HP Storage Essentials

Software Version: 9.5.1

Report Database Guide

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Chapter 1

About the Report Database

The Report Database Admin Utility is a tool used for managing the Report Database. The Report Database is a central repository for all of the report data gathered from the management servers running HP Storage Essentials and provided to Report Optimizer.

For example, assume you have three management servers running HP Storage Essentials each in a different time zone, each gathering data from a unique set of elements. The Report Database gathers the information from each of the management servers and makes it available to Report Optimizer.

In the following figure, there are three central management servers: CMS1, CMS2, CMS3. The Report Database gathers information from the report cache of each of the management servers and stores it in the Report Database. The information is then made available to Report Optimizer.

Information from Each CMS Database is Stored in a Centralized Report Database
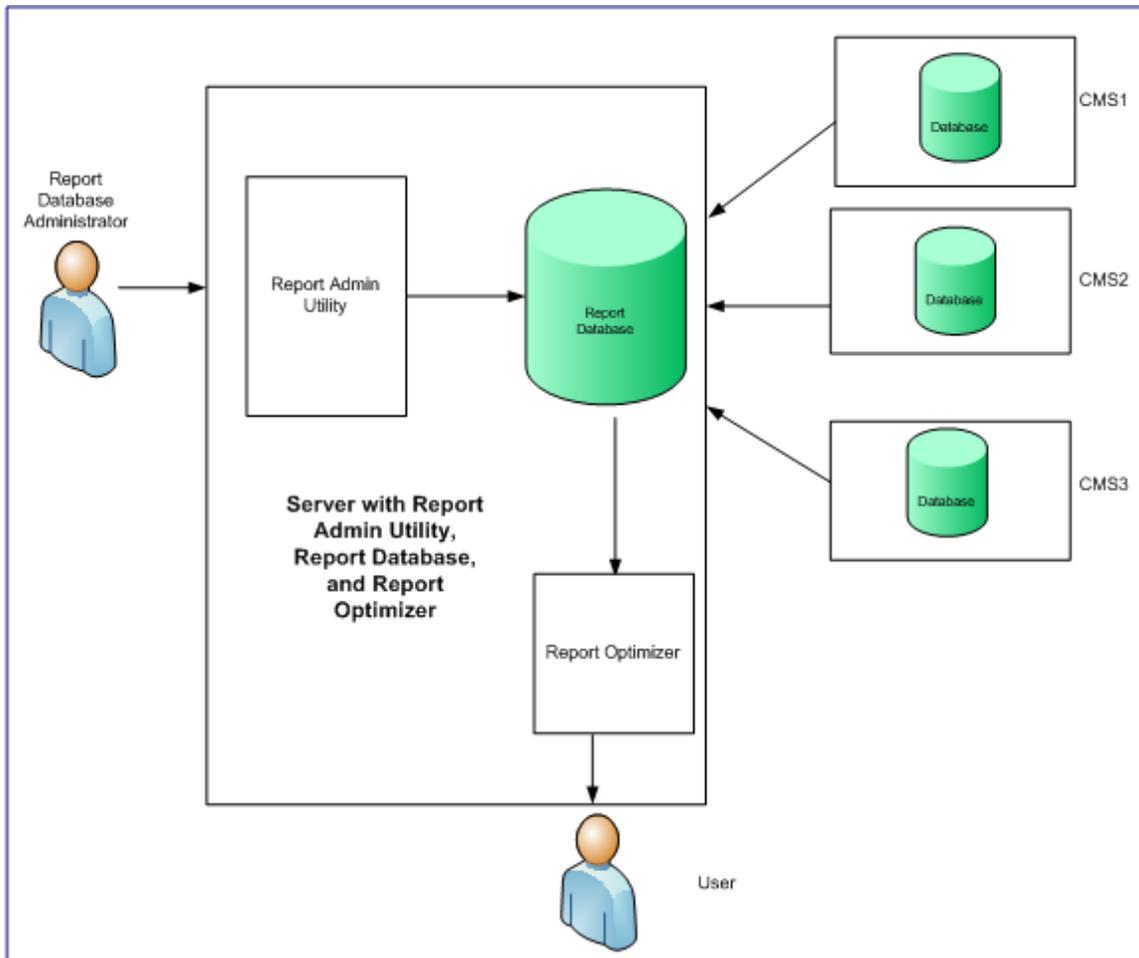
To view reports in Report Optimizer:

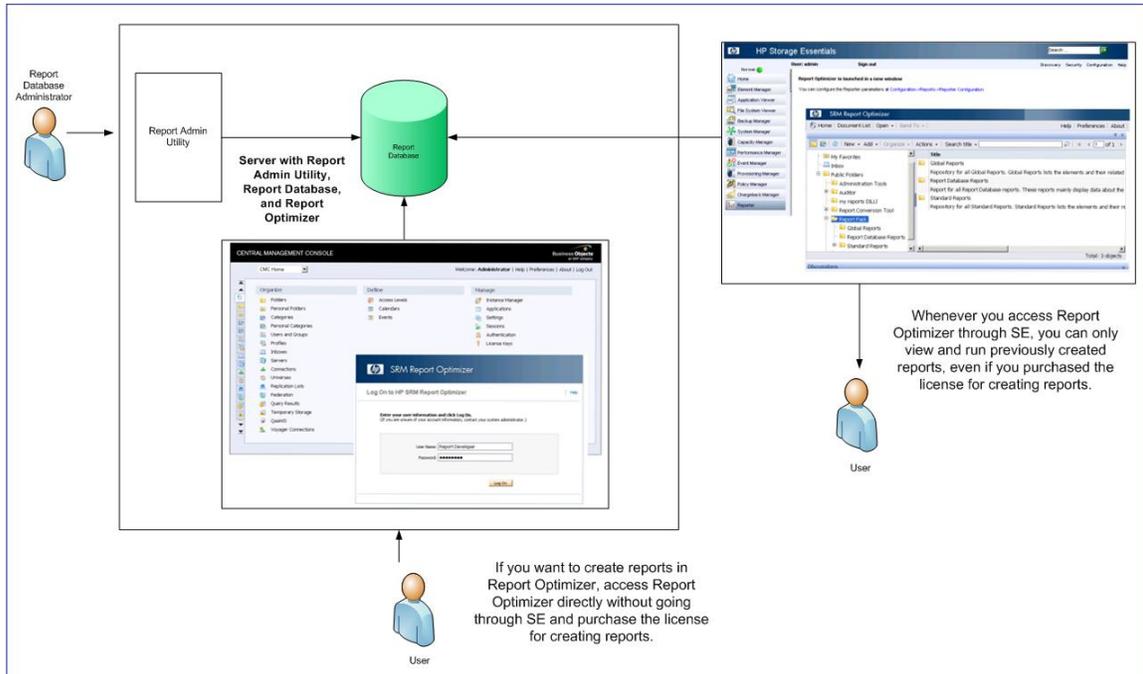1. Log on to Report Optimizer. You can create reports if you purchased the license for creating reports.

   Or

2. Access Report Optimizer through HP Storage Essentials. Whenever you access Report Optimizer through HP Storage Essentials, you can only view and run previously created reports, even if you purchased the license for creating reports.

Accessing Reports

Use the Report Admin Utility to manage the Report Database, such as specify the management servers from which you want it to collect data.

Caution: To receive updated information for reports you must have the following set:

- The OracleServiceREPORTS service must be running for the Report Database to be able to gather information from the management servers.

- The Allow Data Refresh option must be set to ON for the Report Database to pull data from the management servers.

- The Site Polling Frequency and Sleep After Update should be set to run as frequently as their defaults or more often.

- Report cache refreshes should be scheduled to occur as necessary on each of the management servers.

Accessing the Report Database

The way you accessing the Report Database differs according to the operating system you are using.

Accessing the Report Database Utility on Windows

To access the Report Database Utility on Windows:

1. Go to the `%REPORT_DATABASE_HOME%` directory.

2. Double-click **ReportAdmin.bat**.

   If the server is running Windows 2008, make sure user access control (UAC) is disabled. You cannot run the Report Admin Utility if UAC is enabled. For information on how to disable UAC, refer to the documentation for Windows 2008. Do not re-enable UAC. Re-enabling UAC might cause certain functionality in the product not to work.

Accessing the Report Database Utility on Linux

To access the Report Database Utility on Linux:

1. Set the display if you are accessing the Report Database Admin Utility remotely.

2. Go to the `$REPORT_DATABASE_HOME` directory by entering the following at the command prompt:

   ```
   # cd $REPORT_DATABASE_HOME
   ```

3. Run the Report Admin Utility by entering the following at the command prompt:

   ```
   # sh ./ReportAdmin.sh
   ```

Chapter 2

Configuring the Report Database

Report Optimizer use the Report Database to obtain data for reports. Make sure the Report Database is kept up to date as much as possible to ensure the latest information is displayed in the reports.

The Report Database gathers information from the report cache of each central management server (CMS). This gathering is done after the CMS has completed a report cache refresh. The Report Database then stores the information in a separate database for each CMS. You can configure how often the Report Database checks each CMS for a complete report cache refresh by modifying the Site Polling Frequency option.

Caution: To receive updated information for reports you must have the following set:

- The OracleServiceREPORTS service must be running for the Report Database to be able to gather information from the management servers.

- The Allow Data Refresh option must be set to ON for the Report Database to pull data from the management servers.

- The Site Polling Frequency and Sleep After Update should be set to run as frequently as their defaults or more often.

- Report cache refreshes should be scheduled to occur as necessary on each of the management servers.

To configure the Report Database:

1. Access the Report Admin Utility as described in .

2. Select **Configure Report Database** in the left pane.

3. In the right pane provide the following information:

   - **Allow Data Refresh**. When this option is set to off, the Report Database stops polling data from the report sources on the central management sever. The option is automatically set to off during imports and exports. You will need to change the status to on after an import.

   - **Site Polling Frequency**. How often the Report Database pings the management servers to see if a report cache refresh has completed. If the report cache refresh is done, the report database obtains the latest information.

     The Site Polling Frequency should be left at its default at one minute so that it can check frequently when a report cache refresh has ended.

   - **Sleep After Update**. If data has been collected during a site polling, the Report Database stops polling the management servers for the amount of time provided in the Sleep After Update field.

     For example, assume you have the site polling frequency set to one minute and the Sleep After Update value is set to 45 minutes. The report database will poll the management

servers every minute until it collects new data. After the new data is collected, the site polling will "sleep" for 45 minutes.

If the global refresh is taking an hour and the Sleep After Update is set to one minute, the Report Database will not start polling the management servers again until after the global refresh is complete.

If you want the data in the reports not to change in a dynamic environment where report cache refreshes change frequently, set the Sleep After Update option to a large value. Do not increase the Sleep After Update value to more than 2 hours (120 minutes). It is recommended that you set the Sleep After Update value to one minute if you update the report cache refresh daily.

For more detailed information about setting the Sleep After Update value so that your reports are available at a certain time, see "Obtaining Daily Reports" (on page 13) for information on how to configure settings.

- **Standard Report Use**. If you want information from all sites to appear in reports in Report Optimizer, you must select the Global option. If you select an individual site, then only data pertaining to that site is shown in the reports.

  If a CMS name is missing from the list, make sure it has been added. See "Setting Up the Reporting Sources" (on page 12).

  If the Report Database is installed on the same server as HP Storage Essentials, the Standard Report Use field is automatically populated.

4. Click the **Submit** button.

5. Click the **Get Data Now** button from the Set up Report Sources page.

   The **Get Data Now** button gathers data for reports from the report cache on each management server and merges the data in the Report Database, so the information is available to reports in Report Optimizer.

Setting Up the Reporting Sources

You must provide to the Report Database the DNS name or IP addresses of the management servers running HP Storage Essentials. The Report Database gathers report data from the management servers that are provided.

The database schemas of the management servers should be at the same version as those of the Report Database. If you have a management server with an older schema, you should upgrade it. The risk with running schemas at different version levels is that the information in the schemas might not appropriately map the data.

To add a server:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Select **Set up Report Sources** in the left pane.

3. Click **Add**.

4. In the **Site Name** field, provide a unique name for the management server. You could include the location of the management server in the site name; for example, `Boston_ managementserver1`.

5. In the **IP Address** field, provide the domain name or IP address of the management server running HP Storage Essentials.

6. To have the Report Database gather information immediately from the management server, click **Get Data Now**.

   A site ID is generated for each entry.

Icon	Definition
✓	The Report Database was able to contact the management server successfully.
⚠	The Report Database was able to connect to the management server, but there is a schema mismatch. Your reports will not be reliable from that management server, until the schema matches.
✗	The Report Database could not contact the management server.

About Global and Local Reports

If you want information from all sites to appear in reports in Report Optimizer, you must select the Global option in the **Standard Report Use** menu on the Configure Report Database page, as described in "Configuring the Report Database" (on page 11). If you select an individual site, then only data pertaining to that site is shown in the reports.

Obtaining Daily Reports

Assume you need to provide daily reports by 7 a.m. The steps in this section describe how to configure your environment so you receive those daily reports.

Information is gathered for the reports in the following order:

1. **Get Details**. The management server gathers information about the elements discovered by the management server.

2. **Local Report Cache Refresh**. The management server gathers information from the last successful Get Details. Get Details must be complete before the local cache refresh can begin.

3. **Global Copy**. The Report Database copies information from the report cache refresh of each management server.

4. **Global Merge**. The Report Database merges the information from the management servers.

As you can see, the processes depend on one another. If you have multiple management servers, the scheduling of these various processes can become tricky. This section splits the configuration of these processes into steps with the assumption you have at least five management servers.

The following is an example of how the different processes could be scheduled:

4:10 a.m. Get Details

6:10 a.m. Local Cache Refresh

6:25 a.m. Global Copy

6:50 a.m. Global Merge

7 a.m. Reports are Ready

The times provided would vary according to the environment. Let's first find the duration times of these processes for your environment. Once we have the duration times, we can work backwards from 7 a.m. with scheduling the processes.

Step 1 – Finding the Longest Duration of Get Details

Assume you have five management servers. Obtain the duration of the last successful Get Details of each of those management servers, so you know when to schedule Get Details so that it completes in time for the local report cache refresh. Obtain the duration times of Get Details for a management server by referring to the GAEDSummary<timestamp>.log file for each management server.

To access the log:

1. Select **Configuration** > **Product Health**.

2. Click **Download Discovery Summary**.

3. Save the zip file and then unzip it.

4. Open the GAEDSummary.log file in a text editor. If you are using NotePad, you might need to select **Format** > **Word Wrap**.

   The duration of Get Details is listed as Sync Duration, as shown in the following example:

   ```
   [Sync Duration:] 12 minutes 31 seconds
   ```

5. Write down the duration times for Get Details for each of the management servers. Make note of the longest duration time for Get Details. For example:

   - **Management server1**. Last successful Get Details took 2 hours.

   - **Management server2**. Last successful Get Details took 3 hours.

   - **Management server3**. Last successful Get Details took 3.5 hours.

   - **Management server4**. Last successful Get Details took 4 minutes.

   - **Management server5**. Last successful Get Details took 5 minutes.

Step 2 – Finding the Longest Local Report Cache Refresh

The duration of the report cache refresh is displayed by the Most Recent Refresh Successful Duration (hh:mm:ss.sss) field on the Reports tab, which is accessible by clicking **Configuration** > **Reports**.

Write down the duration times for all of your management servers. It is especially important to make note of the longest duration time. You will need this information later. For example:

- **Management server1**. Last successful report cache refresh took 16 minutes.

- **Management server2**. Last successful report cache refresh took 18 minutes.

- **Management server3**. Last successful report cache refresh took 20 minutes.

- **Management server4**. Last successful report cache refresh took 25 minutes.

- **Management server5**. Last successful report cache refresh took 30 minutes.

Step 3 – Finding the Duration of the Global Copy

To find the duration of the global copy:

1. Go to Report Optimizer.

2. Select the **Documentation List** menu.

3. In the left pane, select the Report Database Configuration Summary report under Report Pack in the Report Optimizer tree.

   The listing of times is displayed.

4. Look for the report durations for all of the sites.

5. Write down the amount of time it took for the global copy to complete for all of the sites.

Step 4 – Find the Duration of the Data Merge

Determine the amount of time it will take the Report Database combine the data from each of the global copies from the management servers.

1. Go to Report Optimizer.

2. Select the **Documentation List** menu.

3. In the left pane, select the Report Status report under Report Pack in the Report Optimizer tree.

   The listing of times is displayed.

4. Subtract the global start time from the global end time. Write down the duration.

Step 5 – Scheduling Data Collection

In this step, we will take the data you gathered from the previous steps to determine when to schedule the data collection so you receive updated reports in time. Assume you need reports ready by 7 a.m. Follow these steps to obtain the reports in time:

1. To find when the global merge would need to start, subtract the merge duration from 7 a.m. You found the merge duration in "Step 4 – Find the Duration of the Data Merge" (on page 15). Assume the merge duration is 10 minutes. The global merge would need to start at 6:50 a.m. at the latest.

2. To find the time when you need to start the global copy, subtract the duration of the global copy from 6:50 a.m. You found the duration of the global copy in "Step 3 – Finding the Duration of the Global Copy" (on page 15). Assume the global copy is 25 minutes for all of the sites. You would need the global copy to start at least by 6:25 a.m.

   You want to make sure your the global copy obtains the latest information. Set the frequency and your sleep update to one minute; otherwise, the global copy might not be able to copy all of the information by 7 a.m.

   For example, assume your sleep after update is set to 120 minutes and the frequency update is set to one minute. One of the local report cache refreshes ends early at 6:20 a.m. The global copy will start at 6:21 a.m. because it finds updated information in the local report cache refresh. The Report Database will not start another global copy until 120 minutes later at 8:21

a.m. because the sleep after update value is set to 120 minutes. As a result, the data in the reports provided at 7 a.m. will be incorrect for the management servers that had their report cache refresh end after 6:20 a.m.

3. To find the time when you need to start the local cache refresh, subtract the duration of the longest local cache refresh. Assume the longest local cache refresh is 10 minutes. Your local cache refreshes would need to start by 6:10 a.m.

4. Determine your starting time for Get Details. Find the longest duration for Get Details, and subtracted it from the start time of the local cache refreshes. For example, assume your start time for local cache refreshes is 6:10 a.m. and your longest Get Details is two hours. Get Details will need to start at least by 4:10 a.m.

The local report cache refresh waits for discovery to complete. So it is very important that you take into account variations for discovery times. You might want to check the duration times over several days and add a buffer as necessary. For example, if Get Details takes two hours some days and three hours other days, set Get Details to run at 3:10 a.m. instead of 4:10 a.m. so that the local report cache refresh can start at 6:10 a.m.

Checking the Report Database Status

To find the database status:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Click **Check Report Database Status** in the left pane.

3. Click **Check Report Database Status** in the right pane.

   The database status is shown in the lower pane.

4. To clear the pane, click **Clear All**.

Chapter 3

Managing the Report Database

Use the Report Database Admin Utility to manage your report database. See the subtopics in this section for more information.

"Updating the Host or Site Names" (on page 17)

"Deleting Entries for Management Servers" (on page 17)

"Changing the DB_SYSTEM_USER Password" (on page 17)

"Exporting the Report Database" (on page 18)

"Importing the Report Database" (on page 19)

"Re-initializing the Report Database" (on page 19)

"Resetting the Temp and Undo Tablespace" (on page 20)

"Restarting the Report Database" (on page 20)

"Downloading Log Files" (on page 20)

Updating the Host or Site Names

To update, a host or site name:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Select **Set up Report Sources** in the left pane.

3. Select the row containing the item you want to modify.

4. Click **Edit**.

5. Modify the information displayed in the **Site Name** and/or **Host Name** fields.

6. Click **OK**.

Deleting Entries for Management Servers

To delete one or more entries for management servers:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Select **Set up Report Source** in the left pane.

3. Select the entries you want to delete and click **Delete**.

Changing the DB_SYSTEM_USER Password

The Report Database uses the DB_SYSTEM_USER account to gather information from the management servers. You should change the password for DB_SYSTEM_USER to prevent unauthorized access. Use only the Report Admin Utility to make the changes.

The management server requires the password to have the following characteristics:

- A minimum of three characters

- Starts with a letter

- Contains only letters, numbers and underscores (_)

- Does not start or end with an underscore (_)

To change the password of a system account:

1. Access the Report Database Admin Utility on the new server:

   - **Windows**: Go to the `%REPORT_DATABASE_HOME%` directory. Then double-click **ReportAdmin.bat**.

   - **Linux**:

      i. Set the display if you are accessing the Report Database Admin Utility remotely.

      ii. Go to the `$REPORT_DATABASE_HOME` directory by entering the following at the command prompt:

         ```
         # cd $REPORT_DATABASE_HOME
         ```

      iii. Run the Report Admin Utility by entering the following at the command prompt:

         ```
         # sh ./ReportAdmin.sh
         ```

2. Click **Change Passwords** in the left pane of the Report Admin Database Utility.

3. Select DB_SYSTEM_USER from the **User Name** combo box.

4. Type the current password in the **Old Password** field.

5. Type the new password in the **New Password** field.

6. Retype the password in the **Confirm Password** field.

7. Click **Change**

   The Report Admin Utility changes the password for the specified account.

Exporting the Report Database

Use the Report Admin Utility to archive the reporting data.

During an export of the database, the Report Update Status is set to off. The Report Database stops polling data from the report sources on the central management severs during an export. After the export, the Report Update Status is set to on.

If the server is running Windows 2008, make sure user access control (UAC) is disabled. You cannot run the Report Admin Utility if UAC is enabled. For information on how to disable UAC, refer to the documentation for Windows 2008. Do not re-enable UAC. Re-enabling UAC might cause certain functionality not to work, such as exporting the database.

To export the database:

1. Access the Report Admin Utility as described in .

2. Click **Export Report Database** in the left pane.

3. The option **Include All Report Data** is selected by default.

If you deselect the **Include all report Data** option, only configuration information is saved. See "Configuring the Report Database" (on page 11) for more information about the active and standalone databases.

4. Click the **Browse** button to select a file path. Then, type a file name in the **File name** field. Then, click the **Open** button.

   Select a directory outside of the directory tree of the management server, so that if you remove the Report Database, you will not lose the saved database.

   The file name and its path is displayed in the Report Admin Utility. The.zip file extension is automatically added to the file name.

5. Click **Export Report Database**.

Importing the Report Database

You import report information exported previously by uploading a file (*.zip) containing the database information.

The software stores a snapshot of the data in its database. Since this file is a snapshot of the report information stored in the Report Database at a certain time, it might not contain the most current reporting data from the management servers.

During an import of the database, the Report Update Mode option is set to off. The Report Database stops polling data from the report sources on the central management sever.

To import a database:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Click **Import Report Database** in the left pane.

3. The option **Include All Report Data** is selected by default.

   The Include All Report Data option is selected when you want to include information about the active and standby databases for troubleshooting. When the option is not selected, only the information from the active database is provided. See "Importing the Report Database" (on page 19) for more information about the active and standby databases.

4. Click the **Browse** button. Select a database file with a.zip extension to import. Then, click the **Open** button.

   The file name is displayed in the Report Admin Utility.

5. Click the **Import Report Database** button.

6. Set the Report Update Mode to on, as described in "Configuring the Report Database" (on page 11).

Re-initializing the Report Database

Caution: Re-initializing the database removes everything from the database. This is not recommended unless you are sure about what you are doing. It is strongly suggested you export the database before you re-initialize it. See "Re-initializing the Report Database" (on page 19) for more information on how to save the database.

To re-initialize the database:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Click **Re-initialize Report Database** in the left pane.

3. Enter the password of the SYSTEM account, and click **OK**. The default password of the SYSTEM account is `manager`.

   You are notified when the re-initialization is complete.

4. Click the **Re-initialize Report Database** button.

Resetting the Temp and Undo Tablespace

The temporary and undo tablespace might grow large due to high database activity. You should regularly reset the temp and undo tablespace to its initial value, as described in this section.

To reset the tablespace:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Click **Reset Temp Tablespace** in the left pane.

3. Click the **Reset Temp Tablespace** button.

Restarting the Report Database

Use this feature in the Report Admin Utility to restart the database and its Oracle listener.

To restart the database:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. Click **Restart Report Database** in the left pane.

3. Click the **Restart Report Database** button.

Downloading Log Files

Use the Download Logs option to view log files generated by the Report Database. The Download Logs option saves all the log files in a zip file, which is prefixed with ReportDatabase_AllLogs and then stamped with the date and time (24-hour clock) in MMDD-HHmm format; for example, ReportDatabase_AllLogs1125-1235.zip.

Some of the log files are generated only when you run certain features. For example, the reports.log file is only generated when you run reports.

To download all of the log files for the Report Database:

1. Access the Report Admin Utility as described in "Accessing the Report Database" (on page 8).

2. In the Directory box at the top of the screen, enter the path to an existing directory or browse to a directory using the Browse button.

3. Click **Download Logs**. The log files are saved to a zip file which is copied to the directory you specified.