



CHAPTER 4

Managing the Collection Manager

Introduction

This chapter explains how to use utility scripts to view and update Collection Manager (CM) parameters. Any machine connected to the Collection Manager through, for example, Telnet or SSH, can use utility scripts to monitor and manage the Collection Manager. The utility scripts are located in the installation directory of the Collection Manager.

For information on managing the database and the CSV repository, see [Chapter 5, “Managing Databases and the Comma Separated Value Repository.”](#)

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Using Utility Scripts

General instructions for using utility scripts include:

- To invoke any script, log in as the `scmscm` user, except where otherwise noted. If you attempt to run these scripts as the root user, the script generates an error.
- To display a description of the script, with an explanation of all flags and parameters, invoke the script with the help flag.



Note

Specify the help flag differently depending on the script. To manage the Collection manager, specify `--help`. To manage the database, specify `-h`. See the definition for each script.

The following example shows how to display a description of the `dbperiodic.sh` script:

```
>~scmscm/scripts/dbperiodic.sh --help
Usage:
~scmscm/scripts/dbperiodic.sh --rdr --load
load configuration from
/export/home/scmscm/db_maint/dbperiodic.conf
~scmscm/scripts/dbperiodic.sh --rdr --loadfile=FILE
load configuration from FILE
~scmscm/scripts/dbperiodic.sh --dump
print the current configuration in INI format to standard output
~scmscm/scripts/dbperiodic.sh --help
print this help message
```

Collection Manager Support Information

If you are experiencing difficulties with the Collection Manager installation, you might need to provide the Cisco Technical Assistance Center (TAC) with information about the current system setup. The Collection Manager can create the required support information or files for TAC by running one of the following scripts:

- `~scmscm/unsupported/getinfo/get_cm_info.sh`—This script creates the Collection Manager support information.
- `~scmscm/unsupported/getinfo/get_support_files.sh`—This script creates a support file.

The output is a zip file with the investigation supporting files. The following example shows the output that results from running this script:

```
bash-2.05$ ~scmscm/unsupported/getinfo/get_support_files.sh
Gathering support files into Sun_14_Oct_2007_06-05-03_PM_JST.zip, please
wait.....done.
The generated support file contains the output of
~scmscm/unsupported/getinfo/get_cm_info.sh
```

Configuring the Collection Manager

Use utility scripts to:

- Specify which servers to activate at startup.
- Start or stop the database.
- Start or stop an adapter.
- Drop a Service Control Engine (SCE) connection.

Use the following scripts to configure the Collection Manager:

- `~scmscm/setup/on-boot.sh`
- `~scmscm/scripts/adapterconf.sh`
- `~scmscm/scripts/sceconf.sh`
- `~scmscm/scripts/dbconf.sh --rdr`

For information about scripts for managing the database and the CSV repository, see [Chapter 5, “Managing Databases and the Comma Separated Value Repository.”](#)

Use the following files to configure the Collection Manager:

- **cm.conf**—General configuration of the Collection Manager, including the adapters to turn on when the Collection Manager starts. See the “[Enabling Adapters](#)” section on page 4-4.
- **queue.conf**—Configuration of the adapter queues, including the RDR tags that are associated with a specific adapter. See the “[Configuring the Categorizer](#)” section on page 4-7.
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Activating Servers

To specify the servers (Collection Manager or Sybase) that are activated at startup, use the **on-boot.sh** script:

```
~scmscm/setup/on-boot.sh --cm=flag --sybase=flag
```

Changes take effect the next time the system restarts.



Note

To view the current startup status of each component, run the script with no parameters.

To restart the Collection Manager, run the following script as the scmscm user:

```
~scmscm/cm/bin/cm restart
```

Table 4-1 *on-boot.sh Options*

<code>--cm={ on off }</code>	Activate or do not activate the Collection Manager at startup.
<code>--sybase={ on off }</code>	Activate or do not activate the Sybase server at startup.

The following example shows how to set the Collection Manager and Sybase servers to run at startup. (This setting is the default setting of the script.)

```
>~scmscm/setup/on-boot.sh --cm=on --sybase=on
```

Controlling Adapters

To shut down or activate a configured adapter, use the **adapterconf.sh** script. You can use the **adapterconf.sh** script to list the Collection Manager adapters that are currently running:

```
~scmscm/scripts/adapterconf.sh --op=action [ --adapter=adapter name ]
```

Table 4-2 *adapterconf.sh Options*

<code>--op=start</code>	Activate the adapter specified by the adapter parameter.
<code>--op=stop</code>	Shut down the adapter specified by the adapter parameter.
<code>--op=list</code>	List the Collection Manager adapters that are currently running.
<code>adapter=adapter name</code>	Identify the adapter you want to control. Use only with the start and stop options.
<code>--help</code>	Display these options.

To shut down an adapter, as the scmscm user, run the following script:

```
~scmscm/scripts/adapterconf.sh --op=stop --adapter=adapter name
```

To activate an adapter, as the scmscm user, run the following script:

```
~scmscm/scripts/adapterconf.sh --op=start --adapter=adapter name
```

Enabling Adapters

To configure an adapter to turn on when the Collection Manager starts, remove the remark character at the start of the appropriate line in the **cm.conf** file.

The following example shows how to define the RAG adapter to turn on when the Collection Manager starts.

```
adapter.4 = com.cisco.scmscm.adapters.rag.RAGAdapter
```

The following example shows how to configure the CSV adapter to remain off when the Collection Manager starts.

```
#adapter.2 = com.cisco.scmscm.adapters.CSVAdapter
```

**Note**

The value of the **adapter.<number>** must match the **adapter_id** parameter value configured in the `queue.conf` file for the corresponding adapter.

Dropping an SCE Connection

To drop a connection to a particular SCE, run the **sceconf.sh** script:

```
~scmscm/scripts/sceconf.sh --op=drop --ip=IP address
```

Run this script only if the HTTP adaptor of the Collection Manager is running.

Also use this script to display information about the SCE connection. (See the “[Checking the SCE Connection](#)” section on page 4-16)

Table 4-3 *sceconf.sh* Options

Adapter= <i>IP address</i>	Drop the connection at the specified IP address.
--help	Display these options.

To drop an SCE connection, as the `scmscm` user, run the following command:

```
~scmscm/scripts/sceconf.sh --op=drop --ip=IP address
```

Configuring Databases

To configure a database, run the **dbconf.sh** script:

```
~scmscm/scripts/dbconf.sh --rdr
```

The script prompts you to choose the database type and the corresponding database configuration parameters.

The following example shows how to run the `dbconf.sh` script to configure the Collection Manager to work with an external Oracle database:

```
$ ~scmscm/scripts/dbconf.sh --rdr
Enter the DB type:
1 - Oracle
2 - MySQL
3 - Sybase
4 - exit
Enter your choice: 1
Enter Oracle server host (current is localhost) :10.56.216.80
Enter Oracle server listening port (current is 1521) :
Enter Oracle server instance id (current is apricot) :
Enter CM schema user name (current is pqb_admin) :
Enter CM schema user password (current is pqb_admin) :
Do you want to test the DB connection? (yes/no): yes
PASS:db is up
DB connection succeeded.
$
```

**Note**

Restart the Cisco Collection Manager for the configuration to take place.

Configuring the Timezone Offset

You can configure the timezone offset manually or automatically.

To configure the timezone offset (from GMT) manually, issue the following command:

```
~scmscm/cm/bin/jselect-sce-tz.sh --rdr --offset=offset-in-minutes
```

**Note**

Enter the offset in minutes.

For example, if the SCE is located in GMT+2, issue the following command:

```
~scmscm/cm/bin/jselect-sce-tz.sh --rdr --offset=120
```

For example, if the SCE is located in GMT-10, issue the following command:

```
~scmscm/cm/bin/jselect-sce-tz.sh --rdr --offset=-600
```

To configure the timezone offset (from GMT) automatically, issue the following command:

```
~scmscm/cm/bin/updatetimezone.sh --rdr
```

The `updatetimezone.sh` script calculates the offset in minutes and updates the `CONF_SE_TZ_OFFSET` table.

**Note**

Run the `updatetimezone.sh` script every time the timezone of the SCE is updated. For example, when updating the timezone to accommodate daylight savings time, remember to run the `updatetimezone.sh` script. The SCA Reporter does not use the correct time intervals unless the offset stored in the Collection Manager is consistent with the timezone of the SCE.

Configuring the Categorizer

The Categorizer classifies each RDR according to its RDR tag. You can route an RDR to a specific adapter by adding its RDR tag to the *tags* parameter (a comma-separated list of RDR tags) of the adapter. This configuration is contained in the **queue.conf** file.

The following example configures the RDR tags **4042321920** and **4042321922** to be sent to the **topper/aggregator (TA)** adapter.

```
# Topper/Aggregator Adapter
[topper-hi]
adapter_id=3
priority=3
warning_size=40000
maximum_size=50000
tags=4042321920,4042321922
```

**Note**

The value of the **adapter_id** parameter must match the **adapter.<number>** defined in the **cm.conf** file for the corresponding adapter.

Monitoring System Health

The Collection Manager contains a small, expandable framework that monitors the system and issues alerts for predefined, potentially problematic conditions.

Use the following scripts to monitor the Collection Manager:

- `~scmscm/setup/monitor/setup-monitor.sh`
- `~scmscm/setup/monitor/monitor.sh`

Installing the Periodic Checker

To insert (or remove) an entry for **monitor.sh**, the periodic checker script, in the cron (periodic scheduler) subsystem, run the **setup-monitor.sh** script:

```
~scmscm/setup/monitor/setup-monitor.sh -a flag [ -I flag ]
```

Table 4-4 *setup-monitor.sh Options*

<code>-a { install uninstall }</code>	Insert or remove an entry for monitor.sh in the cron.
<code>-i { 30m 1h 12h 24h }</code>	Run monitor.sh every 30 minutes, 1 hour, 12 hours, or 24 hours.

The following example shows how to install **monitor.sh** so that it runs every 30 minutes.

```
$ ./setup-monitor.sh -a install -i 30m
```

The following example shows how to uninstall **monitor.sh**.

```
$ ./setup-monitor.sh -a uninstall
```

Periodic Checker Script

The following sections provide information on the periodic checker script:

- [Periodic Checker Script, page 4-8](#)
- [Tests, page 4-9](#)

Periodic Checker Script

The periodic checker script, **monitor.sh**, calls a series of subscripsts that monitor different aspects of a running system:

```
~scmscm/setup/monitor/monitor.sh { -a | TEST NAME } [ -v ] [ -d ]
```

The script is not intended to be run from the command line, although you can do so. The script sends test results to the syslog subsystem and logs the results in the file `/var/log/messages`.

Table 4-5 *monitor.sh* Options

-a	Run all tests.
<i>TEST_NAME</i>	The names of one or more tests. A test name is the test filename, without the leading digits and trailing .sh.
-v	Output results in verbose mode. (Log successful tests.)
-d	Print results to window. (By default, results are sent to syslog.)

Any test returns a result in the following format:

STATUS: Message

- STATUS—PASS or FAIL
- Message—A short informative status message

For example, **FAIL: db "apricot" has only 1523 free blocks**

The following example shows how to run all available tests and print system output to the window:

```
$ ./monitor.sh -d -a
Test: 01free_db.sh. Status: PASS. Message: db apricot has 1532 free blocks
Test: 02cm_is_up.sh. Status: FAIL. Message: cm process is not running
```

The following example shows how to run one test to check that the installed database has sufficient free space:

```
$ ./monitor.sh -d free_db
Test: 01free_db.sh. Status: PASS. Message: db apricot has 1532 free blocks
```

Tests

You can run the following tests using **monitor.sh**:

- **db_up**—Checks that the Collection Manager database is running.
- **cm_up**—Checks that the Collection Manager application is running.
- **free_db**—Checks that the bundled Sybase database has at least 10-percent free space.
- **free_log**—Checks that the bundled Sybase database transaction log has at least 70-percent free space.
- **cm_persistent_buffers**—Checks that the persistent buffer of each Collection Manager adapter contains less than 500 files.

The scripts for all these tests are located in the `~/setup/monitor/tests` directory.

When calling a test called **test_name**, the script expects to find a file called **NNtest_name.sh**, where NN is a number that denotes script priority. For example, the test **free_db** is mapped to the file **01free_db.sh**.

Managing Users

The Collection Manager uses the **p3rpc** utility to manage users for authenticated RPC calls.

The command format is: **p3rpc OPERATION [OPTIONS]**

The following table lists **p3rpc** operations and options.

Table 4-6 *p3rpc Operations*

Operation	Description
--set-user --username=username --password=password	Adds and updates the username and password.
--validate-password --username=username --password=password	Validates the username and password.
--delete-user --username=username	Deletes a user configuration.
--show-users	Displays all configured users.

Examples

The following example shows how to add and update the username and password:

```
bash-2.05$ p3rpc --set-user --username=lulu --password=lili
Command terminated successfully
bash-2.05$
```

The following example shows how to validate the username and password. In this example, the user is successfully validated.

```
bash-2.05$ p3rpc --validate-password --username=lala --password=lala
Local machine: user lala was authenticated successfully : (auth level root)
Command terminated successfully
bash-2.05$
```

The following example shows how to validate the username and password. In this example, the user validation fails.

```
bash-2.05$ p3rpc --validate-password --username=lala --password=lulu
Error - Failed to authenticate user lala
bash-2.05$
```

The following example shows how to delete a user configuration.

```
bash-2.05$ p3rpc --delete-user --username=lulu
Command terminated successfully
bash-2.05$
```

The following example shows how to display all of the configured users. In this example, only one configured user exists: clu.

```
bash-2.05$ p3rpc --show-users
clu
Command terminated successfully
bash-2.05$
```

Managing Virtual Links

A script is included in the Collection Manager distribution that enables you to manage virtual link names and indexes that are configured for a specific SCE.

To show or set virtual links, run the **update_vlinks.sh** script:

```
~scmscm/cm/bin/update_vlinks.sh --sce=SCE IP address [ --file=file | --show ]
```

Table 4-7 *update_vlinks.sh* Options

<code>--sce=SCE IP --file=file</code>	Update the VLINK_INI table with the data in the supplied CSV formatted file for the specified SCE.
<code>--sce=SCE IP --show</code>	Query the VLINK_INI table for entries for the specified SCE.
<code>--help</code>	Display these options.

To set the virtual link details, as the scmscm user, run the following command:

```
~scmscm/cm/bin/update_vlinks.sh --sce=SCE IP address --file=file
```

The CSV file format is: link ID (positive integer), link direction (0=upstream, 1=downstream), name (string).

The script performs following validation steps on the file:

- The file exists.
- There are no duplicate virtual links IDs for each direction.
- The virtual link ID is a positive value from 0 to 1024.
- The direction is either 0 (upstream) or 1 (downstream).
- No duplicate virtual link names or empty names exist for each direction.
- Virtual link names can contain up to 256 characters. All printable characters with an ASCII code from 32 through 126 (inclusive) can be used; except for 34 ("), 39 ('), and 96 (^).

After the file is successfully validated, the script performs the following actions:

-
- Step 1** The input CSVfile must contain three data fields (VLINK_ID, VLINK_DIRECTION, VLINK_NAME) or six data fields (VLINK_ID, VLINK_DIRECTION, VLINK_NAME, CHANNEL_ID, CHANNEL_NAME, CMTS_NAME).
- Step 2** If the CSV file contains three data fields, the VLINK_INI table automatically fills the data for the rest of the columns.
- Step 3** All entries in the table that match the SCE_IP_Address and CHANNEL_ID, VLINK_DIRECTION and CHANNEL_NAME are deleted from the table.
- Step 4** The script adds two entries to the VLINK_INI table in the following format:
- Timestamp, sce ip, 0, 0, "Default Virtual Link Up,0, 0, "Default Virtual Link Up "
 - Timestamp, sce ip, 0, 1, "Default Virtual Link Down, 0, 1, "Default Virtual Link Down "

- Step 5** The script parses the CSV file and each line in the CSV file is entered as a record entry in the VLINK_INI table.
- Step 6** If the CSV file is empty, the script inserts default records into the VLINK_INI table.

Managing IMEI/MEID TAC with Device Types

The Cisco Collection Manager supports either GSM or CDMA mobile based reports. GSM reports are enabled by default. Once the Collection Manager is installed, the CSV file `~scmscm/cm/config/imeitac_device_map.csv` populates the IMEI_DEVICETYPE table with default values.

The MEID_DEVICETYPE table stores the CDMA Device Type mapping information in the database. You manually execute the `~scmscm/scripts/update_devicetype.sh` script to update the table. The default input mapping file is `~scmscm/cm/config/meidtac_device_map.csv`.

```
~scmscm/scripts/update_devicetype.sh
```

Table 4-8 *update_devicetype.sh Options*

<code>update_devicetype.sh --imei --r</code>	Removes all the existing records from the IMEI_DEVICETYPE Table.
<code>update_devicetype.sh --meid --r</code>	Removes all the existing records from the MEID_DEVICETYPE Table.
<code>update_devicetype.sh --imei --u</code>	Deletes all the existing records then updates the IMEI_DEVICETYPE table with the data given in the default CSV file.
<code>update_devicetype.sh --meid --u</code>	Deletes all the existing records then updates the MEID_DEVICETYPE table with the data given in the default CSV file.
<code>update_devicetype.sh --h</code>	Prints the usage message.

Update IMEI_DEVICETYPE table

To update the IMEI_DEVICETYPE table, add new TAC details to the CSV file `~scmscm/cm/config/imeitac_device_map.csv` following the format:

Manufacturer (string), Model (string), TAC (number).

Next, run the `/update_devicetype.sh` script using the `--u`.

```
~scmscm/scripts/update_devicetype.sh --imei --u
```

This deletes all the existing records then updates the IMEI_DEVICETYPE table with the data given in the default CSV file.

The `update_devicetype.sh` script performs the following actions:

- The script parses the CSV file `~scmscm/cm/config/imeitac_device_map.csv` and each line in the CSV file is entered as a record entry in the IMEI_DEVICETYPE table.
- If the TAC number is a positive value, records are considered valid. Otherwise, the records are ignored.

- If the script finds duplicate TAC entries, the first TAC entry is considered valid while the other entries are ignored.
- If the CSV file is empty, the script deletes all the existing records in the IMEI_DEVICETYPE table.

Update MEID_DEVICETYPE Table

To update the MEID_DEVICETYPE table, add new TAC details to the CSV file `~scmscm/cm/config/meid_device_map.csv` following the format:

Manufacturer (string), TAC (number).

Next, run the `update_devicetype.sh` script using the `--u`.

```
~scmscm/scripts/update_devicetype.sh --meid --u
```

This deletes all the existing records then updates the MEID_DEVICETYPE table with the data given in the default CSV file.

The `update_devicetype.sh` script performs the following actions:

- The script parses the CSV file `~scmscm/cm/config/meidtac_device_map.csv` and each line in the CSV file is entered as a record entry in the MEID_DEVICETYPE table.
- If the TAC number is a positive value, records are considered valid. Otherwise, the records are ignored.
- If the script finds duplicate TAC entries, the first TAC entry is considered valid while the other entries are ignored.
- If the CSV file is empty, the script deletes all the existing records in the MEID_DEVICETYPE table.

Managing the Peak Hour Configuration

You need to execute the `~scmscm/scripts/updatepeakconfig.sh` script before generating the peak hour reports. This script populates the `peak_hour_config` table with the default peak hour details. By default, the `peak_hour_config` table is not created.

The `updatepeakconfig.sh` script then prompts you to enter the peak hour range for any days you want to change from the default. If the value is not entered for the corresponding day, the current value shown in the prompt is considered the default value.

**Note**

Execute the `~scmscm/scripts/updatepeakconfig.sh` script once with default values before generating any peak hour reports.

The following output is an example of a Peak Hours configuration:

```
-bash-2.05b$ ~scmscm/scripts/updatepeakconfig.sh
Enter the Peak Hour Range for Monday (current is 18-21) :
Enter the Peak Hour Range for Tuesday (current is 18-21) :15-16
Enter the Peak Hour Range for Wednesday (current is 18-21) :15
Enter the Peak Hour Range for Thursday (current is 18-21) :
Enter the Peak Hour Range for Friday (current is 18-21) :
Enter the Peak Hour Range for Saturday (current is 16-19) :
Enter the Peak Hour Range for Sunday (current is 16-19) :
Peak Configurations successfully updated!!!
!!Restart CM for the new config to take effect!!
```

Monitoring the Collection Manager

You can use scripts to monitor system statistics that are relevant to the Collection Manager, such as:

- Percentage of free space in the database
- Rate of RDRs entering the Collection Manager
- SCE platform connection data
- Viewing database insertion rate statistics per table
- Viewing version information

Use the following scripts to monitor the Collection Manager:

- `~scmscm/scripts/dbfree.sh --rdr`
- `~scmscm/scripts/rdr-rate.sh`
- `~scmscm/scripts/sceconf.sh`
- `~scmscm/setup/alive.sh`
- `~scmscm/cm/bin/p3stats`
- `~scmscm/cm/bin/cm version`
- `~scmscm/cm/bin/cm dbversion`

Use the following scripts to configure the Collection Manager (see the [“Configuring the Collection Manager” section on page 4-3](#)). You can also run these scripts to display the relevant configuration:

- `~scmscm/setup/on-boot.sh`
- `~scmscm/scripts/adapterconf.sh`

Checking the Database Capacity

To display the percentage of free space in the database report tables and the associated transaction log, run the **dbfree.sh** script:

```
~scmscm/scripts/dbfree.sh --rdr
```

Use the script only with a bundled Sybase and MySQL databases.

Step 1 As the `scmscm` user, run the **dbfree.sh --rdr** script.

Checking the RDR Rate

To display the momentary total rate of reports entering the Collection Manager, run the **rdr-rate.sh** script

```
rdr-rate.sh
```

The output is a single floating-point number that represents the total rate per second of incoming RDRs (from all sources), which entered the Collection Manager in the past 5 seconds.

Use this script only if the HTTP adaptor of the Collection Manager is running.

Step 1 As the `scmscm` user, run the `rdr-rate.sh` script.

Checking the SCE Connection

To display information about the SCE connections, run the `sceconf.sh` script:

```
~scmscm/scripts/sceconf.sh --op=list
```

Use this script only if the HTTP Adaptor of the Collection Manager is running.

Also use the script to drop a connection from a particular SCE. See the [“Dropping an SCE Connection” section on page 4-5](#).

Step 1 As the `scmscm` user, run the `sceconf.sh` script.

```
~scmscm/scripts/sceconf.sh --op=list
```

Example

The following example shows SCE connection output:

```
>~scmscm/scripts/sceconf.sh --op=list
IP                               Rate                               Peak
-----
10.1.6.93                         0.71798986                       0.718
10.1.9.36                         0.14420895                       0.1442139
10.1.9.35                         0.0                               0.027929332
10.1.12.11                       0.0                               0.0
```

Verifying Server Operation

To verify that the server is functioning correctly, run the `alive.sh` script:

```
~scmscm/setup/alive.sh
```

The script verifies that the following components are operational:

- Collection Manager
- Database (in the bundled database case)
- Report tables (in the bundled database case)

If any component is down, the script issues an error message.

Step 1 As the `scmscm` user, run the `alive.sh` script



Note

It takes time for the components to initialize after a startup. After a restart, wait 5 minutes before running this script.

Viewing Database Statistics

To view the statistics of the Collection Manager database, run the p3stats command line utility (CLU).

```
~scmscm/cm/bin/p3stats [options]
```

Table 4-9 lists the p3stats options.

Table 4-9 p3stats Options

Option	Description
<code>--show-stats</code>	Displays statistics information in the format <DB RDR tag> <RDR rate> <peak RDR rate>
<code>--reset-stats</code>	Resets the statistics counters.



Note

The Collection Manager must be running for this CLU to operate.

The following example shows how to display the statistics of the Collection Manager database:

```
$ ~scmscm/cm/bin/p3stats --show-stats
LUR { rate=0, peak=0 }
MALUR { rate=0, peak=0 }
TR { rate=0, peak=0 }
VLUR { rate=0, peak=0 }
NUR { rate=0, peak=0 }
SUR { rate=0, peak=0 }
MEDIA { rate=0, peak=0 }
PUR { rate=0, peak=0 }
Command terminated successfully
$
```

Viewing Version Information

The Collection Manager includes two scripts to display the current version of the Collection Manager and of the database:

- cm version
- cm dbversion

The following example shows how to view the current Collection Manager version:

```
$ ~scmscm/cm/bin/cm version
CM CD Version 3.7.5 Build 102
```

The following example shows how to view the current database version:

```
$ ~scmscm/cm/bin/cm dbversion
CM:RDR Database
Sybase ase150/
```

