



RESOURCE AND PATIENT MANAGEMENT SYSTEM

# **Consolidated Clinical Document Architecture (CCDA)**

(BCCD)

## **Technical Manual**

Version 1.0  
September 2014

Office of Information Technology  
Division of Information Technology  
Albuquerque, New Mexico

# Table of Contents

<b>1.0</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Purpose .....	1
1.2	Scope .....	1
1.3	Technical Information .....	2
1.4	Architecture .....	2
<b>2.0</b>	<b>Orientation .....</b>	<b>3</b>
2.1	Setup .....	3
2.2	Architecture .....	3
<b>3.0</b>	<b>Implementation and Maintenance .....</b>	<b>5</b>
3.1	General Information .....	5
3.2	System Requirements .....	5
3.3	Package-wide Variables .....	5
3.4	Security Keys.....	6
<b>4.0</b>	<b>CCDA Menu.....</b>	<b>7</b>
<b>5.0</b>	<b>Routine Descriptions .....</b>	<b>8</b>
5.1	Routine List.....	8
5.2	Routines with Description .....	8
<b>6.0</b>	<b>Files and Tables.....</b>	<b>10</b>
6.1	File List .....	10
6.2	File Access .....	10
6.3	Cross References.....	10
6.4	Table File.....	11
<b>7.0</b>	<b>External Relations .....</b>	<b>13</b>
7.1	Callable Routines.....	13
7.2	Published Entry Points.....	13
7.3	Exported Options.....	13
<b>8.0</b>	<b>Internal Relations .....</b>	<b>14</b>
<b>9.0</b>	<b>Archiving and Purging .....</b>	<b>15</b>
<b>10.0</b>	<b>Documentation Resources .....</b>	<b>16</b>
10.1	RPMS System Documentation .....	16
10.1.1	%INDEX .....	16
10.1.2	Inquire Options .....	17
10.1.3	Print Option File.....	17
10.1.4	List File Attributes .....	17
10.2	RPMS Online Help.....	18
10.3	Ensemble Online Help.....	18
10.4	Ensemble Class Documentation.....	18

10.5	Web Service Specification .....	19
<b>11.0</b>	<b>SAC Requirements and Exemptions .....</b>	<b>20</b>
<b>Appendix A:</b>	<b>CCDA Ensemble/Caché Class Development and Deployment.....</b>	<b>21</b>
A.1	Description of Development Environment.....	21
A.2	CCDA Server Requirements.....	21
A.3	Deployment of CCDA Classes.....	21
<b>Appendix B:</b>	<b>CCDA Data Elements .....</b>	<b>22</b>
B.1	General Header .....	22
B.2	Patient .....	23
B.3	Allergy.....	24
B.4	Care Team.....	26
B.5	Functional Status.....	27
B.6	Hospital Discharge Instructions .....	27
B.7	Immunization .....	27
B.8	Instruction .....	28
B.9	Medication .....	29
B.10	Plan of Care.....	31
B.11	Problem .....	32
B.12	Procedure .....	33
B.13	Result .....	33
B.14	Social History.....	35
B.15	Vital Sign .....	35
<b>Appendix C:</b>	<b>List of CCDA Classes.....</b>	<b>36</b>
C.1	Audit .....	36
C.2	CCDA .....	36
C.3	Install .....	50
C.4	Prod.....	50
C.5	Tasks .....	53
C.6	Xfer.....	53
<b>Appendix D:</b>	<b>Web Service API .....</b>	<b>56</b>
D.1	Web Service .....	56
D.1.1	Request Message.....	56
D.1.2	Response Message.....	57
D.2	WSDL Considerations .....	57
D.3	Sample Request .....	58
D.4	Sample Response: Valid .....	58
D.5	Sample Response: Error .....	59
D.6	Additional Web Service Resources.....	59
<b>Appendix E:</b>	<b>CCDA Error Codes .....</b>	<b>61</b>
<b>Appendix F:</b>	<b>CCDA Ensemble Configuration and Management.....</b>	<b>62</b>
F.1	Creation of CCDA Database, Namespace, and Mappings .....	62

---

F.1.1	Creating the CCDA Namespace.....	62
F.1.2	Creating New Global Mappings.....	68
F.1.3	Creating New Package Mappings.....	71
F.2	Managing CCDA Ensemble Production.....	74
F.2.1	Stopping the CCDA Ensemble Production.....	75
F.2.2	Starting the CCDA Ensemble Production.....	75
F.3	Encrypting the CCDA Database.....	76
F.3.1	Stop CCDA Transmissions.....	76
F.3.2	Unschedule the Nightly Upload Task.....	77
F.3.3	Stop the CCDA Production.....	77
F.3.4	Dismount the CCDA Database.....	81
F.3.5	Encrypt the Database.....	83
F.3.6	Re-mount the Database.....	83
F.3.7	Reschedule the Nightly CCDA Task.....	85
F.3.8	Restart CCDA.....	85
<b>Appendix G:</b>	<b>Restoring CCDA from Backup.....</b>	<b>87</b>
G.1	Create CCDA Database, Namespace, and Mappings.....	87
G.2	Restore CACHE.DAT File.....	87
G.2.1	Dismount CCDA Database.....	87
G.2.2	Restore the CACHE.DAT File.....	89
G.2.3	Remount CCDA Database.....	89
G.3	Verify Settings.....	91
G.3.1	Verify Custom Production Settings.....	91
G.3.2	Verify Purge Task Schedule.....	91
G.4	Start CCDA.....	94
<b>Glossary.....</b>		<b>96</b>
<b>Acronym List.....</b>		<b>97</b>
<b>Contact Information.....</b>		<b>98</b>

## Preface

The purpose of this manual is to provide technical information about the Consolidated Clinical Document Architecture (CCDA) v1.0 (BCCD) package. The BCCD package is designed to generate industry standard Continuity of Care Documents (CCD) in Health Level 7 (HL7) CCDA format, following the July 2012 Draft Standard for Trial Use (DSTU) standard, further restricted by Meaningful Use 2 (MU2) requirements. These documents can be transmitted to Indian Health Service (IHS) Health Information Exchange (HIE) repositories and retrieved by the Electronic Health Record (EHR) Graphical User Interface (GUI) using web services.

## Trademark Notice

Caché® and Ensemble® are registered trademarks of InterSystems Corporation.

Continuity of Care Document® is a registered trademark of Health Level Seven International.

HL7® and Health Level Seven® are registered trademarks of Health Level Seven International.

Windows® is a registered trademark of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

## 1.0 Introduction

The CCDA (BCCD) application is a component of the IHS Resource and Patient Management System (RPMS). The application provides facilities for generating industry standard Clinical Summary, Transitions of Care, Data Portability export summary, and CCD documents that meet the HL7 July 2012 DSTU standard and Meaningful Use 2 specifications.

Clinical Summary and Transitions of Care documents are retrieved by the EHR GUI using web services. Data Portability export summary documents are requested via an RPMS Application Programming Interface (API). CCD documents are generated by a nightly background job or via an RPMS menu option and are transmitted to IHS HIE repositories via web services.

### 1.1 Purpose

CCDA documents can serve a variety of purposes, including enabling clinician access to patient data in an emergency scenario, quality reporting, bio surveillance, patient access to the patient's own data via a Personal Health Record (PHR) system, and medication or allergy reconciliation.

Each CCDA document consists of two components: a human readable part known as a narrative block, which can be displayed by a web browser, and a machine-readable part intended for automated data processing. The machine-readable part may contain more detailed information than the human-readable part.

### 1.2 Scope

A CCDA document is an Extensible Markup Language (XML) document summarizing current and pertinent historical information about an individual patient's health care record at a given facility. Although not every document type contains every section, the current IHS implementation of the CCDA standard supports the following sections:

- Allergies
- Care Team
- Hospital Discharge Instructions (inpatient visits only)
- Functional/Cognitive Status
- Immunizations
- Instructions
- Medications
- Patient

- Plan of Care
- Problems/Encounter Diagnoses
- Procedures
- Reason for Hospitalization (inpatient visits only)
- Reason for Referral
- Reason for Visit (ambulatory visits only)
- Results
- Social History (Smoking Status)
- Vital Signs

### 1.3 Technical Information

This manual provides IHS site managers with a technical description of the CCDA routines, files, menus, cross references, globals, Caché classes, Ensemble productions, and other necessary information required to effectively manage the system.

All routines, files, options, and keys are namespaced, starting with the letters BCCD. The file number range for this package is 90310 – 90310.99. All CCDA Caché and Ensemble classes, productions, and data transformations are contained in Caché class package BCCD.

The CCDA application accesses RPMS data through classes generated by the FileMan-to-Class (FM2C) utility. The FM2C classes are part of the BMW package, which must be installed before CCDA.

### 1.4 Architecture

There are three mechanisms for initiating CCDA documents. At sites running EHR version 1.1, patch 13 or higher, Clinical Summary, and Transitions of Care documents may be requested via the EHR client. At sites that are a part of the IHS Health Information Exchange, CCD documents are automatically generated by a nightly background task for all patients whose data has changed since the previous nightly upload. Data Portability export summary documents can be generated for specific patients or for all patients via an RPMS API.



## 2.0 Orientation

### 2.1 Setup

The following steps are used to set up CCDA at an RPMS site:

1. Calculate the additional disk space required for the BCCD package and allocate disk space.
2. Perform pre-install steps, including enabling Long Strings, verifying access to OS configuration file, designating a directory where the new CCDA database will reside, mapping BMW globals, and stopping CCDA.
3. Install the provided Kernel Installation and Distribution System (KIDS) build.
4. Perform post-install steps, including setting up optional encryption, optional e-mail notifications, disabling journaling in the CCDA database, configuring the CCDA CSP Application, setting up site-specific BCCD parameters, and starting CCDA Messaging.

See the CCDA Installation Manual for further details on the installation and configuration steps.

### 2.2 Architecture

CCDA processing can be initiated in three ways. If EHR version 1.1, patch 13 has been installed and configured at the site, then authorized EHR users are able to request Clinical Summary and Transitions of Care documents for display within the EHR GUI client. If the site is a part of the IHS HIE, then CCD documents are generated nightly for all patients whose data has changed since the previous nightly upload. Data Portability export summary documents can be generated for specific patients or for all patients via an RPMS API.

To accommodate requests from the EHR GUI, Ensemble has a web service process listening for requests for Clinical Summary and Transitions of Care documents.

If the site is part of the IHS HIE, a nightly TaskMan task called BCCD NHIE PUSH JOB is automatically scheduled to run every night at the time specified by the site manager in option Edit CCDA Site Parameters. When this task runs for the first time, it creates new CCDA requests for *all* patients in the RPMS database. On subsequent executions, it finds all patients whose data has changed since the last time it ran and creates new requests in the CCDA queue.

To request Data Portability export summary documents, the site manager accesses an RPMS API. In order to prevent unintended initiation of Data Portability documents, the API is not included as an RPMS option in the menu system. Instead, the site

manager must first access Programmer Mode, then enter the necessary command. Because it is expected that this functionality will rarely, if ever, be used, the IHS Software Quality Assurance (SQA) team will distribute instructions for generating Data Portability documents on an “as needed” basis.

The only difference between CCDA requests created by these three mechanisms is that the DocType property is set to the requested document type and several flags are set to control where the documents are sent. For all these requests, a new entry is placed in the CCDA queue, recording the IDs of the requested patient and visit(s), and sets the record’s status to R (for Request).

The CCDA queue is monitored by BCCD BACKGROUND JOB, the main CCDA generator. It is a persistent TaskMan job started at TaskMan startup time or manually from menu option Manage CCDA transmissions. The job constantly runs in the background until the site manager chooses to stop CCDA. When this TaskMan job finds a new CCDA request with the status of R in the CCDA queue, it changes the request’s status to CS (for Compile Started). It then extracts all relevant RPMS data for the specified patient and visit and adds the data to the body of the CCDA request. Depending on the amount of eligible data in the patient’s records, it may take anywhere from under a second to over 10 seconds to extract all needed data from RPMS.

Once the extraction process for the patient is finished, BCCD BACKGROUND JOB changes the status of the request to CE (for Compile Ended). The job then checks the CCDA queue for other outstanding requests with the status of R. If it does not find any, it goes into hibernation for a specific amount of time, usually one second.

The CCDA queue is also monitored by the CCDA Ensemble production running in the CCDA namespace. When the CCDA production finds a new request whose status is set to CE, it retrieves the CCDA data from the body of the request, changes the status to TS (for Transmission Started), and transforms it into a valid CCDA document. For EHR Clinical Summary and Transitions of Care requests, the document is sent back to the requesting EHR. For Data Portability, the production saves this document to a file. For CCD documents, the production transmits it to an IHS HIE. Finally, the production changes the status of the request to T (for Transmitted).

If a site is a part of the IHS HIE, then the site manager is provided with the URL of the associated CCDA repository. Ensemble uses this URL to send CCDA documents to the repository. HIE CCDA processing typically occurs at night to minimize the impact on RPMS performance.

## 3.0 Implementation and Maintenance

### 3.1 General Information

The CCDA application is designed to work with RPMS through Ensemble-based web services, Caché objects, and FM2C (BMW) classes.

The following table shows the prerequisite patch requirements:

Package and Version	Associated Patch Designation	Brief Patch Description
EHR 1.1 patch 13	EHR*1.1*13	Primarily contains updates to EHR in order to meet Meaningful Use Stage Two Certification.
C32 (BJMD) 1.0 patch 4	BJMD*1.0*4	Disables C32 functionality has the application has been replaced by CCDA. This patch is only required if C32 has previously been installed

### 3.2 System Requirements

Module	Minimum Version
BMW	The BMW application generates Ensemble classes that are distributed in a CACHE.DAT file. These classes must be installed and the generation date of the classes must be January 2, 2014 or later.
VA FileMan (DI)	v22.0 Patch 1017
VA Kernel (XU)	v8.0 Patch 1017
IHS/VA Utilities (XB)	v3.0 through Patch 11
Taxonomy (ATX)	v5.1 through Patch 10
IHS Pharmacy Modifications (APSP)	V7.0 through Patch 1007

### 3.3 Package-wide Variables

The CCDA application-wide variables start with the % character, which ensures that they have a process-wide scope when Caché ObjectScript procedures are used. Their use aids CCDA error analysis.

Variable	Brief Description
%DFN	Internal entry number (IEN) of the requested patient; also known as the DFN

---

Variable	Brief Description
%BCCDQID	Internal ID of the CCDA queue record being processed

### 3.4 Security Keys

The CCDA application does not introduce new security keys.

## 4.0 CCDA Menu

The CCDA application has one RPMS menu used by site managers, CCDA MENU [BCCD MENU], which comprises the following four menu options:

- Edit CCDA Site Parameters [BCCD EDIT SITE PARAMETERS]
- Generate CCD for a single patient [BCCD CCDGENONE]
- Generate CCD documents for all patients in RPMS [BCCD CCDALLGEN]
- Manage CCDA transmissions [BCCD CCDA MGR]

The CCDA application contains no menu options accessible to end users.

## 5.0 Routine Descriptions

### 5.1 Routine List

BCCD1E00

BCCD1P00

BCCDCLAS

BCCDDPT

BCCDEDIT

BCCDPAT

BCCDPUSH

BCCDTSK

BCCDTX

BCCDTXA

BCCDTXAB

BCCDTXAC

BCCDTXAD

BCCDUTIL

BCCDUTL1

### 5.2 Routines with Description

<b>Routine</b>	<b>Description</b>
BCCD1E00	KIDS environmental check routine
BCCD1P00	KIDS post-installation routine
BCCDCLAS	Used by the post-installation routine to decrypt and decompress Caché/Ensemble class definitions
BCCDDPT	API for requesting Data Portability export summary documents
BCCDEDIT	Edit CCDA site-specific parameters

<b>Routine</b>	<b>Description</b>
BCCDPAT	RPMS options for requesting one patient upload to HIE, requesting all patients upload to HIE, and starting and stopping CCDA.
BCCDPUSH	TaskMan task active only if the site participates in the IHE HIE; identifies recently modified patient records that need new CCD documents generated
BCCDTSK	TaskMan task that monitors the CCDA queue for new requests and extracts data from RPMS
BCCDTX	Creates the BCCD NO LIMIT LOINC CODES Taxonomy
BCCDTXA	Continuation of BCCDTX
BCCDTXAB	Continuation of BCCDTX
BCCDTXAC	Continuation of BCCDTX
BCCDTXAD	Continuation of BCCDTX
BCCDUTIL	Contains utility subroutines used by the extract process
BCCDUTL1	Contains additional utility subroutines used by the extract process

## 6.0 Files and Tables

### 6.1 File List

File #	Filename	Description
90310.01	BCCD SITE PARAMETERS	Contains site-specific CCDA parameters
90310.02	BCCD MESSAGE TYPE	Contains of message type-specific CCDA parameters
90310.03	BCCD CLASS TRANSPORT	Contains packed Caché and Ensemble classes, which are used to transfer class definitions via a KIDS build

### 6.2 File Access

File #	Filename	GL	RD	WR	LYG	DD	DEL
90310.01	BCCD SITE PARAMETERS	^BCCDS(90310.01,	@	@	@	@	@
90310.02	BCCD MESSAGE TYPE	^BCCDS(90310.02,	@	@	@	@	@
90310.03	BCCD CLASS TRANSPORT	^BCCDCLS(	@	@	@	@	@

### 6.3 Cross References

90310.01 (BCCD SITE PARAMETERS)

.01 HOME SITE

B regular cross reference

90310.02 (BCCD MESSAGE TYPE)

.01 MESSAGE TYPE

B regular cross reference

90310.021 (ALLOWED CS PROVIDER CLASS)

.01 ALLOWED CS PROVIDER CLASS

B regular cross reference

90310.03 (BCCD CLASS TRANSPORT)



## .01 PACKAGE NAME

B regular cross reference

**6.4 Table File**

File: 90310.01 BCCD SITE PARAMETERS

Global: ^BCCDS(90310.01,

Field #	Field Name	Subscript	Piece	Type
.01	HOME SITE	D0,0	1	F
.02	BACKGROUND JOB DELAY	D0,0	2	N
.03	RECORD GLOBAL REFERENCES	D0,0	3	S
.04	CCDA ENABLED	D0,0	4	S
.05	DATE CCDA INSTALLED	D0,0	5	D
.06	TIME TO RUN NIGHTLY TASK	D0,0	6	F

File: 90310.02 BCCD MESSAGE TYPE

Global: ^BCCDS(90310.02,

Field #	Field Name	Subscript	Piece	Type
.01	MESSAGE TYPE	D0,0	1	S
.02	LAST PUSH DATE TIME	D0,0	2	D
.03	DESCRIPTION	D0,0	3	F
.04	DAYS KEEP TRANSMISSION ENTRIES	D0,0	4	N
.05	ENABLED	D0,0	5	S
1	REPOSITORY LOCATION	D0,1	1	F
2.01	ADD SOCIAL ENVIRONMENT PROB	D0,2	1	S
2.02	ADD INACTIVE PERS HISTORY PROB	D0,2	2	S
2.03	DISCHARGE PLANNER PROV TYPE	D0,2	3	P
2.04	DISPLAY THE SMOKING START DATE	D0,2	4	S
3	ALLOWED CS PROVIDER CLASS	D0,3,D1,0	1	P

File: 90310.03 BCCD CLASS TRANSPORT

Global: ^BCCDCLS(

<b>Field #</b>	<b>Field Name</b>	<b>Subscript</b>	<b>Piece</b>	<b>Type</b>
.01	PACKAGE NAME	D0,0	1	F
.02	RPMS STATUS	D0,1	2	S
.03	RPMS DATE/TIME INSTALLED	D0,1	3	D
10	XML	D0,10,D1, 0	1	W
11	CLASS	D0,2,D1,0	1	F

## 7.0 External Relations

### 7.1 Callable Routines

CCDA has no callable routines. All entry points and routines are called internally or via options with the exception of the Published Entry Point listed in Section 7.2.

### 7.2 Published Entry Points

Routine	Description
AUDITHIE^BCCDUTIL	Returns the first successful HIE transmission date/time for a visit

### 7.3 Exported Options

Option Name	Description
BCCD BACKGROUND JOB	Main CCDA background processor; runs continuously in the background when CCDA is running
BCCD EDIT SITE PARAMETERS	Option to edit CCDA site parameters, accessible by the site manager
BCCD GEN ALL	Option to generate HIE requests for all patients in RPMS
BCCD GEN ONE	Option to generate an HIE request for one patient in RPMS
BCCD MENU	Main CCDA menu; contains options accessible by the site manager. This menu should only be assigned to site managers.
BCCD MGR	Option to start and stop CCDA
BCCD NHIE PUSH JOB	Nightly task that identifies patient records for which CCDA document need to be generated and transmitted to HIE; runs only at sites that participate in IHS HIE

## 8.0 Internal Relations

The document generation process, including transmission, requires the CCDA background jobs and the Ensemble production be running. Generally, these processes are started by accessing the Manage CCDA transmissions in CCDA Menu and electing to start CCDA. The site manager will be able to start CCDA only if the CCDA ENABLED setting in the BCCD SITE PARAMETERS file is set to Y (YES).

The CCDA web service requires the Ensemble production to be running. Web service requests made when the Ensemble production is stopped will receive a “CSP timeout” Simple Object Access Protocol (SOAP) fault.

The ONE and ALL options on CCDA Menu can be accessed when CCDA is stopped. For the ONE option, the request will be put on the CCDA queue but will not be processed until CCDA is started. For the ALL option, the requests will not be queued until the BCCD NHIE PUSH JOB nightly task runs.

## 9.0 Archiving and Purging

The CCDA installation process automatically schedules a purge task for every Sunday at midnight. The purge task deletes queue entries older than the value in the `DAYS KEEP TRANSMISSION ENTRIES` setting in the `BCCD MESSAGE TYPE` file. This parameter can be modified by site managers via the `BCCD EDIT SITE PARAMETERS` option. The purge task also deletes Ensemble messages older than seven days. While the queue entries and Ensemble messages can be useful when investigating an issue with CCDA processing, they are no longer used once the CCDA document has reached its intended destination. Therefore, they should be purged regularly to prevent them from consuming an excessive amount of disk space.

## 10.0 Documentation Resources

This section describes a few methods to generate online technical documentation.

### 10.1 RPMS System Documentation

Online VPS system documentation can be generated through the use of several Kernel options, including, but not limited to:

- %INDEX
- Menu Management
- Inquire Option
- Print Option File
- VA FileMan
- Data Dictionary Utilities
- List File Attributes

For more option listings and further information about other utilities that supply online technical information, see the Decentralized Hospital Computer Program (DHCP) Kernel Reference manual.

#### 10.1.1 %INDEX

The %INDEX option analyzes the structure of a routine to determine in part, if the routine adheres to RPMS programming standards. The output can include the following components:

- Compiled list of errors and warnings
- Routine listing
- Local variables
- Global variables
- Naked globals
- Label references
- External references
- Running %INDEX for a specified set of routines allows users to discover any deviations from RPMS programming standards that exist, and to see how routines interact with one another (i.e., which routines call or are called by other routines).
- To run %INDEX for the VPS system:
- At the “Routine(s)?” prompt, type the BCCD namespace.

### 10.1.2 Inquire Options

The Inquire menu management option provides the following information about a specified option:

- Option name
- Menu text
- Option description
- Type of option
- Lock (if any)

In addition, all items on the menu are listed for each menu option. To secure information about CCDA options, specify the BCCD namespace.

### 10.1.3 Print Option File

The Print Option File utility generates a listing of options from the Option file (#19). Users can print all of the entries or a single option or range of options.

### 10.1.4 List File Attributes

This VA FileMan option allows users to generate documentation pertaining to files and file structure. The standard format of this option provides the following data dictionary information for a specified file:

- File name and description
- Identifiers
- Cross-references
- Files pointed to by the file specified
- Files that point to the file specified
- Input, print, and sort templates

In addition, the following applicable data is supplied for each field in the file:

- Field name, number, title, and description
- Global location
- Help prompt
- Cross-references
- Input transform
- Date last edited
- Notes

Using the Global Map format of this option generates an output that lists the following information:

- All cross-references for the file selected
- Global location of each field in the file
- Input, print, and sort templates

For a comprehensive listing of BCCD files, see Section 6.0.

## 10.2 RPMS Online Help

In addition to system documentation, RPMS includes special help displays for most menu options and data entry prompts. Typing one question mark (?) at the “Select . . . Option” prompt displays information related to the current option, where:

Typing . . .	Displays . . .
one question mark (?)	a list of all options accessible from the current option.
two question marks (??)	a list of all accessible options and their formal names
three question marks (???)	a brief description for each option in a menu.
one question mark (?) followed by an option name (?OPTION)	extended help, if available, for that option

## 10.3 Ensemble Online Help

Ensemble includes extensive online documentation for everything from the Caché ObjectScript language to Ensemble system management. The online documentation can be accessed by clicking on the Ensemble cube and selecting **Documentation**. The online documentation includes search functionality and a master index to aid in finding relevant documentation.

## 10.4 Ensemble Class Documentation

Online documentation is available for Ensemble classes. The documentation includes a page for each class, containing a listing and brief description of each parameter, property, method, and query in the class and optionally a description of the class. The class documentation can be viewed by accessing the Ensemble online documentation page, as described in section 10.3, then clicking on **Class Reference** near the top of the page.

Class information can also be obtained via the Class Browser, available in Ensemble Studio. The Class Browser allows the user to view class information, such as property information, interactively.



## 10.5 Web Service Specification

The CCDA web service provides an API for requesting and retrieving Clinical Summary and Transitions of Care documents from RPMS. The associated Web Services Description Language (WSDL) file defines the parameters of the web service, including the format of the request and response SOAP messages and the location of the web service. Further information about the web service, including the WSDL, sample request and response messages, and a list of error codes, is given in Appendix E.

## **11.0 SAC Requirements and Exemptions**

The CCDA application has not been granted any SAC exemptions.

## Appendix A: CCDA Ensemble/Caché Class Development and Deployment

### A.1 Description of Development Environment

The CCDA application was developed using RPMS routines, Caché objects, Caché ObjectScript, and Ensemble productions and data transformations. All new classes created for the CCDA application exist in the RPMS namespace BCCD.

All CCDA Caché and Ensemble classes are delivered in a KIDS build and stored in a regular FileMan file in packed, compressed, and Base64-encoded XML format. The KIDS post-install routine unpacks, uncompresses, decodes, and installs the CCDA classes in the designated Ensemble namespace using class package mapping.

### A.2 CCDA Server Requirements

The CCDA application requires Ensemble 2012.2 or later to run. It does not run under Ensemble 2012.1 or any earlier version. CCDA does not require a specific version of the operating system (OS). The CCDA application requires the BMW classes to be installed (generated after January 2, 2014).

### A.3 Deployment of CCDA Classes

All Caché and Ensemble classes included in the BCCD package are delivered to RPMS sites in packed format as global data within a standard KIDS build. When the KIDS build is created, classes are packed into global nodes using a class exporter, which exports their definitions to a stream as XML, compresses the result, Base64-encodes it, and outputs it to a FileMan word-processing field in file 90310.03.

At the RPMS site, the post-installation part of the KIDS build invokes DO IMPORT^BCCDCLAS, which reverses the packing operation. The subroutine reads the data from the FileMan word-processing field in file 90310.03, Base64-decodes it, uncompresses the result to a stream, then recreates the class definitions from the stream. Even though the KIDS installation process takes place in the RPMS namespace, all BCCD classes are installed in the associated CCDA namespace due to package mapping. The installation process also stops the CCDA Ensemble production and the CCDA generator before installing the BCCD package.

## Appendix B: CCDA Data Elements

CCDA documents are properly formed XML documents that comply with the HL7 Implementation Guide for CDA Release 2: IHE Health Story Consolidation, DSTU Release 1.1 (US Realm) Draft Standard for Trial Use, July 2012 specification, further restricted by Meaningful Use 2 requirements. Individual data elements are listed in this appendix by section.

### B.1 General Header

CCDA locations in this section are assumed to be under the /ClinicalDocument element.

Data Element	Description	CCDA Location	Value Set
Start Date	Start date for the requested visit	componentOf/encompassingEncounter/effectiveTime/low/@value	
End Date	End date for the requested visit	componentOf/encompassingEncounter/effectiveTime/high/@value	
Info Source Name	Name of the organization and facility the information came from	N/A	
Rep Organization	Name of organization and facility the document came from	author/assignedAuthor/representedOrganization/name	
Author ID	Identifier for the facility generating the document	author/assignedAuthor/id/@extension custodian/assignedCustodian/representedCustodianOrganization/id/@extension	
Author Address	Address of the facility generating the document	author/assignedAuthor/addr custodian/assignedCustodian/representedCustodianOrganization/addr	
Author Phone	Telephone number of the facility generating the document	author/assignedAuthor/telecom/@value custodian/assignedCustodian/representedCustodianOrganization/telecom/@value	

Data Element	Description	CCDA Location	Value Set
Author Email Address	Email address of the facility generating the document	author/assignedAuthor/elecom/@value	
Author Model Name	Name of the device generating the document	author/assignedAuthor/assignedAuthoringDevice/manufacturerModelName custodian/assignedCustodian/representedCustodianOrganization/name	
Author Software Name	Name of the software generating the document	author/assignedAuthor/assignedAuthoringDevice/softwareName	
Facility Name	Name of the facility generating the document	part of title	
Visit Location ID	Identifier for the facility where the visit took place	componentOf/encompassingEncounter/id/@extension	
Visit Location Name	Name of the facility where the visit took place	componentOf/encompassingEncounter/location/healthCareFacility/location/name	
Visit Location Address	Address of the facility where the visit took place	componentOf/encompassingEncounter/location/healthCareFacility/location/addr	

## B.2 Patient

CCDA locations in this section are assumed to be under the /ClinicalDocument/recordTarget/patientRole element.

Data Element	Description	CCDA Location	Value Set
CCD ID	Patient identifier	id/@extension	
CCD HRN	Patient health record number	id/@extension	
Name	Patient name	patient/name	
Home Address	Patient's home address	addr	
Work Address	Patient's work address	addr	
Temporary Address	Patient's temporary address	addr	

Data Element	Description	CCDA Location	Value Set
Home Phone	Patient's home telephone number	telecom	
Work Phone	Patient's work telephone number	telecom	
Mobile Phone	Patient's mobile telephone number	telecom	
Age	Patient age	N/A	
Date of Birth	Patient's date of birth	patient/birthTime/@value	
Email Address	Patient's email address	telecom	
Gender	Patient's gender	patient/administrativeGenderCode/@code	Administrative Gender (HL7 V3) 2.16.840.1.113883.1.11.1
Marital Status	Patient's marital status	patient/maritalStatus/@code	HL7 Marital Status 2.16.840.1.113883.1.11.12212
Race	Patient's race	patient/raceCode/@code	Race: 2.16.840.1.113883.1.11.14914
Ethnicity	Patient's ethnicity	patient/ethnicGroupCode/@code	Ethnicity Value Set: 2.16.840.1.114222.4.11.837
Language	Patient's preferred language	patient/languageCommunication/languageCode/@code	Language: 2.16.840.1.113883.1.11.11526
Communication Method	Patient's preferred communication method	Comment with the format <!-- PreferredCommunicationMethod="x" -->	

### B.3 Allergy

CCDA locations in this section are assumed to be under the  
/ClinicalDocument/component/structuredBody/component/section/entry/act element.

Data Element	Description	CCDA Location	Value Set
Allergy ID	Allergy identifier	id/@extension	
Start Date	Date when the allergy began	entryRelationship/observation/effectiveTime/low/@value	

Data Element	Description	CCDA Location	Value Set
Adverse Event Type	SNOMED code for the allergy/adverse event type	entryRelationship/observation/value/@code	Allergy/Adverse Event Type: 2.16.840.1.113883.3.88.12.3221.6.2
Product Free Text	Name of the allergen	entryRelationship/observation/participant/participantRole/playingEntity/code/originalText/reference/@value (pointer)	
Product Code	Code corresponding to the allergen	entryRelationship/observation/participant/participantRole/playingEntity/code/@code	Medication Brand Name 2.16.840.1.113883.3.88.12.80.16 Medication Clinical Drug 2.16.840.1.113883.3.88.12.80.17 Medication Drug Class 2.16.840.1.113883.3.88.12.80.18 Ingredient Name 2.16.840.1.113883.3.88.12.80.20
Product Code System	OID of the code system for the Product Code	entryRelationship/observation/participant/participantRole/playingEntity/code/@codeSystem	
Status	Status of the allergy	statusCode/@code	ProblemAct statusCode: 2.16.840.1.113883.11.20.9.19
Severity	SNOMED codes corresponding to the severity of the allergy	entryRelationship/observation/entryRelationship/observation/value/@code	Problem Severity 2.16.840.1.113883.3.88.12.3221.6.8
Comment	Additional information about the allergy	Narrative only	
No Allergy Code	Code indicating whether there was an allergy assessment	N/A	
Allergy Reaction: Reaction ID	Allergy reaction identifier	entryRelationship/observation/entryRelationship/observation/id/@extension	
Allergy Reaction: Reaction	Text indicating the reaction	Narrative only	

Data Element	Description	CCDA Location	Value Set
Allergy Reaction: Code	SNOMED code of the reaction	entryRelationship/observation/entryRelationship/observation/value/@code	Problem 2.16.840.1.113883.3.88.12.3221.7.4
Allergy Code: Product Code	Code indicating the product causing the allergy	entryRelationship/observation/participant/participantRole/playingEntity/code/@code	Medication Brand Name 2.16.840.1.113883.3.88.12.80.16 Medication Clinical Drug 2.16.840.1.113883.3.88.12.80.17 Medication Drug Class 2.16.840.1.113883.3.88.12.80.18 Ingredient Name 2.16.840.1.113883.3.88.12.80.20
Allergy Code: Product Code System	OID of the code system for the product code	entryRelationship/observation/participant/participantRole/playingEntity/code/@codeSystem,	

## B.4 Care Team

CCDA locations in this section are assumed to be under both the `/ClinicalDocument/documentationOf/serviceEvent/performer/assignedEntity` and `/ClinicalDocument/componentOf/encompassingEncounter/encounterParticipant/assignedEntity` elements unless otherwise specified.

Data Element	Description	CCDA Location	Value Set
Provider ID	Provider Identifier	id/@extension	
Provider ID Type	Indication of whether the value in the Provider ID field is a National Provider Identifier (NPI) or local identifier	Used to determine id/@root	
Label	Label used in the narrative	Narrative only	
NUCC Provider Code	NUCC provider taxonomy	code/@code (documentationOf only)	Healthcare Provider Taxonomy (NUCC - HIPAA) 2.16.840.1.114222.4.11.1066
Address	Provider address	addr	
Phone	Provider telephone number	telecom/@value	



Data Element	Description	CCDA Location	Value Set
Phone Use	Code indicating the type of telephone number in the Phone field	telecom/@use	Telecom Use (US Realm Header) 2.16.840.1.113883.11.2 0.9.20
Email	Provider email address	telecom/@value	
Email Use	Code indicating the type of email address in the Email field	telecom/@use	Telecom Use (US Realm Header) 2.16.840.1.113883.11.2 0.9.20
Name	Provider name	assignedPerson/name	
Referral Number	Referral number (for referring providers)	Narrative only	

## B.5 Functional Status

The Functional Status section does not contain a structured data section, so all elements are narrative only.

Data Element	Description	CCDA Location	Value Set
Value	Functional status text	Narrative only	
Date	Functional status date	Narrative only	
Code	SNOMED code for functional statuses related to problems	Narrative only	
Status	Active/inactive status	Narrative only	

## B.6 Hospital Discharge Instructions

The Hospital Discharge section does not contain a structured data section, so all elements are narrative only.

Data Element	Description	CCDA Location	Value Set
Text	Text for one line of the instructions	Narrative only	

## B.7 Immunization

CCDA locations in this section are assumed to be under the /ClinicalDocument/component/structuredBody/component/section/entry/substanceAdministration element.

Data Element	Description	CCDA Location	Value Set
Immunization ID	Immunization identifier	id/@extension	
Refusal	Boolean value indicating whether the immunization was refused	Used to determine @negationInd	
Mood Code	Mood code indicating whether the immunization was given or is planned	@moodCode	MoodCodeEvnInt 2.16.840.1.113883.11.2 0.9.18
Free Text Product Name	Name of the immunization	text/reference/@value (pointer)	
Administered Date	Date the immunization was administered	effectiveTime	
Coded Product Name	CVX code of the vaccine	consumable/manufacturedProduct/manufacturedMaterial/code/@code	Vaccine Administered Value Set 2.16.840.1.113883.3.88.12.80.22
Due Date	Recommended date for a future immunization	effectiveTime	
Dose Quantity	Immunization dose	doseQuantity/@value	
Lot Number	Lot number of the vaccine	consumable/manufacturedProduct/manufacturedMaterial/lotNumberText	
Drug Manufacturer	Manufacturer of the vaccine	consumable/manufacturedProduct/manufacturedOrganization/name	
Performer	Provider administering the immunization	performer/assignedEntity/AssignedPerson/name	
Refusal Reason Code	Code indicating the reason for refusal	entryRelationship/observation/code/@code	No Immunization Reason Value Set 2.16.840.1.113883.1.11.19717
Refusal SNOMED	SNOMED code indicating the reason for refusal	Narrative only	

## B.8 Instruction

CCDA locations in this section are assumed to be under the /ClinicalDocument/component/structuredBody/component/section/entry/act element.

Data Element	Description	CCDA Location	Value Set
Type	Code specifying whether the instruction is an instruction, a patient decision aid, or a care planning activity	Used to group instructions in the narrative	
Text	Instruction text	Narrative only	
Code	Code indicating the type of instruction	code/@code	Patient Education 2.16.840.1.113883.11.2 0.9.34
Organizer: Text	Problem name for problem-based instructions	text	

## B.9 Medication

CCDA locations in this section are assumed to be under the /ClinicalDocument/component/structuredBody/component/section/entry/substanceAdministration element.

Data Element	Description	CCDA Location	Value Set
Type of Medication	Specifies the type of medication	Used to group medications in the narrative	
Medication ID	Medication identifier	id/@extension	
Mood Code	Mood code indicating whether the medication was taken in the past or is intended to be taken in the future	@moodCode	MoodCodeEvnInt 2.16.840.1.113883.11.2 0.9.18
Sig	Medication sig.	text/reference/@value (pointer)	
Status	Medication status	statusCode/@code	
Started Date/Time	Date medication was started	effectiveTime/low/@value	
Stopped Date/Time	Date medication was stopped	effectiveTime/high/@value	
Fills	Number of administrations or number of allowed administrations	repeatNumber/@value	

Data Element	Description	CCDA Location	Value Set
Route	Code indicating the route of administration	routeCode/@code	Medication Route FDA Value Set 2.16.840.1.113883.3.88.12.3221.8.7
Dose	Dose	doseQuantity/@value	
Dose Units	Dose Units	doseQuantity/@unit	
Product Form	Code indicating the product form	administrationUnitCode/@code	Medication Product Form 2.16.840.1.113883.3.88.12.3221.8.11
Hold Text	Hold reason	Narrative only	
Refills Remaining	Number of refills remaining	Narrative only	
Coded Product Name	RxNorm code indicating the medication prescribed	consumable/manufacturedProduct/manufacturedMaterial/code/@code	
Display Product Name	Display name of the medication	consumable/manufacturedProduct/manufacturedMaterial/code/@displayName	Medication Clinical Drug 2.16.840.1.113883.3.88.12.80.17
Free Text Product Name	Human-readable name of the medication	consumable/manufacturedProduct/manufacturedMaterial/code/originalText/reference/@value (pointer)	
Drug Manufacturer	Name of the drug manufacturer	consumable/manufacturedProduct/manufacturedOrganization/name	
Order Number	Order identifier	entryRelationship/supply/id/@extension	
Order Expiration Date/Time	Order expiration	entryRelationship/supply/effectiveTime/high/@value	
Quantity Ordered Value	Quantity ordered	entryRelationship/supply/quantity/@value	
Quantity Ordered Units	Quantity ordered units	entryRelationship/supply/quantity/@unit	
Order Date/Time	Date/time of order	entryRelationship/supply/author/time/@value	
Ordering Provider	Provider placing the order	entryRelationship/supply/author/assignedAuthor/assignedPerson/name	

Data Element	Description	CCDA Location	Value Set
Med Frequency: Conjunction	Conjunction linking medication frequencies	effectiveTime/@operator	
Med Frequency: Frequency	Text indicating the medication frequency	effectiveTime	
Med Frequency: Order	Number indicating the order of med frequency items	Used to sort the medication frequency items	
Med Dispense: Prescription Number	Prescription number	entryRelationship/supply/id/@extension	
Med Dispense: Fill Status	Code indicating whether the prescription was filled	entryRelationship/supply/statusCode/@code	Medication Fill Status 2.16.840.1.113883.3.88.12.80.64
Med Dispense: Dispense Date	Date the medication was dispensed	entryRelationship/supply/effectiveTime/@value	
Med Dispense: Fill Number	Number indicating which fill is being documented	entryRelationship/supply/repeatNumber/@value	
Med Dispense: Quantity Dispensed	Quantity dispensed	entryRelationship/supply/quantity/@value	
Med Dispense: Provider	Entity performing the dispensation	entryRelationship/supply/performer/assignedEntity/representedOrganization/name	
Med Dispense: Location	Address of the dispensing entity	entryRelationship/supply/performer/assignedEntity/addr	

## B.10 Plan of Care

The Plan of Care section does not contain a structured data section, so all elements are narrative only.

Data Element	Description	CCDA Location	Value Set
Type	Code specifying whether the item is a goal or a plan of care.	Narrative only	
Text	Goal or care plan text	Narrative only	
Organizer: Text	Problem name for problem-based instructions	Narrative only	

## B.11 Problem

CCDA locations in this section are assumed to be under the  
/ClinicalDocument/component/structuredBody/component/section/entry/act element.

Data Element	Description	CCDA Location	Value Set
Problem ID	Problem identifier	id/@extension	
POV	Purpose of visit flag	Narrative only	
Status	Problem status	statusCode/@code	ProblemAct statusCode 2.16.840.1.113883.11.2 0.9.19
Effective Time	Problem start date	effectiveTime/low/@value entryRelationship/observation/effectiveTime/low/@value	
Resolve Date	Problem resolution date	effectiveTime/high/@value entryRelationship/observation/effectiveTime/high/@value	
Code	Code indicating the type of problem	N/A	
Text	Text description of the problem	entryRelationship/observation/value/@displayName entryRelationship/observation/value/translation/@displayName entryRelationship/observation/text/reference/@value (pointer)	
Coded Value	Code indicating the problem	entryRelationship/observation/value/@code entryRelationship/observation/value/translation/@code	Problem Type 2.16.840.1.113883.3.88. 12.3221.7.2
Coded Value Code System	OID of the code system of the Coded Value	entryRelationship/observation/value/@codeSystem entryRelationship/observation/value/translation/@codeSystem	

Data Element	Description	CCDA Location	Value Set
Age At Onset	Patient age at onset of problem	entryRelationship/observation/observation/entryRelationship/value/@value	

## B.12 Procedure

CCDA locations in this section are assumed to be under the `/ClinicalDocument/component/structuredBody/component/section/entry/procedure` element.

Data Element	Description	CCDA Location	Value Set
Procedure ID	Procedure identifier	id/@extension	
Date/Time	Date/time of procedure	effectiveTime/@value	
Code	Code indicating the procedure performed	code/@code code/translation/@code	
Code System	OID of the code system for the Code	code/@codeSystem code/translation/@codeSystem	
Code Description	Description of the procedure	code/@displayName code/translation/@displayName code/originalText/reference/@value (pointer)	
Performer ID	Identifier of the person performing the procedure	performer/assignedEntity/id/@extension	
Performer Address	Address of the person performing the procedure	performer/assignedEntity/addr	
Performer Phone	Telephone number of the person performing the procedure	performer/assignedEntity/telecom/@value	
Current Facility	Flag indicating whether the procedure was performed at the current facility	Used to sort the procedures in the narrative	

## B.13 Result

CCDA locations in this section are assumed to be under the `/ClinicalDocument/component/structuredBody/component/section/entry/organizer` element.

Data Element	Description	CCDA Location	Value Set
Result ID	Result identifier	component/observation/ id/@extension	
Type Code	LOINC code indicating the type of result	component/observation/ code/@code	
Type Code System	OID of the code system for Type Code	component/observation/ code/@codeSystem	
Type Name	Text indicating the type of result	component/observation/ code/@displayName component/observation/ text/reference/@value (pointer)	
Date/Time	Date/time of the result	component/observation/ effectiveTime/@vaue	
Value	Result value	component/observation/ value/@value component/observation/ value/originalText/refere nce/@value (pointer)	
Unit	Result units	component/observation/ value/@unit component/observation/ value/originalText/refere nce/@value (pointer)	
Interpretation Code	Result interpretation code	component/observation/ interpretationCode/@co de	
Reference Range	Result reference range	component/observation/ referenceRange/observ ationRange/text	
Organizer: Organizer ID	Panel or individual test identifier	id/@extension	
Organizer: Code	LOINC code indicating the panel or individual test	code/@code	
Organizer: Code System	OID of the code system for Code	code/@codeSystem	
Organizer: Name	Name of the panel or individual test	code/@displayName	
Organizer: Group Type	Code indicating whether the group is a panel, individual test, or skin test	Used to sort results in the narrative	



## B.14 Social History

CCDA locations in this section are assumed to be under the /ClinicalDocument/component/structuredBody/component/section/entry/observation element.

Data Element	Description	CCDA Location	Value Set
Smoking Status Start Date	Date the patient started smoking	effectiveTime/low/@value	
Smoking Status End Date	Date the patient stopped smoking	effectiveTime/high/@value	
Smoking Status Code	Code indicating the patient's smoking status	value/@code	Smoking Status 2.16.840.1.113883.10.2 2.4.78
Smoking Status Comment	Comment associated with patient's smoking status	Narrative only	

## B.15 Vital Sign

CCDA locations in this section are assumed to be under the /ClinicalDocument/component/structuredBody/component/section/entry/organizer element.

Data Element	Description	CCDA Location	Value Set
Measurement Date	Date of measurement	effectiveTime/@value	
Vital Sign ID	Vital sign identifier	component/observation/id/@extension	
Result Type	LOINC code indicating the type of measurement	component/observation/code/@code	HITSP Vital Sign Result Type 2.16.840.1.113883.3.88. 12.80.62
Measurement Date/Time	Date/time of measurement	component/observation/effectiveTime/@value	
Unit	Measurement units	component/observation/value/@value component/observation/text/reference/@value (pointer)	
Value	Measurement value	component/observation/value/@unit component/observation/text/reference/@value (pointer)	

## Appendix C: List of CCDA Classes

### C.1 Audit

The BCCD.Audit classes support the auditing of CCDA requests and the throttling of errors within the CCDA extract process.

- BCCD.Audit.AuditLog
- BCCD.Audit.ErrorThrottle

### C.2 CCDA

The BCCD.CCDA classes were generated from the HL7 XML schema via Ensemble's XML Schema Wizard. The classes are used to support the generation of the document XML.

- BCCD.CCDA.ActClass
- BCCD.CCDA.ActClassComposition
- BCCD.CCDA.ActClassCondition
- BCCD.CCDA.ActClassContract
- BCCD.CCDA.ActClassControlAct
- BCCD.CCDA.ActClassDocument
- BCCD.CCDA.ActClassEntry
- BCCD.CCDA.ActClassExtract
- BCCD.CCDA.ActClassFinancialContract
- BCCD.CCDA.ActClassObservation
- BCCD.CCDA.ActClassObservationSeries
- BCCD.CCDA.ActClassOrganizer
- BCCD.CCDA.ActClassPublicHealthCase
- BCCD.CCDA.ActClassROI
- BCCD.CCDA.ActClassRoot
- BCCD.CCDA.ActClassSupply
- BCCD.CCDA.ActClinicalDocument
- BCCD.CCDA.ActContainer
- BCCD.CCDA.ActMood

- BCCD.CCDA.ActMoodCompletionTrack
- BCCD.CCDA.ActMoodIntent
- BCCD.CCDA.ActMoodPredicate
- BCCD.CCDA.ActRelationshipAccounting
- BCCD.CCDA.ActRelationshipConditional
- BCCD.CCDA.ActRelationshipCostTracking
- BCCD.CCDA.ActRelationshipExcerpt
- BCCD.CCDA.ActRelationshipFulfills
- BCCD.CCDA.ActRelationshipHasComponent
- BCCD.CCDA.ActRelationshipObjective
- BCCD.CCDA.ActRelationshipOutcome
- BCCD.CCDA.ActRelationshipPertains
- BCCD.CCDA.ActRelationshipPosting
- BCCD.CCDA.ActRelationshipReason
- BCCD.CCDA.ActRelationshipReplacement
- BCCD.CCDA.ActRelationshipSequel
- BCCD.CCDA.ActRelationshipType
- BCCD.CCDA.AD
- BCCD.CCDA.AdditionalLocator
- BCCD.CCDA.AddressPartType
- BCCD.CCDA.AddressUse
- BCCD.CCDA.ADXP
- BCCD.CCDA.adxp.additionalLocator
- BCCD.CCDA.adxp.buildingNumberSuffix
- BCCD.CCDA.adxp.careOf
- BCCD.CCDA.adxp.censusTract
- BCCD.CCDA.adxp.city
- BCCD.CCDA.adxp.country
- BCCD.CCDA.adxp.county
- BCCD.CCDA.adxp.delimiter

- BCCD.CCDA.adxp.deliveryAddressLine
- BCCD.CCDA.adxp.deliveryInstallationArea
- BCCD.CCDA.adxp.deliveryInstallationQualifier
- BCCD.CCDA.adxp.deliveryInstallationType
- BCCD.CCDA.adxp.deliveryMode
- BCCD.CCDA.adxp.deliveryModeIdentifier
- BCCD.CCDA.adxp.direction
- BCCD.CCDA.adxp.houseNumber
- BCCD.CCDA.adxp.houseNumberNumeric
- BCCD.CCDA.adxp.postalCode
- BCCD.CCDA.adxp.postBox
- BCCD.CCDA.adxp.precinct
- BCCD.CCDA.adxp.state
- BCCD.CCDA.adxp.streetAddressLine
- BCCD.CCDA.adxp.streetName
- BCCD.CCDA.adxp.streetNameBase
- BCCD.CCDA.adxp.streetNameType
- BCCD.CCDA.adxp.unitID
- BCCD.CCDA.adxp.unitType
- BCCD.CCDA.ANY
- BCCD.CCDA.ANYNonNull
- BCCD.CCDA.ApplicationMediaType
- BCCD.CCDA.AskedButUnknown
- BCCD.CCDA.AudioMediaType
- BCCD.CCDA.BIN
- BCCD.CCDA.bin1
- BCCD.CCDA.BinaryDataEncoding
- BCCD.CCDA.bl
- BCCD.CCDA.BL1
- BCCD.CCDA.bn

- BCCD.CCDA.BN1
- BCCD.CCDA.BuildingNumber
- BCCD.CCDA.BXITCD
- BCCD.CCDA.BXITIVLPQ
- BCCD.CCDA.CalendarCycle
- BCCD.CCDA.CalendarCycleOneLetter
- BCCD.CCDA.CalendarCycleTwoLetter
- BCCD.CCDA.CD
- BCCD.CCDA.CE
- BCCD.CCDA.CE1
- BCCD.CCDA.Classes
- BCCD.CCDA.CommunicationFunctionType
- BCCD.CCDA.CompressionAlgorithm
- BCCD.CCDA.ContextControl
- BCCD.CCDA.ContextControlAdditive
- BCCD.CCDA.ContextControlNonPropagating
- BCCD.CCDA.ContextControlOverriding
- BCCD.CCDA.ContextControlPropagating
- BCCD.CCDA.CR
- BCCD.CCDA.cs
- BCCD.CCDA.CS1
- BCCD.CCDA.Currency
- BCCD.CCDA.CV
- BCCD.CCDA.DeliveryAddressLine
- BCCD.CCDA.ED
- BCCD.CCDA.EIVL.event
- BCCD.CCDA.EIVLPPDTS
- BCCD.CCDA.EIVLTS
- BCCD.CCDA.EN
- BCCD.CCDA.en.delimiter

- BCCD.CCDA.en.family
- BCCD.CCDA.en.given
- BCCD.CCDA.en.prefix
- BCCD.CCDA.en.suffix
- BCCD.CCDA.EntityClass
- BCCD.CCDA.EntityClassContainer
- BCCD.CCDA.EntityClassDevice
- BCCD.CCDA.EntityClassLivingSubject
- BCCD.CCDA.EntityClassManufacturedMaterial
- BCCD.CCDA.EntityClassMaterial
- BCCD.CCDA.EntityClassNonPersonLivingSubject
- BCCD.CCDA.EntityClassOrganization
- BCCD.CCDA.EntityClassPlace
- BCCD.CCDA.EntityClassRoot
- BCCD.CCDA.EntityDeterminer
- BCCD.CCDA.EntityDeterminerDetermined
- BCCD.CCDA.EntityNamePartQualifier
- BCCD.CCDA.EntityNamePartType
- BCCD.CCDA.EntityNameSearchUse
- BCCD.CCDA.EntityNameUse
- BCCD.CCDA.ENXP
- BCCD.CCDA.GLISTPQ
- BCCD.CCDA.GLISTTS
- BCCD.CCDA.GregorianCalendarCycle
- BCCD.CCDA.hasSupport
- BCCD.CCDA.HomeAddressUse
- BCCD.CCDA.HXITCE
- BCCD.CCDA.HXITPQ
- BCCD.CCDA.II
- BCCD.CCDA.ImageMediaType

- BCCD.CCDA.int
- BCCD.CCDA.INT1
- BCCD.CCDA.IntegrityCheckAlgorithm
- BCCD.CCDA.IVLINT
- BCCD.CCDA.IVLMO
- BCCD.CCDA.IVLPPDPQ
- BCCD.CCDA.IVLPPDTS
- BCCD.CCDA.IVLPQ
- BCCD.CCDA.IVLRREAL
- BCCD.CCDA.IVLTS
- BCCD.CCDA.IVXBINT
- BCCD.CCDA.IVXBMO
- BCCD.CCDA.IVXBPPDPQ
- BCCD.CCDA.IVXBPPDTS
- BCCD.CCDA.IVXBPQ
- BCCD.CCDA.IVXBREAL
- BCCD.CCDA.IVXBTS
- BCCD.CCDA.LicensedEntityRole
- BCCD.CCDA.listint
- BCCD.CCDA.MediaType
- BCCD.CCDA.MO
- BCCD.CCDA.ModelMediaType
- BCCD.CCDA.MultipartMediaType
- BCCD.CCDA.NamePseudonymUse
- BCCD.CCDA.NameRepresentationUse
- BCCD.CCDA.NoInformation
- BCCD.CCDA.NullFlavor
- BCCD.CCDA.oid
- BCCD.CCDA.ON
- BCCD.CCDA.OrganizationNamePartQualifier

- BCCD.CCDA.OrganizationNameUse
- BCCD.CCDA.Other
- BCCD.CCDA.ParticipationAncillary
- BCCD.CCDA.ParticipationIndirectTarget
- BCCD.CCDA.ParticipationInformationGenerator
- BCCD.CCDA.ParticipationInformationRecipient
- BCCD.CCDA.ParticipationPhysicalPerformer
- BCCD.CCDA.ParticipationTargetDevice
- BCCD.CCDA.ParticipationTargetDirect
- BCCD.CCDA.ParticipationTargetLocation
- BCCD.CCDA.ParticipationTargetSubject
- BCCD.CCDA.ParticipationType
- BCCD.CCDA.ParticipationVerifier
- BCCD.CCDA.PersonNamePartAffixTypes
- BCCD.CCDA.PersonNamePartChangeQualifier
- BCCD.CCDA.PersonNamePartMiscQualifier
- BCCD.CCDA.PersonNamePartQualifier
- BCCD.CCDA.PersonNameUse
- BCCD.CCDA.PIVLPPDTS
- BCCD.CCDA.PIVLTS
- BCCD.CCDA.PN
- BCCD.CCDA.POCDMT000040.Act
- BCCD.CCDA.POCDMT000040.AssignedAuthor
- BCCD.CCDA.POCDMT000040.AssignedCustodian
- BCCD.CCDA.POCDMT000040.AssignedEntity
- BCCD.CCDA.POCDMT000040.AssociatedEntity
- BCCD.CCDA.POCDMT000040.Authenticator
- BCCD.CCDA.POCDMT000040.Author
- BCCD.CCDA.POCDMT000040.AuthoringDevice
- BCCD.CCDA.POCDMT000040.Authorization



- BCCD.CCDA.POCDMT000040.Birthplace
- BCCD.CCDA.POCDMT000040.ClinicalDocument
- BCCD.CCDA.POCDMT000040.Component1
- BCCD.CCDA.POCDMT000040.Component2
- BCCD.CCDA.POCDMT000040.Component3
- BCCD.CCDA.POCDMT000040.Component4
- BCCD.CCDA.POCDMT000040.Component5
- BCCD.CCDA.POCDMT000040.Consent
- BCCD.CCDA.POCDMT000040.Consumable
- BCCD.CCDA.POCDMT000040.Criterion
- BCCD.CCDA.POCDMT000040.Custodian
- BCCD.CCDA.POCDMT000040.CustodianOrganization
- BCCD.CCDA.POCDMT000040.DataEnterer
- BCCD.CCDA.POCDMT000040.Device
- BCCD.CCDA.POCDMT000040.DocumentationOf
- BCCD.CCDA.POCDMT000040.EncompassingEncounter
- BCCD.CCDA.POCDMT000040.Encounter
- BCCD.CCDA.POCDMT000040.EncounterParticipant
- BCCD.CCDA.POCDMT000040.Entity
- BCCD.CCDA.POCDMT000040.Entry
- BCCD.CCDA.POCDMT000040.EntryRelationship
- BCCD.CCDA.POCDMT000040.ExternalAct
- BCCD.CCDA.POCDMT000040.ExternalDocument
- BCCD.CCDA.POCDMT000040.ExternalObservation
- BCCD.CCDA.POCDMT000040.ExternalProcedure
- BCCD.CCDA.POCDMT000040.Guardian
- BCCD.CCDA.POCDMT000040.HealthCareFacility
- BCCD.CCDA.POCDMT000040.Informant12
- BCCD.CCDA.POCDMT000040.InformationRecipient
- BCCD.CCDA.POCDMT000040.InfrastructureRoot.typeId

- BCCD.CCDA.POCDMT000040.InFulfillmentOf
- BCCD.CCDA.POCDMT000040.IntendedRecipient
- BCCD.CCDA.POCDMT000040.LabeledDrug
- BCCD.CCDA.POCDMT000040.LanguageCommunication
- BCCD.CCDA.POCDMT000040.LegalAuthenticator
- BCCD.CCDA.POCDMT000040.Location
- BCCD.CCDA.POCDMT000040.MaintainedEntity
- BCCD.CCDA.POCDMT000040.ManufacturedProduct
- BCCD.CCDA.POCDMT000040.Material
- BCCD.CCDA.POCDMT000040.NonXMLBody
- BCCD.CCDA.POCDMT000040.Observation
- BCCD.CCDA.POCDMT000040.ObservationMedia
- BCCD.CCDA.POCDMT000040.ObservationRange
- BCCD.CCDA.POCDMT000040.Order
- BCCD.CCDA.POCDMT000040.Organization
- BCCD.CCDA.POCDMT000040.OrganizationPartOf
- BCCD.CCDA.POCDMT000040.Organizer
- BCCD.CCDA.POCDMT000040.ParentDocument
- BCCD.CCDA.POCDMT000040.Participant1
- BCCD.CCDA.POCDMT000040.Participant2
- BCCD.CCDA.POCDMT000040.ParticipantRole
- BCCD.CCDA.POCDMT000040.Patient
- BCCD.CCDA.POCDMT000040.PatientRole
- BCCD.CCDA.POCDMT000040.Performer1
- BCCD.CCDA.POCDMT000040.Performer2
- BCCD.CCDA.POCDMT000040.Person
- BCCD.CCDA.POCDMT000040.Place
- BCCD.CCDA.POCDMT000040.PlayingEntity
- BCCD.CCDA.POCDMT000040.Precondition
- BCCD.CCDA.POCDMT000040.Procedure

- BCCD.CCDA.POCDMT000040.Product
- BCCD.CCDA.POCDMT000040.RecordTarget
- BCCD.CCDA.POCDMT000040.Reference
- BCCD.CCDA.POCDMT000040.ReferenceRange
- BCCD.CCDA.POCDMT000040.RegionOfInterest
- BCCD.CCDA.POCDMT000040.RegionOfInterest.value
- BCCD.CCDA.POCDMT000040.RelatedDocument
- BCCD.CCDA.POCDMT000040.RelatedEntity
- BCCD.CCDA.POCDMT000040.RelatedSubject
- BCCD.CCDA.POCDMT000040.ResponsibleParty
- BCCD.CCDA.POCDMT000040.Section
- BCCD.CCDA.POCDMT000040.ServiceEvent
- BCCD.CCDA.POCDMT000040.Specimen
- BCCD.CCDA.POCDMT000040.SpecimenRole
- BCCD.CCDA.POCDMT000040.StructuredBody
- BCCD.CCDA.POCDMT000040.Subject
- BCCD.CCDA.POCDMT000040.SubjectPerson
- BCCD.CCDA.POCDMT000040.SubstanceAdministration
- BCCD.CCDA.POCDMT000040.Supply
- BCCD.CCDA.PostalAddressUse
- BCCD.CCDA.PPDPQ
- BCCD.CCDA.PPDTS
- BCCD.CCDA.PQ
- BCCD.CCDA.PQR
- BCCD.CCDA.probability
- BCCD.CCDA.ProbabilityDistributionType
- BCCD.CCDA.QTY
- BCCD.CCDA.real
- BCCD.CCDA.REAL1
- BCCD.CCDA.RelatedLinkType

- BCCD.CCDA.RoleClass
- BCCD.CCDA.RoleClassAgent
- BCCD.CCDA.RoleClassAssignedEntity
- BCCD.CCDA.RoleClassAssociative
- BCCD.CCDA.RoleClassContact
- BCCD.CCDA.RoleClassDistributedMaterial
- BCCD.CCDA.RoleClassEmployee
- BCCD.CCDA.RoleClassInactiveIngredient
- BCCD.CCDA.RoleClassIngredientEntity
- BCCD.CCDA.RoleClassInvestigationSubject
- BCCD.CCDA.RoleClassIsSpeciesEntity
- BCCD.CCDA.RoleClassLocatedEntity
- BCCD.CCDA.RoleClassManufacturedProduct
- BCCD.CCDA.RoleClassMutualRelationship
- BCCD.CCDA.RoleClassOntological
- BCCD.CCDA.RoleClassPartitive
- BCCD.CCDA.RoleClassPassive
- BCCD.CCDA.RoleClassRelationshipFormal
- BCCD.CCDA.RoleClassRoot
- BCCD.CCDA.RoleClassServiceDeliveryLocation
- BCCD.CCDA.RoleClassSpecimen
- BCCD.CCDA.RoleLinkType
- BCCD.CCDA.RTOMOPQ
- BCCD.CCDA.RTOPQPQ
- BCCD.CCDA.RTOQTYQTY
- BCCD.CCDA.ruid
- BCCD.CCDA.SC
- BCCD.CCDA.setEntityNamePartQualifier
- BCCD.CCDA.setEntityNameUse
- BCCD.CCDA.SetOperator

- BCCD.CCDA.setPostalAddressUse
- BCCD.CCDA.setTelecommunicationAddressUse
- BCCD.CCDA.SLISTPQ
- BCCD.CCDA.SLISTTS
- BCCD.CCDA.st
- BCCD.CCDA.ST1
- BCCD.CCDA.State
- BCCD.CCDA.StreetAddressLine
- BCCD.CCDA.StreetName
- BCCD.CCDA.StrucDoc.Br
- BCCD.CCDA.StrucDoc.Caption
- BCCD.CCDA.StrucDoc.Col
- BCCD.CCDA.StrucDoc.Colgroup
- BCCD.CCDA.StrucDoc.Content
- BCCD.CCDA.StrucDoc.Footnote
- BCCD.CCDA.StrucDoc.FootnoteRef
- BCCD.CCDA.StrucDoc.Item
- BCCD.CCDA.StrucDoc.LinkHtml
- BCCD.CCDA.StrucDoc.List
- BCCD.CCDA.StrucDoc.Paragraph
- BCCD.CCDA.StrucDoc.RenderMultiMedia
- BCCD.CCDA.StrucDoc.Sub
- BCCD.CCDA.StrucDoc.Sup
- BCCD.CCDA.StrucDoc.Table
- BCCD.CCDA.StrucDoc.Tbody
- BCCD.CCDA.StrucDoc.Td
- BCCD.CCDA.StrucDoc.Text
- BCCD.CCDA.StrucDoc.Tfoot
- BCCD.CCDA.StrucDoc.Th
- BCCD.CCDA.StrucDoc.Thead

- BCCD.CCDA.StrucDoc.Title
- BCCD.CCDA.StrucDoc.TitleContent
- BCCD.CCDA.StrucDoc.TitleFootnote
- BCCD.CCDA.StrucDoc.Tr
- BCCD.CCDA.SXCMCD
- BCCD.CCDA.SXCMINT
- BCCD.CCDA.SXCMMO
- BCCD.CCDA.SXCMPPDPQ
- BCCD.CCDA.SXCMPPDTS
- BCCD.CCDA.SXCMPQ
- BCCD.CCDA.SXCMREAL
- BCCD.CCDA.SXCMTS
- BCCD.CCDA.SXPPTS
- BCCD.CCDA.TEL
- BCCD.CCDA.TelecommunicationAddressUse
- BCCD.CCDA.TemporallyPertains
- BCCD.CCDA.TextMediaType
- BCCD.CCDA.thumbnail
- BCCD.CCDA.TimingEvent
- BCCD.CCDA.TN
- BCCD.CCDA.ts
- BCCD.CCDA.TS1
- BCCD.CCDA.uid
- BCCD.CCDA.Unknown
- BCCD.CCDA.url
- BCCD.CCDA.URL1
- BCCD.CCDA.URLScheme
- BCCD.CCDA.uuid
- BCCD.CCDA.UVPTS
- BCCD.CCDA.VideoMediaType

- BCCD.CCDA.WorkPlaceAddressUse
- BCCD.CCDA.xActClassDocumentEntryAct
- BCCD.CCDA.xActClassDocumentEntryOrganizer
- BCCD.CCDA.xActMoodDefEvn
- BCCD.CCDA.xActMoodDefEvnRqoPrmsPrp
- BCCD.CCDA.xActMoodDocumentObservation
- BCCD.CCDA.xActMoodEvnOrdPrmsPrp
- BCCD.CCDA.xActMoodIntentEvent
- BCCD.CCDA.xActMoodOrdPrms
- BCCD.CCDA.xActMoodOrdPrmsEvn
- BCCD.CCDA.xActMoodRqoPrpAptArq
- BCCD.CCDA.xActRelationshipDocument
- BCCD.CCDA.xActRelationshipEntry
- BCCD.CCDA.xActRelationshipEntryRelationship
- BCCD.CCDA.xActRelationshipExternalReference
- BCCD.CCDA.xActRelationshipPatientTransport
- BCCD.CCDA.xActRelationshipPertinentInfo
- BCCD.CCDA.xDeterminerInstanceKind
- BCCD.CCDA.xDocumentActMood
- BCCD.CCDA.xDocumentEncounterMood
- BCCD.CCDA.xDocumentEntrySubject
- BCCD.CCDA.xDocumentProcedureMood
- BCCD.CCDA.xDocumentSubject
- BCCD.CCDA.xDocumentSubstanceMood
- BCCD.CCDA.xEncounterParticipant
- BCCD.CCDA.xEncounterPerformerParticipation
- BCCD.CCDA.xEntityClassDocumentReceiving
- BCCD.CCDA.xEntityClassPersonOrOrgReceiving
- BCCD.CCDA.xInformationRecipient
- BCCD.CCDA.xInformationRecipientRole

- BCCD.CCDA.xOrganizationNamePartType
- BCCD.CCDA.xParticipationAuthorPerformer
- BCCD.CCDA.xParticipationEntVrf
- BCCD.CCDA.xParticipationPrfEntVrf
- BCCD.CCDA.xParticipationVrfRespSprfWit
- BCCD.CCDA.xPersonNamePartType
- BCCD.CCDA.xRoleClassAccommodationRequestor
- BCCD.CCDA.xRoleClassCoverage
- BCCD.CCDA.xRoleClassCoverageInvoice
- BCCD.CCDA.xRoleClassCredentialedEntity
- BCCD.CCDA.xRoleClassPayeePolicyRelationship
- BCCD.CCDA.xServiceEventPerformer

### C.3 Install

The BCCD.Install classes support the installation of the CCDA application.

- BCCD.Install.Installer
- BCCD.Install.PostInstallTask
- BCCD.Install.PreInstallTask
- BCCD.Install.ProductionSettings

### C.4 Prod

The BCCD.Prod classes support the CCDA document generation and transmission, the Ensemble production, and the alert process.

- BCCD.Prod.Adapters.AlertInbound
- BCCD.Prod.Adapters.CompiledRecordInbound
- BCCD.Prod.Adapters.ErrorRecordInbound
- BCCD.Prod.Adapters.ErrorThrottleInbound
- BCCD.Prod.Adapters.SuspendedRecordInbound
- BCCD.Prod.Alert.AlertItem
- BCCD.Prod.Build.CCD
- BCCD.Prod.Build.DTL.AllergyComponent



- BCCD.Prod.Build.DTL.AllergyEntry
- BCCD.Prod.Build.DTL.CareTeamComponent
- BCCD.Prod.Build.DTL.CareTeamDocumentationOf
- BCCD.Prod.Build.DTL.CareTeamEncounterParticipant
- BCCD.Prod.Build.DTL.CareTeamPerformer
- BCCD.Prod.Build.DTL.ClinicalDocument
- BCCD.Prod.Build.DTL.FunctionalStatusComponent
- BCCD.Prod.Build.DTL.Functions
- BCCD.Prod.Build.DTL.HospDischargeInstComponent
- BCCD.Prod.Build.DTL.ImmunizationComponent
- BCCD.Prod.Build.DTL.ImmunizationEntry
- BCCD.Prod.Build.DTL.InstructionComponent
- BCCD.Prod.Build.DTL.InstructionEntry
- BCCD.Prod.Build.DTL.MedFrequencyFunctions
- BCCD.Prod.Build.DTL.MedicationComponent
- BCCD.Prod.Build.DTL.MedicationEntry
- BCCD.Prod.Build.DTL.ModuleContext
- BCCD.Prod.Build.DTL.PlanOfCareComponent
- BCCD.Prod.Build.DTL.ProblemComponent
- BCCD.Prod.Build.DTL.ProblemEntry
- BCCD.Prod.Build.DTL.ProblemObservation
- BCCD.Prod.Build.DTL.ProcedureComponent
- BCCD.Prod.Build.DTL.ProcedureEntry
- BCCD.Prod.Build.DTL.ReasonForReferralComponent
- BCCD.Prod.Build.DTL.ReasonForVisitComponent
- BCCD.Prod.Build.DTL.ResultComponent
- BCCD.Prod.Build.DTL.ResultEntry
- BCCD.Prod.Build.DTL.ResultObservation
- BCCD.Prod.Build.DTL.SocialHistoryComponent
- BCCD.Prod.Build.DTL.SocialHistoryEntry

- BCCD.Prod.Build.DTL.VitalSignComponent
- BCCD.Prod.Build.DTL.VitalSignEntry
- BCCD.Prod.Build.DTL.VitalSignObservation
- BCCD.Prod.Build.Main
- BCCD.Prod.Messages.DocumentRequest
- BCCD.Prod.Messages.DocumentResponse
- BCCD.Prod.Messages.ErrorResponse
- BCCD.Prod.Messages.QueueIdRequest
- BCCD.Prod.Messages.StreamRequest
- BCCD.Prod.Operations.FileDoc
- BCCD.Prod.Processes.Alert
- BCCD.Prod.Processes.Alert.Context
- BCCD.Prod.Processes.Alert.Thread1
- BCCD.Prod.Processes.BuildDoc
- BCCD.Prod.Processes.BuildDoc.Context
- BCCD.Prod.Processes.BuildDoc.Thread1
- BCCD.Prod.Processes.TransmitPush
- BCCD.Prod.Production
- BCCD.Prod.PushWS.ns.DocumentComplexType
- BCCD.Prod.PushWS.ns.DocumentContent
- BCCD.Prod.PushWS.ns.DocumentType
- BCCD.Prod.PushWS.Op.PatientRecordReceiverOperationRequest
- BCCD.Prod.PushWS.Op.PatientRecordReceiverOperationResponse
- BCCD.Prod.PushWS.Op.PatientRecordReceiverPort
- BCCD.Prod.PushWS.PatientRecordReceiverPort
- BCCD.Prod.PushWS.PatientRecordReceiverPort.  
PatientRecordReceiverOperation
- BCCD.Prod.PushWS.xmlmime.base64Binary
- BCCD.Prod.PushWS.xmlmime.hexBinary
- BCCD.Prod.Services.Alert
- BCCD.Prod.Services.ClinicalDocumentService

- BCCD.Prod.Services.ClinicalDocumentService.RetrieveDocument
- BCCD.Prod.Services.CompiledRecord
- BCCD.Prod.Services.ErrorRecord
- BCCD.Prod.Services.ErrorThrottle
- BCCD.Prod.Services.SuspendedRecord

## C.5 Tasks

The BCCD.Tasks classes consist of tasks that can be scheduled to run periodically or invoked from the RPMS namespace to run in the CCDA namespace. The classes support the weekly purge process and the ability to start the Ensemble production from the RPMS namespace.

- BCCD.Tasks.Purge
- BCCD.Tasks.UpdateProductionState

## C.6 Xfer

The BCCD.Xfer classes support the extraction of data from RPMS.

- BCCD.Xfer.Address
- BCCD.Xfer.Allergy
- BCCD.Xfer.AllergyCode
- BCCD.Xfer.AllergyReaction
- BCCD.Xfer.CareTeam
- BCCD.Xfer.CCDMain
- BCCD.Xfer.CCDPopulate
- BCCD.Xfer.FieldTransformations
- BCCD.Xfer.FunctionalStatus
- BCCD.Xfer.GeneralHeader
- BCCD.Xfer.HospitalDischargeInstruction
- BCCD.Xfer.Immunization
- BCCD.Xfer.Instruction
- BCCD.Xfer.InstructionOrganizer
- BCCD.Xfer.MedDispense
- BCCD.Xfer.MedFrequency

- BCCD.Xfer.Medication
- BCCD.Xfer.Patient
- BCCD.Xfer.PerformanceData
- BCCD.Xfer.PersonName
- BCCD.Xfer.PlanOfCare
- BCCD.Xfer.PlanOfCareOrganizer
- BCCD.Xfer.PopAllergy
- BCCD.Xfer.PopCareTeam
- BCCD.Xfer.PopDischargeInstructions
- BCCD.Xfer.PopFunctionalStatus
- BCCD.Xfer.PopGeneralHeader
- BCCD.Xfer.PopImmunization
- BCCD.Xfer.PopInstructions
- BCCD.Xfer.PopMedication
- BCCD.Xfer.PopPatient
- BCCD.Xfer.PopPlanOfCare
- BCCD.Xfer.PopProblem
- BCCD.Xfer.PopProcedure
- BCCD.Xfer.PopReasonForReferral
- BCCD.Xfer.PopReasonForVisitHosp
- BCCD.Xfer.PopResult
- BCCD.Xfer.PopSocialHistory
- BCCD.Xfer.PopVitalSign
- BCCD.Xfer.Problem
- BCCD.Xfer.Procedure
- BCCD.Xfer.PushQueue
- BCCD.Xfer.Queue
- BCCD.Xfer.Result
- BCCD.Xfer.ResultOrganizer
- BCCD.Xfer.SocialHistory

- BCCD.Xfer.VitalSign

## Appendix D: Web Service API

This section summarizes the Web Service Application Programming Interface (API) provided for requesting CCDA documents from the EHR GUI and, potentially, other outside applications. Its goal is to assist RPMS sites and outside developers in understanding what the web service is and how to use it to retrieve CCDA documents from RPMS.

### D.1 Web Service

The CCDA web service provides an API for requesting and retrieving a Clinical Summary or Transitions of Care CCDA document from RPMS. To access the web service, it is necessary to develop a web client. Instructions for developing a web client are beyond the scope of this document. However, there are a number of tools available for generating a web client from a WSDL for major platforms, such as Java and .NET. Once a web client has been developed it may be used to request a CCDA document by means of sending a SOAP request containing a Patient ID, one or more Visit IDs, and a Document Type to the web service and receiving a SOAP response containing the CCDA document.

The web service is accessed via HTTP. HTTPS (HTTP Secure or HTTP over SSL/TLS) is not currently supported, so it is the responsibility of the site to address security between the web client and the web service.

#### D.1.1 Request Message

A sample SOAP request is provided in Section D.3. The request consists of a SOAP header and a SOAP body. The request header must include a WS-Security section containing a valid access code/verify code pair. The request body has four required elements: the patient ID, one or more visit IDs, the requested document type, and the RPMS DUZ value of the person making the request.

The access code/verify code pair consists of the access code and verify code for a user in the RPMS NEW PERSON file. The codes are sent encoded just as they are stored in RPMS; they are not sent in plaintext. The access code is sent as the WS-Security username, and the verify code is sent as the WS-Security password.

The patient ID is the patient IEN in the RPMS namespace. It is a unique identifier within an RPMS namespace, but might not be unique across namespaces. To ensure the correct patient record is retrieved, there is one web service for each RPMS namespace; the web client must access the web service corresponding to the RPMS namespace that contains the patient IEN being requested.

The list of visit IDs contains one or more visit IENs in the RPMS namespace. Like the patient IEN, each visit IEN is a unique identifier within an RPMS namespace.

The requested document type is a code to indicate whether the web client is requesting a Clinical Summary or Transitions of Care document. For a Clinical Summary, document type CS is sent. For a Transitions of Care document, document type TC is sent.

The requestor DUZ value must contain the RPMS IEN value of the person making the request. The value is stored in the CCDA audit log to meet CCDA auditing requirements. The value is required and must be a valid user identifier in RPMS.

## D.1.2 Response Message

Unlike the C32 web service, the CCDA web service is synchronous, i.e., the response message is returned on the same session as the request. A portion of a sample response message is provided in Section D.4.

The response body contains the actual CCDA document. The document contains information about the patient's demographics, visit information, and medical history to meet CCD and MU2 requirements. Details about each of the data elements in the CCDA document are included in Appendix B. While all of the information is encoded in XML, some of the information is also encoded in narrative blocks to allow it to be transformed into HTML to be used in generating a web page to make it easier for a person to read the information.

If there is a problem with the request, such as a missing or invalid value in the request, or a problem generating the document, then the response contains error information instead of the CCDA document. A sample error response is provided in Section D.5. The error information consists of two elements: an error code and error text. The error code can be used by the web client to determine the cause of the error. A list of error codes is provided in Appendix E. The error text supplements the error code, providing more information about the cause of the error. Because the error text may vary, it is recommended that the web client use the error code when determining whether the error was caused by an improper request message or by an issue in document generation. Certain types of errors, such as a request that is not a valid SOAP message, may result in Ensemble returning a SOAP fault. In this case, the response will contain a standard SOAP fault and will not contain a CCDA document or the error code/error text pair.

## D.2 WSDL Considerations

The following changes to the CCDA WSDL are required to produce a WSDL that corresponds to the web service at a given site:

```
Replace:
  <service name="ClinicalDocumentService">
    <port name="ClinicalDocumentServiceSoap"
      binding="s0:ClinicalDocumentServiceSoap">
```

```

        <soap:address
location="http://10.24.196.43:57775/csp/ccdagold4/BCCD.Prod.Services.ClinicalDocumentService.cls"/>
        </port>
    </service>

With:
    <service name="ClinicalDocumentService">
        <port name="ClinicalDocumentServiceSoap"
binding="s0:ClinicalDocumentServiceSoap">
            <soap:address location="http://(IP address):(port)/csp/(CCDA
namespace)/BCCD.Prod.Services.ClinicalDocumentService.cls"/>
        </port>
    </service>

```

### D.3 Sample Request

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:urn="urn:hl7-org:v3">
    <soapenv:Header>
        <wsse:Security xmlns:wsse="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
            <wsse:UsernameToken wsu:Id="UsernameToken-4"
xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-utility-1.0.xsd">
                <wsse:Username>64D'odY4g0k}h#}mCY4p</wsse:Username>
                <wsse:Password Type="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-username-token-profile-
1.0#PasswordText">nPv7(FwcTgU,G[m=l0a</wsse:Password>
            </wsse:UsernameToken>
        </wsse:Security>
    </soapenv:Header>
    <soapenv:Body>
        <urn:RetrieveDocument>
            <urn:DocumentRequest>
                <urn:DocumentType>CS</urn:DocumentType>
                <urn:RequestorDUZ>116</urn:RequestorDUZ>
                <urn:PatientId>2163</urn:PatientId>
                <urn:VisitId>
                    <urn:VisitIdItem>3126</urn:VisitIdItem>
                </urn:VisitId>
            </urn:DocumentRequest>
        </urn:RetrieveDocument>
    </soapenv:Body>
</soapenv:Envelope>

```

### D.4 Sample Response: Valid

```

<SOAP-ENV:Envelope xmlns:SOAP-
ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:s="http://www.w3.org/2001/XMLSchema">
    <SOAP-ENV:Body>
        <RetrieveDocumentResponse xmlns="urn:hl7-org:v3">
            <ClinicalDocumentResponse>
                <ClinicalDocument xsi:schemaLocation="urn:hl7-org:v3 CDA.xsd"
xmlns:sdtc="urn:hl7-org:sdtc">

```



```

        <!--DFN=2163; VIEN=3126; QID=139; VisitType=Outpatient-->
        <realmCode code="US"/>
        <typeId root="2.16.840.1.113883.1.3"
extension="POCD_HD000040"/>
        <templateId root="2.16.840.1.113883.10.20.22.1.1"
assigningAuthorityName="US Realm"/>
        <templateId root="2.16.840.1.113883.10.20.22.1.2"
assigningAuthorityName="CCD"/>
        <id root="CCA231F5-34A1-4304-BFE7-076274B4F9B3"/>
        <code code="34133-9" codeSystem="2.16.840.1.113883.6.1"
codeSystemName="LOINC" displayName="Summarization of Episode Note"></code>
        <title>Clinical Summary from SAMPLE FACILITY</title>
<!-- The rest of the document has been removed for brevity -->
        </ClinicalDocument>
    </ClinicalDocumentResponse>
</RetrieveDocumentResponse>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

## D.5 Sample Response: Error

```

<SOAP-ENV:Envelope xmlns:SOAP-
ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:s="http://www.w3.org/2001/XMLSchema">
    <SOAP-ENV:Body>
        <RetrieveDocumentResponse xmlns="urn:hl7-org:v3">
            <ClinicalDocumentResponse>
                <Error>
                    <ErrorCode>124</ErrorCode>
                    <ErrorText>No VisitId in request.</ErrorText>
                </Error>
            </ClinicalDocumentResponse>
        </RetrieveDocumentResponse>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

## D.6 Additional Web Service Resources

W3Schools:

- Web Services tutorial: <http://www.w3schools.com/webservices/default.asp>
- SOAP introduction: [http://www.w3schools.com/webservices/ws\\_soap\\_intro.asp](http://www.w3schools.com/webservices/ws_soap_intro.asp)
- WSDL introduction : [http://www.w3schools.com/webservices/ws\\_wsdll\\_intro.asp](http://www.w3schools.com/webservices/ws_wsdll_intro.asp)
- XML tutorial: <http://www.w3schools.com/xml/default.asp>

Wikipedia:

- API: [http://en.wikipedia.org/wiki/Application\\_programming\\_interface](http://en.wikipedia.org/wiki/Application_programming_interface)
- HTTP: [http://en.wikipedia.org/wiki/Hypertext\\_Transfer\\_Protocol](http://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol)
- HTTPS: [http://en.wikipedia.org/wiki/HTTP\\_Secure](http://en.wikipedia.org/wiki/HTTP_Secure)

- SOAP: <http://en.wikipedia.org/wiki/SOAP>
- Web Service: [http://en.wikipedia.org/wiki/Web\\_service](http://en.wikipedia.org/wiki/Web_service)
- WSDL: [http://en.wikipedia.org/wiki/Web\\_Services\\_Description\\_Language](http://en.wikipedia.org/wiki/Web_Services_Description_Language)
- XML: <http://en.wikipedia.org/wiki/XML>

## Appendix E: CCDA Error Codes

Code	Description
111	CCDA for the requested document type disabled
120	No Document Request sent
121	Missing or invalid Requestor DUZ value in request
122	Missing or invalid Document Type value in request
123	Missing or invalid Patient ID value in request
124	Missing or invalid Visit ID value in request
125	Missing DirectoryPath (Data Portability only)
130	Unable to instantiate Queue record
150	Repository Timeout
151	Unable to acquire document stream
201	Error in data extraction
202	Unable to save extracted data
203	Error trapped by BCCDTSK (background processor)
301	Error in data transformation
302	Error in document generation business process
303	Error in document transmission
310	Document in "Compile Started" status for more than 10000 seconds

## Appendix F: CCDA Ensemble Configuration and Management

### F.1 Creation of CCDA Database, Namespace, and Mappings

The CCDA application adds a new Ensemble database, namespace, CSP application, and set of global and package mappings to each RPMS namespace on the system. The new database and its settings are created by the KIDS build automatically and should not require manual intervention. This section describes, for reference purposes, how the same settings can be created manually.

#### F.1.1 Creating the CCDA Namespace

If the CCDA namespace has already been created, skip this step. RPMS users can remain on the system during this operation.

##### F.1.1.1 Naming the CCDA Namespace

The CCDA application resides in a separate Ensemble namespace. There is one CCDA namespace for every RPMS namespace in the instance. If there are multiple RPMS namespaces running within the same Ensemble instance, create a separate CCDA namespace for each RPMS namespace.

To determine the name of the new namespace, concatenate CCDA with the name of the RPMS namespace associated with it. For example, if the RPMS namespace is named TST, then the CCDA namespace should be named CCDATST. If there is a second RPMS namespace named CHI, then its associated CCDA namespace should be named CCDACHI.

<p><b>Note:</b> This naming convention is relied upon by the CCDA application. The CCDA application will not work if the CCDA namespace is given a different name.</p>
--

##### F.1.1.2 Naming the CCDA Database

Each CCDA namespace will have an underlying Ensemble/Caché database. To avoid confusion, give the database the same name as the associated CCDA namespace, unless there is a specific reason to use a different name. Table 11-1 provides a sample table that may be used by sites with multiple RPMS namespaces to record the database information. Sites should enter data for one RPMS namespace per row.

Table 11-1: Sample table for recording namespace, database, and directory information

RPMS namespace name	CCDA namespace name	CCDA database name	OS directory for CCDA database

### F.1.1.3 Choosing the Storage Location

See the Disk Space section of the CCDA installation manual for instructions for estimating the amount of disk space needed to accommodate the new CCDA database.

Based on the estimated disk space requirements and on how much disk space is available on the storage subsystem, select the disk drive (Windows) or file system (Unix) where each new CCDA database will be installed. Select the directory path and name to be used on that drive or file system. If the directory does not exist, create it and verify that Ensemble can read from it and write to it.

### F.1.1.4 Creating a New Ensemble Database

1. Navigate to the **Local Databases** page in Ensemble's Management Portal as follows:
  - a. Access Ensemble's Management Portal and login as an administrator.
  - b. Select **System Administration** at the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Local Databases**.
  - c. Click **Go** to go to the **Local Databases** page.

The **Local Databases** page displays.

2. Select **Create New Database**. The **Database Wizard** dialog appears.

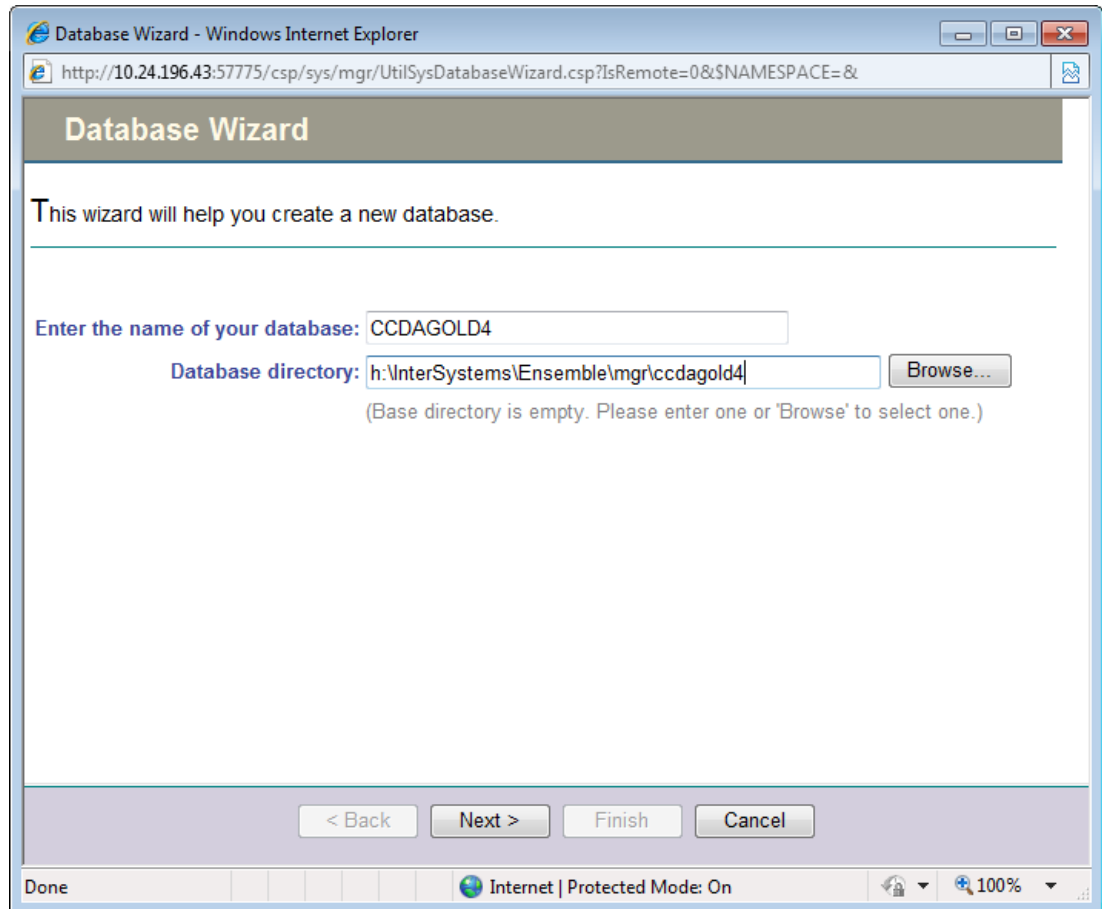


Figure F-1: Database Wizard

3. In the **Enter the name of your database** field, type the database name determined in Section F.2.2, e.g., **CCDATST**.
4. The **Management Portal** will display the default directory name where Ensemble will store the main CACHE.DAT file for this database. (This functionality may not be available depending on browser settings.) Change this directory to the directory set up in Section F.2.3.
5. Click **Next**. The **Database Details** dialog displays.

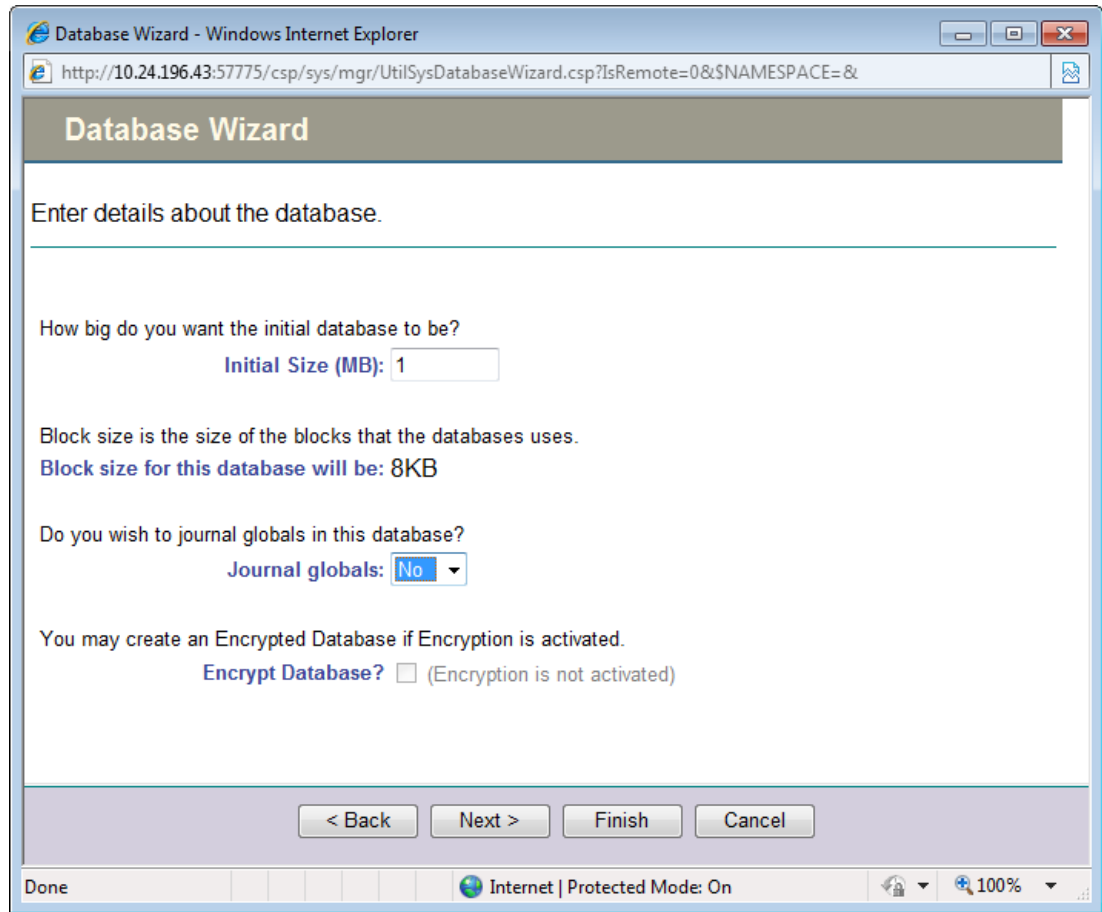


Figure F-2: **Database Wizard**, Database Details

6. In the **Initial Size (MB)** field, type **15**.
7. In the **Journal globals** field select **No**.

**Note:** This is a very important setting. Double check that **No** is selected.

8. Check the **Encrypt database?** checkbox if the site uses database encryption.
9. Click **Next**. The **Database Resource** dialog displays.

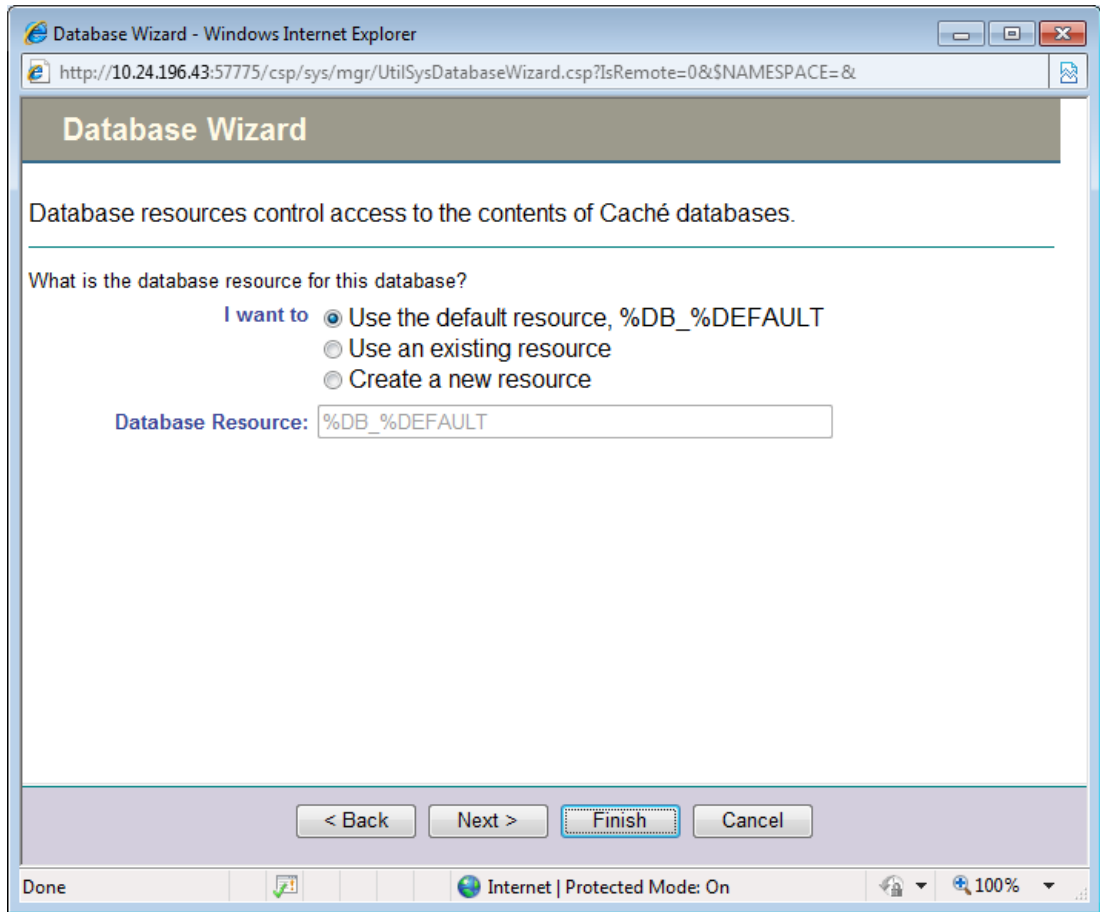


Figure F-3: **Database Wizard**, Database Resource

10. Choose the database resource for this new database. If the site does not have a policy on database resources, accept the default, **Use the default resource, %DB\_%DEFAULT**.
11. Click **Next**. The **Review Settings** dialog displays.



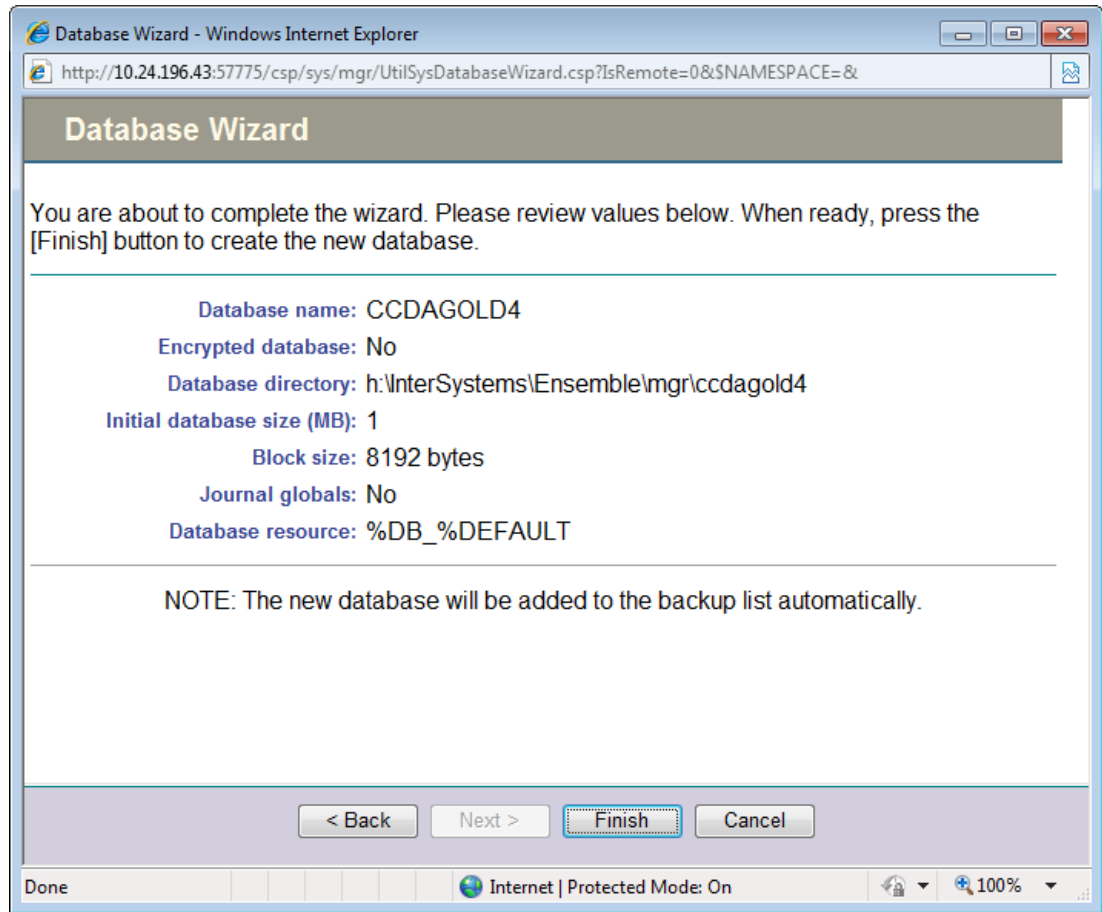


Figure F-4: **Database Wizard**, Review Settings

12. Review the values and, if they are correct, click **Finish**. To correct any mistakes, click **Back**. It may take a few seconds for Ensemble to create the database. When it finishes, the new database displays in the **Local Databases** list.
13. If the Ensemble instance hosts multiple RPMS namespaces, repeat these steps for all new CCDA databases to be created.

### F.1.1.5 Creating a New Ensemble Namespace

1. Navigate to the **Namespaces** page in Ensemble's Management Portal as follows:
  - a. Access Ensemble's Management Portal and sign on as an administrator.
  - b. Select **System Administration** from the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Namespaces**.
  - c. Click **Go** to go to the **Namespaces** page.

The **Namespaces** page displays.

2. Select **Create New Namespace** at the top of the page. The **New Namespace** page displays.

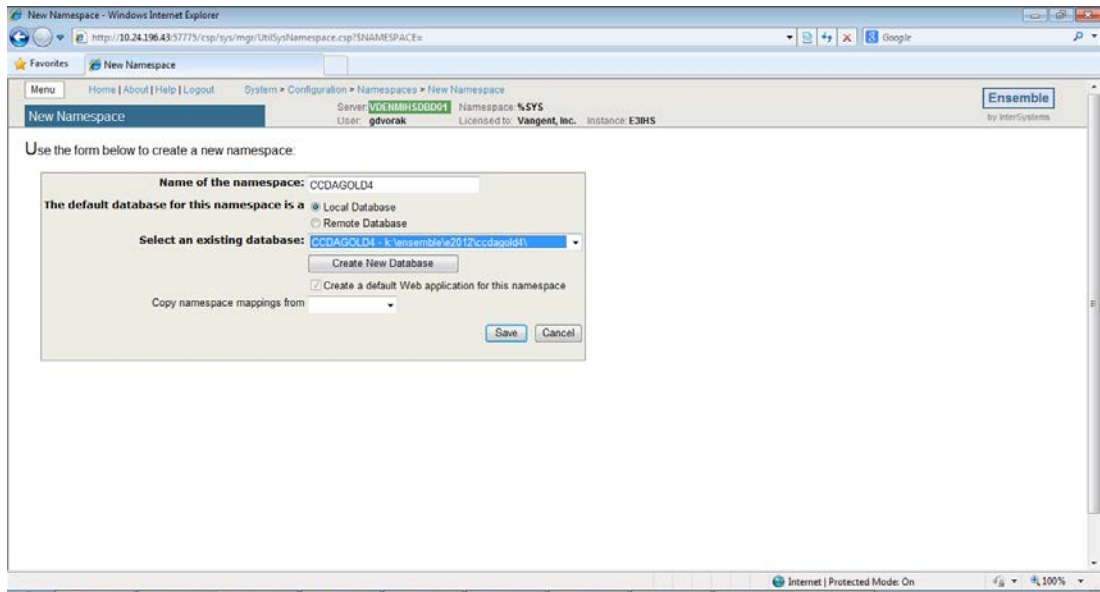


Figure F-5: **New Namespace** Wizard

3. In the **Name of the namespace field**, type the name of the namespace established in Section F.2.1.
4. In the **The default database for this namespace is a field**, select **Local Database**.
5. In the **Select an existing database** list, select the database created in Section F.2.4.
6. Leave the **Copy namespace mappings from field** blank.
7. Click **Save**. It will take Ensemble a few seconds to create the new namespace.
8. If the Ensemble instance hosts multiple RPMS namespaces, repeat these steps for all new CCDA namespaces to be created.

## F.1.2 Creating New Global Mappings

1. Navigate to the **Namespaces** page as follows:
  - a. Access Ensemble's Management Portal and sign on as the administrator.
  - b. Select **System Administration** from the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Namespaces**.
  - c. Click **Go** to go to the **Namespaces** page.

The **Namespaces** page displays.

- In the leftmost column, find the RPMS namespace associated with the new CCDA namespace created in Section F.2.5.

**Note:** This is the pre-existing RPMS namespace, not the newly created CCDA namespace.

- Select **Global Mappings** for the identified namespace. The **Global Mappings** page displays.

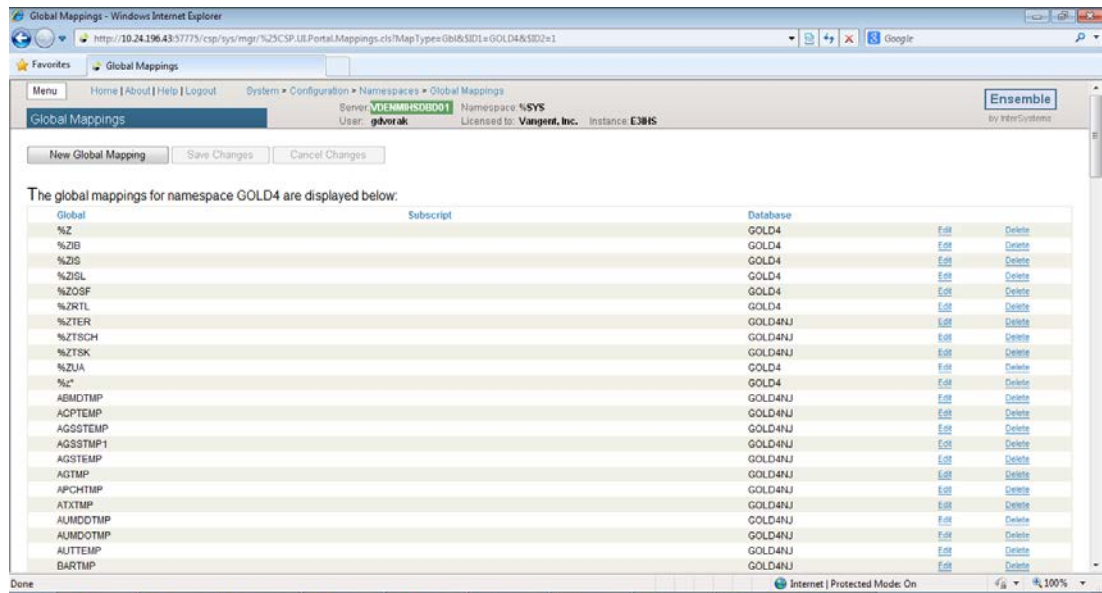


Figure F-6: Global Mappings

- Click **New Global Mapping**, located near the top of the page. The **Global Mapping** dialog appears.

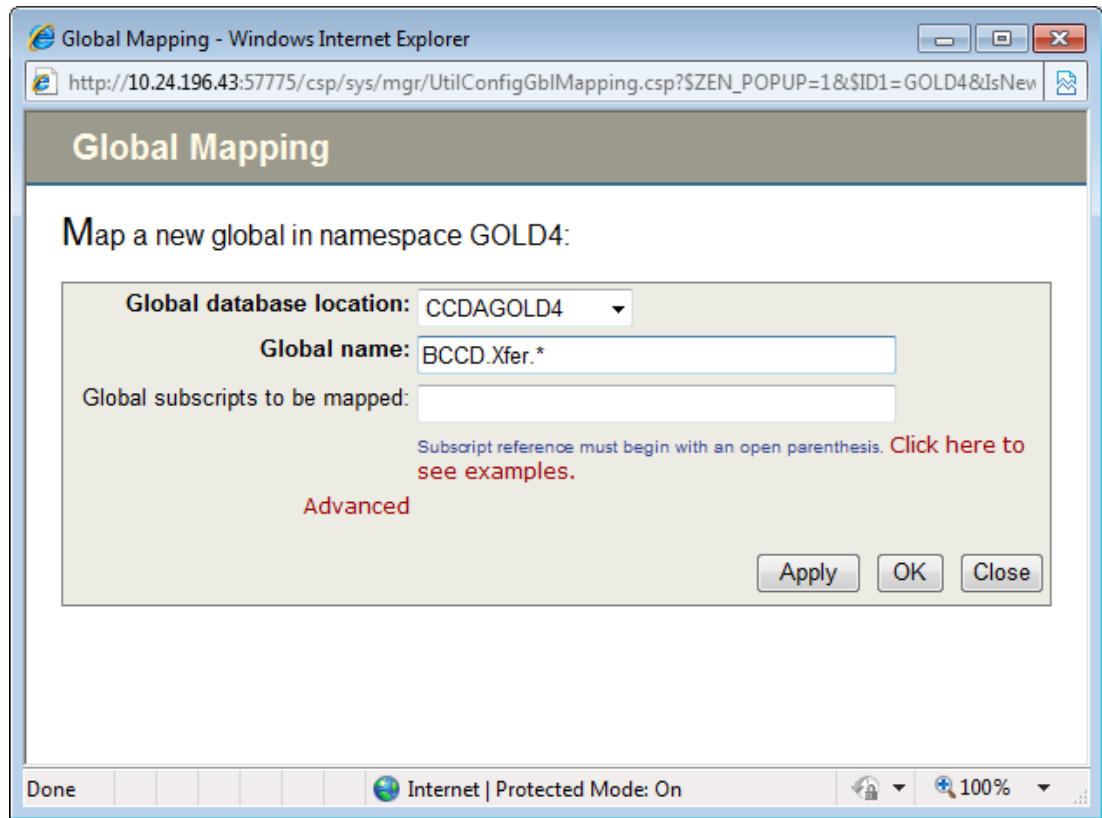


Figure F-7: **Global Mapping** dialog

5. In the **Global database location** list, select the name of the Caché database created in Section F.2.4.
6. In the **Global name** field type **BCCD.Xfer.\***; make sure to include the asterisk.
7. Leave the **Global subscribers to be mapped** field blank.
8. Click **Apply**.
9. Click **Close**. The **Global Mappings** page displays.
10. Click **New Global Mapping**, located near the top of the page. The **Global Mapping** dialog appears.
11. In the **Global database location** list, select the name of the Caché database created in Section F.2.4.
12. In the **Global name** field type **BCCD.Audit.\***; make sure to include the asterisk.
13. Leave the **Global subscribers to be mapped** field blank.
14. Click **Apply**.

15. Click **Close**. The **Global Mappings** page displays.
16. Select **Save Changes** at the top of the page.
17. Click **Namespaces** in the blue line which reads **[Home] > [Configuration] > [Namespaces] > [Global Mappings]** at the top of the page. This will return to the **Namespaces** page.
18. In the leftmost column, find the name of the CCDA namespace created in Section F.2.5. This is the name of the newly created CCDA namespace rather than the name of the RPMS namespace selected in Step 2.
19. Select **Global Mappings** for the identified namespace. The **Global Mappings** page displays.
20. Click **New Global Mapping** at the top of the page. The **Global Mapping** dialog displays.
21. In the **Global database location** field, select the name of the RPMS database associated with this CCDA namespace.
22. In the **Global name** field type **BCCDS**.
23. Leave the **Global subscripts to be mapped** field blank.
24. Click **Apply**.
25. Click **Close**. The **Global Mappings** page displays.
26. Click **New Global Mapping**, located near the top of the page. The **Global Mapping** dialog appears.
27. In the **Global database location** list, select the name of the RPMS database associated with this CCDA namespace.
28. In the **Global name** field type **VA**.
29. In the **Global subscripts to be mapped** field type **(200)**.
30. Click **Apply**.
31. Click **Close**. The **Global Mappings** page displays.
32. Click **Save Changes**.
33. Repeat steps 2-28 for each CCDA namespace added to the Ensemble instance.

### F.1.3 Creating New Package Mappings

1. Navigate to the **Namespaces** page as follows:

- a. Access Ensemble's Management Portal and sign on as the administrator.
- b. Select **System Administration** from the bottom of the left column, then select **Configuration**, then select **System Configuration**, then select **Namespaces**.
- c. Click **Go** to go to the **Namespaces** page.

The **Namespaces** page displays.

2. In the leftmost column, find the RPMS namespace associated with the new CCDA namespace created in Section F.2.5. This should be the pre-existing RPMS namespace, not the newly created CCDA namespace.
3. Select **Package Mappings** for the identified namespace. The **Package Mappings** page displays.

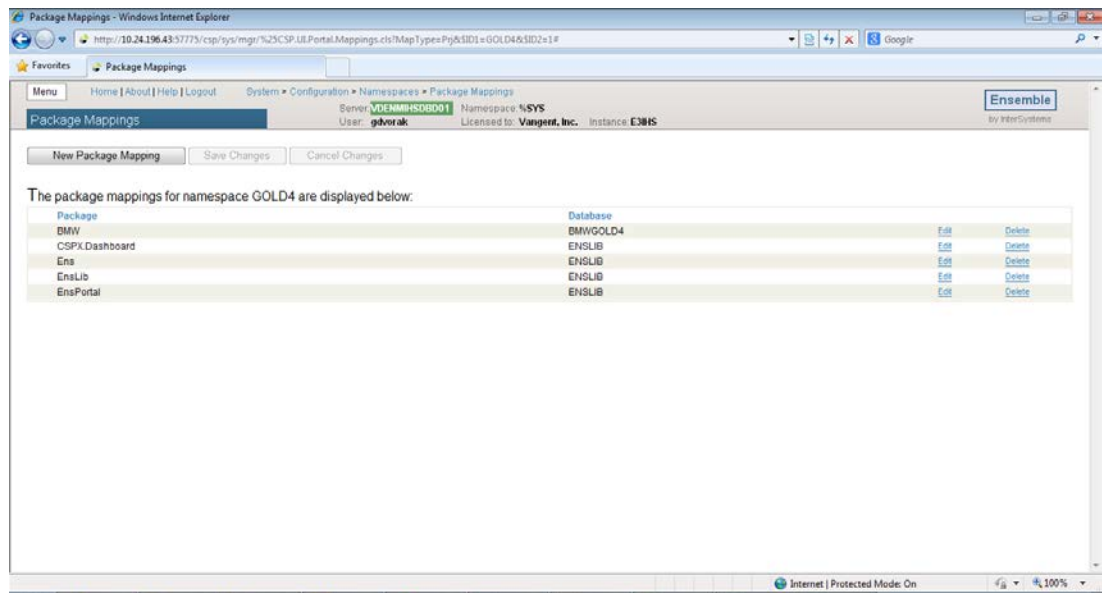


Figure F-8: **Package Mapping**

4. Click **New Package Mapping** at the top of the **Package Mappings** window. The **Package Mapping** dialog displays.

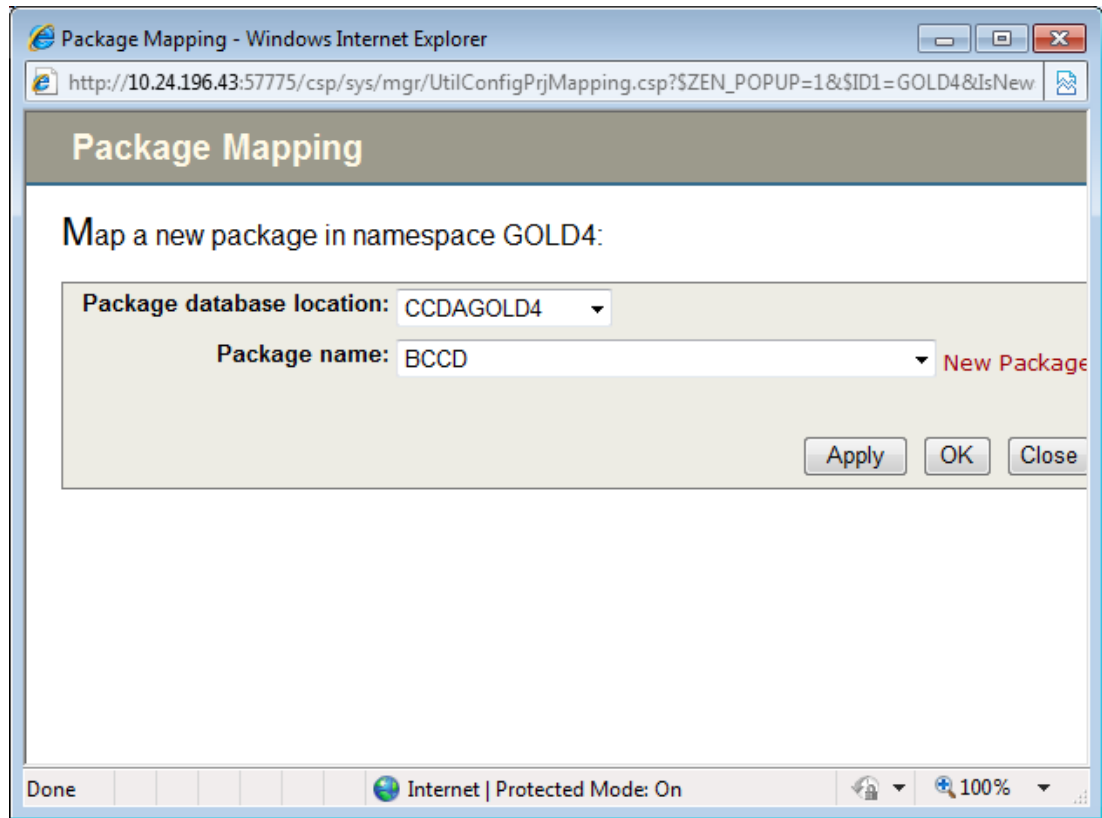


Figure F-9: **Package Mapping** dialog

5. In the **Package database location** list, select the newly created CCDA namespace associated with this RPMS namespace.
6. In the **Package name** list, do not select from the list; rather, click the **New Package** link to the right of the list. A new field called **New package name** will display.

**Note:** Because **New Package** is not underlined, it may not look like a hyperlink.

7. In the **New package name** field, type **BCCD**.
8. Click **Apply**.
9. Click **Close**. The **Package Mappings** page displays.
10. Click **Save Changes** at the top of the page.
11. Find the row containing the package mapping for the **BMW** package. Make a note of the value in the **Database** column for this row. This value will need to be entered in Step 15 below.

12. Select **Namespaces** in the thin blue line which reads **Home > Configuration > Namespaces > Package Mappings** at the top of the page. The **Namespaces** page displays. Find the name of the newly created CCDA namespace in the leftmost column.
13. Select **Package Mappings** for the identified namespace. The **Package Mappings** dialog displays.
14. Click **New Package Mapping** at the top of the page. The **Package Mapping** dialog displays.
15. In the **Package database location** list, select the BMW database noted in Step 11.
16. In the **Package name** list, do not select from the list; rather, click the **New Package** link to the right of the list. A new field called **New package name** will display.

**Note:** Because **New Package** is not underlined or highlighted, it may not look like a hyperlink.

17. In the **New package name** field, type **BMW**.
18. Click **Apply**.
19. Click **Close**. The **Package Mappings** page displays.
20. Click **Save Changes** at the top of the page.
21. Repeat Steps 5-20 for each CCDA namespace added to the Ensemble instance.

At this point the new CCDA database(s) and namespace(s) are fully configured. Use the site's backup configuration process to add the newly added database(s) to the list of backed up databases.

## F.2 Managing CCDA Ensemble Production

As described in Section 1.4, CCDA documents are generated using the CCDA Ensemble production in response to requests via the web service, from the Data Portability API, or by the nightly HIE task.

The CCDA Ensemble production is automatically started whenever Ensemble is started or when CCDA is started via the **MANG** option on the RPMS CCDA menu. During normal business operations, the CCDA Ensemble production will remain running and will not require maintenance. If it is ever necessary to stop or start the CCDA Ensemble production manually, follow the instructions in Sections F.3.1 and F.3.2.



## F.2.1 Stopping the CCDA Ensemble Production

1. Sign on to Ensemble's Management Portal as an administrator. At the top center, the main **Management Portal** page displays the server name, the current user, the current namespace, license and instance information, and a **Switch** link
2. Click the **Switch** link. The **Namespace Chooser** dialog displays.
3. Select the appropriate CCDA namespace. The namespace consists of **CCDA** followed by the name of the RPMS namespace. For example, if the RPMS namespace is named **TEST5**, then the associated CCDA namespace will be named **CCDATEST5**.
4. Click **OK** to select the namespace. The namespace displayed on the **Management Portal** page is updated to reflect the selection.
5. Select **Ensemble** in the left column, then select **Configure**, then select **Production**.
6. When the **View, Edit, Start, or Stop a Production** option appears, click **Go** to display the **Production Configuration** page.
7. Above the **Services** column on the left, the words **Ensemble Running** will be displayed. If the words **Ensemble Stopped** are displayed, then the production is already stopped. Otherwise, click **Stop**. The **Stop Production** dialog displays.

It might take the production a few seconds to stop. When it stops, the message **Production 'BCCD.Prod.Production' stopped** displays, followed by the message **Done**. There might be additional messages on this screen if it takes Ensemble more than a few seconds to stop all associated processes.

8. Click **OK** to return to the **Production Configuration** screen.

## F.2.2 Starting the CCDA Ensemble Production

1. Sign on to Ensemble's Management Portal as an administrator. At the top center, the main **Management Portal** page displays the server name, the current user, the current namespace, license and instance information, and a **Switch** link
2. Click the **Switch** link. The **Namespace Chooser** dialog displays.
3. Select the appropriate CCDA namespace. The namespace consists of **CCDA** followed by the name of the RPMS namespace. For example, if the RPMS namespace is named **TEST5**, then the associated CCDA namespace will be named **CCDATEST5**.
4. Click **OK** to select the namespace. The namespace displayed on the **Management Portal** page is updated to reflect the selection.

5. Select **Ensemble** in the left column, then select **Configure**, then select **Production**.
6. When the **View, Edit, Start, or Stop a Production** option appears, click **Go** to display the **Production Configuration** page.
7. Above the **Services** column on the left, the words **Ensemble Stopped** will be displayed. If the words **Ensemble Running** are displayed, then the production is already running; skip the rest of this section. Otherwise, click **Start**. The **Start Production** dialog displays.

A dialog will appear and ask **Do you wish to start this Production?**. Click **OK**. It might take the production a few seconds to start. When it starts, the message **Production 'BCCD.Prod.Production' started** displays, followed by the message **Done**. There might be additional messages on this screen.

8. Click **OK** to return to the **Production Configuration** screen.

## F.3 Encrypting the CCDA Database

The installation process for the CCDA application automatically creates a new Caché database for the CCDA Ensemble production. The installation process does not automatically encrypt the new database. Sites that have encryption enabled in Ensemble need to encrypt the new database. This section provides instructions for preparing the CCDA Ensemble production and Caché database before encrypting and for returning the database and production back to a running state afterward.

### F.3.1 Stop CCDA Transmissions

1. Navigate to the CCDA menu in RPMS. If you cannot access this menu from the “OPTION NAME” prompt in RPMS, you will need to add it to your user settings.

```
Select OPTION NAME: BCCD MENU          CCDA Menu

EDIT   Edit CCDA Site Parameters
ONE    Generate CCD for a single patient
ALL    Generate CCD documents for all patients in RPMS
MANG   Manage CCDA transmissions

Select CCDA Menu Option:
```

Figure F.F-10: Accessing the CCDA Menu

2. From the CCDA menu, select the **MANG** option.
3. The option will first check whether CCDA is running. If it is not running, you do not need to make any changes. If it is running, then answer **Y** at the “Stop CCDA?” prompt.

```
Select CCDA Menu Option: MANG  Manage CCDA transmissions
CCDA status:
No configuration problems found

CCDA processing task is running

Stop CCDA? No// Y  (Yes)
Attempting to stop CCDA...CCDA stopped
```

Figure F.11: Stop CCDA Transmissions via the MANG option

4. You will receive a message indicating whether CCDA Messaging was stopped. If CCDA could not be stopped, contact the Help Desk for assistance.

### F.3.2 Unschedule the Nightly Upload Task

1. Navigate to the CCDA menu in RPMS.
2. From the CCDA menu, select the **EDIT** option.
3. At the “TIME TO RUN NIGHTLY TASK” prompt, if there is a time entered for this field, make a note of the time as it will be needed in section F.4.7. Then type @ to delete the time. At the “SURE YOU WANT TO DELETE?” prompt, answer **Y** to confirm deletion.
4. Press **ENTER** at the remaining prompts.

```
Select CCDA Menu Option: EDIT  Edit CCDA Site Parameters
Now editing CCDA parameters:

TIME TO RUN NIGHTLY TASK: 23:00// @
  SURE YOU WANT TO DELETE? y  (Yes)

Now editing CCD (Summarization of Episode Note)-specific parameters:

ADD SOCIAL ENVIRONMENT PROB: YES//
ADD INACTIVE PERS HISTORY PROB: YES//
DISCHARGE PLANNER PROV TYPE: WOMEN'S HEALTH CASE MANAGER
  //
Select ALLOWED CS PROVIDER CLASS: OSTEOPATHIC MEDICINE
  //
DAYS KEEP TRANSMISSION ENTRIES: 30//
REPOSITORY LOCATION: http://www.nowhere.com  Replace
ENABLED: YES//
```

Figure F.12: Unscheduling the CCDA Nightly Task via the EDIT option

### F.3.3 Stop the CCDA Production

1. Sign on to Ensemble’s Management Portal as an administrator.
2. At the top center, the main **Management Portal** page displays the server name, the current user, the current namespace, license and instance information, and a **Switch** link. Click the **Switch** link.

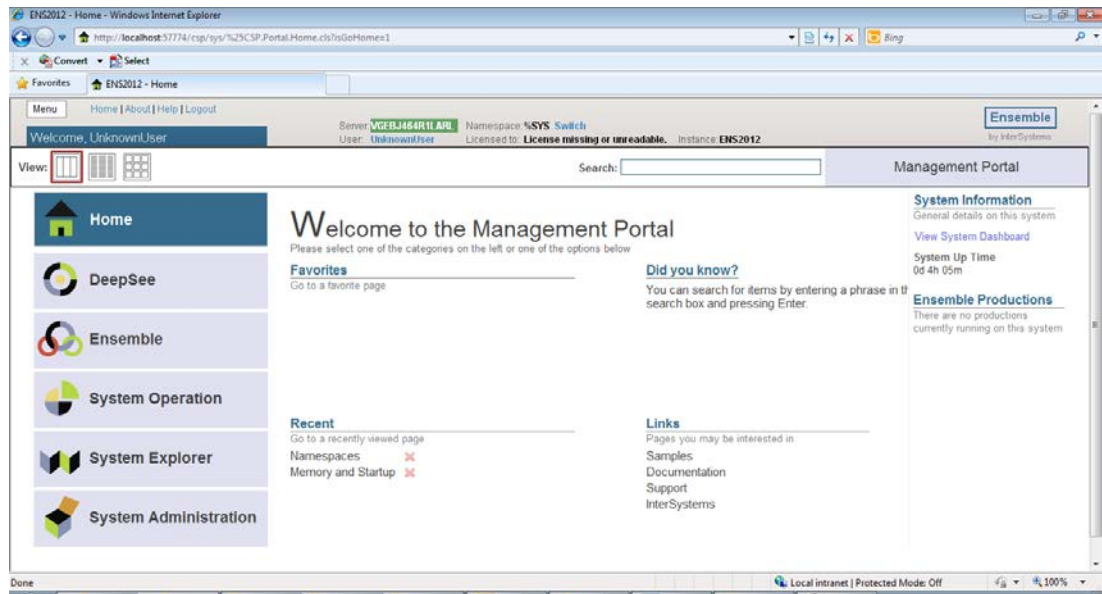


Figure F.13: Management Portal

In the **Namespace Chooser** box, choose the appropriate CCDA namespace. The namespace will consist of “CCDA” concatenated with the name of your RPMS namespace. For example, if your RPMS namespace is called “GOLD4”, then the associated CCDA namespace will be called “CCDAGOLD4”. Click **OK** to choose the namespace. The namespace displayed on the **Management Portal** page will be updated to reflect your selection.

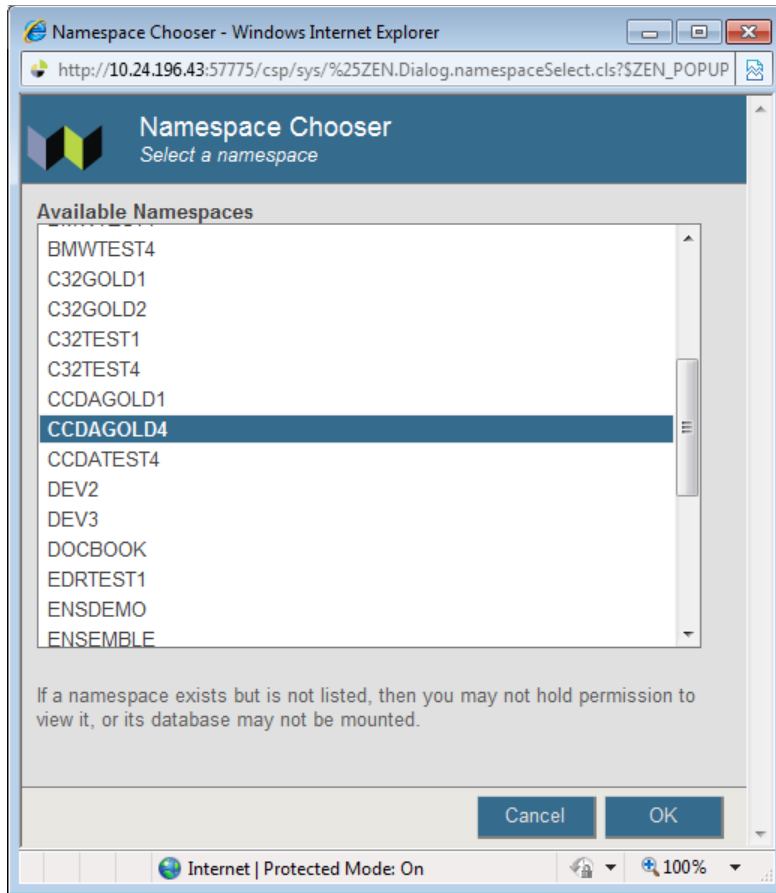


Figure F.14: Namespace Chooser

3. On the main **Management Portal** page, select **Ensemble** in the left column, then select **Configure >>**, then select **Production**. When the **View, Edit, Start, or Stop a Production** option appears, click **Go** to display the **Production Configuration** page.

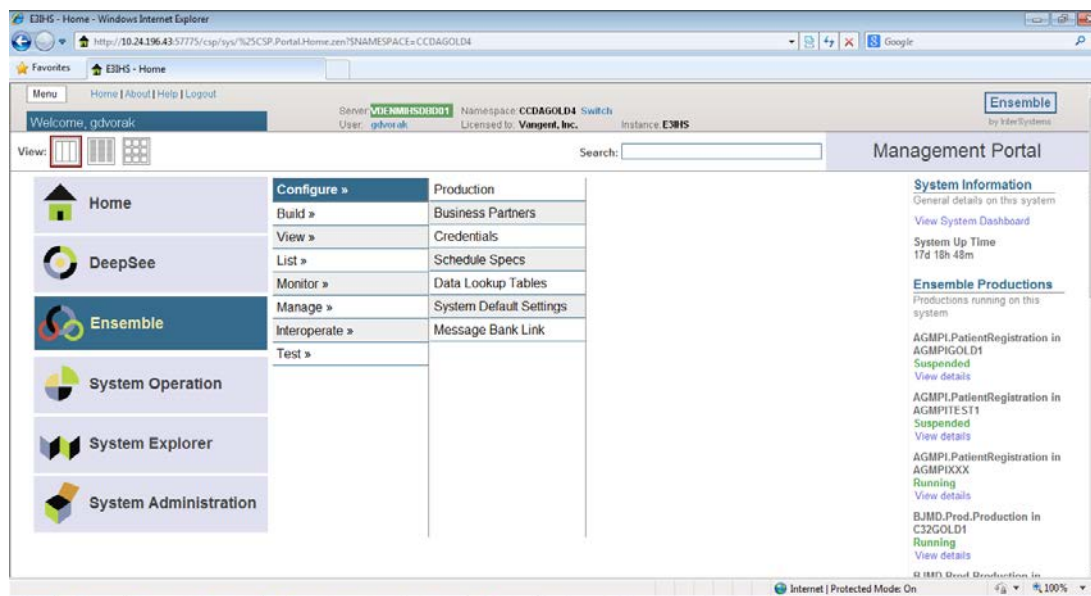


Figure F.15: Management Portal

- Above the **Services** column on the left, the words **Ensemble Running** will be displayed. If the words **Ensemble Stopped** are displayed, then the production is already stopped and you should skip to section F.4.4.

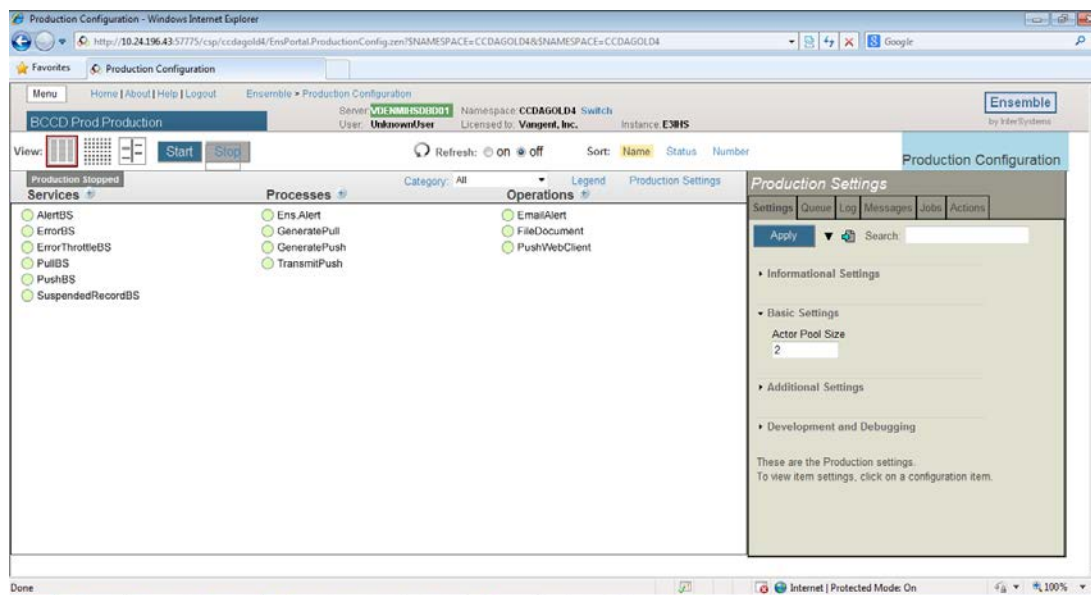


Figure F.16: Ensemble production in a stopped state

Click the **Stop** button. It might take the production a few seconds to stop. When it stops, you will see the text in Figure 11.8 appear on the screen. There might be additional messages on this screen if it takes Ensemble more than a few seconds to stop all associated processes.

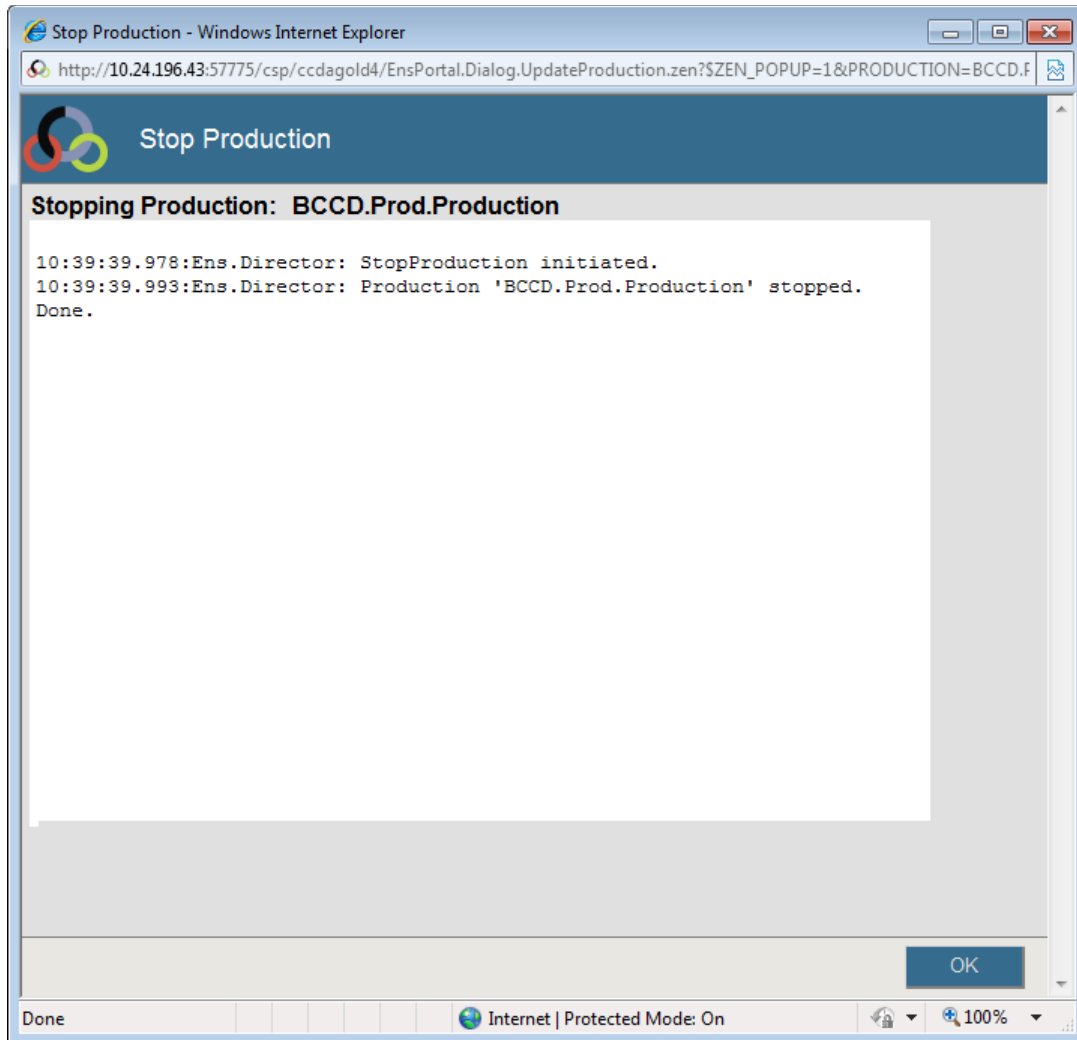


Figure F.17: Stopping the Ensemble production

5. Click **OK** to return to the **Production Configuration** screen.

### F.3.4 Dismount the CCDA Database

1. Sign on to Ensemble's Management Portal.
2. Click on **System Operation** in the left column. Then click **Databases**.

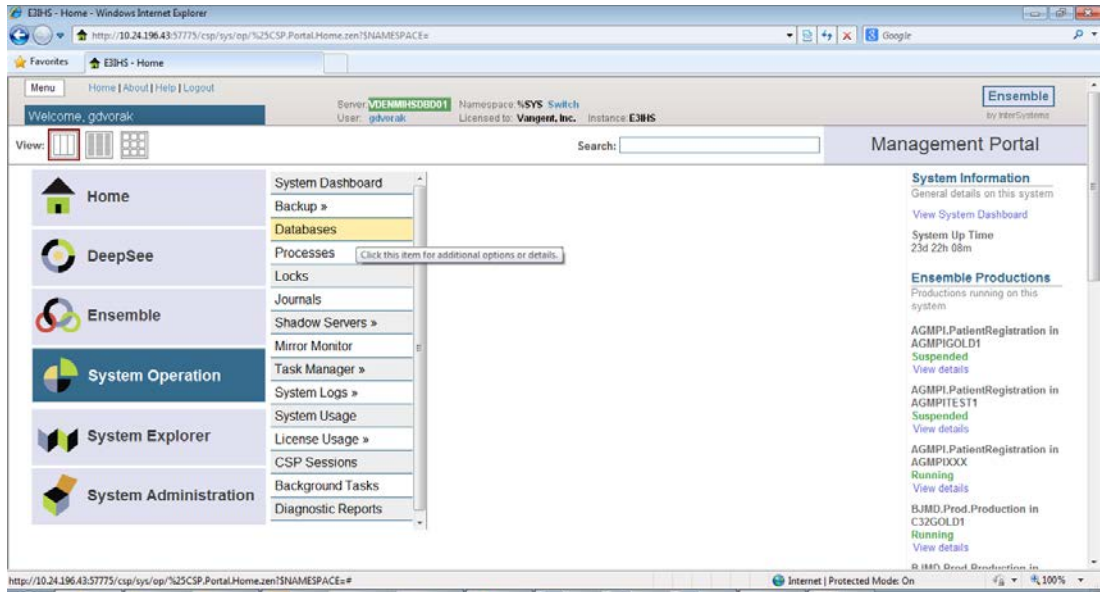


Figure F.18: Ensemble's Management Portal, Databases option

3. On the **Databases** screen, locate the CCDA database and click **Dismount** for that database.

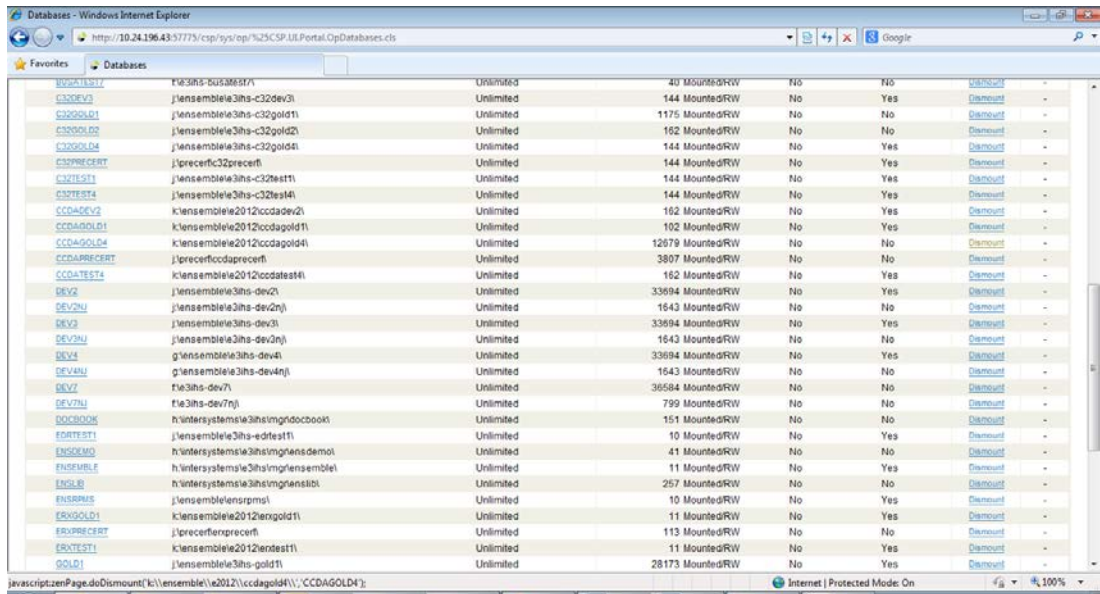


Figure F.19: Databases

4. At the “Are you sure you want to dismount database CCDAXXXX?” prompt, click **OK**.



### F.3.5 Encrypt the Database

Encrypt the database following the instructions provided in the “How to Encrypt an RPMS Database” document. If you need a copy of the document, contact OIT.

### F.3.6 Re-mount the Database

1. Sign on to Ensemble’s Management Portal.
2. Click on **System Operation** in the left column. Then click **Databases**.

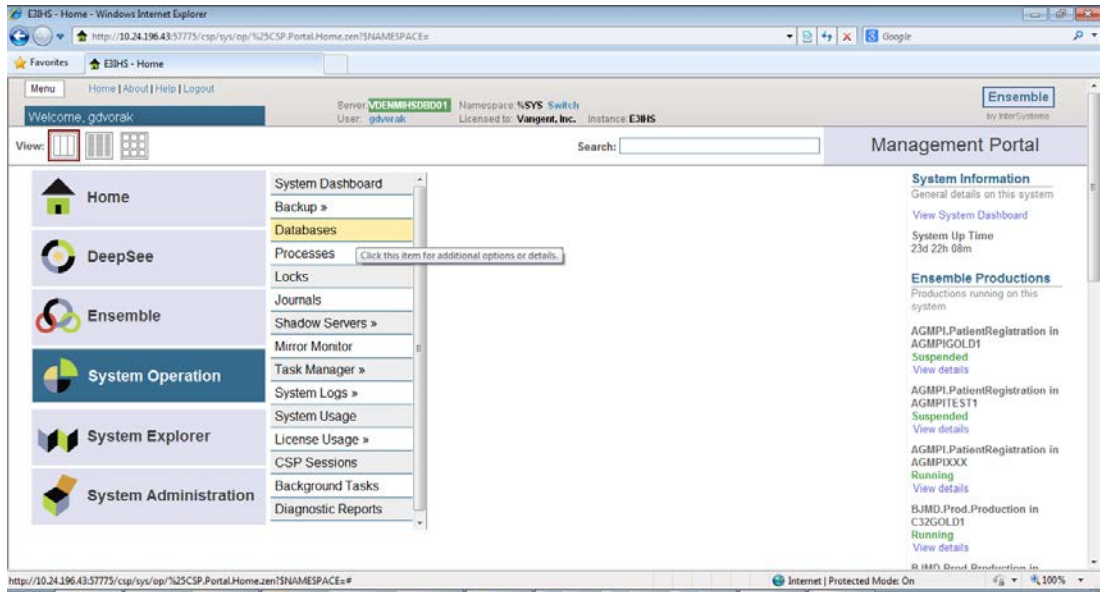


Figure F.20: Ensemble's Management Portal, Databases option

3. On the **Databases** screen, locate the CCDA database and click **Mount** for that database.

Database Name	Path	Size	Status	Permissions	Read Only	Mount
BDDTEST7	f:\3hs-bmwes7\	Unlimited	3384 MountedRW	No	Yes	DisMount
BUSADDEV7	f:\3hs-busadev7\	Unlimited	40 MountedRW	No	No	DisMount
BUSADGOLD4	i:\2012\busagold4\	Unlimited	50 MountedRW	No	Yes	DisMount
BUSAPRECEM	J:\PreCert\busaprecem\	Unlimited	40 Unmounted	No	No	Mount
BUSATEST7	f:\3hs-busates7\	Unlimited	40 MountedRW	No	No	DisMount
C32DEV3	j:\ensemble3\hs-c32dev3\	Unlimited	144 MountedRW	No	Yes	DisMount
C32GOLD1	j:\ensemble3\hs-c32gold1\	Unlimited	1175 MountedRW	No	No	DisMount
C32GOLD2	j:\ensemble3\hs-c32gold2\	Unlimited	162 MountedRW	No	No	DisMount
C32GOLD4	j:\ensemble3\hs-c32gold4\	Unlimited	144 MountedRW	No	Yes	DisMount
C32PRECEM	j:\precert\c32precem\	Unlimited	144 MountedRW	No	Yes	DisMount
C32TEST1	j:\ensemble3\hs-c32test1\	Unlimited	144 MountedRW	No	Yes	DisMount
C32TEST4	j:\ensemble3\hs-c32test4\	Unlimited	144 MountedRW	No	Yes	DisMount
CCDADDEV2	k:\ensemble2012\ccdadev2\	Unlimited	162 MountedRW	No	Yes	DisMount
CCDAGOLD1	k:\ensemble2012\ccdagold1\	Unlimited	102 MountedRW	No	Yes	DisMount
CCDAGOLD4	k:\ensemble2012\ccdagold4\	Unlimited	12679 Dismounted	No	No	Mount
CCDAPRECEM	j:\precert\ccdaprecem\	Unlimited	3807 MountedRW	No	No	DisMount
CCDATEST4	k:\ensemble2012\ccdatest4\	Unlimited	162 MountedRW	No	Yes	DisMount
DEV2	j:\ensemble3\hs-dev2\	Unlimited	33994 MountedRW	No	Yes	DisMount
DEV2U	j:\ensemble3\hs-dev2u\	Unlimited	1643 MountedRW	No	No	DisMount
DEV3	j:\ensemble3\hs-dev3\	Unlimited	33994 MountedRW	No	Yes	DisMount
DEV3U	j:\ensemble3\hs-dev3u\	Unlimited	1643 MountedRW	No	No	DisMount
DEV4	j:\ensemble3\hs-dev4\	Unlimited	33994 MountedRW	No	Yes	DisMount
DEV4U	j:\ensemble3\hs-dev4u\	Unlimited	1643 MountedRW	No	No	DisMount
DEV7	f:\3hs-dev7\	Unlimited	36584 MountedRW	No	No	DisMount
DEV7U	f:\3hs-dev7u\	Unlimited	789 MountedRW	No	No	DisMount
DOCBROOK	h:\intersystems\3\hs\mgr\docbook\	Unlimited	151 MountedRW	No	No	DisMount
EDATEST1	j:\ensemble3\hs-edatest1\	Unlimited	10 MountedRW	No	Yes	DisMount
ENSEM2	h:\intersystems\3\hs\mgr\ensdemo\	Unlimited	41 MountedRW	No	No	DisMount
ENSEM4	h:\intersystems\3\hs\mgr\ensemble\	Unlimited	11 MountedRW	No	Yes	DisMount
ENSEM8	h:\intersystems\3\hs\mgr\enssib\	Unlimited	257 MountedRW	No	No	DisMount
ENSEM9	j:\ensemble\enspm\	Unlimited	10 MountedRW	No	Yes	DisMount

Figure F.21: Databases

- On the **Mount Databases** dialog, verify that the **Read Only** checkbox is unchecked, then click **OK**.

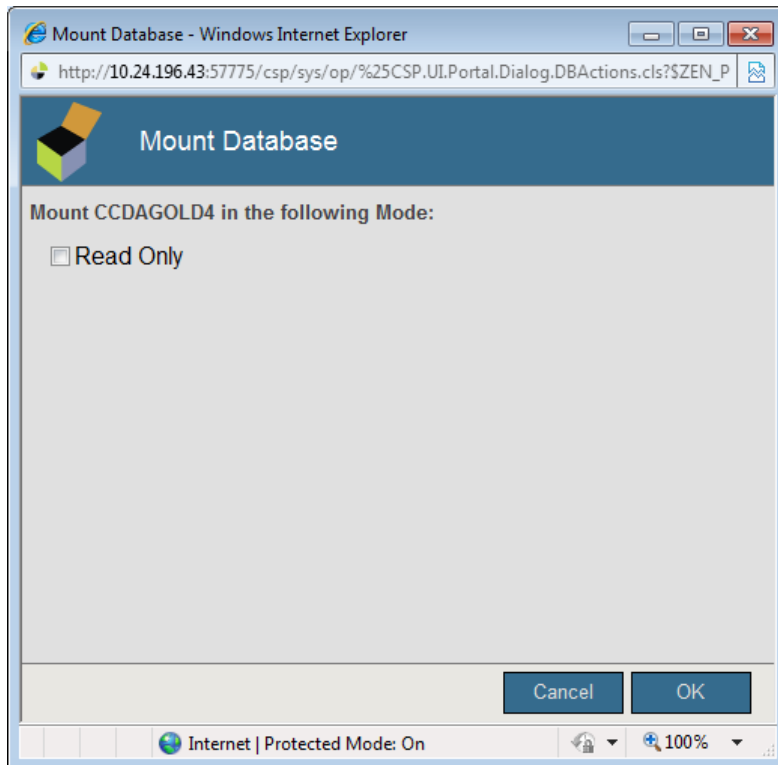


Figure F.22: Mount Databases

### F.3.7 Reschedule the Nightly CCDA Task

If you unscheduled the nightly CCDA task in section F.4.2, then you should reschedule the task. If you did not unschedule the task, then you should skip this section and proceed to section F.4.8.

1. Navigate to the CCDA menu in RPMS.
2. From the CCDA menu, select the **EDIT** option.
3. At the “TIME TO RUN NIGHTLY TASK” prompt, enter the time that was deleted in section F.4.2. In the example below, '23:00' was entered.
4. Press **ENTER** at the remaining prompts.

```
Select CCDA Menu Option: EDIT  Edit CCDA Site Parameters
Now editing CCDA parameters:

TIME TO RUN NIGHTLY TASK: 23:00

Now editing CCD (Summarization of Episode Note)-specific parameters:

ADD SOCIAL ENVIRONMENT PROB: YES//
ADD INACTIVE PERS HISTORY PROB: YES//
DISCHARGE PLANNER PROV TYPE: WOMEN'S HEALTH CASE MANAGER
//
Select ALLOWED CS PROVIDER CLASS: OSTEOPATHIC MEDICINE
//
DAYS KEEP TRANSMISSION ENTRIES: 30//
REPOSITORY LOCATION: http://www.nowhere.com  Replace
ENABLED: YES//
```

Figure F.23: Re-scheduling the CCDA Nightly Task via the EDIT option

### F.3.8 Restart CCDA

The steps in this section will start both the CCDA transmissions task and the CCDA Ensemble production.

1. Navigate to the CCDA menu in RPMS.

```
Select OPTION NAME: BCCD MENU          CCDA Menu

      EDIT  Edit CCDA Site Parameters
      ONE   Generate CCD for a single patient
      ALL   Generate CCD documents for all patients in RPMS
      MANG  Manage CCDA transmissions

Select CCDA Menu Option:
```

Figure F.24: Accessing the CCDA Menu

2. From the CCDA menu, select the **MANG** option.

3. The option will first check whether CCDA is running. If it is running, you do not need to make any changes. If it is not running, then answer **Y** at the “Start CCDA?” prompt.

```
Select CCDA Menu Option: MANG  Manage CCDA transmissions
CCDA status:
No configuration problems found

CCDA processing task is not running

Start CCDA? No// Y  (Yes)
Attempting to start CCDA  (MAY 01, 2014@12:00:00)..CCDA started
```

Figure F.25: Start CCDA Transmissions via the MANG option

4. You will receive a message indicating whether CCDA Messaging was started. If CCDA could not be started, contact the Help Desk for assistance.

## Appendix G: Restoring CCDA from Backup

This appendix contains instructions for restoring the CCDA environment from a backup.

### G.1 Create CCDA Database, Namespace, and Mappings

The specific steps required to create the CCDA database, namespace, and mappings depend on the nature of the restoration effort. If it is necessary to re-install the CCDA KIDS build in the RPMS environment, then the installation process will automatically create the CCDA database, namespace, and mappings.

However, if the CCDA KIDS build is not to be re-installed, then you must create the database, namespace, and mappings manually. Follow the steps in section F.1 to set up the CCDA database, namespace, and mappings.

### G.2 Restore CACHE.DAT File

Regardless of the method used to create the CCDA database, namespace, and mappings in section G.1, the new database will be created with a new CACHE.DAT file in the database directory. In order to restore the CCDA database, it is necessary to restore the CCDA database's CACHE.DAT file from the backup.

#### G.2.1 Dismount CCDA Database

1. Sign on to Ensemble's Management Portal.
2. Click on **System Operation** in the left column, then click **Databases**.



## G.2.2 Restore the CACHE.DAT File

In the operating system (Windows or Unix), restore the CACHE.DAT file for the CCDA database from the backup into the CCDA database directory. The CCDA database directory location can be found on the Databases screen in Ensemble's Management Portal (Figure G.2) and was noted in step 3 of section G.2.1. If you need assistance restoring the file from backup, please contact the OIT Help Desk.

## G.2.3 Remount CCDA Database

1. Sign on to Ensemble's Management Portal.
2. Click on **System Operation** in the left column, then click **Databases**.

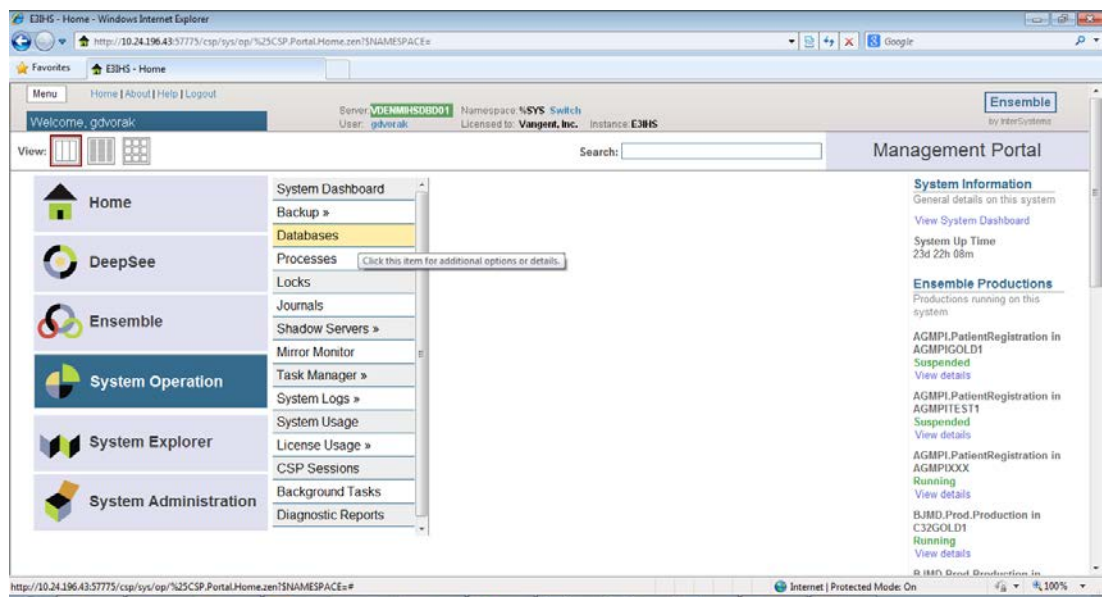


Figure G-3: Ensemble Management Portal, Databases option

3. On the **Databases** screen, locate the CCDA database and click **Mount** for that database.

Database Name	File Path	Size	Status	Permissions	Read Only	Mount
BUSDEV7	file3hs-bmwdev7f	Unlimited	3384 MountedRW	No	Yes	DisMount
BUSDEV7	file3hs-busdev7f	Unlimited	40 MountedRW	No	No	DisMount
BUSADOL4	file2012busagold4f	Unlimited	50 MountedRW	No	Yes	DisMount
BUSAPRECEM	J:\PreCert\busaprecem	Unlimited	40 Unmounted	No	No	Mount
BUSATEST7	file3hs-busafest7f	Unlimited	40 MountedRW	No	No	DisMount
C32DEV3	j:\ensemble3hs-c32dev3f	Unlimited	144 MountedRW	No	Yes	DisMount
C32GOLD1	j:\ensemble3hs-c32gold1f	Unlimited	1175 MountedRW	No	No	DisMount
C32GOLD2	j:\ensemble3hs-c32gold2f	Unlimited	162 MountedRW	No	No	DisMount
C32GOLD4	j:\ensemble3hs-c32gold4f	Unlimited	144 MountedRW	No	Yes	DisMount
C32PRECEM	j:\precert\c32precem	Unlimited	144 MountedRW	No	Yes	DisMount
C32TEST1	j:\ensemble3hs-c32test1f	Unlimited	144 MountedRW	No	Yes	DisMount
C32TEST4	j:\ensemble3hs-c32test4f	Unlimited	144 MountedRW	No	Yes	DisMount
CCDDEV2	k:\ensemble2012ccddev2f	Unlimited	162 MountedRW	No	Yes	DisMount
CCDAGOLD1	k:\ensemble2012ccdagold1f	Unlimited	102 MountedRW	No	Yes	DisMount
CCDAGOLD4	k:\ensemble2012ccdagold4f	Unlimited	12679 Dismounted	No	No	Mount
CCDAPRECEM	j:\precert\ccdaprecem	Unlimited	3807 MountedRW	No	No	DisMount
CCDATEST4	k:\ensemble2012ccdatest4f	Unlimited	162 MountedRW	No	Yes	DisMount
DEV2	j:\ensemble3hs-dev2f	Unlimited	33994 MountedRW	No	Yes	DisMount
DEV2U	j:\ensemble3hs-dev2uf	Unlimited	1643 MountedRW	No	No	DisMount
DEV3	j:\ensemble3hs-dev3f	Unlimited	33994 MountedRW	No	Yes	DisMount
DEV3U	j:\ensemble3hs-dev3uf	Unlimited	1643 MountedRW	No	No	DisMount
DEV4	j:\ensemble3hs-dev4f	Unlimited	33994 MountedRW	No	Yes	DisMount
DEV4U	j:\ensemble3hs-dev4uf	Unlimited	1643 MountedRW	No	No	DisMount
DEV7	file3hs-dev7f	Unlimited	36584 MountedRW	No	No	DisMount
DEV7U	file3hs-dev7uf	Unlimited	789 MountedRW	No	No	DisMount
DOCBOOK	h:\intersystems\3hs\mgr\docbook	Unlimited	151 MountedRW	No	No	DisMount
EDATEST1	j:\ensemble3hs-edatest1f	Unlimited	10 MountedRW	No	Yes	DisMount
ENSEM2	h:\intersystems\3hs\mgr\ensdemo	Unlimited	41 MountedRW	No	No	DisMount
ENSEM4	h:\intersystems\3hs\mgr\ensemble	Unlimited	11 MountedRW	No	Yes	DisMount
ENSEM8	h:\intersystems\3hs\mgr\ens8f	Unlimited	257 MountedRW	No	No	DisMount
ENSEM8S	j:\ensemble8spmf	Unlimited	10 MountedRW	No	Yes	DisMount

Figure G-4: Databases

- On the **Mount Databases** dialog, verify that the **Read Only** checkbox is unchecked, then click **OK**.

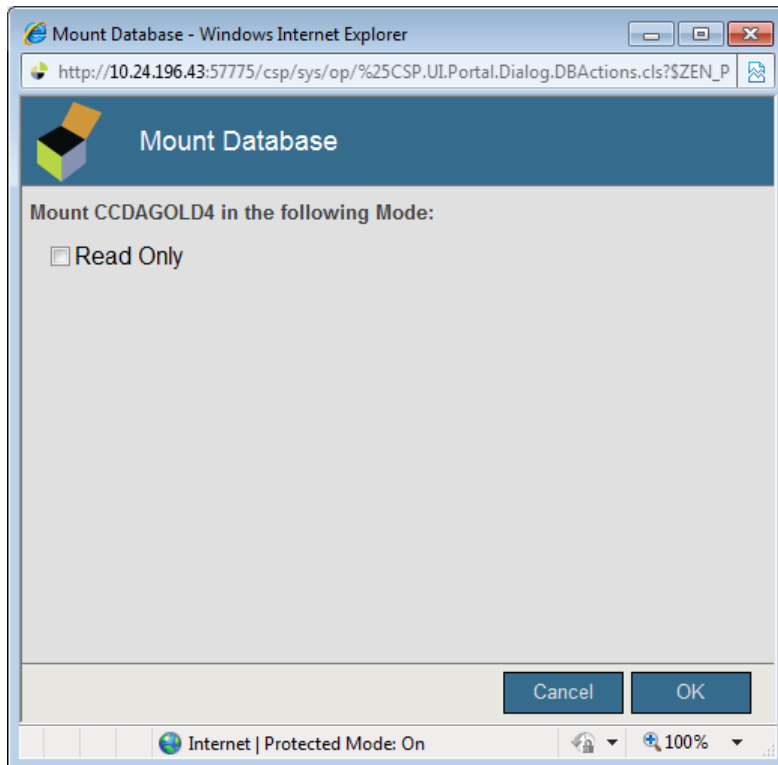


Figure G-5: Mount Databases



## G.3 Verify Settings

The production settings and purge task schedule should be restored with the environment. However, you should double check these settings to ensure they were restored successfully, as they are important for CCDA to work properly.

### G.3.1 Verify Custom Production Settings

1. Navigate to the **Production Configuration** screen in Ensemble's Management Portal.
2. For each item that had custom production settings, for example EmailAlert, click that item in the middle of the screen and verify that the setting has the correct value. If any settings need to be changed, enter the correct settings in the box on the right side of the screen. After changing the value for each item, click **Apply** at the top left of the settings box to save the settings.

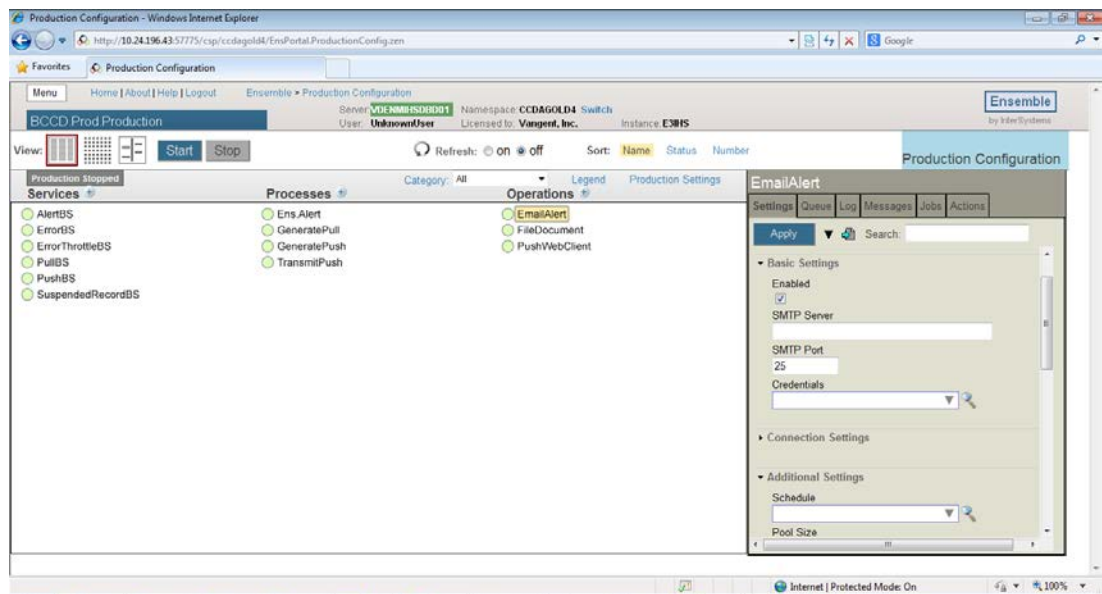


Figure G-6: Applying production settings

### G.3.2 Verify Purge Task Schedule

1. Navigate to the main **Management Portal** page. If you are on the **Production Configuration** page, navigate back to the main **Management Portal** page by clicking the **Home** link near the top left of the page.

- Check whether the purge task is already scheduled by clicking **System Operation**, then clicking **Task Manager >>**, then click **Task Schedule**, then click **Go**. Look for a task named **Auto-Purge CCDA in CCDAXXX**, where “CCDAXXX” is the name of your CCDA namespace. If there is a task by that name, then the purge task is already scheduled and you should skip the rest of this section.

Task Name	Task Type	Namespace	Description	ID	Suspend	Last Finished	Next Scheduled	
AGMPGOLD1 Message Purge	User	AGMPGOLD1	Purge Old AGMPRI Message	1032		2013-11-16 00:00	2013-11-23 00:00	Details History Run
AGMPGOLD2 Message Purge	User	AGMPGOLD2	Purge Old AGMPRI Message	1033		2013-11-16 00:00	2013-11-23 00:00	Details History Run
AGMPPOOX Message Purge	User	AGMPPOOX	Purge Old AGMPRI Message	1031		2013-11-16 00:00	2013-11-23 00:00	Details History Run
Auto-Purge C32 in C32GOLD1	User	C32GOLD1	Automatically purge messages	1001		2013-11-17 00:00	2013-11-24 00:00	Details History Run
Auto-Purge C32 in C32GOLD2	User	C32GOLD2	Automatically purge messages	1036		2013-11-17 00:00	2013-11-24 00:00	Details History Run
Auto-Purge C32 in C32TEST1	User	C32TEST1	Automatically purge messages	1072		2013-11-17 00:00	2013-11-24 00:00	Details History Run
Auto-Purge C32 in C32TEST4	User	C32TEST4	Automatically purge messages	1070		2013-11-17 00:00	2013-11-24 00:00	Details History Run
Auto-Purge CCDA in CCDAGOLD4	User	CCDAGOLD4	Automatically purge messages	1189		2013-10-28 11:28		Details History Run
Auto-Purge CCDA in CCDATEST4	User	CCDATEST4	Automatically purge messages	1041		2013-11-17 00:00	2013-11-24 00:00	Details History Run
Check Logging activity	System	%SYS	Check active application logging at 1:00 am	10		2013-11-19 01:00	2013-11-20 01:00	Details History Run
Diagnostic Report	System	%SYS	Send system diagnostic reports to WRC On Demand, and/or on a schedule	6				Details History Run
Integrity Check	System	%SYS	Integrity check for databases at 2:00 am every Monday	4	Suspend Reschedule		2013-11-25 02:00	Details History Run
Inventory Scan	System	%SYS	Run a scan of the system inventory on install or upgrade and on demand thereafter	8		2013-08-17 13:19		Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1058	Suspend Leave	2013-07-19 09:26	2013-07-19 00:01	Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1060	Suspend Leave	2013-07-29 14:27	2013-07-29 00:01	Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1064	Suspend Leave	2013-05-05 16:30	2013-05-05 00:01	Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1074	Suspend Leave	2013-08-20 13:34	2013-08-20 00:01	Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1080	Suspend Leave	2013-08-20 13:44	2013-08-20 00:01	Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1083	Suspend Leave	2013-08-23 13:56	2013-08-23 00:01	Details History Run
PostinstallTask	User	CCDATEST4	Performs installation steps in Ensemble namespace	1085	Suspend Leave	2013-08-27 11:16	2013-08-27 00:01	Details History Run

Figure G-7: View Task Schedule screen with a CCDA purge task already scheduled

- Navigate back to the main **Management Portal** by clicking on the **Task Manager** link near the top center of the page.
- Navigate to the **Task Scheduler Wizard** by clicking **New Task**.
- In the **Task Scheduler Wizard**, enter the following values, substituting the name of your CCDA namespace for “CCDAXXX”:

Task name: **Auto-Purge Task in CCDAXXX**

Description: **Automatically purge messages**

Namespace to run task in: **CCDAXXX**

Task type: **BCCD.Tasks.Purge**

BodiesToo: **checked**

KeepIntegrity: **checked**

NumberOfDaysToKeep: **7**

TypesToPurge: **Messages**

Task priority: **Priority Normal**

Run task as this user: **select a user with the %All role in Ensemble**

Open output file when task is running: **No**

Output file: **(blank)**

Reschedule task after system restart: **Yes**

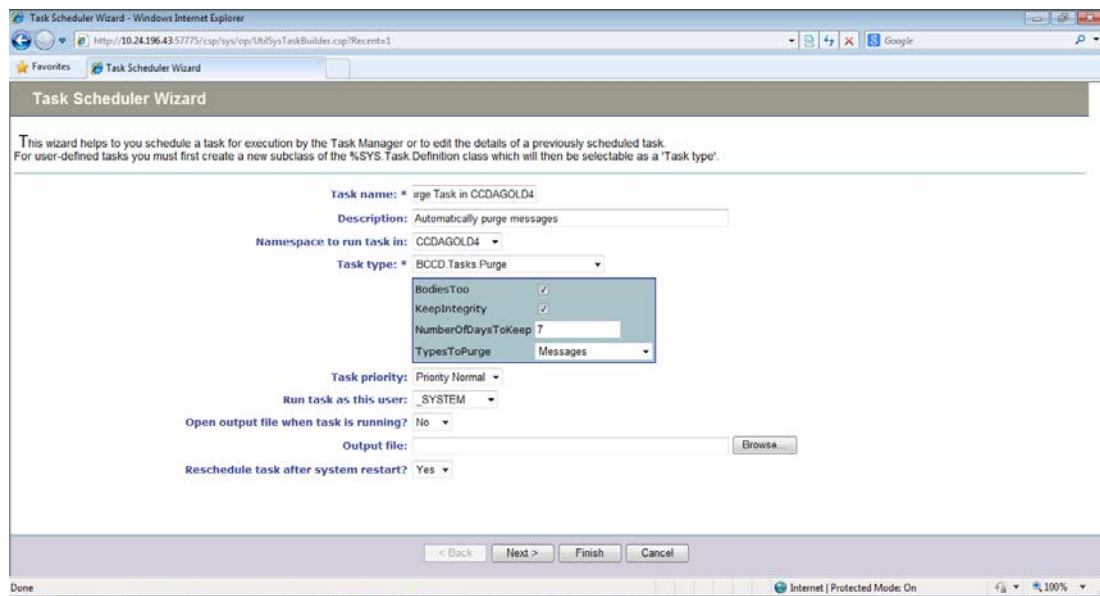


Figure G-8: First Screen on the Task Scheduler Wizard

6. Click **Next >** to navigate to the next screen.
7. On the **Schedule** screen, enter the following values:

How often do you want the Task Manager to execute this task: **Weekly**

Every \_\_ weeks: **1**

Monday-Saturday: **unchecked**

Sunday: **checked**

Start Date: **today's date**

End Date: **(blank)**

Run once at this time: **checked, 00:00:00**

Remaining fields: **do not change**

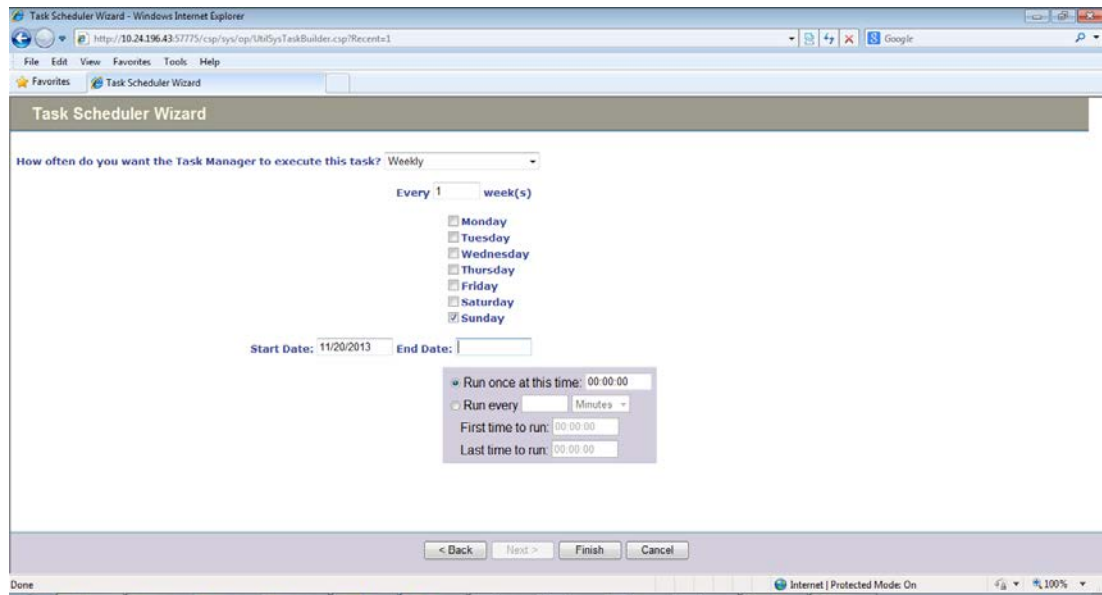


Figure G-9: Second screen of the Task Scheduler Wizard

Click **Finish** to schedule the task. The **View Task Schedule** screen will display with the CCDA purge task added to the list of tasks.

## G.4 Start CCDA

At this point, the CCDA environment has been restored. Once any non-CCDA restoration tasks have been completed and TaskMan is running, CCDA processing may be started by following the steps in this section.

1. Navigate to the CCDA menu in RPMS.

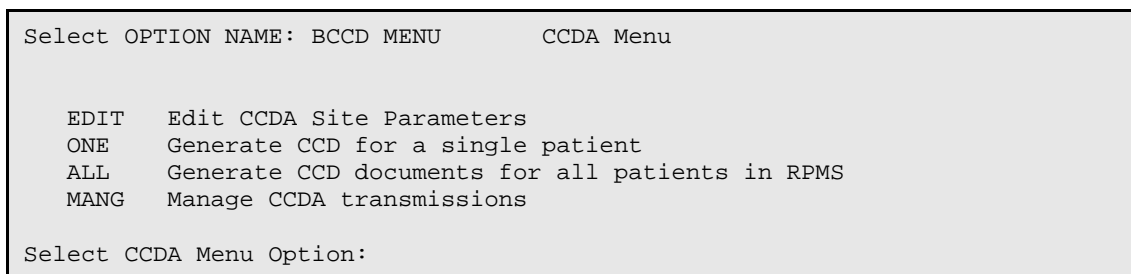


Figure G-10: Accessing the CCDA Menu

2. From the CCDA menu, select the **MANG** option.

3. The option will first check whether CCDA is running. If it is running, you do not need to make any changes. If it is not running, then answer **Y** at the “Start CCDA?” prompt.

```
Select CCDA Menu Option: MANG  Manage CCDA transmissions
CCDA status:
No configuration problems found

CCDA processing task is not running

Start CCDA? No// Y  (Yes)
Attempting to start CCDA  (MAY 01, 2014@12:00:00)..CCDA started
```

Figure G-11: Start CCDA Transmission via the MANG option

4. You will receive a message indicating whether CCDA Messaging was started. If CCDA could not be started, contact the Help Desk for assistance.

## Glossary

**API**

Application Programming Interface; an interface provided by a software application to allow other applications to interact with it.

**BCCD**

RPMS namespace for CCDA files, routines, and classes.

**HTTP**

Hypertext Transfer Protocol; a widely used communication protocol on the World Wide Web.

**SOAP**

Simple Object Access Protocol; the communication protocol and message format used in communicating with web services.

**Taxonomy**

In RPMS, a grouping of functionally related data elements, such as ICD codes. For CCDA, taxonomies are used to list procedures, test results and other data elements with non-standard data extraction criteria.

**Web client**

An application that consumes (accesses) a web service.

**Web service**

An API that allows communication with an application via SOAP messages over HTTP.

**WSDL**

Web Service Description Language; a file that describes a web service's API.

**XML**

Extensible Markup Language; a set of rules for encoding data in a machine-readable form.

## Acronym List

<b>API</b>	Application Programming Interface
<b>CCDA</b>	Consolidated Clinical Document Architecture
<b>EHR</b>	Electronic Health Record
<b>FM2C</b>	FileMan-to-Class utility; prior to FM2C version 1.0, the abbreviation stood for FileMan-to-Caché mapper
<b>HIE</b>	Health Information Exchange
<b>HL7</b>	Health Level Seven
<b>IHS</b>	Indian Health Service
<b>KIDS</b>	Kernel Installation and Distribution System
<b>PHR</b>	Personal Health Record
<b>RPMS</b>	Resource and Patient Management System
<b>WSDL</b>	Web Services Description Language
<b>XML</b>	Extensible Markup Language

## Contact Information

If you have any questions or comments regarding this distribution, please contact the OIT Help Desk (IHS).

**Phone:** (888) 830-7280 (toll free)

**Web:** <http://www.ihs.gov/helpdesk/>

**Email:** [support@ihs.gov](mailto:support@ihs.gov)