Backing Up and Restoring HP Systems Insight Manager 7.1 or Greater Data Files in a HP-UX and Linux Environment White Paper

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Introduction

HP Systems Insight Manager (Systems Insight Manager) uses a PostgreSQL server database to store collected information about the systems on your network. Always back up your database using an appropriate backup schedule. In the event of a catastrophic database problem, this backup can be restored to return Systems Insight Manager to operation.

Important:

The procedures in this paper are only for backing up Systems Insight Manager core data from and restoring core data to the same PostgreSQL database. It is not intended to be used as an example for reinstallation of Systems Insight Manager or for data migration. HP does not guarantee the integrity of partner data if you attempt to use these procedures for reinstallation or data migration.

Backing up and restoring data files for a PostgreSQL database

Backing up data files for a PostgreSQL database

Backing up the database with PostgreSQL requires changing the Systems Insight Manager database user password and saving the database and associated files.

1. If Systems Insight Manager is running, enter `mxstop` in the command line to stop the Systems Insight Manager daemons.
2. To verify that all Systems Insight Manager `mx` processes have stopped, run the following command:

   ```
   ps -ef | grep mx
   ```

   If you find any processes running, stop the process using the following command:

   ```
   kill -9 <process id>
   ```
3. Using the file management utility of your choice, back up the configuration files listed in Table 1.

Table 1. Configuration files that must be backed up

File Directory	Description
`/etc/opt/mx/config`	Directory of configuration files
`/var/opt/mx/config/`	Additional configuration files
`/etc/opt/hp/sslshare/`	Shared OpenSSL certificate directory
`/var/opt/mx/logs/mx.log`	Audit file
`/opt/mx/patch`	Program updates (required if Systems Insight Manager is to be reinstalled)
`/opt/mx/bin/server_cert.pem`	Certificate used by the command line interface (CLI)
`/opt/mx/bin/CLIClientConfig.cgf`	CLI configuration file
`/var/opt/mx/output`	(optional) Contains job result output
`/opt/mx/mibs`	Contains .mib files
`/var/opt/mx/actions`	Contains .xml files

Note:
The file permissions must be prepared during the backup process. The
`Tape Archive` (`TAR`) utility preserves file permissions.

4. Save any existing user-supplied (custom) files contained in the Systems Insight Manager directory tree, such as tool definition files (TDEFs), Management Information Bases (MIBs), sign-in prompt, and actions.
5. Open the `/etc/opt/mx/config/database.props` file and check the property value for `hp.Database.username`. The default PostgreSQL user for Systems Insight Manager is `mxadmin`.

6. Change the password generated by Systems Insight Manager for `mxadmin` before you back up the database. To change the password, enter the following command at the Systems Insight Manager command line:

```
/opt/mx/bin/mxpassword –m –x MxDBUserPassword=<newpassword>
```

Where `<newpassword>` is the new password.

7. Restart the PostgreSQL service with the `restart` command.

Note:
The full command path might vary depending on the PostgreSQL install location.

For HP-UX:

```
/sbin/init.d/hpsmdb restart
```

For SUSE Linux Enterprise Server 9 and SUSE Linux Enterprise Server 10:

```
/etc/init.d/hpsmdb restart
```

For Red Hat Enterprise Linux (all versions):

```
/etc/rc.d/init.d/hpsmdb restart
```

Or

```
service hpsmdb restart
```

8. Enter the following commands to the database:
   For HP-UX:

```
cd /opt/hpsmdb/pgsql/bin
```

For Linux:

```
cd /opt/hpsmdb/bin
./pg_dump –h 127.0.0.1 –U mxadmin –p 50006 insight_v1_0 >
/tmp/saveHPSIMdb
```

Note:
The `pg_dump` version to back up the database should be higher than 8.4.

Where:

`–h` = host name of the server

`–U` = PostgreSQL user name

`–p` = port number (to find the port number, open the `/etc/opt/mx/config/database.props` file and find the property value for the `hp.Database.portNumber` property)

`insight_v1_0` = Systems Insight Manager database name (to find the database name, open the `/etc/opt/mx/config/database.props` file and find the property value for the `hp.Database.databaseName` property)

`saveHPSIMdb` = Any file name to save the database.

9. When prompted for a password, enter the password defined in step 6.

Restoring data files for use with PostgreSQL

- If you are performing a reinstallation of Systems Insight Manager, proceed as directed in the *HP Systems Insight Manager 7.0 Installation Guide* located at

- If you are not performing a reinstallation, complete the following procedure.

1. If Systems Insight Manager is running, enter `mxstop` in the command line to stop the Systems Insight Manager daemons.
2. Stop the PostgreSQL (HPSMDB) service with the `stop` command.

Note:
The full command path might vary depending on the PostgreSQL install location.

For HP-UX:
```
/sbin/init.d/hpsmdb stop
```

For SUSE Linux Enterprise Server 9 and SUSE Linux Enterprise Server 10:
```
/etc/init.d/hpsmdb stop
```

For Red Hat Enterprise Linux (all versions):
```
/etc/rc.d/init.d/hpsmdb stop
```
Or
```
service hpsmdb stop
```

3. To verify that all Systems Insight Manager `mx` processes have stopped, enter the following command:
```
ps -ef | grep mx
```
If you find any `mx` process running, stop the process using the following command:
```
kill -9 <process id>
```
4. For Linux systems:
   a. To verify that the postmaster is running, enter:
   ```
   ps -ef | grep postmaster
   ```
   If the postmaster is running, stop the service by entering:
   ```
   kill -9 <process id>
   ```
   b. Uninstall `hpsmdb` by entering:
   ```
   rpm -qa | grep hpsmdb| xargs rpm -e
   rm -rf /opt/hpsmdb /var/opt/hpsmdb
   ```
   c. Install `hpsmdb` from Systems Insight Manager binary:

   Navigate to the Systems Insight Manager binary, and then execute the following command to unpack all RPMs:
   ```
   ./sysmgmt.bin --noexec --target mxserver
   cd mxserver
   rpm -i hpsmdb-<xxxxxx>.rpm
   ```
   Where <xxxxxx> is the appropriate `hpsmdb` RPM for the Linux and hardware platform. See the Installation section of the *HP Systems Insight Manager 7.0 Installation and Configuration Guide for Linux* for details.
5. For HP-UX systems:
   a. Uninstall the SysMgmtDB by entering the following command:

```
        swremove -x enforce_dependencies=false SysMgmtDB
```
   b. Install SysMgmtDB from the Systems Insight Manager Depot file by entering the following command:
```
      swinstall -s /hpsim.depot SysMgmtDB
```
6. Create a database with the name `insight_v1_0` using the following command:

   For HP-UX enter:
```
   cd /opt/hpsmdb/pgsql/bin
```

   For Linux enter:
```
   cd /opt/hpsmdb/bin
   ./createdb -O hpsmdb -h 127.0.0.1 -p 50006 -U hpsmdb insight_v1_0
```
7. Create a user named `mxadmin` by using the following command:
```
   ./createuser -h 127.0.0.1 -p 50006 -U hpsmdb mxadmin
```

Note:
For the `mxadmin` user, set the role to *super user* without permission to
create databases and user accounts.

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8. Copy the database with the name `insight_v1_0` by entering the following command at the command line:

   For HP-UX:
```
   cd /opt/hpsmdb/pgsql/bin
   ./psql -q -h 127.0.0.1 -U mxadmin -p 50006 -f /tmp/saveHPSIMdb -d
   insight_v1_0
```

   For Linux:
```
   cd /opt/hpsmdb/bin
   ./psql -q -h 127.0.0.1 -U mxadmin -p 50006 -f /tmp/saveHPSIMdb -d
   insight_v1_0
```

   Where:

   `-h` = Host name of the server

   `-U` = PostgreSQL user name

   `-p` = port number (to find the port number, open the `/etc/opt/mx/config/database.props` file and find the property value for the `hp.database.portNumber` property)

   `insight_v1_0` = Systems Insight Manager database name (to find the database name, open the `/etc/opt/mx/config/database.props` file and find the property value for the `hp.Database.databaseName` property)

   `saveHPSIMdb` = the file name of the backup file to restore (this name is what you used when backing up the database)

9. Using an appropriate file management utility, restore the configuration files listed in Table 1.

10. Restore any existing user-supplied (custom) files contained in the Systems Insight Manager directory tree, such as TDEFs, MIBs, sign-in prompts, and actions.

11. Start the Systems Insight Manager service with the `mxstart` command. The service is started and the data from the backup database is restored.

Note:

To move HPSIM data from one Linux operating system to another, use the same steps listed above with the following command:

```
scp Linuxsys1 (data file and configuration files)
Linuxsys2:/path
```

To restore HPSIM data on a different LINUX operating system, follow the restore procedure in Restoring Data Files for Use with PostgreSQL.

Backing up and restoring data files for an Oracle database

The following procedures describe saving (backing up) and restoring data files for a system using an Oracle database that is using Systems Insight Manager.

Important:
Only a user with Oracle Database Administration (DBA) privileges can conduct the backup and restore process.

Saving data files for use with Oracle

1. If Systems Insight Manager is running, enter `mxstop` in the command line to stop the Systems Insight Manager daemons.
2. To verify that all Systems Insight Manager `mx` processes have stopped, run the following command:

   `ps –ef | grep mx`

   If you find any `mx` process running, stop the process using the following command.

   `kill –9 <process id>`
3. Using the file management utility of your choice, save the configuration files listed in Table 2.

Table 2. Configuration files to save

File Directory	Description
/etc/opt/mx/config/	Directory of configuration files
/var/opt/mx/config/	Additional configuration files
/etc/opt/hp/sslshare/	Shared OpenSSL certificate directory
/var/opt/mx/logs/mx.log	Audit file
/opt/mx/patch	Program updates (required if Systems Insight Manager is to be reinstalled)
/opt/mx/bin/server_cert.pem	Certificate used by the command line interface (CLI)
/opt/mx/bin/CLIClientConfig.cfg	CLI configuration file
/opt/mx/mibs	Contains .mib files
/var/opt/mx/actions	Contains .xml files

Note:
The file permissions must be prepared during the backup process. The `Tape Archive (TAR)` utility preserves file permissions.

4. Save any existing user-supplied (custom) files contained in the Systems Insight Manager directory tree such as tool definition files (TDEFx), Management Information Bases (MIBs), login prompt, and actions.

5. Open the `/etc/opt/mx/config/database.props` file and check the property value for `hp.Database.username`.

> **Note:**
> Before you start the database back up, note the database name, DBA user name, and DBA password.

6. At the Oracle server console command line, enter the following command:

   `Set ORACLE_SID=<dbname>`

   Where *<dbname>* is the database to be saved.

7. Log into the SQL by entering:

   `sqlplus   username/passwd as sysdba`

8. To display the directory of the data dump, enter the following command at the SQL prompt:

   `Select directory_path from dba_directories where directory_name ='DATA_DUMP_DIR';`

9. Open the data dump directory by entering the following command:

   `cd /data dump directory`

10. At the Oracle server console command prompt, repeat steps 8 and 9.

11. Execute the `EXPDP` command with the following parameters:

   `$expdp user1/passwd schemas=user1 DUMPFILE=DATA_DUMP_DIR:user1.dmp LOGFILE=DATA_DUMP_DIR:user1.log`

12. Enter the following command to count the number of rows and columns in the database table to ensure the tables are successfully saved.

   `select count(*) from user_tables or dba_tables similarly for views, indices`

Restoring data files for use with Oracle

To restore the Oracle database from a saved copy, use the following procedure:

1. If you are using an existing Oracle installation, delete the backed-up database on the Oracle server. This is necessary because Systems Insight Manager requires an empty database for initialization.

2. Create a new database with the same name as that of the backed up database, and then create a user with DBA privileges with the same user credentials that you created in step 6 of Saving Data Files for Use with Oracle.

3. Install Systems Insight Manager as directed in *HP Systems Insight Manager 7.0 Installation and Configuration Guide*, which is available at:

   http://www.hp.com/go/hpsim (for Linux and HPUX)

> **Note:**
> Use the Systems Insight Manager command `mxoracleconfig` to allow Systems Insight Manager to use an Oracle database.

4. Run `mxinitconfig -a`.

5. If Systems Insight Manager is running, enter `mxstop` in the command line to stop the Systems Insight Manager daemons.

6. To verify that all Systems Insight Manager `mx` processes have stopped, run the following command:

   ```
   ps –ef | grep mx
   ```

7. Restore the configuration files listed in Table 3.

Table 3. Configuration files to be restored

File Directory	Description
`/etc/opt/mx/config/`	Directory of configuration files
`/var/opt/mx/config/`	Additional configuration files
`/etc/opt/hp/sslshare/ (for HP-UX)` `Etc/opt/hp/sslshare (for Linux)`	Shared OpenSSL certificate directory
`/var/opt/mx/logs/mx.log`	Audit file
`/opt/mx/patch`	Program updates (required if Systems Insight Manager is to be reinstalled)
`/opt/mx/bin/server_cert.pem`	Certificate used by the command line interface (CLI)
`/opt/mx/bin/CLIClientConfig.cfg`	CLI configuration file
`/var/opt/mx/output`	(optional) Contains job result output
`/opt/mx/mibs`	Contains .mib files
`/var/opt/mx/actions`	Contains .xml files

8. Restore any existing user-supplied (custom) files contained in the Systems Insight Manager directory tree, such as tool definition files (TDEFx), Management Information Bases (MIBs), login prompt, and actions.

9. Restore the database file from the backup created in step 6 of Saving:

   a. At the Oracle server console, type the following command:

      ```
      set ORACLE_SID=<dbname>
      ```

      Where *<dbname>* is the database just created in step 2.

   b. Create another user (user2) with the same privileges as user1 at SQL Prompt by using the following commands:

      ```
      Create user user2 identified by passwd;
      Grant dba, connect to user2 identified by passwd;
      Commit;
      ```

10. Log out from the user1 account and then log in with the user2 account.

11. Delete the user user1 account and then recreate user1 with all DBA privileges by using the following commands:

    ```
    Drop user user1 CASCADE;
    Create user user1 identified by passwd;
    Grant dba,connect to user1 identified by passwd;
    Commit;
    ```

12. Log out from user2.

13. Import the database by using the IMPDP Utility:

    a. Set `ORACLE_SID=<dbname>`, where *<dbname>* is the database to be saved.

b. Log into the SQL by typing `sqlplus user1/passwd as sysdba`

c. At SQL Prompt, execute the IMPD command with the following parameters:
```
$impdp user1/passwd DIRECTORY=DATA_DUMP_DIR  DUMPFILE=USER1.DMP
SCHEMAS=user1  EXCLUDE=CONSTRAINT,REF_CONSTRAINT,INDEX
TABLE_EXISTS_ACTION=REPLACE
```

Note:

Exception messages (for example, `ORA-31684: Object type VIEW:"HPSIM4"."R_MEDIAACCESSDEVICES" already exists`) are generated to remind you that certain object types are already present. The views are not affected.

---

14. Enter the following command to count the number of rows and columns in the database table to ensure the tables are successfully restored.
```
select count(*) from user_tables or dba_tables similarly for views,
indexes
```

Note:

The count of tables, indexes, and views should be the same after export and import.

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15. Restart Systems Insight Manager service by entering `mxstart`. Systems Insight Manager starts and all the data from the backup database are restored.

For more information

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