Information Engineering Technology

Install Guide - HE

IET DevOps Suite

Release 8.8.4

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Introduction

Architecture

The IET DevOps Suite products are Gen developed *client/server* applications. This means that there are two parts to the install process: the *clients* which are deployed on each workstation; and *servers* which reside on the same server as the Gen encyclopaedia.

As with any Gen developed client/server application, you will require communications software (*middleware*) so that the client programs can talk to the servers.

Server Platform	Middleware Options
Windows / UNIX / Linux (Transaction Enabler)	- TCP/IP - Web Services (Part of Transaction Enabler)
MVS (CICS)	- TCP/IP Direct Connect - MQ - ECI - Web Services (IET provided option) - Client Manager via Comms Bridge
MVS (IMS/DC)	- TCP/IP Direct Connect - Client Manager via Comms Bridge

For further details on appropriate middleware, consult your Gen documentation.

About the Installation Guides

There are a number of documents to help you with the install process. Below is a quick summary of what they are and which one(s) you will need to use.

Note that references below to GuardIEn in relation to the installation are synonymous with the IET DevOps suite. Earlier releases of the software referred to GuardIEn although this included other IET products like VerifIEr, genIE and pathvIEw.

- *Install Guide - Client*: You always need to perform Client Installs for each workstation, regardless of server platform.
- *Install Guide - <Platform/Ency>*: You will also need to perform a Server Install. Choose the appropriate one depending on your encyclopaedia platform. The server software is always installed on the same server as your encyclopaedia. If you eventually intend to use GuardIEn with multiple encyclopaedias then you should choose the server most capable of handling the workload for the first, or *main*, install. There are different versions of this install guide for each server platform. *THIS DOCUMENT* relates to **Host Encyclopaedia Servers**. If your server is a different platform, please locate the appropriate version of this guide now.
- *Install Guide – Multiple HE*. If you wish to additionally install GuardIEn for z/OS with multiple host encyclopaedia support, please refer to this guide.
- *Install Guide – Remote Instal*. GuardIEn supports z/OS to z/OS remote server installation. To set-up z/OS remote server support, please refer to this guide.
- *Install Guide – HE Gen Upgrade*. If you need to upgrade your existing Gen HE version or need to enable concurrent running of multiple versions of Gen alongside your implementation of GuardIEn, please refer to this guide.
- Verification: The server installation guides also include chapters on how to verify that the installation is ok and perform essential initial customisation. You *MUST* work through these sections after you have performed the client and server installs.
- *Remote Processing Daemon*: Installation and configuration guide for using the GuardIEn Remote Processing Daemon (RPD) which provides integrated file transfer and remote processing services for GuardIEn as an alternative to using ftp/sftp. This document is installed with the GuardIEn client.

This document makes continual reference to Gen. Unless explicitly stated otherwise this encompasses all Broadcom supported releases of the Gen product set, irrespective of release level.

Software for Download

All IET software is available for download from the IET support centre: https://support.iet.co.uk. Software is secured on the web site, so you will need register and then request access.

Download the relevant files for your platforms (client + one server) into a temporary directory on a workstation. The individual install chapters in this guide detail the files you will need and what you should do with them.

Server Install – Host Encyclopaedia

You should use this guide if you have a z/OS Host Encyclopaedia, referred to in this document as the 'server'.

This document covers the installation of the server component of the IET DevOps suite. Consult the separate client installation guide for installing the clients.

Who Should Perform the Installation?

The sections below document the steps required to install the IET DevOps Suite server for z/OS. You should review these to assist in determining how much time and resource is required by each step. It is estimated that, with the necessary communications infrastructure and other technical pre-requisites in place, the complete product installation (including client installation) will take approximately 2-3 days.

Individuals who are with familiar with managing DB2 databases, z/OS, TSO, and ISPF environments should perform the installation.

For implementation of the server components, the installer should also have knowledge of implementing client/server systems for z/OS using Gen i.e. knowledge of SNA-Server, TCP/IP, LU6.2, MQ Series, IMS or CICS as appropriate.

Upgrading from previous (including unsupported) Releases

This guide also details how you can upgrade from Release 8.7 to Release 8.8. The installation process is very similar to a new install – any differences are noted in the instructions.

If you are at a previous release to 8.7, then follow the instructions relating to incremental upgrades of the GuardIEn data structure to Release 8.7.

Thereafter the process is handled by execution of specific installation suite JCL members in a correct sequence.

Pre-Requisites

For a list of the technical and related soft and hardware pre-requisites for the installation please refer to the *Technical Requirements* document, section *Server - HE for z/OS*.

Note that you should obtain an activation code for Release 8.8 from the IET Support Centre (https://support.iet.co.uk) prior to commencing the installation.

Download Files

The following files should be downloaded from the web site into a temporary directory.

Setup File Name	Unzipped File
IETZOSxxx.EXE (xxx is the release)	LOADCNTL.SEQ LOADSLIB.SEQ LBATCALL.SEQ LBATDBRM.SEQ LSVRCALL.SEQ LSVRDBRM.SEQ LRITCALL.SEQ LIMSCALL.SEQ LCICCALL.SEQ LOADLINK.SEQ LGENLOAD.SEQ LGENXLAT.SEQ LZ61CALL.SEQ LZ71CALL.SEQ LZ81CALL.SEQ LEXTCALL.SEQ LEXTDBRM.SEQ websvcs.zip (used for CICS web services only)

When you have downloaded all files successfully:

- Extract the files by executing the .exe file
- Once this is complete, the .EXE file can be deleted.

Transfer Files to Server

The installation will require you to upload the datasets in the table below. These should be pre-allocated using the definitions as shown. The datasets should all be sequential datasets, with a record length of 80, i.e.

- Directory Blocks 0
- Record Format FB
- Record Length 80
- Block Size 3120

These datasets will contain the installation datasets in an *'unloaded'* format.

You will need to choose a prefix for the software libraries, for example IET.GDN88. Note that the installation uses fully qualified dataset names.

Upload the files from the workstation to the server. You can use **transfer_files.cmd** to perform the file transfer using the Windows FTP client or winscp or you can transfer the files using your own file transfer client.

All files are supplied as binary (data) files and therefore the file transfer should **NOT** use ASCII conversion.

PC File Name	z/OS Dataset Name	Space in Tracks (3390)	Notes
LOADCNTL.SEQ	<PREFIX>.LOADCNTL	150	
LOADSLIB.SEQ	<PREFIX>.LOADSLIB	150	
LOADLINK.SEQ	<PREFIX>.LOADLINK	50	
LBATDBRM.SEQ	<PREFIX>.LBATDBRM	100	
LBATCALL.SEQ	<PREFIX>.LBATCALL	1000	
LSVRCALL.SEQ	<PREFIX>.LSVRCALL	7000	
LSVRDBRM.SEQ	<PREFIX>.LSVRDBRM	1000	
LRITCALL.SEQ	<PREFIX>.LRITCALL	400	
LIMSCALL.SEQ	<PREFIX>.LIMSCALL	550	Required for IMS installs only but upload anyway
LCICCALL.SEQ	<PREFIX>.LCICCALL	5	Required for CICS installs only but upload anyway
LGENLOAD.SEQ	<PREFIX>.LGENLOAD	800	
LGENXLAT.SEQ	<PREFIX>.LGENXLAT	1200	Used for codepage translation
LZ61CALL.SEQ Or LZ71CALL.SEQ Or LZ81CALL.SEQ	<PREFIX>.LZMFCALL	10	If you DO NOT use ChangeMan at your site then upload the LZ81CALL.SEQ copy. Depending on the ChangeMan release being used (61, 71 or 81) you should upload the appropriate SEQ file renamed to LZMFCALL.
LEXTCALL.SEQ	<PREFIX>.LEXTCALL	50	
LEXTDBRM.SEQ	<PREFIX>.LEXTDBRM	10	

Application Architecture

The IET DevOps Suite application for z/OS is created from the following components:

- Object code and Link Control decks used to link-edit executable load modules
- DBRMs used to bind DB2 packages
- DDL to create the DB2 database
- JCL and TSO procedures
- DB2 LOAD data for key tables when necessary
- GuardIEn uses three started tasks (GDTD/GDTD1, GDPL and GDSYNC). Unless otherwise advised, it is recommended that you install the Task Dispatcher (GDTD or GDTD1) and PAD List (GDPL) started tasks. If you need to seek authorisation to install these started tasks on your z/OS system we advise that you commence this activity prior to commencement of the install process.
- Installation driver suite for configuration and creation of all the above

Create Software Libraries

Edit the LOADCNTL dataset

Edit the <PREFIX>.LOADCNTL dataset. Follow the instructions at the top of this dataset regarding changes that need to be applied before it is submitted as a batch job. Note that this job produces a lot of output (> 50,000 lines) so it may be necessary to insert a /*JOBPARM LINES=9999 to ensure it submits successfully.

Submit the LOADCNTL job

Submit the job. This will allocate the GuardIEn installation and runtime libraries listed in the tables below and load them with the data in the unload files that you uploaded. Note that to ensure you do not accidentally overwrite any libraries from a previous release of GuardIEn, all of the libraries have been declared as NEW. Therefore, if they exist and you want to overwrite them, they will need to be **deleted** before executing this job.

This job is very large so it may be necessary to submit it by entering SUBMIT next to the dataset in an ISPF Data Set List screen rather than from the editor.

Review the job output

Once the job has completed, review the output, checking for return codes > 4. If you encounter any RC 12s from the LOAD steps and an associated message…

INMR108I RECEIVE command terminated. Trailer record missing

…this typically means the sequential file you uploaded into for that step was not large enough. You will need to reallocate it with more space and restart from that step.

Check Dataset management class and retention

The job will allocate the GuardIEn installation libraries described below. If you are using SMS or similar products, these libraries 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.

The LOADCNTL job will create libraries to contain the installation suite and the GuardIEn runtime libraries.

GuardIEn Runtime Libraries

Name	Default Suffix	Primary Allocation (3390) Tracks
Batch Load	.BATLOAD	6000
Server Load	.SVRLOAD	9000
Task Dispatcher Load	.TDLOAD	900
JCL Procedures	.PROCLIB	50
Clists	.CLIB	50
JCL	.JCLRUN	50
Cobol Options File	.COBOPT	5
Skeletal	.SLIBRUN	10
Gen Runtime Load	.GEN.RUNLOAD	500
Parameter Clists	.GEN.ENVCLIB	5
Parameter JCL Procedures	.GEN.PROCLIB	5

GuardIEn Installation Libraries

Name	Default Suffix	Primary Allocation (3390) Tracks
Exit Source	.EXITSRC	50
Exit DBRM	.EXITDBRM	50
Exit Callib	.EXITCALL	50
Exit DLL Callib	.EXITDLCL	50
Exit JCL	.EXITJCL	50
Batch DBRM	.BATDBRM	100
Batch Callib	.BATCALL	500
Server DBRM	.SVRDBRM	700
Server Callib	.SVRCALL	8000
RIT Callib	.RITCALL	250
CICS Callib	.CICSCALL	10
IMS Callib	.IMSCALL	300
Install JCL	.INS.JCL	50
Install Link Control Cards	.INS.LINKCTL	150
Install Database Control and DDL definitions	.INS.DB2CTL	70
Install Database Data Load Data	.INS.DB2LOAD	50
Install Clists	.INS.CLIB	10
Install JCL Procedures	.INS.PROCLIB	10
Install Gen Load	.INS.GENLOAD	500
Install Gen Skeletal	.INS.GENSLIB	10
Install Gen Translation Tables	.INS.GENXLAT	700
Install Skeletal Link Control Cards	.INSLIBLK	20
Install Skeletals	.INSLIB	150
Install Driver Clists	.INCLIB	50
Install Driver Panels	.INPLIB	50
Install Driver Messages	.INMLIB	5
Install Driver Tables	.INTLIB	5
Install Skeletals (Temporary)	.TMPSLIB	150

Preparing for Set-Up

The Installation Suite

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

- Define installation variables
- Verification of the installation variables
- Generation of the GuardIEn JCL, JCL Procedures, TSO Procedures and DB2 Load and Control data
- Generation of the JCL to link-edit and bind the GuardIEn software

Note: Installation variables are saved in the ISPF profile pool using NEWAPPL GDIN. These variables are associated only with the TSO userid used to execute the install facilities. Therefore, if you are required to use the install facilities again (e.g. for an upgrade) either the same userid should be used OR a copy of the GDIN member from that user's ISPPROF dataset should copied to installer's ISPPROF dataset.

Define Variables

During the installation process, you will be required to provide or confirm values for various variables. This section describes these variables so that you can plan what values will be entered, for example to conform to site standards.

GuardIEn Software (Variables Panel 1)

Options	Purpose	Example/Default
GuardIEn Library Prefix	The prefix that your GuardIEn installation and runtime libraries have been defined with, as defined as the <PREFIX> in the LOADCNTL job	IET.GDN88
GuardIEn Runtime Library Suffixes	The suffix that identifies a runtime library component in GuardIEn. **NOTE**: If you wish to make use of the Task Dispatcher Job Check Interface it will be necessary to ensure the TDLOAD and RUNLOAD libraries are APF Authorised. See *Appendix B Started Tasks, Task Dispatcher Job Check Interface* for details.	BATLOAD, SVRLOAD, TDLOAD, PROCLIB, CLIB, JCLRUN, SLIBRUN, GEN.ENVCLIB, GEN.PROCLIB,GEN.RUNLOAD
GuardIEn Exit Libraries	The suffix that identifies an exit library component in GuardIEn.	EXITSRC, EXITDBRM, EXITCALL, EXITDLCL, EXITJCL
GuardIEn Install Libraries	The suffix that identifies an installation library component in GuardIEn. **NOTE:** CICSCALL is only required if installing for CICS. It should be left blank if installing for IMS. **NOTE:** IMSCALL is only required if installing for IMS. It should be left blank if installing for CICS.	BATDBRM, BATCALL, SVRDBRM, SVRCALL, RITCALL, CICSCALL, IMSCALL, INS.JCL, INS.LINKCTL, INSLIB, INCLIB, INTLIB, INPLIB, INMLIB, INSLIBLK, INS.DB2CTL, INS.DB2LOAD, INS.PROCLIB, INS.CLIB
GuardIEn Gen IEFXLATE	The suffix indicating the name of the supplied Gen 8.6 Translation Table dataset. This dataset is required to amend their codepage definitions from the Broadcom supplied defaults.	INS.GENXLAT
GuardIEn Gen Load	The suffix indicating the name of the Gen 8.6 runtime load library supplied by IET. This is an **optional** library if you would prefer to use your own copy of the Gen 8.6 load library. If you DO NOT have a copy of Gen 8.6 available or would prefer to utilise the IET supplied library then make sure this field is **NOT** blank.	INS.GENLOAD
GuardIEn Gen Skeletal	The suffix indicating the name of the Gen 8.6 runtime skeletal library supplied by IET to create the installation link-edit control cards. This library contains IET specific changes and MUST ONLY be used for GuardIEn installations. Do **NOT** use your own Gen skeletal library.	INS.GENSLIB

Gen Software (Variables Panel 2)

Options	Purpose	Example/Default
Host Ency Release Level	The *Release level* of the Gen host encyclopaedia. Valid values are 6.0 (for COOL:Gen), 6.5 (for Advantage Gen), 7.0 (for Gen 7.0), 7.5 (for Gen 7.5), 7.6 (for Gen 7.6), 7.6E (for Gen Priority Enhancement), 7.6F (for Gen support for dynamic batch psteps), 8.0 (for Gen 8.0 base), 8.0A (for Gen 8.0 FP1), 8.5 (for Gen 8.5) and 8.6 (for Gen 8.6).	8.6
Gen Dataset Prefix	The prefix for your Gen HE libraries	CA.GEN86
Gen Dataset Suffixes	The suffix that identifies each Gen HE library. Note that from Gen 8.0 onwards a new PARMLIB library is required and no TLIB library is used.	Pre-Gen 8.0 LOAD, DBRM, SKELETAL, CLIST, TLIB, MLIB Gen 8.0 onwards CEHBPLD0, CEHBPLD1, CEHBDBRM, CEHBSKL0, CEHBCLS0, CEHBMSG0, PARMLIB
Gen Look-Ahead Library Clist **(optional)**	Allows you to specify an additional look-ahead library for the Gen Clist library – typically when you have made customisations in a separate library to the base Gen libraries but still wish GuardIEn to make use of these customisations.	PDSPB.IEFLB.GEN86.MVPP.CLIST

ISPF Library Names (Variables Panel 3)

Options	Purpose	Example/Default
ISPF Clist, Panel, Skeletal, Message, Table Library Names	The libraries required to run an ISPF application. You can concatenate up to seven (7) libraries per ISPF library type.	
ISPF Linklib	Some of the GuardIEn load modules call ISPLINK, and you therefore must specify the ISPF library that contains this module. The verify step will check the library you define to ensure that it contains the ISPLINK module.	SYS1.SISPLOAD

JCL Variables (Variables Panel 4)

Options	Purpose	Example/Default
Temp DiskUnit	Disk UNIT allocation for temporary datasets	DISK
Permanent DiskUnit	Disk UNIT allocation for permanent datasets (e.g. user report files etc.)	DISK
SYSOUT Class	The JCL SYSOUT class that will be used in all GuardIEn JCL	*
Overnight JobClass	Used by GuardIEn batch routines when executed overnight (e.g. migrations, production updates etc.)	W
Profile Blksize	The default profile blocksize at your site. Used by GuardIEn batch jobs when dynamically creating a temporary profile dataset.	27920
ISPSPROF Order	This option places the &ISPSPROF temporary table allocation in ISPTLIB either at the top or the bottom of the concatenation for various GuardIEn JCL procedures. It is recommended to use TOP since use of BOTTOM can result in ISPT036 errors.	TOP or BOTTOM
Temp DSN prefix **(optional)**	Allows you to optionally prefix all GuardIEn work and temporary datasets with this name. Site standards may enforce this naming standard over the more common <userid> prefix.	OURPREF
Temp DSN suffix **(optional)**	Allows you to optionally suffix the <userid> prefix with a specific literal should your site standards require it. Can be used in conjunction with the DSN prefix above also.	HTF8
Task DSN prefix **(mandatory only if installing the HE Task Assistant)**	Defines an initial DSN prefix for files used by the Task Assistant. This field is only required if you have elected to install the Task Assistant.	GJD.TASKD
Management Class **(optional)**	Allows you to allocate a management class for the runtime datasets	MCWORK10
COBOL Version	Indicate whether you are using COBOL 4, 5 or 6.	6
COBOL OPTFILE? **(optional)**	Indicates whether your compile procedures will use an OPTions parameter file instead of specifying the parameters on the EXEC statement. Note that if you use COBOL 5 or 6 you MUST use an OPTFILE for GuardIEn.	YES (or NO)

DB2, COBOL and Miscellaneous Steplib Libraries **(All optional except the 1st DB2 steplib)**	The DB2, COBOL and miscellaneous steplib datasets. You may specify up to 2 libraries.	DB2 Steplib: DSNB10.SDSNLOAD
COBOL, Other and LU6.2 **(optional)** Linklib Libraries	GuardIEn requires LE/370 link libraries to be able to link successfully, so this library MUST be specified. The *LU6.2 Link Library* is required ONLY if you will be connecting to the server via the LU6.2 protocol.	CEE.SCEELKED LU6.2 Linklib: SYS1.CSSLIB
COBOL Runlib (Runtime Library)	The LE runtime library if required on the steplib. This is an optional library as is may already be referenced dynamically (e.g. via linklist or LLA).	CEE.SCEERUN
COBOL OPTFILE **(optional)**	You can specify your COBOL OPTFILE, for use if you indicate you will be using an OPTFILE in your compile procedures, here. Mandatory if you use COBOL 5 or 6.	IET.GDN88.COBOPT

DB2 and TP Monitor Variables (Variables Panel 5)

Options	Purpose	Example/Default
DB2 Subsystem or DSG Name	The *DB2 subsystem* or, if using DB2 Data Sharing, the *DB2 Group Attachment* name for the Host Encyclopaedia (HE) and GuardIEn databases.	DSN1
DSNTEP Program Library	The name of the library containing the DSNTEP (execute SQL in batch) DB2 utility.	DSNTEP2
DSNTEP Program Name	The name of the DSNTEP program	
DSNTEP Plan Name	The DB2 Plan Name associated with the DSNTEP program	DSNTEP11
Use VERSION on Precomp?	Indicates whether the GuardIEn runtime procedures use VERSION(AUTO) in the DB2 pre-compiler. Some sites insist this is not used.	YES
Use MGEXTSZ in Zparm?	Indicates whether tablespace/indexspace allocation can be defaulted to use the DB2 Zparm setting MGEXTSZ introduced in DB2 8.1. Selecting YES will suppress the individual setting of PRIQTY and SECQTY in the GuardIEn DDL.	NO
TP Monitor	The type of *Server TP Monitor* you will be using to connect to the GuardIEn servers. You *must* select either CICS or IMS	CICS (or IMS)
CICS/IMS Load Library	The appropriate *CICS* or *IMS Load Llibrary* that will be used by the install process to successfully link the server load modules.	DFH560.CICS.SDFHLOAD
CICS External Interface Library **(mandatory if CICS is the TP monitor)**	If you are using CICS, you should indicate the name of the *CICS External Interface Library*.	DFH560.CICS.SDFHEXCI
CICS Translator **(mandatory if CICS is the TP monitor)**	If you are using CICS, you must indicate the name of the *CICS Translator* (pre-compiler).	DFHECP1£
Host Ency Plan Prefix	The *Plan Prefix* defined for the host encyclopaedia plans. This is the first four characters of the Gen plan names.	HE86
Host Ency Explicit Creator Id	The *Explicit creator id* of HE tables.	HE
GuardIEn Database Name	The name for the *GuardIEn DB2 Database.*	GDDB1
GuardIEn TableSpace Storage Group	The name of the DB2 storage group for the GuardIEn tablespaces. Change the default if you have your own site standards or will use an existing storage group.	GDSGT1
GuardIEn IndexSpace Storage Group	The name of the DB2 storage group for the GuardIEn indexes. Change the default if you have your own site standards or will use an existing storage group.	GDSGI1
GuardIEn TableSpace Bufferpool	The name of the Bufferpool to be used by the GuardIEn Database and Tablespaces.	BP0
GuardIEn TableSpace Large Bufferpool	The name of the Bufferpool to be used for GuardIEn Tablespaces that contain records greater than 4KB. The recommended bufferpool to use is BP32K.	BP32K
GuardIEn IndexSpace Bufferpool	The name of the Bufferpool to be used by the GuardIEn Indexspaces.	BP0

GuardIEn Explicit Creator Id OR Secondary Authid	Either an *Explicit creator id* (e.g. userid) *OR* a *Secondary authorisation id* to be associated with the GuardIEn databases and tables (note that these variables are mutually exclusive).	GDN
One plan for ALL Servers (Available for CICS Only)	If you are using **CICS** for the Server modules then you can elect to BIND all the GuardIEn Server transactions under a single Server DB2 Plan (recommended). The option of installing a single server plan is only available if your version of CICS no longer requires a Resource Control Table (RCT) entry with one plan name per load module. If you are using **IMS** for the Server modules then this option MUST be set to NO.	YES
GuardIEn Plan Name	The Plan name to be used by GuardIEn. Note that if deploying into IMS, then a single plan is also created for each of the Server load modules (they take the same name as the Server load module) in addition to the Plan name identified here.	GD88
GuardIEn Collection Name	The DB2 Collection to be used for the GuardIEn packages.	GD88COL
PathvIEw Plan Name	A separate Plan for PathvIEw. Must be different to the GuardIEn Plan.	GDPV
PathvIEw Collection Name	The DB2 Collection to be used by PathvIEw	GDPVCOLL
Connection Method to Gen	Specifies whether the Gen HE tables are accessed via an ALIAS or SYNONYM. The default for this action is ALIAS. Note that DB2 support for SYNONYMS is deprecated from DB2 12.	ALIAS

Start Installation Suite

From an ISPF command line type

TSO EX '<prefix>.INCLIB'
After a short while (as initialisation of the environment occurs), the *GuardIEn for HE Setup Main Menu* is displayed:

```
GDN8.8                    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
```

Select option *1* and press *<Enter>*. The *Define Installation Variables* panel is displayed. This section deals with the definition of variables.

NOTE: You must complete each of the options in full including the verification checks before attempting to create the GuardIEn installation and runtime components.

```
GDN8.8                    Define Installation Variables
===>

Select one of the options below, then press enter.

1 Define GuardIEn software
2 Define Gen software
3 Define ISPF library names
4 Define JCL variables
5 Define Db2 and TP Monitor variables
6 Define Runtime JCL job header
7 Define Install JCL job header

8 Verify ALL Installation library names and variables

Do you wish to install the HE Task Dispatcher ?  YES (Yes or No)




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

First, you must indicate whether you plan to install the *HE Task Dispatcher*. Note that if this is a **first-time installation** then it is likely that you will be using the *HE Task Dispatcher* so typically enter *YES* for this field.

Define Installation Variables

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

GuardIEn Software

This panel defines the GuardIEn runtime and installation library names that were created by the LOADCNTL job.

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

Enter or verify the following GuardIEn software library names
                                                        More:      +
GuardIEn Library Prefix:
     GuardIEn dataset prefix:          <PREFIX>_____

GuardIEn Runtime Libraries:
     GuardIEn dataset suffixes:
          Batch Load  . . . . . . . .   BATLOAD_
          Server Load . . . . . . . .   SVRLOAD_
          Task Dispatcher Load. . . .   TDLOAD__
          JCL Procedures. . . . . . .   PROCLIB_
          TSO Clists  . . . . . . . .   CLIB____
          JCL . . . . . . . . . . . .   JCLRUN__
          Skeletal  . . . . . . . . .   SLIBRUN_

          Parameter Clists. . . . . .   GEN.ENVCLIB__
          Parameter Procedures. . . .   GEN.PROCLIB__

          Gen Runtime Load. . . . . .   GEN.RUNLOAD__

GuardIEn Exit Libraries:
     GuardIEn dataset suffixes:
          Exit Source . . . . . . . .   EXITSRC_
          Exit Callib . . . . . . . .   EXITCALL
          Exit DLL Callib . . . . . .   EXITDLCL
          Exit DBRMlib. . . . . . . .   EXITDBRM
          Exit JCL  . . . . . . . . .   EXITJCL_

GuardIEn Install Libraries:
     GuardIEn dataset suffixes:
          Batch   DBRMlib . . . . . .   BATDBRM_
          Batch   Callib. . . . . . .   BATCALL_
          Server  DBRMlib . . . . . .   SVRDBRM_
          Server  Callib. . . . . . .   SVRCALL_
          Trigger Callib. . . . . . .   RITCALL_
          CICS    Callib. . . . . . .   CICSCALL      (for CICS only)
          IMS     Callib. . . . . . .   _____      (for IMS  only)

          Install Skeletal. . . . . .   INSLIB__
          Install Skeletal Link Ctl .   INSLIBLK
          Install JCL . . . . . . . .   INS.JCL_____
          Install Clists. . . . . . .   INS.CLIB_____
          Install Procedures. . . . .   INS.PROCLIB__
          Install Link Ctl Cards. . .   INS.LINKCTL__
          Install DB2 Control . . . .   INS.DB2CTL___
          Install DB2 Data Load . . .   INS.DB2LOAD__
          Install GEN Translation . .   INS.GENXLAT__
          Install GEN Skeletal. . . .   INS.GENSLIB__
          Install GEN Load. . . . . .   INS.GENLOAD__   (optional)


F1=Help  F2=Accept  F3=End  F6=Save  F7=Scroll Up  F8=Scroll Down  F12=Cancel
```

Complete the GuardIEn *prefix* and *suffixes* using the information identified in the earlier **Define Variables** section. The GuardIEn libraries specified must refer to the library names of those allocated earlier in the LOADCNTL job step.

Note that this panel is scrollable (indicated by the *More* display field). To complete all variables will require you to page up/down through the panel (via use of *F7/F8*).

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…

If the verification completes successfully, you may press *<Enter>* to exit from the *Installation Status* screen and return to the *Define GuardIEn Software* panel. Note that it is now possible to verify ALL the installation variables at the end of the definition process so the requirement to press *F2* at this point is optional.

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

Activity: GuardIEn Software Checked

Component    Description                     Status
-----------------------------------------------------------------------
CHECKING GUARDIEN SOFTWARE
CHECK OF GUARDIEN SOFTWARE                   ACCEPTED
                                             Now press ENTER to continue
****************************** Bottom of data ******************************
```

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 libraries you allocated), for example…

```
GDN8.7                        Installation Status        Row 1 to 4 of 4
===> _

Activity: GuardIEn Software Checked

Component    Description                     Status
-----------------------------------------------------------------------
CHECKING GUARDIEN SOFTWARE
  GJD.GDNBASE.R870.WHOOPS                    DATASET NOT FOUND
CHECK OF GUARDIEN SOFTWARE                   REJECTED
                                             Now press ENTER to continue
****************************** Bottom of data ******************************
```

When you have completed the definition successfully, press *F3* to exit the *Setup GuardIEn Software panel*.

Select option *2* from the menu and press *<Enter>*. The *Define Gen Software* panel is displayed.

Gen Software

This panel defines the *Gen* release level and dataset names.

```
GDN8.8                       Define Gen Software
===>


Enter or verify the following Gen software information

Gen Release Level:
     Host Ency Release Level. . . . .  8.6_      (6.0,6.5,7.0,7.5,7.6,7.6E,
                                                  7.6F,8.0,8.0A,8.5 or 8.6)
Gen Encyclopaedia Libraries:
     Gen dataset prefix:               CA.HE86_____
     Gen dataset suffixes:
          Gen Load. . . . . . . . . .  CEHBPLD0
          Runtime Load. . . . . . . .  CEHBPLD1  (required from Gen8.0 )
          DBRM  . . . . . . . . . . .  CEHBDBRM
          Skeletal  . . . . . . . . .  CEHBSKL0
          Clist . . . . . . . . . . .  CEHBCLS0
          Tlib  . . . . . . . . . . .  _____  (not required from Gen8.0 )
          Mlib  . . . . . . . . . . .  CEHBMSG0
          Parmlib . . . . . . . . . .  PARMLIB_  (required from Gen8.0 )
     Lookahead library: (if applicable)
          Clist . . . . . . . . . . .  _____


F1=Help  F2=Accept  F3=End  F6=Save  F7=Scroll Up  F8=Scroll Down  F12=Cancel
```

Complete the *Gen release level*, *prefix* and *suffixes* 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 (although note that it is possible to verify ALL the installation variables at the end of the definition process so the requirement to press *F2* at this point is optional).

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

Select option *3* from the menu and press *<Enter>*. The *Setup ISPF Library Names* panel is displayed.

ISPF Library Names

This panel defines the ISPF runtime libraries.

```
GDN8.7                     Define ISPF Library Names
===> _

Enter or verify the following SYSPROC and ISPF library names
                                                         More:      +
ISPF Clist Libraries:
     Sysproc1 . . .   _____
     Sysproc2 . . .   _____ (optional)
     Sysproc3 . . .   _____ (optional)
     Sysproc4 . . .   _____ (optional)
     Sysproc5 . . .   _____ (optional)
     Sysproc6 . . .   _____ (optional)
     Sysproc7 . . .   _____ (optional)

ISPF Panel Libraries:
     Panel1 . . . .   _____
     Panel2 . . . .   _____ (optional)
     Panel3 . . . .   _____ (optional)
     Panel4 . . . .   _____ (optional)
     Panel5 . . . .   _____ (optional)
     Panel6 . . . .   _____ (optional)
     Panel7 . . . .   _____ (optional)

ISPF Skeletal Libraries:
     Skeletal1  . .   _____
     Skeletal2  . .   _____ (optional)
     Skeletal3  . .   _____ (optional)
     Skeletal4  . .   _____ (optional)
     Skeletal5  . .   _____ (optional)
     Skeletal6  . .   _____ (optional)
     Skeletal7  . .   _____ (optional)

ISPF Message Libraries:
     Message1 . . .   _____
     Message2 . . .   _____ (optional)
     Message3 . . .   _____ (optional)
     Message4 . . .   _____ (optional)
     Message5 . . .   _____ (optional)
     Message6 . . .   _____ (optional)
     Message7 . . .   _____ (optional)

ISPF Table Libraries:
     Table1 . . . .   _____
     Table2 . . . .   _____ (optional)
     Table3 . . . .   _____ (optional)
     Table4 . . . .   _____ (optional)
     Table5 . . . .   _____ (optional)
     Table6 . . . .   _____ (optional)
     Table7 . . . .   _____ (optional)

ISPF Link library:(contains ISPLINK member)
     ISPF LinkLib .   _____


 F1=Help  F2=Accept  F3=End  F6=Save  F7=Scroll Up  F8=Scroll Down  F12=Cancel

MA  A                                                        02/007
```

Complete the *ISPF Library Names* using the information identified in the earlier **Define Variables** section.

Please note that this panel is scrollable (indicated by the *More* display field). To complete all variables will require you to page up/down through the panel (via use of *F7/F8*). Once you have specified all the library definitions, press *F6* to save the variables and then *F2* to verify them (although note that it is possible to verify ALL the installation variables at the end of the definition process so the requirement to press *F2* at this point is optional).

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 *Define ISPF Library Names* panel, then press *F3* to return to the *Define Installation Variables* panel.

Select option *4* from the menu and press *<Enter>*. The *Define JCL Variables* panel is displayed.

JCL Variables

This panel defines JCL and related variables.

```
GDN8.7                          Define JCL Variables
===> _

    Enter or verify the following JCL variables and any STEPLIB library names

    Your Runtime Variables:
       Temp DiskUnit . .  DISK____   Permanent DiskUnit . .  DISK____
       SYSOUT Class. . .  *
       O'night Jobclass.  W
       Profile BlkSize .  27920
       ISPSPROF Order. .  TOP___                    (Choose TOP or BOTTOM)
       Temp DSN Prefix .  _____                           (optional)
       Temp DSN Suffix .  _____                           (optional)
       Task DSN Prefix .  _____  (for Task Assistant)
       Management Class.  _____                           (optional)
       COBOL Version . .  4                         (Choose 4,5 or 6)
       COBOL Optfile ? .  YES                      (Use a COBOL OPTFILE?)

    Steplib Libraries:
       DB2   Steplib 1 .  _____
       DB2   Steplib 2 .  _____  (optional)
       COBOL Steplib 1 .  _____  (optional)
       COBOL Steplib 2 .  _____  (optional)
       Misc  Steplib 1 .  _____  (optional)
       Misc  Steplib 2 .  _____  (optional)

    Linklib Libraries:
       COBOL Linklib . .  _____
       Other Linklib . .  _____  (optional)
       LU6.2 Linklib . .  _____  (optional)

    Runlib Libraries:
       COBOL Runlib. . .  _____  (optional)

    Parameter Files:
       COBOL OPTFILE . .  _____  (optional)


    F1=Help  F2=Accept  F3=End  F6=Save  F7=Scroll Up  F8=Scroll Down  F12=Cancel
```

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

Please note that this panel is scrollable (indicated by the *More* display field). To complete all variables will require you to page up/down through the panel (via use of *F7/F8*). Once you have specified all the library definitions, press *F6* to save the variables and then *F2* to verify them (although note that it is possible to verify ALL the installation variables at the end of the definition process so the requirement to press *F2* at this point is optional).

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 *Define JCL variables* panel, then press *F3* to return to the *Define Installation Variables* panel.

Select option *5* from the menu and press *<Enter>*. The *Define DB2 and TP Monitor Variables* panel is displayed.

DB2 and TP Monitor Variables

This panel defines DB2 and TP monitor variables.

```
GDN8.7                  Define DB2 and TP Monitor Variables
===> _

Enter or verify the following DB2 and TP Monitor variables
                                                        More:      +
DB2 Specific:
   DB2 Subsystem Id . . . . . . .  ____
   DSNTEP Program Library . . .  _____
   DSNTEP Program Name. . . . .  _____   (Program name for DSNTEP program)
   DSNTEP Plan Name . . . . . .  _____   (Plan name for DSNTEP program)
   Use VERSION on Precomp ? . .  ___       (Yes or No)
   Use MGEXTSZ in Zparm ? . . .  ___       (Yes or No)

TP Monitor Specific:
   Server TP Monitor. . . . . .  CICS      (IMS or CICS only)
   CICS/IMS Load Library. . . .  _____
   CICS Ext Interface Library .  _____
   CICS COBOL Translator. . . .  DFHECP1£  (CICS only; for COBOL translator)

CA Gen Specific:
   Host Ency Plan Prefix. . . .  HE86
   Explicit Creator Id. . . . .  HE_____

GuardIEn Specific:
   Database Name. . . . . . . .  GDDB1___
   TableSpace Storage Group . .  GDSTG01_
   IndexSpace Storage Group . .  GDSTG01_
   TableSpace Bufferpool. . . .  BP0___
   TableSpace Large Bufferpool.  BP32K_
   IndexSpace Bufferpool. . . .  BP0___

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

   One Plan for ALL servers ? .  NO_       (Yes or No)
   Plan Name. . . . . . . . . .  GD87____
   Collection Name. . . . . . .  GD87COL_

   PathvIEw Plan Name . . . . .  GDPV____
   PathvIEw Collection Name . .  GDPVCOLL

   Connection method to GEN ? .  ALIAS__   (Alias or Synonym)


F1=Help  F2=Accept  F3=End  F6=Save  F7=Scroll Up  F8=Scroll Down  F12=Cancel
```

Complete the *DB2 and TP Monitor Variables* using the information identified in the earlier **Define Variables** section.

Please note that this panel is scrollable (indicated by the *More* display field). To complete all variables will require you to page up/down through the panel (via use of *F7/F8*). Once you have specified all the library definitions, press *F6* to save the variables and then *F2* to verify them (although note that it is possible to verify ALL the installation variables at the end of the definition process so the requirement to press *F2* at this point is optional).

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 *Define DB2 and TP Monitor Variables* panel, then press *F3* to return to the *Define Installation Variables* panel.

Select option *6* from the menu and press *<Enter>*. The *Define Runtime JCL Job Header* panel is displayed.

Runtime JCL Header

This panel defines the jobcards for batch job submission at runtime (utility batch jobs, started task JCL etc.)

```
GDN8.7                      Define Runtime JCL Header
===> _

Enter or verify the following Runtime JCL Header details below

Start of GuardIEn Runtime JCL Header cards

//GJDI JOB 'GDN870',MSGCLASS=X,REGION=0M
//      JCLLIB ORDER=('GJD.GDNBASE.R870.PROCLIB',
//      'GJD.GDNBASE.R870.GEN.PROCLIB')
//*
//*
//*
//*
//*
//*

End of GuardIEn Runtime JCL Header cards


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

Specify a valid job card for your site. Note: you may need to add a JCLLIB card, as in the example above, if the GuardIEn Runtime JCL Procedures and Parameter Procedures are to be stored, as is typically the case, in private libraries – these are referred to on the GuardIEn Software Installation Variables panel under 'Runtime Libraries'. Alternatively, the procedures can be placed in system procedure libraries so there is no need to specify private JCL libraries.

When completed, press *F6* to save the job header. When completed successfully, press *F3* to exit the screen. The *Define Installation Variables* panel is redisplayed.

Select option *7* from the menu and press *<Enter>*. The *Define Install JCL Job Header* panel is displayed.

Install JCL Header

This panel defines the jobcards for installation batch jobs.

```
GDN8.7                      Define Installation JCL Header
===> _

Enter or verify the following Installation JCL Header details below

Start of GuardIEn Installation JCL Header cards

//GJDI JOB 'GDN870',MSGCLASS=X,REGION=0M
//      JCLLIB ORDER=('GJD.GDNBASE.R870.INS.PROCLIB')
//*
//*
//*
//*
//*
//*
//*

End of GuardIEn Installation JCL Header cards


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

Specify a valid job card for your site. You will need to add a JCLLIB card if, as in the example above, the GuardIEn Install Procedures are to be stored in a private library, as will almost certainly be the case - these are referred to on the GuardIEn Software Installation Variables panel under 'Installation Libraries'. When completed, press *F6* to save the job header. When completed successfully, press *F3* to exit the screen. The *Define Installation Variables* panel is redisplayed.

You have now successfully completed definition of the GuardIEn parameters. You may now proceed to verify ALL the installation variables in preparation for creating all the installation and runtime components.

Verify Installation Variables

Choose option *8* on the *Define Installation Variables* panel, press *<Enter>*.

On selection of this option, the verification of all installation variables defined is initiated. The first variables to be checked are the *GuardIEn Software*…

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

Activity: GuardIEn Software Checked

Component    Description                      Status
--------------------------------------------------------------------------
CHECKING GUARDIEN SOFTWARE
CHECK OF GUARDIEN SOFTWARE                    ACCEPTED
                                             Now press ENTER to continue
****************************** Bottom of data ******************************
```

…Press <Enter>. The *Gen Software*, *ISPF Variables*, *JCL Variables* and *DB2 and TP Monitor Variables* are then verified in turn.

If all the checks complete successfully you will be returned to the *Define Installation Variables* menu with the a 'Variables accepted' message in the top right corner of the panel.

If checks fail, an error message will be reported. If this occurs, you would need to fix the error(s) and retry. Once you have successfully verified all the GuardIEn installation variables, you may proceed to generate the GuardIEn software components.

```
GDN8.7                          Define Installation Vari      Variables rejected
===> _

Select one of the options below, then press enter.

1 Define GuardIEn software
2 Define CA Gen software
3 Define ISPF library names
4 Define JCL variables
5 Define DB2 and TP Monitor variables
6 Define Runtime JCL job header
7 Define Install JCL job header

8 Verify ALL Installation library names and variables

Do you wish to install the HE Task Dispatcher ?  YES (Yes or No)


        ┌──────────────────────────────────────────────────────────┐
        │ Variables have been checked some or all are not valid     │
        └──────────────────────────────────────────────────────────┘


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

Create Components

Once all variable panels have been completed and verified successfully, you are ready to create the components of the GuardIEn system.

Return to the *GuardIEn for HE Set-up Main Menu* by pressing *F3* again. You should now choose option 4 *Create ALL Components* 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 ALL Install and Runtime Components











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

…indicating that you have requested to '*Create ALL Install and Runtime components*'. Press *F12* to cancel or *<Enter>* to continue. Press *<Enter>* and the component creation process begins.

```
GDN8.7                        Installation Status    Row 721 to 730 of 730
===> _

Activity: Created ALL Install and Runtime Components successfully

Component      Description                   Status
-----------------------------------------------------------------------
G7U5           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7V1           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7V2           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7V3           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7W1           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7W2           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7W3           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7X1           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
G7X2           SERVER LINKCTL DECK           TAILORING SUCCESSFUL
                                             Now press ENTER to continue
******************************* Bottom of data *******************************
```

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 proceed to the **Review/Browse Created Components** section.

Creating Components Selectively (Optional)

You may wish to install the GuardIEn components selectively – useful if you have changed one or two variables and wish to refresh the settings for some of the components rather than rebuilding them all. To do this, return to the *GuardIEn for HE Setup Main Menu.* To create the *Installation Components* (JCL, procedures, clists, DB2 control, DB2 load and link control cards – all used to install the GuardIEn software) select option 2 from the menu and press *<Enter>*. The *Create Installation Components* panel is displayed.

Create Installation Components

This panel displays a set of options to enable creation of components specific to the installation of GuardIEn

```
GDN8.7                    Create Installation Components
===>  _

Select one of the options below, then press enter.

1 Create JCL
2 Create JCL procedures
3 Create TSO clists
4 Create DB2 components
5 Create Link control cards






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

Choose each '*create'* option (options *1* to *5*) in turn to generate the JCL, JCL procedures, TSO clists, DB2 control, DB2 Load data, DDL, and the GuardIEn link control card decks.

The following is an example of the generation phase. Choosing option *1* from the main menu displays a confirmation screen for the creation of GuardIEn Installation JCL.

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

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

Activity: Create Installation JCL











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

Press *<Enter>* to confirm the selected activity. Press *F3* to exit from this panel without generation of any components. Pressing *<Enter>* initiates creation of all the Installation JCL. A status panel is displayed and updated as each component is created.

You can scroll up and down through the list when it has completed. This enables you to verify that all the tailoring has completed successfully. The same process is carried out for JCL Procedure, TSO procedure, DB2 Control Data, DB2 load, DB2 DDL and Link Control Deck components. Once all components have been generated successfully you may then progress to the next phase of the GuardIEn installation.

Return to the *GuardIEn for HE Set-up Main Menu* by pressing *F3*. Select option *3* from the menu and press *<Enter>*. The *Create Runtime Components* panel is displayed.

Create Runtime Components

This panel displays a set of options to enable creation of components specific to using GuardIEn as an application at runtime.

```
GDN8.7                          Create Runtime Components

GDN8.7                        Browse and Run Installation
===> _

Select one of the options below, then press enter.

1 Browse DB2 Control
2 Browse DB2 Load Data
3 Browse Link Control Decks
4 Browse Installation JCL
5 Browse Exit Source Code JCL

6 Edit   Exit Source Code
7 Edit   Installation JCL
8 Edit   Exit Source Code JCL




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

Choose each '*Create*' option (options *1* to *3*) in turn to generate the runtime JCL, JCL procedures and TSO clists in exactly the same way as you created the installation components.

Once you have successfully completed the creation of all the GuardIEn installation and runtime components you can then move on to the next section.

Review/Browse Created Components

Return to the *GuardIEn for HE Setup Main Menu* by pressing *F3*. Select option *5* from the menu and press *<Enter>*. The *Browse and Run Installation* panel is displayed.

The Installation or Exit JCL, DB2 control, DB2 Load, Link control can be browsed/reviewed as necessary. In addition, the Exit Source (containing IET supplied default USER EXIT COBOL code), Installation or Exit JCL library can also be edited and, if applicable, submitted.

Install Software

Installation Jobs

Once all the components have been created, you can begin the process of installing the software.

The installation process has been separated into a number of jobs that reside in the JCL library. The job suffix specifies if the job must always be run (suffixed '**A**'), is only applicable to new installations (suffixed '**N**') or upgrades from a previous GuardIEn release (suffixed '**U**').

Installation Jobs Sequence

Jobname	Description	When used ?
@JOB0A	Compile/Linkedit GDSETPCK program	**All** Installations
@JOB1A	Linkedit GuardIEn Executable Load modules	**All** Installations
@JOB2N	Create GuardIEn DB2 database and views	**New** Install only
@JOB2U1	Upgrade GuardIEn DB from GuardIEn 8.7 release to GuardIEn 8.8 release	Upgrades from **8.7 only**
@JOB3N	Create Gen table aliases, new views and grant SQL access to the GuardIEn authid	**New** Install only
@JOB4N	Load empty GuardIEn tables with default data	**New** Install only
@JOB4U1	Upgrade existing GuardIEn tables load data from GuardIEn 8.7 to GuardIEn 8.8	Upgrades from **8.7 only**
@JOB5N	Run DB2 Runstats for GuardIEn tablespaces	**New** Install only
@JOB6A	Bind GuardIEn application DB2 packages	**All** Installations
@JOB7A	Bind GuardIEn application DB2 plan & Grant Plan/Packages to Public (to allow use of the GuardIEn application)	**All** Installations
@JOB8A	Optional link-edit of CICS web services and REST API	**All** Installations

Upgrade Impact (Important Note)

Note that when upgrading an existing installation of GuardIEn, the upgrade process requires exclusive access to the GuardIEn database. As a consequence, IET recommends that all currently installed GuardIEn software elements (CICS/IMS servers, batch routines and started tasks) are NOT active during the period of the upgrade process itself.

Failure to ensure any existing software is deactivated during the period of the upgrade may cause unpredictable results and delay the successful implementation of the upgrade itself.

Customise GuardIEn User Exits (optional)

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Customise USER EXITs (optional)	If you have previously customised any of the user exits then you will need to check for changes to the exits as provided by IET in GuardIEn 8.8 and then rework your changes into the new versions of the exits. These exits are implemented as COBOL programs. For the full list and implementation details please see *Appendix A – HE Server User Exits*. **IMPORTANT NOTE - PLEASE READ THIS SECTION** If you are installing the Task Dispatcher (TD) started task and **DO NOT** wish the USER/PASSWORD cards to be supplied automatically to the job header, then you will need to amend the supplied GDJCLEX member of EXITSRC. To undo the password functionality contained therein all that is necessary is to comment out the following line… MOVE 'Y' TO WS-ADD-PWD …and then use the GDJCLEX EXITJCL library member to compile/link/bind the amended version. If you do not wish to automatically convert your password to UPPER case then you should also remove the section within the standard GDJCLEX exit that converts any lower-case characters to upper case. This is used in conjunction with the Windows client environment variable GDN_PWD_UPPER being set to NO. Conversion to UPPER case is the default behaviour	N/A	YES	
Customise GDJCLSUB exit (optional)	If you are installing GuardIEn **without** the HE Task Assistant and/or PAD Extract Started Tasks (not recommended) then it is necessary to customise this exit to allow batch jobs created by GuardIEn at runtime to be submitted to your internal reader (via your site's resident TP monitor – CICS or IMS). The GDJCLSUB program is used to submit the generated batch job JCL via your chosen TP monitor. You must complete this section to ensure that the GuardIEn Server transactions can submit batch jobs to the z/OS environment. • Create a *new* member called GDJCLSUB in the EXITSRC library. • Copy the standard exit from the EXITSRC library into this new member. The standard exit is GDJCLCIC for CICS Servers or GDJCLIMS for IMS/DC Servers. ensure that you copy the correct version of the GDJCLSUB program for your chosen TP monitor (CICS or IMS/DC). • Review the source code in the exit to ensure that the exit conforms to your site standards for submitting jobs from IMS/DC or CICS. You will find advice on how to amend GDJCLSUB to make it work at your site within the code itself. • Save the new member GDJCLSUB. • Once you have amended GDJCLSUB to conform to your site requirements, edit the Install JCL library and submit the member GDJCLSUB. This compile/links the GDJCLSUB program ready for use by the rest of the GuardIEn application and places it within the G8EXITn DLL. • Ensure you receive a return code of 4 or less. Any higher and the program will not have compiled correctly.	YES	YES	

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Specify Alternative Date Edit Pattern (optional)	The default edit pattern for date input in GuardIEn is DD-MM-YYYY. US customers may prefer to use the MM-DD-YYYY edit pattern. To use a US date edit pattern, alter the EXITSRC member GDNDLCT, commenting out the 'default' dialect and un-commenting the 'US' reference. * MOVE 'DEFAULT ' TO DIALECT-CODE. MOVE 'US ' TO DIALECT-CODE. Now run the EXITJCL member GDNDLCT to install the changes into the G8EXITn DLL.	YES	YES	

Create Executables

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Customise GDSETPCK	The GDSETPCK exit (located in the EXITSRC library) is used to set the current DB2 PACKAGESET to enable GuardIEn to connect to multiple Host Encyclopaedia. Note that you **MUST** install this exit even if you are not planning to connect to multiple Host Encyclopaedia as GuardIEn also uses this exit to reference the original Package Bind Collection for a standard installation. Note that if you alter the name of the DB2 packages defined within the exit after initial installation you should make the code changes required and then reinstall the exit. If you **DO** wish to use GuardIEn to connect to more than one Host encyclopaedia, you will need to additionally customise the GDSETPCK exit to refer to a second Package Bind Collection (for full context please see the separate *MultiHE Install* document). Follow the instructions as detailed within GDSETPCK itself and then continue with the base installation.	YES	YES	
Execute @JOB0A	Once you have amended GDSETPCK, browse the Install JCL library and submit job @JOB0A This compiles and links the GDSETPCK program into the G8EXITn DLL. Please note that even if you do not make changes to GDSETPCK it is still necessary to implement GDSETPCK to ensure the correct GuardIEn collection is set. Ensure you receive a return code of 4 or less.	YES	YES	
Execute @JOB1A	Browse the Install JCL library and submit job @JOB1A to link-edit the GuardIEn load modules. Due to the number of load modules that may be involved the job is actually a number of separate link jobs all with the same Jobname – so they will run sequentially when submitted. Ensure that each step in each of the jobs completes with a return code of 4 or less.	YES	YES	

Install/Upgrade Database Structures

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Execute @JOB2N	If this is a new installation of GuardIEn then you should review the GDNEW member in the DB2CTL library. It contains the DDL to create a new GuardIEn database – and although the DDL will have been configured based on the variables entered in the Installation Suite you may wish to verify the information defined. For example, ensure the SQLID used has the necessary DBA access to create the various DB2 objects (e.g. DBADM, USE of STOGROUP, USE of BUFFERPOOL, BINDADD etc) and that the DB2 storage groups defined in the installation suite exist prior to attempting to create the GuardIEn database – at least DBADM will be necessary. Browse the Install JCL library and submit job @JOB2N to create the GuardIEn database and associated GuardIEn table views. 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.	YES	N/A	
Review GuardIEn DDL requirements prior to Release 8.7	IF YOU ARE NOT AT GUARDIEN 8.7 READ THIS SECTION To upgrade the GuardIEn data structures to Release 8.7 you will need to run the following… From GuardIEn 8.5, submit OGD8587 as contained within the Install JCL library. From GuardIEn 8.6, submit OGD8687 as contained within the Install JCL library.	N/A	N/A	
Execute @JOB2U1	Browse the Install JCL library and submit job @JOB2U1 to implement the data structure (DDL) changes for the GuardIEn 8.7 to GuardIEn 8.8 upgrade. Ensure that each step completes with a return code of zero (0) and also scan the individual SQL statement return codes rather than relying on the overall job return code.	N/A	YES	

Create Host Encyclopaedia Connects

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Execute @JOB3N	Several of the GuardIEn executables SELECT/UPDATE/DELETE/CREATE data from tables in the encyclopaedia, but the generated SQL refers to the Host Encyclopaedia (HE) table using an unqualified name, e.g. SELECT OBJ_ID FROM DOBJ. Therefore, to enable GuardIEn plans/packages to bind against the HE tables, the following needs to occur… • An alias for each table using the high-level qualifier needs to be allocated. You may need to have previously granted the necessary access rights to the GuardIEn SQLID specified to perform the grants to the Gen tables (this cannot be done by the SQLID for itself). This requires the CREATEALIAS privilege. • Appropriate levels of access for the GuardIEn SQLID to the Gen tables are GRANTED to that SQLID. • DB2 views are created against the Gen tables for the GuardIEn SQLID. Browse the Install JCL library and submit job @JOB3N to create the appropriate levels of access to the Gen tables. Ensure that each step completes with a return code of zero (0) and also scan the individual SQL statement return codes rather than relying on the overall job return code.	YES	N/A	

Load New/Existing GuardIEn Tables with Data

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Execute @JOB4N	Browse the Install JCL library and submit job @JOB4N to load the new GuardIEn tables with the IET supplied base data. Ensure that each load step completes with a return code of 4 or less. Any higher and the loads have failed for some reason for that table. When restarting a particular step remember to TERM the existing UTILITY to avoid additional job failures.	YES	N/A	
Execute @JOB4U1	Browse the Install JCL library and submit job @JOB4U1 to load the existing GuardIEn tables with the IET supplied base data for the GuardIEn 8.7 to GuardIEn 8.8 upgrade. You may encounter duplicate records warning messages when reloading the CDI_PERMVALUE table. This is acceptable. Ensure that each load step completes with a return code of 4 or less. Any higher and the loads have failed for some reason for that table. When restarting a particular step remember to TERM the existing UTILITY to avoid additional job failures. **IMPORTANT NOTE - PLEASE READ THIS SECTION** It is also assumed in this job that you are using the IBM recommended single table/tablespace structure. Failure to apply this structure prior to execution of this job **may result in DATA LOSS**.	N/A	YES	

DB2 Runstats

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Execute @JOB5N	Browse the Install JCL library and submit job @JOB5N to perform a DB2 RUNSTATS for the GuardIEn tablespaces. This is performed prior to the DB2 Plan and Package binds to optimise the DB2 access paths. Ensure that the GDRSTAT step completes with a return code of zero (0).	YES	N/A	

Bind Packages

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Execute @JOB6A	Browse the Install JCL library and submit job @JOB6A to bind all the packages for the GuardIEn batch, server and started task components – using a single DB2 package collection for the entire installation. To bind to a new collection will require PACKADM privilege for the GuardIEn SQLID. Ensure that each step completes with a return code of zero (0) and also scan the individual bind return codes rather than relying on the overall job return code. A tip is to search through the output looking for 'UNSUCCESSFUL' for any failed bind packages.	YES	YES	

Bind Plan and Grant Execution Authority to Public

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Execute @JOB7A	Browse the Install JCL library and submit job @JOB7A to initially grant access to the previously created DB2 collection and then bind the GuardIEn Plan. Note that GuardIEn has been implemented using DB2 packages and so each of the plans refer to a package list (collection id) – allowing the plan bind to only be performed once. Thereafter any changes to the application can take place at PACKAGE level. 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' Once completed, the job then grants execute authority to the GuardIEn application plan to PUBLIC.	YES	YES	

DB2 Steplib in TP Monitor Definition

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Check DB2 DSNLOAD in TP Region steplib	Ensure that your DB2 DSNLOAD library is referenced in the started task for either your CICS or IMS regions.	YES	YES	

Install GuardIEn CICS Transactions

If you are implementing GuardIEn using CICS then please complete this section.

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Define GuardIEn Transaction/ Program Definitions **(CICS Only)**	In the CICS environment, you need to perform at least the following steps: • Check that the CICS Region is defined with the **AUTOINSTALL** option. This prevents problems executing the GDNDLCT dynamic module (now located within the G8EXITn DLL) • Define a CICS transaction definition for each transaction code The GuardIEn INS.JCL library contains a sample job SGDNCSD that defines all the CICS resources. • Edit the SGDNCSD member in the JCL library • Review the names for the CICS SDFHLOAD & CSD libraries to ensure that the correct CSD file is updated • Edit the name for the LIST that you want to add the entries to. The group name is GDNG8. <table><tr><th>Trancodes</th></tr><tr><td>G8AP</td></tr><tr><td>G8A1,2,3,4</td></tr><tr><td>G8B1</td></tr><tr><td>G8C1,2,3,4</td></tr><tr><td>G8D1,2,3</td></tr><tr><td>G8E1,2</td></tr><tr><td>G8G1,2,3</td></tr><tr><td>G8HA</td></tr><tr><td>G8I1,2,3,4</td></tr><tr><td>G8K1</td></tr><tr><td>G8L1,2,3</td></tr><tr><td>G8M1,2,3,4</td></tr><tr><td>G8P1,2,3,4</td></tr><tr><td>G8S1,2,3,4</td></tr><tr><td>G8T1</td></tr><tr><td>G8U1,2,3,4,5</td></tr><tr><td>G8V1,2,3</td></tr><tr><td>G8W1,2,3</td></tr><tr><td>G8X1,2</td></tr><tr><td>G8Z1, G8Z3, G8Z4, G8Z5, G8Z6, G8Z7</td></tr></table> Note that, for performance reasons, we recommend that your CICS region's **EDSALIM** parameter (related to provision of storage for your EDSAs) is set to no less than 400M and will ideally be set to the installation default of 800M.	YES	YES	
Copy Server Load Modules to DFHRPL concatenation **(CICS Only)**	Copy the load modules (same names as trancodes above) to a program load library for the CICS region being targeted. Alternatively, you could add the GuardIEn SVRLOAD to the DFHRPL definition of the CICS region in question. Issue a CICS NEWCOPY command to refresh the load modules - CEMT SET PROG(G8*) NEWCOPY Note that, unless you define the GuardIEn SVRLOAD to DFHRPL, you should also copy the following dynamic exit load modules from SVRLOAD into the program load library: G8CASC, G8CASCI, G8EXITC, GNSE, GDENQDQ1	YES	YES	

Install GuardIEn IMS Transactions

If you are implementing GuardIEn using IMS/DC then complete this section.

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Define Transaction/ Program Definitions **(IMS Only)**	In the IMS region, you need to perform at least the following steps: • Define an IMS transaction definition for each transaction code using an IMS Gen. • Perform PSB/ACB Generation The GuardIEn INSLIB library contains a sample DEFIMST that provides the IMS Generate required for each of the transactions listed below. The GuardIEn INSLIB library contains a sample DEFACPSB that provides the PSB/ACB Generate for each of the transactions listed below. **Trancodes** G8A1,2,3,4 G8B1 G8C1,2,3,4 G8D1,2,3 G8E1,2 G8G1,2,3 G8HA G8I1,2,3,4 G8K1 G8L1,2,3 G8M1,2,3,4 G8P1,2,3,4 G8S1,2,3,4 G8T1 G8U1,2,3,4,5 G8V1,2,3 G8W1,2,3 G8X1,2	YES	YES	
Copy Server Load Modules to IMS Region **(IMS Only)**	Copy the load modules (same names as trancodes above) to a program load library for the IMS region. Alternatively, you could add the GuardIEn SVRLOAD to the Steplib definition of the IMS region in question. Note that, unless you define the GuardIEn SVRLOAD to IMS Region steplib, you should also copy the following dynamic exit load modules from SVRLOAD into the program load library for the IMS region being targeted: G8CASC, G8CASCI, G8EXITI, GDENQDQ1	YES	YES	

Define Gen CICS Runtimes

If you are implementing GuardIEn using CICS then please complete this section.

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Define Gen Runtime Transaction/ Program Definitions **(CICS Only)**	In the CICS region you need to perform at least the following steps: • Assess whether you have previously installed the Gen CICS runtimes into the CICS region and, if so, confirm the present Gen release of those runtimes. The GuardIEn INS.JCL library contains a sample job SCACSD that defines all the CICS resources for Gen. As GuardIEn requires a Gen 8.6 runtime environment it is important to bring the CICS region concerned up to that Gen level. • Edit the SCACSD member in the JCL library • Review the names for the CICS SDFHLOAD & CSD libraries to ensure that the correct CSD file is updated • Edit the group name if required. The default group is set as GENGRP. • Comment out the Gen steps that are not required. STEPCA80 contains the CICS runtimes introduced in Gen 8.0, STEPCA85 the runtimes introduced in Gen 8.5 and STEPCA86 the runtimes introduced in Gen 8.6. You should only need to run the steps in this job that bring the environment up to the Gen 8.6 level (e.g. if you are already running Gen 8.5 in the CICS region you should only need to run STEPCA86 to achieve this).	YES	YES	

Install Gen Runtimes into TP Environment

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Check CODEPAGE TRANSLATION requirements (optional)	The Gen runtime modules TIRCRUNC for CICS or TIRCRUNI for IMS perform codepage translation between the server and client. These are supplied with the default server codepage of 037 enabled. If you need to support an alternative codepage, then follow these instructions: Amend the TIRXINFO exit as located in the GuardIEn EXITSRC library: • Locate the line DEFCODEP DC CL8'00000037' and change '00000037' to the value of the EBCDIC codepage required. • Locate the line DEFPADCH DC XL4'00000040' and change '00000040' to the value of the padding character for the EBCDIC code page selected. Amend the sample JCL member SMKCRUN located in the Installation JCL library: • Confirm that the library CEE.SCEEMAC corresponds to the z/OS macro library at your site. If not then amend all occurrences to the correct name. • Confirm that the library SYS1.MACLIB corresponds to the z/OS maclib containing the YREGS. • Amend the GEN step SYSIN card by supplying the code page pairs required to support the server default code page: The first number is the EBCDIC code page value, the 2nd is the ASCII code page value. NOTE...leave all the entries marked 'Required' but remove all the comments. • Submit the SMKCRUN job. Depending on your selected TP monitor, an amended version of TIRCRUNC (CICS) or TIRCRUNI (IMS) will be created into the GuardIEn SVRLOAD library. For further information, please consult the *Gen Installation Guide for Host Encyclopedia and Host Construction* manual.	YES	YES	
Copy Gen Runtimes to CICS/IMS Region steplib	The CICS or IMS region used by GuardIEn must contain the Gen runtime software modules. The GuardIEn INS.JCL library contains a sample job SCPYGEN that will copy the appropriate runtimes from a Gen runtime library to the required CICS/IMS Region program library. The Gen Runtime modules should be copied from the IET supplied INS.GENLOAD or, if you have a Gen 8.6 HE or IT installed, from the runtime load library CEHBPLD1. As GuardIEn 8.8 is a Gen 8.6 generated application you must upgrade the IMS or CICS region used to Gen 8.6. • Edit the SCPYGEN member in the JCL library. • Review the name for the source library <Source Gen Library here> • Review the name for the target library <Target Server Library here> **IMPORTANT NOTE:** The target library used to contain the Gen runtime modules **must** be a PDSE. For full details relating to these requirements, please see the Gen 8.6 document *Gen z/OS Installation Guide, Chapter 11 (Configuring IMS and CICS).*	YES	YES	

Install GuardIEn Started Tasks

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Install GDTD or GDTD1 Started Task?	The Task Dispatcher started task needs to be implemented if you are using the Task Assistant. As standard, the Task Dispatcher submits jobs to the JES internal reader to perform the required functions. When these jobs complete, they mark the task as complete or failed. In some circumstances (i.e. a JCL error) the batch job terminates before the status of the task can be updated. In this situation, the task remains in the started state and needs to be manually marked as failed. For tasks that run in overnight queues, this means that no further tasks run in these queues until the task is marked as failed. The Task Dispatcher Job Check Interface (JCI) addresses this issue by monitoring the status of the submitted job. If the task dispatcher detects that the job has finished execution but the status of the task has not been updated, it marks the task as failed. If you wish to install the JCI version of the Task Dispatcher, skip the next section and go to the 'Install GDTD1 (JCI)' step.	YES	YES	
Install GDTD (non-JCI) *Or…*	To start the Task Dispatcher started task… • Copy the GDTASKD member from the GuardIEn PROCLIB library to your system proclib (i.e. SYS1.PROCLIB). The GDIOVF and GDSTEP INCLUDE JCL members should also be copied. • Copy the GDSETPRM INCLUDE JCL from the GuardIEn GEN PROCLIB library to your system proclib (i.e. SYS1.PROCLIB). • Verify that the necessary GuardIEn configuration has been performed. This is detailed below. • Start the started task (i.e. /S GDTASKD) To verify if the initial GuardIEn configuration has been performed to enable the Task Dispatcher started task to run… • Logon to the GuardIEn system administration client and access System Parameters • Check that the values for the following system parameters	YES	YES	

Code	Description	Example Value
TASKD	YES specifies that the Task Dispatcher is used.	YES
TSOPROC	Specifies the JCL procedure used to execute a GuardIEn System Update	GDTSOT if using the task dispatcher
DOWNDSN	Library prefix for download tran files	GDN.DOWNLOAD
UPLDSN	Library prefix for upload tran files	GDN.UPLOAD
VERDSN	Library prefix for verify tran files	GDN.VERIFY
JOBCHECK	Specifies if job check interface is used.	NO

• Logon to the Queue Manager and check that a <TASKD> queue has been defined. If there isn't a queue with a code of <TASKD>, create one using the File->Create <TASKD> queue menu item.
• Use the Queue Manager function **Set Task Priorities** to review the default Task Type Priorities and adjust these as required.

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
…Install GDTD1 (JCI)	To start the Task Dispatcher JCI started task… • APF authorise the <PREFIX>.TDLOAD and associated <PREFIX>.GEN.RUNLOAD library. This is necessary because of the usage of an extended status SSI call requiring that the TASKD runs in supervisor state instead of problem state which in turn requires the program to run in AC(1). • Copy the GDTASKD1 member from the GuardIEn PROCLIB library to your system proclib (i.e. SYS1.PROCLIB). You may want rename it GDTASKD in SYS1.PROCLIB. The GDIOVF and GDSTEP INCLUDE JCL members should also be copied. • Copy the GDSETPRM INCLUDE JCL from the GuardIEn GEN PROCLIB library to your system proclib (i.e. SYS1.PROCLIB). • Verify that the necessary GuardIEn configuration has been performed. This is detailed below. • Start the started task (i.e. /S GDTASKD) To verify if the initial GuardIEn configuration has been performed to enable the Task Dispatcher started task to run… • Logon to the GuardIEn system administration client and access System Parameters • Check that the values for the following system parameters 	Code	Description	Example Value
---	---	---
TASKD	YES specifies that the Task Dispatcher is used.	YES
TSOPROC	Specifies the JCL procedure used to execute a GuardIEn System Update	GDTSOT if using the task dispatcher
DOWNDSN	Library prefix for download tran files	GDN.DOWNLOAD
UPLDSN	Library prefix for upload tran files	GDN.UPLOAD
VERDSN	Library prefix for verify tran files	GDN.VERIFY
JOBCHECK	Specifies if job check interface is used.	YES | • Logon to the Queue Manager and check that a <TASKD> queue has been defined. If there isn't a queue with a code of <TASKD>, create one using the File->Create <TASKD> queue menu item. • Use the Queue Manager function **Set Task Priorities** to review the default Task Type Priorities and adjust these as required..	YES	YES	

Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Install GDPL Started Task	The PAD List started task manages the production of action diagram prints. If you are not using the PAD List started task, action diagram prints are produced by batch jobs that are submitted when the user needs to view an action diagram. The advantages of the PAD List started task over submitted batch jobs are… • There is no need to implement the batch job submission facility from CICS/IMS (i.e. no need for the GDJCLSUB exit) • Creation of PAD lists is more rapid since the user does not have to wait for a batch job to execute To start the PAD List started task… • Logon to the GuardIEn system administration client and access System Parameters • Check that the PADLIST system parameter is set to the value TASK. If the system parameter does not exist, add a new system parameter (code=PADLIST, text value=TASK). • Copy the GDPL, GDIOVF and GDSTEPT INCLUDE members from the GuardIEn PROCLIB library to your system proclib (i.e. SYS1.PROCLIB). • Copy the GDSETPRM and GDSPF INCLUDE members from the GuardIEn GEN PROCLIB (GEN.PROCLIB) library to your system proclib (i.e. SYS1.PROCLIB). Note if you have already copied members GDSETPRM, GDIOVF and GDSTEPT while setting up the Task Dispatcher started task, these do not need to be copied again. • Start the started task (i.e. /S GDPL) If you are using multiple host encyclopaedias, you will need to start one instance of the started task for each encyclopaedia. Each instance should have a different name, i.e. GDPL1 for GuardIEn system 1, GDPL2 for GuardIEn system 2, etc.	YES	YES	
Install GDSYNC Started Task (optional)	The Sync Server started task is used to synchronise the GuardIEn Change Request database with an external data source. You will not need to start this started task unless you have a specific requirement for synchronisation. For more information on the Sync Server, consult the GuardIEn user documentation.	YES	YES	

Install GuardIEn Web Services and REST API

GuardIEn can use CICS web services as an alternative communications protocol to the standard Gen protocols of TCP/IP, MQ ECI or Comms Bridge.

In addition, the GuardIEn API can be implemented as a CICS REST web service to enable the GuardIEn API to be invoked directly rather than using a JEE application server and a Java proxy interface to CICS.

| Task or Job Name	Task Description (and Notes)	New Install	Upgrade GuardIEn 8.7	Completed ?
Check pre-requisites	Verify that the CICS region is setup to support web services, for example that the following resources are defined: • TCPIPSERVICE • JVMSERVER	YES	YES	
Extract files	Extract the contents of websvcs.zip. to a temporary folder. This will contain a soap folder and a rest folder.			
Create WSDIR folders	Create shelf and pickup folders in a z/OS USS file system to contain the WSBIND and WSDL files for the REST and SOAP services, for example /u/gdn88/rest and /u/gdn88/soap.	YES	YES	
Customise SOAP WSDL	If you are implementing the CICS SOAP web services, you will need to create the wsdl files, specifying the correct URL to access CICS web services. • Execute customise_wsdl.bat to customise the wsdl files. • At the prompt enter Y if your CICS web services will use https, or N to use http. • Enter the host name or IP address to access CICS. • Enter the port for CICS web services. The default is port 80.	YES	YES	
Transfer WSDL and WSBIND to USS	• Transfer the wsbind and wsdl files from the soap and rest folders to the pickup folder for the REST and SOAP services using **binary** file transfer. • You can execute transfer_uss_files.bat to automate the file transfer using the windows ftp executable or WinSCP if you have this installed.	YES	YES	
Define CICS resources	Install the CICS resources for either the REST API or Web Services plus REST API. • If you are only installing the REST API, use job SGDRCSD • If you installing web services (which includes the REST API) use job SGDWCSD • Verify the path names for the CONFIGFILE, SHELF and WSDIR properties and that the WSDIR values match the folders created above.	YES	YES	
Execute @JOB8A	Browse the Install JCL library and submit job @JOB8A to link-edit the GuardIEn web service load modules. • Ensure that each step in each of the jobs completes with a return code of 4 or less.	YES	YES	
Define web service resources	Perform a CICS PIPELINE SCAN to define the WEBSERVICE and URIMAP resources, for example: - CEMT PERFORM PIPELINE(GDHSOAP) SCAN - CEMT PERFORM PIPELINE(GDHREST) SCAN Check the CICS logs to ensure that the webservice and urimap resources have been defined from the wsbind files.			
Copy Web Service Load Modules to DFHRPL concatenation (CICS Only)	Copy the load modules (GH*) to a program load library for the CICS region. Alternatively, you could add the GuardIEn SVRLOAD to the DFHRPL definition of the CICS region. Issue a CICS NEWCOPY command to refresh the load modules - CEMT SET PROG(GH*) NEWCOPY Note that, unless you define the GuardIEn SVRLOAD to DFHRPL, you should also copy the following runtime modules from SVRLOAD into the program load library for the CICS region being targeted: IETRSCRT, IETRSCRX	YES	YES	

Initial Setup

Enter Activation Code

Logon to the *System Administration* client with the userid that installed the software. If this is the first time that you have accessed the server you will be prompted to enter your activation code which should be obtained from IET.
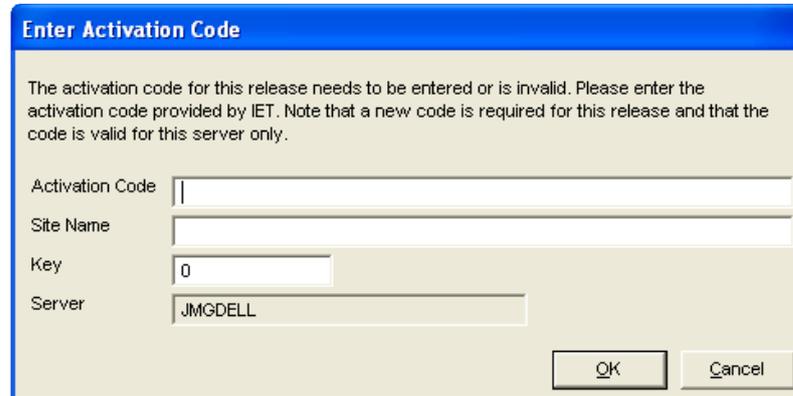

Define Users

Each userid that wishes to access GuardIEn needs to be defined in the GuardIEn database.

The simplest approach is to import the userids defined to the Gen host encyclopaedia. In the *System Administration* client, *Users/Groups*, then choose the Import function from the File menu:
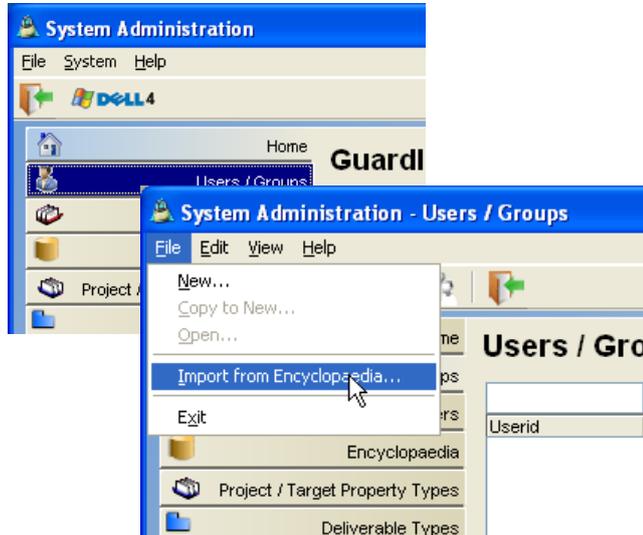
Set the filters to return the rows that you want, populate the list on the right with the userid(s) that you wish to import. Set the project and optionally an initial password (if using GuardIEn password control) then import the selected users/groups.
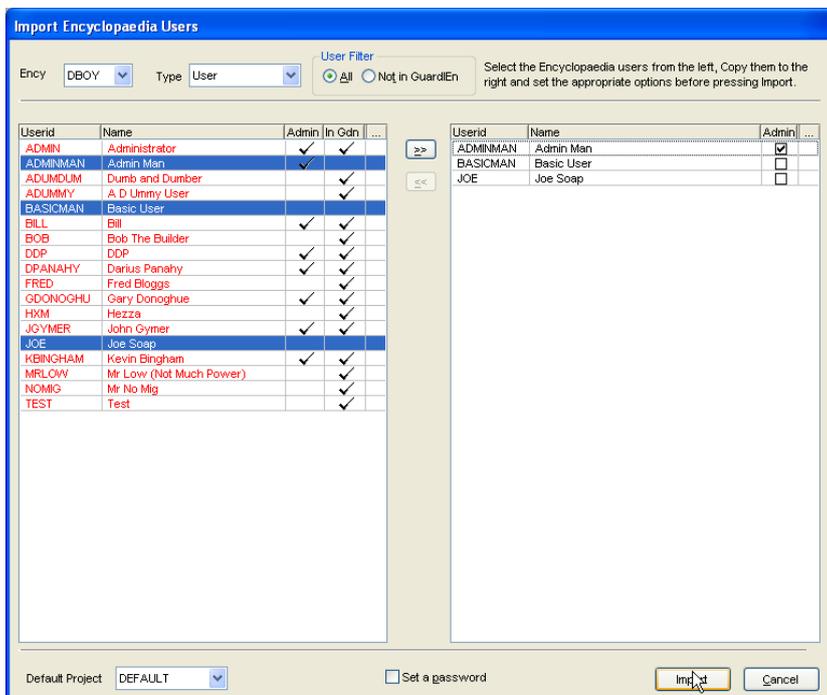
Field	Purpose
Userid	An identifier for the user. This should be the same as the user's Gen userid.
Name	The user's Name
Default Project	The default project for the user. The user can change this if they want to use a different project. Imported users are given 'S' access to the project specified at the time of import.
Password	Note that passwords are optional. The passwords are encrypted when sent from the client to the server and are in an encrypted form on the server. When importing users/groups from the encyclopaedia, the same password is set for all users imported at one time.
Admin	Specifies if the userid is a GuardIEn system administrator. This is automatically set if the user is already an Encyclopaedia administrator.

Appendix A – HE Server User Exits

GuardIEn contains several user exits for the HE server that can be customised if required. These exits are implemented as COBOL external action blocks on the z/OS platform.

The list of supported exits is as follows. The GuardIEn documentation provides greater detail on the use of the exits.

Exit Source Member	Latest Release	Changed Date	Usage	Changed in GuardIEn 8.8?
GDAVF2	77.2	N/A	Batch/Server	NO
GDAVF3	77.0	N/A	Batch/Server	NO
GDAVF44	77.0	N/A	Batch/Server	NO
GDAVF45	77.0	N/A	Batch/Server	NO
GDAVF46	77.0	N/A	Batch/Server	NO
GDBINDEX	86.0	28/08/2014	Batch	NO
GDCCNOEX	77.0	05/02/2007	Batch/Server	NO
GDCODEEX	77.0	05/02/2007	Batch/Server	NO
GDCRUPEX	77.0	05/02/2007	Batch/Server	NO
GDEVNTEX	80.0	09/09/2009	Batch/Server/Task Dispatcher	NO
GDFTPXO	81.0	07/09/2010	Server	NO
GDGNUVAR	87.0	12/03/2018	Batch	NO
GDHXGFTP	81.0	06/09/2010	Batch	NO
GDINFOEX	81.0	28/06/2010	Server	NO
GDJCLEX	88.4	01/09/2023	Batch/Server/Task Dispatcher	YES. Changed to support 100 bytes passwords and passphrase and up to 10 jobcard lines
GDLOWREX	78.0	30/07/2008	Batch/Server	NO
GDPACKEX	81.0	06/09/2010	Batch	NO
GDPMIGEX	1.0	06/05/2003	Batch	NO
GDPUCKEX	77.0	26/03/2007	Batch/Server	NO
GDPUEXCH	77.0	20/12/2007	Batch	NO
GDPUEXIT	81.4	01/09/2023	Batch	YES. Changed to support up to 10 jobcard lines
GDPWDEX	88.0	23/06/2021	Server	YES. Import views changed to support 100-byte passwords and passphrase
GDSECTOK	88.0	04/09/2023	Server	NEW
GDSCCSEX	80.0	22/09/2009	Server	NO
GDSUBEX2	81.0	10/02/2011	Server	NO
GDSUBSEX	77.0	05/02/2007	Server	NO
GDSYNRMT	53.0	10/06/2002	Server	NO
GDUAVFEX	80.0	13/09/2011	Batch/Server	NO
GDUSGIEX	80.0	30/11/2009	Server	NO
GDUSGLEX	81.0	24/02/2012	Server	NO
GDUSGPEX	80.0	24/03/2010	Server	NO
GDUSGVEX	80.0	30/11/2009	Server	NO
GDVALEII	77.0	05/02/2007	Batch/Server	NO
GDVMIGEX	80.0	13/09/2011	Batch/Server	NO
GDVREXIT	77.0	05/02/2007	Batch/Server	NO
GDVSEXIT	77.0	05/02/2007	Batch/Server	NO

The 'changed in' section indicates changes since GuardIEn 8.7. If you are upgrading from a release previous to this then you should also review all the exit import/export views in previous releases to assess the implications or contact IET for guidance.

If you are using any of the user exits, please check to ensure that you have upgraded your exit to reflect changes in the import/export views or processing logic of the standard IET-supplied exits above. The latest version of the exit can be found in the EXITSRC library (*accessible via the Installation Suite option 5.6*). If you have customised the exits, then you should copy your custom code into the default exit and then use the supplied JCL for each EXITSRC member to (optionally) pre-compile then compile/linkedit and (optionally) bind as follows…

The EXITJCL library (*accessible via the installation suite option 5.8*) contains a compile job for each exit identified with the same name as the exit.

The GDAVF2, GDAVF3, GDAVF44, GDAVF45, GDAVF46 exits are for the VerifIEr product and are supplied as models provided by IET with VerifIEr. Any code changes required are made within the model and then generated (either locally or using host construction). The resulting module should then be placed within the GuardIEn EXITSRC library and the associated compile JCL within INS.EXITJCL used to deliver the changes into the G8EXITn DLL.

For details about the IET supplied model exits, please see the main *VerifIEr* documentation under *VerifIEr customisation*.

Appendix B - Supporting Websphere MQ Series

GuardIEn can use MQ series as the communications middleware for the client to server communications. Please read the Gen 8.6 technical pre-requisites documentation for the 3rd party software requirements.

To enable MQ series support, you need to define MQ series queues for the GuardIEn server modules and customise the GuardIEn clients to enable them to communicate via MQ.

The GuardIEn Server transactions execute under CICS or IMS and these transactions are not affected if MQ series is used. With MQ support, the transactions are executed via MQ series as opposed to TCP/IP direct connect or LU 6.2.

The steps required to implement MQ support are as follows:

Verify MQ environment

The GuardIEn transactions will be executed by the MQ CICS or IMS adaptor. You must therefore verify that the relevant MQ series Adaptor has been installed into your CICS or IMS region.

The reply message is sent to a dynamic reply-to queue that uses SYSTEM.DEFAULT.MODEL.QUEUE as the model. Verify that this model queue has been defined to MQ series.

Check the name of the CICS or IMS initiation queue, e.g. CICS01.INITQ

Define MQ queues and trigger processes

The default mechanism for supporting the GuardIEn Servers is to define an MQ local queue for each GuardIEn server transaction. This queue has an associated trigger process that places the message onto a CICS or IMS initiation queue. The CICS or IMS MQ Adaptor will then get the message from the queue and execute the GuardIEn Server transaction.

You will therefore need to define a local queue (on the MQ Queue Manager) for each GuardIEn Server and an associated trigger process. If you want to use the Gen Transaction Dispatcher for CICS (TDC), then you can configure this instead of the default GuardIEn setup for MQ.

To use the GuardIEn default configuration (one queue per server), first edit the GDINMQ member in the GuardIEn Install CLIB library (default: INS.CLIB). Verify that the APPLTYPE is correctly set to CICS or IMS and that the initiation queue is correct.

Then edit the sample MQ installation job SMQDEF job in the installation JCL library. Check that the queue manager name is correct and that the correct high-level qualifier has been provided for the MQ software. Then submit the job to define the queues and processes to MQ series. Verify that the job completed and all definitions were successful.

Configure Clients

Install the GuardIEn client software, selecting MQ as the communications middleware. This will create the commcfg.ini file to correctly establish connections to MQ. See the GuardIEn client installation guide for further details.

Verify that the MQ client software has been installed on the client machine and the necessary environment variables defined to connect to the correct queue manager and channel.

Test the connections by logging onto GuardIEn.

Appendix C – SYSPLEX and Multi Instance TD/GDPL considerations

Gen uses MVS Global Resource Serialization "GRS" or ENQ/DEQ to serialise access to models and thus avoid inconsistent updates to models or subsets.

To avoid submitting a task that would conflict with another process and thus cause a resource conflict, the GuardIEn Task Dispatcher checks the ENQs issued by the Gen host encyclopaedia to monitor model and subset locks. genIE also issues ENQs using the same resource names as Gen to ensure that genIE updates are serialised with Gen updates.

The scope of the Gen ENQ is SYSTEM which means that the same resource can be used by programs in more than one address space on the same system.

Setup Support for Multiple LPARs

If the GuardIEn Task Dispatcher or CICS/IMS servers execute in a different LPAR to the TSO system used for the Gen encyclopaedia, the scope of these ENQs will need to be changed from SYSTEM to SYSTEMS so that the resource scope is shared across all systems in the sysplex.

This is achieved by using the System Inclusion Resource Name List (RNL) located in the GRSRNLxx member in the PARMLIB to define that the Gen ENQs that are specified with a scope of SYSTEM are changed to a scope of SYSTEMS:

RNLDEF RNL(INCL) TYPE(GENERIC) QNAME(IEFENCY)

Setup Multiple Instance Task Dispatcher and PAD List Started Task

To enable multiple instances of the Task Dispatcher and PAD List Started Task operating on different LPARs and sharing the same DB2 tables:

1. Create a system parameter with a code of MULTINST and a text value of YES.

2. Create the started task JCL for the second instance as a copy of the first instance JCL. The second instance should be given a different name so that MVS console commands can be directed at a specific instance.

3. Setup an RNL Include statement in the GRSRNLxx member in the PARMLIB to change the scope of GuardIEn ENQs from SYSTEM to SYSTEMS:

   RNLDEF RNL(INCL) TYPE(GENERIC) QNAME(GUARDIEN)

You can use the DISPLAY GRS command on both LPARS once the RNL definitions are in place and the started tasks executing to ensure they are defined correctly for the RNL inclusions.

Appendix D – CICS PHASEIN Option (CICS only)

By default, the GuardIEn mechanism for automating the deployment of changed CICS application load modules utilises a CICS NEW COPY via load module GNSE deployed into the target CICS region. However, if desired, this behaviour can be altered to invoke a CICS PHASEIN by deployment of a different version of the GNSE module that is also supplied with the GuardIEn HE installation.

To activate this functionality, you will need to firstly rename the GuardIEn SVRCALL member GNSE to GNSEO, rename member GNSE2 to GNSE and then relink the GNSE load module. This ensure s the CICS PHASEIN call replaces the default CICS NEW COPY.

Appendix E – GNSE Options for CICS NEW COPY/PHASEIN (CICS only)

By default, the GuardIEn mechanism for automating the deployment of changed application CICS load modules utilises the standard mirror transaction (CSMI) as defined to DFHMIRS to invoke a CICS NEW COPY or PHASEIN via a batch job (GNSEBTCH). For most sites use of CSMI will be acceptable although should you need to utilise a separate and discrete mirror transaction then GNSE may itself be used, defined as a transaction based on CSMI.

GNSE will also have to be defined with the necessary authorities to run CSMI requests otherwise security errors will be encountered when the GNSEBTCH batch job attempts to invoke GNSE via the mirror transaction.

To activate this functionality, you will need to firstly rename the GuardIEn BATCALL member GNSEBTCH to GNSEBTCO, rename member GNSEBTC2 to GNSEBTCH and then relink GNSEBTCH. This ensure s a TRANSID with the GNSE transaction is passed into CICS instead of the default CSMI.

Appendix F - File Transfer and Remote Processing Services

GuardIEn uses file transfer services for:

- Transferring transaction (.trn) files between the toolset and encyclopaedia server for upload/download tasks

- Transferring XOS files between the client and the XOS file server(s)

- Transferring XOS minor version files between the client and encyclopaedia server

- Transferring remote installation (.rmt) files from a GuardIEn CSE server to a remote build server

- Submitting MVS batch jobs from a GuardIEn CSE server

- Transferring HE-XGen and Remote processing .trn and .ctl files from the HE to the CSE server

GuardIEn uses remote processing services for:

- Processing XOS migrates and builds on a file server

- Processing installs and other SU steps on a remote build server

The GuardIEn Remote Processing Daemon (RPD) provides integrated file transfer and remote processing services for GuardIEn as an alternative to using standard remote or secure shell and FTP utilities, especially for implementations where a suitable remote shell product is not installed or configured.

The RPD consists of two components:
- The RPD Listener executes as a service on the GuardIEn and/or remote server and processes requests issued from the client. The RPD listener is a multi-threaded application to provide a high level of concurrency and availability.

- The RPD client resides on the requesting machine and sends processing requests to the RPD Listener. The client is embedded within the GuardIEn client and server executables and is also available as a command line interface (CLI) standalone program to enable script integration.

If you wish to use RPD, consult the *Remote Processing Daemon* installation and configuration guide which is installed with the GuardIEn client.