19,	Multiday RT Averages option, 170
21, 25, 37, 39, 41, 43, 44, 45	Multi-Term Lookup (MTLU)
LOCAL LOOKUP File, 23	option, 17
LOCAL SHORTCUT file, 12, 13, 14,	Multi-Term Look-Up (MTLU), 12
17, 21, 22, 42, 44	Add Entries To Look-Up File
LOCAL SYNONYM file, 12, 13, 14, 21,	Example, 25
26, 42, 44	IRM/Developer Utility, 12, 21,
Locking Data option, 124	23
LOG RESOURCE USAGE? field, 153	option, 12, 21, 23
Logging is Enabled, 169	Set Entries in the LOCAL
Long RT Report Print option, 170	LOOKUP file, 21, 23
Manual Purge of VPM Data option,	XTLKZMGR Security Key, 12,
112	21, 23
Merge (Ready to Merge) Verified	Add/Modify Utility
Duplicates option, 72	Examples, 33
Merge Capability, Duplicate	Keywords example, 33
Resolution Utilities	Keywords option, 12, 25, 29
Developing, 87	option, 21, 25
Merge Process, 53, 71	Shortcuts example, 33
Merge Process, Interactive, 71	Shortcuts option, 12, 25
Merge Process, Verified Duplicates, 71	Synonyms example, 34
Merge Routines, 53	Synonyms option, 12, 25, 30
Merge Selected Verified Duplicate	Callable Entry Point
Pair option, 72	XTLKKWL, 39
Merge Verified Duplicates, Duplicate	Delete Entries From Look-Up
Resolution Utilities	Example, 22
Merge Process, 71	IRM/Developer Utility, 12
Merge, Customized, 53	option, 12, 21, 22
Merging of Duplicates, 53	XTLKZMGR Security Key, 12
Merging Of Duplicates, 53	Direct Mode Utilities
Morning RTHIST Data Capture, 133	>D ^XTLKKWL, 39
Move Host File to MailMan option,	Enhanced API
107	DK^XTLKMGR, 43
MPM Schedule/Unschedule options,	DLL^XTLKMGR, 44
133	DSH^XTLKMGR, 44
MPM, How to configure the, 131	DSY^XTLKMGR, 44
MSM Capacity Management	K^XTLKMGR, 41
Manager's Menu	L^XTLKMGR, 43
options;, 129	LKUP^XTLKMGR, 45
	SH^XTLKMGR, 42

SY^XTLKMGR, 42	Examples, 33
Example, 18	KE Keywords, 29
Functional Description, 12	Utilities For MTLU option
Keywords, 11, 25	Add Entries To Look-Up File
Associated with a Single Term	option, 23
and Multiple Terms, 14	Add/Modify Utility option,
Example, 33	21, 25
option, 29	SY Synonyms, 30
Lexical Variants, 13	Delete Entries From Look-
LOCAL KEYWORD file, 12, 14, 21,	Up option, 21, 22
22, 26, 41, 43	Multi-Term Lookup (MTLU) Main
LOCAL LOOKUP file, 11, 12, 17,	Menu options, 15, 21
19, 21, 25, 37, 39, 41, 43, 44, 45	Print Utility
LOCAL LOOKUP File, 23	Example, 20
LOCAL SHORTCUT file, 12, 13,	option, 12, 19
14, 17, 21, 22, 42, 44	Shortcuts, 11, 25
LOCAL SYNONYM file, 12, 13, 14,	Example, 33
21, 26, 42, 44	Point to a Single Word or
Look-up, How to Request a, 13	Phrase, 13
Look-ups on Database Files, 13	Site Implementation, 35
MTLU and FileMan look-ups, 39	Standard Device Chart, 16
MTLU and VA FileMan Supported	Synonyms, 11, 25
Calls, 39	Associated with Multiple
MTLU, How to Override	Terms, 13
FileMan look-ups and MTLU,	Example, 34
39	Multiple Tokens, 13
Multi-Term Lookup (MTLU)	option, 30
option, 12, 17	Utilities for MTLU option
Multi-Term Lookup (MTLU) Main	Add Entries To Look-Up File
Menu	option
Add Entries To Look-Up File	Example, 25
option, 12, 21, 23	Add/Modify Utility option
Add/Modify Utility option, 12	Example, Keywords, 33
Keywords option, 12	Example, Shortcuts, 33
Shortcuts option, 12	Example, Synonyms, 34
Synonyms option, 12	Delete Entries From Look-Up
Delete Entries From Look-Up	option
option, 12	Example, 22
Multi-Term Lookup (MTLU)	MUMPS error, 179
option, 12, 17	MUMPS Read, 169
Print Utility option, 12, 19	Name Test Routine for a Patient
Utilities for MTLU option, 21	Merge
Add Entries To Look-Up File	Example, 221
option, 21	$New\ Fields,114$
Add/Modify Utility option	

Nodename Average by Day of Week	List Global option < Locked with
[XUCMBR2C], 127	XUPROGMODE>, 201
NTEG, 197, 198	Number Base Changer option, 202
Number Base Changer option < Locked	Purge Duplicate Record File
with XUPROGMODE>, 202	Example, 86
Operations Management menu, 197	option, 86
Output Routines option, 187	Raw Paging/BIO/DIO/FLS/MLS
Performance Analysis option, 105	option, 125
Performance Monitor, 112	Receive Kermit File option, 207
PERFORMANCE MONITOR, 131	Resource Consumption Measured by
Performance Problems, 169	Package, 153
PM MSM RTHIST Task Option,	Resource Usage Menu
133	options, 155
Potential Duplicate Pairs, 53	Resource Usage, Capacity
POTENTIAL DUPLICATE	Management, 153
THRESHOLD%, 53, 85, 94	Response Time, 169
Print Formatted Report (Table/Graph)	Response Time Log Options menu,
Example, Graph format subtotaled	107
by node (Live execution), 165	Response Time Report (By Date/VG),
Example, Table format with	139
subtotals printed by node and	Response Time Report (By VG/Date),
cumulative station totals (Live	146
execution), 162	Routine Changes File, 192
Example, Table format without	Routine CMNDS/GREF Report (By
subtotals (Live execution), 163	Date/VG), 140, 141
option, 161	Routine CMNDS/GREF Report (By
Print List of File Duplicates	VG/Date), 147, 148
Example, 79	Routine Compare - Current with
option, 79	Previous option, 192, 193
Print RT Report option, 170	Routine Compare Utility, 192
Print Utility, MTLU	Routine Edit option, 184
Example, 20	Routine Editor, 213, 215
option, 12, 19	Routine Management Menu, 197
Producing Reports, Searches, and	Routine Tools menu
Statistics Through Standardized	%INDEX of Routines option, 179
Encoding of Diagnoses and	Compare Routines on Tape to Disk
Procedures, 11	option, 186
Program Integrity Checker option, 197	Compare Two Routines option, 185
Programmer Options menu, 177, 195,	Delete Routines option, 186
201	First Line Routine Print option,
Build an 'NTEG' Routine for a	185
Package option, 198	Flow Chart Entire Routine option,
Calculate and Show Checksum	178
Values option, 195	Flow Chart from Entry Point
List Global option, 201	option, 178

Group Routine Edit option, 184	Synonyms, Multi-Term Look-Up
Input Routines option, 186	(MTLU), 11, 12, 25, 42, 44
List Routines option, 185	Associated with Multiple Terms, 13
Output Routines option, 187	Example, 34
Routine Edit option, 184	Multiple Tokens, 13
Variable Changer option, 184	option, 30
Version Number Update option,	System Performance, 169
185	System Performance Summary
RT logging, 173	Example, 117
RTHIST, 112, 115, 117, 126, 129, 134,	System Statistical Report (By
171	Date/VG), 142
Search Status option, Display the, 55	System Statistical Report (By
Search Status, Duplicate Resolution	VG/Date), 149
Utilities	$T0^{S}$
Display Search Status option, 55	Start RT Measure, 173
Selecting Fields to Compare in	T1^%ZOSV
Candidate Collection, Duplicate	Stop RT Measure, 174
Resolution Utilities, 91	Tally STATUS and MERGE STATUS
Send Kermit File option, 207	fields
Setup Performance Monitor option,	Example, 81
112	option, 81
SH^XTLKMGR, 42	TAPE^XTRCMP, 186
Shortcuts, Multi-Term Look-Up	Tasked CM File Update, 134
(MTLU), 11, 12, 25	Tokenizing Routine, 13
Example, 33, 42, 44	Two Standard Deviation Rule, 101
Point to a Single Word or Phrase,	UNDO Edits (Restore to Older Version
13	of Routine) option, 193
Site/Event Rate Summary	Update with Current Routines option,
[XUCMBR2A], 128	192, 193
Sort Raw Resource Usage Data	User Termination, 169
Example, Live execution, 159	Utilities For MTLU option, 21
Example, Live execution with	VA Programming Standards and
output of sorted raw data, 160	Conventions (SAC), 179, 199
Example, Queued for background	Variable Changer option, 184
processing, 159	VAX/ALPHA Capacity Management
option, 158	menu, 107
Standard Device Chart, 16	VAX/ALPHA Performance Monitor
Start or Halt a Search for Duplicates	(VPM), 109
Within a File, 57	Verified Duplicates, Duplicate
Start/Halt Duplicate Search	Resolution Utilities, 53, 66
Example, Halting a search, 60	Verified Non-Duplicates, Duplicate
Example, Starting a search, 58	Resolution Utilities, 53, 66
option, 57	Verifier Tools Menu, 192
SY^XTLKMGR, 42	Accumulate Globals for Package option, 194

Edit Verification Package File	XTVCHG, 184
option, 194	XTVNUM, 185
Global Compare for Selected	XUCM TASK NIT, 115, 117
Package option, 194	XUCM TASK VPM, 115
Last Routine Change Date	XUGET, 197
Recorded option, 193	XUMGR key, 191
Routine Compare - Current with	XUPROG key, 177, 186, 191, 201
Previous option, 192, 193	XUPROGMODE key, 177, 184, 185,
UNDO Edits (Restore to Older	186, 191, 196, 201, 202
Version of Routine) option, 193	XURTLC, 171
Update with Current Routines	XURTLK, 171
option, 192, 193	
Verify Potential Duplicates	
Example, 64	${f Z}$
option, 63	
Verify Selected Potential Duplicate	%G, 201
Pair	%GL, 201
Example, 66	%INDEX of Routines option, 179
option, 66	%INDEX Utility, 179, 180, 199
Version Number Update option, 185	%RR, 186
VG/DATE MSM CM Reports, 143	%RS, 186, 187
View Duplicate Record Entries	%ZTER, 196
Example, 78	%ZTP1, 185
option, 78	%ZTPP, 185
VMS monitor, 115	%ZTRDEL, 186
VPM Reports option, 115	[XDR ADD VERIFIED DUPS], 75
VPM Schedule/Unschedule options,	[XDR AUTO MERGE], 72, 83
114	[XDR CHECK PAIR], 73
Write Raw Resource Usage Data	[XDR DISPLAY SEARCH STATUS],
Example, Live execution, 156	55
Example, Queued for background	[XDR EDIT DUP RECORD STATUS],
processing, 157	77
option, 155	[XDR EDIT DUP RESOLUTION
XRTL variable, 169, 173	FILE], 85
XTBASE, 202	[XDR FIND POTENTIAL
XTER, 196	DUPLICATES], 75
XTERPUR, 196	[XDR MAIN MENU], 54
XTLKER() array, 41	[XDR MANAGER UTILITIES], 54
XTLKTOKN, 13	[XDR MERGE READY
XTLKZMGR, 12, 21	DUPLICATES], 72
XTRCMP, 186	[XDR MERGE SELECTED PAIR], 72
XTSUMBLD, 195	[XDR OPERATIONS MENU], 54
XTV ROUTINE CHANGES file, 192	[XDR PRINT LIST], 79
XTV VERIFICATION PACKAGE file,	[XDR PURGE], 86
194	[XDR SEARCH ALL], 57

[XDR TALLY STATUS FIELDS], 81 [XUCM ANALYSE], 105 [XDR UTILITIES MENU], 54 XUCM COMPUTE LOCAL REFERENCES], 103 [XDR VERIFY ALL], 63 [XDR VERIFY SELECTED PAIR], 66 [XUCM DISK], 128 [XDR VIEW DUPLICATE RECORD], [XUCM EDIT DISK THRESHOLD], 78 102 [XUCM EDIT REF THRESH], 102 [XTCM DISK2MAIL], 107 [XTCM MAIN], 107, 155 [XUCM EDIT VOL SET THRESH], [XTCM], 169 102 [XTFCE], 178 [XUCM GRAF MET AVE], 128 [XTFCR], 178 [XUCM LIST DAILY STATS], 127 [XT-KERMIT EDIT], 206 [XUCM LIST RAW], 126 [XT-KERMIT MENU], 206 [XUCM LIST VOL SET INFO], 127 [XT-KERMIT RECEIVE], 207 [XUCM LOCKS], 124 [XT-KERMIT SEND], 207 [XUCM MAIN], 107, 155 [XTLKLKUP], 12, 17 [XUCM MODES], 125 [XTLKMODKY], 12, 29 [XUCM ON/OFF], 112 [XTLKMODPARK], 12, 21, 22 [XUCM PAGE], 125 [XTLKMODPARS], 12, 21, 23 [XUCM PERFORMANCE MONITOR], [XTLKMODSH], 12, 27 109 [XTLKMODSY], 12, 30 [XUCM PURGE], 112 [XTLKMODUTL], 12, 21, 25 [XUCM RAW RTHIST DATA], 126 [XTLKPRTUTL], 12, 19 [XUCM REPORTS], 115 [XTLKUSER2], 15, 21 [XUCM SET ALERTS], 104 [XTLKUTILITIES], 21 [XUCM SETUP], 112 [XTMENU], 15, 21, 54 [XUCMBR MENU], 127 [XT-NUMBER BASE CHANGER], 202 [XUCMBR2], 127 [XTRDEL], 186 [XUCMBR2A], 128 [XTRGRPE], 184 [XUCMBR2C], 127 [XT-ROUTINE COMPARE], 185 [XUCPFORMATTED], 161 [XTSUMBLD], 198 [XUCPKILL], 166 [XTSUMBLD-CHECK], 195 [XUCPMENU], 109, 155 [XTV EDIT VERIF PACKAGE], 194 [XUCPRAWPRINT], 155 [XTV MENU], 192 [XUCPSORT], 158 [XUCPTOGGLE], 167 [XT-VARIABLE CHANGER], 184 [XUCSR REPORTS MENU], 135 [XT-VERSION NUMBER], 185 [XTVG COMPARE], 194 [XUCSRA REPORTS BY (VG,DATE)], [XTVG UPDATE], 194 143 [XTVR COMPARE], 192, 193 [XUCSRB REPORTS BY (DATE, VG)], XTVR MOST RECENT CHANGE DATE], 193, 227 [XUCSRG GRAPHS MENU], 150 [XTVR RESTORE PREV ROUTINE], [XUINDEX], 179 [XUINTEG], 197 [XTVR UPDATE], 192, 193 [XUPR RTN EDIT], 184 [XU FIRST LINE PRINT], 185 [XUPRGL], 201

[XUPROG], 177, 192, 195, 201 Ave. %CPU & %DISK Graph, 150 [XUPRROU], 185 Ave. Response Time Graph, 151 [XUPR-RTN-TAPE-CMP], 186 Bernstein Response Time Reports [XUROUTINE IN], 186 menu option, 127 [XUROUTINE OUT], 187 Bernstein RT Statistics (detailed) [XUROUTINES], 197 [XUCMBR2], 127 Build an 'NTEG' Routine for a [XURTL], 169 [XURTLC], 170 Package option, 198 [XURTLCK], 170 Calculate and Show Checksum Values [XURTLK], 170 option, 195 [XURTLM], 107, 169 Callable Entry Points: Kermit, 211; [XURTLMA], 170 RECEIVE^XTKERMIT, 211; [XURTLP], 170 SEND^XTKERMIT, 211; TO^%ZOSV [XURTLPG], 170 Start RT Measure, 173; T1^{\%}ZOSV [XURTLPL], 170 Stop RT Measure, 174; XRT0 Output [XUSITEMGR], 197 Variable, Start Time, 173; XRTN ^%Z Editor, 184, 213, 215 Input Variable, Routine Name, 174; ^%Z Global, 213 XTLKKWL, 39 ^%ZOSV, 170, 174 Candidate Collection Routine for ^%ZRTL, 169, 170, 171, 174 Patient Merge: Example, 219 ^%ZRTL(1, RESPONSE TIME (. Candidate Collection, Selecting Fields 3.091) to Compare in, 91 ^%ZRTL(2, RT DATE UCI, VOL, 171 Capacity Management: Capacity ^%ZRTL(4, RT RAWDATA, 171 Management menu; Move Host File ^XINDEX, 182 to MailMan option, 107; Response ^XTLKDICL, 13, 37, 43, 45 Time Log Options, 107; VAX/ALPHA ^XTLKMGR, 41, 42 Capacity Management menu, 107; ^XTLKWIC, 35 Direct Mode Utility, Resource Usage; ^XTMP Global, 155, 158, 166 D ZHDIF^%ZOSV, 174; Hardware ^XUP, 196 Performance Summary; Example, Accumulate Globals for Package 117; MSM Capacity Management option, 194 Manager's Menu; CM Reports Menu; ACTION menu, 215 Ave. %CPU & %DISK Add Entries To Look-Up File option, Graph;.i.[XUCSRG GRAPHS 12, 21, 23 MENU];.i.[XUCSRG CPU-DISK Add Verified Duplicate Pair option, 75 GRAPH];, 150; Ave. Response Add/Modify Utility option, 12, 21, 25 Time Graph;.i.[XUCSRG ALTERNATE EDITOR file, 209 GRAPHS MENU];.i.[XUCSRG AM MSM RTHIST Task Option, RESPONSE TIME GRAPH]; 151; 133 CPU/DISK Utilization Report (By Application Utilities menu, 15 Date/VG):.i.[XUCSRB REPORTS BY Auto Purge of CM Data, 134 (DATE,VG)];.i.[XUCSRB CPU/DISK Automatically Merge Already Verified REPORT];, 135, 136; CPU/DISK Duplicates: Example, 83; option, 72, Utilization Report (By 83

VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA CPU/DISK REPORT];, 143; Global Reference Report (By Date/VG);.i.[XUCSRB REPORTS BY (DATE,VG)];.i.[XUCSRB GREF REPORT];, 137, 138; Global Reference Report (By VG/Date):.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA GREF REPORT];, 144, 145; Response Time Report (By Date/VG);.i.[XUCSRB] REPORTS BY (DATE,VG)];.i.[XUCSRB RESPONSE REPORT:, 139; Response Time Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA RESPONSE REPORT];, 146; Routine CMNDS/GREF Report (By Date/VG);.i.[XUCSRB REPORTS BY (DATE,VG)];.i.[XUCSRB ROU CMNDS/GREF REPORT];, 140, 141; Routine CMNDS/GREF Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA ROU CMNDS/GREF REPORT];, 147, 148; System Statistical Report (By Date/VG);.i.[XUCSRB REPORTS BY (DATE, VG)];.i.[XUCSRB SYS STAT REPORT];, 142; System Statistical Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA SYS STAT REPORT];, 149; CM Reports Menu;. The options are described in the same order as they appear on the screen., 135; CM Reports Menu;.i.Capacity Management; MSM Capacity Management Manager's Menu; options, 129; MSM Site Parameters Enter/Edit Menu; option [XUCS SITE EDIT MENU].i.[XUCS SITE EDIT MENU]; is used to configure the

MPM after installation., 131; options; i.MSM Capacity Management Manager's Menu; options, 130; Performance Assurance menu; Compute New Local References option, 103; Edit. Days to Compute Reference Ranges option; Edit VMS Disk Space Threshold option, 102; Edit Volume Set Threshold option, 102; Enable Alerts for Selected Metrics option, 104; Performance Analysis option, 105; Performance Monitor; Configuring, 112; PERFORMANCE MONITOR; Configuring, 131; Resource Usage; ^XTMP Global, 155, 158, 166; Date Range, 154; Devices, 154; Host File Server (HFS); Device, 154; LOG RESOURCE USAGE? field, 153; Measure Resource Consumption by Package, 153; Queuing, 154; Response Time Log Options, 169; Copy RT Raw Data to FM File option, 170; Destroy FM Copy of Raw RT Data option, 170; Enable/Disable RT Logging option, 169; Graphic RT Report Print option, 170; Kill Raw RT Data, Save Means option, 170; Long RT Report Print option, 170; Multiday RT Averages option, 170; Print RT Report option, 170; Response Time Measures, 169; ^%ZRTL global, 171, 174; ^%ZRTL(1, RESPONSE TIME (. 3.091); ^%ZRTL(2, RT DATE UCI, VOL, 171; ^%ZRTL(4, RT RAWDATA, 171; Callable Entry Points; T0^%ZOSV Start RT Measure, 173; T1^{\%}ZOSV Stop RT Measure, 174; XRT0 Output Variable, Start Time, 173; XRTN Input Variable, Routine Name, 174; Logging is Enabled, 169; MUMPS Read, 169; Performance Problems,

169; Response Time, 169, 173; RT logging, 173, 174; System Performance, 169; User Termination, 169; XRTL variable, 173; System Performance Summary; Example, 117; VAX/ALPHA Performance Monitor menu; Enable/Disable VPM option, 112; Manual Purge of VPM Data option, 112; Resource Usage Menu; Enable/Disable Collection of Resource Usage Data; Example, Disable collection of data (Queued for background processing), 168; Example, Enable collection of data (Queued for background processing), 167; option, 167; Kill Raw Resource Usage Data; Example, Live execution, 166; option, 166; options, 155; Print Formatted Report (Table/Graph); Example, Graph format subtotaled by node (Live execution), 165; Example, Table format with subtotals printed by node and cumulative station totals (Live execution), 162; Example, Table format without subtotals (Live execution), 163; option, 161; Sort Raw Resource Usage Data; Example, Live execution, 159; Example, Live execution with output of sorted raw data, 160; Example, Queued for background processing, 159; option, 158; Write Raw Resource Usage Data; Example, Live execution, 156; Example, Queued for background processing, 157; option, 155; Setup Performance Monitor option, 112; VPM Reports option, 115; VPM Reports menu; Bernstein Response Time Reports menu option, 127; CPU Modes/Compute States option, 125; Disk Drive Raw Data Statistics menu, 128; Graph Workday Averages for Selected Metric option,

128; List Raw RTHIST Data for a Range of Dates option, 126; List Raw System Data option, 126; List Volume Set Information option, 127; List Workday Averages for Selected Metric(s) option, 127; Locking Data option, 124; Raw Paging/BIO/DIO/FLS/MLS option, 125 Check Pair of Records to see if Duplicates: Example, 74; option, 73 CHECK^XTSUMBLD, 195 Checksum, 215 CM DAILY STATISTICS file, 109 CM DISK DRIVE RAW DATA file, 115 CM METRICS file, 103, 110 CM METRICS List, 110 CM NODENAME RAW DATA file, 115, 124 CM SITE PARAMETERS file, 107 Compare Routines on Tape to Disk option, 186 Compare Two Routines option, 185 Compute New Local References option, 103 Configuring the MPM, 131 Control File: (See also DUPLICATE RESOLUTION file), 53 Copy RT Raw Data to FM File option, 170 CPU Modes/Compute States option, CPU/DISK Utilization Report (By Date/VG), 135, 136 CPU/DISK Utilization Report (By VG/Date), 143 Customized Merge, 53, 87 Date of Birth test Routine for a Patient Merge: Example, 223 DATE/VG MSM CM Reports, 135 Delete Entries From Look-Up option, 12, 21, 22

Delete Routines option, 186

Destroy FM Copy of Raw RT Data option, 170 Device Chart, 16 DEVICE file, 107 Direct Mode Utilities: >D ^%ZTER, 196; >D ^XTER, 196; >D ^XTERPUR, 196; >D ^XTNTEG, 197; >D ^%G (OS-specific), 201, 203; >D ^%INDEX, 179, 189, 199; >D RR (OS-specific), 186; >D %RS (OS-specific), 187, 190; >D 8 ZTER, 199; > D 8 Z T P 1, 185, 189; > D ^ % Z T P P, 185, 189; > D^%ZTRDEL, 186, 190; >D ^nsNTEG, 199; >D ^XINDEX, 199; >D ^XTBASE, 202, 203; >D ^XTCMFILN, 107; >D ^XTER, 199; >D ^XTERPUR, 199; > D $^{\land}$ X T F C E , 178, 189; > D $^{\text{XTFCR}}$, 178, 189; >D ^XTLKKWL, 39; >D ^XTRCMP, 186, 189; >D ^XTRGRPE, 184, 189; >D ^XTVCHG, 184, 189; >D ^XTVNUM, 185, 189; >D CHECK^XTSUMBLD, 195, 199; >D MAIL1^XTCMFILN, 107; >D nsNTEG, 197; >D ONE^nsNTEG, 197, 199; > D TAPE^XTRCMP, 186,190; >D^ %RR (OS-specific), 190; >x ^%z, 184, 189 Disk Drive Raw Data Statistics menu, 128 Display Search Status: Example, 56; option, 55 DK^XTLKMGR, 43 DLL^XTLKMGR, 44 DSH^XTLKMGR, 44 DSY^XTLKMGR, 44 Duplicate Checker, How to check a pair of records using the., 73 Duplicate Checking Algorithm, 53 Duplicate Pairs, Duplicate Resolution Utilities: How to Verify Duplicate Pairs, 63 Duplicate Pairs, How to Verify, 63

DUPLICATE RECORD file, 53, 54, 63, 66, 72, 73, 75, 77, 78, 81, 85, 86, 87, 88, 89, 91, 94 DUPLICATE RECORD File, 79 Duplicate Records, 53 DUPLICATE RESOLUTION file, 53, 72, 90, 92, 94 Duplicate Resolution System menu: Manager Utilities menu, 54, 83; Operations menu, 54, 55; options, 54; Utilities menu, 54, 73 Duplicate Resolution Utilities: Add Verified Duplicate Pair option, 75; Automatically Merge Already Verified Duplicates; Example, 83; option, 72, 83; Candidate Collection, Selecting Fields to Compare in, 91; Check Pair of Records to see if Duplicates; Example, 74; option, 73; Control File: (See also DUPLICATE RESOLUTION file), 53; Customized Merge, 53, 87; Display Search Status; Example, 56; option, 55; Duplicate Checking Algorithm, 53; DUPLICATE RECORD file, 53, 54, 63, 66, 72, 73, 75, 77, 78, 81, 85, 86, 87, 88, 91, 94; DUPLICATE RECORD File, 79; Duplicate Records, 53; DUPLICATE RESOLUTION file, 53, 72, 90, 92, 94; Duplicate Threshold%, 53, 85, 94; Edit Duplicate Record Status; Example, 77; option, 77; Edit Duplicate Resolution File; Example, 85; option, 85; Find Potential Duplicates for an Entry in a File; Example, 75; option, 75; Manager Utilities menu; AUTO Automatically Merge Already Verified Duplicates option, 72, 83; FILE Edit Duplicate Resolution File option, 85; PRGE Purge Duplicate Record File option, 86; Merge (Ready to Merge) Verified Duplicates option, 72; Merge Capability, Developing,

87; Merge Process, 53, 71; Merge Process, Interactive, 71; Merge Selected Verified Duplicate Pair option, 72; Merge, Customized, 53; Merged-From Record, 53; Merged-To Record, 53; Operations menu; DSS Display Search Status option, 55; MVD Merge (Ready to Merge) Verified Duplicates option, 72; SPD Verify Selected Potential Duplicate Pair option, 66; SRCH Start/Halt Duplicate Search option, 57; SVD Merge Selected Verified Duplicate Pair option, 72; VPD Verify Potential Duplicates option, 63; Potential Duplicate Pairs, 53; POTENTIAL DUPLICATE THRESHOLD%, 53, 85, 94; Potential Duplicates, 53, 85, 94; Print List of File Duplicates: Example, 79; option, 79; Purge Duplicate Record File; Example, 86; option, 86; Selecting Fields to Compare in Candidate Collection, 91: Start or Halt a Search for Duplicate Records, 57; Start/Halt Duplicate Search; Example, Halting a search, 60; Example, Starting a search, 58; option, 57; Tally STATUS and MERGE STATUS fields; Example, 81; Tally STATUS and MERGE STATUS fields option, 81; Utilities menu; ADD Add Verified Duplicate Pair option, 75; CHCK Check Pair of Records to see if Duplicates option, 73; EDIT Edit Duplicate Record Status option, 77; FIND Find Potential Duplicates for an Entry in a File option, 75; PRNT Print List of File Duplicates option, 79; TSF Tally STATUS and MERGE STATUS fields option, 81; VIEW View Duplicate Record Entries; option, 78; Verified Duplicates, 53, 66; Verified Non-Duplicates, 53, 66;

Verify Potential Duplicates; Example, 64; option, 63; Verify Selected Potential Duplicate Pair; Example, 66; option, 66; View Duplicate Record Entries; Example, 78; option, 78 Duplicate Resolution Utilities,, 89 Duplicate Search, Duplicate Resolution Utilities: Start/Halt Duplicate Search option, 57 Duplicate Test Routines: Examples, 221 Duplicate Threshold%, 53, 85, 94 Edit. Days to Compute Reference Ranges option Edit Duplicate Record Status: Example, 77; option, 77 Edit Duplicate Resolution File: Example, 85; option, 85 Edit Kermit Holding File option, 206 Edit Verification Package File option, 194 Edit VMS Disk Space Threshold option, 102 Edit Volume Set Threshold option, 102 Editing in Line Mode, Help, 214 **Enable Alerts for Selected Metrics** option, 104 Enable/Disable Collection of Resource Usage Data: Example, Disable collection of data (Queued for background processing), 168; Example, Enable collection of data (Queued for background processing), 167; option, 167 Enable/Disable RT Logging option, 169 Enable/Disable VPM option, 112 Error Log, 196 File Merge Capability, Developing, 87 FileMan look-ups and MTLU, 39 Find Potential Duplicates for an Entry in a File: Example, 75; option, 75 First Line Routine Print option, 185 Flow Chart Entire Routine option, 178

Flow Chart from Entry Point option, L^XTLKMGR, 43 178 Last Routine Change Date Recorded Global Compare for Selected Package option, 193, 227 option, 194 Line Mode Editing Help, 214 Global Reference Report (By List Global option, 201 Date/VG), 137, 138 List Raw RTHIST Data for a Range of Global Reference Report (By Dates option, 126 VG/Date), 144, 145 List Raw System Data option, 126 Graph Workday Averages for Selected List Routines option, 185 Metric option, 128 List Volume Set Information option, Graphic RT Report Print option, 170 127 GRAPHS MENU MSM CM Reports, List Workday Averages for Selected 150 Metric(s) option, 127 Group Routine Edit option, 184 LKUP^XTLKMGR, 37, 39, 45 Hardware Performance Summary: LOCAL KEYWORD file, 12, 14, 21, Example, 117 22, 26, 41, 43 Help: Line Mode Editing, 214 LOCAL LOOKUP file, 11, 12, 17, 19, HFS, 154 21, 25, 37, 39, 41, 43, 44, 45 How to Configure the MPM, 131 LOCAL LOOKUP File, 23 Implementation of MTLU, 35 LOCAL SHORTCUT file, 12, 13, 14, Input Routines option, 186 17, 21, 22, 42, 44 K^XTLKMGR, 41 LOCAL SYNONYM file, 12, 13, 14, 21, Kermit: Callable Entry Points, 211 26, 42, 44 Kermit as an Alternate Editor, 205 Locking Data option, 124 LOG RESOURCE USAGE? field, 153 Kermit file transfer protocol, 205; Macintosh steps, 205 Logging is Enabled, 169 Long RT Report Print option, 170 KERMIT HOLDING file, 206 Kermit Menu, 206, 209; Edit Kermit Manual Purge of VPM Data option, Holding File option, 206; Receive 112 Kermit File option, 207; Send Merge (Ready to Merge) Verified Kermit File option, 207 Duplicates option, 72 KERNEL SITE PARAMETERS file, Merge Capability, Duplicate 153 Resolution Utilities: Developing, 87 Key Word In Context (KWIC), 13, 35 Merge Process, 53, 71 Keywords, Multi-Term Look-Up Merge Process, Interactive, 71 (MTLU), 11, 12, 25, 41, 43; Merge Process, Verified Duplicates, 71 Associated with a Single Term and Merge Routines, 53 Merge Selected Verified Duplicate Multiple Terms, 14; Example, 33; option, 29 Pair option, 72 Kill Raw Resource Usage Data: Merge Verified Duplicates, Duplicate Example, Live execution, 166; Resolution Utilities: Merge Process, option, 166 71 Kill Raw RT Data, Save Means option, Merge, Customized, 53 Merging of Duplicates, 53 170 KWIC, 13, 35 Merging Of Duplicates, 53

Move Host File to MailMan option, 107 MPM Schedule/Unschedule options. 133 MPM, How to configure the, 131 MSM Capacity Management Manager's Menu: options;, 129 MSM RTHIST REPORT DATA file, 129 MSM RTHIST SITE file, 129 MSM Site Parameters Enter/Edit Menu, 131 Multiday RT Averages option, 170 Multi-Term Lookup (MTLU): option, 17 Multi-Term Look-Up (MTLU), 12; Add Entries To Look-Up File; Example, 25; IRM/Developer Utility, 12, 21, 23; option, 12, 21, 23; Set Entries in the LOCAL LOOKUP file, 21, 23; XTLKZMGR Security Key, 12, 21, 23; Add/Modify Utility; Examples, 33; Keywords example, 33; Keywords option, 12, 25, 29; option, 21, 25; Shortcuts example, 33; Shortcuts option, 12, 25; Synonyms example, 34; Synonyms option, 12, 25, 30; Callable Entry Point; XTLKKWL, 39; Delete Entries From Look-Up; Example, 22; IRM/Developer Utility, 12; option, 12, 21, 22; XTLKZMGR Security Key, 12; Direct Mode Utilities; >D ^XTLKKWL, 39; Enhanced API; DK^XTLKMGR, 43; DLL^XTLKMGR, 44; DSH^XTLKMGR, 44; DSY^XTLKMGR, 44; K^XTLKMGR, 41; L^XTLKMGR, 43; LKUP^XTLKMGR, 45; SH^XTLKMGR, 42; SY^XTLKMGR, 42; Example, 18; Functional Description, 12; Keywords, 11, 25; Associated with a Single Term and Multiple Terms, 14; Example, 33;

Morning RTHIST Data Capture, 133

option, 29; Lexical Variants, 13; LOCAL KEYWORD file, 12, 14, 21, 22, 26, 41, 43; LOCAL LOOKUP file, 11, 12, 17, 19, 21, 25, 37, 39, 41, 43, 44, 45; LOCAL LOOKUP File, 23; LOCAL SHORTCUT file, 12, 13, 14, 17, 21, 22, 42, 44; LOCAL SYNONYM file, 12, 13, 14, 21, 26, 42, 44; Look-up, How to Request a, 13; Look-ups on Database Files, 13; MTLU and FileMan look-ups, 39; MTLU and VA FileMan Supported Calls, 39; MTLU, How to Override; FileMan look-ups and MTLU, 39; Multi-Term Lookup (MTLU); option, 12, 17; Multi-Term Lookup (MTLU) Main Menu; Add Entries To Look-Up File option, 12, 21, 23; Add/Modify Utility option, 12; Keywords option, 12; Shortcuts option, 12; Synonyms option, 12; Delete Entries From Look-Up option, 12; Multi-Term Lookup (MTLU) option, 12, 17; Print Utility option, 12, 19; Utilities for MTLU option, 21; Add Entries To Look-Up File option, 21; Add/Modify Utility option; Examples, 33; KE Keywords, 29; Utilities For MTLU option; Add Entries To Look-Up File option, 23; Add/Modify Utility option, 21, 25; SY Synonyms, 30; Delete Entries From Look-Up option, 21, 22; Multi-Term Lookup (MTLU) Main Menu options, 15, 21; Print Utility; Example, 20; option, 12, 19; Shortcuts, 11, 25; Example, 33; Point to a Single Word or Phrase, 13; Site Implementation, 35; Standard Device Chart, 16; Synonyms, 11, 25; Associated with Multiple Terms, 13; Example, 34; Multiple Tokens, 13; option, 30; Utilities for MTLU option; Add Entries To Look-Up File option; Example, 25; Add/Modify Utility option; Example, Keywords,

33; Example, Shortcuts, 33; Programmer Options menu, 177, 195, Example, Synonyms, 34; Delete 201; Build an 'NTEG' Routine for a Entries From Look-Up option; Package option, 198; Calculate and Show Checksum Values option, 195; Example, 22 MUMPS error, 179 List Global option, 201; List Global MUMPS Read, 169 option <Locked with Name Test Routine for a Patient XUPROGMODE>, 201; Number Merge: Example, 221 Base Changer option, 202 New Fields, 114 Purge Duplicate Record File: Nodename Average by Day of Week Example, 86; option, 86 Raw Paging/BIO/DIO/FLS/MLS [XUCMBR2C], 127 NTEG, 197, 198 option, 125 Number Base Changer option < Locked Receive Kermit File option, 207 with XUPROGMODE>, 202 Resource Consumption Measured by Operations Management menu, 197 Package, 153 Output Routines option, 187 Resource Usage Menu: options, 155 Performance Analysis option, 105 Resource Usage, Capacity Performance Monitor, 112 Management, 153 PERFORMANCE MONITOR, 131 Response Time, 169 Response Time Log Options menu, Performance Problems, 169 PM MSM RTHIST Task Option, 107 133 Response Time Report (By Date/VG), Potential Duplicate Pairs, 53 139 POTENTIAL DUPLICATE Response Time Report (By VG/Date), THRESHOLD%, 53, 85, 94 146 Routine Changes File, 192 Print Formatted Report Routine CMNDS/GREF Report (By (Table/Graph): Example, Graph format subtotaled by node (Live Date/VG), 140, 141 execution), 165; Example, Table Routine CMNDS/GREF Report (By format with subtotals printed by VG/Date), 147, 148 node and cumulative station totals Routine Compare - Current with (Live execution), 162; Example, Previous option, 192, 193 Table format without subtotals (Live Routine Compare Utility, 192 execution), 163; option, 161 Routine Edit option, 184 Routine Editor, 213, 215 Print List of File Duplicates: Example, 79; option, 79 Routine Management Menu, 197 Routine Tools menu: %INDEX of Print RT Report option, 170 Routines option, 179; Compare Print Utility, MTLU: Example, 20; option, 12, 19 Routines on Tape to Disk option, Producing Reports, Searches, and 186; Compare Two Routines option, Statistics Through Standardized 185; Delete Routines option, 186; **Encoding of Diagnoses and** First Line Routine Print option, 185; Flow Chart Entire Routine option, Procedures, 11 Program Integrity Checker option, 197 178; Flow Chart from Entry Point

option, 178; Group Routine Edit

option, 184; Input Routines option, 186; List Routines option, 185; Output Routines option, 187; Routine Edit option, 184; Variable Changer option, 184; Version Number Update option, 185 RT logging, 173 RTHIST, 112, 115, 117, 126, 129, 134, 171 Search Status option, Display the, 55 Search Status, Duplicate Resolution **Utilities: Display Search Status** option, 55 Selecting Fields to Compare in Candidate Collection, Duplicate Resolution Utilities, 91 Send Kermit File option, 207 Setup Performance Monitor option, 112 SH^XTLKMGR, 42 Shortcuts, Multi-Term Look-Up (MTLU), 11, 12, 25; Example, 33, 42, 44; Point to a Single Word or Phrase, 13 Site/Event Rate Summary [XUCMBR2A], 128 Sort Raw Resource Usage Data: Example, Live execution, 159; Example, Live execution with output of sorted raw data, 160; Example, Queued for background processing, 159; option, 158 Standard Device Chart, 16 Start or Halt a Search for Duplicates Within a File, 57 Start/Halt Duplicate Search: Example, Halting a search, 60; Example, Starting a search, 58; option, 57 SY^XTLKMGR, 42 Synonyms, Multi-Term Look-Up (MTLU), 11, 12, 25, 42, 44; Associated with Multiple Terms, 13; Example, 34; Multiple Tokens, 13; option, 30 System Performance, 169

System Performance Summary: Example, 117 System Statistical Report (By Date/VG), 142 System Statistical Report (By VG/Date), 149 T0^%ZOSV: Start RT Measure, 173 T1^%ZOSV: Stop RT Measure, 174 Tally STATUS and MERGE STATUS fields: Example, 81; option, 81 TAPE^XTRCMP, 186 Tasked CM File Update, 134 Tokenizing Routine, 13 Two Standard Deviation Rule, 101 UNDO Edits (Restore to Older Version of Routine) option, 193 Update with Current Routines option, 192, 193 User Termination, 169 Utilities For MTLU option, 21 VA Programming Standards and Conventions (SAC), 179, 199 Variable Changer option, 184 VAX/ALPHA Capacity Management menu, 107 VAX/ALPHA Performance Monitor (VPM), 109 Verified Duplicates, Duplicate Resolution Utilities, 53, 66 Verified Non-Duplicates, Duplicate Resolution Utilities, 53, 66 Verifier Tools Menu, 192; Accumulate Globals for Package option, 194; Edit Verification Package File option, 194; Global Compare for Selected Package option, 194; Last Routine Change Date Recorded option, 193; Routine Compare - Current with Previous option, 192, 193; UNDO Edits (Restore to Older Version of Routine) option, 193; Update with Current Routines option, 192, 193 Verify Potential Duplicates: Example, 64; option, 63

Verify Selected Potential Duplicate

Pair: Example, 66; option, 66

Version Number Update option, 185

VG/DATE MSM CM Reports, 143

View Duplicate Record Entries:

Example, 78; option, 78

VMS monitor, 115

VPM Reports option, 115

VPM Schedule/Unschedule options,

114

Write Raw Resource Usage Data:

Example, Live execution, 156;

Example, Queued for background

processing, 157; option, 155

XRTL variable, 169, 173

XTBASE, 202

XTER, 196

XTERPUR, 196

XTLKER() array, 41

XTLKTOKN, 13

XTLKZMGR, 12, 21

XTRCMP, 186

XTSUMBLD, 195

XTV ROUTINE CHANGES file, 192

XTV VERIFICATION PACKAGE file,

194

XTVCHG, 184

XTVNUM, 185

XUCM TASK NIT, 115, 117

XUCM TASK VPM, 115

XUGET, 197

XUMGR key, 191

XUPROG key, 177, 186, 191, 201

XUPROGMODE key, 177, 184, 185,

186, 191, 196, 201, 202

XURTLC, 171

XURTLK, 171

Options

Options	[XT-KERMIT EDIT], 206
Options	[XT-KERMIT MENU], 206
	[XT-KERMIT RECEIVE], 207
%G, 201	[XT-KERMIT SEND], 207
%GL, 201	[XTLKLKUP], 12, 17
%INDEX of Routines option, 179	[XTLKMODKY], 12, 29
-	[XTLKMODPARK], 12, 21, 22
%INDEX Utility, 179, 180, 199 %RR, 186	[XTLKMODPARS], 12, 21, 23
%RS, 186, 187	[XTLKMODSH], 12, 27
%ZTER, 196	[XTLKMODS1], 12, 27
%ZTP1, 185	[XTLKMODUTL], 12, 21, 25
%ZTPP, 185	[XTLKPRTUTL], 12, 19
%ZTRDEL, 186	[XTLKUSER2], 15, 21
[XDR ADD VERIFIED DUPS], 75	[XTLKUTILITIES], 21
[XDR AUTO MERGE], 72, 83	[XTMENU], 15, 21, 54
[XDR CHECK PAIR], 73	[XT-NUMBER BASE CHANGER], 202
[XDR DISPLAY SEARCH STATUS],	[XTRDEL], 186
55	[XTRGRPE], 184
[XDR EDIT DUP RECORD STATUS],	[XT-ROUTINE COMPARE], 185
77	[XTSUMBLD], 198
[XDR EDIT DUP RESOLUTION	[XTSUMBLD-CHECK], 195
FILE], 85	[XTV EDIT VERIF PACKAGE], 194
[XDR FIND POTENTIAL	[XTV MENU], 192
DUPLICATES], 75	[XT-VARIABLE CHANGER], 184
[XDR MAIN MENU], 54	[XT-VERSION NUMBER], 185
[XDR MANAGER UTILITIES], 54	[XTVG COMPARE], 194
[XDR MERGE READY	[XTVG UPDATE], 194
DUPLICATES], 72	[XTVR COMPARE], 192, 193
[XDR MERGE SELECTED PAIR], 72	[XTVR MOST RECENT CHANGE
[XDR OPERATIONS MENU], 54	DATE], 193, 227
[XDR PRINT LIST], 79	[XTVR RESTORE PREV ROUTINE],
[XDR PURGE], 86	193
[XDR SEARCH ALL], 57	[XTVR UPDATE], 192, 193
[XDR TALLY STATUS FIELDS], 81	[XU FIRST LINE PRINT], 185
[XDR UTILITIES MENU], 54	[XUCM ANALYSE], 105
[XDR VERIFY ALL], 63	[XUCM COMPUTE LOCAL
[XDR VERIFY SELECTED PAIR], 66	REFERENCES], 103
[XDR VIEW DUPLICATE RECORD],	[XUCM DISK], 128
78	[XUCM EDIT DISK THRESHOLD],
[XTCM DISK2MAIL], 107	102
[XTCM MAIN], 107, 155	[XUCM EDIT REF THRESH], 102
[XTCM], 169	[XUCM EDIT VOL SET THRESH],
[XTFCE], 178	102
[XTFCR], 178	[XUCM GRAF MET AVE], 128
	[XUCM LIST DAILY STATS], 127

[XUCM LIST RAW], 126	[XURTLMA], 170
[XUCM LIST VOL SET INFO], 127	[XURTLP], 170
[XUCM LOCKS], 124	[XURTLPG], 170
[XUCM MAIN], 107, 155	[XURTLPL], 170
[XUCM MODES], 125	[XUSITEMGR], 197
[XUCM ON/OFF], 112	^%Z Editor, 184, 213, 215
[XUCM PAGE], 125	^%Z Global, 213
[XUCM PERFORMANCE MONITOR],	^%ZOSV, 170, 174
109	^%ZRTL, 169, 170, 171, 174
[XUCM PURGE], 112	^%ZRTL(1, RESPONSE TIME (.
[XUCM RAW RTHIST DATA], 126	3.091)
[XUCM REPORTS], 115	^%ZRTL(2, RT DATE_UCI,VOL, 171
[XUCM SET ALERTS], 104	^%ZRTL(4, RT RAWDATA, 171
[XUCM SETUP], 112	^XINDEX, 182
[XUCMBR MENU], 127	^XTLKDICL, 13, 37, 43, 45
[XUCMBR2], 127	^XTLKMGR, 41, 42
[XUCMBR2A], 128	^XTLKWIC, 35
[XUCMBR2C], 127	^XTMP Global, 155, 158, 166
[XUCPFORMATTED], 161	^XUP, 196
[XUCPKILL], 166	Accumulate Globals for Package
[XUCPMENU], 109, 155	option, 194
[XUCPRAWPRINT], 155	ACTION menu, 215
[XUCPSORT], 158	Add Entries To Look-Up File option,
[XUCPTOGGLE], 167	12, 21, 23
[XUCSR REPORTS MENU], 135	Add Verified Duplicate Pair option, 75
[XUCSRA REPORTS BY (VG,DATE)],	Add/Modify Utility option, 12, 21, 25
143	ALTERNATE EDITOR file, 209
[XUCSRB REPORTS BY (DATE,VG)],	AM MSM RTHIST Task Option,
135	133
[XUCSRG GRAPHS MENU], 150	Application Utilities menu, 15
[XUINDEX], 179	Auto Purge of CM Data, 134
[XUINTEG], 197	Automatically Merge Already Verified
[XUPR RTN EDIT], 184	Duplicates: Example, 83; option, 72,
[XUPRGL], 201	83
[XUPROG], 177, 192, 195, 201	Ave. %CPU & %DISK Graph, 150
[XUPRROU], 185	Ave. Response Time Graph, 151
[XUPR-RTN-TAPE-CMP], 186	Bernstein Response Time Reports
[XUROUTINE IN], 186	menu option, 127
[XUROUTINE OUT], 187	Bernstein RT Statistics (detailed)
[XUROUTINES], 197	[XUCMBR2], 127
[XURTL], 169	Build an 'NTEG' Routine for a
[XURTLC], 170	Package option, 198
[XURTLCK], 170	Calculate and Show Checksum Values
[XURTLK], 170	option, 195
[XURTLM], 107, 169	

Callable Entry Points: Kermit, 211; RECEIVE^XTKERMIT, 211: SEND^XTKERMIT, 211; TO^%ZOSV Start RT Measure, 173; T1^%ZOSV Stop RT Measure, 174; XRT0 Output Variable, Start Time, 173; XRTN Input Variable, Routine Name, 174; XTLKKWL, 39 Candidate Collection Routine for Patient Merge: Example, 219 Candidate Collection, Selecting Fields to Compare in, 91 Capacity Management: Capacity Management menu; Move Host File to MailMan option, 107; Response Time Log Options, 107; VAX/ALPHA Capacity Management menu, 107; Direct Mode Utility, Resource Usage; D ZHDIF^%ZOSV, 174; Hardware Performance Summary; Example, 117; MSM Capacity Management Manager's Menu; CM Reports Menu; Ave. %CPU & %DISK Graph;.i.[XUCSRG GRAPHS MENU];.i.[XUCSRG CPU-DISK GRAPH];, 150; Ave. Response Time Graph;.i. XUCSRG GRAPHS MENU];.i.[XUCSRG RESPONSE TIME GRAPH]; 151; CPU/DISK Utilization Report (By Date/VG):.i.[XUCSRB REPORTS BY (DATE,VG)];.i.[XUCSRB CPU/DISK REPORT];, 135, 136; CPU/DISK Utilization Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA CPU/DISK REPORT];, 143; Global Reference Report (By Date/VG);.i.[XUCSRB] REPORTS BY (DATE,VG)];.i.[XUCSRB GREF REPORT];, 137, 138; Global Reference Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA GREF

REPORT];, 144, 145; Response Time Report (By Date/VG);.i.[XUCSRB REPORTS BY (DATE, VG)];.i.[XUCSRB RESPONSE REPORT];, 139; Response Time Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA RESPONSE REPORT]; 146; Routine CMNDS/GREF Report (By Date/VG);.i.[XUCSRB REPORTS BY (DATE, VG)];.i.[XUCSRB ROU CMNDS/GREF REPORT];, 140, 141; Routine CMNDS/GREF Report (By VG/Date):.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA ROU CMNDS/GREF REPORT];, 147, 148; System Statistical Report (By Date/VG);.i.[XUCSRB REPORTS BY (DATE, VG)];,i.[XUCSRB SYS STAT REPORT];, 142; System Statistical Report (By VG/Date);.i.[XUCSRA REPORTS BY (VG,DATE)];.i.[XUCSRA SYS STAT REPORT];, 149; CM Reports Menu;. The options are described in the same order as they appear on the screen., 135; CM Reports Menu; i. Capacity Management; MSM Capacity Management Manager's Menu; options, 129; MSM Site Parameters Enter/Edit Menu; option [XUCS SITE EDIT MENU].i.[XUCS SITE EDIT MENU]; is used to configure the MPM after installation., 131; options; i.MSM Capacity Management Manager's Menu; options, 130; Performance Assurance menu: Compute New Local References option, 103; Edit. Days to Compute Reference Ranges option; Edit VMS Disk Space Threshold option, 102; Edit Volume Set Threshold option, 102; Enable

Alerts for Selected Metrics option, 104; Performance Analysis option, 105; Performance Monitor; Configuring, 112; PERFORMANCE MONITOR; Configuring, 131; Resource Usage; 'XTMP Global, 155, 158, 166; Date Range, 154; Devices, 154; Host File Server (HFS); Device, 154; LOG RESOURCE USAGE? field, 153; Measure Resource Consumption by Package, 153; Queuing, 154; Response Time Log Options, 169; Copy RT Raw Data to FM File option, 170; Destroy FM Copy of Raw RT Data option, 170; Enable/Disable RT Logging option, 169; Graphic RT Report Print option, 170; Kill Raw RT Data, Save Means option, 170; Long RT Report Print option, 170; Multiday RT Averages option, 170; Print RT Report option, 170; Response Time Measures, 169; ^%ZRTL global, 171, 174; ^%ZRTL(1, RESPONSE TIME (. 3.091); ^%ZRTL(2, RT DATE_UCI,VOL, 171; ^%ZRTL(4, RT RAWDATA, 171; Callable Entry Points; T0^{\%}ZOSV Start RT Measure, 173; T1^{\%}ZOSV Stop RT Measure, 174; XRT0 Output Variable, Start Time, 173; XRTN Input Variable, Routine Name, 174; Logging is Enabled, 169; MUMPS Read, 169; Performance Problems, 169; Response Time, 169, 173; RT logging, 173, 174; System Performance, 169; User Termination, 169; XRTL variable, 173; System Performance Summary; Example, 117; VAX/ALPHA Performance Monitor menu; Enable/Disable VPM option, 112; Manual Purge of VPM Data option, 112; Resource Usage Menu;

Enable/Disable Collection of Resource Usage Data; Example, Disable collection of data (Queued for background processing), 168; Example, Enable collection of data (Queued for background processing), 167; option, 167; Kill Raw Resource Usage Data; Example, Live execution, 166; option, 166; options, 155; Print Formatted Report (Table/Graph); Example, Graph format subtotaled by node (Live execution), 165; Example, Table format with subtotals printed by node and cumulative station totals (Live execution), 162; Example, Table format without subtotals (Live execution), 163; option, 161; Sort Raw Resource Usage Data; Example, Live execution, 159; Example, Live execution with output of sorted raw data, 160; Example, Queued for background processing, 159; option, 158; Write Raw Resource Usage Data; Example, Live execution, 156; Example, Queued for background processing, 157; option, 155; Setup Performance Monitor option, 112; VPM Reports option, 115; VPM Reports menu; Bernstein Response Time Reports menu option, 127; CPU Modes/Compute States option, 125; Disk Drive Raw Data Statistics menu, 128; Graph Workday Averages for Selected Metric option, 128; List Raw RTHIST Data for a Range of Dates option, 126; List Raw System Data option, 126; List Volume Set Information option, 127; List Workday Averages for Selected Metric(s) option, 127; Locking Data option, 124; Raw Paging/BIO/DIO/FLS/MLS option, 125

Check Pair of Records to see if Duplicates: Example, 74; option, 73 CHECK^XTSUMBLD, 195 Checksum, 215 CM DAILY STATISTICS file, 109 CM DISK DRIVE RAW DATA file, CM METRICS file, 103, 110 CM METRICS List, 110 CM NODENAME RAW DATA file, 115, 124 CM SITE PARAMETERS file, 107 Compare Routines on Tape to Disk option, 186 Compare Two Routines option, 185 Compute New Local References option, 103 Configuring the MPM, 131 Control File: (See also DUPLICATE RESOLUTION file), 53 Copy RT Raw Data to FM File option, 170 CPU Modes/Compute States option, CPU/DISK Utilization Report (By Date/VG), 135, 136 CPU/DISK Utilization Report (By VG/Date), 143 Customized Merge, 53, 87 Date of Birth test Routine for a Patient Merge: Example, 223 DATE/VG MSM CM Reports, 135 Delete Entries From Look-Up option, 12, 21, 22 Delete Routines option, 186 Destroy FM Copy of Raw RT Data option, 170 Device Chart, 16 DEVICE file, 107 Direct Mode Utilities: >D ^%ZTER, 196; >D ^XTER, 196; >D >D ^%G (OS-specific), 201, 203; >D ^%INDEX, 179, 189, 199; >D

%RR (OS-specific), 186; >D^%RS (OS-specific), 187, 190; >D 8 ZTER, 199; > D 8 ZTP1, 185, 189; > D ^ % Z T P P, 185, 189; > D^%ZTRDEL, 186, 190; >D ^nsNTEG, 199; >D ^XINDEX, 199; >D $^{\text{XTBASE}}$, 202, 203; >D ^XTCMFILN, 107; >D ^XTER, 199; >D ^XTERPUR, 199; > D $^{\land}$ X T F C E , 178, 189; > D $^{\text{X}}$ T F C R, 178, 189; >D ^XTLKKWL, 39; >D ^XTRCMP, 186, 189; >D ^XTRGRPE, 184, 189; >D ^XTVCHG, 184, 189; >D ^XTVNUM, 185, 189; >D CHECK^XTSUMBLD, 195, 199; >D MAIL1^XTCMFILN, 107; >D nsnteg, 197; >D one^nsnteg, 197, 199; >D TAPE^XTRCMP, 186, $190; >D^ *RR (OS-specific),$ 190; >x ^%z, 184, 189 Disk Drive Raw Data Statistics menu, 128 Display Search Status: Example, 56; option, 55 DK^XTLKMGR, 43 DLL^XTLKMGR, 44 DSH^XTLKMGR, 44 DSY^XTLKMGR, 44 Duplicate Checker, How to check a pair of records using the., 73 Duplicate Checking Algorithm, 53 Duplicate Pairs, Duplicate Resolution Utilities: How to Verify Duplicate Pairs, 63 Duplicate Pairs, How to Verify, 63 DUPLICATE RECORD file, 53, 54, 63, 66, 72, 73, 75, 77, 78, 81, 85, 86, 87, 88, 89, 91, 94 DUPLICATE RECORD File, 79 Duplicate Records, 53 DUPLICATE RESOLUTION file, 53, 72, 90, 92, 94 Duplicate Resolution System menu: Manager Utilities menu, 54, 83;

Operations menu, 54, 55; options, 54; Utilities menu, 54, 73 Duplicate Resolution Utilities: Add Verified Duplicate Pair option, 75; Automatically Merge Already Verified Duplicates; Example, 83; option, 72, 83; Candidate Collection, Selecting Fields to Compare in, 91; Check Pair of Records to see if Duplicates; Example, 74; option, 73; Control File; (See also DUPLICATE RESOLUTION file), 53; Customized Merge, 53, 87; Display Search Status; Example, 56; option, 55; Duplicate Checking Algorithm, 53; DUPLICATE RECORD file, 53, 54, 63, 66, 72, 73, 75, 77, 78, 81, 85, 86, 87, 88, 91, 94; DUPLICATE RECORD File, 79; Duplicate Records, 53; DUPLICATE RESOLUTION file, 53, 72, 90, 92, 94; Duplicate Threshold%, 53, 85, 94; Edit Duplicate Record Status; Example, 77; option, 77; Edit Duplicate Resolution File; Example, 85; option, 85; Find Potential Duplicates for an Entry in a File; Example, 75; option, 75; Manager Utilities menu; AUTO **Automatically Merge Already** Verified Duplicates option, 72, 83; FILE Edit Duplicate Resolution File option, 85; PRGE Purge Duplicate Record File option, 86; Merge (Ready to Merge) Verified Duplicates option, 72; Merge Capability, Developing, 87; Merge Process, 53, 71; Merge Process, Interactive, 71; Merge Selected Verified Duplicate Pair option, 72; Merge, Customized, 53; Merged-From Record, 53; Merged-To Record, 53; Operations menu; DSS Display Search Status option, 55; MVD Merge (Ready to Merge) Verified Duplicates option, 72; SPD

Verify Selected Potential Duplicate Pair option, 66; SRCH Start/Halt Duplicate Search option, 57; SVD Merge Selected Verified Duplicate Pair option, 72; VPD Verify Potential Duplicates option, 63; Potential Duplicate Pairs, 53; POTENTIAL DUPLICATE THRESHOLD%, 53, 85, 94; Potential Duplicates, 53, 85, 94; Print List of File Duplicates; Example, 79; option, 79; Purge Duplicate Record File; Example, 86; option, 86; Selecting Fields to Compare in Candidate Collection, 91; Start or Halt a Search for Duplicate Records, 57; Start/Halt Duplicate Search; Example, Halting a search, 60; Example, Starting a search, 58; option, 57; Tally STATUS and MERGE STATUS fields; Example, 81; Tally STATUS and MERGE STATUS fields option, 81; Utilities menu; ADD Add Verified Duplicate Pair option, 75; CHCK Check Pair of Records to see if Duplicates option, 73; EDIT Edit Duplicate Record Status option, 77; FIND Find Potential Duplicates for an Entry in a File option, 75; PRNT Print List of File Duplicates option, 79; TSF Tally STATUS and MERGE STATUS fields option, 81; VIEW View Duplicate Record Entries; option, 78; Verified Duplicates, 53, 66; Verified Non-Duplicates, 53, 66; Verify Potential Duplicates; Example, 64; option, 63; Verify Selected Potential Duplicate Pair; Example, 66; option, 66; View Duplicate Record Entries; Example, 78; option, 78 Duplicate Resolution Utilities,, 89

Duplicate Search, Duplicate Resolution Utilities: Start/Halt Duplicate Search option, 57 Duplicate Test Routines: Examples, 221 Duplicate Threshold%, 53, 85, 94 Edit. Days to Compute Reference Ranges option Edit Duplicate Record Status: Example, 77; option, 77 Edit Duplicate Resolution File: Example, 85; option, 85 Edit Kermit Holding File option, 206 Edit Verification Package File option, 194 Edit VMS Disk Space Threshold option, 102 Edit Volume Set Threshold option, 102 Editing in Line Mode, Help, 214 **Enable Alerts for Selected Metrics** option, 104 Enable/Disable Collection of Resource Usage Data: Example, Disable collection of data (Queued for background processing), 168; Example, Enable collection of data (Queued for background processing), 167; option, 167 Enable/Disable RT Logging option, 169 Enable/Disable VPM option, 112 Error Log, 196 File Merge Capability, Developing, 87 FileMan look-ups and MTLU, 39 Find Potential Duplicates for an Entry in a File: Example, 75; option, 75 First Line Routine Print option, 185 Flow Chart Entire Routine option, 178 Flow Chart from Entry Point option, 178 Global Compare for Selected Package option, 194 Global Reference Report (By Date/VG), 137, 138

Global Reference Report (By VG/Date), 144, 145 Graph Workday Averages for Selected Metric option, 128 Graphic RT Report Print option, 170 GRAPHS MENU MSM CM Reports, Group Routine Edit option, 184 Hardware Performance Summary: Example, 117 Help: Line Mode Editing, 214 HFS. 154 How to Configure the MPM, 131 Implementation of MTLU, 35 Input Routines option, 186 K^XTLKMGR, 41 Kermit: Callable Entry Points, 211 Kermit as an Alternate Editor, 205 Kermit file transfer protocol, 205; Macintosh steps, 205 KERMIT HOLDING file, 206 Kermit Menu, 206, 209; Edit Kermit Holding File option, 206; Receive Kermit File option, 207; Send Kermit File option, 207 KERNEL SITE PARAMETERS file, 153 Key Word In Context (KWIC), 13, 35 Keywords, Multi-Term Look-Up (MTLU), 11, 12, 25, 41, 43; Associated with a Single Term and Multiple Terms, 14; Example, 33; option, 29 Kill Raw Resource Usage Data: Example, Live execution, 166; option, 166 Kill Raw RT Data, Save Means option, 170 KWIC, 13, 35 L^XTLKMGR, 43 Last Routine Change Date Recorded option, 193, 227 Line Mode Editing Help, 214 List Global option, 201

List Raw RTHIST Data for a Range of Dates option, 126 List Raw System Data option, 126 List Routines option, 185 List Volume Set Information option, 127 List Workday Averages for Selected Metric(s) option, 127 LKUP^XTLKMGR, 37, 39, 45 LOCAL KEYWORD file, 12, 14, 21, 22, 26, 41, 43 LOCAL LOOKUP file, 11, 12, 17, 19, 21, 25, 37, 39, 41, 43, 44, 45 LOCAL LOOKUP File, 23 LOCAL SHORTCUT file, 12, 13, 14, 17, 21, 22, 42, 44 LOCAL SYNONYM file, 12, 13, 14, 21, 26, 42, 44 Locking Data option, 124 LOG RESOURCE USAGE? field, 153 Logging is Enabled, 169 Long RT Report Print option, 170 Manual Purge of VPM Data option, 112 Merge (Ready to Merge) Verified Duplicates option, 72 Merge Capability, Duplicate Resolution Utilities: Developing, 87 Merge Process, 53, 71 Merge Process, Interactive, 71 Merge Process, Verified Duplicates, 71 Merge Routines, 53 Merge Selected Verified Duplicate Pair option, 72 Merge Verified Duplicates, Duplicate Resolution Utilities: Merge Process, 71Merge, Customized, 53 Merging of Duplicates, 53 Merging Of Duplicates, 53 Morning RTHIST Data Capture, 133 Move Host File to MailMan option, 107 MPM Schedule/Unschedule options. 133

MPM, How to configure the, 131 MSM Capacity Management Manager's Menu: options;, 129 MSM RTHIST REPORT DATA file. 129 MSM RTHIST SITE file, 129 MSM Site Parameters Enter/Edit Menu, 131 Multiday RT Averages option, 170 Multi-Term Lookup (MTLU): option, 17 Multi-Term Look-Up (MTLU), 12; Add Entries To Look-Up File; Example, 25; IRM/Developer Utility, 12, 21, 23; option, 12, 21, 23; Set Entries in the LOCAL LOOKUP file, 21, 23; XTLKZMGR Security Key, 12, 21, 23; Add/Modify Utility; Examples, 33; Keywords example, 33; Keywords option, 12, 25, 29; option, 21, 25; Shortcuts example, 33; Shortcuts option, 12, 25; Synonyms example, 34; Synonyms option, 12, 25, 30; Callable Entry Point; XTLKKWL, 39; Delete Entries From Look-Up; Example, 22; IRM/Developer Utility, 12; option, 12, 21, 22; XTLKZMGR Security Key, 12; Direct Mode Utilities; >D ^XTLKKWL, 39; Enhanced API; DK^XTLKMGR, 43; DLL^XTLKMGR, 44; DSH^XTLKMGR, 44; DSY^XTLKMGR, 44; K^XTLKMGR, 41; L^XTLKMGR, 43; LKUP^XTLKMGR, 45; SH^XTLKMGR, 42; SY^XTLKMGR, 42; Example, 18; Functional Description, 12; Keywords, 11, 25; Associated with a Single Term and Multiple Terms, 14; Example, 33; option, 29; Lexical Variants, 13; LOCAL KEYWORD file, 12, 14, 21, 22, 26, 41, 43; LOCAL LOOKUP file, 11, 12, 17, 19, 21, 25, 37, 39, 41, 43, 44, 45; LOCAL LOOKUP File, 23;

LOCAL SHORTCUT file, 12, 13, 14, 17, 21, 22, 42, 44; LOCAL SYNONYM file, 12, 13, 14, 21, 26, 42, 44; Look-up, How to Request a, 13; Look-ups on Database Files, 13; MTLU and FileMan look-ups, 39; MTLU and VA FileMan Supported Calls, 39; MTLU, How to Override; FileMan look-ups and MTLU, 39; Multi-Term Lookup (MTLU); option, 12, 17; Multi-Term Lookup (MTLU) Main Menu; Add Entries To Look-Up File option, 12, 21, 23; Add/Modify Utility option, 12; Keywords option, 12; Shortcuts option, 12; Synonyms option, 12; Delete Entries From Look-Up option, 12; Multi-Term Lookup (MTLU) option, 12, 17; Print Utility option, 12, 19; Utilities for MTLU option, 21; Add Entries To Look-Up File option, 21; Add/Modify Utility option; Examples, 33; KE Keywords, 29; Utilities For MTLU option; Add Entries To Look-Up File option, 23; Add/Modify Utility option, 21, 25; SY Synonyms, 30; Delete Entries From Look-Up option, 21, 22; Multi-Term Lookup (MTLU) Main Menu options, 15, 21; Print Utility; Example, 20; option, 12, 19; Shortcuts, 11, 25; Example, 33; Point to a Single Word or Phrase, 13; Site Implementation, 35; Standard Device Chart, 16; Synonyms, 11, 25; Associated with Multiple Terms, 13; Example, 34; Multiple Tokens, 13; option, 30; Utilities for MTLU option; Add Entries To Look-Up File option; Example, 25; Add/Modify Utility option; Example, Keywords, 33; Example, Shortcuts, 33; Example, Synonyms, 34; Delete Entries From Look-Up option; Example, 22 MUMPS error, 179

MUMPS Read, 169 Name Test Routine for a Patient Merge: Example, 221 New Fields, 114 Nodename Average by Day of Week [XUCMBR2C], 127 NTEG, 197, 198 Number Base Changer option < Locked with XUPROGMODE>, 202 Operations Management menu, 197 Output Routines option, 187 Performance Analysis option, 105 Performance Monitor, 112 PERFORMANCE MONITOR, 131 Performance Problems, 169 PM MSM RTHIST Task Option, 133 Potential Duplicate Pairs, 53 POTENTIAL DUPLICATE THRESHOLD%, 53, 85, 94 Print Formatted Report (Table/Graph): Example, Graph format subtotaled by node (Live execution), 165; Example, Table format with subtotals printed by node and cumulative station totals (Live execution), 162; Example, Table format without subtotals (Live execution), 163; option, 161 Print List of File Duplicates: Example, 79; option, 79 Print RT Report option, 170 Print Utility, MTLU: Example, 20; option, 12, 19 Producing Reports, Searches, and Statistics Through Standardized Encoding of Diagnoses and Procedures, 11 Program Integrity Checker option, 197 Programmer Options menu, 177, 195, 201; Build an 'NTEG' Routine for a Package option, 198; Calculate and Show Checksum Values option, 195; List Global option, 201; List Global

option <Locked with Changer option, 184; Version XUPROGMODE>, 201; Number Number Update option, 185 Base Changer option, 202 RT logging, 173 Purge Duplicate Record File: RTHIST, 112, 115, 117, 126, 129, 134, Example, 86; option, 86 Raw Paging/BIO/DIO/FLS/MLS Search Status option, Display the, 55 option, 125 Search Status, Duplicate Resolution Receive Kermit File option, 207 **Utilities: Display Search Status** Resource Consumption Measured by option, 55 Package, 153 Selecting Fields to Compare in Resource Usage Menu: options, 155 Candidate Collection, Duplicate Resource Usage, Capacity Resolution Utilities, 91 Management, 153 Send Kermit File option, 207 Response Time, 169 Setup Performance Monitor option, Response Time Log Options menu, 112 107 SH^XTLKMGR, 42 Response Time Report (By Date/VG), Shortcuts, Multi-Term Look-Up (MTLU), 11, 12, 25; Example, 33, 42, Response Time Report (By VG/Date), 44; Point to a Single Word or Phrase, 13 146 Routine Changes File, 192 Site/Event Rate Summary Routine CMNDS/GREF Report (By [XUCMBR2A], 128 Date/VG), 140, 141 Sort Raw Resource Usage Data: Routine CMNDS/GREF Report (By Example, Live execution, 159; VG/Date), 147, 148 Example, Live execution with output Routine Compare - Current with of sorted raw data, 160; Example, Previous option, 192, 193 Queued for background processing, Routine Compare Utility, 192 159; option, 158 Routine Edit option, 184 Standard Device Chart, 16 Start or Halt a Search for Duplicates Routine Editor, 213, 215 Routine Management Menu, 197 Within a File, 57 Routine Tools menu: %INDEX of Start/Halt Duplicate Search: Example, Routines option, 179; Compare Halting a search, 60; Example, Routines on Tape to Disk option, Starting a search, 58; option, 57 186; Compare Two Routines option, SY^XTLKMGR, 42 185; Delete Routines option, 186; Synonyms, Multi-Term Look-Up First Line Routine Print option, 185; (MTLU), 11, 12, 25, 42, 44; Flow Chart Entire Routine option, Associated with Multiple Terms, 13; 178; Flow Chart from Entry Point Example, 34; Multiple Tokens, 13; option, 178; Group Routine Edit option, 30 System Performance, 169 option, 184; Input Routines option, 186; List Routines option, 185; System Performance Summary: Output Routines option, 187; Example, 117 System Statistical Report (By Routine Edit option, 184; Variable Date/VG), 142

System Statistical Report (By VG/Date), 149 T0^{\%}ZOSV: Start RT Measure, 173 T1^{\%}ZOSV: Stop RT Measure, 174 Tally STATUS and MERGE STATUS fields: Example, 81; option, 81 TAPE^XTRCMP, 186 Tasked CM File Update, 134 Tokenizing Routine, 13 Two Standard Deviation Rule, 101 UNDO Edits (Restore to Older Version of Routine) option, 193 Update with Current Routines option, 192, 193 User Termination, 169 Utilities For MTLU option, 21 VA Programming Standards and Conventions (SAC), 179, 199 Variable Changer option, 184 VAX/ALPHA Capacity Management menu, 107 VAX/ALPHA Performance Monitor (VPM), 109 Verified Duplicates, Duplicate Resolution Utilities, 53, 66 Verified Non-Duplicates, Duplicate Resolution Utilities, 53, 66 Verifier Tools Menu, 192; Accumulate Globals for Package option, 194; Edit Verification Package File option, 194; Global Compare for Selected Package option, 194; Last Routine Change Date Recorded option, 193; Routine Compare - Current with Previous option, 192, 193; UNDO Edits (Restore to Older Version of Routine) option, 193; Update with Current Routines option, 192, 193 Verify Potential Duplicates: Example, 64; option, 63 Verify Selected Potential Duplicate Pair: Example, 66; option, 66 Version Number Update option, 185 VG/DATE MSM CM Reports, 143

View Duplicate Record Entries: Example, 78; option, 78 VMS monitor, 115 VPM Reports option, 115 VPM Schedule/Unschedule options, 114 Write Raw Resource Usage Data: Example, Live execution, 156; Example, Queued for background processing, 157; option, 155 XRTL variable, 169, 173 XTBASE, 202 XTER, 196 XTERPUR, 196 XTLKER() array, 41 XTLKTOKN, 13 XTLKZMGR, 12, 21 XTRCMP, 186 XTSUMBLD, 195 XTV ROUTINE CHANGES file, 192 XTV VERIFICATION PACKAGE file, 194 XTVCHG, 184 XTVNUM, 185 XUCM TASK NIT, 115, 117 XUCM TASK VPM, 115 XUGET, 197 XUMGR key, 191 XUPROG key, 177, 186, 191, 201 XUPROGMODE key, 177, 184, 185, 186, 191, 196, 201, 202 XURTLC, 171 XURTLK, 171

572