



Graphical Scenario Generation Tool (GSGT)

ERAM Simulation Generation Tool (SGET) Version 7.5.10.0 User Installation Guide

(SGET – UG – 001)

March 13, 2015

Volume 1: User Installation Guide Final SGET Version 7.5.10.0
Revision 1

Copyright © 2014

Enroute Computer Solutions (ECS) Inc.
2511 Fire Rd., Suite A-4
Egg Harbor Twp, NJ 08234
609-569-9255

Table of Contents

Table of Contents	i
1. GSGT Install Guide	1
1.1 General Information.....	1
1.2 GSGT Software Installation.....	2
1.3 QT Graphics Library Installation.....	3
1.4 GSGT User Configuration	4
1.5 Oracle Files Configuration.....	5
1.6 Addendums to Install Guide	7

1. GSGT Install Guide

1.1 General Information

This document details the process of installing GSGT on an AIX 5.2 platform.

The target system should be an IBM POWER4 or POWERPC based system with AIX 5L version 5.2, libm, and all of the current patch levels installed. It is assumed that GCC runtime and QT are not installed outside of this install process since the required versions are provided within the GSGT package itself. The system must also be configured to run with True Color.

The system should have at least 426mb of space for adaptation files and 120mb of space for the GSGT install environment including the GCC and QT runtime prerequisites and the GSGT executables, libraries, and data files.

This installation procedure also assumes access to the graphical version of smit and root permissions to modify directories.

1.2 GSGT Software Installation

NOTE: All steps are performed on the SCDP machine, unless otherwise noted.

- | | |
|----|--|
| 1) | Copy the GSGT Install Package onto the system you wish to install on. |
| 2) | Create installation directory for GSGT. The default installation location for the revision should be /usr/local/gsgt.X.X.X.X/ however you may use a different installation location. |
| 3) | Extract the Install Package tar file into directory created in step 2.
<code>cd <dir_created_in_step_2></code>
<code>zcat <path_to_gsgt_package_file>gsgt.X.X.X.X.pkg.tar.Z tar xvf -</code> |
| 4) | If you used other than default installation directory in step 2, set your LIBPATH directory to the location of the gsgt library files as you moved them: e.g. if the env is in /NASREL1/gsgt.X.X.X.X set LIBPATH to /NASREL1/gsgt.X.X.X.X/lib. |
| 5) | Copy the sget.license file to /etc.
NOTE: The SGET license key (sget.license) should be available on a Product Controlled CDROM, separate from the ECS GSGT (SGET) installation package. If that is not available when installing SGET, please contact your lead who will contact the appropriate Product Control personnel. A formal License request form (PC Service Request form) is needed to obtain these licenses. The following information is needed for the License request form: 1) The number of SCDPs at the site that need SGET 2) The Host Name, Host ID, MAC Address of each of these SCDP's. Once you receive the license, cp the license key file and rename it (if needed) sget.license in the /etc directory i.e. cp /mnt/fac_001.lic /etc/sget.license |
| 6) | Install appropriate QT Graphics Library provided in a separate installation package. |

GSGT software installation is complete.

1.3 QT Graphics Library Installation

NOTE: All steps are performed on the SCDP machine, unless otherwise noted.

1)	Copy the QT Install Package onto the system you wish to install on.
2)	Open smit and select Software Installation and Maintenance.
3)	Select Install and Update Software.
4)	Select Install Software.
5)	Type in the directory location to the .bff files for the QT Graphic Library environment (e.g. /tmp/pkgs/) and click OK.
6)	Click on the List button next to the SOFTWARE to install field on the Install Software dialog.
7)	Select the revision of QT you wish to install and click on OK in the Multi-select List dialog. Recommended is to install ALL.
8)	Click OK to install the QT main package. Then click OK in the "ARE YOU SURE?" dialog.
9)	Upon successful completion, exit smit by clicking Done in the Install Software window, Cancel in the other Install Software window, then selecting Exit-> Exit SMIT from the System Management Interface Tool window.
10)	The final installation location for the revision should be /usr/lib/qt-X.X.X/. Do not move the /usr/lib or /opt/freeware/lib/gcc prerequisite files as those are built outside of gsgt and are required to be installed to that directory by their respective vendors.

QT Graphics Library installation is complete.

1.4 GSGT User Configuration

The following steps must be performed on a per user basis for the system to work.

1)	Set GSGT to the location of the gsgt files: e.g. for normal install, /usr/local/gsgt.X.X.X/ or using the path assumption in section 1.2 step 11, /NASREL1/gsgt.X.X.X/.
2)	Either set DSSC_REL to the name of the National Release of the EADP files you wish to select: e.g. sgetnat1 OR set ADAPTATION_PATH to the location of the ERAM adaptation files: e.g. /opt/adaptation
3)	Set GSGT_WORK_PATH to the working directory of the scenario files. This should also be set up in the gsgt_run.sh script for the Oracle forms tool.
4)	Set GSGT_LOGDIR to the path where the GSGT session logs will reside. The default is /tmp.
5)	Set GSGT_SITE_DEFAULTS to the path where the default Preferences and ATCoach Control files can reside.
6)	Set EXPORT_OPS_PATH to the path where the OPS ATCoach export files will reside. Set EXPORT_TTS_PATH to the path where the TTS ATCoach export files will reside.
7)	Append /usr/local/qt/lib and the path to the ATCoach libraries to the LIBPATH variable.
8)	Set WX_PATH to the location of the Weather Scenario source files.
9)	Set ORACLE_HOME to /u01/app/oracle/OraHome_2.
10)	Create paths for the GSGT users on your system under GSGT_WORK_PATH and set r/w permissions for the respective users as well as the Oracle forms applet user.
11)	Append the path to the GSGT executables directory (\$GSGT/bin) to the PATH variable.
12)	Append the path to the ATCoach executables directory to the PATH variable.
13)	Set all the environment variables needed to run ATCoach as specified in the ATCoach installation manual.
14)	You may test gsgt by either selecting a scenario from the Oracle forms or by typing gsgt from the command line.
15)	If you are satisfied by the execution of the system, place the environment variables that you set from steps 1 to 7 into your 'environment' or 'profile' files to set the environment up at login time. Also, if you performed step 10 in section 1.2 make sure that the LIBPATH variable is set in the 'environment' or 'profile' files.

1.5 Oracle Files Configuration

NOTE: All steps are performed on the MISMCP machine, unless otherwise noted.

1)	Ensure that both Oracle 10g Database (Oracle Database Installation Guide for UNIX Systems, B10811-05) and Application Server Forms and Reports services(Oracle Application Server 10g Documentation 10g (9.0.4) for AIX-Based Systems, hp HP-UX PA-RISC (64-bit), hp Tru64 UNIX, and Linux x86, B12428_14) are installed on the target server machines (this should be the MISMCP environment) and ensure that oracle 32 bit client libraries, runtime version, is installed on the SCDP machine. Also ensure that version 4.3.7.5 or later of the SSH Tectia Server (sshd2) is installed and running on the SCDP, and version 4.3.7.5 or later of SSH Tectia Client (ssh2) is installed on the MISMCP.
2)	The tnsnames.ora file should point to the appropriate database server listener connection - for the demonstration/drop 2 code it should be scenario:1521.
3)	Mount the GSGT Installation cd . The compiled form executable scendb.fmx should be available on the install cd under the /database directory.
4)	Sign on as the oracle user.
5)	Start a sqlplus session by issuing 'sqlplus /NOLOG'.
6)	Enter the command 'connect sys@scenario AS SYSDBA'. Enter the sys user password when prompted.
7)	Create a user by running '@/<cdrom>/database/createuser.sql;' and then 'commit;' the changes.
8)	Run the script '@/<cdrom>/database/genprocs.sql;', '@/<cdrom>/database/http.sql;', and '@/<cdrom>/database/login.sql' to create the stored procedures and tables necessary for SGET, and then 'commit;'.
9)	Enter the command 'exec init_dbase();'.
10)	Exit the sqlplus session.
11)	Copy scendb.fmx from the cd to the application server \$ORACLE_HOME/forms90
12)	cd into the server directory and modify formsweb.cfg for the application server and add the following entry: [sget_dbase] form=scendb.fmx
13)	Copy sget.htm from the cd to application server \$ORACLE_HOME/Apache/Apache/htdocs/ and change the ip address to that of the MISMCP server. Copy sget_cgi_launch.sh and filestats_cgi_launch.sh to \$ORACLE_HOME/Apache/Apache/cgi-bin and chmod oracle:dba and chown 755 them.
14)	Make a directory to hold the report scenrpt.rdf which is located on the cd and copy the report there.
15)	Open the application server \$ORACLE_HOME/reports/conf/rep_<srvname>.conf and modify the <property name="sourceDir" ...> entry to point to the directory where

	scenrpt.rdb is located. eg: <property name="sourceDir" value="/home/oracle/reports">. Restart the forms servlet to apply the change.
16)	Copy the three shell scripts from the cd: gsgt_exec.sh, gsgt_filestats_exec.sh, and gsgt_run.sh to the /home/oracle directory and run 'chown oracle <script>' and 'chmod 755 <script>' on each.
17)	Open gsgt_exec.sh and gsgt_filestats_exec.sh and ensure that the ip address points to the SCDP server. Also change the directories for the gsgt executable and the GSGT variable to point to the current version in gsgt_filestats_exec.sh.
18)	For each scenario database user, create a user account on both the MISMCP and SCDP and generate an SSH2 key pair for each user on the MISMCP machine. Also create an account and SSH2 key pair for the oracle user on the SCDP. For detailed instructions about SSH2 key generation see Addendum #1 of this guide, or the ERAM CAS SWAD.
19)	For each user on the MISMCP, copy the SSH2 public key (which should be located under ~/.ssh2/id_dsa_2048_<alphabetic> on the MISMCP) to /home/oracle/.ssh2/id_dsa_2048_<alphabetic> also on the MISMCP.
20)	Run 'chown oracle:dba id_dsa_2048_<alphabetic>' and 'chmod 400 id_dsa_2048_<alphabetic>' on the public key files in /home/oracle/.ssh2 on the MISMCP.
21)	Install oracle client services, administration version, to /u01/app/oracle/OraHome_2 on the SCDP server.
22)	For each scenario database user on the SCDP server, ensure that the ORACLE_HOME environment variable is set to /u01/app/oracle/OracleHome_2.
23)	Copy gsgt_run.sh to the SCDP machine to /home/oracle/' and chown and chmod as per step 16. Verify that the script sets all of the variables in steps 1 to 7 in section 1.3.
24)	Run oracrypt on the SCDP server in the \$GSGT/bin directory to generate an encrypted password for step 25 for the common database user. Chown oracle:dba and chmod 700 the oracrypt binary to ensure that only the oracle user may use the password encryption tool.
25)	On the SCDP server, open \$GSGT/opt/gsgt/gsgtrc and append the following config info: <pre>[DB] database=<database> user=<user name> password=<list of numbers generated in step 24> host=<mismcp></pre> Where database is the database that you created to house the sget app, username and password are those for the database user you created the tables and procedures under, and host is the hostname of the mismcp machine: eg jvnaix.
26)	You should now be able to navigate to the oracle forms url, login, and launch scenarios on the SCDP server from the MISMCP server.

1.6 Addendums to Install Guide

1) User Authentication with Public Keys (see Step 19)

The following steps assume that the SSH Tectia Server (version 4.3.7.5 or later) is installed on the SCDP and the SSH Tectia Client (version 4.3.7.5 or later) is installed on the MISMCP as specified in the ERAM CAS SWAD. The following steps to set up publickey (i.e. promptless) login were adapted from the ERAM CAS SWAD, and are listed here as a convenience.

For Client (MISMCP):

Use of user public key authentication requires that it be listed as one of the allowed authentication methods in the SSH configuration file. In the `/etc/ssh2/ssh2_config` file, the `AllowedAuthentications` keyword shall contain `publickey` as an allowed method (other methods may also be listed, but the least interactive methods should be listed first). For example:

```
AllowedAuthentications      publickey
```

Then do the following manual setup for each specific user:

1. Create a key pair by executing `/usr/local/bin/ssh-keygen2` on the client (MISMCP) machine. For example, `<userA>` needs to create a key pair:

Example:

```
==> /usr/local/bin/ssh-keygen2
Generating 2048-bit dsa key pair
      1 oOo.oOo.o
Key generated.
2048-bit dsa, <userA>@Client, Wed Mar 22 2006 00:13:43 +0200
Passphrase:
Again:
Private key saved to /home/<userA>/.ssh2/id_dsa_2048_a
Public key saved to /home/<userA>/.ssh2/id_dsa_2048_a.pub
```

`ssh-keygen2` asks for a passphrase for the new key. Passphrase is optional and should not be entered (i.e., just hit Enter) if totally promptless login from Oracle to SGET is desired. `ssh-keygen2` creates a `.ssh2` directory in the user's home directory (i.e., `/home/<userA>/.ssh2` in this example) if that is not already present, and stores the new authentication key pair in two separate files, `~/.ssh2/id_dsa_2048_<alphabetic>` and `~/.ssh2/id_dsa_2048_<alphabetic>.pub`. One of the keys is the user's private key which must never be made available to anyone but the user.

2. Create an identification file in the user's `~/.ssh2` directory on the client machine. For

example, user <userA> on the client machine needs to create an identification file:

Example:

```
cd /home/<userA>/.ssh2
echo "IdKey id_dsa_2048_a" > identification
```

The identification file consists of one line that denotes the file containing the user's identification (user's private key).

3. Copy the public key, id_dsa_2048_a.pub to the user's ~/.ssh2 directory on the server machine.

4. Create an authorization file in the user's ~/.ssh2 directory on the server machine (SCDP). For example, user <userB> on the server machine needs to create an authorization file:

Example:

```
cd /home/<userB>/.ssh2
echo "Key id_dsa_2048_a.pub" > authorization
```

This directs SSH Tectia Server to use id_dsa_2048_a.pub as a valid public key when authorizing the user's login.

Note: If the user wants to login to the server machine from other hosts, repeat the steps above.

5. The user should be able to login to the server machine from the client machine using SSH Tectia Client. For example:

Example:

```
ssh <server_machine_name>
Passphrase for key "/home/<userA>/.ssh2/id_dsa_2048_a with
comment "2048-
bit dsa, created by <userA>@Client Wed Mar 22 2006 00:14:43
+0200":
```

A Secure Shell connection will be established without prompting for any user input.

For Server (SCDP):

In the /etc/ssh2/sshd2_config file, the AllowedAuthentications keyword shall contain

publickey as an allowed method. For example:

Example:

```
AllowedAuthentications      publickey
```

Other authentication methods may be listed, but the least interactive methods should be listed first.

2) ORACLE APPLICATION SERVER REPORTS

See Doc ID: Note:200474.1 Subject: Comprehensive REP-3000 Troubleshooting and Overview Guide Oracle requires that a valid X Server be pointed to by the DISPLAY environment variable. The MIS-MCP machine must set this variable immediately after booting the system as per the document, or set the DISPLAY variable to a valid X Server on another machine in the reports.sh file in the \$ORACLE_HOME/bin directory.

3) DATA BACKUP

All system data is stored in the database. The only things that need to be stored are the ssh keys in each user's ~/.ssh directory.

4) PATH FOR ORACLE ON SCDP

GSGT uses the QT Toolkit. In order to connect GSGT with the scenario database, the usage of the QOCI library is necessary. The qt library is linked with gcc which is not relocatable, and the qt library is also linked to the \$ORACLE_HOME/lib/lib32 libraries in a non-relocatable manner. These are standard system libraries and are not created or maintained by ECS/JVN. Because of the linking of the qt libraries, on the SCDP machine, oracle client libraries must be located in /u01/app/oracle/OraHome_2. Moving this means recompiling the qt library.

5) ADDING USERS TO SGET

Sget requires one of the three roles created in login.sql to be applied to a user in order for him to connect to the database component: GRANT DATABASE_APPLICATION TO <USERNAME>, GRANT SCENARIO_DEVELOPER TO <USERNAME>, GRANT USER_LOGON TO <USERNAME>. <USERNAME> is the name of the oracle user.