

Step	Description
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|-------|--|---|
| 1. | HL("MTN") | The three character message type for the message received (e.g., QRY [Query], ORU [Observation Result Unsolicited], etc.). |
| cont. | HL("PID") | The HL7 processing ID for the message received. (Normally, P for production, T for Training, D for debug.) |
| | HL("Q") | Two quotation marks (""). This variable can be used to insert a null value in an HL7 field when building HL7 segments. |
| | HL("RAN") | The name of the receiving application from the HL7 APPLICATION PARAMETER file (#771)(e.g., Radiology). |
| | HL("SAN") | The name of the sending application for the message received from the HL7 APPLICATION PARAMETER file (#771). |
| | HL("VER") | The version number of the HL7 protocol that was used to build the message being received. |
| 2. | All messages received are stored in a multiple field of the MESSAGE TEXT file (#772). This is the data that the receiving DHCP application must process. To process this data, the application must use the following three special variables: | |
| | HLNEXT | M code that is executed by the application to \$O through the nodes of the Message Text global. |
| | HLNODE | A node from the Message Text global. |
| | HLQUIT | A variable that indicates when there are no more nodes to process. If HLQUIT>0 all message text has been processed. |

Step Description

3. The DHCP application processing routine should analyze the data in the message stored in the Message Text global and determine the appropriate HL7 response. To analyze the data, the application processing routine should execute the HLNEXT variable, analyze the data stored in the HLNODE variable, and quit if the HLQUIT variable is not greater than zero.

The following is an example of possible application code:

```
N I,J,X
F I=1:1 X HLNEXT Q:HLQUIT'>0 S X(I)=HLNODE,J=0 F S J=$0(HLNODE(J))
Q:'J S X(I,J)=HLNODE(J)
```

NOTE: For segments greater than 245 characters, HLNODE(X) will be defined.

To respond to the incoming message, the DHCP application processing routine should set nodes of the HLA("HLA",I) local array equal to the appropriate HL7 segments or alternately, if the response is a large message, set HL7 segments into the global array ^TMP("HLA",\$J,I). At this point, the receiving application becomes a sending application.

NOTE: If a batch of HL7 messages (more than one) is to be created, the routine should invoke the CREATE^HLTF(HLMID,MTIEN,HLDT,HLDT1) entry point to obtain a message ID for the message being sent and to create an entry in the Message Text file (#772). The routine should then create the Message Header (MSH) segments for each HL7 message in the batch. The function call MSH^HLFNC2(HL,MID,RESULT,SECURITY) can be used to build the MSH segments. The message ID for each MSH segment should be created by concatenating together the message ID returned by the call to CREATE^HLTF, a hyphen, and a sequential whole number starting with the number 1 (e.g., 12345-1). If only one HL7 message is being created, the routine should not make the call to CREATE^HLTF or create the MSH segment. The DHCP HL7 package will create the MSH segment for you. The application processing routine should then invoke the GENACK^HLMA1(HLEID,HLMTIENS,HLEIDS,HLARYTYP,HLFORMAT,HLRESLTA,HLMTIENA,HLP) entry point to send the acknowledgment message, then quit to pass control back to the DHCP HL7 package.

Step Description

3. The input and output parameters for these entry points are as follows:
cont.

CREATE^HLTF(HLMID,MTIEN,HLDT,HLDT1)

Input Parameters

HLMID	The parameter in which the message ID will be returned. This parameter must be passed by reference.
MTIEN	The parameter in which the IEN of the entry in the MESSAGE TEXT file (#772) will be returned. This parameter must be passed by reference.
HLDT	The parameter in which the message date/ time in VA FileMan format will be returned. This parameter must be passed by reference.
HLDT1	The parameter in which the message date/time in HL7 format will be returned. This parameter must be passed by reference.

Output Parameters

All of the above input parameters are returned as output parameters.

MSH^HLFNC2(HL,MID,RESULT,SECURITY)

Input Parameters

HL	The array in which the output parameters will be returned. This parameter must be passed by reference.
MID	The parameter in which the message ID will be returned.

Step Description

3. RESULT cont.	The message ID assigned to this message and/or an error message will be returned in this parameter. This parameter must be passed by reference. If the call to MSH^HLFNC2 is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.
SECURITY	Security information (1 to 40 characters) that the DHCP application wants included in the SECURITY field (#8) of the HL7 MSH or BHS segment when sending a message. (Optional)

Output Parameters

All of the above input parameters are returned as output parameters.

GENACK^HLMA1(HLEID,HLMTIENS,HLEIDS,HLARYTYP,HLFORMAT,HLRESLTA,HLMTIENA,HLP)

Input Parameters

HLEID	The IEN of the event driver protocol in the PROTOCOL file (#101). It is passed to the processing routine in the variable HL("EID")
HLMTIENS	The IEN of the entry in the MESSAGE TEXT file (#772) for the subscriber application.
HLEIDS	The IEN of the subscriber protocol in the PROTOCOL file (#101). It is passed to the processing routine in the variable HL("EIDS")
HLARYTYP	This parameter specifies where the acknowledgment array is stored and whether it is a single message or batch acknowledgment. It must equal LM for Local/Single Message, LB for Local/Batch Message, GM for Global/Single Message or GB for Global/Batch Message

Step Description

2. Check for \$O(HL("")). If this check proves false, the call to INIT^HLFNC2 failed. The HL variable will contain the error message/reason for failure. The routine should quit. Otherwise, the routine should set the local array HLA("HLS",I) or, alternately, if the HL7 message is a large one, the global array ^TMP("HLS",\$J,I) equal to the HL7 segments to be included in the HL7 message. If a batch of HL7 messages (more than one) is to be created, the routine should invoke the CREATE^HLTF(HLMID,MTIEN,HLDT,HLDT1) entry point to obtain a message ID for the message being sent and to create an entry in the MESSAGE TEXT file (#772). The routine should then create the Message Header (MSH) segments for each HL7 message in the batch. The function call MSH^HLFNC2 can be used to build the MSH segments. The message ID for each MSH segment should be created by concatenating together the message ID returned by the call to CREATE^HLTF, a hyphen, and a sequential, whole number starting with 1 (e.g., 12345-1). If only one HL7 message is being created, the routine should not make the call to CREATE^HLTF or create the MSH segment. The DHCP HL7 package will create the MSH segment for you. The input and output parameters for CREATE^HLTF(HLMID,MTIEN,HLDT,HLDT1) are as follows:

Input Parameters

HLMID	The parameter in which the message ID will be returned. This parameter must be passed by reference.
MTIEN	The parameter in which the IEN of the entry in the MESSAGE TEXT file (#772) will be returned. This parameter must be passed by reference.
HLDT	The parameter in which the message date/time in VA FileMan format will be returned. This parameter must be passed by reference.
HLDT1	The parameter in which the message date/time in HL7 format will be returned. This parameter must be passed by reference.

Output Parameters

All of the above input parameters are returned as output parameters.

Step Description

2. The input and output parameters for MSH^HLFNC2(HL,MID,RESULT, cont. SECURITY) are as follows:

Input Parameters

HL	The array in which the output parameters will be returned. This parameter must be passed by reference.
MID	The parameter in which the message ID will be returned.
RESULT	The message ID assigned to this message and/or an error message will be returned in this parameter. This parameter must be passed by reference. If the call to MSH^HLFNC2 is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.
SECURITY	Security information (1 to 40 characters) that the DHCP application wants included in the SECURITY field (#8) of the HL7 MSH or BHS segment when sending a message. (Optional)

Output Parameters

All of the above input parameters are returned as output parameters.

The variables that the DHCP application is responsible for setting are defined as follows:

HLA("HLS",I)	A local array consisting of HL7 segments that form an HL7 message where the variable I is a sequential, whole number starting with the number one. This array is built by the DHCP application in order to send an HL7 message that is small enough to be built in the local partition space. Otherwise, the ^TMP("HLS") global array defined below should be set.
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Step Description

2. ^TMP("HLS",\$J,I)
cont. A global array containing all segments of the HL7 message that the receiving DHCP application wishes to send as a response. The variable I is a sequential, whole number starting with the number one.

3. Once the HLA("HLS") local array or the ^TMP("HLS") global array has been created, the routine should call the subroutine entry point GENERATE^HLMA(HLEID,HLARYTYP,HLFORMAT,HLRESLT,HLMTIEN,HLP). The input and output parameters for this call are as follows:

Input Parameters

HLEID	The IEN of the event driver protocol in the Protocol file (#101). It is passed to the processing routine in the variable HL("EID")
HLARYTYP	This parameter specifies where the acknowledgment array is stored and whether it is a single message or batch acknowledgment. It must equal LM for Local/Single Message, LB for Local/Batch Message, GM for Global/Single Message or GB for Global/Batch Message
HLFORMAT	This parameter specifies whether the HLA array is pre-formatted in HL7 format. At this time, it should always equal 1.
HLMTIEN	The IEN of the entry in the Message Text file (#772) created by the call to the entry point CREATE^HLTF.
HLRESLT	The message ID assigned to this message and/or an error message will be returned in this parameter. This parameter must be passed by reference.
HLP("CONTPTR")	The value that should go in the continuation pointer field of the Message Header segment for the message being sent.

Step Description

3. Input Parameters, cont. cont.

HLP("PRIORITY")	This parameter is optional. The default priority is delayed. Set this parameter equal to I for Immediate if this message should be delivered in the foreground (immediately).
HLP("SECURITY")	Security information that the DHCP application wants included in the Security field (#8) of the HL7 MSH or BHS segment when sending a message. This is an optional variable.

Output Parameters

HLRESLT	If the call to GENERATE^HLMA is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.
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4. When the entry point GENERATE^HLMA is invoked, the data in the HLA("HLS") local array or ^TMP("HLS") global array is loaded into the MESSAGE TEXT file (#772) and the entry in the MESSAGE TEXT file (#772) is completed. The message is then delivered to the subscribers to the event driver protocol specified in the PROTOCOL file (#101).

Reference Guide

Variables

The following table provides a list of the basic variables, with their descriptions, that are used by the DHCP HL7 package for the V. 1.6 interface method. The variables are grouped into the following three categories:

- Variables created when an HL7 message is *received*
- Variables created when an HL7 message is being *sent*
- Variables created when HL7 messages are both *sent and received*

Variable Name	Description	When Created
EID	The IEN of the event driver protocol in the PROTOCOL file (#101) for the application that is sending this message.	Sent
HL	The array in which the output parameters will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HL("ACAT")	The accept acknowledgment type from the PROTOCOL file (#101). (Optional)	Sent
HL("APAT")	The application acknowledgment condition of the sending application from the PROTOCOL file (#101). It is in the message header of the message received. This variable will be used by the receiving application to determine the type of acknowledgment, if any, that must be returned to the application that sent the message. (Optional)	Sent and Received
HL("CC")	The country code of the sending application from the HL7 APPLICATION PARAMETER file (#771). It is in the message header of the message received. (Optional)	Sent and Received
HL("DTM")	The date/time from the message header of the message received in HL7 format. (Optional)	Received
HL("DUZ")	If a valid DHCP access code is contained in the first component of the SECURITY field (#8) of the MSH segment, HLDUZ will equal the DUZ associated with this access code from the NEW PERSON file (#200) on DHCP. (Optional)	Received

Variables, cont.

Variable Name	Description	When Created
HL("ECH")	The HL7 encoding characters (1 to 4 characters) to be used in extracting data from HL7 segments and fields. Each character must be unique and cannot match the HL7 field separator character. (See the variable HLFS for a definition of the field separator character.) The four encoding characters are the component separator, repetition separator, escape character, and sub-component separator, in that order. The default characters used by the DHCP HL7 package (when an application package does not define its own encoding characters) are ~ \&.	Sent and Received
HL("EID")	The IEN of the event driver protocol from the PROTOCOL file (#101) that generated the message.	Received
HL("EIDS")	The IEN of the subscriber protocol from the PROTOCOL file (#101) that is receiving the message.	Received
HL("ESIG")	This variable might not always exist. If a valid DHCP electronic signature code is contained in the third component of the SECURITY field (#8) of the MSH segment, HLESIG will equal the signature block printed name associated with this electronic signature code from the NEW PERSON file (#200) on DHCP.	Received
HL("ETN")	The 3 character event type name from the PROTOCOL file (#101) (e.g., A01 [Admit a Patient], O01 [Order Message], etc.).	Sent and Received
HL("FS")	The HL7 field separator character to be used in extracting fields of data from HL7 messages received, or building HL7 segments in messages sent. The field separator is only one character (e.g., ^).	Sent and Received
HL("MID")	The HL7 message control ID for the message received. A number that uniquely identifies the message.	Received
HL("MTN")	The three character message type name from the PROTOCOL file (#101) (e.g., ADT, QRY [Query], ORU [Observation Result Unsolicited], etc.).	Sent and Received
HL("PID")	The HL7 processing ID for the message received. (Normally, P for production, T for Training, D for Debug.)	Sent and Received
HL("Q")	Two quotation marks (""). This variable can be used to insert a null value in an HL7 field when building HL7 segments.	Sent and Received

Variables, cont.

Variable Name	Description	When Created
HL("RAN")	The name of the receiving application from the HL7 APPLICATION PARAMETER file (#771) (e.g., Radiology).	Received
HL("SAF")	The name of the sending facility from the HL7 APPLICATION PARAMETER file (#771).	Sent
HL("SAN")	The name of the sending application (e.g., Radiology) from the HL7 APPLICATION PARAMETER file (#771) for the message received.	Sent and Received
HL("VER")	The version number of the HL7 protocol that was used to build the message being sent/received.	Sent and Received
HLA("HLA",I)	A local array consisting of HL7 segments that form an HL7 message where the variable I is a sequential, whole number starting with the number 1. This array is built by the DHCP application in order to send an HL7 message that is small enough to be built in the local partition space. Otherwise, the ^TMP("HLA") global array should be set.	Received
HLA("HLS",I)	A local array consisting of HL7 segments that form an HL7 message where the variable I is a sequential, whole number starting with the number 1. This array is built by the DHCP application in order to send an HL7 message that is small enough to be built in the local partition space. Otherwise, the ^TMP("HLS") global array defined below should be set.	Sent
HLARYTYP	This parameter specifies where the acknowledgment array is stored and whether it is a single message or batch acknowledgment. It must equal LM for Local/Single Message, LB for Local/Batch Message, GM for Global/Single Message or GB for Global/Batch Message.	Sent and Received
HLDT	The parameter in which the message date/time in internal VA FileMan format will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HLDT1	The parameter in which the message date/time in HL7 format will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HLEID	The IEN of the event driver protocol in the PROTOCOL file (#101). It is passed to the processing routine in the variable HL("EID").	Sent and Received
HLEIDS	The IEN of the subscriber protocol in the PROTOCOL file (#101). It is passed to the processing routine in the variable HL("EIDS").	Received

Variables, cont.

Variable Name	Description	When Created
HLFORMAT	This parameter specifies whether the HLA array is pre-formatted in HL7 format. At this time, it should always equal 1.	Sent and Received
HLMID	The parameter in which the message ID will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HLMTIEN	The parameter in which the IEN of the entry in the MESSAGE TEXT file (#772) created by the call to the entry point CREATE^HLTF.	Sent
HLMTIENA	The IEN of the entry in the MESSAGE TEXT file (#772) created by the call to the entry point CREATE^HLTF and returned in the MTIEN parameter.	Received
HLMTIENS	The IEN of the entry in the MESSAGE TEXT file (#772) for the subscriber application.	Received
HLNEXT	M code that is executed by the application to \$O through the nodes of the Message Text global.	Received
HLNODE	A node from the Message Text global.	Received
HLP("CONTPTR")	The value that should go in the CONTINUATION POINTER field of the Message Header segment for the message being sent.	Sent
HLP("ERRTEXT")	If an error occurred during the processing of the incoming message, an error message (1 to 80 characters) should be passed in this parameter. (Optional)	Received
HLP("PRIORITY")	The default priority is delayed. Set this parameter equal to I for Immediate if this message should be delivered in the foreground (immediate).	Sent and Received
HLP("SECURITY")	Security information (1 - 40 characters) that the DHCP application wants included in the SECURITY field (#8) of the HL7 MSH or BHS segment when sending a message. (Optional)	Sent and Received
HLQUIT	A variable that indicates when there are no more nodes to process. If HLQUIT is not greater than zero, all message text has been processed.	Received

Variables, cont.

Variable Name	Description	When Created
HLRESLT	The message ID assigned to this message and/or an error message will be returned in this parameter. This parameter must be passed by reference. If the call to GENERATE^HLMA is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.	Sent
HLRESLTA	The message ID assigned to this message and/or an error will be returned in this parameter. This parameter must be passed by reference. If the call to GENACK is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.	Received
INT	Indicates that only array values for an internal DHCP-to-DHCP message exchange should be utilized.	Sent
MID	The parameter in which the message ID will be returned.	Sent and Received
MTIEN	The parameter in which the IEN of the entry in the MESSAGE TEXT file (#772) (created by the call to the entry point CREATE^HLTF) will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
MTIENA	The IEN of the entry in the MESSAGE TEXT file (#772) created by the call to the entry point CREATE^HLTF and returned in the MTIEN parameter.	Received
PRIORITY	The default priority is delayed. Set this parameter equal to I for Immediate if this message should be delivered in the foreground (immediately). (Optional)	Sent and Received

Variables, cont.

Variable Name	Description	When Created
RESULT	The message ID assigned to this message and/or an error message will be returned in this parameter. <i>This parameter must be passed by reference.</i> If the call to MSH^HLFNC2 is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.	Sent and Received
SECURITY	Security information (1 to 40 characters) that the DHCP application wants included in the SECURITY field (#8) of the HL7 MSH or BHS segment when sending a message. (Optional)	Sent and Received
^TMP("HLA",\$J,I)	A global array containing all segments of the HL7 message that the receiving DHCP application wishes to send as a response. The variable I is a sequential, whole number starting with the number 1.	Received
^TMP("HLS",\$J,I)	A global array containing all segments of the HL7 message that the receiving DHCP application wishes to send as a response. The variable I is a sequential, whole number starting with the number 1.	Sent

Entry Points

The following is a List of supported entry points into routines belonging to the DHCP HL7 package. These entry points should be used by individual DHCP packages using the V. 1.6 interface method. For each entry point listed, the following information is provided:

- Entry point name and description
- Required/optional input parameters
- Output parameters, if applicable

CREATE^HLTF(HLMID,MTIEN,HLDT,HLDT1)

If a batch of HL7 messages (more than one) is to be created, the application processing routine should invoke this entry point to obtain a message ID for the message being sent, and to create an entry in the MESSAGE TEXT file (#772).

Required Input Parameters: HLDT, HLDT1, HLMID, MTIEN
(These parameters must be passed by reference.)

Output Parameters: All of the above input variables are returned as
output variables.

GENACK^HLMA1(HLEID,HLMTIENS, HLEIDS,HLARYTYP,HLFORMAT, HLRESLTA,HLMTIENA,HLP)

After the MSH segment is created, the application processing routine should invoke this entry point to send the acknowledgment message, then quit to pass control back to the DHCP HL7 package. If the call to GENACK is successful, the HLRESLTA parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, the HLRESLTA parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.

Required Input Parameters: HLEID, HLMTIENS, HLEIDS, HLARYTYP,
HLFORMAT, HLRESLTA, HLMTIENA, HLP
(HLRESLTA must be passed by reference.)

Optional Input Parameters: HLMTIENA, HLP("PRIORITY"), HLP("SECURITY")

Output Parameters: HLRESLTA

Entry Points, cont.

GENERATE^HLMA(HLEID,HLARYTYP,HLFORMAT,HLMTIEN,HLRESLT,HLP)

When this entry point is invoked, it loads the data in the HLA("HLS") local array or the ^TMP("HLS") global array in the MESSAGE TEXT file (#772), and the entry in the MESSAGE TEXT file (#772) is completed. The message is then delivered to the subscribers to the event driver protocol specified in the PROTOCOL file (#101). If the call to GENERATE^HLMA is successful, the HLRESLT parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, the HLRESLT parameter will be returned with the following three prices of data: message ID (or 0 if no message ID was assigned)^error code^error message.

Required Input Parameters: HLEID, HLARAYTYP, HLFORMAT, HLRESLT
(HLRESLT must be passed by reference.)

Optional Input Parameters: HLMTIEN, HLP("PRIORITY"), HLP("SECURITY"),
HLP("CONTPTR")

Output Parameters: HLRESLT

INIT^HLFNC2(EID,HL,INT)

To transmit HL7 messages, the DHCP application must develop a MUMPS routine (or, optionally, an entry point in a routine) for each type of HL7 message it will be sending. (Please refer to Appendix B for a list of supported HL7 message types.) The MUMPS routine should invoke this subroutine entry point to initialize variables needed to build an HL7 message for transmission to the receiving application.

Input Parameters: EID, HL
(HL must be passed by reference.)

Optional Input Parameters INT

Output Parameters: HL("ACAT"), HL("APAT"), HL("CC"), HL("ECH"),
HL("ETN"), HL("FS"), HL("MTN")HL("PID"), HL("Q"),
HL("SAN"), HL("SAF"), HL("VER")

Callable Routines

The following is a list of supported entry points into routines belonging to the DHCP HL7 package. These entry points should be used by individual DHCP packages using the V. 1.6 interface method. For each entry point listed, the following information is provided:

- Entry point name and description
- Required/optional input parameters
- Output parameters, if applicable

CREATE^HLTF(HLMID,MTIEN,HLDT,HLDT1)

If a batch of HL7 messages (more than one) is to be created, the application processing routine should invoke this entry point to obtain a message ID for the message being sent, and to create an entry in the MESSAGE TEXT file (#772).

Required Input Parameters: HLDT, HLDT1, HLMID, MTIEN
(These parameters must be passed by reference.)

Output Parameters: All of the above input variables are returned as
output variables.

GENACK^HLMA1(HLEID,HLMTIENS, HLEIDS,HLARYTYP,HLFORMAT, HLRESLTA,HLMTIENA,HLP)

After the MSH segment is created, the application processing routine should invoke this entry point to send the acknowledgment message, then quit to pass control back to the DHCP HL7 package. If the call to GENACK is successful, the HLRESLTA parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, the HLRESLTA parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.

Required Input Parameters: HLEID, HLMTIENS, HLEIDS, HLARYTYP,
HLFORMAT, HLRESLTA, HLMTIENA, HLP
(HLRESLTA must be passed by reference.)

Optional Input Parameters: HLMTIENA, HLP("PRIORITY"), HLP("SECURITY")

Output Parameters: HLRESLTA

Callable Routines, cont.

GENERATE^HLMA(HLEID,HLARYTYP,HLFORMAT,HLRESLT,HLMTIEN,HLP)

When this entry point is invoked, it loads the data in the HLA("HLS") local array or the ^TMP("HLS") global array into the MESSAGE TEXT file (#772), and the entry in the MESSAGE TEXT file (#772) is completed. The message is then delivered to the subscribers to the event driver protocol specified in the PROTOCOL file (#101). If the call to GENERATE^HLMA is successful, the HLRESLT parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, the HLRESLT parameter will be returned with the following three prices of data: message ID (or 0 if no message ID was assigned)^error code^error message.

Required Input Parameters: HLEID, HLARAYTYP, HLFORMAT, HLRESLT
(HLRESLT must be passed by reference.)

Optional Input Parameters: HLMTIEN, HLP("PRIORITY"), HLP("SECURITY"),
HLP("CONTPTR")

Output Parameters: HLRESLT

INIT^HLFNC2(EID,HL,INT)

To transmit HL7 messages, the DHCP application must develop a M routine (or, optionally, an entry point in a routine) for each type of HL7 message it will be sending. (Please refer to Appendix B for a list of supported HL7 message types.) The M routine should invoke this subroutine entry point to initialize variables needed to build an HL7 message for transmission to the receiving application.

Input Parameters: EID, HL
(HL must be passed by reference.)

Optional Input Parameters INT

Output Parameters: HL("ACAT"), HL("APAT"), HL("CC"), HL("ECH"),
HL("ETN"), HL("FS"), HL("MTN")HL("PID"), HL("Q"),
HL("SAN"), HL("SAF"), HL("VER")

Variables

Package-wide Variables

There are no package-wide variables associated with the DHCP HL7 software package.

Basic Variables

The following table provides a list of the basic variables, with their descriptions, that are used by the DHCP HL7 package for the V. 1.6 interface method. The variables are grouped into the following three categories:

- Variables created when an HL7 message is *received*
- Variables created when an HL7 message is being *sent*
- Variables created when HL7 messages are both *sent and received*

Variable Name	Description	When Created
EID	The IEN of the event driver protocol in the PROTOCOL file (#101) for the application that is sending this message.	Sent
HL	The array in which the output parameters will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HL("ACAT")	The accept acknowledgment type from the PROTOCOL file (#101). (Optional)	Sent
HL("APAT")	The application acknowledgment condition of the sending application from the PROTOCOL file (#101). It is in the message header of the message received. This variable will be used by the receiving application to determine the type of acknowledgment, if any, that must be returned to the application that sent the message. (Optional)	Sent and Received
HL("CC")	The country code of the sending application from the HL7 APPLICATION PARAMETER file (#771). It is in the message header of the message received. (Optional)	Sent and Received
HL("DTM")	The date/time from the message header of the message received in HL7 format. (Optional)	Received

Basic Variables, cont.

Variable Name	Description	When Created
HL("DUZ")	If a valid DHCP access code is contained in the first component of the SECURITY field (#8) of the MSH segment, HLDUZ will equal the DUZ associated with this access code from the NEW PERSON file (#200) on DHCP. (Optional)	Received
HL("ECH")	The HL7 encoding characters (1 to 4 characters) to be used in extracting data from HL7 segments and fields. Each character must be unique and cannot match the HL7 field separator character. (See the variable HLFS for a definition of the field separator character.) The four encoding characters are the component separator, repetition separator, escape character, and sub-component separator, in that order. The default characters used by the DHCP HL7 package (when an application package does not define its own encoding characters) are ~ \&.	Sent and Received
HL("EID")	The IEN of the event driver protocol from the PROTOCOL file (#101) that generated the message.	Received
HL("EIDS")	The IEN of the subscriber protocol from the PROTOCOL file (#101) that is receiving the message.	Received
HL("ESIG")	This variable might not always exist. If a valid DHCP electronic signature code is contained in the third component of the SECURITY field (#8) of the MSH segment, HLESIG will equal the signature block printed name associated with this electronic signature code from the NEW PERSON file (#200) on DHCP.	Received
HL("ETN")	The 3 character event type name from the PROTOCOL file (#101) (e.g., A01 [Admit a Patient], O01 [Order Message], etc.).	Sent and Received
HL("FS")	The HL7 field separator character to be used in extracting fields of data from HL7 messages received, or building HL7 segments in messages sent. The field separator is only one character (e.g., ^).	Sent and Received
HL("MID")	The HL7 message control ID for the message received. A number that uniquely identifies the message.	Received
HL("MTN")	The three character message type name from the PROTOCOL file (#101) (e.g., ADT, QRY [Query], ORU [Observation Result Unsolicited], etc.).	Sent and Received

Basic Variables, cont.

Variable Name	Description	When Created
HL("PID")	The HL7 processing ID for the message received. (Normally, P for production, T for Training, D for Debug.)	Sent and Received
HL("Q")	Two quotation marks (""). This variable can be used to insert a null value in an HL7 field when building HL7 segments.	Sent and Received
HL("RAN")	The name of the receiving application from the HL7 APPLICATION PARAMETER file (#771) (e.g., Radiology).	Received
HL("SAF")	The name of the sending facility from the HL7 APPLICATION PARAMETER file (#771).	Sent
HL("SAN")	The name of the sending application (e.g., Radiology) from the HL7 APPLICATION PARAMETER file (#771) for the message received.	Sent and Received
HL("VER")	The version number of the HL7 protocol that was used to build the message being sent/received.	Sent and Received
HLA("HLA",I)	A local array consisting of HL7 segments that form an HL7 message where the variable I is a sequential, whole number starting with the number 1. This array is built by the DHCP application in order to send an HL7 message that is small enough to be built in the local partition space. Otherwise, the ^TMP("HLA") global array should be set.	Received
HLA("HLS",I)	A local array consisting of HL7 segments that form an HL7 message where the variable I is a sequential, whole number starting with the number 1. This array is built by the DHCP application in order to send an HL7 message that is small enough to be built in the local partition space. Otherwise, the ^TMP("HLS") global array defined below should be set.	Sent
HLARYTYP	This parameter specifies where the acknowledgment array is stored and whether it is a single message or batch acknowledgment. It must equal LM for Local/Single Message, LB for Local/Batch Message, GM for Global/Single Message or GB for Global/Batch Message.	Sent and Received
HLDT	The parameter in which the message date/time in internal VA FileMan format will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HLDT1	The parameter in which the message date/time in HL7 format will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received

Basic Variables, cont.

Variable Name	Description	When Created
HLEID	The IEN of the event driver protocol in the PROTOCOL file (#101). It is passed to the processing routine in the variable HL("EID").	Sent and Received
HLEIDS	The IEN of the subscriber protocol in the PROTOCOL file (#101). It is passed to the processing routine in the variable HL("EIDS").	Received
HLFORMAT	This parameter specifies whether the HLA array is pre-formatted in HL7 format. At this time, it should always equal 1.	Sent and Received
HLMID	The parameter in which the message ID will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
HLMTIEN	The parameter in which the IEN of the entry in the MESSAGE TEXT file (#772) created by the call to the entry point CREATE^HLTF.	Sent
HLMTIENA	The IEN of the entry in the MESSAGE TEXT file (#772) created by the call to the entry point CREATE^HLTF and returned in the MTIEN parameter.	Received
HLMTIENS	The IEN of the entry in the MESSAGE TEXT file (#772) for the subscriber application.	Received
HLNEXT	M code that is executed by the application to \$O through the nodes of the Message Text global.	Received
HLNODE	A node from the Message Text global.	Received
HLP("CONTPTR")	The value that should go in the CONTINUATION POINTER field of the Message Header segment for the message being sent.	Sent
HLP("ERRTEXT")	If an error occurred during the processing of the incoming message, an error message (1 to 80 characters) should be passed in this parameter. (Optional)	Received
HLP("PRIORITY")	The default priority is delayed. Set this parameter equal to I for Immediate if this message should be delivered in the foreground (immediate).	Sent and Received
HLP("SECURITY")	Security information (1 - 40 characters) that the DHCP application wants included in the SECURITY field (#8) of the HL7 MSH or BHS segment when sending a message. (Optional)	Sent and Received
HLQUIT	A variable that indicates when there are no more nodes to process. If HLQUIT is not greater than zero, all message text has been processed.	Received

Basic Variables, cont.

Variable Name	Description	When Created
HLRESLT	The message ID assigned to this message and/or an error message will be returned in this parameter. This parameter must be passed by reference. If the call to GENERATE^HLMA is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.	Sent
HLRESLTA	The message ID assigned to this message and/or an error will be returned in this parameter. This parameter must be passed by reference. If the call to GENACK is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.	Received
INT	Indicates that only array values for an internal DHCP-to-DHCP message exchange should be utilized.	Sent
MID	The parameter in which the message ID will be returned.	Sent and Received
MTIEN	The parameter in which the IEN of the entry in the MESSAGE TEXT file (#772) (created by the call to the entry point CREATE^HLTF) will be returned. <i>This parameter must be passed by reference.</i>	Sent and Received
MTIENA	The IEN of the entry in the MESSAGE TEXT file (#772) created by the call to the entry point CREATE^HLTF and returned in the MTIEN parameter.	Received
PRIORITY	The default priority is delayed. Set this parameter equal to I for Immediate if this message should be delivered in the foreground (immediately). (Optional)	Sent and Received

Basic Variables, cont.

Variable Name	Description	When Created
RESULT	The message ID assigned to this message and/or an error message will be returned in this parameter. <i>This parameter must be passed by reference.</i> If the call to MSH^HLFNC2 is successful, this parameter will be returned equal to the message ID assigned to the message that was created. If the call was not successful, this parameter will be returned with the following three pieces of data: message ID (or 0 if no message ID was assigned)^error code^error message.	Sent and Received
SECURITY	Security information (1 to 40 characters) that the DHCP application wants included in the SECURITY field (#8) of the HL7 MSH or BHS segment when sending a message. (Optional)	Sent and Received
^TMP("HLA",\$J,I)	A global array containing all segments of the HL7 message that the receiving DHCP application wishes to send as a response. The variable I is a sequential, whole number starting with the number 1.	Received
^TMP("HLS",\$J,I)	A global array containing all segments of the HL7 message that the receiving DHCP application wishes to send as a response. The variable I is a sequential, whole number starting with the number 1.	Sent

Variables

Arrays

The following table contains a list of arrays, with their descriptions, which are used by the DHCP HL7 V. 1.6 interface method.

Array Name	Description	When Created
^HL(772,HLDA,"IN",I,0)	A global array containing all segments of the HL7 message received. This is the data that the receiving DHCP application must process. HLDA is the variable as defined earlier in this section. The variable I is a sequential number starting with the number one.	Received
^TMP("HLS",\$J,HLSDT,I)	A global array containing all segments of the HL7 message that the receiving DHCP application wishes to send. The HLSDT variable is as defined above. The variable I is a sequential number starting with the number one.	Sent