

Managing Configuration Files

SYSTEM ADMINISTRATOR GUIDE

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Managing Configuration Files

This document provides an overview of file storage, system image, boot files, and configuration files, URL access to system files, and describes the tasks that are used to load and save system configuration files through the operating system.

For a description of the tasks used to administer file storage and releases, see *Command List*. For information about upgrading the Boot ROM and Minikernel, see *Installing the SmartEdge OS*.

For information about accessing the Boot ROM interface (also known as the OFW or NetBSD shell) and useful Boot ROM commands, see *Basic Troubleshooting Techniques*.

Note: In the following descriptions, the term controller card applies to the Cross-Connect Route Processor (XCRP4) Controller card, including the controller carrier card unless otherwise noted.

The term controller carrier card refers to the controller functions on the carrier card within the SmartEdge™ 100 chassis. The term I/O carrier card refers to the traffic card functions on the carrier card; these functions are compatible with the similar functions that are implemented on the traffic card that are supported on all other SmartEdge routers.

This document applies to both the Ericsson SmartEdge® and SM family routers. However, the software that applies to the SM family of systems is a subset of the SmartEdge OS; some of the functionality described in this document may not apply to SM family routers.

For information specific to the SM family chassis, including line cards, refer to the SM family chassis documentation.

For specific information about the differences between the SmartEdge and SM family routers, refer to the Technical Product Description *SM Family of Systems* (part number 5/221 02-CRA 119 1170/1) in the **Product Overview** folder of this Customer Product Information library.





2 About Files and Storage

This section describes software storage organization, configuration files, storage for system images and configuration files and provides useful URLs.

2.1 Software Storage Organization

Each SmartEdge router can contain one or two controller cards. If there are two controller cards, one is active and the other is standby. Each controller card has two internal compact-flash cards: one to store the operating system, configuration, and other system files, and one to store the low-level software. The compact-flash card for the low-level software is not accessible from the command-line interface (CLI).

The compact-flash card stores the operating system files. Storage on the compact-flash card is divided into three independent partitions: p01, p02, and /flash:

- The p01 and p02 partitions are system boot partitions used to store operating system image files; one is the active partition and one is the alternate partition.

The active partition always stores the current operating system image files; the alternate partition is either empty or stores the operating system image files from a previous release.

The controller cards in the SmartEdge router ship with the current operating system release, which consists of many files, installed in the active partition, either p01 or p02. The system is configured to automatically load the release installed on the active partition when the system is powered up.

- The /flash partition is configured as a UNIX-based local file system device and is used to store configuration files, core dump files, and other operating system files.
- The size of the compact flash cards in the active and standby controllers cards need not match, but both controllers cards must have at least 192 MB capacity.

You can also install a 1-GB mass-storage device in the external slot of a controller card for additional storage space. The device is divided into two independent partitions, a UNIX-based file system, /md, and a partition to store operating system core dumps.

Note: If you install a mass-storage device in the active controller card, you must also install one in the standby controller card.



2.2 Configuration Files

A configuration file is a script of configuration commands that can be loaded into the system. Configuration files can contain partial configurations and more than one can be read at any time. This allows you to keep sequences of commands that may be required from time to time.

A configuration file can have two versions: a text version and a binary version. The system generates both versions of the file when you enter the **save configuration** command (in exec mode).

By default (if a different file has not been specified with the **boot configuration** command, in global configuration mode), the system automatically loads the binary version of the system configuration file, *redback.bin*, from the local file system during system power on or reload. If the binary version does not exist, or if it does not match the *redback.cfg* file, the system loads the *redback.cfg* file.

The *redback.cfg* file is loaded on the file system at the factory, but if the file does not exist, the system automatically generates a minimal configuration. You can then begin to modify the configuration.

You can modify the active system configuration in both of the following ways:

- You can change the system configuration interactively.
- You can create and modify configuration files offline.

An interactive configuration consists of beginning a CLI session, and then accessing global configuration mode by entering the **configure** command (in exec mode). In global configuration mode, you can enter any number of configuration commands.

An offline configuration allows you to enter configuration commands using any text editor and save the file to be loaded by the operating system at a later time.

The operating system supports comment lines within configuration files. To add a comment to your configuration file, simply begin the line using the exclamation point (!) key. When you load a configuration file, any line that begins with the ! key is not processed as a command.

2.3 Storage for System Images and Configuration Files

System images and configuration files can be stored locally in the /flash partition on the internal compact-flash card or in the /md partition on the mass-storage device.

You can also store them on a remote server and access them using the File Transfer Protocol (FTP), Remote Copy Protocol (RCP), Secure Copy Protocol (SCP), Secure Shell FTP (SFTP), or Trivial FTP (TFTP).



You can also use the enterprise Management Information Base (MIB), RBN-CONFIG-FILE-MIB, to save and load configuration files to and from a TFTP or FTP server. The server must be reachable through one of the system ports.

Note: For operations that request the use of transfer protocol, such as FTP, SCP, or TFTP, it is assumed that there is a system configured and reachable by the SmartEdge router to service these requests.

2.4 URLs

Many SmartEdge router commands use a URL to access a file. For details on a particular command, see the *Command List*. When referring to a file on the local file system, the URL takes the following form:

```
[/device][//directory]/filename.ext
```

Configuration files can be stored on the local file system (/flash) or on the mass-storage device (/md) on a SmartEdge router. The *device* argument can be **flash**, or if a mass-storage device is installed, **md**. If the *device* argument is not specified, the default value is the device in the current working directory. If the *directory* argument is not specified, the default value is the current directory. Directories can be nested. The *filename* argument can be up to 256 characters in length.

You can also access files using the FTP, RCP, SCP, SFTP, or TFTP. Table 1 describes the syntax for the *url* argument when accessing a remote server.

Table 1 URL Syntax for Accessing a Remote Server

Server Protocol	URL Format
FTP, SCP, or SFTP	<pre>ftp://username[:passwd]@{ip-addr hostname}[//directory]/filename.ext scp://username[:passwd]@{ip-addr hostname}[//directory]/filename.ext sftp://username[:passwd]@{ip-addr hostname}[//directory]/filename.ext</pre>
RCP	<pre>rnp://username@{ip-addr hostname}[//directo ry]/filename.ext</pre>
TFTP	<pre>ftp://{ip-addr hostname}[//directory]/filenam e.ext</pre>



Note: Use double slashes (//) if the path name to the directory on the remote server is an absolute pathname; use a single slash (/) if it is a relative path name (under the hierarchy of username account home directory).

You can specify the *hostname* argument only if the Domain Name System (DNS) is enabled with the `ip domain-lookup`, `ip domain-name`, and `ip name-servers` commands (in context configuration mode). For more information, see the *Command List*.



3 Manage Configuration Files

To load and save configuration files, perform the tasks described in Table 2.

Table 2 Load and Save Configuration Files

Task	Root Command	Notes
Set the boot configuration file.	<i>boot configuration</i>	Enter this command in global configuration mode.
Load a configuration file.	<i>configure (URL)</i>	Enter the configure command in exec mode. You must specify the URL of the file.
Save the running configuration to a specified file on the local or a remote file system.	<i>save configuration</i>	Enter the save configuration command in exec mode. You must specify the URL of the file.





4 Example: Managing Configuration Files

The following example loads the configuration file, *test.cfg* and merges the *test.cfg* with the running configuration:

```
[local]Redback#configure test.cfg besteffort verbose
```