Configuring Boot File Options with CLI

This section provides information to configure BOF parameters with CLI.

Topics in this section include:

BOF Configuration Overview

Alcatel-Lucent 7750 SR routers do not contain a boot EEPROM. The boot loader code is loaded from the boot.ldr file. The BOF file performs the following tasks:

1. Sets up the CPM/ Ethernet port (speed, duplex, auto).
2. Assigns the IP address for the CPM/Ethernet port.
3. Creates static routes for the CPM/ Ethernet port.
4. Sets the console port speed.
5. Configures the Domain Name System (DNS) name and DNS servers.
6. Configures the primary, secondary, tertiary configuration source.
7. Configures the primary, secondary, and tertiary image source.
8. Configures operational parameters.

Basic BOF Configuration

The parameters which specify location of the image filename that the router will try to boot from and the configuration file are in the BOF.

The most basic BOF configuration should have the following:

- Primary addressPrimary image location
- Primary configuration location

Following is a sample of a basic BOF configuration.

```
A:SR-45# show bof
===============================================================================
BOF (Memory)
===============================================================================
    primary-image    cf3:/4.0.R20
    primary-config   cf3:/ospf_default.cfg
    addres           138.120.189.53/24 active
    static-route     138.120.0.0/16 next-hop 138.120.189.1
    static-route     172.0.0.0/8 next-hop 138.120.189.1
    autonegotiate
    duplex           full
    speed            100
    wait             3
    persist          on
    console-speed    115200
===============================================================================
A:SR-45#
```

Common Configuration Tasks

The following sections are basic system tasks that must be performed.

For details about hardware installation and initial router connections, refer to the specific 7750 SR hardware installation guide.

Searching for the BOF

The BOF should be on the same drive as the boot loader file. If the system cannot load or cannot find the BOF then the system checks whether the boot sequence was manually interrupted. The system prompts for a different image and configuration location.

The following example displays an example of the output when the boot sequence is interrupted.

```
...

Hit a key within 3 seconds to change boot parms...

You must supply some required Boot Options. At any prompt, you can type:
   "restart" - restart the query mode.
   "reboot"  - reboot.
   "exit"    - boot with with existing values.

Press ENTER to begin, or 'flash' to enter firmware update...

Software Location
-----------------
   You must enter the URL of the TiMOS software.
   The location can be on a Compact Flash device,
   or on the network.

   Here are some examples
      cf3:/timos1.0R1
      ftp://user:passwd@192.168.xx.xxx/./timos1.0R1
      tftp://192.168.xx.xxx/./timos1.0R1

The existing Image URL is 'ftp://vxworks:vxw0rks@192.168.xx.xxx/./rel/0.0/xx'
Press ENTER to keep it.
Software Image URL:
Using: 'ftp://vxworks:vxw0rks@192.168.xx.xxx/./rel/0.0/xx'

Configuration File Location
---------------------------
   You must enter the location of configuration
   file to be used by TiMOS.  The file can be on
   a Compact Flash device, or on the network.

   Here are some examples
      cf1:/config.cfg
      ftp://user:passwd@192.168.xx.xxx/./config.cfg
      tftp://192.168.xx.xxx/./config.cfg

The existing Config URL is 'cf3:/config.cfg'
Press ENTER to keep it, or the word 'none' forno  Config URL.
Config File URL:
Using: 'cf3:/config.cfg'

Network Configuration
---------------------
   You specified a network location for either the
   software or the configuration file.  You need to
```

```
   assign an IP address for this system.

   The IP address should be entered in standard
   dotted decimal form with a network length.
       example:   192.168.xx.xxx/24
```

Displays on no n-Redundant Models I

```
The existing IP address is 192.168.xx.xxx/20. Press ENTER to keep it.
Enter IP Address:
Using: 192.168.xx.xxx/20
```

Display on Redundant models

```
The existing Active IP address is 192.168.xx.xxx/20. Press ENTER to keep it.
Enter Active IP Address:
Using: 192.168.xx.xxx/20

The existing Standby IP address is 192.168.xx.xxx/20. Press ENTER to keep it.
Enter Standby IP Address (Type 0 ifno ne desired):
Using: 192.168.xx.xxx/20



Would you like to add a static route? (yes/no) y

Static Routes
-------------
   You specified network locations which require
   static routes to reach. You will be asked to
   enter static routes until all the locations become
   reachable.

   Static routes should be entered in the following format:
   prefix/mask next-hop ip-address
       example:     192.168.xx.xxx/16 next-hop 192.168.xx.xxx

Enter route: 1.x.x.0/24 next-hop 192.168.xx.xxx
OK

Would you like to add another static route? (yes/no) n



New Settings
------------
    primary-image    ftp://vxworks:vxw0rks@192.168.xx.xx/./rel/0.0/xx
    primary-config   cf3:/config.cfg
    address          192.168.xx.xx/20 active
    primary-dns      192.168.xx.xx
    dns-domain       xxx.xxx.com
    static-route     1.x.x.0/24 next-hop 192.168.xx.xxx
    autonegotiate
    duplex           full
    speed            100
    wait             3
    persist          off


Do you want to overwrite cf3:/bof.cfg with the new settings? (yes/no): y
Successfully saved the new settings in cf3:/bof.cfg
```

Accessing the CLI

To access the CLI to configure the software for the first time, follow these steps:

- When the SF/CPM is installed and power to the chassis is turned on, the SR OS7750 SR OS MG software automatically begins the boot sequence.
- When the boot loader and BOF image and configuration files are successfully located, establish a router connection (console session).

Console Connection

To establish a console connection, you will need the following:

- An ASCII terminal or a PC running terminal emulation software set to the parameters shown in the table below.
- A standard serial cable with a male DB9.

Table 20: Console Configuration Parameter Values

Parameter	Value
Baud Rate	115,200
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

Figure 11 displays an example of the Console port on a front panel.

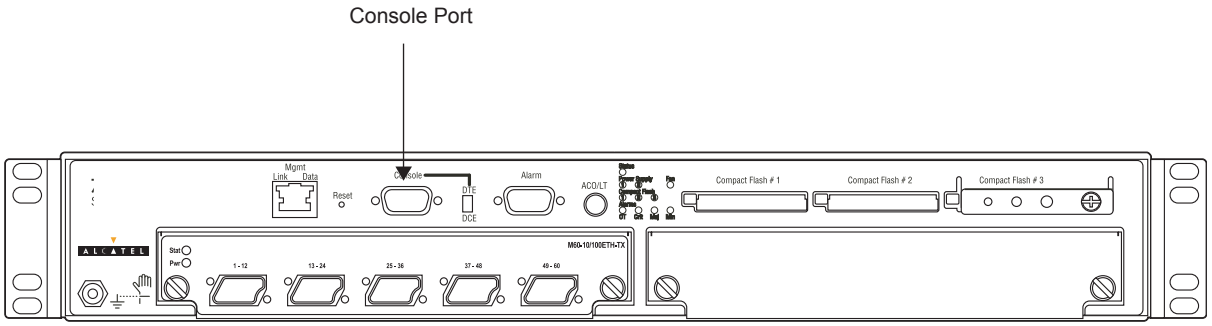

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Figure 11: Front Panel Console Port

To establish a console connection:

Step 1 Connect the terminal to the Console port on the front panel using the serial cable.

Step 2 Power on the terminal.

Step 3 Establish the connection by pressing the <Enter> key a few times on your terminal keyboard.

Step 4 At the router prompt, enter the login and password.

The default login is `admin`.
The default password is `admin`.

Configuring BOF Parameters

The following output displays a BOF configuration:

```
A:ALA-1>bof# show bof
===============================================================
Memory BOF
===============================================================
no autonegotiate
duplex      full
speed      100
address    10.10.xx.xx/20 active
wait    3
primary-image cf3:\both.tim
primary-config cf3:\test123.cfg
primary-dns 192.168.xx.xx
persist     on
dns-domain test.alcatel.com
===============================================================
A:ALA-1>bof#
```

Service Management Tasks

This section discusses the following service management tasks:

System Administration Commands

Use the following administrative commands to perform management tasks.

CLI Syntax:
```
A:ALA-1# admin
 display-config
 reboot [active|standby|upgrade][hold][now]
 save [file-url] [detail] [index]
```

Viewing the Current Configuration

Use one of the following CLI commands to display the current configuration. The *detail* option displays all default values. The *index* option displays only the persistent indices. The `info` command displays context-level information.

CLI Syntax:
```
admin# display-config [detail|index]
info detail
```

The following displays an example of a configuration file:

```
A:7750-3>admin# display-config
# TiMOS B-1.0.Ixxx - Copyright (c) 2000-2007 Alcatel, Inc.
# Built on Tues Jan 21 21:39:07 2007 by builder in /rel1.0/xx/panos/main

# Generated WED Jan 31 06:15:29 2007 UTC

exit all
configure
#------------------------------------------------
echo "System Configuration"
#------------------------------------------------
    system
        name "7750-3"
        contact "Fred Information Technology"
```

```
        location "Bldg.1-floor 2-Room 201"
        clli-code "abcdefg1234"
        coordinates "N 45 58 23, W 34 56 12"
        ccm 1
        exit
        snmp
        exit
        login-control
            idle-timeout 1440
            motd text "7750-3"
        exit
        time
            sntp
                shutdown
            exit
            zone UTC
        exit
        thresholds
            rmon
            exit
        exit
    exit...
...
#------------------------------------------------
echo "Redundancy Configuration"
#------------------------------------------------
    redundancy
        synchronize boot-env
    exit
...exit all

# Finished FRI Nov 21 15:06:16 2008 UTC
A:7750#
```

Modifying and Saving a Configuration

If you modify a configuration file, the changes remain in effect only during the current power cycle unless a `save` command is executed. Changes are lost if the system is powered down or the router is rebooted without saving.

- Specify the file URL location to save the running configuration. If a destination is not specified, the files are saved to the location where the files were found for that boot sequence. The same configuration can be saved with different file names to the same location or to different locations.
- The **detail** option adds the default parameters to the saved configuration.
- The **index** option forces a save of the index file.
- Changing the active and standby addresses without reboot standby CPM may cause a boot-env sync to fail.

The following command saves a configuration:

CLI Syntax: `bof# save [cflash-id]`

Example:
```
A:ALA-1# bof
A:ALA-1>bof# save cf3:
A:ALA-1>bof#
```

The following command saves the system configuration:

CLI Syntax: `admin# save [file-url] [detail] [index]`

Example:
```
A:ALA-1# admin save cf3:\test123.cfg
Saving config.# Saved to cf3:\test123.cfg
... complete
A:ALA-1#
```

NOTE: If the `persist` option is enabled and the `admin save file-url` command is executed with an FTP path used as the *`file-url`* parameter, two FTP sessions simultaneously open to the FTP server. The FTP server must be configured to allow multiple sessions from the same login, otherwise, the configuration and index files will not be saved correctly.

Deleting BOF Parameters

You can delete specific BOF parameters. The **no** form of these commands removes the parameter from configuration. The changes remain in effect only during the current power cycle unless a `save` command is executed. Changes are lost if the system is powered down or the router is rebooted without saving.

Deleting a BOF address entry is not allowed from a Telnet session.

Use the following CLI syntax to save and remove BOF configuration parameters:

CLI Syntax: `bof# save [cflash-id]`

Example:
```
A:ALA-1# bof
A:ALA-1>bof# save cf3:
A:ALA-1>bof#
```

CLI Syntax:
```
bof#
 no address ip-address/mask [active | standby]
 no autonegotiate
 no console-speed
 no dns-domain
 no li-local-save
 no li-separate
 no primary-config
 no primary-dns
 no primary-image
 no secondary-config
 no secondary-dns
 no secondary-image
 no static-route ip-address/mask next-hop ip-address
 no tertiary-config
 no tertiary-dns
 no tertiary-image
```

Saving a Configuration to a Different Filename

Save the current configuration with a unique filename to have additional backup copies and to edit parameters with a text editor. You can save your current configuration to an ASCII file.

Use either of the following CLI syntax to save a configuration to a different location:

CLI Syntax: `bof# save [cflash-id]`

Example:
```
A:ALA-1# bof
A:ALA-1>bof# save cf3:
A:ALA-1>bof#
```

or

CLI Syntax: `admin# save [file-url] [detail] [index]`

Example:
```
A:ALA-1>admin# save cf3:\testABC.cfg
Saving config.# Saved to cf3:\testABC.cfg
... complete
A:ALA-1#
```

Rebooting

When an **admin>reboot** command is issued, routers with redundant CPM are rebooted as well as the IOMs. Changes are lost unless the configuration is saved. Use the **admin>save** *file-url* command to save the current configuration. If no command line options are specified, the user is prompted to confirm the reboot operation.

Use the following CLI syntax to reboot:

CLI Syntax: `admin# reboot [active|standby|upgrade][hold][now]`

Example:
```
A:ALA-1>admin# reboot
A:DutA>admin# reboot

Are you sure you want to reboot (y/n)? y

Resetting...OK

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license agreements.
....
```