

Information Engineering Technology

# Install Guide - Multiple HE



Release 8.7.4

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# Multiple Host Encyclopaedia Support

This guide describes how to configure GuardIEn to connect, view and manage model data across multiple (i.e. separate and distinct) copies of the Host Encyclopaedia (HE) databases.

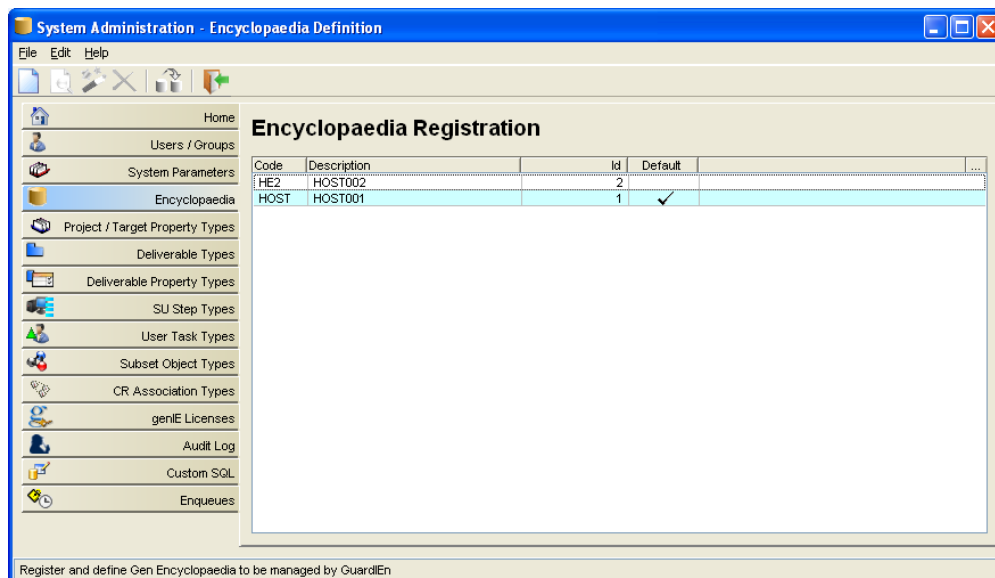
## Pre-Requisites

It is assumed that you have already configured a 'main' GuardIEn database as detailed in the *Install Guide - HE*, which is where the majority of the physical GuardIEn tables will be located.

If you are using encyclopaedia that have a mixture of CA Gen releases, i.e. CA Gen 8.6 on one HE, CA Gen 8.5 on another and a single GuardIEn project will contain models from one or more of these encyclopaedia, then you must ensure that the schema tables for **each encyclopaedia** are loaded to contain the **highest** schema defined for models in the project (note that CA Gen releases 8.0 and above are all using schema level 9.2.A6).

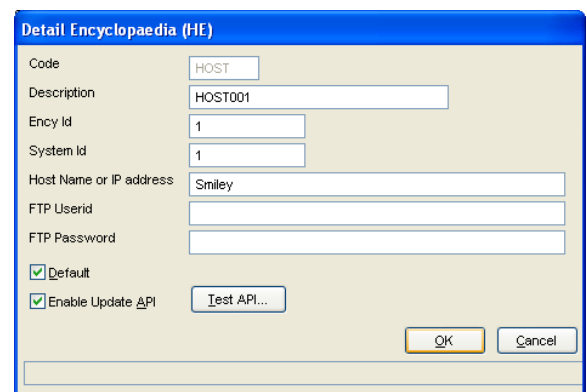
## Enhanced Multiple-Encyclopaedia Support

Each encyclopaedia is defined to GuardIEn, with one of them defined as the *default* encyclopaedia. Look at Encyclopaedia Definition via the System Administration window...

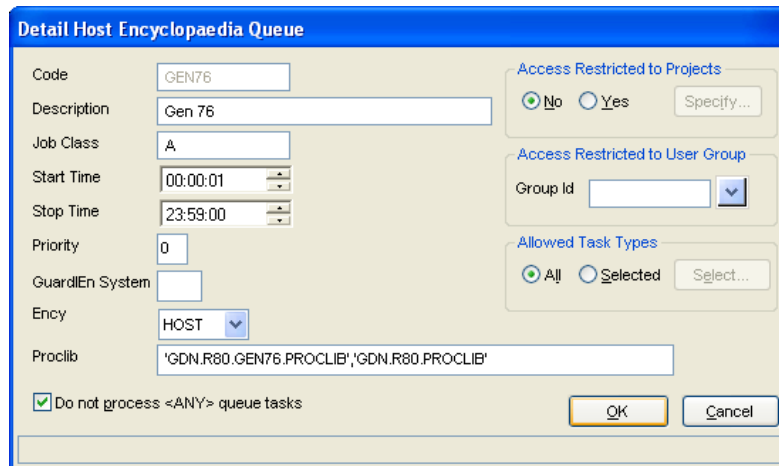


The CCL\_MODEL & CCM\_DELLINK tables are shared across all encyclopaedia. This allows one GuardIEn project to access linkages (and hence encyclopaedia data) from multiple encyclopaedia.

This approach is achieved by GuardIEn dynamically changing the Db2 CURRENT PACKAGESET when it detects that it needs to access data from a non-default encyclopaedia. The 2-byte System Id field on the Encyclopaedia definition screen in System Administration is used to determine the correct PACKAGESET (Collection Id) to set for this encyclopaedia.

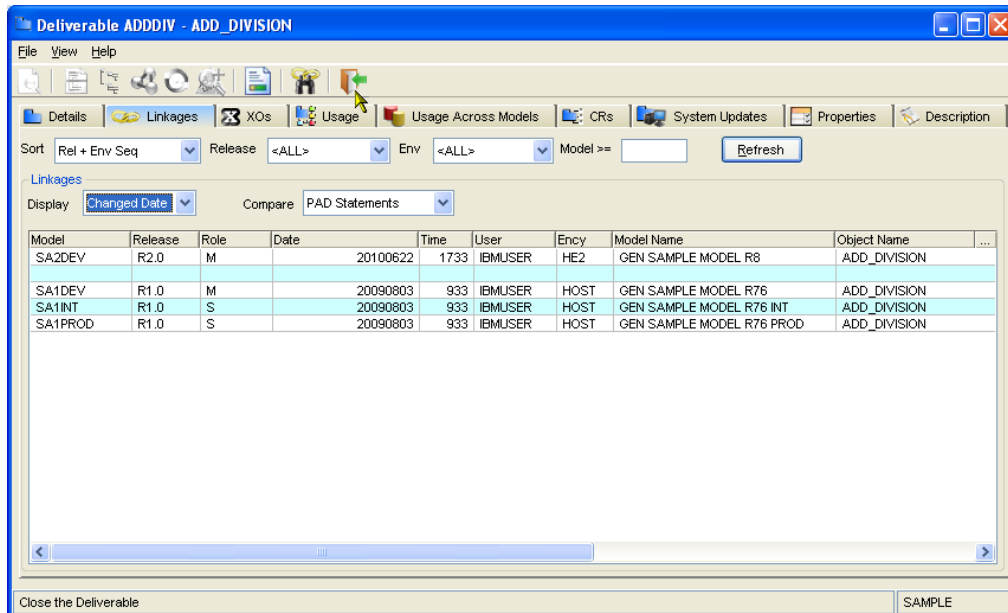


Furthermore, if you are using the Task Dispatcher, you will use the same CDD\_SYSPARM (System Parameter) table since the PROCLIB for the encyclopaedia can be specified in the Queue definition and the software release for the CA Gen software in the encyclopaedia description.



### Linkages

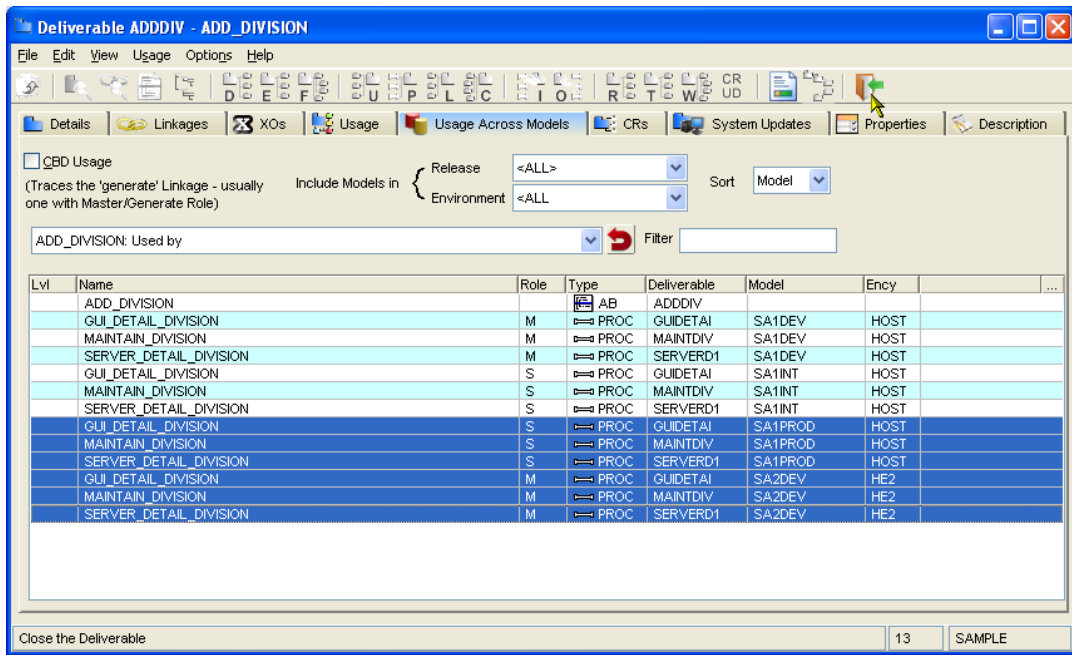
The Linkages list shows all linkages for a deliverable – across ALL defined encyclopaedia. Full compare (including PAD statements) is available.



One fundamental difference between the HE and the CSE is that the CSE ancestry contains the encyclopaedia ID and hence the combination of original object id + original encyclopaedia id is unique across all encyclopaedia. The HE does not support original encyclopaedia id and therefore an original object id is only unique within one encyclopaedia.

This poses a problem for matching linkages to deliverables, since a GuardIEn deliverable could be matched to linkages with different ancestry. The solution adopted is to restrict the common ancestry check to linkages from the same encyclopaedia. When a match fails to find a deliverable associated to an object with the same ancestry (in the same encyclopaedia), it will match to a deliverable based on equivalent name and type.

Cross model usage can also show data from multiple encys:



## Model Management

From GuardIEn 7.5, support was provided for cross-encyclopaedia migrations. However, since common ancestry cannot be established across host encyclopaedia, the temporary model created in the target ency will be adopted into the same family as the destination model once it has been loaded into the destination encyclopaedia. Therefore, the names of objects will need to be the same between the models in the source and destination encyclopaedia.

Cross-ency migrates **require** the Task Assistant.

Several GuardIEn dialogs display the model name without the ency name and therefore, if the same model name is used in separate encyclopaedia, this could be confusing. It is therefore recommended that **model name is unique** across all encyclopaedia.

## genIE

genIE Direct can be used to cross-copy selected PAD statements from a source PAD in one ency to a destination PAD in a different ency. Because there will not be common ancestry between the two encys, object equivalence will be determined using name equivalence.

# Preparing for Multi-HE Support

## The Installation Suite

An installation suite is provided to ease the customisation and creation of the components of the GuardIEn system. This process consists of the following tasks:

- Definition of installation variables to your site standards
- Verification of the installation variables
- Generation of the GuardIEn JCL, JCL Procedures, TSO Procedures and DDL for the second encyclopaedia
- Binding a Db2 plan and packages for the second encyclopaedia

You should have already used this suite to define the 'main' GuardIEn software, database and connections to the 1<sup>st</sup> Host Encyclopaedia.

## Define Variables

Later, during the installation process for Multiple Host Encyclopaedia support you will be prompted to provide values for various fields used during the installation process and at application runtime. This section allows you to identify these values.

### Additional GuardIEn Software (Multiple Ency or Multi-CA Gen Support Variables Panel 1)

Options	Purpose	Example/Default
Additional GuardIEn Runtime Library Suffixes	The suffix that identifies an additional runtime library component in GuardIEn. By default, these will take the same suffixes as defined within the 'main' install suite but should be amended to refer to the new Parameter Libraries to be used.	GEN85.ENVCLIB, GEN85.PROCLIB.

### Additional CA Gen Software (Multiple Ency or Multi-CA Gen Support Variables Panel 2)

Options	Purpose	Example/Default
Additional CA Gen Release Level	The <i>Release level</i> of the additional HE that the GuardIEn facilities will attach to. Valid values are currently 6.0 (for COOL:Gen) or 6.5 (for Advantage Gen), 7.0, 7.5, 7.6, 7.6E (for CA Gen Priority Enhancement), 7.6F (for CA Gen support for dynamic batch psteps), 8.0 (for CA Gen 8 base), 8.0A (for CA Gen r8 FP1), 8.5 (for CA Gen 8.5) and 8.6 (for CA Gen 8.6).	8.5
Additional CA Gen Plan Prefix	The <i>Plan Prefix</i> that your additional CA Gen plans use. This is the first four characters of the CA Gen plan names	HE85
Additional CA Gen Dataset Prefix	The prefix for the libraries associated with the additional CA Gen HE you wish to connect to.	IET.GEN85
Additional CA Gen Dataset Suffixes	The suffix that identifies each CA Gen HE library. By default, these will take the same suffixes as defined within the 'main' install suite but CAN be different if required. Note that from CA Gen 8.0 onwards a new PARMLIB library is required and no TLIB library is used.	Pre-CA Gen 8.0  LOAD, DBRM, SKELETAL, CLIST, TLIB, MLIB  CA Gen 8.0 onwards  CEHBPLD0, CEHBDBRM, CEHBSKLO, CEHBCLSO, CEHBMSG0, PARMLIB
Additional CA Gen Look-Ahead Library Clist (optional)	Allows you to specify an additional look-ahead library for an additional CA Gen Clist library – typically when you have made site-customisations in a separate library to the base CA Gen libraries but still wish GuardIEn to make use of these customisations.	PDSPB.IEFLB.GEN85.CLIST

**Additional Db2 Variables (Multiple Ency or Multi-CA Gen Support Variables Panel 3)**

<b>Options</b>	<b>Purpose</b>	<b>Example/Default</b>
Additional Host Ency Explicit Creator Id	The <i>Explicit creator id</i> of HE tables used by GuardIEn.	P390
Additional GuardIEn Database Name	The name you wish to call the 2 <sup>nd</sup> <i>GuardIEn Database</i> required to support multiple encyclopaedia support (change the default if you have your own site standards). This <b>MUST</b> be a different name to the 'main' GuardIEn database.	GDDB2
Additional GuardIEn TableSpace Storage Group	The name of the Db2 storage group where you wish to store the 2 <sup>nd</sup> GuardIEn tablespaces. Change the default if you have your own site standards or will use an existing storage group)	GDSGT2
Additional GuardIEn IndexSpace Storage Group	The name of the Db2 storage group where you wish to store the 2 <sup>nd</sup> GuardIEn indices. Change the default if you have your own site standards or will use an existing storage group)	GDSGI2
Additional GuardIEn Explicit Creator Id OR Secondary Authid	Either an <i>Explicit creator id</i> (e.g. userid) <i>OR</i> a <i>Secondary authorisation id</i> to be associated with the 2 <sup>nd</sup> GuardIEn databases and tables (note that these variables are mutually exclusive). The creator <b>MUST</b> be different to the creator of the first GuardIEn database due to use of GuardIEn VIEWS into the CA Gen tables.	GDN2
2 <sup>nd</sup> GuardIEn Plan Name	The Plan Name to be associated with the GuardIEn applications. <b>Note</b> that this <b>MUST</b> be different to the Plan of the first GuardIEn database.	GD872
2 <sup>nd</sup> GuardIEn Package Bind Collection	The Db2 Collection to be used by the 2 <sup>nd</sup> GuardIEn database and Host Encyclopaedia. This <b>MUST</b> be different to the Db2 collection used by the first GuardIEn database and Host Encyclopaedia.	GDN87CL2

# Revise GDSETPCK Changes

You should check that the GDSETPCK exit changes as detailed in the *Install Guide – HE* document are made to reference the 2<sup>nd</sup> collection id used to connect to the 2<sup>nd</sup> encyclopaedia. If not then these changes will need to be reimplemented into the base release of GuardIEn before continuing here.

```
*
* CURRENT PACKAGE SET IS BY DEFAULT:
*
* <1STCOL> IS THE DEFAULT COLLECTION ID (8 BYTES)
* THE 2ND COLLECTION IS THE 1ST COLLECTION + THE 2ND
* SYSTEM IDENTIFIER BY DEFAULT.
*
  MOVE SPACES TO HV-COLLID
  IF GDN-SYSTEM EQUAL '1 '
  MOVE 'GDN87CL' TO HV-COLLID
  ELSE
  STRING 'GDN87CL', GDN-SYSTEM
  DELIMITED BY SPACE
  INTO HV-COLLID
  END-IF
  EXEC SQL
  SET CURRENT PACKAGESET = :HV-COLLID
  END-EXEC
```

The 2-byte GDN-SYSTEM variable above is obtained from the System Id field of Encyclopaedia Definition. Based on this you'd need to explicitly state the value of the 2<sup>nd</sup> collection in this exit to ensure the information from the 2<sup>nd</sup> encyclopaedia was obtained.

## Create Additional GuardIEn Libraries

You will now need to allocate the two additional GuardIEn runtime libraries required for multiple host encyclopaedia support as described below. If you are using SMS or similar products, these datasets may have been allocated as temporary so you will therefore need to change their management class or retention period to ensure that they are not deleted by a housekeeping routine.

### Additional GuardIEn Runtime Libraries

Name	Default Suffix	Space in Tracks	Directory Blocks
Parameter Procedures	GEN85.PROCLIB	50	10
Parameter Clists	GEN85.ENVCLIB	50	10

We recommend you use the allocations of the 'main' GuardIEn GEN Parameter libraries to allocate these additional libraries.

```
GDN8.7                               GuardIEn for HE Setup Main Menu
===> _

Select one of the options below, then press enter.

1 Define Installation Variables
2 Create Installation Components
3 Create Runtime Components
4 Create ALL Components
5 Browse and Run Installation
6 Advanced Options

F1=Help  F3=End  F12=Cancel
```



# Access Advanced Options

Now return to the Installation Suite and from the main menu 'GuardIEn for HE Setup Main Menu', select option 6 'Advanced Options' and press <Enter>The Advanced Options menu is displayed...

```
GDN8.7                               Advanced Options Menu
===> _

Select one of the options below, then press enter.

1 Define Variables for Multi-Ency or Multi-CA Gen Support
2 Create GuardIEn Components for Multi-Ency Support
3 Create GuardIEn Components for Multi-CA Gen Support
4 Alter  GuardIEn Components for CA Gen Upgrade

F1=Help  F3=End  F12=Cancel
```

Select option 1 'Define Variables for Multi-Ency or Multi-CA Gen Support' and press <Enter>. The Define Multi-Ency or Multi-CA Gen Support Variables menu is displayed...

```
GDN8.7                               Define Multi-Ency or Multi-CA Gen Support Variables
===> _

Select one of the options below, then press enter.

1 Define Additional GuardIEn software
2 Define Additional CA Gen software
3 Define Additional DB2 variables

Do you wish to install Multiple Encyclopaedia Support ? YES (Yes or No)

F1=Help  F3=End  F12=Cancel
```

First, you must indicate that you actually WANT to install GuardIEn with Multiple Encyclopaedia Support and to do this you must enter Yes as required in the supplied field. Retaining No in this field (the default) will prevent you defining variables and generating the various installation and runtime components of this support.

# Define Installation Variables

Once this has been done, choose option 1 and press <Enter>. The *Define GuardIEn Software* panel is displayed.

## Additional GuardIEn Software

This panel is used to define the additional GuardIEn software required for multiple encyclopaedia support. By default, it details the standard library name suffixes.

Complete the Additional GuardIEn *suffixes* using the information identified in the earlier **Define Variables** section. The GuardIEn libraries specified must refer to the dataset names of those allocated earlier – but note that the same GuardIEn dataset *prefix* is used.

```

GDN8.7                      Define Additional GuardIEn Software
===> _

Enter or verify the following GuardIEn software library names

GuardIEn Library Prefix:
  GuardIEn dataset prefix:      GJD.GDNBASE.R870_____

Additional GuardIEn Runtime Libraries:
  GuardIEn dataset suffixes:
    Parameter Clists. . . . . GEN85.ENVCLIB
    Parameter Procedures. . . . GEN85.PROCLIB

F1=Help  F2=Accept  F3=End  F6=Save  F12=Cancel
  
```

Once you have specified all the library definitions, press *F6* to save the variables and then *F2* to verify them. A verification process is executed to ensure the information is correct...

```

GDN8.7                      Installation Status                      Row 1 to 3 of 3
===> _

Activity: Additional GuardIEn Software Checked

Component      Description                      Status
-----
CHECKING ADDITIONAL GUARDIEN SOFTWARE
CHECK OF ADDITIONAL GUARDIEN SOFTWARE          ACCEPTED
Now press ENTER to continue

***** Bottom of data *****
  
```

If the verification completes successfully, you may press <Enter> to exit from the *Installation Status* screen and return to the *Setup Additional GuardIEn Software* panel. If the verification fails, check the error messages displayed on the status screen (e.g. ensure that the GuardIEn library names defined match the names of the datasets you allocated) for example...

```

GDN8.7                      Installation Status                      Row 1 to 5 of 5
===> _

Activity: Additional GuardIEn Software Checked

Component      Description                      Status
-----
CHECKING ADDITIONAL GUARDIEN SOFTWARE
  GJD.GDNBASE.R870.OOPS.GEN85.PROCLIB          DATASET NOT FOUND
  GJD.GDNBASE.R870.OOPS.GEN85.ENVCLIB          DATASET NOT FOUND
CHECK OF ADDITIONAL GUARDIEN SOFTWARE          REJECTED
Now press ENTER to continue

***** Bottom of data *****
  
```

However, when you have completed the definition successfully, press *F3* to exit the *Setup Additional Software* panel. The *Define Multi-Ency or Multi-CA Gen Support Variables* menu is redisplayed. Select option 2 from the menu and press *<Enter>*. The *Setup Additional CA Gen Software* panel is displayed.

## Additional CA Gen Software

This section details the CA Gen Release and the CA Gen library names for the 2nd Host Encyclopaedia software you wish to connect to GuardIEn.

```

GDN8.7                      Define Additional CA Gen Software
===> _

Enter or verify the following CA Gen software information

Additional CA Gen Release Level:
  Host Ency Release Level. . . . . 8.5_      (6.0,6.5,7.0,7.5,7.6,7.6E
                                           7.6F,8.0,8.0A,8.5 or 8.6)

Additional CA Gen DB2 Specific:
  Host Ency Plan Prefix. . . . . HE85

Additional CA Gen Encyclopaedia Libraries:
  Gen dataset prefix:                CA.HE85_____
  Gen dataset suffixes:
    Load . . . . . CEHBPLD0
    Skeletal . . . . . CEHBSKL0
    Clist . . . . . CEHBCLS0
    Tlib . . . . . _____ (not required from Gen 8.0 )
    Mlib . . . . . CEHBMSG0
    Parmlib . . . . . PARMLIB_ (required from Gen 8.0 )
  Lookahead library: (if applicable)
    Clist . . . . . _____

F1=Help  F2=Accept  F3=End  F6=Save  F12=Cancel

```

Complete the *Additional CA Gen Software* fields using the information identified in the earlier **Define Variables** section. Note that the CA Gen library prefix will be initially displayed with the prefix from the first Host Encyclopaedia libraries defined – but this MUST ultimately be different to successfully complete the verification process.

Once you have specified all the library definitions, press *F6* to save the variables and then *F2* to verify them.

If you do press *F2*, a verification process is executed to ensure the information is correct. If the verification completes successfully, you may press *<Enter>* to exit from the *Installation Status* screen and return to the *Setup Additional CA Gen Software* panel, then press *F3* to return to the *Define Multi-Ency or Multi-CA Gen Support Variables* panel.

Select option 3 from the menu and press *<Enter>*. The *Setup Additional Db2 Variables* panel is displayed.

## Additional Db2 Variables

This panel allows you to provide the definitions for the additional Db2 variables to enable multiple encyclopaedia support

```

GDN8.7                      Define Additional DB2 Variables
===> _

Enter or verify the following DB2 variables

Additional CA Gen Specific:
  Explicit Creator Id. . . . . HE2_____

Additional GuardIEn Specific:
  Database Name. . . . . GDDB2____
  TableSpace Storage Group . . GDSGT2__
  IndexSpace Storage Group . . GDSGI2__

  Explicit Creator Id. . . . . _____ (optional)
or a Secondary Authorisation Id GDN2_____ (optional)

  2nd Plan Name. . . . . GD872____
  2nd Collection Name. . . . . GD872COL

F1=Help F2=Accept F3=End F6=Save F12=Cancel
  
```

Complete the *Additional Db2 Variables* using the information identified in the earlier **Define Variables** section.

Once you have specified all the library definitions, press *F6* to save the variables and then *F2* to verify them.

If you press *F2*, a verification process is executed to ensure the information is correct. If the verification completes successfully, you may press <Enter> to exit from the *Installation Status* screen and return to the *Setup Additional Db2 Variables* panel, then press *F3* to return to the *Define Multi-Ency or Multi-CA Gen Support Variables* panel.

```

GDN8.7                      Installation Status                      Row 1 to 3 of 3
===> _

Activity: Additional DB2 Variables Checked

Component      Description                      Status
-----
CHECKING ADDITIONAL DB2 VARIABLES
CHECK OF ADDITIONAL DB2 VARIABLES          ACCEPTED
                                           Now press ENTER to continue

***** Bottom of data *****
  
```

You have now successfully completed definition of the GuardIEn parameters for multiple host encyclopaedia support. You may now proceed to create all the installation and runtime components.

# Create Components

Press *F3* until you return to the *Advanced Options* menu...

```
GDN8.7                               Advanced Options Menu
===> _

Select one of the options below, then press enter.

1 Define Variables for Multi-Ency or Multi-CA Gen Support
2 Create GuardIEn Components for Multi-Ency Support
3 Create GuardIEn Components for Multi-CA Gen Support
4 Alter GuardIEn Components for CA Gen Upgrade

F1=Help  F3=End  F12=Cancel
```

Select option 2 'Create GuardIEn Components for Multi-Ency Support' and press <Enter>. The Confirm Component Creation panel is displayed...

```
GDN8.7                               Confirm Component Creation
===> _

Verify the requested activity, then press ENTER to continue or F12 to cancel

Activity: Create GuardIEn Components for Multi-Ency Support

F1=Help  F3=End  F12=Cancel
```

...indicating that you have requested to 'Create GuardIEn Components for Multi-Ency Support'. Press *F12* to cancel or <Enter> to continue. Press <Enter> and the component creation process begins. This should not take too long and, at the end, all the requisite GuardIEn installation and runtime components for multi-encyclopaedia support will have been created...

```

GDN8.7                               Installation Status           Row 1 to 36 of 36
===> _

Activity: Created GuardIEn Components for Multi-Ency Support successfully

Component      Description                                     Status
-----
MEJOB1N        *NEW* CREATE 2ND GDN DB ET AL                 TAILORING SUCCESSFUL
MEJOB1U        *UPG* UPGRADE 2ND DB FROM 8.5                 TAILORING SUCCESSFUL
MEJOB2A        *ALL* PACKAGE BIND 2ND GDN DB                 TAILORING SUCCESSFUL
MEJOB3A        *ALL* PLAN BIND 2ND GDN DB                   TAILORING SUCCESSFUL
ME7685         *OLD* UPGRADE 2ND DB TO 8.5                  TAILORING SUCCESSFUL
ME7785         *OLD* UPGRADE 2ND DB TO 8.5                  TAILORING SUCCESSFUL
ME7881         *OLD* UPGRADE 2ND DB TO 8.5                  TAILORING SUCCESSFUL
ME8085         *OLD* UPGRADE 2ND DB TO 8.5                  TAILORING SUCCESSFUL
GDMENEW1       MULTI-ENCY FULL GDN DDL                       TAILORING SUCCESSFUL
GDMECGA        MULTI-ENCY GEN ALIAS                          TAILORING SUCCESSFUL
GDMECGS        MULTI-ENCY GEN SYNONYM                       TAILORING SUCCESSFUL
GDMEVIEW       MULTI-ENCY GEN VIEWS                          TAILORING SUCCESSFUL
GDMEGRTC       MULTI-ENCY GRANT COLLECTION                  TAILORING SUCCESSFUL
GDMEGRTP       MULTI-ENCY GRANT PLAN                        TAILORING SUCCESSFUL
GDMESQL        MULTI-ENCY SQL CHANGES                      TAILORING SUCCESSFUL
GDME77         MULTI-ENCY UPGRADE FOR 7.7                  TAILORING SUCCESSFUL
GDME78         MULTI-ENCY UPGRADE FOR 7.8                  TAILORING SUCCESSFUL
GDME80         MULTI-ENCY UPGRADE FOR 8.0                  TAILORING SUCCESSFUL
GDME81         MULTI-ENCY UPGRADE FOR 8.1                  TAILORING SUCCESSFUL
GDME86         MULTI-ENCY UPGRADE FOR 8.6                  TAILORING SUCCESSFUL
GDINSPK2       GUARDIEN PACKAGE BINDS 2ND DB                TAILORING SUCCESSFUL
GDINSPL2       GUARDIEN PLAN BINDS 2ND DB                  TAILORING SUCCESSFUL
GDPL2          RUN PAD PRINT 2 JCL                          TAILORING SUCCESSFUL
GDPL2          RUN PAD PRINT 2 PROC                         TAILORING SUCCESSFUL
GDSETPRM       SET RUNTIME VARIABLES 2ND PROC               TAILORING SUCCESSFUL
GDCOMPX        COMPILE LINK OPTS NO COMPAT PROC             TAILORING SUCCESSFUL
GDCOMPY        COMPILE LINK OPTS COMPAT PROC                TAILORING SUCCESSFUL
GDINXCO        COMPILE OPTS FOR XOS INCLUDE                 TAILORING SUCCESSFUL
GDSPF          GDN ISPF INCLUDE                             TAILORING SUCCESSFUL
GDGNSTEP       GEN STEPLIB INCLUDE                          TAILORING SUCCESSFUL
GDPARMS2       GUARDIEN TASKS PARAMETER 2ND DB              TAILORING SUCCESSFUL
GDGLOB         GUARDIEN GLOBAL SET CLIST                    TAILORING SUCCESSFUL
TIUDFILE       GEN FILE ALLOCATION CLIST                     TAILORING SUCCESSFUL
XTICMLK        GDN OVERRIDE BINDER CLIST                   TAILORING SUCCESSFUL
XTICMPL        PU OVERRIDE COMPILE CLIST                    TAILORING SUCCESSFUL
Now press ENTER to continue

```

Please scroll up (F7) and down (F8) through the list when it has completed to confirm that ALL the components were created successfully (with the 'Tailoring Successful' message in the status column. This enables you to verify that all the tailoring has completed successfully. Once completed you may now exit from the Install suite and continue with the multi-Ency Support installation located in the following libraries...

**GuardIEn Installation Libraries**

Name	Description
Install JCL	JCL to support the implementation of multiple encyclopaedia support will be located in the existing GuardIEn Install JCL library.
Database Control and DDL definitions	Db2 Control Information (DDL etc.) to support the implementation of multiple encyclopaedia support will be located in the existing GuardIEn Install DB2CTL library.
TSO Clists	Clists to support the implementation of multiple encyclopaedia support will be located in the existing GuardIEn Install CLIB library.

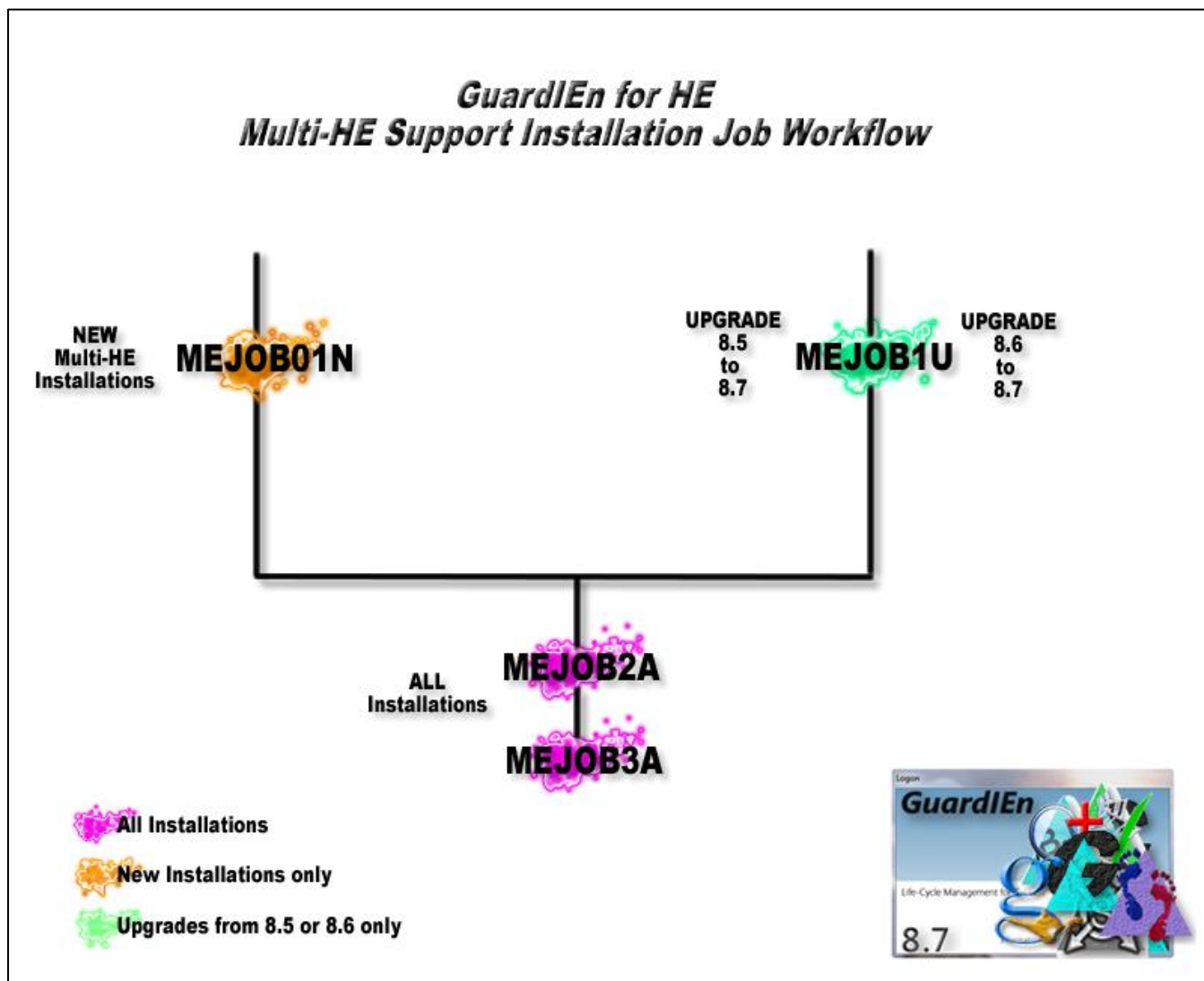
**Additional GuardIEn Runtime Libraries**

Name	Description
Parameter Procedures	The separate library containing references to the additional Host Encyclopaedia and GuardIEn libraries.
Parameter Clists	The separate library containing references to the additional Host Encyclopaedia and GuardIEn plan.

# Install Multi-HE Support

## Installation Jobs


Once all the components (installation and runtime) have been created you can then begin the process of installing the Multi-encyclopaedia support. The installation process has been separated into a number of discrete jobs that reside in the INS.JCL library – the following flowchart describes the workflow...



...with each job performing the following function. Note that some jobs must always be run (suffixed 'A') with some jobs applicable only to completely new installations (suffixed 'N') or upgrades from specific GuardIEn releases (suffixed 'U').

Jobname	Description	When used?
<b>MEJOB1N</b>	Install Multi-ency support for the first time	<b>New Install only</b>
<b>MEJOB1U</b>	Upgrades the existing 2 <sup>nd</sup> GuardIEn implementation from GuardIEn 8.5 or 8.6 to GuardIEn 8.7	<b>Upgrades from 8.5 or 8.6 only</b>
<b>MEJOB2A</b>	Bind the GuardIEn packages to the 2 <sup>nd</sup> GuardIEn database and Host Encyclopaedia	<b>All Installations</b>
<b>MEJOB3A</b>	Bind the 2 <sup>nd</sup> GuardIEn database plan and grants the access to the collection and plan to Public.	<b>All Installations</b>

# Install/Upgrade Database Structures

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.5	Upgrade GuardIEn 8.6	Completed ?
<b>Execute MEJOB1N</b>	<p>Use this JCL if you are installing the Multi-ency support for the first time.</p> <p>This job submits the DDL to create a 2<sup>nd</sup> GuardIEn database with a number of aliases created to the existing GuardIEn database. It also creates the requisite views and aliases to the additional Host Encyclopaedia you wish to connect to.</p> <p>Browse the Install JCL dataset and submit job MEJOB1N to create the GuardIEn database and associated views and aliases.</p> <p>Please ensure that each step completes with a return code of zero (0) – although you may have to scan the individual SQL statement return codes rather than rely on the overall job return code.</p>	YES	NO	NO	
<b>Review Multi-Ency requirements prior to Release GuardIEn 8.5</b>	<p><b>IF YOU ARE NOT AT GUARDIEN 8.5 OR HIGHER READ THIS SECTION</b></p> <p>If you are upgrading an existing GuardIEn system prior to Release 8.5, then the following members in the INS.JCL library contain the necessary jobs to upgrade Multiple encyclopaedia support to the supported 8.5 level before you run the remaining installation jobs. If you are at a release prior to GuardIEn 7.0 then please read <i>Appendix A – Previous Multi-HE Support (Pre-GuardIEn 7.0)</i> and implement the documented changes before proceeding any further.</p> <p> <b>IMPORTANT NOTE - PLEASE READ THIS SECTION</b></p> <p>To upgrade Multi-Ency support to the lowest supported GuardIEn Release (8.5) you will need to run the following...</p> <p>From GuardIEn 7.6, submit ME7685 as located in the Install JCL library            From GuardIEn 7.7, submit ME7785 as located in the Install JCL library            From GuardIEn 7.8, submit ME7885 as located in the Install JCL library            From GuardIEn 8.0, submit ME8085 as located in the Install JCL library</p> <p>Do <b>NOT</b> proceed with the installation until this work is successfully completed.</p>	N/A	N/A	N/A	
<b>Execute MEJOB1U</b>	<p>This job submits the DDL to upgrade a 2<sup>nd</sup> GuardIEn database with new aliases for the GuardIEn 8.7 release if upgrading from GuardIEn 8.5 or 8.6. Use this JCL if you are upgrading your existing multi-ency support from GuardIEn 8.5 or GuardIEn 8.6.</p> <p>Browse the Install JCL dataset and submit job MEJOB1U to create the GuardIEn database and associated views and aliases.</p> <p>Please ensure that each step completes with a return code of zero (0) – although you may have to scan the individual SQL statement return codes rather than rely on the overall job return code.</p>	NO	YES	YES	



## Bind Packages

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.5	Upgrade GuardIEn 8.6	Completed ?
<b>Execute MEJOB2A</b>	<p>Browse the Install JCL dataset and submit job MEJOB2A to bind all the packages for the 2<sup>nd</sup> GuardIEn database batch and server components – using a single Db2 package collection for the entire installation.</p> <p>Please ensure that each bind package completes with a return code of zero (0) – although you may have to scan the individual SQL statement return codes rather than rely on the overall job return code. A tip is to search through the output looking for ‘UNSUCCESSFUL’</p>	YES	YES	YES	

## Bind Plan & Grant Execution Authority to Public

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.5	Upgrade GuardIEn 8.6	Completed ?
<b>Execute MEJOB3A</b>	<p>Browse the Install JCL dataset and submit job MEJOB3A to initially grant access to the previously created Db2 collection and then bind the plan for the 2nd GuardIEn batch components. Finally, the job grants execute to public for the new plan.</p> <p>Please ensure that the bind plan completes with a return code of zero (0) – although you may have to scan the individual SQL statement return codes rather than rely on the overall job return code. A tip is to search through the output looking for ‘NOT SUCCESSFUL’</p>	YES	YES	YES	

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# Appendix A: Legacy Multi-HE Support (Pre-GuardIEn 7.0)

Use this section only if you are upgrading from a GuardIEn release prior to GuardIEn 7.0 SP2 and are required to use Multi-HE support – it documents the preparatory work to enable the new Multi-HE support to work with your upgraded GuardIEn implementation.

## Background

Prior to the 7.0.2 release, GuardIEn provided limited support for multiple host encyclopaedia. You were able to set up more than one encyclopaedia via a second GuardIEn system. Each GuardIEn system was assigned a unique code and associated Db2 collection id and each project had to be associated to a single GuardIEn ‘system’. This meant that all models associated to the project had to reside in a single encyclopaedia and there was no support for cross-encyclopaedia reporting or object sharing/migration.

The secondary GuardIEn system had its own database containing the following tables:

Table	Description
CDD_SYSPARM	GuardIEn System Parameters
CCL_MODEL	GuardIEn Models
CCM_DELLINK	Linkages
CU2_PADX_BLK	PAD Extract
CU3_PADX_LINE	PAD Line

The remaining GuardIEn tables were accessed from the main GuardIEn database using synonyms or aliases.

Whilst this approach proved adequate for projects that solely resided within a single encyclopaedia and limited demand for cross-encyclopaedia data sharing, it did prove restrictive for large projects that had to split their models across multiple encyclopaedia or organisations that wanted to share common objects between models on multiple encyclopaedia.

Duplicate CDD\_SYSPARM tables were also required to support differing values for the following system parameters:

Parameter	Description
JCLLIB	GuardIEn JCL PROCLIB
IEFVER	CA Gen version

Some additional software specific parameters were removed for GuardIEn 7.0 (IEFSLIB, IEFLOAD, PLANPRFX).

The disadvantage of duplicate system parameter tables was that any changes to the parameters (i.e. activation codes) had to be replicated to all copies of this table.

## Converting to the new Multi-HE Support Method

The tasks to convert to the new approach for managing multiple host encyclopaedia, if you are still using the old multiple encyclopaedia method as described above, are as follows:

### 1) Obtain new activation code

The GuardIEn activation code defines the number of allowed encyclopaedia. In most cases, the current activation code will restrict this to one encyclopaedia and therefore a new activation code will be required to support additional encyclopaedia.

### 2) Define Encyclopaedia

The secondary encyclopaedia needs to be defined to GuardIEn. The collection id field needs to be set for each encyclopaedia, including the default encyclopaedia.

### 3) Check primary key for CCM\_DELLINK

The default primary key for the CCM\_DELLINK table contains just CCM\_IEF\_ID. It needs to be re-defined to be:

```
PRIMARY KEY
(CCM_FK_CCL_CODE,
 CCM_IEF_ID      )
```

The GuardIEn 7.7 release level ensured the CCM\_DELLINK primary key was correctly defined so this step will not be required if you are successfully upgraded to this release. This will be performed as part of any upgrade to GuardIEn 8.7 if you are currently not at GuardIEn 7.7.

### 4) Copy GuardIEn model data

The data in the secondary GuardIEn CCL\_MODEL table needs to be moved to the main GuardIEn database. This can be achieved using SQL provided by IET.

### 5) Copy GuardIEn linkage data

The data in the secondary GuardIEn CCM\_DELLINK table needs to be moved to the main GuardIEn database. This can be achieved using SQL provided by IET.

### 6) Unset GDNDB project property

All projects should now not require use of the GDNDB project property, so this should be set to blank or '1' for all projects. This can be achieved using SQL provided by IET.

### 7) Redefine CCL & CCM in secondary database

The CCL\_MODEL & CCM\_DELLINK tables in the secondary GuardIEn database will need to be dropped and replaced with an alias or synonym to the main database tables.

### 8) Redefine CDD in secondary database

The CDD\_SYSPARM table in the secondary GuardIEn database will need to be dropped and replaced with an alias or synonym to the main database tables. This assumes use of Task Dispatcher. If you are **NOT** using Task Dispatcher then the CDD table needs to exist in each GuardIEn database and you will need to ensure that any changes made to CDD are applied to all copies, i.e. Activation codes and changes to other system parameters. The only value that will need to be different is JCLLIB, which will refer to the base GuardIEn Procedure library as well as the Parameter Procedure library specific to the encyclopaedia in question.

Once these activities are completed you will be able to continue with the implementation of your Multi-HE upgrade using GuardIEn 8.7.