

Getting Started

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Using MRTG and RRDTool for Real-Time SNMP Monitoring

To produce graphics to monitor your network in real time using MRTG and RRDTool, follow these general steps.

SUMMARY STEPS

1. Install MRTG (requires Perl installation) and RRDTool
2. Install Cron or any other scheduling service
3. Install a web server. Configure the web server to allow CGI script execution and directories automatic listings. see [How to Install the CFG and CGI Files for Use by MRTG and RRDTool, page 3-5](#).
4. Create the RTM directory under the web server web documents directory tree. See [Chapter 1, "Overview"](#).
5. For each SCE device that you want to monitor, create the necessary CFG and CGI files. The CFG and CGI files reflect the service configuration applied to the monitored SCE devices. Cisco Service Control provides a utility to automatically create the files necessary to produce a range of pre-defined reports (see [Chapter 3, "Real-Time Monitoring Configuration Utility"](#) and [Real-Time Monitoring Configuration Utility, page 3-1](#)).
6. Install the MRTG CFG and Report CGI files on the RTM setup.
7. Configure the cron job to periodically invoke MRTG on the MRTG CFG files created for each SCE device.
8. Monitor the reports using a web browser.

DETAILED STEPS

- Step 1** Install MRTG (requires Perl installation) and RRDTool.
- Step 2** Install Cron or any other scheduling service.
- Step 3** Install a web server. Configure the web server to allow CGI script execution and directories automatic listings. see How to Install the CFG and CGI Files for Use by MRTG and RRDTool, page 3-5.
- Step 4** Create the RTM directory under the web server web documents directory tree. See Overview, page 1-1.
- Step 5** For each SCE device that you want to monitor, create the necessary CFG and CGI files. The CFG and CGI files reflect the service configuration applied to the monitored SCE devices. Cisco Service Control provides a utility to automatically create the files necessary to produce a range of pre-defined reports (see Chapter 3, “Real-Time Monitoring Configuration Utility” and Real-Time Monitoring Configuration Utility, page 3-1).
- Step 6** Install the MRTG CFG and Report CGI files on the RTM setup.
- Step 7** Configure the cron job to periodically invoke MRTG on the MRTG CFG files created for each SCE device.
- Step 8** Monitor the reports using a web browser.
- a. Browse to the root of the RTM directory and select an SCE device.
 - b. Select a report from the available reports listed on the left. [Figure 2-1](#) is a screen shot taken after selecting an SCE device.

Figure 2-1 Report Selection



This guide focuses on Step 5, creating the CFG and CGI files for MRTG and RRDTool. The SCA BB Real-Time Monitoring Configuration utility creates the necessary files from the specified PQB file or Service Configuration.

The other steps in this process are explained in detail in the relevant MRTG and RRDTool documentation (see [Chapter 1, “Overview”](#)).

Web Server Configuration

The web server configuration should be such that it enables the following two common web server features:

- Execution of CGI scripts—Reports are created on demand by browsing to a CGI script file that dynamically creates the report HTML page.
- Enable automatic listings of directories when there is no directory index (for example index.html)—Enabling this feature enables listing of the SCE platforms for which MRTG CFG file and report CGI files have been prepared.

Note that these features can be selectively enabled for the RTM directory only.

Apache Web Server Configuration

The following configuration instructions for the Apache Web Server reflect the general guidelines provided in [Web Server Configuration, page 2-3](#).

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- Step 1** Add a directory section for the RTM directory to the Apache configuration file httpd.conf. Use the following example as a template for the newly created section:

```
Directory "<Apache installation directory>/htdocs/<rtm directory>">
Options Indexes FollowSymLinks ExecCGIAllowOverride Indexes
Order allow,deny
</Directory>
```

- Step 2** Restart the Apache Web Server.
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Using the SCA BB Real-Time Monitoring Configuration Utility

To use rtmcmd to produce the files for MRTG and RRDTool, follow this procedure:

SUMMARY STEPS

1. If using rtmcmd for the first time, do the following:
2. Prepare a destination directory where the utility will save the CFG and CGI files. It is recommended that this directory will be different to the RTM folder where the CFG and CGI files will be installed.
3. Edit the user configuration file according to your setup (see [User Configuration File, page 3-3](#)). A sample configuration file (rtmcmf.cfg) is located in the bin directory under the utility installation directory.

4. Run `rtmcmd`, using the appropriate options and point it to the directories and configuration file you have prepared (see [rtmcmd Utility, page 3-2](#)).
5. Install these CFG and CGI files into your RTM setup (see [How to Install the CFG and CGI Files for Use by MRTG and RRDTool, page 3-5](#)).

DETAILED STEPS

- Step 1** If using `rtmcmd` for the first time, do the following:
- a. Install it (see [Installing the RTMCMD Utility and the RTM Report Templates](#))
 - b. Extract the templates distribution to a directory (see [Installing the RTMCMD Utility and the RTM Report Templates](#))
- Step 2** Prepare a destination directory where the utility will save the CFG and CGI files. It is recommended that this directory will be different to the RTM folder where the CFG and CGI files will be installed.
- Step 3** Edit the user configuration file according to your setup (see [The User Configuration File, page 3-3](#)). A sample configuration file (`rtmcmf.cfg`) is located in the `bin` directory under the utility installation directory.

(This step may not be required each time you run the utility if the directory locations have not been changed.)

- Step 4** Run `rtmcmd`, using the appropriate options and point it to the directories and configuration file you have prepared (see the [rtmcmd Utility, page 3-2](#)).

`rtmcmd` writes the files to the specified destination directory. The destination directory contains:

- A sub-directory for each SCE platform containing CGI report files, the index HTML file, and the reports index HTML file.
- A sub-directory for MRTG CFG files containing an MRTG CFG file for each SCE device.
- Sample files for the configuration of the Cron application. There is one sample file for Windows and one sample file for Unix/Linux.
- A static directory containing CSS and image files.
- A `htaccess` file—When using the Apache web server, this file is used to exclude files or folders from the automatic listings of a directory.

The resulting CFG files are compatible with the SCA BB and SCE MIBs of releases 3.0.5 and above.

If `rtmcmd` fails, an error log is available at the following locations:

- Linux: “<USERPROFILE>/p-cube/servconf.log”
- Windows: “<user folder>\p-cube\servconf.log”.

- Step 5** Install these CFG and CGI files into your RTM setup (see [How to Install the CFG and CGI Files for Use by MRTG and RRDTool, page 3-5](#)).
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Installing the RTMCMD Utility and the RTM Report Templates

To install the SCA BB rtmcmd utility and RTM report templates, complete the following steps:

- [Installing the Java Runtime Environment, page 2-5](#)

Installing the Java Runtime Environment

To verify that the JRE is installed, run `java -version` from the command prompt; the Java version should start with 1.4 or 1.5.

The JRE can be downloaded from the Sun™ website, at: <http://java.sun.com/j2se/1.4.2/download.html>

If a different version of JRE is also installed on the workstation, you may need to tell `servconf` where to find the appropriate JRE by setting the `JAVA_HOME` environment variable to point to the JRE 1.4 installation directory. For example:

```
JAVA_HOME=C:\Program Files\Java\j2re1.4.2_08
```

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- Step 1** Locate the file `sca_bb_util.tgz` (located in the SCA BB distribution zip file), and copy it to a Windows or Linux workstation.
- Step 2** Unpack the file to a new folder.
- The SCA BB Real-Time Monitoring Configuration Utility, `rtmcmd`, is located under the `bin` folder.
- Step 3** Locate the file `scabb_rtm_templates_v3.0.5A_b05.zip`.
- The file is located on the Software Download of Cisco Service Control Application Suite for Broadband page at http://download-sj.cisco.com/cisco/cable/ServiceControl/scasbb/scabb_rtm_templates_v3.0.5A_b05.zip.
- Step 4** Download and copy the `scabb_rtm_templates_v3.0.5A_b05.zip` file to a Windows or Linux workstation.
- Step 5** Unpack the file to a new folder.
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