



# **Brocade<sup>®</sup> Fabric OS<sup>®</sup> Maintenance Account Command Reference Manual, 9.2.x**

**Technical Reference Manual  
April 28, 2023**

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# Chapter 1: Introduction

This document describes the commands that can be issued using a default maintenance role and account for better troubleshooting.

## 1.1 Supported Hardware

The following hardware platforms are supported by Brocade® Fabric OS® v9.2.x.

### 1.1.1 Brocade Gen 7 (64G) Fixed-Port Switches

- Brocade G720 Switch
- Brocade G730 Switch
- Brocade 7850 Extension Switch

### 1.1.2 Brocade Gen 7 (64G) Directors

For ease of reference, Brocade chassis-based storage systems are standardizing on the term *director*. The legacy term *backbone* can be used interchangeably with the term *director*.

- Brocade X7-4 Director
- Brocade X7-8 Director

### 1.1.3 Brocade Gen 6 (32G) Fixed-Port Switches

- Brocade G610 Switch
- Brocade G620 Switch
- Brocade G630 Switch
- Brocade 7810 Extension Switch
- Brocade G648 Blade Server SAN I/O Module
- Brocade MXG610 Blade Server SAN I/O Module

### 1.1.4 Brocade Gen 6 (32G) Directors

- Brocade X6-4 Director
- Brocade X6-8 Director

## 1.2 CLI Usage Conventions

- Some Fabric OS show commands display certain switch or fabric components in three-digit decimal numbers, for example, 003. When you use these numeric identifiers as input to other commands, you must remove the leading zeros; otherwise the commands will fail or generate incorrect results. Adding zeros to any decimal number in command input will cause that number to be treated as an octal number.
- The entire command line (both commands and options) is case-sensitive. Selected command names and options may also support Java-style capitalization. Java-style capitalization means that while `bannershow` and `bannerShow` both work, `BANNERSHOW` and `BannerShow` do not work. Command options, on the other hand, are strictly case-sensitive, and therefore only lowercase or Java-style capitalization can be entered depending on each option. This means that while the `-USB` option of the `configDownload` command works, the `-usb` option does not work. Refer to the command syntax for explicit instructions on supported capitalization for each command and its options.

- Almost all commands have both Hungarian and all lowercase notations. Entries for both these notations are in the execution path. Users may execute a command in either notation. FOS documentation uses both notations interchangeably in online and offline man pages.
- When command examples in this reference manual show user input enclosed in quotation marks, the quotation marks are required. Example: `zonecreate "zonename"` requires that the value for `zonename` be in quotation marks.
- Automatic page breaks in CLI command output are being phased out. Use the `more` option to display command output with page breaks: `command | more`. Do not use the `more` option in conjunction with help pages. Issuing `help command | more` displays a "no manual entry for command" message.

## 1.3 Contacting Technical Support for Your Brocade® Product

If you purchased Brocade® product support from a Broadcom® OEM or solution provider, contact your OEM or solution provider for all your product support needs.

- OEM/solution providers are trained and certified by Broadcom to support Brocade products.
- Broadcom provides backline support for issues that cannot be resolved by the OEM or solution provider.
- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information on this option, contact Broadcom or your OEM.
- For questions regarding service levels and response times, contact your OEM or solution provider.

If you purchased Brocade product support directly from Broadcom, use one of the following methods to contact the Technical Assistance Center 24x7. For product support information and the latest information on contacting the Technical Assistance Center, go to [www.broadcom.com/support/fibre-channel-networking/contact-brocade-support](http://www.broadcom.com/support/fibre-channel-networking/contact-brocade-support).

| Online                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Telephone                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For nonurgent issues, the preferred method is to log on to the Support portal at <a href="http://support.broadcom.com">support.broadcom.com</a> . (You must initially register to gain access to the Support portal.) Once registered, log on and then select <b>Brocade Products</b> . You can now navigate to the following sites: <ul style="list-style-type: none"> <li>■ Case Management</li> <li>■ Software Downloads</li> <li>■ Licensing</li> <li>■ SAN Reports</li> <li>■ Brocade Support Link</li> <li>■ Training &amp; Education</li> </ul> | For Severity 1 (critical) issues, call Brocade Fibre Channel Networking Global Support at one of the phone numbers listed at <a href="https://www.broadcom.com/support/fibre-channel-networking/contact-brocade-support">https://www.broadcom.com/support/fibre-channel-networking/contact-brocade-support</a> . |

## 1.4 Document Feedback

Quality is our first concern. We have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission or if you think that a topic needs further development, we want to hear from you. Send your feedback to [documentation.pdl@broadcom.com](mailto:documentation.pdl@broadcom.com). Provide the publication title; topic heading; publication number and page number (for PDF documents); URL (for HTML documents); and as much detail as possible.

## Chapter 2: Using Maintenance Commands

This document details the default role and account in Fabric OS 9.2.x that you can use for troubleshooting or debugging Brocade Fabric OS devices. The maintenance account can issue maintenance commands in a controlled and audited login session with limited privileges. This protected account is primarily to be used by a Broadcom OEM or solution provider and Broadcom backline support when diagnosing an issue.

### 2.1 Audience

The target audience for this document is support personnel who diagnose issues on Brocade Fabric OS devices that are accessed through the new maintenance account. Refer to the *Brocade Fabric OS Command Reference Manual* for more information about other account-specific commands.

### 2.2 About the Maintenance Account and Role

The maintenance account can be accessed through SSH, Telnet, or a serial console. The maintenance account allows a maximum limit of 12 locally authenticated sessions to be shared between admin and maintenance accounts. Remote authenticated accounts that use the maintenance role have a maximum limit of four sessions.

The following include and exclude behaviors are for remote and locally authenticated maintenance users:

- The maximum limit of 12 sessions for locally authenticated maintenance users is excluded from the maximum limit of four sessions for remote users with the maintenance role. For example, if there are four sessions currently in use by remote users with the maintenance role, then locally authenticated maintenance users can still create 12 new sessions.
- The maximum limit of four sessions for remote users with the maintenance role is included in the maximum limit of 12 sessions for locally authenticated maintenance users. For example, if there are four sessions currently in use by locally authenticated maintenance users, then session creation will fail if a remote user with the maintenance role tries to create a new session.

The first time you log in to a new switch, you will receive a prompt for the default account password: `password`. You must change the default password during the first login attempt. By default, the maintenance account is disabled and must be enabled by an administrator using a CLI session or through a boot prompt. Logging in using public key authentication is not supported, and administrator accounts are not allowed to import the public key for the maintenance account through `sshutil`.

#### 2.2.1 Enabling the Maintenance Role through the CLI and Boot Prompt

Perform the following command to enable the maintenance role through a CLI session.

```
switch:admin> userconfig --change maintenance -e yes
```

**NOTE:** You cannot change another user's password using the `passwd` command through the maintenance account.

Perform the following steps to enable the maintenance role through a boot prompt:

1. Reboot the switch.
2. Press **ESC** to stop auto boot, and select **2** to enter the command shell.

**NOTE:** You can also use the `sboot <fospasswdreset | maint | auto>` command to switch to Single User Mode boot and enable the maintenance account on secure boot-enabled devices.

A disclaimer message is displayed for any account (remote or local) associated with the maintenance role:

This Fibre Channel switch is equipped with the Maintenance account that is intended for diagnostics and debugging purposes solely by the Equipment vendor's trained engineers. Improper use of functionality made available through the Maintenance account could cause significant harm and disruption to the operation of the SAN fabric.

Your use of the functionality made available through the Maintenance account is at your sole risk and you assume all liability resulting from such use. The Equipment vendor shall have no liability for any losses or damages arising from or relating to the use of the Maintenance account (and the functionality enabled thereby) by anyone other than the Equipment vendor's authorized engineers.

Proceeding with the usage of this switch as the Maintenance user explicitly indicates your agreement to the terms of this disclaimer.

## 2.2.2 AAA Accounts

The default maintenance account is associated with a new default maintenance role. The maintenance role can also be associated with remote authentication, authorization, and accounting (AAA) accounts. This role allows the execution of all admin commands and the set of maintenance commands specifically available to the maintenance role that are to be prefixed with the `serviceExec` command.

The following list describes the features of the remote accounts that have the maintenance role:

- The password policy and the account enable or disable status are as configured on the AAA server and are not enforced on the device. Authorization information of the maintenance account is as configured on the server or as mapped on the device for LDAP.
- AAA accounts must have the Brocade VSA data with all roles assigned only to maintenance. Other roles or a mix of roles are not allowed.
- The AAA maintenance account configured on the server with the maintenance role does not supersede the role on the device. The role on the device always results in the home Virtual Fabric (VF) as the default fabric ID (FID) and will have full chassis permissions.
- TACACS+ or RADIUS notifications of a password expiration timer for a user with a maintenance role are not supported.

The following items are examples of AAA accounts with the maintenance role:

### ■ LDAP

```
dn: cn=John,cn=Users,dc=mybrocade,dc=com
objectClass: user
objectClass: person
objectClass: uidObject
cn: John
sn: Doe
description: First user
brcdAdVfData: HomeLF=128;LFRoleList=maintenance:1-128;ChassisRole=maintenance
userPassword: password
uid: jdoe@mybrocade.com
```

### ■ RADIUS

```
jdoe Auth-Type := Local, User-Password == "password"
Brocade-Auth-Role = "maintenance",
Brocade-AVPairs1 = "HomeLF=128",
Brocade-AVPairs2 = "LFRoleList=maintenance:1-128",
Brocade-AVPairs3 = "ChassisRole=maintenance",
Brocade-Password-ExpiryDate = "11/10/2021",
Brocade-Password-WarnPeriod = "30"
```

### ■ TACACS+

```

user = jdoe {
  pap = clear "password"
  service = shell {
    set brcd-role = maintenance
    set brcd-AV-Pair1 = "homeLF=128;LFRoleList=maintenance:1-128"
    set brcd-AV-Pair2 = "chassisRole=maintenance"
  }
}

```

## 2.3 Firmware Upgrade, Downgrade, and Distribution Considerations

The following are to be considered during a firmware upgrade or downgrade:

- The following events occur when you upgrade the firmware from all releases earlier than Fabric OS v9.x to any Fabric OS v9.x release:
  - The admin is prompted to delete any user-defined accounts or roles with the name maintenance.
  - The default maintenance account and role are added with the default settings upon upgrade.
- The maintenance account and associated configuration are not distributed. Similarly, the configurations remain the same upon receiving PWD distribution.

## 2.4 Using serviceShell under the Maintenance Account

Use the `serviceShell` command to enable permissions for a Broadcom support engineer. The permissions allow the engineer to participate in a privileged debugging session on the switch. The `serviceShell` command is available only with the maintenance account, and the `serviceShell` command requires authentication through a valid token ID before it is active.

A privileged session requires the local maintenance user to complete the following tasks:

- Invoke a service shell session through SSH, Telnet, or the console. SSH inline is not supported.
- Obtain a valid token ID. See the [serviceShell Command](#) section for more details.
- For the duration of authorized access:
  - Multiple login and logout sessions are allowed within the authorized duration.
  - A Broadcom support engineer can access the service shell session by logging in again within the duration of authorized access if the session terminates because of inactivity, explicit session logout, or reboot.
- Enter the `--reset` option under the maintenance account to delete the token at the end of the session.

### NOTE:

- In VF mode, the current VF of maintenance is retained on the service shell.
- The `serviceExec` command is not supported during a service shell session.
- The service shell configured while Fabric OS is up and running cannot be used when FOS initialization fails or when FOS is up and running and Fabric OS initialization fails. The service shell must be reconfigured with `--reset` option and must be authenticated again.

## 2.5 serviceExec Command

### 2.5.1 Synopsis

```
serviceexec <serviceCmd>
serviceexec "<serviceCmd>"
serviceexec "<serviceCmd1>; <serviceCmd2>; <serviceCmd3>; ..."
```

### 2.5.2 Description

The `serviceExec` command allows the maintenance user to execute maintenance debug commands in Fabric OS. The `serviceExec` command and its supported commands are restricted to the maintenance account.

The `serviceExec` command takes a maintenance command as its argument. It allows a single command as input without quotes or single and multiple commands as input within quotes. The commands must be separated using a semicolon if multiple commands are executed together, for example, `serviceExec "fcrlogshow -m; df -h"`.

The `serviceExec` command is not supported through inline SSH. Also, interactive commands and mixed quotes are not supported in the execution of the `serviceExec` command. See [Chapter 3, Supported Maintenance Role Commands](#), for the list of supported commands.

The following example shows how to issue a command from the maintenance account.

```
switch:maintenance> serviceexec bladeportmap 3
miniS=0 chips/Minis=1 bports/chip=64
miniS=1 chips/Minis=1 bports/chip=64
minis_count=2 chip_count=2 port_count=128
```

| CTL    | BPt | UPt | SPt | MPt | CPt | IFi | GPt | M# | C# | Sw# | G# | ChID     | PBPt:ISL   | OID        |
|--------|-----|-----|-----|-----|-----|-----|-----|----|----|-----|----|----------|------------|------------|
| DIS 0  | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328000 |
| DIS 1  | 2   | 2   | 1   | 1   | 2   | 1   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328001 |
| DIS 2  | 3   | 3   | 2   | 2   | 3   | 2   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328002 |
| DIS 3  | 1   | 1   | 3   | 3   | 4   | 3   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328003 |
| DIS 4  | 4   | 4   | 4   | 4   | 5   | 4   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328004 |
| DIS 5  | 6   | 6   | 5   | 5   | 6   | 5   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328005 |
| DIS 6  | 7   | 7   | 6   | 6   | 7   | 6   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328006 |
| DIS 7  | 5   | 5   | 7   | 7   | 8   | 7   | 0   | 0  | 0  | 0   | 1  | CONDOR4+ | :No_Module | 0x43328007 |
| DIS 8  | 8   | 8   | 8   | 8   | 9   | 0   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x43328008 |
| DIS 9  | 10  | 10  | 9   | 9   | 10  | 1   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x43328009 |
| DIS 10 | 11  | 11  | 10  | 10  | 11  | 2   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x4332800a |
| DIS 11 | 9   | 9   | 11  | 11  | 12  | 3   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x4332800b |
| DIS 12 | 12  | 12  | 12  | 12  | 13  | 4   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x4332800c |
| DIS 13 | 14  | 14  | 13  | 13  | 14  | 5   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x4332800d |
| DIS 14 | 15  | 15  | 14  | 14  | 15  | 6   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x4332800e |
| DIS 15 | 13  | 13  | 15  | 15  | 16  | 7   | 0   | 0  | 0  | 0   | 2  | CONDOR4+ | :No_Module | 0x4332800f |

(output truncated...)

The following example displays a failure scenario when you execute the command with mixed quotes.

```
switch:maintenance> serviceexec "errdumpall" df
Error: Invalid maintenance command arglist specified
```



--show

Displays the status of the service shell.

### Examples

This example shows how to display the status when the service shell is not configured:

```
switch:maintenance> serviceshell --show
Service shell status : Not Configured
```

This example shows how to display the generated request token status:

```
switch:maintenance> serviceshell --show
Service shell status : Token generated
Service token       : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

This example shows how to display the number of failure attempts with the token status:

```
switch:maintenance> serviceshell --show
Service shell status      : Token generated
Service token            : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Number of failed attempts : 2
```

This example shows how to display the token authentication with the token validity and the remaining duration:

```
switch:maintenance> serviceshell --show
Service shell status      : Token authenticated
Service token remaining duration : 3 hours 28 mins 21 secs
Service token expiry time  : Wed Jun 15 14:01:53 2022 PST
```

--help

Displays the command usage.

## Chapter 3: Supported Maintenance Role Commands

This chapter summarizes the supported commands in the maintenance role.

### 3.1 Maintenance Role Commands with the serviceexec Prefix

The following table lists the supported commands in the maintenance role executed with the `serviceexec` prefix. If there is a Fabric OS initialization failure, some of the listed commands may not work as designed. These commands are limited in function or categorized as debug and are to be used in conjunction with Broadcom support.

**Table 1: Maintenance Role Commands Executed with the serviceexec Prefix**

| Command        | Argument                                                                                      | Description                                                                                                                                                                                                                                                                                    |
|----------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| arp            | —                                                                                             | Manipulates or displays the kernel's IPv4 network neighbor cache. It can add or delete entries to the table or display the current content. ARP stands for Address Resolution Protocol, which is used to find the media access control address of a network neighbor for a given IPv4 address. |
| bladefaultinfo | -rsn <faultycode>                                                                             | Displays the details of the faulty blade with the blade type, blade ID, model name, blade status, and faulty code with the SCN reason for the faulty blades. This command also accepts faulty code as input with the <code>-rsn</code> option.                                                 |
| bladeportmap   | <slot>                                                                                        | Displays the blade port mapping of a slot. For a chassis, the command takes the slot number as an argument; no argument is required for a switch.                                                                                                                                              |
| bootEnv        | -u                                                                                            | Sets or clears the boot environment configuration.                                                                                                                                                                                                                                             |
| burninerrclear | <slot_num>                                                                                    | Clears error that are stored in the nonvolatile storage on the slot during burn-in.                                                                                                                                                                                                            |
| burninerrshow  | <slot_num>                                                                                    | Displays error that are stored in the nonvolatile storage on the slot during burn-in.                                                                                                                                                                                                          |
| burninlevel    | <level><br>--show                                                                             | Sets the diagnostics burn-in level.                                                                                                                                                                                                                                                            |
| burninstatus   | --slot <slot_num>                                                                             | Displays the diagnostics burn-in status.                                                                                                                                                                                                                                                       |
| c4pregdump     | [slot/]chip                                                                                   | Stores the ASIC chip registers and values into a file for the given slot or chip. By default, they are stored in the <code>/var/regdump.dmp</code> file.                                                                                                                                       |
| c4regdump      | [slot/]chip                                                                                   |                                                                                                                                                                                                                                                                                                |
| c5regdump      | [slot/]chip                                                                                   |                                                                                                                                                                                                                                                                                                |
| cfgTest        | -dcfgdbhdr [=swno]<br>-dnewdbhdr<br>-dbhdrtest [=swno]<br>-dbftrtest [=swno]<br>-dbinfo<br>-h | Displays the statistics of the configuration database. This command takes the switch number as optional input for some of the command options.                                                                                                                                                 |
| chassisReboot  | —                                                                                             | Reboots the chassis.                                                                                                                                                                                                                                                                           |
| chkconfig      | -h, -s, -i, -f, -r                                                                            | Enables or disables Fabric OS daemons.                                                                                                                                                                                                                                                         |

**Table 1: Maintenance Role Commands Executed with the serviceexec Prefix (Continued)**

| Command         | Argument                                                                                                                                                              | Description                                                                                                                                                                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cleanup         | -n, -s, -p                                                                                                                                                            | This utility checks for any obsolete files that are in the file system that do not belong to any package, and then it removes them. These files may be output from the <code>firmwareCommit</code> command. The list of directories that are checked is in the <code>/etc/cleanup.conf</code> file. |
| configcommit    | —                                                                                                                                                                     | Commits a modified configuration.                                                                                                                                                                                                                                                                   |
| configremoveall | NULL<br>-all<br>-automatic<br>-fid<br>-h                                                                                                                              | Removes all the configuration data from a switch or a chassis.                                                                                                                                                                                                                                      |
| coreshow        | -l<br>-r<br>-R                                                                                                                                                        | Displays the core files or FFDC present on the switch. The command also runs interactively allowing all options.                                                                                                                                                                                    |
| dbgshow         | —                                                                                                                                                                     | Displays the debug levels of multiple modules in a platform and in the ASIC drivers.                                                                                                                                                                                                                |
| df              | -h<br>-H                                                                                                                                                              | Reports the amount of available and used disk space for the file system.                                                                                                                                                                                                                            |
| dft             | --show<br>--show -all<br>--show -flag <state><br>--help                                                                                                               | Displays the feature records grouped by the category name.                                                                                                                                                                                                                                          |
| diagfecstats    | -slot <slot no><br>-uports <user portlist><br>-ports <blade portlist>                                                                                                 | Debugs 64G optics and displays the FEC error counters when the <code>minicycletest</code> command runs in parallel.                                                                                                                                                                                 |
| diagsetcycle    | <script_name><br>-current<br>-show<br>-default<br><-keyword value>                                                                                                    | Sets diagnostic script parameters.                                                                                                                                                                                                                                                                  |
| dmesg           | -C, -c, -d, -D, -E, -f, -H, -k,<br>-L, -l, -n, -P, -r, -S, -s, -u,<br>-w, -x, -d, -e, -T, -t                                                                          | Displays kernel debug logs.                                                                                                                                                                                                                                                                         |
| errDumpAll      | -r, --help                                                                                                                                                            | Displays the error logs.                                                                                                                                                                                                                                                                            |
| errlogtest      | -i -t, -i -s, -i -w, -i -m<br>-i -a, -i -r, -i -p, -i -g<br>-i -o<br>-c -t, -c -a, -c -f<br>-s -w, -s -n, -s -v, -s -d<br>-u -f, -u -i, -u -n, -u -a,<br>-u -r, -u -p | Dumps the error and audit log catalog of possible messages.                                                                                                                                                                                                                                         |
| ethtool         | <null>, -i, -h                                                                                                                                                        | Retrieves information and changes your network interface card settings.                                                                                                                                                                                                                             |

**Table 1: Maintenance Role Commands Executed with the serviceexec Prefix (Continued)**

| Command         | Argument                                                         | Description                                                                                                                                                                                                                                                            |
|-----------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fabPortShow     | [slot/]port                                                      | Displays the following information: <ul style="list-style-type: none"> <li>■ State of the port</li> <li>■ Flow control mode</li> <li>■ Neighbor switch World Wide Name (WWN)</li> <li>■ Port information relative to the fabric</li> </ul>                             |
| fcrdbgdevshow   | —                                                                | Displays the Fibre Channel routing (FCR) debug details for all LSAN zones created from the edge fabric, for another backbone fabric, and from the local backbone fabric.                                                                                               |
| fcrdbghashow    | —                                                                | Displays the FCR HA states for the components and statistics.                                                                                                                                                                                                          |
| fcrdbgportshow  | --port<br>--state<br>--domain<br>--proxy<br>--xlate              | Displays the state of all available EX_Ports, domains (front and real) in the BB fabric, and Xlate domains with the owner details.                                                                                                                                     |
| fcrdbgrouteshow | —                                                                | Displays the router port details of the local and other FCRs in the fabric.                                                                                                                                                                                            |
| fcrdbgset       | <mode>                                                           | Sets or resets ISW log entries and levels.                                                                                                                                                                                                                             |
| fcrdbgshow      | —                                                                | Displays the ISW log entries and the levels set using the <code>fcrdbgset</code> command.                                                                                                                                                                              |
| fcrlogclear     | -m <main event logs><br>-r <regular event logs><br>-a <all logs> | Clears the FCR logs for main events, regular events, and all events.                                                                                                                                                                                                   |
| fcrLogShow      | -m <main event logs><br>-r <regular event logs><br>-a <all logs> | Displays the FCR traces for main events, regular events, and all events.                                                                                                                                                                                               |
| fruinfoaset     | <slot   fan   ps   chassis><br><unit number>                     | Sets the data in the field-replaceable unit header. This command sets the four externally accessible fields in the header associated with each FRU. This command prompts the user for the new values and then prints the final content once the changes are committed. |
| ge4regdump      | [slot/]chip                                                      | Stores the ASIC chip registers and values for the given slot or chip into a file. By default it is stored in the <code>/var/regdump.dmp</code> file.                                                                                                                   |
| ge5regdump      | [slot/]chip                                                      |                                                                                                                                                                                                                                                                        |
| haSyncStart     | —                                                                | Starts high availability state synchronization.                                                                                                                                                                                                                        |
| haSyncStop      | —                                                                | Stops high availability state synchronization.                                                                                                                                                                                                                         |
| hostname        | --fqdn, -a, -d, -f, -F, -i, -s, -y, -V                           | Gets or sets the host name or DNS domain name.                                                                                                                                                                                                                         |
| ifconfig        | -a, -h                                                           | Configures the kernel-resident network interfaces. It is used at the time of system boot to set up interfaces as necessary. It is also used for debugging and system tuning, if required.                                                                              |
| iptables        | -vL                                                              | Displays IPv4 packet filter rules.                                                                                                                                                                                                                                     |
| ip6tables       | -vL                                                              | Displays IPv6 packet filter rules.                                                                                                                                                                                                                                     |
| mdb             | —                                                                | For internal debugging use only; used by authorized support engineers.                                                                                                                                                                                                 |

**Table 1: Maintenance Role Commands Executed with the serviceexec Prefix (Continued)**

| Command                    | Argument                                                                                                                                                                                                                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minicycletest              | --slot <slot no><br>-lb_mode <1 2><br>-r <patternIdx><br>-uports <user portlist><br>-ports <blade portlist><br>-spd_mode <portspeed><br>-nframes <frame count to send><br>-duration <sec><br>-l <pktLen><br>-allbe<br>-fecmi <minute><br>-ewrap | Debugs optical modules.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| portfcportcmdshow          | [slot/]port                                                                                                                                                                                                                                     | Displays the general port status, statistics counters, ASIC port registers, and login information for a specified port.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| portregshow /<br>ptregshow | [slot/]port                                                                                                                                                                                                                                     | Displays the port register information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| portRouteShow              | [slot/]port                                                                                                                                                                                                                                     | Displays the port address ID for a specific port and the contents of the port routing tables.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ps                         | -e, -x, -f, -c, -l, --help                                                                                                                                                                                                                      | Displays information about a selected group of active processes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ptchipregshow              | [slot/]port                                                                                                                                                                                                                                     | Displays the chip register information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ptdatashow                 | [slot/]port                                                                                                                                                                                                                                     | Displays the port data structure information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| pterrshow                  | [slot/]port                                                                                                                                                                                                                                     | Displays the error statistics for all the ports in the slot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ptstatshow                 | [slot/]port                                                                                                                                                                                                                                     | Displays the port statistics information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| rasdecode                  | -a, -g, -g1, -g2, -g3,<br>-g4, -l, , -m, -n, -r,<br>-s, -t, -v                                                                                                                                                                                  | Decodes the trace buffer on the switch.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| rddc                       | --enable<br>--disable<br>--config<br>--dump<br>--show<br>--configshow<br>--logshow<br>--logclear<br>--help<br>--lockup<br>--mode<br>--panic                                                                                                     | Manages a set of debug features. The following list contains the debug features managed by the command: <ul style="list-style-type: none"> <li>■ Fablog – Fabric OS kernel modules memory tracker.</li> <li>■ Syslock – Fabric OS kernel modules lock tracker.</li> <li>■ HighCpuDc – High CPU data collector. This feature collects stack traces of the top five processes listed in the top output.</li> <li>■ Hung task – Logs hung tasks and can trigger warnings.</li> <li>■ Softlockup – Logs softlock tasks and can trigger warnings.</li> <li>■ Watchdog – Lists the status of the kernel, user, and soft watchdog.</li> </ul> |
| route                      | -h                                                                                                                                                                                                                                              | Manipulates the kernel IP routing tables. The primary use of this command is to set up static routes to specific hosts or networks through an interface once configured with the <code>ifconfig(8)</code> program.                                                                                                                                                                                                                                                                                                                                                                                                                     |
| setdbg                     | –                                                                                                                                                                                                                                               | Sets the debug levels of multiple modules in a platform and in the ASIC drivers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**Table 1: Maintenance Role Commands Executed with the serviceexec Prefix (Continued)**

| Command            | Argument                                                                                                                                                                                                   | Description                                                                                                           |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| slotErrShow        | -s <slot_range><br>-p <poll_period><br>-c <poll_count><br>-a<br>-r<br>-i <asicId_range><br>-x <asicId_range><br>-u<br>-g<br>-f <fname><br>-v<br>-d<br>-m<br>-e <trigCmd><br>-t <trigCtr><br>-tcrz<br>-help | Displays the error statistics.                                                                                        |
| slotShow           | -d576                                                                                                                                                                                                      | Displays the EM debug details such as the FRU number, FRU type, ID, status, private state, reason code, and hsmstate. |
| slotstatsshow      | <slot>                                                                                                                                                                                                     | Displays statistics for all the ports in the switch.                                                                  |
| supportuffdc       | --show<br>--timeout <seconds><br>--enable<br>--disable<br>--message<br>--default<br>--dump<br>--debug<br>--read<br>--purge<br>--size<br>--count                                                            | Enables, disables, displays, and modifies FFDC configuration parameters.                                              |
| systemVerification | -parameters<br>-short<br>-stop                                                                                                                                                                             | Runs a suite of diagnostic tests on a switch or a chassis.                                                            |
| tracedecode        | -a, -c, -d, -g, -g1, -g2,<br>-g3, -i, -l, -m, -p, -P,<br>-r, -s, -S, -t, -u, -v,<br>-x, -Z                                                                                                                 | Converts the raw trace data from a trace data file into a formatted output.                                           |

**Table 1: Maintenance Role Commands Executed with the serviceexec Prefix (Continued)**

| Command      | Argument                                                                                                                                                                                                                                                                                                                                   | Description                                                                                                                                                                  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| trafOptDebug | --audit<br>--showflow<br>--getflow<br>--internal<br>--ospgagingtime <time_in_sec><br>--osagingtime <time_in_sec><br>--enableosclassification <1/0><br>--ostxqlatencythres<br><avg_txq_in_microsec><br>--ostxqthroughputthres<br><percentage [70-100]><br>--losslesspausetime<br><pause_in_milli_sec><br>--override_impairment_qos<br><0/1> | Manages the traffic optimizer by setting advanced or legacy mode and displays the current active configuration, flow membership information, resource allocation, and audit. |
| uname        | -a, -s, -n, -r, -v, -m, -p, -i, -o                                                                                                                                                                                                                                                                                                         | Displays kernel information such as the version and name.                                                                                                                    |

## 3.2 Maintenance Role Commands without Any Prefix

The following debug commands must be used at the direction of Broadcom during a troubleshooting session.

**Table 2: Maintenance Role Commands without Prefixes**

| Command        | Argument                                  | Description                                                                                                  |
|----------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| cat            | —                                         | Restricted Linux command.                                                                                    |
| fabstatsclear  | —                                         | Clears fabric statistics.                                                                                    |
| fcrConfigure   | --enable allowxisl<br>--disable allowxisl | For internal debug use only; used by authorized support engineers.                                           |
| fcrXlateConfig | --add xd <FID> <domain>                   |                                                                                                              |
| fimadmin       | --scan                                    | Validates the files installed by the Fabric OS firmware and reports the violations.                          |
| firmwarePatch  | --install<br>--remove<br>--show<br>--help | Allows the device to update the firmware by applying patch updates in addition to the existing FOS firmware. |

**Table 2: Maintenance Role Commands without Prefixes (Continued)**

| Command           | Argument                               | Description                                                                                                                                                                                                         |
|-------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fosdbg_appsrvr    | —                                      | For internal debug use only; used by authorized support engineers.                                                                                                                                                  |
| fosdbg_ess        | —                                      |                                                                                                                                                                                                                     |
| fosdbg_fabswitch  | —                                      |                                                                                                                                                                                                                     |
| fosdbg_ficon dump | —                                      |                                                                                                                                                                                                                     |
| fosdbg_ficon get  | —                                      |                                                                                                                                                                                                                     |
| fosdbg_fspf       | —                                      |                                                                                                                                                                                                                     |
| fosdbg_ftc        | —                                      |                                                                                                                                                                                                                     |
| fosdbg_mdd        | —                                      |                                                                                                                                                                                                                     |
| fosdbg_ns         | —                                      |                                                                                                                                                                                                                     |
| fosdbg_rcs        | —                                      |                                                                                                                                                                                                                     |
| fosdbg_rte        | —                                      |                                                                                                                                                                                                                     |
| fosdbg_snmp       | —                                      |                                                                                                                                                                                                                     |
| fosdbg_telemetry  | —                                      |                                                                                                                                                                                                                     |
| fosdbg_ufcs       | —                                      |                                                                                                                                                                                                                     |
| fosdbg_webl       | —                                      |                                                                                                                                                                                                                     |
| fosdbg_zone       | —                                      |                                                                                                                                                                                                                     |
| fosredirout       | —                                      | Redirects the log output of a specific module with a specific debug level to an alternative destination as specified in the command options. This command is restricted only to files within the working directory. |
| grep              | —                                      | Restricted Linux command.                                                                                                                                                                                           |
| less              | —                                      | Restricted Linux command.                                                                                                                                                                                           |
| ls                | —                                      | Restricted Linux command.                                                                                                                                                                                           |
| lsDbShow          | -tlv                                   | Displays the type, length, and value information that is included with the label switching routers in the link-state database.                                                                                      |
| more              | —                                      | Restricted Linux command.                                                                                                                                                                                           |
| nslookup          | —                                      | Queries the Domain Name System (DNS) to obtain the domain name or IP address mapping or any other specific DNS record.                                                                                              |
| portDPortTest     | --set <ewrap owrap>                    | Sets the port status.                                                                                                                                                                                               |
| rm                | —                                      | Restricted Linux command.                                                                                                                                                                                           |
| scp               | -4, -6, -C, -p, -q,<br>-r, -v, -C, -o, | Restricted Linux command that uploads files or directories from the maintenance working directory to the remote host.                                                                                               |
| touch             | —                                      | Restricted Linux command.                                                                                                                                                                                           |
| tsClockServer     | --showstats                            | Dumps all Network Time Protocol (NTP) statistics.                                                                                                                                                                   |

## 3.3 Local Maintenance Account Command

The following command is for information only.

**Table 3: Local Maintenance Account Command**

| Command      | Argument                                                                                                                                      | Description                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| serviceshell | --generate [-force]<br>--authenticate "<response_token>"<br>--authenticate -interactive<br>--activate<br>--show<br>--reset [-force]<br>--help | Enables service shell configuration.<br><b>NOTE:</b> This command is for Broadcom support use only. |

## Revision History

The revision history provides a list of the important changes made in each version of the document.

### **FOS-92x-MaintCLI-RM100; April 28, 2023**

Initial document version.

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