Information Engineering Technology

Install Guide - Multiple Oracle CSE

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Multi-CSE Install for Oracle

This paper describes how to configure GuardIEn to connect, view and manage data across multiple Oracle CSE databases.

Pre-Requisites

It is assumed that you have already configured a *'main'* GuardIEn database server, which is where the physical GuardIEn tables are located.

Before you go any further you need to ensure that you can successfully connect your GuardIEn clients to your main GuardIEn server.

Understanding Connections (Single CSE)

The server executes GuardIEn Distributed Process Servers (servers for the GUI clients) under the control of the AEFAD (TE Daemon). It also executes the Task Dispatcher whose function is to manage GuardIEn Tasks.

In a single CSE set-up, GuardIEn Servers and the Task Dispatcher connect to the gdn schema using gdn/gdn, which owns the GuardIEn tables. gdn contains actual GuardIEn tables plus synonyms/views to the local CSE's tables.
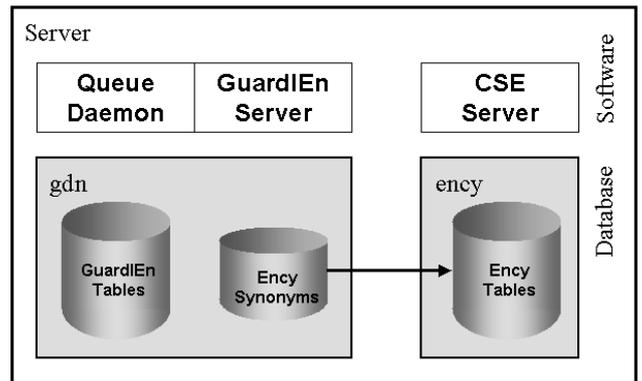
In this diagram the separate Oracle databases/schemas are shown as grey boxes with the relevant tables and views shown within the boxes.


Understanding Connections (Multiple CSEs)

The recommended approach for multiple CSEs is to install the GuardIEn software (and TE) once on a main GuardIEn server, and also create one GuardIEn database per CSE on that main GuardIEn server, each database viewing one of the CSEs.

Hence there will be only one copy of the GuardIEn software and just one TE to connect to.

When GuardIEn needs to access data from another CSE, it connects to a different userid on the main server, for example gdn2. The connect details that it should use are defined as properties of the encyclopaedia in the table CDW_ENCY.
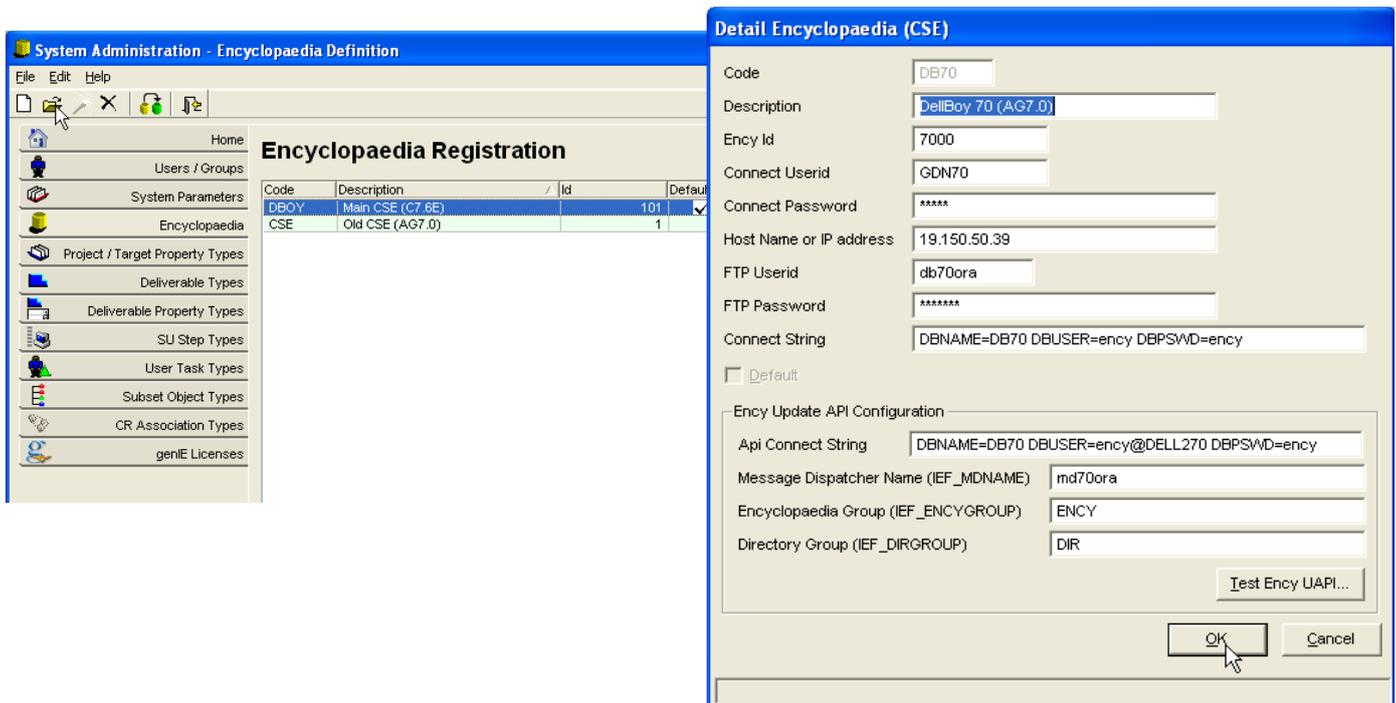
This diagram shows an example architecture for 3 CSEs.
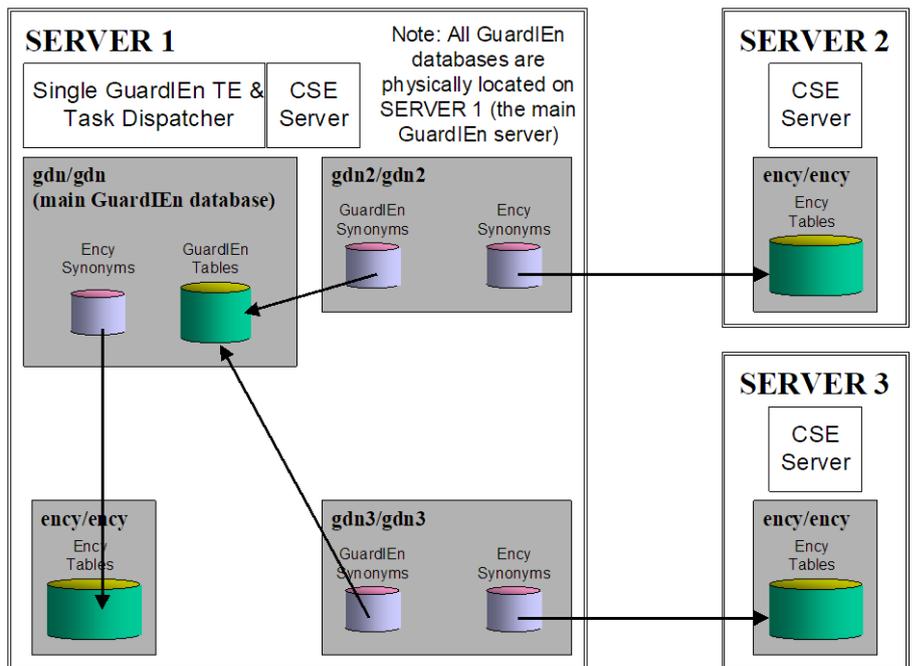
Performing the Installs

The *mini* GuardIEn databases are created using a function in the *System Administration* client. We shall look at that function now…

Start the *System Administration* client and open the list of Encyclopaedias defined to GuardIEn.

Initially you will only see your default CSE as set-up by the install program.

To begin the process of creating links to a remote CSE, use the **New** function and fill in the fields on the *Detail Encyclopaedia* dialog as follows:

Field	Description	Examples
Code	Choose a unique 4-character code to identify the remote CSE.	SRVn
Description	Enter a long description for the remote CSE. If the Gen version is different on the remote CSE to the local CSE, then you need to include a special string in the description to indicate the version e.g. (CG7.6E)… see the System Admin documentation on Ency definition for more info.	My other CSE (CG7.6E)
Ency Id	Enter the Gen Encyclopaedia Id for that CSE – you can find this in the Co-Ordination client by detailing that Ency	
Connect Userid	The Oracle userid/schema to be created locally on the main GuardIEn server. This schema will have views of the main GuardIEn tables as well as views of the remote CSE's tables.	gdnsrv2
Connect Password	The Oracle password for the above Connect Userid.	gdnsrv2
Host Name or IP address	The network name (DNS) or TCP/IP address for the remote server.	10.20.30.40 or myserver
FTP Userid	A userid which can logon to the remote server through FTP.	gdn
FTP Password	The password for the above FTP Userid.	gdn
Connect String	The remote CSE's database connection string.	DBNAME=DBIE DBUSER=ency DBPSWD=ency
API Connect String	Similar to the above Connect String, but should be relative from the GuardIEn server machine, so the DBNAME must be the Oracle SID of the remote CSE.	DBNAME=DBIE2 DBUSER=ency@TNSDBIE2 DBPSWD=ency
Message Dispatcher Name	The value of IEF_MDNAME for the remote CSE, as viewed from the GuardIEn server machine.	iefmd2
Encyclopaedia Group	IEF_ENCYGROUP for the remote CSE	ENCY2
Dir Group	IEF_DIRGROUP for the remote CSE	DIR2

If you are not familiar with all of these values yet, you should obtain them now before continuing with the remote CSE's definition.

The API details only need to be filled in if you intend to use genIE Direct's update functions (updates from a PAD Viewer). A *Test* button is available to check that the basic details of the API connection are correct. Note that this does not guarantee that the API will be available, but is a good starting test.

Once you have completed all of these values, press **OK** to create the CSE's definition in the GuardIEn database. This inserts a single row for the new CSE in the CDW_ENCY table. Whenever you create a new record for a remote CSE, this will be detected automatically and you will be prompted to begin the physical creation of the mini GuardIEn database required to actually connect to that CSE. Hence the following question will be presented:
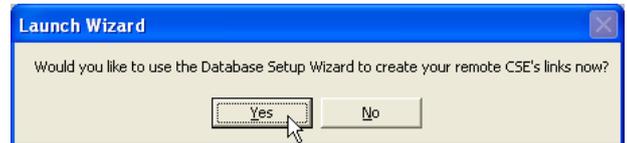
If you answer **No** then you can always perform the task later by clicking on your new CSE's record in the *Encyclopaedia Definition* list and using the **Wizard** function.

If you choose **Yes** or launch the wizard later, you will be presented with the *Database Set-Up Wizard*…

This wizard can be used to create or delete the GuardIEn links to a remote CSE. If you already have such a link and would like to upgrade it to the later GuardIEn release, performing a *Delete* followed by a *Create* is the correct approach to use.

In our example, we are creating a new link to a remote CSE. Select **Create** on this first dialog and press **Next** to begin the creation portion of the wizard…

You will be asked to enter the *Setup* path for your GuardIEn server installation (relative to the server). The wizard will hopefully have worked this out for you automatically, but you should verify it and press **Next** when you are ready. The wizard will perform some checks itself at this point to ensure that the required set-up files are located beneath the chosen path.

After these verifications are made, the wizard presents the next dialog, to begin gathering more information related to the Oracle parameters required to create a new mini GuardIEn database…

The wizard will make some suggestions based on your current installation and the values that you provided when you defined the new CSE to GuardIEn:

- Mini GuardIEn User/Password – these are taken from the Connect Userid/Password that you provided for the Ency definition

Usually, the suggested values will be ok. The wizard will prevent you from using values which might corrupt your main GuardIEn database. Press **Next** to continue…
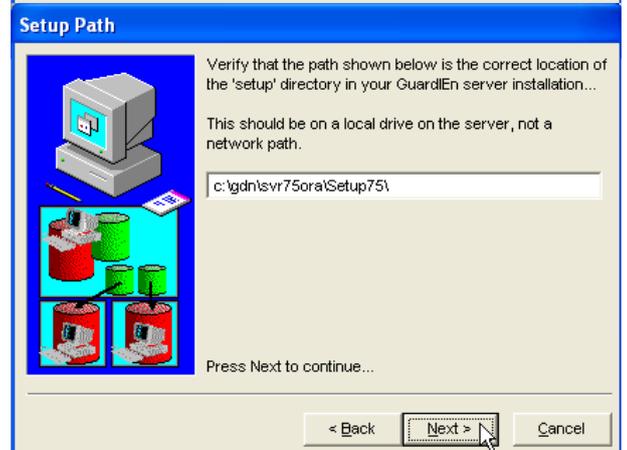
This dialog asks for information about the remote CSE. Again, most of the information is obtained from the values you entered earlier:

- Remote CSE User/Password – these are taken from the Ency DB Connect String that you provided for the Ency definition
- Remote CSE's SID – this is also taken from the Connect String that you provided for the Ency definition
- TNS Alias – this is suggested, but probably needs amending. It is the Oracle TNS Alias (in the tnsnames.ora) file that is used to connect to the remote CSE's database *from* the main GuardIEn server e.g. ency/ency@DBIESV2. Your DBA should be able to configure/provide this value for you.

When you are happy with these values, press **Next** to proceed…
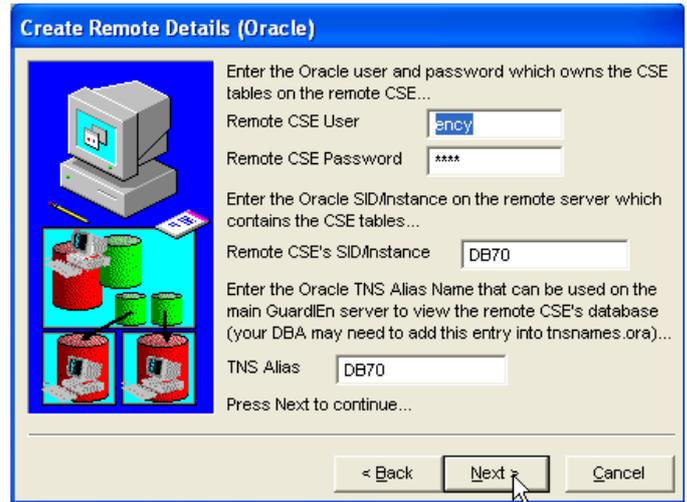
The wizard does not need any more information to begin creating the mini GuardIEn database to view the remote CSE, so a confirmation panel is displayed where you can review all of the values you just chose. Press **Create** to commence the database creation…

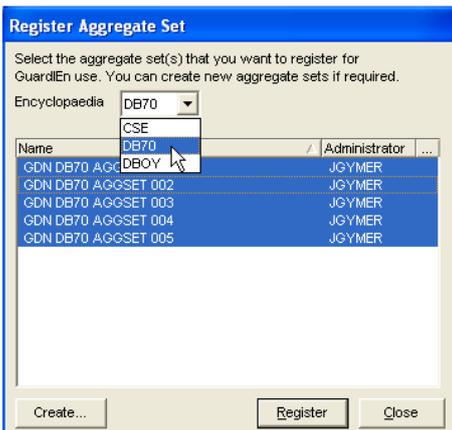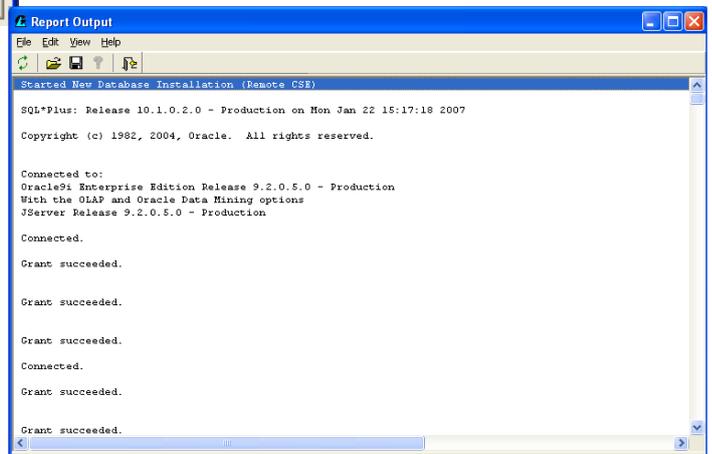Confirm **Yes** and the creation will begin…
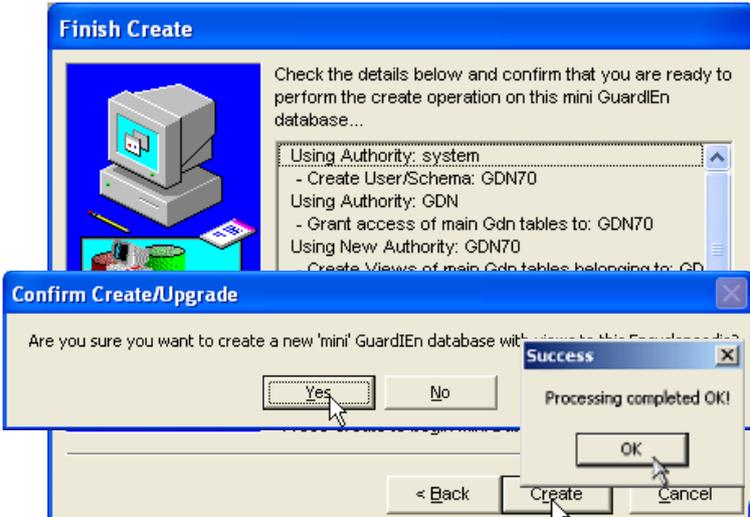
The wizard will attempt to detect failures as it proceeds, as

well as performing a short test at the end to see if the new connection works. If all is ok, then you will see a *Success* message. In addition, you can review the output from the DDL processed…

Your remote CSE is now available to connect to via GuardIEn!

A good *real* test after this is complete, is to register some *Aggregate Sets* from the remote CSE using the *System Administration* client. This will not only confirm that the connection is ok, but will be required if you intend to perform any migrations which involve the remote CSE later!

Remote Shell Daemon

GuardIEn will require a remote shell daemon to be present and active on each of the remote servers. This is to handle rsh commands to perform server-specific jobs e.g. run uploads/downloads/generates etc. against the remote server's CSE. IET recommends WRSHDNT from DeniComp, although other versions of daemons that support the same features may also work.

If you choose to use the DeniComp software then you need to perform the following configuration (most set-up is done via the Control Panel for WRSHD):

- Attempt Redirection on every command – ON
- Default window type – MINIMIZED
- Environment Variable File - <wrshdnt install path>\%ruser%.var
- Execute all RSH commands as user - <user>/<password> - e.g. gdn – it is recommended that you define a special user just for GuardIEn e.g. gdn, and define this user to NT. You will never actually log onto Windows with this user, but RSH will use this logon.
- All other options in the Control Panel for WRSDH should be blank or off
- Configure WRSHD variable files… create a <userid>.var file containing the environment of the Message Dispatcher (example below). The processes will actually run under gdn (or whatever you choose above). You will need a separate userid.var file per CSE on each remote server, e.g. if you have 3 CSEs on one server, then you should create 3 userid.var files e.g. csea.var, cseb.var and csec.var, each containing the environment for their own CSEs. Note: no SET keywords should be used in the .var files. The value of <userid> should be the same as the value entered for the FTP userid in the GuardIEn encyclopaedia definition. An example .var file for Gen 7.6 might look something like this:

```
AEHOME=c:\CA\GEN\
COOL-BASE=c:\CA\GEN\
IEF=c:\CA\GEN\
IEFCONST=c:\CA\CLIENT\
IEFCSGEN=c:\CA\CSE\bin
IEFGEN=c:\CA\GEN\
IEFGXTP=c:\CA\translat\
IEFH=c:\CA\GEN
IEFLAN=c:\CA\CLIENT\
IEF_CCP=c:\CA\CLIENT\
IEF_DIRGROUP=DIR
IEF_ENCYGROUP=ENCY
IEF_MDMODE=TCPIP
IEF_RDSNODE=localhost
INCLUDE=c:\CA\GEN;c:\CA\CSE\include;%INCLUDE%
LIB=c:\CA\CSE\lib;c:\CA\GEN;%LIB%
PATH=c:\CA\GEN;c:\CA\CLIENT;c:\CA\CSE\bin;c:\CA;%PATH%
IEF_MDNAME=iefmd
```

Shared Network Drives

Set-up a Shared Network Drive for GuardIEn e.g. drive X: which should point to the GuardIEn root directory on the main GuardIEn server from all servers i.e. server 2 should see X: the same as server 1 etc. Under this drive will be the GuardIEn home directory, queue home directories, PAD Listing path and any code gen directories. Of course, you may specify different directories for queue home or code gen, but use the same Shared Network Drive technique.

For WRSHD configuration, create a file called automap.ini in the WRSHD home that has NET USE commands for the Network Drives you have e.g.:

```
net use x: \\server\c$\gdn
```

Start the WRSHD service and verify from a DOS Prompt with something like the following (replace csea with the userid from the userid.var file you created earlier). You should see the correct environment variables returned for user csea.

```
rsh SERVER2 –l csea set
```

GuardIEn Remote Scripts

Copy supplied files gdruncmd.exe, gdrmtrun.bat, gdpingmd.bat and gdgetvar.bat (placed in the \setup86\remote Directory where you installed GuardIEn by the set-up program) into each of the remote servers to a directory that is in the PATH of the remote server e.g. \windows\system32.

Task Dispatcher / Queues

The Task Dispatcher will physically run on the main GuardIEn server, submitting remote shell commands (rsh) to invoke CSE processes, such as downloads/uploads etc., on remote CSEs.

In the Queue Manager, point all of your Queues to a common Shared Network Path e.g. X: for the drive and \GdnQueues\ for the path. The Task Dispatcher will take care of stopping/starting your queues automatically according to their start/stop times.

Code Generation

Code Generation must be performed into shared network drives too. Amend any Code Generation paths in your Target Properties to point to a common Shared Network Path e.g. X:\MYPROJ\DEV\ etc. You *do not need* to do this for generations out of the CSE on the main GuardIEn server.

Known Restrictions and Problems

1. Do not use spaces in the path names for the shared directories, i.e. queue home, pad listing and code generation. If you do, you should specify them with DOS short names e.g. progra~1 instead.

2. The system date/time on each of the servers must be less than 1 minute apart, ideally kept in synch with a time synchronisation service.

3. Local install methods will execute on the GuardIEn server. If the installs have to execute on another server, then remote install method should be used.

4. If you are using encyclopaedias that have a mixture of Gen releases, e.g. Gen 8.6 on one CSE and Gen 7.6 on another and a single GuardIEn project will contain models from more than one encyclopaedia, then you must ensure that the schema tables for each encyclopaedia are loaded to contain the highest schema defined for models in the project.