Integrated Dell Remote Access Controller 9

RACADM CLI Guide

7.xx Series

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Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Contents

Chapter 1: Introduction **6**
New features added 6
Firmware version 7.30.10.50 6
Firmware version 7.20.80.50 6
Firmware version 7.20.70.50 6
Firmware version 7.20.60.50 6
Firmware version 7.20.30.50 6
Firmware version 7.20.10.50 7
Firmware version 7.10.70.00 7
Firmware version 7.10.50.00 7
Firmware version 7.10.30.00 7
Firmware version 7.00.60.00 7
Firmware version 7.00.00.00 7
Deprecated and New Subcommands 7
Unsupported RACADM Subcommands 8
Supported RACADM Interfaces 8
RACADM Syntax Usage 9
SSH or Remote RACADM 9
Remote RACADM 9
Accessing Indexed-Based Device Groups and Objects 10
RACADM Command Options 11
Using autocomplete feature 11
Lifecycle Controller Log 12
Proxy parameters 12
Supported Storage Controller cards 13
Other Documents You May Need 13
Accessing documents from Dell support site 13
Contacting Dell 14

Chapter 2: Running Get and Set **15**
get 15
set 19

Chapter 3: RACADM Subcommand Details **25**
Guidelines to Quote Strings Containing Special Characters When Using RACADM Commands 27
help and help subcommand 27
ackdriveremoval 28
arp 28
autoupdatescheduler 29
bioscert 31
biosscan 33
cd 34
clearasrscreen 34
clearpending 35

closessn....35
clrsel....36
cmreset....36
connect....37
coredump....37
coredumpdelete....38
coredumpexport....38
diagnostics....39
driverpack....40
eventfilters....41
exposeismminstallertohost....43
fcstatistics....44
frontpanelerror....44
fwupdate....44
gethostnetworkinterfaces....46
getled....47
getmetrics....48
getniccfg....48
getraclog....49
getractime....50
getremoteservicesstatus....51
getsel....51
getsensorinfo....52
getssninfo....57
getsvctag....58
getsysinfo....58
gettracelog....60
getversion....61
groupmanager....63
httpsbootcert....63
hwinventory....65
ifconfig....97
ilkm....97
infinibandstatistics....98
inlettemphistory....99
jobqueue....101
krbkeytabupload....103
lclog....103
license....108
netstat....111
networktransceiverstatistics....111
nicstatistics....111
pcieslotview....113
ping....115
ping6....115
plugin....116
racadm proxy....117
racdump....118
racreset....120
racresetcfg....121

recover ... 122
remoteimage ... 122
remoteimage2 ... 123
rollback ... 124
sekm ... 125
serialcapture ... 126
sensorsettings ... 127
serveraction ... 128
setled ... 129
setniccfg ... 129
spdm ... 130
sshpkauth ... 131
sslcertdelete ... 132
sslcertdownload ... 133
sslcertupload ... 134
sslcertview ... 135
sslcsrgen ... 137
sslkeyupload ... 138
sslresetcfg ... 138
storage ... 139
supportassist ... 171
swinventory ... 176
switchconnection ... 180
systemerase ... 181
systemperfstatistics ... 182
techsupreport ... 183
testalert ... 185
testemail ... 185
testrsyslogconnection ... 186
testtrap ... 186
traceroute ... 187
traceroute6 ... 187
update ... 187
usercertupload ... 192
usercertview ... 192
vflashpartition ... 193
vflashsd ... 194
vmdisconnect ... 195
witnessnodepoweraction ... 195

Chapter 4: Legacy and New Groups and Objects ... 196
cfgSSADRoleGroupPrivilege (Read or Write) ... 204

Chapter 5: Error Codes ... 205

1

Introduction

This document provides information about the RACADM subcommands, supported RACADM interfaces, and property database groups and object definitions for iDRAC for the Dell servers.

Topics:

- New features added
- Deprecated and New Subcommands
- Unsupported RACADM Subcommands
- Supported RACADM Interfaces
- RACADM Syntax Usage
- Proxy parameters
- Supported Storage Controller cards
- Other Documents You May Need
- Accessing documents from Dell support site
- Contacting Dell

New features added

NOTE: For new attributes added, see the Attribute Registry guide available at dell.com/support

NOTE: For details about the previous releases, if applicable, or to determine the most recent release for your platform, and for latest documentation version, see the Integrated Dell Remote Access Controller 9 Versions and Release Notes page.

Firmware version 7.30.10.50

There are no new features added in this release.

Firmware version 7.20.80.50

There are no new features added in this release.

Firmware version 7.20.70.50

There are no new features added in this release.

Firmware version 7.20.60.50

There are no new features added in this release.

Firmware version 7.20.30.50

The following feature is added in this release:

- Support for SHA384 and SHA512 authentication protocols.

Firmware version 7.20.10.50

There are no new features added in this release.

Firmware version 7.10.70.00

The following feature is added in this release:

Support for Universal Basebands in the `racadm hwinventory` command.

Firmware version 7.10.50.00

The following feature is added in this release:

Support for the `gpudebug` option for the command `supportassist`

Firmware version 7.10.30.00

The following feature is added in this release:

Support for `getmetrics` command to display utilization of GPU devices.

Firmware version 7.00.60.00

Following features were added or updated in this release:

- Support for `spdm` command.
- Support for SPDM Emulex NIC cards.
- Support for Bluefield-2 PCIe FH (closed loop thermals only and power budget tables).

Firmware version 7.00.00.00

Following features were added or updated in this release:

- Support for ACME in Auto SSL Certificate Enrollment.
- Support for password length of up to 127 characters and 3k/4k RSA keys.
- Support for CAC/PIV cards.
- Support for `reinstallfw` option for `systemerase` command.
- Port number option supported for HTTP/HTTPS shares (Server Configuration Profile, SupportAssist, export hardware inventory and export LC log features).
- Support for StartTLS option in LDAP/Active Directory connections.

Deprecated and New Subcommands

NOTE: Following commands are deprecated, and will not be available from iDRAC version 4.40.00.00 and onwards. Ensure that you reconfigure the scripts that use these commands to avoid any issues or failures.

Table 1. Details of Deprecated and New Subcommands

Deprecated Subcommands	New Subcommands
getconfig	get
config	set
NOTE: Some examples in this document still use getconfig and config subcommands as they still work with previous versions of iDRAC.	

Table 1. Details of Deprecated and New Subcommands (continued)

Deprecated Subcommands	New Subcommands
getuscversion	getversion
systemconfig	N/A
supportassist exportlastcollection	N/A
supportassist autocollectscheduler	N/A

Unsupported RACADM Subcommands

The following table provides the list of RACADM subcommands which are not supported through Telnet/SSH/Serial interface of RACADM.

Table 2. Unsupported RACADM Subcommands

Subcommand	iDRAC on Blade Servers
	Telnet/SSH/Serial
krbkeytabupload	No
sslcertupload	No
sslkeyupload	No
usercertupload	No

Supported RACADM Interfaces

The RACADM command-line utility provides a scriptable interface that allows you to locally or remotely configure your iDRAC. The utility runs on the management station and the managed system. The RACADM utility is available on the Dell OpenManage Systems Management and Documentation DVD or at Dell Support page.

The RACADM utility supports the following interfaces:

- Local—Supports running RACADM commands from the managed server's operating system. To run local RACADM commands, install the Dell iDRACTools software on the managed server. Only one instance of Local RACADM can be executed on a system at a time. If you try to open another instance, an error message is displayed and the second instance of Local RACADM closes immediately. To download the local RACADM tool from Dell Support page, select **Drivers and Downloads**, select a server, and then select **Systems Management** > **Dell iDRACTools** .

  NOTE: Local RACADM and local RACADM proxy runs with root user privilege.

- SSH—Also known as Firmware RACADM. Firmware RACADM is accessible by logging in to iDRAC using SSH. Similar to Remote RACADM, at the RACADM prompt, directly run the commands without the RACADM prefix.
- Remote—Supports running RACADM commands from a remote management station such as a laptop or desktop. To run Remote RACADM commands, install the Dell iDRACTools software on the remote computer. To run Remote RACADM commands:
  - Formulate the command as an SSH RACADM command.

  NOTE:
  - ESXi operating system allows up to 1020 characters in a RACADM command. This is limited to local and remote RACADM interfaces.

  For more information about the options, see RACADM Subcommand Details. To download the local RACADM tool, go to PowerEdge Manuals, select the desired server. and then click **Drivers & downloads**.

RACADM Syntax Usage

The following section describes the syntax usage for SSH and Remote RACADM.

SSH or Remote RACADM

```
racadm -r <racIPAddr> -u <username> -p <password> <subcommand>
```

```
racadm -r <racIPAddr> -u <username> -p <password> get -g <group name> -o <object name>
```

```
racadm <subcommand>
```

Example

```
racadm getsysinfo
```

```
racadm -r 192.168.0.2 -u username -p xxx getsysinfo
```

```
racadm -r 192.168.0.2 -u username -p xxx get -g cfgchassispower
```

Remote RACADM

NOTE:

- By default, TLS version 1.0 is enabled on Windows 2012 R2 which is not supported on the Remote RACADM. Install the latest Windows update available, to upgrade TLS to version 1.1 or higher. Also, set the TLS version in the `iDRAC.Webserver.TLSProtocol` as appropriate. For more information about Windows update see, support.microsoft.com/en-us/help/3140245/update-to-enable-tls-1-1-and-tls-1-2-as-default-secure-protocols-in-wi
- Before configuring the webserver settings to TLS version 1.3, ensure that the client OS supports TLS 1.3.
- If Force Change of Password (FCP) feature is enabled, it is recommended to change the default password using SSH or iDRAC GUI. Changing the default password using Remote RACADM may not be successful.

```
racadm -r <racIPAddr> -u <username> -p <password> <subcommand>
```

Example

```
racadm -r 192.168.0.2 -u root -p xxxx getsysinfo
Security Alert: Certificate is invalid - Certificate is not signed by Trusted Third
Party Continuing execution.
```

NOTE: The following command does not display a security error:

```
racadm -r 192.168.0.2 -u noble -p xxx getsysinfo --nocertwarn
```

The remote RACADM commands must link to the libssl library on the HOST, which corresponds to the version of OpenSSL package installed on the HOST. Perform the following steps to verify and link the library.

- Check the openssl version installed in the HOST:

```
[root@localhost ~]# openssl
OpenSSL> version
OpenSSL 1.0.1e-fips 11 Feb 2013
OpenSSL>
```

- Locate the openSSL libraries are in the HOST machine (/usr/lib64/ in case of RHEL), and to check the various versions of the libraries:

```
[root@localhost ~]# ls -l /usr/lib64/libssl*
-rwxr-xr-x. 1 root root 249368 Oct 15  2013 /usr/lib64/libssl3.so
lrwxrwxrwx. 1 root root     16 Oct 29  2014 /usr/lib64/libssl.so.10 ->
libssl.so.1.0.1e
-rwxr-xr-x. 1 root root 439912 Sep 27  2013 /usr/lib64/libssl.so.1.0.1e
```

- Link the library libssl.so using ln -s command to the appropriate OpenSSL version in the HOST:

```
[root@localhost ~]# ln -s /usr/lib64/libssl.so.1.0.1e /usr/lib64/libssl.so
```

- Verify if the libssl.so soft linked to libssl.so.1.0.1e:

```
[root@localhost ~]# ls -l /usr/lib64/libssl*
-rwxr-xr-x. 1 root root 249368 Oct 15  2013 /usr/lib64/libssl3.so
lrwxrwxrwx. 1 root root     27 Aug 28 13:31 /usr/lib64/libssl.so -> /usr/lib64/
libssl.so.1.0.1e
lrwxrwxrwx. 1 root root     16 Oct 29  2014 /usr/lib64/libssl.so.10 ->
libssl.so.1.0.1e
-rwxr-xr-x. 1 root root 439912 Sep 27  2013 /usr/lib64/libssl.so.1.0.1e
```

Accessing Indexed-Based Device Groups and Objects

- To access any object, run the following syntax:

```
device.<group name>.[<index>].<object name>
```

- To display the supported indexes for a specified group, run:

```
racadm get device.<group name>
```

Example

```
racadm get nic.nicconfig
NIC.nicconfig.1 [Key=NIC.Integrated.1-1-1#nicconfig]
NIC.nicconfig.2 [Key=NIC.Integrated.1-2-1#nicconfig]
NIC.nicconfig.3 [Key=NIC.Integrated.1-3-1#nicconfig]
NIC.nicconfig.4 [Key=NIC.Integrated.1-4-1#nicconfig]
```

- To display the object list for the specified group, run:

```
racadm get device.<group name>.<index>
```

Example

```
racadm get nic.nicconfig.2
[Key=NIC.Integrated.1-2-1#nicconfig]
BannerMessageTimeout=5
BootStrapType=AutoDetect
HideSetupPrompt=Disabled
LegacyBootProto=NONE
LnkSpeed=AutoNeg
#VLanId=1
VLanMode=Disabled
```

- To display a single object for the specified group, run:

```
racadm get device.<group name>.<index>.<object name>
```

Example

```
racadm get nic.nicconfig.3.legacybootproto
[Key=NIC.Integrated.1-3#NICConfig]
Legacybootproto=PXE
```

RACADM Command Options

The following table lists the options for the RACADM command:

Table 3. RACADM Command Options

Option	Description
`-r <racIpAddr>` `-r <racIpAddr> : <port number>`	Specifies the controller's remote IP address. Use `<port number>` if the iDRAC port number is not the default port (443).
`-u <username>`	Specifies the user name that is used to authenticate the command transaction. If the `-u` option is used, the `-p` option must be used, and the `-i` option (interactive) is not allowed. **NOTE:** If you delete a user account using the iDRAC web interface and then use RACADM to create a new account with the same user name, you are not prompted to enter a password. However, you must manually provide a password for the account to be able to log into iDRAC using that account.
`-p <password>`	Specifies the password used to authenticate the command transaction. If the `-p` option is used, the `-i` option is not allowed.
`--nocertwarn`	Does not display certificate related warning message.

Using autocomplete feature

Use the autocomplete feature in firmware RACADM to:

- Display all the available RACADM commands in the alphabetical order by pressing the tab key at the `racadm>>` prompt.
- View the complete list, by entering the starting letter of the command at the `racadm>>` prompt and press tab key.

  NOTE:
  - Commands that are displayed/suggested by the shell are case insensitive.
  - If an attribute group does not include any attributes, autocomplete does not display this group at all.

- Navigate the cursor within a command, by pressing:
  - Home key: Directs to the starting of the command
  - End key: Directs to the end of the command
- View the history of the commands that were run in the current session by pressing up and down arrow key.
- If an attribute value starts with double quotes but does not end with them, the value is still considered and the command runs successfully.
- Exit the Autocomplete mode, by entering `Quit` or `Exit`

For example:

- Example 1: `racadm>> <press tab>`

```
arp
autoupdatescheduler
clearasrscreen
clearpending
closessn
clrraclog
.
.
.
.
.
.
.
vflashsd
vflashpartition
```

```
vmdisconnect
cd
quit
```

- Example 2: `racadm>> get <press tab>`

```
get
getled
getniccfg
getraclog
getractime
getsel
getsensorinfo
getssninfo
getsvctag
getsysinfo
gettracelog
getversion
```

- Example 3:

```
racadm>> getl<press tab>
```

```
racadm>> getled <press enter> or <racadm getled>
LEDState: Not-Blinking
```

- Example 4:

```
racadm>> get bios.uefiBootSettings
BIOS.UefiBootSettings
BIOS.UefiBootSettings.UefiBootSeq
BIOS.UefiBootSettings.UefiPxeIpVersion
```

NOTE:

- In the RACADM autocomplete mode, type the commands directly without giving racadm as prefix.
- NIC/FC/InfiniBand FQDDs are configuration-dependent. To find FQDDs present in system, run the RACADM command `racadm hwinventory NIC/FC/InfiniBand`

Lifecycle Controller Log

Lifecycle Controller logs provide the history of changes related to components installed on a managed system. You can also add work notes to each log entry.

The following events and activities are logged:

- System events
- Storage devices
- Network devices
- Configuration
- Audit
- Updates

You can view and filter logs based on the category and severity level. You can also export and add a work note to a log event.

If you initiate configuration jobs using RACADM CLI or iDRAC web interface, the Lifecycle log captures the information about the user, interface used, and the IP address of the system from which you initiate the job.

Proxy parameters

Some commands do not support setting the proxy parameters if the share location (-l) is HTTP/HTTPS. To perform the operation with HTTP or HTTPS through a proxy, the proxy parameters must be first configured using the lifecyclecontroller.lcattributes. Once these proxy parameters are configured, they become the part of default configuration; the proxy attributes should be cleared to end use of the HTTP/HTTPS proxy.

The valid lifecyclecontroller.lcattributes HTTP/HTTPS proxy parameters are:

- `UserProxyUserName`
- `UserProxyPassword`
- `UserProxyServer`
- `UserProxyPort`
- `UserProxyType`

To view the list of proxy attributes, use `racadm get lifecycleController.lcAttributes`.

Supported Storage Controller cards

The following table lists the supported Storage Controller cards:

PERC 12	PERC H965i, PERC H965e and PERC H965Mx
PERC 11	PERC H350, PERC H355, PERC H750, and PERC H755
PERC 10	PERC H345, PERC H740, PERC H740P, PERC H745P, and PERC H840
PERC 9	PERC H330, PERC H730, PERC H730P, PERC H830, PERC FD33xS, and PERC FD33xD
HBA cards	HBA 330, HBA 345, HBA 355, HBA 350i, HBA 465i, HBA 465e and 12Gbps SAS HBA
BOSS Cards cards	BOSS S1, BOSS S2, BOSS N1
Software RAID	PERC S130, PERC S140, PERC S150, PERC S160

Other Documents You May Need

In addition to this guide, you can access the following guides available on the Dell Support website at iDRAC Manuals. To access the documents, click the appropriate product link.

- The Integrated Dell Remote Access Controller User's Guide provides information about configuring and using an iDRAC to remotely manage and monitor your system and its shared resources through a network.
- The iDRAC9 Attribute Registry provides information about all attributes to perform get and set operations using RACADM interface.
- Documentation specific to your third-party management console application.
- The Dell OpenManage Server Administrator's User's Guide provides information about installing and using Dell OpenManage Server Administrator.
- The Dell Update Packages User's Guide provides information about obtaining and using Dell Update Packages as part of your system update strategy.
- The Glossary provides information about the terms used in this document.

The following system documents are also available to provide more information about the system in which iDRAC is installed:

- The Hardware Owner's Manual provides information about system features and describes how to troubleshoot the system and install or replace system components.
- Documentation for any components you purchased separately provides information to configure and install the options.
- Release notes or readme files may be included to provide last-minute updates to the system or documentation or advanced technical reference material intended for experienced users or technicians.

Updates are sometimes included with the system to describe changes to the system, software, and/or documentation. Always read the updates first because they often supersede information in other documents.

See the Safety and Regulatory information that is shipped with your system.

NOTE: Warranty information may be included within this document or as a separate document.

Accessing documents from Dell support site

You can access the required documents in one of the following ways:

- Using the following links:
  - For all Enterprise Systems Management documents — ESM Manuals

- For OpenManage documents — OpenManage Manuals
- For iDRAC and Lifecycle Controller documents — iDRAC Manuals
- For OpenManage Connections Enterprise Systems Management documents — OM Connections Enterprise Systems Management Manuals
- For Serviceability Tools documents — Software Serviceability Tools
- For Client Command Suite Systems Management documents — Client System Management Manuals

- From the Dell Support site:
  1. Go to the Dell Supportsite.
  2. Under **Browse all products** section, click **Software**.
  3. In the **Software** group box, click the required link from the following:
     - **Enterprise Systems Management**
     - **Client Systems Management**
     - **Serviceability Tools**
  4. To view a document, click the required product version.
- Using search engines:
  - Type the name and version of the document in the search box.

Contacting Dell

NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to Dell Support page.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down list at the bottom of the page.
4. Select the appropriate service or support link based on your need.

2

Running Get and Set

This section provides detailed description of the RACADM Get and Set subcommands including the syntax and valid entries.

For more information about all attributes to perform get and set operations, see the Integrated Dell Remote Access Controller Attribute Registry available on the iDRAC Manualspage.

Topics:

- get
- set

get

Table 4. Details of get

get	
Description	Displays the value of one or more objects. The `get` subcommand has two forms. ● Displays the value of a single object. ● Exports the value of multiple objects to a file. It supports multiple object value exports in the below file format: ● Server Configuration Profile(SCP) XML and JSON format—XML and JSON format files can be imported from a local file, from an NFS, CIFS, HTTP, HTTPS, FTP and TFTP network share. **NOTE:** You need admin user privilege to perform import and export SCP operations. **NOTE:** ● Some objects may have a pending value if a `Set` operation is performed on the object through a reboot job. To complete the pending operation, schedule the job using a `jobqueue` command, and then check for completion of the job using the returned Job ID. For more information, see `jobqueue`. ● Import and Export of INI file type doesn't support -c option for firmware versions earlier than iDRAC version 4.40.00.00. ● For more information on the `get` subcommand, run the RACADM command `racadm help get` ● Autobackup will return a license error from iDRAC version 4.40.00.00 release for Rx4xx and Mx4xx platforms. The command will display this error as the feature and the corresponding license will be removed. ● For HddSeq, BootSeq and UefiBootSeq attributes, a maximum of 32 device list is supported. For Unique FQDDs, use the iDRAC Redfish interface.

Synopsis	Single-object Get
	`racadm get <FQDD Alias>.<group>`
	`racadm get <FQDD Alias>.<group>.<object>`
	`racadm get <FQDD Alias>.<group>.[<index>].<object>`
	`racadm get <FQDD Alias>.<index>.<group>.<index>.<object>`

Table 4. Details of get (continued)

get	

	Multi-object Get
	`racadm get -f <filename> -t xml -l <NFS share> [--clone | --replace ] [--includeph]`
	`racadm get -f <filename> -t xml -l <NFS share> -c <FQDD>[,<FQDD>*]`
	`racadm get -f <filename> -t xml -u <username> -p <password> -l <FTP share> -c <FQDD>`
	`racadm get -f <filename> -t xml -l <TFTP share> -c <FQDD>`
	`racadm get -f <filename> -t xml -u <username> -p <password> -l <CIFS share> [--clone | --replace ] [--includeph]`
	`racadm get -f <filename> -t xml -u <username> -p <password> -l <CIFS share> -c <FQDD>[,<FQDD>*]`
	`racadm get -f <filename> -t xml -u <username> -p <password> -l <HTTP share> -port <port number> -c <FQDD>`
	`racadm get -f <filename> -t xml -u <username> -p <password> -l <HTTPS share> -port <port number> -c <FQDD>`
	`racadm get -f <filename> -t xml --customdefaults`
	`racadm get -f -t xml -l <NFS share>  [--clone | --replace ] [--includeph]  [--includeCustomTelemetry]`
	`racadm get -f -t xml -u -p -l <CIFS share> [--clone | --replace ] [--includeph] [--includeCustomTelemetry]`

Input	• `<FQDD Alias>`
	  ○ Examples for FQDDs
	  ▪ `System.Power`
	  ▪ `System.Power.Supply`
	  ▪ `System.Location`
	  ▪ `LifecycleController.LCAttributes`
	  ▪ `System.LCD`
	  ▪ `iDRAC.Serial`
	For the list of supported groups and objects under the get command, see Database objects with get and set commands.
	• `<group>`—Specifies the group containing the object that must be read.
	• `<object>`—Specifies the object name of the value that must be read.
	• `<index>`—Specifies where FQDD Aliases or Groups must be indexed.
	• `-f <filename>`—This option enables you to export multiple object values to a file. This option is not supported in the Firmware RACADM interface.
	• `-u`—Specifies user name of the remote CIFS share to which the file must be exported.
	• `-p`—Specifies password for the remote CIFS share to which the file must be exported.
	• `-l`—Specifies network share location to which the file is exported.
	• `-port`—Specifies the port number.

Table 4. Details of get (continued)

get	

	NOTE: This is an optional parameter. If this option is not specified, the default port number is used.
	• `-t`—Specifies the file type to be exported. The valid values are:
	  ○ `JSON`—It exports the SCP JSON file to a network share file.
	  ○ `xml`—It exports the SCP xml format file, either to a local or network share file.
	• `--clone`—Gets the configuration `.xml` files without system-related details such as service tag. The `.xml` file received does not have any virtual disk creation option.
	• `--replace`—Gets the configuration `.xml` files with the system-related details such as service tag.
	• `-c`—Specifies the FQDD or list of FQDDs separated by ',' of the components for which the configurations should be exported. If this option is not specified, the configuration related to all the components are exported.
	• `--includeph`—Specifies that the output of the passwords included in the exported configuration `.xml` file are in the hashed format.
	NOTE: if --includeph is not used, the output of the passwords are in the .xml file in clear text.
	• `--customdefaults`—Exports custom default configuration to file. Supports only with XML file type and local share.
	• `--includeCustomTelemetry`—Includes Telemetry Custom Metric Report Definitions (MRDs) in the configuration XML file.
	NOTE:
	• For `--clone` and `--replace` options, only `.xml` file template is received. These options `--clone` and `--replace` cannot be used in the same command.
	• `--customdefaults` and `--includeCustomTelemetry` cannot be used in the same command.
	This command does not support proxy parameters. To perform the operation with http and https, the proxy parameters has to be configured in the lifecyclecontroller.lcattributes. Once these proxy parameters are configured, they become the part of default configuration. They have to be removed to ignore the proxy parameters.
	This command does not support setting the proxy parameters if the share location (-l) is HTTP/HTTPS. To perform the operation with HTTP or HTTPS through a proxy, the proxy parameters must be first configured using the lifecyclecontroller.lcattributes. Once these proxy parameters are configured, they become the part of default configuration; the proxy attributes should be cleared to end use of the HTTP/HTTPS proxy. The valid lifecyclecontroller.lcattributes HTTP/HTTPS proxy parameters are:
	• `UserProxyUserName`
	• `UserProxyPassword`
	• `UserProxyServer`
	• `UserProxyPort`
	• `UserProxyType`
	To view the list of proxy attributes, use `racadm get lifecycleController.lcAttributes`.

Examples	• Get system LCD information.
	`racadm get system.lcdLCDUserString`
	• Display an entire group, in this case the topology configuration.
	`racadm get system.location`
	• Display a single object from a particular group.
	`racadm get system.location.rack.name`
	• Export the xml configuration to a CIFS share.
	`racadm get -f file -t xml -u myuser -p xxx -l //192.168.0/share`

Table 4. Details of get (continued)

get	

	• Export the xml configuration to an NFS share.
	`racadm get -f file -t xml -l 192.168.0:/myshare`
	• Export a “cloned” xml configuration to a CIFS share
	`racadm get -f xyz_temp_clone -t xml -u Administrator -p xxx -l // 192.168.0/xyz --clone`
	• Export a “replace” xml configuration to a CIFS share
	`racadm get -f xyz_temp_replace -t xml -u Administrator -p xxx -l // 192.168.0/xyz --replace`
	• Export the xml configuration of the iDRAC component to FTP share.
	`racadm get -f file -t xml -u username -p password -l ftp:// 192.168.10.24/`
	• Export the JSON configuration of the iDRAC component to FTP share.
	`racadm get -f file -t json -u username -p password -l ftp:// 192.168.10.24/`
	• Export the xml configuration of the iDRAC component to TFTP share.
	`racadm get -f file -t xml -l tftp://192.168.10.24/`
	• Export the JSON configuration of the iDRAC component to TFTP share.
	`racadm get -f file -t json -l ftp://192.168.10.24/`
	• Export the xml configuration of the iDRAC component to a CIFS share.
	`racadm get -f file -t xml -u myuser -p xxx -l //192.168.0/share -c iDRAC.Embedded.1`
	• Export the xml configuration of the iDRAC component to NFS share.
	`racadm get -f file -t xml -l 10.1.12.13:/myshare`
	• Export the xml configuration of the iDRAC component to HTTP share.
	`racadm get -f file -t xml -u httpuser -p httppwd -l http://test.com/ myshare -port 8080`
	• Export the xml configuration of the iDRAC component to HTTPS share.
	`racadm get -f file -t xml -u httpuser -p httppwd -l https://test.com/ myshare -port 8080`
	• Export the JSON configuration of the iDRAC component to HTTP share.
	`racadm get -f file -t json -u httpuser -p httppwd -l http://test.com/ myshare -port 8080`
	• Export the JSON configuration of the iDRAC component to HTTPS share.
	`racadm get -f file -t json -u httpuser -p httppwd -l https://test.com/ myshare -port 8080`
	• Export the custom default xml configuration to local share.
	`racadm get -f file -t xml --customdefaults`

Table 4. Details of get (continued)

get	

	• Include Telemetry Custom Metric Report Definitions in the configuration .xml file.
	`racadm get -f <filename> -t xml -l <NFS or CIFS share> -u <username> -p <password> --includeCustomTelemetry`
	• Include password hash in the configuration `.xml` file.
	`racadm get -f<filename> -t xml -l<NFS or CIFS share> -u<username> -p<password> -t xml --includeph`
	• Configure proxy parameters.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername admin1`
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername`
	• View the list of proxy attributes.
	`racadm get lifecycleController.lcAttributes`
	• To display InfiniBand related groups.
	`racadm get InfiniBand`

set

Table 5. Details of set

set	
Description	Modifies the value of configuration objects on a component. The `Set` sub-command has two forms: • The modification of a single object to a new value specified in the command line. • The modification of multiple objects to new values using a configuration file. It supports multi-object value import from the below configuration file format: ○ Server Configuration Profile(SCP) XML and JSON format—XML and JSON format files can be imported from a local file, from an NFS, CIFS, HTTP, HTTPS, FTP and TFTP network share. **NOTE:** You need admin user privilege to perform import and export SCP operations. Depending on the type of configuration object being modified, the new values could be applied immediately (in "real-time") or require staging and a reboot of the system to apply the new values. The following components support either real-time or staged application of new values: ○ iDRAC with Lifecycle Controller ○ PowerEdge RAID controllers **NOTE:** Use PowerEdge RAID controllers with firmware version 9.1 or later. The real-time support is provided only while performing hardware RAID configuration. The following components require staging and system reboot for application of new values: • BIOS • Other PowerEdge RAID controllers — For software RAID configuration • Networking devices – Ethernet and Fibre Channel **NOTE:** • To modify the value of staged objects such as BIOS or NIC, commit and reboot job creation must be used to apply the pending values. When single object `Set`operations are used to stage value modification, use the jobqueue command to schedule a job to reboot the server and apply the new values. For staged multi-object `Set`operations using xml configuration files, a job will automatically

Table 5. Details of set (continued)

set	
	be created by the `Set` command; use the –b, -w and -s options to specify how the staged reboot will be performed. For more information, see jobqueue. • Import and Export of INI file type doesn't support -c option for firmware versions earlier than iDRAC 4.40.00.00. • For more information on the `set` subcommand, run the RACADM command `racadm help set`.
Synopsis	Single-object Set • `racadm set <FQDD Alias>.<group> <value>` • `racadm set <FQDD Alias>.<group>.<object> <value>` • `racadm set <FQDD Alias>.<group>.[<index>].<object> <value>` • `racadm set <FQDD Alias>.<index>.<group>.<index>.<object> <value>`

	Multi-object Set
	• `racadm set -f <filename> -t xml -l <NFS share> [--preview] [--continue]`
	• `racadm set -f <filename> -t xml -l <NFS share> -c <FQDD>[,<FQDD>*]`
	• `racadm set -f <filename> -t xml -u <username> -p <password> -l <CIFS share> [--preview] [--continue]`
	• `racadm set -f <filename> -t xml -u <username> -p <password> -l <CIFS share> -c <FQDD>[,<FQDD>*]`
	• `racadm set -f <filename> -t <file_type> -u <user> -p <pass> -l <location> \ [-s <state>] [-c <component_FQDD>] [--preview] [--customdefaults]`
	• `racadm set --savecustomdefaults`
	• Configure a RAC from an XML configuration file located on a remote NFS share
	`racadm set -f <filename> -t xml -l <NFS> 10.1.2.3:/myshare`
	• Configure a RAC from an XML configuration file located on a remote HTTP share.
	`racadm set -f <filename> -t xml -u <httpuser> -p <httppwd> -l <HTTP> http://test.com/myshare -port <port number>`
	• Configure a RAC from an XML configuration file located on a remote HTTPS share.
	`racadm set -f <filename> -t xml -u <httpsuser> -p <httpspwd> -l <HTTPS> https://test.com/myshare -port <port number>`
	• Configure a RAC from an XML configuration file located on a remote FTP share
	`racadm set -f <filename> -t xml -u <username> -p <password> -l <FTP share> -c <FQDD>`
	• Configure a RAC from an XML configuration file located on a remote TFTP share.
	`racadm set -f <filename> -t xml -l <TFTP share> -c <FQDD>`
	• To modify the value of InfiniBand attribute
	`racadm set <InfiniBand Attribute> <value>`

Input	• `<FQDD Alias>` Examples for FQDDs:

Table 5. Details of set (continued)

set	
	○ System.Power ○ System.Power.Supply ○ System.Location ○ LifecycleController.LCAttributes ○ System.LCD ○ iDRAC.Serial ● <group> — Specifies the group containing the object that must be written. ● <object> — Specifies the object name of the value that must be written. ● <index> — This option is specified where FQDD Aliases or Groups must be indexed. ● -f <filename> — Enables set to configure the device from a specified file. This option is not supported in the Firmware RACADM interface. ● -u — Specifies user name of the CIFS remote share from which the file must be imported ● -p — Specifies password for the remote CIFS share from which the file must be imported. ● -l — Specifies network share location from where the file must be imported. ● -port — Specifies the port number. **NOTE:** This is an optional parameter. If this option is not specified, the default port number is used. ● -t — Specifies the file type to be imported. The valid values are: ○ xml—Imports the Server Configuration Profile in XML format either from a local or network share file. ○ JSON—Specifies a JSON file. Staging and reboot control options. The following options control when and how system reboots are performed when using the –f option. As noted above, some FQDDs require a system reboot to apply the new values; other FQDDs optionally support immediate application of new values. If the imported file contains ONLY immediate application-capable FQDDs such as iDRAC, do NOT use the –b option and the Set command will schedule a real-time job to immediately apply the new values. **NOTE:** The –b, -w, –s, and --preview options are applicable only with –f option. ● -b—Specifies the host shutdown type to run scheduled import job. The parameters are Graceful, Forced, and NoReboot for graceful shutdown, forced shutdown, and no reboot respectively. If -b is not specified, graceful shutdown is taken as the default except as noted above for files containing new values for immediate application-capable <FQDD>s. **NOTE:** If the operating system is in use, then the graceful shutdown option may time out within 300 seconds. If this operation is unsuccessful, then retry with the force option. ● -w—Maximum time to wait for the graceful shutdown to occur. The value must be entered in seconds. Minimum accepted value is 300 seconds and the maximum accepted value is 3600 seconds. The default value is 1800 seconds. ● -s—Power state of the host when the import operation completes. The parameters are "On" for powered ON and "Off" for powered OFF. If this parameter is not specified, power ON is taken as default. ● --preview—Validates the configuration .xml file and view the status. The --preview option provides the **Job ID** to verify the status of the file preview operation. The **Job ID** can be tracked by running the racadm jobqueue view -I <JID> command. **NOTE:** ○ The --preview option does not restart the system. ○ The-b,-w options cannot be included with the --preview option. ○ A scheduled job or pending configuration should not be running while using the --preview option. ● -c—Specifies the FQDD or list of FQDDs separated by ',' of the components for which the configurations should be imported. If this option is not specified, configuration related to all the components are imported.

Table 5. Details of set (continued)

set	
	NOTE: • To use the `-c` or `--preview` option, the minimum Lifecycle Controller version required is 1.2. • On certain devices, importing the server configuration profile requires two imports to apply the configuration to all the devices. The first import of the profile enables hidden devices which are then configured with a second import. The devices that require two imports are as follows: ○ PERC S110 and PERC S130 controllers ○ PERC S110 and PERC S130 controllers ○ BIOS and PCIe device: enabling PCIe slots in the system that are disabled and configuring the PCIe device ○ BIOS: enabling processor trusted execution (TXT) when server has Trusted Platform Module (TPM) 2.0 installed ○ BIOS: if SCP contains only a BIOS section that includes switching boot mode to UEFI and configuration of UEFI PXE network settings ○ BIOS: if SCP contains only a BIOS section that includes switching boot mode to legacy BIOS or UEFI along with changes to the boot order sequence using changes to BootSeq, HddSeq, or UefiBootSeq attributes. ○ BIOS: changing TPM 2.0 cryptographic support from the default of SHA-1 **NOTE:** Boot mode and boot order sequence can be changed with a single SCP import if the SetBootOrderFqddN and SetLegacyHddOrderFqddN attributes are used. • `--savecustomdefaults`—Saves current configuration as custom default configuration. • `--customdefaults`—Performs the upload of custom default configuration file. This option should not be combined with `--preview`. Supports XML file type only. This command does not support setting the proxy parameters if the share location (-l) is HTTP/HTTPS. For more information, see Proxy parameter section.

Example	Single-object Set of real-time objects
	• Configure LCD String.
	`racadm set system.lcd.LCDUserString test`
	• ○ Configure iDRAC name.
	`racadm set iDRAC.Info.Name idrac-server100`
	Single-object Set of staged objects
	• Configure several BIOS settings, create a job to initiate application of new values, reboot the system, then wait for the job to complete.
	`racadm set BIOS.SysProfileSettings.ProcTurboMode Disabled`
	`racadm set BIOS.ProcSettings.ProcVirtualization Enabled`
	`racadm set BIOS.ProcSettings.ControlledTurbo Enabled`
	`racadm jobqueue create BIOS.Setup.1-1 -r Graceful`
	○ Note of the Job ID output by the jobqueue command
	○ After reboot, wait for the job to complete by checking the job status
	`racadm jobqueue view -i <Job ID>`
	Multi-object Set of real-time objects
	• Configure the iDRAC using a local Server Configuration Profile XML file containing only iDRAC settings.
	`racadm set -f myidrac.xml -t xml`
	• Configure the iDRAC using a Server Configuration Profile XML file stored on an NFS share containing only iDRAC settings.
	`racadm set -f myidrac.xml -t xml -l 10.1.2.3:/myshare`
	• Import a Server Configuration Profile from a CIFS share, using only the iDRAC component.

Table 5. Details of set (continued)

set	

	`racadm set -f file -t xml -u myuser -p mypassword -l //192.168.0/share -c iDRAC.Embedded.1`
	Multi-object Set of staged objects
	● Configure a systems using a local Server Configuration Profile XML file containing a mix of real-time and staged objects; reboot the server gracefully with a wait time of ten minutes, leaving the server powered on after the reboot.
	`racadm set -f myfile.xml -t xml -b "graceful" -w 600 -s "on"`
	○ Make note of the Job ID output by the Set command.
	○ After reboot, wait for the job to complete by checking the job status.
	`racadm jobqueue view -i <Job ID>`
	● Configure a systems using a local Server Configuration Profile XML file containing a mix of real-time and staged objects; postpone reboot until other operations have been completed.
	`racadm set -f myfile.xml -t xml -b NoReboot`
	○ Make note of the Job ID output by the Set command; because of the NoReboot option, the job will be pending until the server is rebooted
	○ Complete other operations, then perform a reboot
	○ After reboot, wait for the job to complete by checking the job status
	`racadm jobqueue view -i <Job ID>`
	● Verify the Server Configuration Profile XML file content located in a remote CIFS share.
	`racadm set -f temp_Configuration_file -t xml -u Administrator -p Password -l //192.168.0/xyz -preview`
	● Configure a RAC from an XML configuration file located on a remote FTP share.
	`racadm set -f myfile.xml -t xml -u username -p password -l ftp://192.168.10.24/`
	● Configure a RAC from a JSON configuration file located on a remote FTP share.
	`racadm set -f myfile.xml -t json -u httpsuser -p httpspwd -l ftp://192.168.10.24/`
	● Configure a RAC from an XML configuration file located on a remote TFTP share.
	`racadm set -f myfile.xml -t xml -l tftp://192.168.10.24/`
	● Configure a RAC from a JSON configuration file located on a remote TFTP share.
	`racadm set -f myfile.xml -t json -l tftp://192.168.10.24/`
	● Configure a RAC from an XML configuration file located on a remote HTTP share.
	`racadm set -f myfile.xml -t xml -u httpuser -p httppwd -l http://test.com/myshare -port 8080`
	● Configure a RAC from an XML configuration file located on a remote HTTPS share.
	`racadm set -f myfile.xml -t xml -u httpsuser -p httpspwd -l https://test.com/myshare -port 8080`
	● Configure a RAC from a JSON configuration file located on a remote HTTPS share.
	`racadm set -f myfile.xml -t json -u httpsuser -p httpspwd -l https://test.com/myshare -port 8080`
	● Configure the proxy parameter.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername admin1`

Table 5. Details of set (continued)

set	

	• Remove the proxy parameter.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername`
	• Upload the custom default XML configuration file located on NFS share to RAC.
	`racadm set -f myfile.xml -t xml -l share_ip:/PATH --customdefaults`
	• Save current configuration as custom default configuration.
	`racadm set --savecustomdefaults`

3

RACADM Subcommand Details

This section provides detailed description of the RACADM subcommands including the syntax and valid entries.

Topics:

- Guidelines to Quote Strings Containing Special Characters When Using RACADM Commands
- help and help subcommand
- ackdriveremoval
- arp
- autoupdatescheduler
- bioscert
- biosscan
- cd
- clearasrscreen
- clearpending
- closessn
- clrsel
- cmreset
- connect
- coredump
- coredumpdelete
- coredumpexport
- diagnostics
- driverpack
- eventfilters
- exposeismInstallertohost
- fcstatistics
- frontpanelerror
- fwupdate
- gethostnetworkinterfaces
- getled
- getmetrics
- getniccfg
- getraclog
- getractime
- getremoteservicesstatus
- getsel
- getsensorinfo
- getssninfo
- getsvctag
- getsysinfo
- gettracelog
- getversion
- groupmanager
- httpsbootcert
- hwinventory
- ifconfig
- ilkm
- infinibandstatistics
- inlettemphistory
- jobqueue

- krbkeytabupload
- lclog
- license
- netstat
- networktransceiverstatistics
- nicstatistics
- pcieslotview
- ping
- ping6
- plugin
- racadm proxy
- racdump
- racreset
- racresetcfg
- recover
- remoteimage
- remoteimage2
- rollback
- sekm
- serialcapture
- sensorsettings
- serveraction
- setled
- setniccfg
- spdm
- sshpkauth
- sslcertdelete
- sslcertdownload
- sslcertupload
- sslcertview
- sslcsrgen
- sslkeyupload
- sslresetcfg
- storage
- supportassist
- swinventory
- switchconnection
- systemerase
- systemperfstatistics
- techsupreport
- testalert
- testemail
- testrsyslogconnection
- testtrap
- traceroute
- traceroute6
- update
- usercertupload
- usercertview
- vflashpartition
- vflashsd
- vmdisconnect
- witnessnodepoweraction

Guidelines to Quote Strings Containing Special Characters When Using RACADM Commands

When using strings that contain special characters, use the following guidelines:

Strings containing the following special characters must be quoted using single quotation marks or double quotation marks:

- $ (dollar sign)
- " (double quotation marks)
- ` (backward quotation marks)
- \ (backward slash)
- ~ (tilde)
- | (vertical bar)
- ((left parentheses)
-) (right parentheses)
- & (ampersand)
- > (greater than)
- < (less than)
- # (pound)
- ASCII code 32 (space)

NOTE: The following character must always be escaped by preceding with a backward slash.

- \ (backward slash)

There are different escaping rules for double quotation marks.

For using double quotation marks:

The following characters must be escaped by preceding with a backward slash:

- $ (dollar sign)
- " (double quotation marks)
- ` (back quotation marks)
- ' (single quotation marks)

help and help subcommand

Table 6. help and help subcommand

Help and help subcommand	
Description	Lists all the subcommands available for use with RACADM and provides a short description about each subcommand. You may also type a subcommand, group, object or Fully Qualified Descriptor (FQDD) name after `help`.
Synopsis	• `racadm help` • `racadm help <subcommand>`
Input	• `<subcommand>` — specifies the subcommand for which you need the help information. • `<device name>` — specifies the device name such as iDRAC, BIOS, NIC, LifecycleController, FC, system, or Storage. • `<group>` — specifies the group name supported by the corresponding device. • `<object>` — specifies the object for the entered group.
Output	• The `help` command displays a complete list of subcommands. • The `racadm help <subcommand>` command displays information for the specified subcommand only. • The `racadm help <device name> <Group>` command displays information for the specified group. • The `racadm help <device name> <Group> <Object>` command displays information for the specified object.

Table 6. help and help subcommand (continued)

Help and help subcommand	
	NOTE: `help` for NIC/FC/Infiniband vendor implementation specific attributes are fetched from the respective vendors and may not be complete for few attributes.
Example	To display the help information about InfiniBand FQDD: `racadm help <InfiniBand FQDD>`

ackdriveremoval

Table 7. Details of ackdriveremoval command

ackdriveremoval	
Description	The plug-in subcommand acknowledges drive removal and clears the amber state of the chassis LED to healthy state.
Synopsis	• racadm ackdriveremoval -d <drive_id> -b <bay_id> • racadm ackdriveremoval --all
Input	• --all—Acknowledge all the drive removal. • -d—Drive ID to acknowledge drive removal. • -b—Bay ID to acknowledge drive removal.

Example	To acknowledge all the drive removal:
	`racadm ackdriveremoval --all`
	To acknowledge the drive removal for a given drive and bay id:
	`racadm ackdriveremoval -d 2 -b 0`

arp

Table 8. Details of arp command

arp	
Description	• Displays the contents of the Address Resolution Protocol (ARP) table. ARP table entries cannot be added or deleted. • To use this command, you must have Debug privilege.
Synopsis	`racadm arp`
Input	N/A
Example	`racadm arp`

Output

Table 9. Details of output

Address	HW Type	HW Address	Mask	Device
192.168.1.1	Ether	00:0d:65:f3:7c:bf	C	eth0

autoupdatescheduler

Table 10. Details of the autoupdatescheduler command

autoupdatescheduler	
Description	You can automatically update the firmware of the devices on the server. To run this subcommand, you must have the Server Control privilege. **NOTE:** • The `autoupdatescheduler` subcommand can be enabled or disabled. • Lifecycle Controller and CSIOR may not be enabled to run this subcommand. • The autoupdatescheduler can be enabled or disabled. • The minimum Lifecycle Controller version required is Lifecycle Controller 1.3. • When a job is already scheduled and the `clear` command is run, the scheduling parameters are cleared. • If the network share is not accessible or the catalog file is missing when the job is scheduled, then the job is unsuccessful.

Synopsis	• To create the AutoUpdateScheduler, run the command.
	`racadm autoupdatescheduler create -u <user> -p <password> -l <location> -f <filename> -time <time> -dom <DayOfMonth> -wom <WeekOfMonth> -dow <DayofWeek> -rp <repeat> -a <applyreboot> -ph <proxyHost> -pu <proxyUser> -pp <proxyPassword> -po <proxyPort> -pt <proxyType>`
	• To view the AutoUpdateScheduler parameter, run the command.
	`racadm autoupdatescheduler view`
	• To clear and display AutoUpdateScheduler parameter, run the command.
	`racadm autoupdatescheduler clear`
	NOTE: After the parameters are cleared, the AutoUpdateScheduler is disabled. To schedule the update again, enable the AutoUpdateScheduler.

Input	Valid options: • `-u` — Specifies the username of the remote share that stores the catalog file. **NOTE:** For CIFS, enter the domain name as domain or username. • `-p` — Specifies the password of the remote share that stores the catalog file. • `-l` — Specifies the network share (NFS, CIFS, FTP, TFTP, HTTP, or HTTPS) location of the catalog file. IPv4 and IPv6 addresses are supported. • `-f` — Specifies the catalog location and the filename. If the filename is not specified, then the default file used is `catalog.xml`. **NOTE:** If the file is in a subfolder within the share location, then enter the network share location in the `-l` option and enter the subfolder location and the filename in the `-f` option. • `-ph` — Specifies the FTP/HTTP proxy hostname. • `-pu` — Specifies the FTP/HTTP proxy username. • `-pp` — Specifies the FTP/HTTP proxy password. • `-po` — Specifies the FTP/HTTP proxy port. • `-pt` — Specifies the FTP/HTTP proxy type. • `-time` — Specifies the time to schedule an autoupdate in the HH:MM format. This option must be specified. • `-dom` — Specifies the day of month to schedule an autoupdate. Valid values are 1–28, L (Last day) or '*' (default—any day).

Table 10. Details of the autoupdatescheduler command (continued)

autoupdatescheduler	

	• -wom — Specifies the week of month to schedule an autoupdate. Valid values are 1–4, L (Last week) or '*' (default—any week).
	• -dow — Specifies the day of week to schedule an autoupdate. Valid values are sun, mon, tue, wed, thu, fri, sat, or '*' (default—any day).
	NOTE: The -dom, -wom, or -dow option must be included in the command for the autoupdate schedule. The * value for the options must be included within ' ' (single quotation mark).
	  • If the -dom option is specified, then the -wom and -dow options are not required.
	  • If the-wom option is specified, then the-dow is required and -dom is not required.
	  • If the-dom option is non-'*', then the schedule repeats by month.
	  • If the-wom option is non-'*', then the schedule repeats by month.
	  • If the-dom and -wom options are '*' and the -dow option is non-'*', then the schedule repeats by week.
	  • If all the three -dom, -wom and -dow options are '*', then the schedule repeats by day.
	• -rp — Specifies the repeat parameter. This parameter must be specified.
	  ○ If the-dom option is specified, then the valid values for -rp are 1–12.
	  ○ If the-wom option is specified, then the valid values for -rp are 1–52.
	  ○ If the-dow option is specified, then the valid values for -rp are 1–366.
	• -a — Applies reboot (1—Yes, 0—No). This option must be specified.

Example	Usage examples:
	• To configure autoupdate feature settings.
	  ○ For CIFS, run the command:
	`racadm autoupdatescheduler create -u domain/admin -p xxx -l // 1.2.3.4/share -f cat.xml -time 14:30 -wom 1 -dow sun -rp 1 -a 1`
	  ○ For NFS, run the command:
	`racadm autoupdatescheduler create -u nfsadmin -p nfspwd -l 1.2.3.4:/share -f cat.xml -time 14:30 -dom 1 -rp 5 -a 1`
	  ○ For FTP, run the command:
	`racadm autoupdatescheduler create -u ftpuser -p ftppwd -l` **`ftp.test.com`** `-f cat.xml.gz -ph 10.20.30.40 -pu padmin -pp ppwd -po 8080 -pt http -time 14:30 -dom 1 -rp 5 -a 1`
	  ○ For HTTP, run the command:
	`racadm autoupdatescheduler create -u httpuser -p httppwd -l http://test.com -f cat.xml -ph 10.20.30.40 -pu padmin -pp ppwd - po 8080 -pt http -time 14:30 -dom 1 -rp 5 -a 1`
	  ○ For TFTP, run the command:
	`racadm autoupdatescheduler create -l tftp://1.2.3.4 -f cat.xml.gz -time 14:30 -dom 1 -rp 5 -a 1`
	  ○ To view AutoUpdateScheduler parameter:
	`racadm autoupdatescheduler view`
	`hostname = 192.168.0`
	`sharename = nfs`
	`sharetype = nfs`
	`catalogname = Catlog.xml`
	`time = 14:30dayofmonth =1`
	`repeat = 5`
	`applyreboot = 1`
	`idracuser = racuser`

Table 10. Details of the autoupdatescheduler command (continued)

autoupdatescheduler	

	○ To clear and display AutoUpdateScheduler parameter:
	`racadm autoupdatescheduler clear`
	`RAC1047: Successfully cleared the Automatic Update (autoupdate) feature settings`

bioscert

Table 11. Details of the bioscert command

bioscert	
Description	Allows you to ● View the installed Secure Boot Certificates. To view, you must have the Login privilege. ● Export the Secure Boot Certificate to a remote share or local system. To export, you must have the Login privilege. ● Import the Secure Boot Certificate from a remote share or local system. To import, you must have login and system control privilege. ● Delete the installed Secure Boot Certificate. To delete, you must have login and system control privilege. ● Restore the installed Secure Boot Certificate Sections. To restore, you must have login and system control privilege.

Synopsis	● To view the installed Secure Boot Certificates
	`racadm bioscert view –all`
	● To export the Secure Boot Certificate to a remote share or local system.
	`racadm bioscert view -t <keyType> -k <KeySubType> -v <HashValue or ThumbPrintValue>`
	● `racadm bioscert export -t <keyType> -k <KeySubType> -v <HashValue or ThumbPrintValue> -f <filename> -l <CIFS/NFS/HTTP/HTTPS share> -u <username> -p <password>`
	● `racadm bioscert import -t <keyType> -k <KeySubType> -f <filename> -l <CIFS/NFS/HTTP/HTTPS share> -u <username> -p <password>`
	● `racadm bioscert delete –all`
	● `racadm bioscert delete -t <keyType> -k <KeySubType> -v <HashValue or ThumbPrintValue>`
	● `racadm bioscert restore –all`
	● `racadm bioscert restore -t <keyType>`

Input	● `-t` — Specifies the key type of the Secure Boot Certificate to be exported. ○ 0—Specifies the PK (Platform Key) ○ 1—Specifies the KEK (Key Exchange Key) ○ 2—Specifies the DB (Signature Database) ○ 3—Specifies the DBX (Forbidden signatures Database) ● `-k` — Specifies the Certificate type or the Hash type of the Secure Boot Certificate file to be exported. ○ 0—Specifies the Certificate type ○ 1—Specifies the Hash type (SHA - 256)

Table 11. Details of the bioscert command (continued)

bioscert	
	○ 2—Specifies the Hash type (SHA - 384) ○ 3—Specifies the Hash type (SHA - 512) ● -v— Specifies the Thumbprint value or the Hash value of the Secure Boot Certificate file to be exported. ● -f—Specifies the file name of the exported Secure Boot Certificate. ● -l—Specifies the network location to where the Secure Boot Certificate file must be exported. ● -u—Specifies the username for the remote share to where the Secure Boot Certificate file must be exported. ● -p—Specifies the password for the remote share to where the Secure Boot Certificate file must be exported.

Example	● To view the installed Secure boot Certificates.
	`racadm bioscert view -all`
	● To view an installed PK Certificate
	`racadm bioscert view -t 0 -k 0 -v AB:A8:F8:BD:17:1E:35:12:90:67:CD:0E:69:66:79:9B:BE:64:52:0E`
	● To view an installed DBX certificate of HASH type SHA-256.
	`racadm bioscert view -t 3 -k 1 -v 416e3e4a6722a534afba9040b6d6a69cc313f1e48e7959f57bf248d543d00245`
	● Export the KEK certificate to a remote CIFS share.
	`racadm bioscert export -t 1 -k 0 -v AB:A8:F8:BD:17:1E:35:12:90:67:CD:0E:69:66:79:9B:BE:64:52:0E -f kek_cert.der -l //10.94.161.103/share -u admin -p mypass`
	● Export the DBX (Hash Type SHA-256) to a remote NFS share.
	`racadm bioscert export -t 3 -k 1 -v 416e3e4a6722a534afba9040b6d6a69cc313f1e48e7959f57bf248d543d00245 -f kek_cert.der -l 192.168.2.14:/share`
	● Export the KEK certificate to a local share using the local racadm.
	`racadm bioscert export -t 1 -k 0 -v AB:A8:F8:BD:17:1E:35:12:90:67:CD:0E:69:66:79:9B:BE:64:52:0E -f kek_cert.der`
	● Export the KEK certificate to a local share using remote racadm.
	`racadm -r 10.94.161.119 -u root -p calvin bioscert export -t 1 -k 0 -v AB:A8:F8:BD:17:1E:35:12:90:67:CD:0E:69:66:79:9B:BE:64:52:0E -f kek_cert.der`
	● Import the KEK certificate from the CIFS share to the embedded iDRAC.
	`racadm bioscert import -t 1 -k 0 -f kek_cert.der -l //10.94.161.103/share -u admin -p mypass`
	● Import KEK (Hash Type SHA-256) from a CIFS share to the embedded iDRAC
	`racadm bioscert import -t 1 -k 1 -f kek_cert.der -l //192.168.2.140/licshare -u admin -p passwd`
	● Import a KEK certificate from a NFS share to the embedded iDRAC.
	`racadm bioscert import -t 1 -k 0 -f kek_cert.der -l 192.168.2.14:/share`

Table 11. Details of the bioscert command (continued)

bioscert	

	• Import a KEK certificate from a local share using Local RACADM.
	`racadm bioscert import -t 1 -k 0 -f kek_cert.der`
	• Import a KEK certificate from a local share using remote RACADM.
	`racadm -r 10.94.161.119 -u root -p calvin bioscert import -t 1 -k 0 -f kek_cert.der`
	• To delete an installed KEK Secure Boot Certificate
	`racadm bioscert delete -t 3 -k 0 -v 416e3e4a6722a534afba9040b6d6a69cc313f1e48e7959f57bf248d543d00245`
	• To delete an installed DBX Secure Boot Certificate of HASH type SHA-256.
	`racadm bioscert delete -t 3 -k 1 -v 416e3e4a6722a534afba9040b6d6a69cc313f1e48e7959f57bf248d543d00245`
	• To delete all the installed KEK Secure Boot Certificates
	`racadm bioscert delete --all`
	• To restore the installed KEK Secure Boot Certificates
	`racadm bioscert restore -t 1`
	• To restore all the installed Secure Boot Certificates
	`racadm bioscert restore --all`

biosscan

Table 12. Details of the biosscan command

biosscan	
Description	Allows iDRAC to scan the BIOS on scheduled intervals or as requested by the user.

Synopsis	To schedule BIOS scanning
	`racadm biosscan -s <Frequency Type>`
	or
	`racadm biosscan -s <frequency> -t <start-time> -d <start-date>`

Input	• `-s`—Specifies the type of schedule for BIOS scan. ○ 0—Never schedule for BIOS scan and deletes existing schedules ○ 1—Schedule now ○ 2—Schedule daily ○ 3—Schedule weekly ○ 4—Schedule monthly ○ 5—Schedule yearly • `-t<HH:00>`—Schedule start time in a 24-hour format. Specifying minute is not supported, therefore the minute value must be set as 00. The default time is set to 23:00 if time is not specified. • `-d<YYYY-MM-DD>`—Schedule start date. The default date is set to the current date when the date is not specified. **NOTE:** -t and -d inputs must be specified together and are not applicable for -s 0 and -s 1.

Table 12. Details of the biosscan command (continued)

biosscan	
	NOTE: In modular systems, the scheduled start time (minutes) may vary based on the server slot number.

Example	• To perform the BIOS Scan immediately:
	`racadm biosscan -s 1`
	• To perform the BIOS Scan daily:
	`racadm biosscan -s 2`
	• To perform BIOS scan weekly at 2100 Hrs from December 20, 2020:
	`racadm biosscan -s 3 -t 21:00 -d 2020-12-20`
	• To perform BIOS scan weekly from today at default time 23:00:
	`racadm biosscan -s 3`

cd

Table 13. Details of cd command

cd	
Description	To change the current working object, use this command.
Synopsis	`racadm>> cd <object>`
Input	`racadm>> cd <object>`
Output	Displays the new prompt.

Example	• Example 1: To navigate to the system device type directory:
	`racadm>>cd system`
	`racadm/system>`
	• Example 2: To run all the power-related `get` or `set` commands:
	`racadm/system>cd power`
	`racadm/Power>`

NOTE: To go back to the previous directory, use the `cd..` command.

clearasrscreen

Table 14. Details of the clearasrscreen command

clearasrscreen	
Description	Clears the last crash (ASR) screen that is in memory. For more information, see "Enabling Last Crash Screen" section in Integrated Dell Remote Access Controller User's Guide. **NOTE:** To run this subcommand, you must have the Clear Logs permission.

Table 14. Details of the clearasrscreen command (continued)

clearasrscreen	
Synopsis	`racadm clearasrscreen`
Input	None
Output	Clears the last crash screen buffer.
Example	`racadm clearasrscreen`

clearpending

Table 15. Details of clearpending command

clearpending	
Description	Deletes the pending values of all the attributes (objects) in the device (NIC, BIOS, FC, and Storage). **NOTE:** If any attribute is not modified or a job is already scheduled for the same device, then the pending state is not cleared or deleted.
Synopsis	`racadm clearpending <FQDD>`
Input	`<FQDD>` — The values are: • BIOS FQDD • NIC FQDD • InfiniBand FQDD • FC FQDD • Storage controller FQDD
Output	A message is displayed indicating that the pending state is cleared or deleted.

Example	• To clear the pending state of NIC device
	`racadm clearpending NIC.Integrated.1-1`
	• To clear the pending state of InfiniBand device
	`racadm clearpending <InfiniBand FQDD>`

closessn

Table 16. Details of closessn

closessn	
Description	Closes a communication session on the device. Use `getssninfo` to view a list of sessions that can be closed using this command. To run this subcommand, you must have the Administrator permission. **NOTE:** This subcommand ends all the sessions other than the current session.
Synopsis	• `racadm closessn -i <session_ID>` • `racadm closessn -a` • `racadm closessn -u <username>`

Table 16. Details of closessn (continued)

closessn	
Input	• `–i <session_ID>` — The session ID of the session to close, which can be retrieved using RACADM `getssninfo` subcommand. Session running this command cannot be closed. • `–a` — Closes all sessions. • `–u <username>` — Closes all sessions for a particular user name.
Output	Successful or error message is displayed.

Example	• Closes the session 1234.
	`racadm closessn -i 1234`
	• Closes all the sessions other then the active session for root user.
	`racadm closessn –u root`
	• Closes all the sessions.
	`racadm closessn –a`

clrsel

Table 17. Details of clrsel

clrsel	
Description	• Removes all the existing records from the System Event Log (SEL). • To use this subcommand, you must have **Clear Logs** permission.
Synopsis	`racadm clrsel`
Example	• `racadm clrsel` The SEL was cleared successfully

cmreset

Table 18. Details of cmreset

cmreset	
Description	This command is used to perform a chassis manager reset operation.
Synopsis	**NOTE:** This command is only supported on DCS systems. • `racadm cmreset`
Example	• To perform the chassis manager reset operation. `racadm cmreset`

connect

Table 19. Details of connect

connect	
Description	Allows you to connect to the switch or blade serial console. **NOTE:** This subcommand is only supported on the firmware interface.
Synopsis	• `racadm connect [-b] -m <module>`
Input	• `-b`—binary mode. **NOTE:** If -b is used, CMC must be reset to terminate connect. • `-m`—module, and can be one of the following values: ○ `server-<n>`—where n = 1 to 16 ○ `server-<nx>`—where n = 1 to 8 and x = a to d ○ `switch-n`—where n = 1 to 6 or <a1 | a2 | b1 | b2 | c1 | c2>

Examples	• To connect to I/O Module 1 serial console:
	`racadm connect -m switch-1`
	• To connect to server 1 serial console:
	`racadm connect -m server-1`

coredump

Table 20. Details of coredump

coredump	
Description	Displays the list of RAC coredump files. If available, the coredump information is persistent across iDRAC power cycles and remains available until either of the following conditions occur: The coredump information is deleted using the coredumpdelete subcommand. For more information about clearing the `coredump`, see the coredumpdelete. **NOTE:** To use this subcommand, you must have the **Execute Debug** privilege.
Synopsis	`racadm coredump`

Example	• `racadm coredump`
	`There is no coredump currently available.`
	• `racadm coredump`
	`<size>  <date & time>     <name>`
	`863     Feb  8 05:56   corefile1.gz`
	`31      Feb  8 05:56   corefile2.gz`
	`322     Feb  8 05:56   corefile3.gz`
	NOTE: The output displays the file size in kilobytes.

coredumpdelete

Table 21. Details of coredumpdelete

coredumpdelete	
Description	Deletes any currently available coredump data stored in the RAC. To use this subcommand, you must have **Execute Debug** Command permission. **NOTE:** If a `coredumpdelete` command is issued and a `coredump` is not currently stored in the RAC, the command displays a success message. This behavior is expected. See the `coredump` subcommand for more information about viewing a coredump.
Synopsis	`racadm coredumpdelete [-f <coreFileName>][--all]`
Output	Coredump is deleted.
Input	• `-f <coreFileName>`— Specifies the name of the core file to be deleted. • `--all`— Deletes all core files.

Example	• To delete a specific core file
	`racadm coredumpdelete -f corefile.gz`
	• To delete all core files
	`racadm coredumpdelete --all`

coredumpexport

Table 22. Details of coredumpexport

coredumpexport	
Description	Exports the RAC coredump files.
Synopsis	`racadm coredumpexport -f <filename> -l <NFS or CIFS share> -u <username> -p <password>`
Output	Coredump files exported successfully
Input	• `-u <username>` —Username of the remote share to where the file must be exported. • `-p <password>` —Password for the remote share to where the file must be exported. • `-l <location>` —NFS/CIFS Network share location to where the file must be exported. • `-f <filename>` —Core file to be exported.

Example	• Export a particular coredump file to a remote CIFS share:
	`racadm coredumpexport -f corefile.gz -u admin -p mypass -l //1.2.3.4/share`
	• Export a particular coredump file to a remote NFS share:
	`racadm coredumpexport -f corefile.gz -u admin -p mypass -l 1.2.3.4:/share`

diagnostics

Table 23. Details of diagnostics

diagnostics	
Description	Collects and exports remote diagnostics report from iDRAC. The results of the latest successfully run remote diagnostics are available and retrievable remotely through an NFS, CIFS, HTTP, or HTTPS) share.

Synopsis	To run a remote diagnostic report:
	`racadm diagnostics run -m <mode> -r <reboot type> -s <start time> -e <expiration time>`
	To export a remote diagnostic report:
	`racadm diagnostics export -f <file name> -l <NFS,CIFS,HTTP,or HTTPS share location> -u <username> -p <password>`

`Input`	• `–m <mode>`—Specifies the type of diagnostic mode. The types are:
	  ○ Collect and export remote diagnostics report from the iDRAC. The results of the latest successfully executed remote Diagnostics will be available and retrievable remotely through the NFS, CIFS, HTTP, and HTTPS share.
	  ○ `0`(Express)—The express mode executes a subset of diagnostic tests.
	  ○ `1`(Extended)—The extended mode executes all available diagnostics tests.
	  ○ `2`(Both)—Runs express and extended tests serially in sequence.
	• `-f <filename>`—Specifies the name of the configuration file.
	• `-l`—Specifies the location of the network share (NFS, CIFS, HTTP, and HTTPS).
	• `-u <username>`—Specifies the user name of the remote share to import the file.
	• `-p <password>`—Specifies the password of the remote share to import the file.
	• `-r <reboot type>`—Specifies the reboot type. The type can be one of the following:
	  ○ `pwrcycle`—Power cycle
	  ○ `Graceful` —Graceful reboot without forced shutdown
	  ○ `Forced`—Graceful reboot with forced shutdown
	• `-s <start time>`—Specifies the start time for the scheduled job in yyyymmddhhmmss format. The default value `TIME_NOW` starts the job immediately.
	• `-e <expiration time>`—Specifies the expiry time for the scheduled job in yyyymmddhhmmss format. The default value `TIME_NA` does not apply the waiting time.
	NOTE: For the diagnostic report run operation, the time difference between the `-s` and `-e` options must be more than five minutes.

Output	Provides the Job ID for the diagnostic operation.

Examples	• To initiate the remote diagnostic operation:
	`racadm diagnostics run -m 1 -r forced -s 20121215101010 -e TIME_NA`
	• To export a remote diagnostics report to CIFS share:
	`racadm diagnostics export -f diagnostics -l //192.168.0/cifs -u administrator -p xxx`
	• To export a remote diagnostics report to NFS share:
	`racadm diagnostics export -f diagnostics -l 192.168.0:/nfs -u administrator -p xxx`
	• To export a remote diagnostics report to the HTTP share:
	`racadm diagnostics export -f diags.txt -u httpuser -p httppwd -l http://test.com`

Table 23. Details of diagnostics (continued)

diagnostics	

	• To export a remote diagnostics report to the HTTPS share:
	`racadm diagnostics export -f diags.txt -u httpsuser -p httpspwd -l https://test.com`
	• To export a remote diagnostics report to a local share:
	`racadm diagnostics export -f diags.txt`

driverpack

Table 24. Details of driverpack

driverpack	
Description	Installs the driver pack for the operating system.

Synopsis	To get information about the available driver packs
	`racadm driverpack getinfo`
	To attach the driver pack that matches the operating system
	`Racadm driverpack attach -i <index> -t <expose duration>`
	To detach the driver pack
	`Racadm driverpack detach`

Input	• `-i`—index of the operating system • `-t`—exposed time duration in seconds. It is an optional parameter and the default value is 64800 seconds.

Output	• `racadm driverpack getinfo`—<OS name>
	• `Racadm driverpack attach`—Job Id details
	• `Racadm driverpack detach`—detach successful
	`racadm driverpack getinfo–<OS name>`
	`Racadm driverpack attach–Job Id details`
	`Racadm driverpack detach–detach successful`

Example	• To attach the driver pack with operating system index and exposed time
	`racadm driverpack attach -i <OS Index> [-t <exposed time>]`
	• To check the job status
	`racadm jobqueue view -i JID_000000000000`
	• To detach the operating system
	`racadm driverpack detach`

NOTE: In the local RACADM interface, if a driver pack is attached, some of the export operation commands may not work as expected. Ensure that the driver pack is detached before using commands like serialcapture export, hwinventory, swinventory, hwinventory export, and inlettemphistory export.

eventfilters

Table 25. Details of eventfilters

eventfilters	
Description	Displays the list of event filter settings. To use this subcommand with the `set` and `test` option, you must have the **Administrator** privilege.

Synopsis	`racadm eventfilters <eventfilters command type>`
	`racadm eventfilters get -c <alert category>`
	`racadm eventfilters set -c <alert category> -a <action> -n <notifications>`
	`racadm eventfilters set -c <alert category> -a <action> -r <recurrence>`
	`racadm eventfilters test -i <Message ID to test>`
	NOTE: The general format of an alert category:
	`idrac.alert.category.[subcategory].[severity]`
	where category is mandatory, but subcategory and severity are optional. A severity cannot precede a subcategory.
	Valid Category values are:
	• `All`
	• `System`
	• `Storage`
	• `Updates`
	• `Audit`
	• `Config`
	• `Worknotes`
	Definitions of the values are:
	• System Health—System Health category represents all the alerts that are related to hardware within the system chassis. Examples include temperature errors, voltage errors, and device errors.
	• Storage Health—Storage Health category represents alerts that are related to the storage subsystem. Examples include, controller errors, physical disk errors, and virtual disk errors.
	• Updates—Update category represents alerts that are generated when firmware/drivers are upgraded or downgraded.
	NOTE: This does not represent firmware inventory.
	• Audit—Audit category represents the audit log. Examples include, user login/logout information, password authentication failures, session info, and power states.
	• Configuration—Configuration category represents alerts that are related to hardware, firmware, and software configuration changes. Examples include, PCIe card added/removed, RAID configuration changed, iDRAC license changed.
	• Work notes—Work notes represents an entry in the Lifecycle log. You can add a work note to the Lifecycle Log to record comments for your reference. You can enter comments such as scheduled downtime or changes that are made by administrators who work in different shifts for the later reference.

Table 25. Details of eventfilters (continued)

eventfilters	
	NOTE: `idrac.all.all` is not a valid sub category. Valid Severity values are: • `Critical` • `Warning` • `Info` Valid examples of alert queries are: • `idrac.alert.all` • `idrac.alert.audit` • `idrac.alert.audit.lic` • `idrac.alert.audit.warning` • `idrac.alert.audit.lic.critical` This command does not support setting the proxy parameters if the share location (-l) is HTTP/HTTPS. For more information, see Proxy parameter section.
Input	• `get`—Displays the list of eventfilter settings • `set`—Configures the actions and notifications for a given eventfilter configuration • `-i`—Message ID for which the simulation is needed • `-c`—Alert category of the specific event filter • `-a`—The action that must be invoked when the event occurs. Valid values are `none`, `powercycle`, `power off`, or `systemreset` • `-n`—The notification is sent when the event occurs. Valid values are `all`, `snmp`, `ipmi`, `ws-events`, `redfish-events`, `oslog`, `email`, `remotesyslog`, or `none`. You can append multiple notifications that are separated by a comma. You cannot enter the values `all` or `none` with other notifications. If incorrect notification is specified along with other valid notifications, the valid and invalid notification set is failed. • `-r`—Event generation interval. This option is applicable only to the temperature statistics subcategory `tmps`. You can use this option as a stand-alone or with `-n` and `-a`. **NOTE:** If both **event generation interval** and **notifications** are configured and there is an error while configuring the notifications, the event generation interval is not set. The valid values are 0–365. 0 disables the event generation.

Example	• Display all available event filter configurations.
	`racadm eventfilters get -c idrac.alert.all`
	• Display eventfilter configurations for a specific category. For example, audit
	`racadm eventfilters get -c idrac.alert.audit`
	• Display eventfilter configurations for a specific subcategory. For example, licensing under the audit category
	`racadm eventfilters get -c idrac.alert.audit.lic`
	• Display eventfilter configurations for a specific severity. For example, warning under the audit category
	`racadm eventfilters get -c idrac.alert.audit.warning`
	• Display eventfilter configurations for a specific severity and subcategory. For example, a severity of warning in the subcategory licensing under audit category
	`racadm eventfilters get -c idrac.alert.audit.lic.warning`
	• Clear all available alert settings.
	`racadm eventfilters set -c idrac.alert.all -a none -n none`

Table 25. Details of eventfilters (continued)

eventfilters	

	• Configure using severity as a parameter. For example, all informational events in storage category are assigned power off as action, and email and SNMP as notifications.
	`racadm eventfilters set -c idrac.alert.storage.info -a poweroff -n email,snmp`
	• Configure using subcategory as a parameter. For example, all configurations under the licensing subcategory in the audit category are assigned power off as action and all notifications are enabled.
	`racadm eventfilters set -c idrac.alert.audit.lic -a poweroff -n all`
	• Configure using subcategory and severity as parameters. For example, all information events under the licensing subcategory in the audit category are assigned power off as action and all notifications are disabled:
	`racadm eventfilters set -c idrac.alert.audit.lic.info -a poweroff -n none`
	• Configure the event generation interval for temperature statistics.
	`racadm eventfilters set -c idrac.alert.system.tmps.warning -r 10`
	• Configure the event generation interval and notifications for temperature statistics.
	`racadm eventfilters set -c idrac.alert.system.tmps -r 5 -a none -n snmp`
	• Send a test alert for the fan event.
	`racadm eventfilters test -i FAN0001`
	• To configure the proxy parameter.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername admin1`
	• To remove the proxy parameter.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername`
	• To view the list of proxy attributes.
	`racadm get lifecycleController.lcAttributes`

exposeismminstallertohost

Table 26. Details of exposeismminstallertohost

exposeismminstallertohost	
Description	Exposes the ISM installer to host OS
Synopsis	`racadm exposeismminstallertohost`
Input	Not Applicable
Example	Not Applicable

fcstatistics

Table 27. Details of fcstatistics

fcstatistics	
Description	Displays a list of FCs (FQDDs), managed server for which statistics is available.
Synopsis	`racadm fcstatistics <FC fqdd>`
Input	`<FC fqdd>` — Specify the FQDD of the target FC device.
Example	`racadm fcstatistics <FC fqdd>`

frontpanelerror

Table 28. Details of frontpanelerror

frontpanelerror	
Description	Enables or disables the live-feed of the errors currently being displayed on the LCD screen. For error acknowledge use `hide`, and error assert use `show`.
Synopsis	`racadm frontpanelerror show` `racadm frontpanelerror hide`
Input	• `show` — to view the errors currently being displayed on the LCD screen. • `hide` — to hide the errors currently being displayed on the LCD screen.

Example	• `racadm frontpanelerror show`
	`Front Panel Error—Show Enabled.`
	• `racadm frontpanelerror hide`
	`Front Panel Error—Hide Enabled.`

fwupdate

Table 29. Details of fwupdate

fwupdate	
Description	Allows you to update the firmware. You can: • Check the firmware update process status. • Update iDRAC firmware from FTP or TFTP server by providing an IP address and optional path. • Update iDRAC firmware from the local file system using Local and Remote RACADM. • Roll back to the standby firmware. To use this subcommand, you must have Configure iDRAC permission. **NOTE:** This command is only for iDRAC firmware update. For any other firmware update like BIOS or DUPs, use **Update** subcommand. **NOTE:** If the iSM is exposed on the host server, you may see the `Firmware update operation is already in progress` error.

Table 29. Details of fwupdate (continued)

fwupdate	
	NOTE: If the iSM is exposed on the host server, you may see the `Firmware update operation is already in progress` error. **NOTE:** Disabling the `idrac.info.FactoryresetEnable` parameter and executing a firmware update with the `-clearcfg` flag prevents the iDRAC settings from reverting to the previous configuration.

Synopsis	`racadm fwupdate -s`
	`racadm fwupdate -g -u -a <TFTP_Server_IP_Address> [-d <path> [--clearcfg]`
	`racadm -r <iDRAC IP_Address> -u <username> -p <password> fwupdate -f <ftpserver ip> <ftpserver username> <ftpserver password> -d <path> where path is the location on the ftp server where firmimgFIT.d9 is stored.`
	`racadm fwupdate -r`
	`racadm fwupdate -p -u [-d <path>]`
	NOTE: When attempting to run firmware update task, if the firmware image path length is greater than 256 characters, remote RACADM client exits with the error message "`ERROR: Specified path is too long`".

Input	• `–u`—The update option performs a checksum of the firmware update file and starts the update process. This option may be used along with the `–g` or `–p` options. At the end of the update, iDRAC performs a soft reset. • `–s`—This option returns the status of the update process. • `-a`—The `-a` option specifies TFTP server IP address that is used for firmware image. This option must be used with the `-g` option. • `--clearcfg`—The `-clearcfg` option removes the previous iDRAC configuration after firmware update. • `-g`—The get option instructs the firmware to get the firmware update file from the TFTP server. Specify the `-a -u`, and `–d` options. In the absence of the `–a` option, the defaults are read from properties in the group `cfgRemoteHosts`, using properties `cfgRhostsFwUpdateIpAddr` and `cfgRhostsFwUpdatePath`. • `-p`—The `-p`, or put, option is used to update the firmware file from the managed system to iDRAC. The `-u` option must be used with the `-p` option. • `Default`: Designated TFTP default directory on that host for the file if `-g` option is absent. If `-g` is used, it defaults to a directory configured on the TFTP server. **NOTE:** The `-p` option is supported on local and remote RACADM and is not supported with the `serial/ssh` console and on the Linux operating systems. **NOTE:** The `-p` option is applicable for both remote and local RACADM proxy commands. However, this option is not supported for local RACADM running on Linux operating systems. **NOTE:** The filename for firmware update file must be firmimgFIT.d9. • `-r`—The rollback option is used to roll back to the standby firmware.
Output	Displays a message indicating the operation that is being performed.
Example	• Uploads a firmware image from the client and start firmware update: `racadm fwupdate -p -u -d /tmp/images`

Table 29. Details of fwupdate (continued)

fwupdate	

	• Upload firmware image from FTP server and start firmware update:
	`racadm fwupdate -f 192.168.0.10 test test -d firmimgFIT.d9`
	• Upload firmware image from TFTP server and start firmware update:
	`racadm fwupdate -g -u -a 192.168.0.100 -d /tmp/images`
	• Query the current status of the firmware update process:
	`racadm fwupdate -s`
	• Rollback to the standby firmware:
	`racadm fwupdate -r`
	• Upload firmware image from TFTP server, start firmware update. After firmware update is complete, delete previous iDRAC configuration:
	`racadm fwupdate -g -u -a 192.168.0.100 -d /tmp/images --clearcfg`
	NOTE: Firmware update from local RACADM (using `-p -u -d` options) is not supported on Linux operating system.

The following table describes the firmware update method that is supported for each interface:

Table 30. Details of fwupdate methods

FW Update Method	iDRAC on Blade Servers	iDRAC on Rack and Tower Servers
Local RACADM	Yes	Yes
Local RACADM-TFTP	Yes	Yes
Local RACADM-FTP	Yes	Yes
Remote RACADM	Yes	Yes
Remote RACADM-TFTP	Yes	Yes
Remote RACADM-FTP	Yes	Yes
Firmware RACADM-TFTP	Yes	Yes
Firmware RACADM-FTP	Yes	Yes

gethostnetworkinterfaces

Table 31. Details of gethostnetworkinterfaces

gethostnetworkinterfaces	
Description	Displays host network interface details. **NOTE:** To run this subcommand, you must have iDRAC Service Module installed on the server operating system.
Synopsis	`racadm gethostnetworkinterfaces` `racadm gethostnetworkinterfaces <NIC FQDD>`

Table 31. Details of gethostnetworkinterfaces (continued)

gethostnetworkinterfaces	

Examples	• To display the details of all the network interfaces on the server.
	`racadm gethostnetworkinterfaces`
	`Local Area Connection 12`
	`Description : iDRAC Virtual NIC USB Device #8`
	`Status : Up`
	`Interface Type : Ethernet`
	`DHCP : Enabled`
	`DHCPServerV4 : 169.254.0.1`
	`MAC Address : 00-25-64-F9-7A-E7`
	`IPv4 Address : 169.254.0.2`
	`Subnet Mask : 255.255.255.0`
	`IPv6 Address : fe80::1cce:a0a7:f30e:54fc`
	`Prefix Length : 64`
	`IPv6 DNSServer Address 0: fec0:0:0:ffff::1`
	`IPv6 DNSServer Address 1: fec0:0:0:ffff::2`
	`IPv6 DNSServer Address 2: fec0:0:0:ffff::3`
	• To display the details of a particular NIC on the server.
	`racadm gethostnetworkinterfaces NIC.Integrated.1-1-1`
	`Local Area Connection`
	`Description : Broadcom NetXtreme Gigabit Ethernet`
	`Status : Up`
	`Interface Type : Ethernet`
	`DHCP : Enabled`
	`DHCPServerV4 : 10.94.224.25`
	`MAC Address : 14-FE-B5-FF-B1-9C`
	`FQDD : NIC.Integrated.1-1-1`
	`IPv4 Address : 10.94.225.189`
	`Subnet Mask : 255.255.255.128`
	`IPv6 Address : fe80::7c5f:a114:84d4:17f6`
	`Prefix Length : 64`
	`IPv4 Gateway Address : 10.94.225.129`
	`IPv4 DNSServer Address 0: 10.116.2.250`
	`IPv4 DNSServer Address 1: 10.116.2.251`

getled

Table 32. Details of getled

getled	
Description	Displays the LED settings on a module: blinking, not blinking, or unknown (for empty slots). To run this subcommand, you must have the Login User privilege.
Synopsis	`racadm getled`
Output	• LED is blinking • LED is not-blinking

Example	`racadm getled`
	`LED State : Blinking`
	`racadm getled`
	`LED State : Not-Blinking`

getmetrics

Table 33. Details of getmetrics

getmetrics	
Description	• The `racadm getmetrics accelerator` command is used to display the GPU and proaccelerator devices. • The `racadm getmetrics <GPU_FQDD>` command is used to display utilization of GPU devices such as GPU Utilization, Memory Utilization, Graphics clock frequency, and Memory clock frequency.
Synopsis	`racadm getmetrics accelerator` `racadm getmetrics <GPU_FQDD>`
Input	• `<GPU_FQDD>`— FQDD of GPU device

Example	To display the GPU and proaccelerator devices:
	`racadm getmetrics accelerator`
	To display the utilization of the particular GPU device:
	`racadm getmetrics Video.Slot.1-1`

getniccfg

Table 34. Details of getniccfg

getniccfg	
Description	Displays the current and static NIC settings for iDRAC.
Synopsis	`racadm getniccfg`

Output	The `getniccfg` subcommand displays an appropriate error message if the operation is not successful. Otherwise, the output is displayed in the following format: The following provides the details of IPV4 settings:
	`IPv4 settings:`
	`NIC Enabled =1`
	`IPv4 Enabled =1`
	`DHCP Enabled =0`
	`IP Address =10.94.227.207`
	`Subnet Mask =255.255.255.0`
	`Gateway =10.94.227.1`
	`IPv6 settings:`
	`IPv6 Enabled =Enabled`
	`DHCP6 Enabled =Enabled`
	`IP Address 1 =::`
	`Gateway =::`
	`Link Local Address =::`
	`IP Address 2 =::`
	`IP Address 3 =::`
	`IP Address 4 =::`
	`IP Address 5 =::`
	`IP Address 6 =::`
	`IP Address 7 =::`
	`IP Address 8 =::`
	`IP Address 9 =::`
	`IP Address 10 =::`

Table 34. Details of getniccfg (continued)

getniccfg	
	IP Address 11 =:: IP Address 12 =:: IP Address 13 =:: IP Address 14 =:: IP Address 15 =:: LOM Status: NIC Selection =dedicated Link Detected =Yes Speed =1Gb/s Duplex Mode =Full Duplex Active NIC =Dedicated Static IPv4 settings: Static IP Address =10.94.227.207 Static Subnet Mask =255.255.255.0 Static Gateway =10.94.227.1 Static IPv6 settings: Static IP Address 1 =:: Static Prefix Length =64 Static Gateway =:: **NOTE:** IPv6 information is displayed only if IPv6 is enabled in iDRAC. **NOTE:** IPv6 Address 1 field indicates static IP and IPv6 Address 2 field indicates dynamic IP. **NOTE:** LOM Status is displayed only for iDRAC on Rack and Tower servers and is not displayed for iDRAC Enterprise on Blade servers.
Example	• Display iDRAC network settings in server slot 1 `racadm getniccfg`

getraclog

Table 35. Details of getraclog

getraclog	
Description	The `getraclog` command displays RAC log entries.
Synopsis	• `racadm getraclog [-i]` • `racadm getraclog [-s <start>] [-c <count>]` `racadm getraclog [-c <count>] [-s <start-record>]` **NOTE:** If options are not provided, the entire log is displayed.
Input	• `-c` — Specifies the number of records to display. **NOTE:** On Local RACADM, the number of logs are restricted to 100 by default. • `-s` — Specifies the starting record used for the display. **NOTE:** When Enhanced Chassis Logging and Events feature is enabled, then -i and --more options are not displayed.

Table 35. Details of getraclog (continued)

getraclog	

Output	`SeqNumber = 286`
	`Message ID = USR0005`
	`Category = Audit`
	`AgentID = RACLOG`
	`Severity = Information`
	`Timestamp = 2017-05-15 06:25:27`
	`Message = Login failed from processdisco06a: 192.168.0`
	`Message Arg 1 = processdisco06a`
	`Message Arg 2 = 10.92.68.245`
	`FQDD = iDRAC.Embedded.1`

Example	Display the recent 2 records for RAC log
	`racadm getraclog -c`
	`2`
	`SeqNumber = 4102`
	`Message ID = LIC201`
	`Category = Audit`
	`AgentID = DE`
	`Severity = Warning`
	`Timestamp = 2017-05-15 06:30:20`
	`Message = License yPMRJGuEf7z5HG8LO7gh assigned to device iDRAC expires in 4 days.`
	`Message Arg 1 = yPMRJGuEf7z5HG8LO7ghMessage Arg 2 = iDRACMessage Arg 3 = 4`
	`---------`
	`SeqNumber = 4101`
	`Message ID = USR0032`
	`Category = Audit`
	`AgentID = RACLOG`
	`Severity = Information`
	`Timestamp = 2017-05-15 06:25:27`
	`Message = The session for root from 192.168.0 using RACADM is logged off.`
	`Message Arg 1 = root`
	`Message Arg 2 = 10.94.98.92`
	`Message Arg 3 = RACADM`
	`FQDD = iDRAC.Embedded.1`
	`----------`

getractime

Table 36. Details of getractime

getractime	
Description	Displays the current iDRAC time.
Synopsis	• `racadm getractime [-d]`
Input	• `-d` — Displays the time in the format, YYYYMMDDhhmmss.
Output	The current iDRAC time is displayed.

Example	• `racadm getractime`
	`Mon May 13 17:17:12 2013`
	• `racadm getractime -d`
	`20141126114423`

getremoteservicesstatus

Table 37. Details of getremoteservicesstatus

getremoteservicesstatus	
Description	Displays the status of a system.
Synopsis	`racadm getremoteservicesstatus`
Input	`racadm getremoteservicesstatus` Possible values for the host system status • Powered Off • In POST • Out of POST • Collecting System Inventory • Automated Task Execution • Lifecycle Controller Unified Server Configurator • Server has halted at F1/F2 error prompt because of a POST error • Server has halted at F1/F2/F11 prompt because there are no bootable devices available • Server has entered F2 setup menu • Server has entered F11 Boot Manager menu Possible values for the for Lifecycle controller(LC) status • Ready • Not Initialized • Reloading data • Disabled • In Recovery • In Use Possible values for the real time status • Ready • Not ready • Not Applicable **NOTE:** The real time status is displayed as **Not Applicable** if there are no real time capable controllers present on the system. Possible values for the overall status • Ready • Not ready Possible values for the Telemetry status • Ready • Not ready
Example	• `racadm getremoteservicesstatus`

getsel

Table 38. Details of getsel

getsel	
Description	Displays all system event log (SEL) entries in iDRAC.
Synopsis	• `racadm getsel [-i]` • `racadm getsel [-s <start>][-c <count>]` **NOTE:** If no arguments are specified, the entire log is displayed.

Table 38. Details of getsel (continued)

getsel	
Input	• `–i` — Displays the number of entries in the SEL. • `-s` — Displays the starting record number. • `-c` — Specifies the number of records to display. • `--more` — Displays a screen. **NOTE:** Press Q to exit from the screen. • `-A` — Does not display headers or labels. • `-o` — Displays each record on a single line.. • `-E` — Displays RAW SEL data along with the other data. • `-R` — Displays only the RAW SEL data for each record

Example	• Display entire log.
	`racadm getsel`
	• Display number of records in log.
	`racadm getsel -i`

getsensorinfo

Table 39. Details of getsensorinfo

getsensorinfo	
Description	Displays the status for system sensors. **NOTE:** For the Dell PowerEdge FX2 chassis with the FM120x4 server, the power-related information is not displayed.
Synopsis	• `racadm getsensorinfo` • `racadm getsensorinfo -c`
Input	`-c`—Compact output format.

NOTE: Chassis Controller is supported only on PowerEdge FX2, and GPU sensors are displayed only on PowerEdge C4140 servers. **Example**

```
racadm getsensorinfo
Sensor Type : POWER
```

NOTE: For current information of supported properties and their values, see the iDRAC Online Help.

Table 40. racadm getsensorinfo Sensor Type : POWER

<Sensor Name>	<Status>	<Type>	<Input Power>
PS1 Status	Present	AC	Watts
PS2 Status	AC-Lost	AC	Watts

```
Sensor Type : TEMPERATURE
```

Table 41. Sensor Type : TEMPERATURE

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>	<Inc>[R/W]	<Unc>[R/W]
System Board Inlet Temp	Ok	20 C	-7 C	47 C	3 C [Y]	42C [Y]
System Board Exhaust Temp	Ok	19 C	0 C	75 C	0 C [N]	70 C [N]
CPU1 Temp	Ok	59 C	3 C	97 C	8 C [N]	92 C [N]

```
Sensor Type : FAN
```

Table 42. Sensor Type : FAN

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>	<PWM %>
System Board Fan1 RPM	Ok	5880 RPM	600 RPM	NA	21%
System Board Fan2 RPM	Ok	6000 RPM	600 RPM	NA	0%
System Board Fan3 RPM	Ok	5880 RPM	600 RPM	NA	0%
System Board Fan4 RPM	Ok	5880 RPM	600 RPM	NA	0%
System Board Fan5 RPM	Ok	5640 RPM	600 RPM	NA	144%
System Board Fan6 RPM	Ok	5880 RPM	600 RPM	NA	152%

```
Sensor Type : VOLTAGE
```

Table 43. Sensor Type : VOLTAGE

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>
CPU1 VCORE PG	Ok	Good	NA	NA
System Board 3.3V PG	Ok	Good	NA	NA
System Board 5V AUX PG	Ok	Good	NA	NA
CPU1 M23 VPP PG	Ok	Good	NA	NA
System Board 1.05V PG	Ok	Good	NA	NA
CPU1 M23 VDDQ PG	Ok	Good	NA	NA
CPU1 M23 VTT PG	Ok	Good	NA	NA
System Board 5V SWITCH PG	Ok	Good	NA	NA
System Board VCCIO PG	Ok	Good	NA	NA

Table 43. Sensor Type : VOLTAGE (continued)

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>
System Board 2.5V AUX PG	Ok	Good	NA	NA
PS1 Voltage 1	Ok	-28.00V	NA	NA
PS1 Voltage 2	Ok	0.00V	NA	NA
CPU1 M01 VDDQ PG	Ok	Good	NA	NA
System Board NDC PG	Ok	Good	NA	NA
CPU1 M01 VPP PG	Ok	Good	NA	NA
System Board 1.5V PG	Ok	Good	NA	NA
System Board PS2 PG Fail	Ok	Good	NA	NA
System Board PS1 PG Fail	Ok	Good	NA	NA
System Board 1.5V AUX PG	Ok	Good	NA	NA
CPU1 M01 VTT PG	Ok	Good	NA	NA
PS1 Voltage 1	Ok	240 V	NA	NA
System Board DIMM PG	Ok	Good	NA	NA

```
Sensor Type : CURRENT
```

Table 44. Sensor Type : CURRENT

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>	<Inc> [R/W]	<unc> [R/W]
PS1 Current 1	Ok	0.4 Amps	NA	NA	0 Amps [N]	0 Amps [N]
System Board Pwr Consumption	Ok	56 Watts	NA	1386 Watts	0 Watts [N]	1260 Watts [N]

```
Sensor Type : PROCESSOR
```

Table 45. Sensor Type : PROCESSOR

<Sensor Name>	<Status>	<State>	<lc>	<uc>
CPU1 Status	Ok	Presence Detected	NA	NA
CPU2 Status	N/A	Absent	NA	NA

```
Sensor Type : MEMORY
```

Table 46. Sensor Type : MEMORY

<Sensor Name>	<Status>	<State>	<lc>	<uc>
DIMM A1	N/A	Presence Detected	NA	NA
DIMM A2	N/A	Absent	NA	NA

Table 46. Sensor Type : MEMORY (continued)

<Sensor Name>	<Status>	<State>	<lc>	<uc>
DIMM A3	Ok	Absent	NA	NA
DIMM A4	N/A	Absent	NA	NA
DIMM A5	N/A	Absent	NA	NA
DIMM A6	N/A	Absent	NA	NA
DIMM A7	N/A	Absent	NA	NA
DIMM A8	N/A	Absent	NA	NA
DIMM A9	N/A	Absent	NA	NA
DIMM A10	N/A	Absent	NA	NA
DIMM A11	N/A	Absent	NA	NA
DIMM A12	N/A	Absent	NA	NA
DIMM B1	N/A	Absent	NA	NA
DIMM B2	N/A	Absent	NA	NA
DIMM B3	N/A	Absent	NA	NA
DIMM B4	N/A	Absent	NA	NA
DIMM B5	N/A	Absent	NA	NA
DIMM B6	N/A	Absent	NA	NA
DIMM B7	N/A	Absent	NA	NA
DIMM B8	N/A	Absent	NA	NA
DIMM B9	N/A	Absent	NA	NA
DIMM B10	N/A	Absent	NA	NA
DIMM B11	N/A	Absent	NA	NA
DIMM B12	N/A	Absent	NA	NA

```
Sensor Type : Chassis Controller
```

Table 47. Sensor Type : Chassis Controller

<Sensor Name>	<Status>	<State>
Chassis Controller	OK	OK

```
Sensor Type : BATTERY
```

Table 48. Sensor Type : BATTERY

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>
System Board CMOS Battery	Ok	Present	NA	NA
PERC1 ROMB Battery	Ok	Unknown	NA	NA
PERC2 ROMB Battery	Ok	Unknown	NA	NA

```
Sensor Type : PERFORMANCE
```

Table 49. Sensor Type : PERFORMANCE

<Sensor Name>	<Status>	<Status>	<lc>	<uc>
System Board Power Optimized	Ok	Not Degraded	NA	NA

```
Sensor Type : INTRUSION
```

Table 50. Sensor Type : INTRUSION

<Sensor Name>	<Intrusion>	<Status>
System Board Intrusion	Closed	Power ON

```
Sensor Type : REDUNDANCY
```

Table 51. Sensor Type : REDUNDANCY

<Sensor Name>	<Status>	<Type>
System Board Fan Redundancy	Full Redundant	Fan
System Board PS Redundancy	Disabled	PSU

```
Sensor Type : SYSTEM PERFORMANCE
```

Table 52. Sensor Type : SYSTEM PERFORMANCE

<Sensor Name>	<Status>	<Reading>	<lc>	<uc>	<Inc> [R/W]	<unc> [R/W]
System Board CPU Usage	Non-Critical	0%	0%	100%	0% [N]	99% [Y]
System Board IO Usage	Non-Critical	0%	0%	100%	0% [N]	99% [Y]
System Board MEM Usage	Non-Critical	0%	0%	100%	0% [N]	99% [Y]
System Board SYS Usage	Non-Critical	0%	0%	100%	0% [N]	99% [Y]

Table 53. Sensor Type : GPU Power

<Sensor Name>	<PwrConsumption>	<PwrSupplyStatus>	<BoardPwrSupplyStatus>
Video.Slot.1	4.3MW	Enabled	Disabled
Video.Slot.3	4.3MW	Enabled	Disabled
Video.Slot.5	4.3MW	Enabled	Disabled
Video.Slot.4	4.3MW	Enabled	Disabled
Video.Slot.8	4.3MW	Enabled	Disabled

Table 54. Sensor Type : GPU Temperature

<Sensor Name>	<GPU Temperature>	<SecondaryGPUTemp>	<BoardTemp>	<MemoryTemp>
Video.Slot.1	29C	255C	255C	255C

Table 54. Sensor Type : GPU Temperature (continued)

<Sensor Name>	<GPU Temperature>	<SecondaryGPUTemp>	<BoardTemp>	<MemoryTemp>
Video.Slot.3	56C	255C	255C	255C
Video.Slot.5	57C	255C	255C	255C
Video.Slot.4	32C	255C	255C	255C
Video.Slot.8	30C	255C	255C	255C

Table 55. Sensor Type : GPU Thermal

<Sensor Name>	<GPU Target Temp>	<MinGPUHwSlowdownTemp>	<GPUShutdownTemp>	<MaxMemoryOperatingTemp>	<MaxGPUOperatingTemp>	<ThermalAlertStatus>	<PowerBrakeStatus>
Video.Slot.1	255C	255C	255C	255C	255C	Disabled	Disabled
Video.Slot.3	255C	255C	255C	255C	255C	Disabled	Disabled
Video.Slot.5	255C	255C	255C	255C	255C	Disabled	Disabled
Video.Slot.4	255C	255C	255C	255C	255C	Disabled	Disabled
Video.Slot.8	255C	255C	255C	255C	255C	Disabled	Disabled

Table 56. Sensor Type : MAX DIMM TEMPERATURE

Sensor Name	Reading
Max DIMM Temperature	24.000

Table 57. Sensor Type : NIC TEMPERATURE

Sensor Name	Reading
Temp Sensor.1	51.0C

Table 58. Sensor Type : NIC POWER

Sensor Name	Reading
Power Sensor.2	26.0W

getssninfo

Table 59. Details of getssninfo

getssninfo	
Description	Displays a list of users that are connected to iDRAC. The following information is displayed: • Session ID • Username • IP address (if applicable) • Session type • Login date and time in MM/DD/YYYY HH:MM:SS format **NOTE:** Based on the Session ID (SSNID) or the user name (User), the iDRAC administrator can close the respective sessions or all the sessions using the `closessn` subcommand. For more information, see closessn.

Table 59. Details of getssninfo (continued)

getssninfo	
Synopsis	`racadm getssninfo [-u <username>] [-A]`
Input	• `-u` — displays only sessions associated with a specific user. • `-A` — does not display headers or labels.

Example

```
racadm getssninfo
```

Table 60. racadm getssninfo

SSNID	Type	User	IP Address	Login Date/Time
58999	SSH	root	192.168.0.10	04/07/2016 12:00:34

Display the details of sessions without header

```
racadm getssninfo -A
```

```
"43584" "SSH" "root" "192.168.0.10" "04/07/2016 12:00:34"
```

getsvctag

Table 61. Details of getsvctag

getsvctag	
Description	Displays the service tag of the host system.
Synopsis	`racadm getsvctag`
Output	Any system tag as applicable.
Example	• Display the service tag of the host system. `racadm getsvctag`

getsysinfo

Table 62. Details of getsysinfo

getsysinfo	
Description	Displays information related to iDRAC, managed system, and watchdog configuration. **NOTE:** The hostname and OS Name fields in the `getsysinfo` output display accurate information only if the **OpenManage Server Administrator (OMSA**) is installed on the managed system. If OMSA is not installed these fields may be blank or inaccurate. An exception to this are the VMware and Windows operating system names, which are displayed even if OMSA is not installed on the managed system.
Synopsis	`racadm getsysinfo [-d] [-A] [-c] [-4] [-6]`
Input	• `–4`—Displays IPv4 settings • `–6`—Displays IPv6 settings • `–c`—Displays common settings • `–d`—Displays iDRAC information

Table 62. Details of getsysinfo (continued)

getsysinfo	
	• –A—Eliminates the printing of headers or labels

Output

```
RAC Information:
RAC Date/Time           = Tue Aug  2 14:22:36 2022

Firmware Version        = 6.00.30.00
Firmware Build          = 20
Last Firmware Update    = 06/28/2022 11:47:02
Hardware Version        = 0.01
MAC Address             = 90:8d:6e:fa:f6:4e
SVC Tag                 = 7894561

Common settings:
Register DNS RAC Name   = 0
DNS RAC Name            = idrac-7894561
Current DNS Domain      =
Domain Name from DHCP   = Disabled

IPv4 settings:
Enabled                 = 1
Current IP Address      = 100.101.21.94
Current IP Gateway      = 100.101.21.1
Current IP Netmask      = 255.255.255.0
DHCP Enabled            = 1
Current DNS Server 1    = 100.101.0.5
Current DNS Server 2    = 10.8.8.8
DNS Servers from DHCP   = Enabled

IPv6 settings:
Enabled                 = 1
Current IP Address 1    = 2607:f2b1:f088:21::1e3/128
Current IP Gateway      = fe80::de11:bdc:21:1
Autoconfig              = 1
Link Local IP Address   = fe80::607c:4042:56e2:871b/128
Current IP Address 2    = 2607:f2b1:f088:21:3e9d:c9a7:2afe:8f65/128KN
Current IP Address 3    = ::
Current IP Address 4    = ::
Current IP Address 5    = ::
Current IP Address 6    = ::
Current IP Address 7    = ::
Current IP Address 8    = ::
Current IP Address 9    = ::
Current IP Address 10   = ::
Current IP Address 11   = ::
Current IP Address 12   = ::
Current IP Address 13   = ::
Current IP Address 14   = ::
Current IP Address 15   = ::
DNS Servers from DHCPv6 = Disabled
Current DNS Server 1    = ::
Current DNS Server 2    = ::

System Information:
System Model            = PowerEdge XR4510c
System Revision         = I
System BIOS Version     = 0.3.8
Service Tag             = 7894561
Express Svc Code        = 15736515625
Host Name               = WIN-JG3S2H0KE9V
OS Name                 =
OS Version              =
Power Status            = ON
Fresh Air Capable       = No
RollupStatus            = Error

Watchdog Information:
Recovery Action         = None
```

```
Present countdown value =  seconds
Initial countdown value =  seconds

Chassis Information:
Chassis Service Tag     =
Chassis Manager Version = 0.17.0.0.0.0

System Thermal Information:
EstimatedSystemAirflow  =  NA
EstimatedExhaustTemperature =  NA

Embedded NIC MAC Addresses:
NIC.Embedded.1-1-1      Ethernet                = 00:00:00:00:01:00
NIC.Embedded.2-1-1      Ethernet                = 00:00:00:00:01:01
NIC.Embedded.3-1-1      Ethernet                = 00:00:00:00:01:02
NIC.Embedded.4-1-1      Ethernet                = 00:00:00:00:01:03
```

Example

- Display system information

```
racadm getsysinfo -c
```

- Display iDRAC information

```
racadm getsysinfo -d
```

- Display IPv4 details without header

```
racadm getsysinfo -A
```

```
"RAC IPv4 Information:"
"1"
"10.94.195.33"
"10.94.195.1"
"255.255.255.0"
"1"
"10.94.192.67"
"0.0.0.0"
"1"
```

- Display svctag information

```
racadm -r 10.94.95.96 getsysinfo -d
```

gettracelog

Table 63. Details of gettracelog

gettracelog	
Description	Lists all the trace login entries of iDRAC.
Synopsis	• `racadm gettracelog [-i]` • `racadm gettracelog [-s <start>] [-c <count>]`
Input	• `–i` — Displays the number of entries in iDRAC trace log. • `-c` — Specifies the number of records to display. • `-s` — Specifies the starting record to display.
Output	The default output display shows the record number, timestamp, source and description. The timestamp begins at midnight, January 1 and increases until the system starts. After the system starts, the system's timestamp is used.

Table 63. Details of gettracelog (continued)

gettracelog	

Example	• Display entire log
	`racadm gettracelog`
	• Display number of records in log
	`racadm gettracelog -i`
	`Total Records: 228`

getversion

Table 64. Details of getversion

getversion	
Description	Displays the current software version, model and generation information, and whether the target device can be updated.
Synopsis	• `racadm getversion` • `racadm getversion [-b | -c | –i]` • `racadm getversion [-f <filter>]`

Input	• `-c` — Displays the server's current CPLD version.
	• `-b` — Displays the server's current BIOS version.
	• `-i` — Displays the server's current IDSDM version.
	• `-f <filter>` — Filters the components and must be one of the following values:
	  ○ `bios`: BIOS
	  ○ `idrac`: iDRAC
	  ○ `lc`: Lifecycle Controller
	  ○ `idsdm`: SD card

```
racadm getversion -c
```

Table 65. Details of `racadm getversion -c`

<Server>	<CPLD Version>	<Blade Type>
server-1	1.0.5	PowerEdgeM520
server-2	1.0.3	PowerEdgeM610x
server-4	1.0.0	PowerEdgeM710HD
server-5	1.0.3	PowerEdgeM710
server-7	1.0.6	PowerEdgeM620

Table 65. Details of `racadm getversion -c`

<Server>	<CPLD Version>	<Blade Type>
server-9	1.0.5	PowerEdgeM520

```
racadm getversion
Bios Version = 2.0.18
iDRAC Version = 2.00.00.00
Lifecycle Controller Version = 2.00.00.00
```

`racadm getversion -b`

Table 66. Details of `racadm getversion -b`

<Server>	<BIOS Version>	<Blade Type>
server-1	1.6.0	PowerEdgeM520
server-2	6.3.0	PowerEdgeM610x
server-4	7.0.0	PowerEdgeM710HD
server-5	6.3.0	PowerEdgeM710
server-7	1.7.1	PowerEdgeM620
server-9	1.7.1	PowerEdgeM520

Table 67. Details

<Switch>	<Model Name>	<HW Version>	<FW Version>
switch-1	MXL 10/40GbE	X01	9-2(0-296)
switch-2	M8024-k 10GbE SW	A00	5.0.1.3
switch-3	Dell PowerConnect M8024	X00	Not applicable
switch-4	Dell PowerConnect M8024	X00	Not applicable
switch-5	Dell PowerConnect M6348	X02	Not applicable
switch-6	Dell PowerConnect M6220	A01	Not applicable

groupmanager

Table 68. Details of groupmanager

groupmanager	
Description	Allows you to: • Delete the group from the group manager. • Remove the iDRAC from group by itself by using admin privileges. • Join the group using administrator privileges. **NOTE:** This subcommand is supported only on iDRAC9.

Synopsis	• To delete the group from the group manager.
	`groupmanager delete -g <groupname>`
	• To remove the iDRAC from group by itself by using administrator privileges.
	`groupmanager removeself -g <groupname>`
	• To join the group using administrator privileges.
	`groupmanager joingroup -g <groupname> -uid <uuid> -pcode < grouppasscode>`

Input	• `-g`— Specifies the name of the iDRAC member group • `-uid` — Specifies the group user id • `-pcode`— Specifies the group passcode

Example	• To delete the group from the groupmanager:
	`racadm groupmanager delete -g <groupname>`
	• To remove the iDRAC from the group by itself:
	`racadm groupmanager removeself -g <groupname>`
	• To join server to the local iDRAC group:
	`racadm groupmanager joingroup -g <mygrpxyz> -uid <uid1234> -pcode <12345>`

httpsbootcert

Table 69. Details of httpsbootcert

httpsbootcert	
Description	Allows you to manage BIOS https Boot Certificate Management operations.

Synopsis	• To import the bios https Boot Certificate from a remote share or local system
	`racadm httpsbootcert help import`
	• To export the bios https boot Certificate to a remote share or local system
	`racadm httpsbootcert help export`
	• To delete the bios https boot certificate
	`racadm httpsbootcert help delete`

Input	• `-i`—Index of the boot device 1 to 4

Table 69. Details of httpsbootcert (continued)

httpsbootcert	
	• `-f`—Filename of the bios https Boot Device Certificate • `-l`—Network share location <CIFS/NFS/HTTP/HTTPS share> • `-u`—Username for the remote share • `-p`—Password for the remote share **NOTE:** The supported file formats are .cer,.der,.crt,.pem and .txt. **NOTE:** This command supports both IPV4 and IPV6 formats. IPV6 is applicable for CIFS and NFS type remote shares.

Example	• To import the boot device cert with index 1 from a remote CIFS share:
	`racadm httpsbootcert import -i 1 -f httpsboot_cert.txt -l // 10.94.161.103/share -u admin -p mypass`
	• To import the boot device cert with index 2 from a remote NFS share:
	`racadm httpsbootcert import -i 2 -f httpsboot_cert.cer -l 192.168.2.14:/share`
	• To import the boot device cert with index 2 from a remote HTTP share:
	`racadm httpsbootcert import -i 2 -f httpsboot_cert.der -l http:// 192.168.10.24/share -u myuser -p mypass`
	• To import the boot device cert with index 2 from a remote HTTPS share:
	`racadm httpsbootcert import -i 2 -f httpsboot_cert.pem -l https:// 192.168.10.24/share -u myuser -p mypass`
	• To ilmport the boot device cert with index 3 from a local share using local racadm:
	`racadm httpsbootcert import -f httpsboot_cert.crt`
	• To import the boot device cert with index 4 from a local share using remote racadm:
	`racadm -r 10.94.161.119 -u root -p calvin httpsbootcert import -f httpsboot_cert.txt`
	• To export the boot device cert with index 1 to a remote CIFS share:
	`racadm httpsbootcert export -i 1 -f httpsboot_cert.txt -l // 10.94.161.103/share -u admin -p mypass`
	• To export the boot device cert with index 2 to a remote NFS share:
	`racadm httpsbootcert export -i 2 -f httpsboot_cert.cer -l 192.168.2.14:/share`
	• To export the boot device cert with index 2 to a remote HTTP share:
	`racadm httpsbootcert export -i 2 -f httpsboot_cert.der -l http:// 192.168.10.24/share -u myuser -p mypass`
	• To export the boot device cert with index 2 to a remote HTTPS share:
	`racadm httpsbootcert export -i 2 -f httpsboot_cert.crt -l https:// 192.168.10.24/share -u myuser -p mypass`
	• To export the boot device cert with index 3 to local share using local racadm:
	`racadm httpsbootcert export -f httpsboot_cert.pem`

Table 69. Details of httpsbootcert (continued)

httpsbootcert	

	• To export the boot device cert with index 4 to a local share using remote racadm:
	`racadm -r 10.94.161.119 -u root -p calvin httpsbootcert export -f httpsboot_cert.txt`
	NOTE: These commands do not support setting the proxy parameters if the share location is HTTP/HTTPS. To perform the operation with HTTP or HTTPS via a proxy, the proxy parameters must be first configured using the `lifecyclecontroller.lcattributes` group. Once these proxy parameters are configured, they become the part of default configuration. The proxy attributes should be cleared to end use of the HTTP/HTTPS proxy. The valid `lifecyclecontroller.lcattributes` HTTP/HTTPS proxy parameters are:
	• UserProxyUserName
	• UserProxyPassword
	• UserProxyServer
	• UserProxyPort
	• UserProxyType
	To view the list of proxy attributes, use `racadm get lifecycleController.lcAttributes`.
	• To delete the boot device cert with index 1:
	`racadm httpsbootcert delete -i 1`
	• To delete the boot device cert with index 2:
	`racadm httpsbootcert delete -i 2`

hwinventory

Table 70. Details of hwinventory

hwinventory	
Description	Allows you to display or export current internal hardware inventory or shipped hardware inventory by device. **NOTE:** iDRAC supports a maximum of 12 parallel sessions of hardware inventory.
Synopsis	• `racadm hwinventory` • `racadm hwinventory networktransceiver` • `racadm hwinventory NIC|FC|Infiniband` • `racadm hwinventory <FQDD>` • `racadm hwinventory export -f <filename> -u <username> -p <password> -l <CIFS or NFS share>` • `racadm hwinventory export -f <filename> -u <username> -p <password> -l <HTTP or HTTPS share> -port <port number>`
Input	• `<FQDD>` — Specifies the FQDD of the target device. o `FQDD` — NIC.Slot.1–2 **NOTE:** The hwinventory subcommand supports NIC, Infiniband, and FC FQDDs only. • `-f` — Exported Hardware Inventory filename. • `-u` — Username of the remote share to where the file must be exported. Specify the user name in a domain as **domain/username**. • `-p` — Password for the remote share to where the file must be exported. • `-l` — Network share location to where the Hardware Inventory must be exported.

Table 70. Details of hwinventory (continued)

hwinventory	
	• -port — Specifies the port number. **NOTE:** This is an optional parameter. If this option is not specified, the default port number is used.

Examples

- To get the hwinventory, run the following command:

```
racadm hwinventory
------------------------HARDWARE INVENTORY-----------------------

[InstanceID: AHCI.Embedded.1-1]
Device Type = Controller
AlarmState = Alarm Not present
AutoConfigBehavior = NotApplicable
Bus = C8
CPUAffinity = Not Applicable
CacheSizeInMB = 0 MB
CachecadeCapability = Cachecade Virtual Disk not supported
ConfigLockdownCapable = False
ConfigLockdownState = Disabled
ConnectorCount = 0
CurrentControllerMode = NotSupported
Device = 0
DeviceCardDataBusWidth = Unknown
DeviceCardManufacturer = DELL
DeviceCardSlotLength = Unknown
DeviceCardSlotType = Unknown
DeviceDescription = Embedded AHCI 1
DriverVersion = Not Applicable
EncryptionCapability = None
EncryptionMode = None
FQDD = AHCI.Embedded.1-1
Function = 0
InstanceID = AHCI.Embedded.1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-02T17:19:22
MaxAvailablePCILinkSpeed = Not Applicable
MaxPossiblePCILinkSpeed = Not Applicable
PCIDeviceID = 7901
PCISubDeviceID = AF6
PCISubVendorID = 1028
PCIVendorID = 1022
PatrolReadState = Unknown
PersistentHotspare = Not Applicable
PrimaryStatus = Unknown
ProductName = FCH SATA Controller [AHCI mode]
RealtimeCapability = Incapable
RollupStatus = Unknown
SASAddress = Not Applicable
SecurityStatus = Encryption Not Capable
SharedSlotAssignmentAllowed = Not Applicable
SlicedVDCapability = Sliced Virtual Disk creation not supported
SupportControllerBootMode = Not Supported
SupportEnhancedAutoForeignImport = Not Supported
SupportRAID10UnevenSpans = Not supported
SupportsLKMtoSEKMTransition = No
T10PICapability = Not supported
UpdateLockdownCapable = False
UpdateLockdownState = Disabled
----------------------------------------------------------------------

[InstanceID: CPU.Socket.1]
Device Type = CPU
CPUFamily = AMD Zen Processor Family
CPUStatus = CPU Enabled
Cache1Associativity = 8-way Set-Associative
```

```
Cache1ErrorMethodology = Parity
Cache1InstalledSize = 2048 KB
Cache1Level = L1
Cache1Location = Internal
Cache1PrimaryStatus = OK
Cache1SRAMType = Unknown
Cache1Size = 2048 KB
Cache1Type = Unified
Cache1WritePolicy = Write Back
Cache2Associativity = 8-way Set-Associative
Cache2ErrorMethodology = Multi-bit ECC
Cache2InstalledSize = 32768 KB
Cache2Level = L2
Cache2Location = Internal
Cache2PrimaryStatus = OK
Cache2SRAMType = Unknown
Cache2Size = 32768 KB
Cache2Type = Unified
Cache2WritePolicy = Write Back
Cache3Associativity = 16-way Set-Associative
Cache3ErrorMethodology = Multi-bit ECC
Cache3InstalledSize = 131072 KB
Cache3Level = L3
Cache3Location = Internal
Cache3PrimaryStatus = OK
Cache3SRAMType = Unknown
Cache3Size = 131072 KB
Cache3Type = Unified
Cache3WritePolicy = Write Back
Characteristics = 64-bit Capable
CurrentClockSpeed = 2550 MHz
DeviceDescription = CPU 1
ExecuteDisabledCapable = Yes
ExecuteDisabledEnabled = Yes
ExternalBusClockSpeed = 0 MHz
FQDD = CPU.Socket.1
HyperThreadingCapable = Yes
HyperThreadingEnabled = Yes
InstanceID = CPU.Socket.1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-11T14:10:05
Manufacturer = AMD
MaxClockSpeed = 4400 MHz
Model = AMD Eng Sample: 100-000000897-03
NumberOfEnabledCores = 32
NumberOfEnabledThreads = 64
NumberOfProcessorCores = 32
PPIN = 02B688262FEA807C
PrimaryStatus = OK
TurboModeCapable = Yes
TurboModeEnabled = Yes
VirtualizationTechnologyCapable = Yes
VirtualizationTechnologyEnabled = Yes
Voltage = 1.8 V
----------------------------------------------------------------------

[InstanceID: Fan.Embedded.1A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 11760 RPM
DeviceDescription = Fan 1A
FQDD = Fan.Embedded.1A
FanType = Gold
InstanceID = Fan.Embedded.1A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 36 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
```

```
-------------------------------------------------------------------

[InstanceID: Fan.Embedded.2A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 12480 RPM
DeviceDescription = Fan 2A
FQDD = Fan.Embedded.2A
FanType = Gold
InstanceID = Fan.Embedded.2A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------

[InstanceID: Fan.Embedded.3A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 12480 RPM
DeviceDescription = Fan 3A
FQDD = Fan.Embedded.3A
FanType = Gold
InstanceID = Fan.Embedded.3A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------

[InstanceID: Fan.Embedded.4A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 12600 RPM
DeviceDescription = Fan 4A
FQDD = Fan.Embedded.4A
FanType = Gold
InstanceID = Fan.Embedded.4A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------

[InstanceID: Fan.Embedded.5A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 12480 RPM
DeviceDescription = Fan 5A
FQDD = Fan.Embedded.5A
FanType = Gold
InstanceID = Fan.Embedded.5A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
```

```
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.6A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 12480 RPM
DeviceDescription = Fan 6A
FQDD = Fan.Embedded.6A
FanType = Gold
InstanceID = Fan.Embedded.6A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.7A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 12480 RPM
DeviceDescription = Fan 7A
FQDD = Fan.Embedded.7A
FanType = Gold
InstanceID = Fan.Embedded.7A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.8A]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 11640 RPM
DeviceDescription = Fan 8A
FQDD = Fan.Embedded.8A
FanType = Gold
InstanceID = Fan.Embedded.8A
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 36 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.1B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 10080 RPM
DeviceDescription = Fan 1B
FQDD = Fan.Embedded.1B
FanType = Gold
InstanceID = Fan.Embedded.1B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:55
```

```
PWM = 36 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
----------------------------------------------------------------------

[InstanceID: Fan.Embedded.2B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 11040 RPM
DeviceDescription = Fan 2B
FQDD = Fan.Embedded.2B
FanType = Gold
InstanceID = Fan.Embedded.2B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
----------------------------------------------------------------------

[InstanceID: Fan.Embedded.3B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 11040 RPM
DeviceDescription = Fan 3B
FQDD = Fan.Embedded.3B
FanType = Gold
InstanceID = Fan.Embedded.3B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
----------------------------------------------------------------------

[InstanceID: Fan.Embedded.4B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 10920 RPM
DeviceDescription = Fan 4B
FQDD = Fan.Embedded.4B
FanType = Gold
InstanceID = Fan.Embedded.4B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
----------------------------------------------------------------------

[InstanceID: Fan.Embedded.5B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 11160 RPM
DeviceDescription = Fan 5B
FQDD = Fan.Embedded.5B
FanType = Gold
```

```
InstanceID = Fan.Embedded.5B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.6B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 10920 RPM
DeviceDescription = Fan 6B
FQDD = Fan.Embedded.6B
FanType = Gold
InstanceID = Fan.Embedded.6B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.7B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 10920 RPM
DeviceDescription = Fan 7B
FQDD = Fan.Embedded.7B
FanType = Gold
InstanceID = Fan.Embedded.7B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 40 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: Fan.Embedded.8B]
Device Type = Fan
ActiveCooling = 1
BaseUnits = RPM
CurrentReading = 10080 RPM
DeviceDescription = Fan 8B
FQDD = Fan.Embedded.8B
FanType = Gold
InstanceID = Fan.Embedded.8B
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:54
PWM = 36 %
PrimaryStatus = OK
RateUnits = None
RedundancyStatus = Fully Redundant
UnitModifier = 0
VariableSpeed = 1
-------------------------------------------------------------------------

[InstanceID: iDRAC.Embedded.1-1#IDRACinfo]
Device Type = iDRACCard
DNSDomainName = ece.delllabs.net
DNSRacName = idrac-SVCTAG
DeviceDescription = iDRAC
```

```
FQDD = iDRAC.Embedded.1-1
FirmwareVersion = 6.10.80.00
GUID = ffffffff-ffff-ffff-ffff-ffffffffffff
IPMIVersion = 2.0
InstanceID = iDRAC.Embedded.1-1#IDRACinfo
LANEnabledState = Disabled
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:55
Model = Express
PermanentMACAddress = b4:45:06:e6:18:49
ProductDescription = This system component provides a complete set of remote
management functions for PowerEdge servers
SOLEnabledState = Enabled
URLString = https://100.69.39.221:443
----------------------------------------------------------------------

[InstanceID: InfiniBand.Slot.2-1]
Device Type = InfiniBand
BusNumber = 5
CPUAffinity = 1
CurrentMACAddress = 10:70:FD:6D:65:FA
DataBusWidth = 16x or x16
DeviceDescription = InfiniBand in Slot 2 Port 1
DeviceNumber = 0
EFIVersion = 14.28.15
FQDD = InfiniBand.Slot.2-1
FamilyVersion = 28.35.10.12
FunctionNumber = 0
InfiniBandOSDriverVersion = 5.8-1.0.1
InstanceID = InfiniBand.Slot.2-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-09T19:24:50
MediaType = SFF_CAGE
NodeGUID = 1070:FD03:006D:65FA
NumberOfPorts = 1
NumberPCIEFunctionsEnabled = 1
NumberPCIEFunctionsSupported = 1
PCIDeviceID = 1021
PCISubDeviceID = 0041
PCISubVendorID = 15b3
PCIVendorID = 15b3
PermanentMACAddress = 10:70:FD:6D:65:FA
PermanentPortGUID = 1070:FD03:006D:65FA
PrimaryStatus = OK
ProductName = NVIDIA ConnectX-7 Single Port NDR OSFP Adapter - 10:70:FD:6D:65:FA
Protocol = RDMA,InfiniBand
SNAPIState = Disabled
SNAPISupport = Available
SlotLength = Short Length
SlotType = PCI Express Gen 5
UpdateLockdownCapable = True
UpdateLockdownState = Disabled
VPISupport = Not Available
VendorName = Mellanox Technologies, Inc.
VirtNodeGUID = 0000:0000:0000:0000
----------------------------------------------------------------------

[InstanceID: DIMM.Socket.A1]
Device Type = Memory
BankLabel = A
CPUAffinity = 1
CurrentOperatingSpeed = 4800 MT/s
DeviceDescription = DIMM A1
FQDD = DIMM.Socket.A1
InstanceID = DIMM.Socket.A1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-02T03:44:24
ManufactureDate = Mon Dec 13 06:00:00 2021 UTC
Manufacturer = Micron Technology
MemoryTechnology = DRAM
MemoryType = DDR-5
MemoryTypeExtended = RDIMM
Model = DDR5 DIMM
```

```
PartNumber = MTC10F1084S1RC48BA1
PrimaryStatus = OK
Rank = Single Rank
SerialNumber = 336D15F5
Size = 16384 MB
Speed = 4800 MHz
SystemEraseCapability = Not Supported
VolatileSize = 16384 MB
----------------------------------------------------------------------

[InstanceID: NetworkTransceiver.Integrated.1:InfiniBand.Slot.2-1]
Device Type = NetworkTransceiver
DeviceDescription = Network Transceiver in InfiniBand in Slot 2 Port 1
FQDD = NetworkTransceiver.Integrated.1:InfiniBand.Slot.2-1
IdentifierType = OSFP
InstanceID = NetworkTransceiver.Integrated.1:InfiniBand.Slot.2-1
InterfaceType = Not Supported
PartNumber = MCP7Y00-N001
Revision = A2
SerialNumber = MT2243VS02842
VendorName = NVIDIA
----------------------------------------------------------------------

[InstanceID: NetworkTransceiver.Integrated.1:NIC.Integrated.1-2]
Device Type = NetworkTransceiver
DeviceDescription = Network Transceiver in Integrated NIC 1 Port 2
FQDD = NetworkTransceiver.Integrated.1:NIC.Integrated.1-2
IdentifierType = SFP/SFP+/SFP28
InstanceID = NetworkTransceiver.Integrated.1:NIC.Integrated.1-2
InterfaceType = Direct Attach Copper
PartNumber = VXFJY
Revision = A1
SerialNumber = CN0APX00139522J
VendorName = DELL
----------------------------------------------------------------------

[InstanceID: NIC.Embedded.2-1-1]
Device Type = NIC
AutoNegotiation = Disabled
BusNumber = 195
CPUAffinity = 1
ControllerBIOSVersion = 1.39
CurrentMACAddress = EC:2A:72:30:44:8D
DataBusWidth = Unknown
DeviceDescription = Embedded NIC 1 Port 2 Partition 1
DeviceNumber = 0
EFIVersion = 21.6.29
FCoEOffloadMode = Unknown
FQDD = NIC.Embedded.2-1-1
FamilyVersion = 22.0.5
FunctionNumber = 1
InstanceID = NIC.Embedded.2-1-1
LANDriverVersion = 3.137
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-11T11:23:37
LinkDuplex = Unknown
MaxBandwidth = 0
MediaType = Base T
MinBandwidth = 0
NicMode = Unknown
PCIDeviceID = 165f
PCISubDeviceID = 0a6b
PCISubVendorID = 1028
PCIVendorID = 14e4
PermanentMACAddress = EC:2A:72:30:44:8D
PrimaryStatus = OK
ProductName = Broadcom Gigabit Ethernet BCM5720 - EC:2A:72:30:44:8D
Protocol = NIC
ReceiveFlowControl = Off
SNAPIState = Disabled
SNAPISupport = Not Available
SlotLength = Unknown
SlotType = Unknown
```

```
TransmitFlowControl = Off
UpdateLockdownCapable = True
UpdateLockdownState = Disabled
VPISupport = Not Available
VendorName = Broadcom Corp
iScsiOffloadMode = Unknown
----------------------------------------------------------------------

[InstanceID: NIC.Embedded.1-1-1]
Device Type = NIC
AutoNegotiation = Disabled
BusNumber = 195
CPUAffinity = 1
ControllerBIOSVersion = 1.39
CurrentMACAddress = EC:2A:72:30:44:8C
DataBusWidth = Unknown
DeviceDescription = Embedded NIC 1 Port 1 Partition 1
DeviceNumber = 0
EFIVersion = 21.6.29
FCoEOffloadMode = Unknown
FQDD = NIC.Embedded.1-1-1
FamilyVersion = 22.0.5
FunctionNumber = 0
InstanceID = NIC.Embedded.1-1-1
LANDriverVersion = 3.137
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-29T19:35:36
LinkDuplex = Unknown
MaxBandwidth = 0
MediaType = Base T
MinBandwidth = 0
NicMode = Unknown
PCIDeviceID = 165f
PCISubDeviceID = 0a6b
PCISubVendorID = 1028
PCIVendorID = 14e4
PermanentMACAddress = EC:2A:72:30:44:8C
PrimaryStatus = OK
ProductName = Broadcom Gigabit Ethernet BCM5720 - EC:2A:72:30:44:8C
Protocol = NIC
ReceiveFlowControl = Off
SNAPIState = Disabled
SNAPISupport = Not Available
SlotLength = Unknown
SlotType = Unknown
TransmitFlowControl = Off
UpdateLockdownCapable = True
UpdateLockdownState = Disabled
VPISupport = Not Available
VendorName = Broadcom Corp
iScsiOffloadMode = Unknown
----------------------------------------------------------------------

[InstanceID: NIC.Integrated.1-2-1]
Device Type = NIC
AutoNegotiation = Enabled
BusNumber = 196
CPUAffinity = 1
CurrentMACAddress = B8:CE:F6:90:D6:DD
DataBusWidth = Unknown
DeviceDescription = Integrated NIC 1 Port 2 Partition 1
DeviceNumber = 0
EFIVersion = 14.28.15
FCoEOffloadMode = Unknown
FQDD = NIC.Integrated.1-2-1
FamilyVersion = 26.35.10.12
FunctionNumber = 1
InstanceID = NIC.Integrated.1-2-1
LANDriverVersion = 5.8-1.0.1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-09T16:39:57
LinkDuplex = Full Duplex
LinkSpeed = 25Gbps
```

```
MaxBandwidth = 0
MediaType = SFF_CAGE
MinBandwidth = 0
NicMode = Enabled
PCIDeviceID = 101f
PCISubDeviceID = 0019
PCISubVendorID = 15b3
PCIVendorID = 15b3
PartNumber = 0DN78C
PermanentMACAddress = B8:CE:F6:90:D6:DD
PrimaryStatus = OK
ProductName = ConnectX-6 Lx 2x 25G SFP28 OCP3.0 SFF - B8:CE:F6:90:D6:DD
Protocol = NIC,RDMA
ReceiveFlowControl = Off
SNAPIState = Disabled
SNAPISupport = Not Available
SerialNumber = IL7403114P004U
SlotLength = Unknown
SlotType = Unknown
TransmitFlowControl = Off
UpdateLockdownCapable = True
UpdateLockdownState = Disabled
VPISupport = Not Available
VendorName = Mellanox Technologies, Inc.
iScsiOffloadMode = Unknown
------------------------------------------------------------------------

[InstanceID: NIC.Integrated.1-1-1]
Device Type = NIC
AutoNegotiation = Enabled
BusNumber = 196
CPUAffinity = 1
CurrentMACAddress = B8:CE:F6:90:D6:DC
DataBusWidth = Unknown
DeviceDescription = Integrated NIC 1 Port 1 Partition 1
DeviceNumber = 0
EFIVersion = 14.28.15
FCoEOffloadMode = Unknown
FQDD = NIC.Integrated.1-1-1
FamilyVersion = 26.35.10.12
FunctionNumber = 0
InstanceID = NIC.Integrated.1-1-1
LANDriverVersion = 5.8-1.0.1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-02T17:19:22
LinkDuplex = Unknown
MaxBandwidth = 0
MediaType = SFF_CAGE
MinBandwidth = 0
NicMode = Enabled
PCIDeviceID = 101f
PCISubDeviceID = 0019
PCISubVendorID = 15b3
PCIVendorID = 15b3
PartNumber = 0DN78C
PermanentMACAddress = B8:CE:F6:90:D6:DC
PrimaryStatus = OK
ProductName = ConnectX-6 Lx 2x 25G SFP28 OCP3.0 SFF - B8:CE:F6:90:D6:DC
Protocol = NIC,RDMA
ReceiveFlowControl = Off
SNAPIState = Disabled
SNAPISupport = Not Available
SerialNumber = IL7403114P004U
SlotLength = Unknown
SlotType = Unknown
TransmitFlowControl = Off
UpdateLockdownCapable = True
UpdateLockdownState = Disabled
VPISupport = Not Available
VendorName = Mellanox Technologies, Inc.
iScsiOffloadMode = Unknown
------------------------------------------------------------------------
```

```
[InstanceID: HostBridge.Embedded.3-5]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 3-5
DeviceNumber = 7
FQDD = HostBridge.Embedded.3-5
FunctionNumber = 0
InstanceID = HostBridge.Embedded.3-5
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.3-1]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 3-1
DeviceNumber = 1
FQDD = HostBridge.Embedded.3-1
FunctionNumber = 0
InstanceID = HostBridge.Embedded.3-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: P2PBridge.Embedded.3-1]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded P2P Bridge 3-1
DeviceNumber = 1
FQDD = P2PBridge.Embedded.3-1
FunctionNumber = 1
InstanceID = P2PBridge.Embedded.3-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-10T22:41:55
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14AB
PCISubDeviceID = 1234
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.3-4]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 3-4
```

```
DeviceNumber = 4
FQDD = HostBridge.Embedded.3-4
FunctionNumber = 0
InstanceID = HostBridge.Embedded.3-4
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: ISABridge.Embedded.3-1]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = FCH LPC Bridge
DeviceDescription = Embedded ISA Bridge 3
DeviceNumber = 20
FQDD = ISABridge.Embedded.3-1
FunctionNumber = 3
InstanceID = ISABridge.Embedded.3-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:01:39
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 790E
PCISubDeviceID = 0AF6
PCISubVendorID = 1028
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: P2PBridge.Embedded.3-2]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded P2P Bridge 3-2
DeviceNumber = 7
FQDD = P2PBridge.Embedded.3-2
FunctionNumber = 1
InstanceID = P2PBridge.Embedded.3-2
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-10T22:41:55
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14A7
PCISubDeviceID = 14A4
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: SMBus.Embedded.3-1]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = FCH SMBus Controller
DeviceDescription = Embedded SM Bus 3
DeviceNumber = 20
FQDD = SMBus.Embedded.3-1
FunctionNumber = 0
InstanceID = SMBus.Embedded.3-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:01:39
Manufacturer = Advanced Micro Devices, Inc. [AMD]
```

```
PCIDeviceID = 790B
PCISubDeviceID = 0AF6
PCISubVendorID = 1028
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.3-2]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 3-2
DeviceNumber = 2
FQDD = HostBridge.Embedded.3-2
FunctionNumber = 0
InstanceID = HostBridge.Embedded.3-2
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.3-3]
Device Type = PCIDevice
BusNumber = 0
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 3-3
DeviceNumber = 3
FQDD = HostBridge.Embedded.3-3
FunctionNumber = 0
InstanceID = HostBridge.Embedded.3-3
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: InfiniBand.Slot.2-1]
Device Type = PCIDevice
BusNumber = 5
CPUAffinity = 1
DataBusWidth = 16x or x16
Description = MT2910 Family [ConnectX-7]
DeviceDescription = InfiniBand in Slot 2 Port 1
DeviceNumber = 0
FQDD = InfiniBand.Slot.2-1
FunctionNumber = 0
InstanceID = InfiniBand.Slot.2-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-09T19:24:50
Manufacturer = Mellanox Technologies
PCIDeviceID = 1021
PCISubDeviceID = 0041
PCISubVendorID = 15B3
PCIVendorID = 15B3
SlotLength = Short Length
SlotType = PCI Express Gen 5
-------------------------------------------------------------------------
```

```
[InstanceID: Disk.Bay.0:Enclosure.Internal.0-1]
Device Type = PCIDevice
BusNumber = 3
CPUAffinity = 1
DataBusWidth = 4x or x4
Description = NVMe CD7 E3.S 1.92TB
DeviceDescription = PCIe SSD in Slot 0 in Bay 1
DeviceNumber = 0
FQDD = Disk.Bay.0:Enclosure.Internal.0-1
FunctionNumber = 0
InstanceID = Disk.Bay.0:Enclosure.Internal.0-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-11T14:10:05
Manufacturer = KIOXIA Corporation
PCIDeviceID = 0011
PCISubDeviceID = 2193
PCISubVendorID = 1028
PCIVendorID = 1E0F
SlotLength = Short Length
SlotType = EDSFF E3
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.2-5]
Device Type = PCIDevice
BusNumber = 128
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 2-5
DeviceNumber = 7
FQDD = HostBridge.Embedded.2-5
FunctionNumber = 0
InstanceID = HostBridge.Embedded.2-5
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.2-1]
Device Type = PCIDevice
BusNumber = 128
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 2-1
DeviceNumber = 1
FQDD = HostBridge.Embedded.2-1
FunctionNumber = 0
InstanceID = HostBridge.Embedded.2-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: P2PBridge.Embedded.2-1]
Device Type = PCIDevice
BusNumber = 128
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
```

```
DeviceDescription = Embedded P2P Bridge 2-1
DeviceNumber = 7
FQDD = P2PBridge.Embedded.2-1
FunctionNumber = 1
InstanceID = P2PBridge.Embedded.2-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-10T22:41:55
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14A7
PCISubDeviceID = 14A4
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.2-4]
Device Type = PCIDevice
BusNumber = 128
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 2-4
DeviceNumber = 4
FQDD = HostBridge.Embedded.2-4
FunctionNumber = 0
InstanceID = HostBridge.Embedded.2-4
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.2-2]
Device Type = PCIDevice
BusNumber = 128
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 2-2
DeviceNumber = 2
FQDD = HostBridge.Embedded.2-2
FunctionNumber = 0
InstanceID = HostBridge.Embedded.2-2
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.2-3]
Device Type = PCIDevice
BusNumber = 128
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 2-3
DeviceNumber = 3
FQDD = HostBridge.Embedded.2-3
FunctionNumber = 0
InstanceID = HostBridge.Embedded.2-3
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
```

```
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: NIC.Embedded.2-1-1]
Device Type = PCIDevice
BusNumber = 195
CPUAffinity = 1
DataBusWidth = Unknown
Description = NetXtreme BCM5720 Gigabit Ethernet PCIe
DeviceDescription = Embedded NIC 1 Port 2 Partition 1
DeviceNumber = 0
FQDD = NIC.Embedded.2-1-1
FunctionNumber = 1
InstanceID = NIC.Embedded.2-1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-11T11:23:37
Manufacturer = Broadcom Inc. and subsidiaries
PCIDeviceID = 165F
PCISubDeviceID = 0A6B
PCISubVendorID = 1028
PCIVendorID = 14E4
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.1-5]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 1-5
DeviceNumber = 4
FQDD = HostBridge.Embedded.1-5
FunctionNumber = 0
InstanceID = HostBridge.Embedded.1-5
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.1-1]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 1-1
DeviceNumber = 0
FQDD = HostBridge.Embedded.1-1
FunctionNumber = 0
InstanceID = HostBridge.Embedded.1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14A4
PCISubDeviceID = 14A4
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
```

```
-------------------------------------------------------------------

[InstanceID: P2PBridge.Embedded.1-1]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded P2P Bridge 1-1
DeviceNumber = 7
FQDD = P2PBridge.Embedded.1-1
FunctionNumber = 1
InstanceID = P2PBridge.Embedded.1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-10T22:41:55
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14A7
PCISubDeviceID = 14A4
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.1-6]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 1-6
DeviceNumber = 7
FQDD = HostBridge.Embedded.1-6
FunctionNumber = 0
InstanceID = HostBridge.Embedded.1-6
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.1-4]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 1-4
DeviceNumber = 3
FQDD = HostBridge.Embedded.1-4
FunctionNumber = 0
InstanceID = HostBridge.Embedded.1-4
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------

[InstanceID: AHCI.Embedded.1-1]
Device Type = PCIDevice
BusNumber = 200
CPUAffinity = Not Applicable
DataBusWidth = Unknown
```

```
Description = FCH SATA Controller [AHCI mode]
DeviceDescription = Embedded AHCI 1
DeviceNumber = 0
FQDD = AHCI.Embedded.1-1
FunctionNumber = 0
InstanceID = AHCI.Embedded.1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-02T17:19:22
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 7901
PCISubDeviceID = 0AF6
PCISubVendorID = 1028
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.1-2]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 1-2
DeviceNumber = 1
FQDD = HostBridge.Embedded.1-2
FunctionNumber = 0
InstanceID = HostBridge.Embedded.1-2
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.1-3]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 1-3
DeviceNumber = 2
FQDD = HostBridge.Embedded.1-3
FunctionNumber = 0
InstanceID = HostBridge.Embedded.1-3
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: NIC.Embedded.1-1-1]
Device Type = PCIDevice
BusNumber = 195
CPUAffinity = 1
DataBusWidth = Unknown
Description = NetXtreme BCM5720 Gigabit Ethernet PCIe
DeviceDescription = Embedded NIC 1 Port 1 Partition 1
DeviceNumber = 0
FQDD = NIC.Embedded.1-1-1
FunctionNumber = 0
InstanceID = NIC.Embedded.1-1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
```

```
LastUpdateTime = 2022-11-29T19:35:36
Manufacturer = Broadcom Inc. and subsidiaries
PCIDeviceID = 165F
PCISubDeviceID = 0A6B
PCISubVendorID = 1028
PCIVendorID = 14E4
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: Video.Embedded.1-1]
Device Type = PCIDevice
BusNumber = 194
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Integrated Matrox G200eW3 Graphics Controller
DeviceDescription = Embedded Video Controller 1
DeviceNumber = 0
FQDD = Video.Embedded.1-1
FunctionNumber = 0
InstanceID = Video.Embedded.1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-11T14:10:05
Manufacturer = Matrox Electronics Systems Ltd.
PCIDeviceID = 0536
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 102B
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: P2PBridge.Embedded.1-3]
Device Type = PCIDevice
BusNumber = 192
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded P2P Bridge 1-3
DeviceNumber = 7
FQDD = P2PBridge.Embedded.1-3
FunctionNumber = 2
InstanceID = P2PBridge.Embedded.1-3
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-10T22:41:55
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14A7
PCISubDeviceID = 14A4
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
----------------------------------------------------------------------

[InstanceID: NIC.Integrated.1-2-1]
Device Type = PCIDevice
BusNumber = 196
CPUAffinity = 1
DataBusWidth = Unknown
Description = MT2894 Family [ConnectX-6 Lx]
DeviceDescription = Integrated NIC 1 Port 2 Partition 1
DeviceNumber = 0
FQDD = NIC.Integrated.1-2-1
FunctionNumber = 1
InstanceID = NIC.Integrated.1-2-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-09T16:39:57
Manufacturer = Mellanox Technologies
PCIDeviceID = 101F
PCISubDeviceID = 0019
PCISubVendorID = 15B3
PCIVendorID = 15B3
SlotLength = Unknown
```

```
SlotType = Unknown
-----------------------------------------------------------------

[InstanceID: NIC.Integrated.1-1-1]
Device Type = PCIDevice
BusNumber = 196
CPUAffinity = 1
DataBusWidth = Unknown
Description = MT2894 Family [ConnectX-6 Lx]
DeviceDescription = Integrated NIC 1 Port 1 Partition 1
DeviceNumber = 0
FQDD = NIC.Integrated.1-1-1
FunctionNumber = 0
InstanceID = NIC.Integrated.1-1-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-02T17:19:22
Manufacturer = Mellanox Technologies
PCIDeviceID = 101F
PCISubDeviceID = 0019
PCISubVendorID = 15B3
PCIVendorID = 15B3
SlotLength = Unknown
SlotType = Unknown
-----------------------------------------------------------------

[InstanceID: HostBridge.Embedded.4-5]
Device Type = PCIDevice
BusNumber = 64
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 4-5
DeviceNumber = 7
FQDD = HostBridge.Embedded.4-5
FunctionNumber = 0
InstanceID = HostBridge.Embedded.4-5
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-----------------------------------------------------------------

[InstanceID: HostBridge.Embedded.4-1]
Device Type = PCIDevice
BusNumber = 64
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 4-1
DeviceNumber = 1
FQDD = HostBridge.Embedded.4-1
FunctionNumber = 0
InstanceID = HostBridge.Embedded.4-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-----------------------------------------------------------------

[InstanceID: P2PBridge.Embedded.4-1]
Device Type = PCIDevice
BusNumber = 64
CPUAffinity = Not Applicable
```

```
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded P2P Bridge 4-1
DeviceNumber = 7
FQDD = P2PBridge.Embedded.4-1
FunctionNumber = 1
InstanceID = P2PBridge.Embedded.4-1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-11-10T22:41:55
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 14A7
PCISubDeviceID = 14A4
PCISubVendorID = 1022
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.4-4]
Device Type = PCIDevice
BusNumber = 64
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 4-4
DeviceNumber = 4
FQDD = HostBridge.Embedded.4-4
FunctionNumber = 0
InstanceID = HostBridge.Embedded.4-4
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.4-2]
Device Type = PCIDevice
BusNumber = 64
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 4-2
DeviceNumber = 2
FQDD = HostBridge.Embedded.4-2
FunctionNumber = 0
InstanceID = HostBridge.Embedded.4-2
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: HostBridge.Embedded.4-3]
Device Type = PCIDevice
BusNumber = 64
CPUAffinity = Not Applicable
DataBusWidth = Unknown
Description = Advanced Micro Devices, Inc. [AMD]
DeviceDescription = Embedded Host Bridge 4-3
DeviceNumber = 3
FQDD = HostBridge.Embedded.4-3
FunctionNumber = 0
InstanceID = HostBridge.Embedded.4-3
```

```
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 1998-01-01T06:22:07
Manufacturer = Advanced Micro Devices, Inc. [AMD]
PCIDeviceID = 149F
PCISubDeviceID = 0000
PCISubVendorID = 0000
PCIVendorID = 1022
SlotLength = Unknown
SlotType = Unknown
-------------------------------------------------------------------------

[InstanceID: Enclosure.Internal.0-1]
Device Type = PCIeSSDBackPlane
DeviceDescription = PCIe SSD Backplane 1
FQDD = Enclosure.Internal.0-1
FirmwareVersion = 6.42
InstanceID = Enclosure.Internal.0-1
MediaType = Solid State Drive
PCIExpressGeneration = Gen 5
ProductName = PCIe SSD Backplane 1
RollupStatus = OK
SlotCount = 8
WiredOrder = 1
-------------------------------------------------------------------------

[InstanceID: Enclosure.Internal.0-2]
Device Type = PCIeSSDBackPlane
DeviceDescription = PCIe SSD Backplane 2
FQDD = Enclosure.Internal.0-2
FirmwareVersion = 6.42
InstanceID = Enclosure.Internal.0-2
MediaType = Solid State Drive
PCIExpressGeneration = Gen 5
ProductName = PCIe SSD Backplane 2
RollupStatus = OK
SlotCount = 8
WiredOrder = 2
-------------------------------------------------------------------------

[InstanceID: Disk.Bay.0:Enclosure.Internal.0-1]
Device Type = PCIeSSD
AvailableSpare = 100 %
Bus = 3
BusProtocol = PCIE
CPUAffinity = 1
CryptographicEraseCapable = Capable
Device = 0
DeviceDescription = PCIe SSD in Slot 0 in Bay 1
DeviceProtocol = NVMe 1.4
DeviceSidebandProtocol = NVMe-MI1.1
DriveFormFactor = E3.S
EncryptionProtocol = None
ErrorRecoverable = NotApplicable
FQDD = Disk.Bay.0:Enclosure.Internal.0-1
FailurePredicted = NO
Function = 0
InstanceID = Disk.Bay.0:Enclosure.Internal.0-1
Manufacturer = KIOXIA Corporation
MaximumCapableSpeed = 32 GT/s
MediaType = Solid State Drive
Model = Dell DC NVMe CD7 E3.S 1.92TB
NegotiatedSpeed = 32 GT/s
PCIeCapableLinkWidth = x4
PCIeNegotiatedLinkWidth = x4
PrimaryStatus = OK
ProductID = 11
RAIDType = Unknown
RemainingRatedWriteEndurance = 100 %
Revision = 0.0.2
SerialNumber = 32C0A08PTX47
SizeInBytes = 1920383410176
Slot = 0
State = Ready
```

```
SystemEraseCapability = CryptographicErasePD
UsedSizeInBytes = 0 Bytes
----------------------------------------------------------------------

[InstanceID: PSU.Slot.1]
Device Type = PowerSupply
DetailedState = Presence Detected
DeviceDescription = Power Supply 1
EffectiveCapacity = 800
FQDD = PSU.Slot.1
FirmwareVersion = 00.1B.53
InputVoltage = 208 Volts
InstanceID = PSU.Slot.1
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:07:55
LineStatus = High line
Manufacturer = DELL
Model = PWR SPLY,800W,RDNT,DELTA
PMBusMonitoring = Capable
PartNumber = 0MGPPCA02
PrimaryStatus = OK
Range1MaxInputPower = 927 Watts
RedMinNumberNeeded = 1
RedTypeOfSet = N+1,Sparing
RedundancyStatus = Unknown
SerialNumber = CNDED0024L05DH
TotalOutputPower = 800 Watts
Type = AC
----------------------------------------------------------------------

[InstanceID: PSU.Slot.2]
Device Type = PowerSupply
DetailedState = Absent
DeviceDescription = Power Supply 2
EffectiveCapacity = 0
FQDD = PSU.Slot.2
FirmwareVersion =
InputVoltage = 0 Volts
InstanceID = PSU.Slot.2
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2023-01-01T02:08:08
LineStatus = Unknown
Manufacturer =
Model =
PMBusMonitoring = Not Capable
PartNumber =
PrimaryStatus = Unknown
Range1MaxInputPower = 0 Watts
RedMinNumberNeeded = 1
RedTypeOfSet = N+1,Sparing
RedundancyStatus = Unknown
SerialNumber =
TotalOutputPower = 0 Watts
Type = AC
----------------------------------------------------------------------

[InstanceID: System.Embedded.1]
Device Type = System
AssetTag =
BIOSReleaseDate = 11/25/2022
BIOSVersionString = 1.1.0
BaseBoardChassisSlot = NA
BatteryRollupStatus = OK
BladeGeometry = Not Applicable
BoardPartNumber = 0MJ02CX20
BoardSerialNumber = CNFCP00226003X
CPLDVersion = 1.1.0
CPURollupStatus = OK
ChassisName = Main System Chassis
ChassisServiceTag =
ChassisSystemHeight = 1 U
CurrentRollupStatus = OK
DeviceDescription = System
```

```
EstimatedExhaustTemperature = Not applicable
EstimatedSystemAirflow = Not applicable
ExpressServiceCode = 0
FQDD = System.Embedded.1
FanRollupStatus = OK
HostName = WIN-IKBI7GNCIO4
InstanceID = System.Embedded.1
IntrusionRollupStatus = OK
IsOEMBranded = False
LastSystemInventoryTime = 2022-12-09T19:24:51
LastUpdateTime = 2022-12-02T17:19:22
LicensingRollupStatus = Degraded
LifecycleControllerVersion = 6.10.80.00
ManagedSystemSize = 1 U
Manufacturer = Dell Inc.
MaxCPUSockets = 1
MaxDIMMSlots = 12
MaxPCIeSlots = 3
MemoryOperationMode = Unknown
MemoryRollupStatus = OK
Model = PowerEdge R6615
NodeID =
PSRollupStatus = OK
PlatformGUID = ffffffff-ffff-ffff-ffff-ffffffffffff
PopulatedCPUSockets = 1
PopulatedDIMMSlots = 1
PopulatedPCIeSlots = 1
PowerCap = 308 Watts
PowerCapEnabledState = Disabled
PowerState = On
PrimaryStatus = Error
RollupStatus = Error
SELRollupStatus = Error
ServiceTag =
StorageRollupStatus = OK
SysMemErrorMethodology = Multi-bit ECC
SysMemFailOverState = NotInUse
SysMemLocation = System board or motherboard
SysMemMaxCapacitySize = 1572864 MB
SysMemPrimaryStatus = OK
SysMemTotalSize = 16384 MB
SystemGeneration = 16G Monolithic
SystemID = 2806
SystemRevision = I
TempRollupStatus = OK
TempStatisticsRollupStatus = OK
UUID = ffffffff-ffff-ffff-ffff-ffffffffffff
VoltRollupStatus = OK
smbiosGUID = ffffffff-ffff-ffff-ffff-ffffffffffff
----------------------------------------------------------------------
```

- To get the list of NIC FQDDs, run the following command:

```
racadm hwinventory nic
NIC.Slot.2-1-1:Emulex OCe14102-U1-D - 00:90:FA:4C:FE:C2
PartitionCapable :                              1

NIC.Slot.2-1-2:Emulex OCe14102-U1-D - 00:90:FA:4C:FE:C3
PartitionCapable :                              2

NIC.Slot.2-1-3:Emulex OCe14102-U1-D - 00:90:FA:4C:FE:C4
PartitionCapable :                              3

NIC.Slot.2-1-4:Emulex OCe14102-U1-D - 00:90:FA:4C:FE:C5
PartitionCapable :                              4
```

- To get the list of Infiniband FQDDs, run the following command:

```
racadm hwinventory InfiniBand
InfiniBand.Slot.3-1-1:Mellanox ConnectX-6 Single Port VPI HDR QSFP Adapter -
12:12:12:11:11:BB
PartitionCapable :                              1
```

```
InfiniBand.Slot.3-1-2:Mellanox ConnectX-6 Single Port VPI HDR QSFP Adapter -
12:12:12:11:11:BB
PartitionCapable :                              2
```

- To display the statistics for the NIC FQDD, type the following command:

```
$racadm hwinventory <NIC FQDD>
Total RDMA Packets Received:            0

Total RDMA Packets Transmitted:            0

Total RDMA Bytes Transmitted:            0

Total RDMA Bytes Received:            0

Total RDMA Transmitted ReadRequest Packets:    0

Total RDMA Transmitted Send Packets:        0

Total RDMA Transmitted Write Packets:        0

Total RDMA Protocol Errors:            0

Total RDMA Protection Errors:            0
```

- To get the complete details for NIC.Embedded.1-1-1, type the following command:

```
racadm hwinventory NIC.Embedded.1-1-1
Device Description:                             Embedded NIC 1 Port 1 Partition 1
status:                                         OK
PCI Vendor ID:                                  14e4
PCI Sub Vendor ID:                              1028
PCI Device ID:                                  165f
PCI Sub Device ID:                              08ff
Current MAC Address:                            F4:02:70:BF:95:BA
Permanent MAC Address:                          F4:02:70:BF:95:BA
Virtual iSCSI MAC Address:                      Unavailable
Permanent iSCSI MAC Address:                    Unavailable
Virtual FIP MAC Address:                        Unavailable
Permanent FIP MAC Address:                      Unavailable
Permanent FCoE MAC Address:                     Unavailable
Slot Type:                                      Not Applicable
Data Bus Width:                                 Unknown
Slot Length:                                    Not Applicable
Bus Number:                                     225
DeviceNumber:                                   0
Function Number:                                0
Last Update Time:                               2021-05-18T07:32:41
Last System Inventory Time:                     2021-11-08T09:54:31
ProductName:                                    Broadcom Gigabit Ethernet BCM5720 -
F4:02:70:BF:95:BA
WWN:                                            Unavailable
VirtWWN:                                        Unavailable
WWPN:                                           Unavailable
VirtWWPN:                                       Unavailable
Family Version:                                 21.80.9
Controller BIOS Version:                        1.39
EFI Version:                                    21.6.18
FCoE WWNN:                                      Unavailable
Vendor Name:                                    Broadcom Corp
Number of PCI-e Functions
Supported per Port:                             1
Number of PCI-e Functions
Currently Enabled per Port:                     1
OS Driver Version:                              214.0.0.6
ISCSI OS Driver Version:                        Unavailable
FCOE OS Driver Version:                         Unavailable
FC OS Driver Version:                           Unavailable
RDMA OS Driver Version:                         Unavailable
Protocol:                                       NIC
Link Duplex:                                    Not Applicable
Link Speed:                                     Not Applicable
Auto Negotiated:                                Disabled
```

```
Transmit Flow Control:                          Off
Receive Flow Control:                           Off
Media Type:                                     BASE-T
NIC Mode:                                       Not Applicable
FCoE Offload Mode:                              Not Applicable
iSCSI Offload Mode:                             Not Applicable
SNAPI Support:                                  Not Available
SNAPI State:                                    Disabled
VPI Support:                                    Not Available
Update Lockdown Capable:                        True
Update Lockdown State:                          Disabled
CPU Affinity:                                   Not Applicable
Max Bandwidth:                                  Not Applicable
Min Bandwidth:                                  Not Applicable
Max Number of IOs per session supported:        0
Number of Max LOGINs per port:                  0
Max Number of exchanges:                        0
Max NPIV WWN per port:                          0
Number of Targets Supported:                    0
Max Number of outstanding commands
supported across all sessions:                  0
Virtual Addressing:                             Capable
UEFI:                                           Capable
iSCSI Offload:                                  Not Capable
iSCSI Boot:                                     Not Capable
TCP OffloadEngine:                              Not Capable
FCoE:                                           Not Capable
FCoE Boot:                                      Not Capable
PXE Boot:                                       Capable
SRIOV:                                          Not Capable
Wake on LAN:                                    Capable
Network Management Pass Through:                Capable
OS2BMC PassThrough:                             Capable
Energy Efficient Ethernet:                      Capable
On Chip Thermal Sensor:                         Capable
NPar:                                           Not Capable
Remote PHY:                                     Not Capable
Feature Licensing:                              Not Capable
IPSec Offload:                                  Not Capable
MAC Sec:                                        Not Capable
RDMA:                                           Not Capable
Enhanced Transmission Selection:                Not Capable
Priority Flow Control:                          Not Capable
DCB Exchange Protocol:                          Not Capable
Congestion Notification:                        Not Capable
VEB-VEPA Single Channel:                        Not Capable
VEB:                                            Not Capable
VEB-VEPA Multi Channel:                         Not Capable
EVB:                                            Not Capable
BPE:                                            Not Capable
Open Flow:                                      Not Capable
Partition WOL Support:                          Not Capable
Virtual Link Control:                           Not Capable
Partition RX Flow Control:                      Not Capable
Partition TX Flow Control:                      Not Capable
TX Bandwidth Control Maximum:                   Not Capable
TX Bandwidth Control Minimum:                   Not Capable
Persistence Policy Capability:                  Capable
```

- To get the complete details for NIC.Embedded.2-1-1, type the following command:

```
racadm hwinventory NIC.Embedded.2-1-1
Device Description:                             Embedded NIC 1 Port 2 Partition 1
status:                                         OK
PCI Vendor ID:                                  14e4
PCI Sub Vendor ID:                              1028
PCI Device ID:                                  165f
PCI Sub Device ID:                              08ff
Current MAC Address:                            F4:02:70:BF:95:BB
Permanent MAC Address:                          F4:02:70:BF:95:BB
Virtual iSCSI MAC Address:                      Unavailable
Permanent iSCSI MAC Address:                    Unavailable
```

```
Virtual FIP MAC Address:                        Unavailable
Permanent FIP MAC Address:                      Unavailable
Permanent FCoE MAC Address:                     Unavailable
Slot Type:                                      Not Applicable
Data Bus Width:                                 Unknown
Slot Length:                                    Not Applicable
Bus Number:                                     225
DeviceNumber:                                   0
Function Number:                                1
Last Update Time:                               2021-05-18T07:32:41
Last System Inventory Time:                     2021-11-08T09:54:31
ProductName:                                    Broadcom Gigabit Ethernet BCM5720 -
F4:02:70:BF:95:BB
WWN:                                            Unavailable
VirtWWN:                                        Unavailable
WWPN:                                           Unavailable
VirtWWPN:                                       Unavailable
Family Version:                                 21.80.9
Controller BIOS Version:                        1.39
EFI Version:                                    21.6.18
FCoE WWNN:                                      Unavailable
Vendor Name:                                    Broadcom Corp
Number of PCI-e Functions
Supported per Port:                             1
Number of PCI-e Functions
Currently Enabled per Port:                     1
OS Driver Version:                              214.0.0.6
ISCSI OS Driver Version:                        Unavailable
FCOE OS Driver Version:                         Unavailable
FC OS Driver Version:                           Unavailable
RDMA OS Driver Version:                         Unavailable
Protocol:                                       NIC
Link Duplex:                                    Full Duplex
Link Speed:                                     1000 Mbps
Auto Negotiated:                                Enabled
Transmit Flow Control:                          On
Receive Flow Control:                           On
Media Type:                                     BASE-T
NIC Mode:                                       Not Applicable
FCoE Offload Mode:                              Not Applicable
iSCSI Offload Mode:                             Not Applicable
SNAPI Support:                                  Not Available
SNAPI State:                                    Disabled
VPI Support:                                    Not Available
Update Lockdown Capable:                        True
Update Lockdown State:                          Disabled
CPU Affinity:                                   Not Applicable
Max Bandwidth:                                  Not Applicable
Min Bandwidth:                                  Not Applicable
Max Number of IOs per session supported:        0
Number of Max LOGINs per port:                  0
Max Number of exchanges:                        0
Max NPIV WWN per port:                          0
Number of Targets Supported:                    0
Max Number of outstanding commands
supported across all sessions:                  0
Virtual Addressing:                             Capable
UEFI:                                           Capable
iSCSI Offload:                                  Not Capable
iSCSI Boot:                                     Not Capable
TCP OffloadEngine:                              Not Capable
FCoE:                                           Not Capable
FCoE Boot:                                      Not Capable
PXE Boot:                                       Capable
SRIOV:                                          Not Capable
Wake on LAN:                                    Capable
Network Management Pass Through:                Capable
OS2BMC PassThrough:                             Capable
Energy Efficient Ethernet:                      Capable
On Chip Thermal Sensor:                         Capable
NPar:                                           Not Capable
Remote PHY:                                     Not Capable
Feature Licensing:                              Not Capable
```

```
IPSec Offload:                                  Not Capable
MAC Sec:                                        Not Capable
RDMA:                                           Not Capable
Enhanced Transmission Selection:                Not Capable
Priority Flow Control:                          Not Capable
DCB Exchange Protocol:                          Not Capable
Congestion Notification:                        Not Capable
VEB-VEPA Single Channel:                        Not Capable
VEB:                                            Not Capable
VEB-VEPA Multi Channel:                         Not Capable
EVB:                                            Not Capable
BPE:                                            Not Capable
Open Flow:                                      Not Capable
Partition WOL Support:                          Not Capable
Virtual Link Control:                           Not Capable
Partition RX Flow Control:                      Not Capable
Partition TX Flow Control:                      Not Capable
TX Bandwidth Control Maximum:                   Not Capable
TX Bandwidth Control Minimum:                   Not Capable
Persistence Policy Capability:                  Capable
```

- To get the complete details for InfiniBand.Slot.3-1-1, type the following command:

```
racadm hwinventory InfiniBand.Slot.3-1-1
Device Description:                             InfiniBand in Slot 3 Port 1 Partition 1
status:                                         Ok
PCI Vendor ID:                                  15b3
PCI Sub Vendor ID:                              15b3
PCI Device ID:                                  101b
PCI Sub Device ID:                              0022
Current (Virtual) MAC Address:                  12:12:12:11:11:BB
Permanent MAC Address:                          98:03:9B:9F:53:12
Virtual iSCSI MAC Address:                      Not Available
Permanent iSCSI MAC Address:                    Not Available
Virtual Port GUID Address:                      Not Available
Permanent Port GUID Address:                    9803:9B03:009F:5312
Node GUID Address:                              9803:9B03:009F:5312
Virtual Node GUID Address:                      1234:1234:1111:2222
Permanent FCoE MAC Address:                     Not Available
Slot Type:                                      PCI Express Gen 4
Data Bus Width:                                 8x or x8
Slot Length:                                    Long Length
Bus Number:                                     161
DeviceNumber:                                   0
Function Number:                                0
Last Update Time:                               20200620115358.000000+000
Last System Inventory Time:                     20200620120506.000000+000
ProductName:                                    Mellanox ConnectX-6 Single Port VPI HDR
QSFP Adapter - 12:12:12:11:11:BB
UEFI Device Path:                               PciRoot(0x5)/Pci(0x3,0x1)/Pci(0x0,0x0)/
MAC(1212121111BB,0x1)
Family Version:                                 20.27.40.52
Controller BIOS Version:                        Not Available
EFI Version:                                    14.20.25
Vendor Name:                                    Mellanox Technologies, Inc.
Number of PCI-e Functions
Supported per Port:                             2
Number of PCI-e Functions
Currently Enabled per Port:                     2
LAN Driver Version:                             Not Available
InfiniBand OS Driver Version:                   5.0-0
ISCSI OS Driver Version:                        Not Available
FCoEOS Driver Version:                          Not Available
FC OS Driver Version:                           Not Available
RDMA OS Driver Version:                         Not Available
Media Type:                                     SFFCAGE
Protocol:                                       InfiniBand
SNAPI Support:                                  Available
SNAPI State:                                    Enabled
VPI Support:                                    Available
Virtual(Flex) Addressing:                       Capable
UEFI:                                           Capable
```

```
iSCSI Offload:                                  Not Capable
iSCSI Boot:                                     Capable
TCP OffloadEngine:                              Not Capable
PXE Boot:                                       Capable
SRIOV:                                          Capable
Wake on LAN:                                    Not Capable
Network Management Pass Through:                Capable
OS2BMC PassThrough:                             Capable
Energy Efficient Ethernet:                      Not Capable
On Chip Thermal Sensor:                         Capable
NPar:                                           Capable
Remote PHY:                                     Not Capable
Feature Licensing:                              Not Capable
IPSec Offload:                                  Not Capable
MAC Sec:                                        Not Capable
RDMA:                                           Capable
Enhanced Transmission Selection:                Not Capable
Priority Flow Control:                          Not Capable
DCB Exchange Protocol:                          Not Capable
Congestion Notification:                        Not Capable
VEB-VEPA Single Channel:                        Not Capable
VEB-VEPA Multi Channel:                         Not Capable
EVB:                                            Not Capable
BPE:                                            Not Capable
Open Flow:                                      Not Capable
Partition WOL Support:                          Not Capable
Virtual Link Control:                           Capable
Partition RX Flow Control:                      Not Capable
Partition TX Flow Control:                      Not Capable
TX Bandwidth Control Maximum:                   Capable
TX Bandwidth Control Minimum:                   Capable
Persistence Policy Capability:                  Capable
Supported Link Width:                           1X,2X,4X
Supported Link Speed:                           SDR,DDR,QDR,FDR,EDR,HDR
```

- To get the list of network transceivers, type the following command:

```
racadm hwinventory networktransceiver
NIC.Slot.2-1-1
NIC.Slot.2-2-1
NIC.Slot.3-1-1
FC.Slot.6-2
```

- To display the network transceiver properties with FQDD, type the following command:

```
racadm hwinventory networktransceiver NIC.Integrated.1-2-1
Vendor Name:                                    DELL
Part Number:                                    VXFJY
Serial Number:                                  CN0APX00139522J
Revision:                                       A1
Identifier Type:                                SFP/SFP+/SFP28
sh-5.0# racadm hwinventory networktransceiver InfiniBand.Slot.2-1
Vendor Name:                                    NVIDIA
Part Number:                                    MCP7Y00-N001
Serial Number:                                  MT2243VS02842
Revision:                                       A2
Identifier Type:                                OSFP
```

- To export the inventory to a remote CIFS share, type the following command:

```
racadm hwinventory export -f Myinventory.xml -u admin -p xxx
  -l //1.2.3.4/share
```

- To export the inventory to a remote NFS share, type the following command:

```
racadm hwinventory export -f Myinventory.xml -u admin -p xxx
  -l 1.2.3.4:/share
```

- To export the inventory to local file system using local Racadm, type the following command:

```
racadm hwinventory export -f Myinventory.xml
```

- To export the inventory to a remote HTTP share:

```
racadm hwinventory export -f Myinventory.xml -u httpuser -p httppass -l http://
test.com/share -port 8080
```

- To export the inventory to a remote HTTPS share:

```
racadm hwinventory export -f Myinventory.xml -u httpuser -p httppass -l http://
test.com/share -port 8080
```

- To list all the accelerator device FQDD available in each Slot.N-Index, type the following command:

```
racadm hwinventory accelerator
ProcAccelerator.slot.1-1
ProcAccelerator.slot.1-2
ProcAccelerator.slot.2-1
Video.Slot.3-1
UBB.Integrated.1-1
```

- To display the standard hardware inventory details of the Universal BaseBoard (UBB), UBB.Integrated.1-1, type the following command:

```
racadm hwinventory UBB.Integrated.1-1

Model:                                          Integrated Matrox G200eW3 Graphics
Controller                                                        Controller
Board Part Number:                              900-21228-3850-100
Serial Number:                                  0322411000001
Part Number:                                    1091-890-A2
Firmware Version:                               NA
```

- To display the Standard hardware inventory verbose description for the ProcAccelerator.Slot.8-1, type the following command:

```
racadm hwinventory ProcAccelerator.Slot.8-1

Model:                                           Not Available
Board Part Number:                               Not Available
Serial Number:                                   Not Available
FPGA Part Number:                                Not Applicable
Firmware Version:                                Not Available
CPUAffinity:                                     1
```

- To display the standard hardware inventory verbose description for the Video.Slot.3-1, type the following command:

```
racadm hwinventory Video.Slot.3-1

Model:                                          Integrated Matrox G200eW3 Graphics
Controller
Board Part Number:                              900-21228-3850-100
Serial Number:                                  0322411000001
Part Number:                                    1091-890-A2
Release Date:                                   20180816
Firmware Version:                               1.0
```

- To display the information about InfiniBand Cards and its FQDDs:

```
racadm hwinventory InfiniBand
```

- To display the Standard hardware inventory verbose description for the FC.Slot.2–1, type the following command:

```
racadm hwinventory FC.Slot.2-1
PCI Vendor ID:                                  1077
PCI Sub Vendor ID:                              1077
PCI Device ID:                                  2532
PCI Sub Device ID:                              015c
PCI Bus:                                        67
PCI Device:                                     0
PCI Function:                                   0
Vendor Name:                                    Unavailable
Device Name:                                    QLogic QLE2560 8Gb Fibre Channel
Adapter - 21000024FF089D8A
```

```
WWN:                                            20:00:00:24:FF:08:9D:8A
VirtWWN:                                        20:00:00:24:FF:08:9D:8A
WWPN:                                           21:00:00:24:FF:08:9D:8A
VirtWWPN:                                       21:00:00:24:FF:08:9D:8A
Chip Type:                                      ISP2532
Family Version:                                 02.57.14
EFI Version:                                    2.34
OS Driver Version:                              Unavailable
First FC Target WWPN:                           50:06:01:60:44:60:28:8C
First FC Target LUN:                            0
Second FC Target WWPN:                          00:00:00:00:00:00:00:00
Second FC Target LUN:                           0
Hard Zone Address:                              0
Hard Zone Enable:                               Disabled
FC Tape Enable:                                 Disabled
Loop reset Delay:                               5
Frame Payload Size :                            2048
Fabric Login Retry Count:                       0
Fabric Login Timeout:                           0
Port Login Retry Count:                         8
Port Login Timeout:                             3000
Port Down Retry Count:                          45
Port Down Timeout:                              0
Link Down Timeout:                              45000
Port Number:                                    1
Port Speed:                                     0
No capabilities found for FQDD "FC.Slot.2-1"
racadm>> racadm hwinventory FC.Slot.3-1
PCI Vendor ID:                                  1077
PCI Sub Vendor ID:                              1077
PCI Device ID:                                  2031
PCI Sub Device ID:                              0256
PCI Bus:                                        4
PCI Device:                                     0
PCI Function:                                   0
Vendor Name:                                    QLogic
Device Name:                                    QLogic QLE2660 16Gb FC Adapter -
2001000E1E091075
WWN:                                            20:00:00:0E:1E:09:10:75
VirtWWN:                                        20:00:00:0E:1E:09:10:75
WWPN:                                           20:01:00:0E:1E:09:10:75
VirtWWPN:                                       20:01:00:0E:1E:09:10:75
Chip Type:                                      8324, Rev. 02
Family Version:                                 02.00.84
EFI Version:                                    5.30
OS Driver Version:                              9.1.10.27
First FC Target WWPN:                           00:00:00:00:00:00:00:00
First FC Target LUN:                            0
Second FC Target WWPN:                          00:00:00:00:00:00:00:00
Second FC Target LUN:                           0
Hard Zone Address:                              0
Hard Zone Enable:                               Disabled
FC Tape Enable:                                 Disabled
Loop reset Delay:                               5
Frame Payload Size :                            2048
Fabric Login Retry Count:                       0
Fabric Login Timeout:                           0
Port Login Retry Count:                         8
Port Login Timeout:                             3000
Port Down Retry Count:                          30
Port Down Timeout:                              0
Link Down Timeout:                              30000
Port Number:                                    1
Port Speed:                                     0
Max Number of IOs per connection supported:     9
Maximum number of Logins per port:              8
Maximum number of exchanges:                    9
Maximum NPIV per port:                          1
Maximum number of FC Targets supported:         8
Maximum number of outstanding commands across all connections: 9
Flex Addressing:                                Capable
UEFI:                                           Capable
FC Start:                                        Capable
```

```
On Chip Thermal Sensor:                         Capable
Feature Licensing:                              Not Capable
```

ifconfig

Table 71. Details of ifconfig

ifconfig	
Description	Displays the contents of the network interface table. To use this subcommand, you must have the Execute Diagnostic Commands permission.
Synopsis	`racadm ifconfig`
Input	N/A

Table 72. Example

Example	

`eth0`	`Link encap:Ethernet  HWaddr 00:1D:09:FF:DA:23`
	`inet addr:192.168.0.0 Bcast:192.168.0.255 Mask:255.255.255.0`
	`UP BROADCAST RUNNING MULTICAST  MTU:1500 Metric:1`
	`RX packets:2550665 errors:0 dropped:0 overruns:0 frame:0`
	`TX packets:0 errors:0 dropped:0 overruns:0 carrier:0`
	`collisions:0 txqueuelen:1000`
	`RX bytes:272532097 (259.9 MiB)  TX bytes:0 (0.0 B)`

ilkm

Table 73. Details of ilkm

ilkm	
Description	The ilkm subcommand allows you to enable or disable ilkm support for a server, and rekey ilkm-supported devices on a server. To run this subcommand, you must have the following privileges: • **Enable**—server control and configure iDRAC privileges • **Disable**—server control and configure iDRAC privileges • **Rekey**—server control and configure iDRAC privileges • **Getstatus**—login privileges

Synopsis	**NOTE:** To run enable or disable subcommands, the target server must have sekm license.
	• To get ilkm status.
	`racadm ilkm getstatus`
	• To enable ilkm feature.
	`racadm ilkm enable -keyid <keyID> -passphrase <password>`
	• To disable ilkm feature.
	`racadm ilkm disable`
	• To request iDRAC to rekey all ilkm devices.
	`racadm ilkm rekey -oldpassphrase <password> -newkeyid <keyID> -newpassphrase <password>`

Input	• `-keyid`—Key Identifier

Table 73. Details of ilkm (continued)

ilkm	
	• -passphrase—Password • -oldpassphrase—Old Password • -newkeyid—New Key ID • -newpassphrase—New Password

Example	• To get ilkm status.
	`racadm ilkm getstatus`
	• To enable ilkm feature.
	`racadm ilkm enable -keyid keyID -passphrase password`
	• To disable ilkm feature.
	`racadm ilkm disable`
	• To request iDRAC to rekey all ilkm devices.
	`racadm ilkm rekey -oldpassphrase password -newkeyid keyID -newpassphrase pasword`

infinibandstatistics

Table 74. Details of infinibandstatistics

infinibandstatistics	
Description	Displays the list of InfiniBand devices managed by the server for which statistics are available.
Synopsis	• `racadm infinibandstatistics <Infiniband FQDD>`
Input	• `<Infiniband FQDD>` — The fully qualified device descriptor of the device. **NOTE:** `Partition Driver State` and `Partition OS Driver State` properties are the same for infinibandstatistics.

Example	• Display the statistics of all InfiniBand devices managed by the server.
	`racadm infinibandstatistics`
	• Display the statistics of the InfiniBand specified by InfiniBand.Slot.3-1.
	`racadm infinibandstatistics InfiniBand.Slot.3-1`
	`Device Description: InfiniBand in Slot 3 Port 1 Partition 1`
	`Port Transmit Data: 0`
	`Port Receive Data: 0`
	`Port Transmit Packets: 0`
	`Port Receive Packets: 0`
	`Port Transmit Wait: 0`
	`Port Transmit Discard: 0`
	`Symbol Error Count: 0`
	`Link Error Recovery Count: 0`
	`Link Downed Count: 0`
	`Port Receive Errors: 0`
	`Port Receive Remote Physical Errors: 0`
	`Port Receive Switch Relay Errors: 0`
	`Local Link Integrity Errors: 0`
	`Excessive Buffer Overrun: 0`
	`VL15 Dropped: 0`
	`Total Bytes Received: Not Applicable`

Table 74. Details of infinibandstatistics (continued)

infinibandstatistics	
	Total Bytes Transmitted: Not Applicable Total Unicast Bytes Received: Not Applicable Total Multicast Bytes Received: Not Applicable Total Broadcast Bytes Received: Not Applicable Total Unicast Bytes Transmitted: Not Applicable Total Multicast Bytes Transmitted: Not Applicable Total Broadcast Bytes Transmitted: Not Applicable FCS Error Packets Received: Not Applicable Alignment Error Packets Received: Not Applicable False Carrier Error Packets Received: Not Applicable Runt Frames Received: Not Applicable Jabber Error Frames Received: Not Applicable Total Pause XON Frames Received: Not Applicable Total Pause XOFF Frames Received: Not Applicable Discarded Packets: 0 Total Pause XON Frames Transmitted: Not Applicable Total Pause XOFF Frames Transmitted: Not Applicable Single Collision Frames Transmitted: Not Applicable Multiple Collision Frames Transmitted: Not Applicable Late Collision Frames Transmitted: Not Applicable Excessive Collision Frames Transmitted: Not Applicable Link Status: Down Link Width: Not Available Link Speed: Not Available Partition Link Status: Up Partition Driver State: Operational **NOTE:** When Port, Partition or RDMA statistics are not available, the output displays `No Port/Partition/RDMA Statistics found for FQDD <Infiniband FQDD>.`

inlettemphistory

Table 75. Details of inlettemphistory

inlettemphistory	
Description	Displays the average and the peak temperatures during the last hour, day, week, month, or year. Also Exports the inlet temperature history datafile. The file can be exported to a remote file share, local file system, or the management station. **NOTE:** For FM120x4 systems, this subcommand provides the historical data for system board temperature.

Synopsis	• `racadm inlettemphistory get`
	`racadm inlettemphistory export -f <Filename> -u <username> -p <password>\`
	`-l <location> -t <export file type>`
	`racadm -r <idrac ip> -u <idrac username> -p <idrac password> inlettemphistory\`
	`export -f <Filename> -u <username> -p <password> -l <location> -t <export file type>`
	This command does not support setting the proxy parameters if the share location (-l) is HTTP/HTTPS. To perform the operation with HTTP or HTTPS through a proxy, the proxy parameters must be first configured using the lifecyclecontroller.lcattributes. Once these proxy parameters are configured, they become the part of default configuration; the proxy attributes should be cleared to end use of the HTTP/HTTPS proxy. The valid lifecyclecontroller.lcattributes HTTP/HTTPS proxy parameters are:
	• `UserProxyUserName`
	• `UserProxyPassword`
	• `UserProxyServer`

Table 75. Details of inlettemphistory (continued)

inlettemphistory	
	• `UserProxyPort` • `UserProxyType` To view the list of proxy attributes, use `racadm get lifecycleController.lcAttributes`.
Input	• `-f` — Exports inlet temperature history filename. The maximum length of this parameter is 64 characters. **NOTE:** If a file with the specified filename exists, then the older file is replaced with the new history file. • `-u` — User name of the remote share to export the file. Specify user name in a domain as domain or username. • `-p` — Password for the remote share to where the file must be exported. • `-l` — Network share location to where the inlet temperature history must be exported. The maximum length of this parameter is 256 characters. **NOTE:** The supported network locations are CIFS, NFS, HTTP, and HTTPS. • `-t` — Specifies the exported file type. Valid values are `xml` and `csv`. These values are case-insensitive. **NOTE:** From RACADM firmware, only export to a remote share is supported. The behavior of remote share is not defined when the path specified (`-l`) contains special characters. **NOTE:** This command supports both IPV4 and IPV6 formats. IPV6 is applicable for CIFS, and NFS type remote shares.

Example	• Export the log to a remote CIFS share.
	`racadm inlettemphistory export -f Mylog.xml -u admin -p xxx -l // 1.2.3.4/share -t xml`
	• Export the log to a remote HTTP share.
	`racadm inlettemphistory export -f Mylog.xml -u httpuser -p httppwd\n -l http://test.com -t xml`
	• Export the log to a remote HTTPS share.
	`racadm inlettemphistory export -f Mylog.xml -u httpsuser -p httpspwd\n -l https://test.com -t xml`
	• Export the log to a remote NFS share.
	`racadm inlettemphistory export -f Mylog.csv -l 1.2.3.4:/home/user -t csv`
	• Export the log to a remote FTP share.
	`racadm inlettemphistory export -f Mylog.csv -u ftpuser -p ftppwd -l ftp://test.com/share -t csv`
	• Export the log to a remote TFTP share.
	`racadm inlettemphistory export -f Mylog.csv -l tftp://test.com/share -t csv`
	• Export the log to a local file system using Local RACADM.
	`racadm inlettemphistory export -f Mylog.xml -t xml`
	• Export the log to the management station using Remote RACADM.
	`racadm -r 1.2.3.4 -u user -p xxx inlettemphistory export -f Mylog.csv -t csv`

Table 75. Details of inlettemphistory (continued)

inlettemphistory	

	• View the inlet temperature history.
	`racadm inlettemphistory get`
	`Duration Above Warning Threshold as Percentage = 0.0%`
	`Duration Above Critical Threshold as Percentage = 0.0%`
	`Average Temperatures`
	`Last Hour = 23C ( 73.4F )`
	`Last Day = 24C ( 75.2F )`
	`Last Week = 24C ( 77.0F )`
	`Last Month = 25C ( 77.0F )`
	`Last Year = 23C ( 73.4F )`
	`Peak Temperatures`
	`Last Hour = 23C ( 73.4F ) [At Wed, 21 May 2017 11:00:57]`
	`Last Day = 25C ( 77.0F ) [At Tue, 21 May 2017 15:37:23]`
	`Last Week = 27C ( 80.6F ) [At Fri, 20 May 2017 10:38:20]`
	`Last Month = 29C ( 84.2F ) [At Wed, 16 May 2017 15:34:13]`
	`Last Year = 29C ( 84.2F ) [At Wed, 16 May 2017 15:34:13]`
	• Configure the proxy parameter.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername admin1`
	• Remove the proxy parameter.
	`racadm set lifecyclecontroller.lcattributes.UserProxyUsername`
	• View the list of proxy attributes.
	`racadm get lifecycleController.lcAttributes`

jobqueue

Table 76. Details of jobqueue

jobqueue	
Description	Enables you to view and delete a job or jobs in the current Job Queue. **NOTE:** • To run this subcommand, you must have the **Server control** privilege. • If an unexpected error message is displayed for any operation, ensure you delete some jobs in the jobqueue and retry the operation. • Use jobqueue create command after applying a pending device configuration. Else, you may see a job creation and deletion in the lclog. • Multi-object Set commands using XML, or JSON files do NOT require a jobqueue create command; jobs will be automatically created by the Set command. • The **Scheduled Start Time** for the jobs is displayed as **Not Applicable**. However, in the iDRAC UI, the **Scheduled Start Time** is available for the jobs.
Synopsis	`racadm jobqueue view -i<jobid>` `racadm jobqueue delete [-i<jobid>][--all]`

Table 76. Details of jobqueue (continued)

jobqueue	

	where valid options are `-i` and `--all`.
	`racadm jobqueue create <fqdd> [-r <reboot type> ] [-s <start time> ] [-e <expiry time>]`
	`racadm jobqueue create <fqdd> [-r <reboot type>] [-s <start time>] [-e <expiration time>] [--realtime]`

Input	• `-i` — Specifies a job ID that is displayed or deleted.
	NOTE: The value `JID_CLEARALL` will force delete all the possible jobs in the queue.
	• `--all` — The job IDs that are not applicable are deleted.
	• `-fqdd` — Specifies an FQDD for which a job should be created.
	• `–r <reboot type>` — Specifies a reboot type.
	  ○ `none` — No Reboot Job. This option is the default value.
	  ○ `pwrcycle` — Power cycle.
	  ○ `graceful` — Graceful Reboot without forced shut down.
	  ○ `forced` — Graceful Reboot with forced shut down.
	• `start time` — Specifies a start time for job scheduled in the yyyymmddhhmmss format. TIME_NOW means immediate. Next Reboot means job is in scheduled state until the next manual restart.
	• `expiry time` — Specifies expiry time for the job execution in the yyyymmddhhmmss format. The job must start by this time. TIME_NA means expiry time is not applicable.
	• `--realtime` — Specifies the real time job.
	NOTE:
	○ `--realtime` is applicable for storage configuration commands run on PowerEdge servers with PERC 9 or newer storage controllers. To check if the controller supports realtime capability, run `storage get controllers -o -p RealtimeConfigurationCapability` command.
	○ `-r` option is not valid for real time configuration.

Example	• View jobs in the current job queue.
	`racadm jobqueue view`
	• View status of a specific job ID.
	`racadm jobqueue view -i <JobID>`
	• Issue configuration changes for a PowerEdge RAID controller then start a real time job to execute the changes.
	`racadm set RAID.Slot.3-1.RAIDdefaultWritePolicy WriteBack`
	`racadm set RAID.Slot.3-1.Name "Prod Workload"`
	`racadm jobqueue create RAID.Slot.3-1 -realtime`
	• Delete all possible jobs from the current job queue.
	`racadm jobqueue delete --all`
	• Delete a specific job from the current job queue.
	`racadm jobqueue delete -i <JobID>`
	• To clear all the jobs in the job queue.
	`racadm jobqueue delete -i JID_CLEARALL`

Table 76. Details of jobqueue (continued)

jobqueue	

	• Create a Job for the provided FQDD and add to the job queue.
	`racadm jobqueue create NIC.Integrated.1-1 -r pwrcycle -s TIME_NOW -e 20120501100000`
	NOTE: As RACADM does not support warm boot job creation, you will not observe any LCL messages.
	• Create a real time configuration job for the specified RAID controller.
	`racadm jobqueue create RAID.Integrated.1-1 -s TIME_NOW --realTime`
	`RAC1024: Successfully scheduled a job.`
	`Verify the job status using "racadm jobqueue view -i JID_xxxxx" command.`
	`Commit JID = JID_927008261880`
	• Create a commit job for InfiniBand objects.
	`racadm jobqueue create <InfiniBand FQDD>`

krbkeytabupload

Table 77. Details of krbkeytabupload

krbkeytabupload	
Description	Uploads a `Kerberos keytab` file to iDRAC. To run this subcommand, you must have the Server Control privilege.
Synopsis	`racadm krbkeytabupload [-f <filename>]` `<filename>` is the name of the file including the path.
Input	`-f` — Specifies the filename of the keytab uploaded. If the file is not specified, the keytab file in the current directory is selected.
Output	When successful `Kerberos Keytab successfully uploaded to the RAC` message is displayed. If unsuccessful, appropriate error message is displayed.
Example	`racadm krbkeytabupload -f c:\keytab\krbkeytab.tab`

lclog

Table 78. Details of lclog

lclog	
Description	Allows you to: • Export the lifecycle log history. The log exports to remote or local share location. • View the lifecycle log for a particular device or category • Add comment to a record in lifecycle log • Add a work note (an entry) in the lifecycle log • View the status of a configuration job. **NOTE:**

Table 78. Details of lclog (continued)

lclog	
	• When you run this command on Local RACADM, the data is available to RACADM as a USB partition and may display a pop-up message. • While Lifecycle Controller is running for racadm commands, you cannot perform other operation which needs Lifecycle Controller Partition. If the Lifecycle Controller Partition is unreleased (because of improper closure of racadm command in the partition), then you must wait 20-35 minutes to clear the Lifecycle Controller Partition

Synopsis	`racadm lclog comment edit -q <sequence number> -m <Text to be added>`
	
	`racadm lclog view -i <number of records> -a <agent id>  -c <category> -s <severity> -b <sub-category> -q <sequence no> -n <number of records> -r <start timestamp> -e <end timestamp>`
	
	`racadm lclog export -f <filename> -u <username> -p <password> -l <CIFS or NFS or TFTP or FTP share>`
	
	`racadm lclog export -f <filename> -u <username> -p <password> -l <HTTP or HTTPS share> -port <port number>`
	
	`racadm lclog export -f <filename> -u <username> -p <password> -l <CIFS or NFS or TFTP or FTP share> --complete`
	
	`racadm lclog export -f <filename> -u <username> -p <password> -l <HTTP or HTTPS share> -port <port number> --complete`
	
	`racadm -r <idracip> -u <idrac username> -p <idrac password> lclog export\ -f <filename> -u <username> -p <password> -l <CIFS or NFS or TFTP or FTP share>`
	
	`racadm -r <idracip> -u <idrac username> -p <idrac password> lclog export\ -f <filename> -u <username> -p <password> -l <HTTP or HTTPS  share> -port <port number>`
	
	`racadm -r <idracip> -u <idrac username> -p <idrac password> lclog export\ -f <filename> -u <username> -p <password> -l <CIFS or NFS or  TFTP or FTP share> -- complete`
	
	`racadm -r <idracip> -u <idrac username> -p <idrac password> lclog export\ -f <filename> -u <username> -p <password> -l <HTTP or HTTPS share> -port <port number> -- complete`
	
	`racadm lclog viewconfigresult -j <job ID>`
	
	`racadm lclog worknote add -m <text to be added>`

Input	• `-i`—Displays the number of records present in the active log.
	• `-a`—The agent ID used to filter the records. Only one agent ID is accepted. The value is case-insensitive. Valid Agent-ID values:
	  ○ `UEFI_SS_USC`
	  ○ `CusOsUp`
	  ○ `UEFI_Inventory`
	  ○ `iDRAC`

Table 78. Details of lclog (continued)

lclog	
	○ UEFI_DCS ○ SEL ○ RACLOG ○ DE ○ WSMAN ○ RACADM ○ iDRAC_GUI • -k—Filters the records based on the filter string provided in **racadm lclog view** command. • -c — The category used to filter the records. Provides multiple categories using a "," as the delimiter. The value is case-insensitive. Valid category values: ○ System ○ Storage ○ Worknotes ○ Config ○ Updates ○ Audit • -b —The subcategory used to filter the records. Provides multiple subcategories using a "," as the delimiter. • -q—The sequence number from which the records must be displayed. Records older than this sequence number is displayed. **NOTE:** This parameter input is an integer. If an alphanumeric input is provided, then invalid subcommand syntax error is displayed. • -n—Specifies the n number of records that must be displayed. On Local RACADM, if this parameter is not specified, by default 100 logs are retrieved. • -r—Displays events that have occurred after this time. The time format is yyyy-mm-dd HH:MM:SS. The time stamp must be provided within double quotation marks. • -e—Displays events that have occurred before this time. The time format is yyyy-mm-dd HH:MM:SS. The time stamp must be provided within double quotation marks. • -f <filename>—Specifies the file location and name where lifecycle log is exported. • -a <name>—Specifies the FTP Server IP address or FQDN, user name, and password. • -l <location>—Specifies the location of the network share or area on file system where lifecycle log is exported. Two types of network shares are supported: ○ SMB-mounted path: //<ipaddress or domain name>/<share_name>/<path to image> ○ NFS-mounted path: <ipaddress>:/<path to image>. • -u <user>—Specifies the user name for accessing the FTP server, or Domain and user name for accessing network share location. • -p <password>—Specifies the password for accessing the FTP server or share location. • -port <port number>—Specifies the port number. **NOTE:** This is an optional parameter. If this option is not specified, the default port number is used. • -s—The severity used to filter the records. Provide multiple severities using a "," as the delimiter. The value is case-insensitive. Valid Severity values: ○ Warning ○ Critical ○ Info • —m <Comment> —User comment string for a record that must be inserted in the Lifecycle Controller log. This comment string must be less than 128 characters. The text must be specified within double quotation mark. **NOTE:** HTML-specific characters may appear as escaped text.

Table 78. Details of lclog (continued)

lclog	
	• `-m <Worknote>`—Adds a worknote (an entry) in the Lifecycle log. This worknote must be less than 256 characters. The text must be specified within double quotation mark. **NOTE:** HTML-specific characters may appear as escaped text. **NOTE:** For `-m <worknote>` and `—m <comment>` options, you need **test alert** privilege. • `--complete`—Export the complete Lifecycle log as a compressed file. The exported file is of the type `.xml.gz`. • `-j<Job ID>`—Specifies the Job ID.

Example	• Display the number of records present in the Lifecycle log.
	`racadm lclog view -i`
	• Display the records containing the string `session`
	`racadm lclog view -k session`
	• Display the iDRAC agent `idrac` records, under the storage category and storage physical disk drive subcategory, with severity set to `warning`.
	`racadm lclog view -a idrac -c storage -b pdr -s warning`
	• Display the records under storage and system categories with severities set to `warning` or `critical`.
	`racadm lclog view -c storage,system -s warning,critical`
	• Display the records having severities set to `warning` or `critical`, starting from sequence number 4.
	`racadm lclog view -s warning,critical -q 4`
	• Display 5 records starting from sequence number 20.
	`racadm lclog view -q 20 -n 5`
	• Display all records of events that have occurred between 2011-01-02 23:33:40 and 2011-01-03 00:32:15.
	`racadm lclog view -r "2011-01-02 23:33:40" -e "2011-01-03 00:32:15"`
	• Display all the available records from the active Lifecycle log.
	`racadm lclog view`
	
	NOTE: If output is not returned when this command is used remotely, then retry increasing the remote RACADM timeout value. To increase the timeout value, run the command `racadm set iDRAC.Racadm.Timeout <value>`. Alternatively, you can retrieve few records.
	• Add a comment to record number 5 in the Lifecycle log.
	`racadm lclog comment edit -q 5 -m “This is a test comment.”`
	• Add a worknote to the Lifecycle log.
	`racadm lclog worknote add -m "This is a test worknote."`
	• Export the complete Lifecycle log in gzip format to a remote FTP share
	`racadm lclog export -f log.xml.gz -u ftppuser -p ftppwd -l ftp://192.168.0/share`

Table 78. Details of lclog (continued)

lclog	

	• Export the complete Lifecycle log in gzip format to a remote TFTP share
	`racadm lclog export -f log.xml.gz tftp://192.168.0.1/`
	• Export the Lifecycle log to a remote FTP share
	`racadm lclog export -f Mylog.xml -u ftppuser -p ftppwd -l ftp://192.168.0/share`
	• Export the Lifecycle log to a remote TFTP share
	`racadm lclog export -f Mylog.xml tftp://192.168.0.1/`
	• Export the Lifecycle log to a remote CIFS share.
	`racadm lclog export -f Mylog.xml -u admin -p xxx -l //192.168.0/share`
	• Export the complete Lifecycle log in gzip format to a remote CIFS share.
	`racadm lclog export -f log.xml.gz -u admin -p xxx -l //192.168.0/share --complete`
	• Export the Lifecycle log to a remote NFS share.
	`racadm lclog export -f Mylog.xml -l 192.168.0:/home/lclog_user`
	• Export the Lifecycle log to a local share using Local RACADM.
	`racadm lclog export -f Mylog.xml`
	• Export the complete Lifecycle log in gzip format to a local share using Local RACADM.
	`racadm lclog export -f log.xml.gz --complete`
	• Export the Lifecycle log `lclog` to a local share using Remote RACADM.
	`racadm -r 192.168.0 -u admin -p xxx lclog export -f Mylog.xml`
	• Display the status of the specified Job ID with Lifecycle Controller.
	`racadm lclog viewconfigresult -j JID_123456789012`
	• Export the complete Lifecycle Log in gzip format to a remote HTTP share:
	`racadm lclog export -f log.xml.gz -u httpuser -p httppwd -l http://test.com -port 8080`
	• Export the complete Lifecycle Log in gzip format to a remote HTTPS share
	`racadm lclog export -f log.xml.gz -u httpsuser -p httpspwd -l https://test.com -port 8080`
	• Export the Life Cycle Log to a remote HTTP share
	`racadm lclog export -f Mylog.xml -u httpuser -p httppwd -l http://test.com -port 8080`
	• Export the Life Cycle Log to a remote HTTPS share
	`racadm lclog export -f Mylog.xml -u httpsuser -p httpspwd -l https://test.com -port 8080`

license

Table 79. license

License	
Description	Manages the hardware licenses.
Synopsis	• `racadm license view [-c <component>]` • `racadm license import [-f <licensefile>] -l <location> -u <username> -p <password> -c <component> [-o]` • `racadm license import -u <username> -p <password> -f <license file name>\ -l <location> -c <FQDD> [-o]` • `racadm license export -f <license file> [-l <location>] [-u <username>] [-p <password>] -e <ID> -c <component>` • `racadm license export -u <username> -p <password> -f <license file name>\ -l <location> -t <transaction ID>` • `racadm license export -u <username> -p <password> -f <license file name>\ -l <locaton> -e <entitlement ID>` • `racadm license export -u <username> -p <password> -f <license file name>\ -l <location> -c <FQDD>` • `racadm license delete -t <transaction ID> [-o]` • `racadm license delete -e <entitlement ID> [-o]` • `racadm license delete -c <component> [-o]`
Input	• `view` — View license information. • `import` — Installs a new license. • `export` — Exports a license file. • `delete` — Deletes a license from the system. • `-l <remote share location>` — Network share location from where the license file must be imported. Possible locations are NFS, CIFS, HTTP, HTTPS, FTP, TFTP. If the file is on a shared location, then `-u <share user>` and `-p <share password>` must be used. **NOTE:** Using an invalid or unreachable IP for remote share (HTTP, HTTPS, FTP, TFTP) may not return an error message. • `-f` — Filename or path to the license file • `-e <ID>` — Specifies the entitlement ID of the license file that must be exported • `-t <ID>` — Specifies the transaction ID. • `-c <component>` — Specifies the component name on which the license is installed. • `-o` — Overrides the End User License Agreement (EULA) warning and imports, replaces or deletes the license. • `-u` — Username of the system where the file will be exported. • `-p` — Password of the user on the system where the file will be exported. **NOTE:** Only a user with **Server Control** and **Configure iDRAC** privilege can run the `import`and `delete` commands. **NOTE:** To export licenses, you need **Login iDRAC** privileges. **NOTE:** This command supports both IPV4 and IPV6 formats. IPV6 is applicable for CIFS and NFS type remote shares.

Examples

- View all License Information on System.

```
$racadm license view
```

```
iDRAC.Embedded.1
        Status               = OK
        Device               = iDRAC.Embedded.1
        Device Description   = iDRAC
        Unique Identifier    = H1VGF2S
                License #1
                        Status               = OK
                        Transaction ID       = 5
                        License Description  = iDRAC Enterprise License
                        License Type         = PERPETUAL
                        Entitlement ID       = Q3XJmvoxZdJVSuZemDehlcrd
                        License Bound        = H1VGF2S
                        Expiration           = Not Applicable
```

- Import a new license to a specific device in a known location.

```
$racadm license import -f license.xml -l //shareip/sharename
-u <share user> -p <share user password> -c idrac.embedded.1
```

- Import a license from a CIFS share to a device, in this case Embedded iDRAC.

```
 racadm license import -u admin -p xxx -f License.xml -l //192.168.0/licshare -c
idrac.embedded.1
```

- Import a license from an NFS share to a device, in this case Embedded iDRAC.

```
 racadm license import -f Licen.xml -l 192.168.0:/share -c idrac.embedded.1
```

- Import a license from an HTTP share to a device, in this case Embedded iDRAC.

```
 racadm license import -f Licen.xml -u httpuser -p httppswd -l http://test.com -c
idrac.embedded.1
```

- Import a license from an HTTPS share to a device, in this case Embedded iDRAC.

```
 racadm license import -f Licen.xml -u httpsuser -p httpspswd -l https://test.com -c
idrac.embedded.1
```

- Import a license from an FTP share to a device, in this case Embedded iDRAC.

```
 racadm license import -f Licen.xml -u ftpuser -p ftppwd -l ftp://test.com/share -c
idrac.embedded.1
```

- Import a license from an TFTP share to a device, in this case Embedded iDRAC.

```
 racadm license import -f Licen.xml -l tftp://test.com/share -c idrac.embedded.1
```

- Import a license by overriding the EULA warning.

```
racadm license import -u admin -p passwd -f License.xml -l //192.168.0/licshare -c
idrac.embedded.1 -o
```

```
-Import a license from the local filesystem using local racadm: racadm license import
-f License.xml -c idrac.embedded.1
```

```
-Import a license from the local filesystem using remote racadm: racadm license
import -f C:\Mylicdir\License.xml -c idrac.embedded.1
```

- Import a license from the local file system using Local RACADM.

```
 racadm license import -f License.xml -c idrac.embedded.1
```

- Import a license from the local file system using Remote RACADM.

```
 racadm -r 192.168.0.1 -u admin -p xxx license import -f C:\Mylicdir\License.xml -c
idrac.embedded.1
```

- Export a license file.

```
racadm license export -f license.xml -l 192.168.0:/share -u uname -p xxx -c
iDRAC.Embedded.1
```

  Instead of `-c`, you can use `-e <ID>` or `-t <ID>`. For Remote RACADM, if filename is not specified, the files are exported to the directory where RACADM is running.
- Export license to an NFS share using transaction ID, in this case transaction 27.

```
racadm license export -f License.xml -l 192.168.0:/licshare
-t 27
```

- Export license to a CIFS share specifying the entitlement ID, in this case abcdxyz.

```
racadm license export -u admin -p passwd -f License.xml -l //192.168.0/licshare -e
abcdxyz
```

```
racadm license export -u httpuser -p httppwd -f License.xml -l http://test.com -e
abcdxyz
```

```
racadm license export -u httpsuser -p httpspwd -f License.xml -l https://test.com -e
abcdxyz
```

```
racadm license export -f License.xml -l tftp://test.com/share -e abcdxyz
```

```
racadm license export -u ftpuser -p ftppwd -f License.xml -l ftp://test.com/share -e
abcdxyz
```

- Export license to a CIFS share specifying the FQDD. While using the `-c` option and exporting a license from a device, more than one license file may be exported. Therefore if a filename is given, an index is appended to the end of the filename such as`LicenseFile0.xml`, `LicenseFile1.xml`. In this case, the device is Embedded iDRAC.

```
racadm license export -u admin -p xxx -f LicenseFile.xml -l //192.168.0/licshare -c
idrac.embedded.1
```

```
racadm license export -u httpuser -p httppswd -f LicenseFile.xml -l http://test.com
-c idrac.embedded.1
```

```
racadm license export -u httpsuser -p httpspswd -f LicenseFile.xml -l https://
test.com -c idrac.embedded.1
```

```
racadm license export -f LicenseFile.xml -l tftp://test.com/share -c idrac.embedded.1
```

```
racadm license export -u ftpuser -p ftppwd -f LicenseFile.xml -l ftp://test.com/share
-c idrac.embedded.1
```

- Delete licenses on a particular device, in this case Embedded iDRAC.

```
racadm license delete -c idrac.embedded.1
```

- Delete a license using entitlement ID, in this case xYZabcdefg.

```
racadm license delete -e xYZabcdefg
```

- Delete a license using transaction ID, in this case 2.

```
racadm license delete -t 2
```

netstat

Table 80. Details of netstat

netstat	
Description	Display the routing table and network statistics.
Synopsis	`racadm netstat`
Privilege Required	Debug

Examples

- To display the routing table and network statistics, type the following command:

```
$ racadm netstat
```

networktransceiverstatistics

Table 81. Details of networktransceiverstatistics

networktransceiverstatistics	
Description	Displays the statistics for the list of NIC transceivers.
Synopsis	**NOTE:** The target server must have iDRAC Datacenter license to run this command. • `racadm networktransceiverstatistics` • `racadm networktransceiverstatistics <PORT FQDD>` • `racadm networktransceiverstatistics -all`
Input	• `<PORT FQDD>`—fully qualified device descriptor of the NIC • `-all`—for all the available network transceivers

Example	• To display the available network transceivers managed by the server for statistics:
	`racadm networktransceiverstatistics`
	• To display the statistics of the network transceiver specified by NIC.Integrated.1-1-1:
	`racadm networktransceiverstatistics NIC.Integrated.1-1-1`
	• To display the statistics of all the network transceivers managed by the server:
	`racadm networktransceiverstatistics -all`

nicstatistics

Table 82. Details of nicstatistics

nicstatistics	
Description	Displays the statistics for the NIC FQDD.
Synopsis	• `racadm nicstatistics`

Table 82. Details of nicstatistics (continued)

nicstatistics	
	• `racadm nicstatistics <NIC FQDD>` • `racadm hwinventory NIC.Integrated.1-1` **NOTE:** `Partition Driver State` and `Partition OS Driver State` properties are the same for nicstatistics.

Examples

- To display the statistics for the integrated NIC, type the following command:

```
racadm nicstatistics NIC.Integrated.1-1-1
Device Description:                             Integrated NIC 1 Port 1 Partition 1
Total Bytes Received:                           0
Total Bytes Transmitted:                        0
Total Unicast Bytes Received:                   0
Total Multicast Bytes Received:                 0
Total Broadcast Bytes Received:                 0
Total Unicast Bytes Transmitted:                0
Total Multicast Bytes Transmitted:              0
Total Broadcast Bytes Transmitted:              0
FCS error packets Received:                     0
Alignment error packets Received:               Not Applicable
False Carrier error packets Received:           Not Applicable
Runt frames Received:                           0
Jabber error frames Received:                   0
Total Pause XON frames Received:                Not Applicable
Total Pause XOFF frames Received:               Not Applicable
Discarded packets:                              0
Single Collision frames Transmitted:            Not Applicable
Multiple Collision frames Transmitted:          Not Applicable
Late Collision frames Transmitted:              Not Applicable
Excessive Collision frames Transmitted:         Not Applicable
Link Status:                                    Down
OS Driver State:                                Operational
FCoE Packets Received:                          Not Applicable
FCoE Packets Transmitted:                       Not Applicable
FC CRC Error Count:                             Not Applicable
FCoE Packets Dropped:                           Not Applicable
FCoE Link Failures:                             Not Applicable
Lan Unicast Packets Received:                   0
Lan Unicast Packets Transmitted:                0
Lan FCS Receive Errors:                         Not Applicable
Partition Link Status:                          Down
Partition Driver State:                         Operational
Total RDMA Packets Received:                    0
Total RDMA Packets Transmitted:                 0
Total RDMA Bytes Transmitted:                   0
Total RDMA Bytes Received:                      0
Total RDMA Transmitted ReadRequest Packets:     Not Applicable
Total RDMA Transmitted Send Packets:            Not Applicable
Total RDMA Transmitted Write Packets:           Not Applicable
Total RDMA Protocol Errors:                     Not Applicable
Total RDMA Protection Errors:                   Not Applicable
```

NOTE: When Port, Partition or RDMA statistics are not available, the output displays `No Port/Partition/RDMA Statistics found for FQDD <NIC FQDD>`.

- To get the network statistics, type the following command:

```
racadm nicstatistics

NIC.Integrated.1-1-1:QLogic 2x25GE QL41232HQCU NIC - 34:80:0D:2A:D9:E0
PartitionCapable :                              1
```

```
NIC.Integrated.1-1-2:QLogic 2x25GE QL41232HQCU NIC - 34:80:0D:2A:D9:E2
PartitionCapable :                              2

NIC.Integrated.1-1-3:QLogic 2x25GE QL41232HQCU NIC - 34:80:0D:2A:D9:E4
PartitionCapable :                              3

NIC.Integrated.1-1-4:QLogic 2x25GE QL41232HQCU NIC - 34:80:0D:2A:D9:E6
PartitionCapable :                              4
```

pcieslotview

Table 83. Details of pcieslotview

pcieslotview	
Description	The pcieslotview subcommand is used to display PCIe slot details.
Synopsis	• racadm pcieslotview • racadm pcieslotview --all • racadm pcieslotview <slot>
Input	• `<slot>` — PCIe slot key. • `--all` — view details of all the PCIe Slots.

Examples

- To display available PCIe slot keys, run the following command:

```
racadm>>pcieslotview
PCIe.Slot.3#SysSlot
PCIe.Mezzanine.1#SysSlot
PCIeSSD.BaySlot.7:1#SysSlot
PCIeSSD.BaySlot.6:1#SysSlot
PCIeSSD.BaySlot.9:1#SysSlot
PCIeSSD.BaySlot.8:1#SysSlot
PCIeSSD.BaySlot.0:1#SysSlot
PCIeSSD.BaySlot.1:1#SysSlot
PCIeSSD.BaySlot.3:1#SysSlot
PCIeSSD.BaySlot.2:1#SysSlot
PCIeSSD.BaySlot.5:1#SysSlot
PCIeSSD.BaySlot.4:1#SysSlot
```

- To display details of all the PCIe Slots, run the following command:

```
racadm>>pcieslotview --all
Slot                : PCIe.Slot.3#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : False
Slot Type           : FullLength
PCIe Type           : Gen4
Lanes               : 16
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIe.Mezzanine.1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : False
Slot Type           : FullLength
PCIe Type           : Gen3
Lanes               : 8
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.7:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
```

```
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.6:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.9:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.8:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.0:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.1:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.3:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.2:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
Lanes               : 4
CPU Affinity        : Not Applicable
----------------------------------------------------------
Slot                : PCIeSSD.BaySlot.5:1#SysSlot
Populated           : No
State               : Enabled
Hot Pluggable       : True
Slot Type           : U2
PCIe Type           : Gen3
```

```
Lanes                : 4
CPU Affinity         : Not Applicable
-------------------------------------------------------------
Slot                 : PCIeSSD.BaySlot.4:1#SysSlot
Populated            : No
State                : Enabled
Hot Pluggable        : True
Slot Type            : U2
PCIe Type            : Gen3
Lanes                : 4
CPU Affinity         : Not Applicable
-------------------------------------------------------------
```

- To display details of specific PCIe slot, run the following command:

```
racadm>>pcieslotview PCIeSSD.BaySlot.4:1#SysSlot
Slot                 : PCIeSSD.BaySlot.4:1#SysSlot
Populated            : No
State                : Enabled
Hot Pluggable        : True
Slot Type            : U2
PCIe Type            : Gen3
Lanes                : 4
CPU Affinity         : Not Applicable
-------------------------------------------------------------
```

ping

Table 84. Details of ping

ping	
Description	Verifies if the destination IP address is reachable from iDRAC with the current routing-table contents. A destination IP address is required. Based on the current routing-table contents, an ICMP echo packet is sent to the destination IP address. To run this subcommand, you must have the **Debug** privilege.
Synopsis	`racadm ping <ipaddress>`
Input	`<ipaddress>` — The IP address of the remote endpoint to ping.

Output	`PING 192.168.0 (192.168.0): 56 data bytes64 bytes from 192.168.0: seq=0 ttl=64 time=4.121 ms`
	`192.168.0 ping statistics`
	`1 packets transmitted, 1 packets received, 0 percent packet lossround-trip min/avg/max = 4.121/4.121/4.121 ms`

ping6

Table 85. Details of ping6

ping6	
Description	Verifies if the destination IPv6 address is reachable from iDRAC or with the current routing-table contents. A destination IPv6 address is required. Based on the current routing-table contents, an ICMP echo packet is sent to the destination IPv6 address. To run this subcommand, you must have **Debug** privilege.
Synopsis	`racadm ping6 <ipv6address>`
Input	`<ipv6address>` — the IPv6 address of the remote endpoint to ping.

Table 85. Details of ping6 (continued)

ping6	

Example	`Pinging 2011:de11:bdc:194::31 from 2011:de11:bdc:194::101 with 32 bytes of data:`
	`Reply from 2011:de11:bdc:194::31: time<1ms`
	`Reply from 2011:de11:bdc:194::31: time<1ms`
	`Reply from 2011:de11:bdc:194::31: time<1ms`
	`Reply from 2011:de11:bdc:194::31: time<1ms`
	
	`Ping statistics for 2011:de11:bdc:194::31:`
	`Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),`
	`Approximate round trip times in milli-seconds:`
	`Minimum = 0ms, Maximum = 0ms, Average = 0ms`

plugin

Table 86. Details of RACADM Plugin

RACADM Plugin	
Description	The plugin subcommand allows you to perform operations on various plugins.
Synopsis	• racadm plugin view • racadm plugin view --all • racadm plugin view <FQDD> • racadm plugin enable <FQDD> • racadm plugin disable <FQDD> • racadm plugin restart <FQDD> • racadm plugin uninstall <FQDD>
Input	• <FQDD>—Specifies the fully qualified device descriptor of the plugin. • `--all` —Specifies details of all plugins.

Example	To restart the plugin by FQDD:
	`racadm plugin restart Plugin.Integrated.INT.000`
	To enable the plugin by FQDD
	`racadm plugin enable Plugin.Integrated.INT.000`
	To disable the plugin by FQDD
	`racadm plugin disable Plugin.Integrated.INT.000`
	To uninstall the plugin by FQDD
	`racadm plugin uninstall Plugin.Integrated.INT.000`
	To view the available plugins
	`racadm plugin view`
	To view the specific plugin details by FQDD
	`racadm plugin view Plugin.Integrated.INT.000`
	To display details of all the plugins
	`racadm plugin view --all`

racadm proxy

Table 87. Details of RACADM Proxy

RACADM Proxy	
Description	On the PowerEdge FX2/FX2s systems, you can manage the compute sleds and CMC using the iDRAC's RACADM Proxy feature that redirects commands from iDRAC to CMC. You can return the CMC response to local or remote RACADM.to access the CMC configuration and reporting features without placing the CMC on the management network. The CMC configuration commands are supported through local proxy when local configuration is enabled on iDRAC. **NOTE:** Local racadm and local racadm proxy runs with root user privilege.

Synopsis	Local RACADM proxy usage
	`racadm <CMC racadm subcommand> --proxy`
	Remote RACADM proxy usage
	`racadm <CMC racadm subcommand> -u <username> -p <password> -r <idrac-ip connected to cmc> --proxy`
	NOTE:
	• The attribute `racadm get -g cfgractuning -o cfgRacTuneChassisMgmtAtServer` must be set as non-zero in CMC.
	• The attribute `racadm get system.ChassisControl.ChassisManagementMonitoring` attribute must be enabled in iDRAC.
	• `--proxy` must be entered at the end of the command.
	• The root privilege is the default privilege for Local RACADM proxy.
	• The user privilege in the Remote RACADM proxy for CMC maps to iDRAC privilege.

Input	• `-u` — Specifies the user name of the remote share that stores the catalog file.

Table 88. Details of CMC and iDRAC privilege for an operation

Required CMC Privilege for an operation	Required iDRAC Privilege for proxy operation
CMC Login User	Login
Chassis Configuration Administrator	Configure
User Configuration Administrator	Configure User
Clear Logs Administrator	Logs
Chassis Control Administrator	System Control
Server Administrator	System Control
Test Alert User	System Operations
Debug Command Administrator	Debug
Fabric x Administrator (where x is A, B, or C)	System Control

- When CMC is not placed on the network, the import, export, and file operation commands to CIFS, NFS, or FTP will fail.
- When the Remote or Local RACADM Proxy operation is in progress, if the iDRAC is reset, then the Proxy operation fails and the output is not displayed in Remote or Local RACADM.
- When racadm `getsystem.ChassisControl.ChassisManagementMonitoring` attribute is set to `monitor`, all the users including root users can only view the attribute. To configure, set the attribute to `monitor and manage` in CMC.

Table 87. Details of RACADM Proxy (continued)

RACADM Proxy	
	• `-p` — Specifies the password of the remote share that stores the catalog file. • `-r` — Specifies the iDRAC IP address connected to CMC.

Example	Local RACADM
	`racadm getractime --proxy`
	Remote RACADM
	`racadm getractime -u root -p xxx -r 192.168.0 getractime --proxy`

racdump

Table 89. Details of racdump

racdump	
Description	Provides a single command to get dump, status, and general iDRAC board information. To run this subcommand, you must have the Debug permission. • General System/RAC Information • Coredump Information • Network Interface Statistics • Session Information • Process Information • RAC Firmware Build Log **NOTE:** The RAC debug logs are not part of Local and Remote RACADM. It is available only on Firmware RACADM
Synopsis	`racadm racdump`
Input	N/A

Example

```
================================================================================
 General System/RAC Information
================================================================================

RAC Information:
RAC Date/Time           = Thu May  18 13:35:32 2017

Firmware Version        = 3.00.00.00
Firmware Build          = 12
Last Firmware Update    = 04/04/2017 19:41:38
Hardware Version        = 0.01
MAC Address             = 18:03:73:F7:B7:CA

Common settings:
Register DNS RAC Name   = 0
DNS RAC Name            = idrac
Current DNS Domain      =
Domain Name from DHCP   = Disabled

IPv4 settings:
Enabled                 = 1
Current IP Address      = 192.168.0.1
Current IP Gateway      = 192.168.0.1
Current IP Netmask      = 192.168.0.1
DHCP Enabled            = 0
Current DNS Server 1    = 0.0.0.0
```

```
Current DNS Server 2    = 0.0.0.0
DNS Servers from DHCP   = Disabled

IPv6 settings:
Enabled                 = 0
Current IP Address 1    = ::
Current IP Gateway      = ::
Autoconfig              = 1
Link Local IP Address   = ::
Current IP Address 2    = ::
Current IP Address 3    = ::
Current IP Address 4    = ::
Current IP Address 5    = ::
Current IP Address 6    = ::
Current IP Address 7    = ::
Current IP Address 8    = ::
Current IP Address 9    = ::
Current IP Address 10   = ::
Current IP Address 11   = ::
Current IP Address 12   = ::
Current IP Address 13   = ::
Current IP Address 14   = ::
Current IP Address 15   = ::
DNS Servers from DHCPv6 = Disabled
Current DNS Server 1    = ::
Current DNS Server 2    = ::

System Information:
System Model            = PowerEdge R720
System Revision         = I
System BIOS Version     = 3.0.00
Service Tag             =
Express Svc Code        =
Host Name               = localhost.localdomain
OS Name                 =
OS Version              =
Power Status            = ON
Fresh Air Capable       = No

Watchdog Information:
Recovery Action         = None
Present countdown value = 478 seconds
Initial countdown value = 480 seconds

Embedded NIC MAC Addresses:
NIC.Integrated.1-3-1    Ethernet                = 78:2B:CB:4B:C2:ED
NIC.Integrated.1-1-1    Ethernet                = 78:2B:CB:4B:C2:EB


================================================================================
 Coredump Information
================================================================================
There is no coredump currently available.

================================================================================
 Network Interface Statistics
================================================================================
Kernel IPv6 routing table
Destination                                 Next Hop
Flags Metric Ref    Use Iface
::1/128                                     ::                                  U
 0      1        1 lo
::1/128                                     ::                                  U
 256    0        0 lo
fe80::1a03:73ff:fef7:b7ca/128               ::                                  U
 0      0        1 lo
fe80::/64                                   ::                                  U
 256    0        0 eth1
ff00::/8                                    ::                                  U
 256    0        0 eth1


Kernel IP routing table
```

```
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
0.0.0.0         192.168.0.1     0.0.0.0         UG        0 0          0 bond0
192.168.0.1     0.0.0.0         192.168.0.1     U         0 0          0 bond0


Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address               Foreign Address             State
tcp        0      0 192.168.0.1:53986           192.168.0.1:199             ESTABLISHED
tcp        0      0 192.168.0.1:53985           192.168.0.1:199             ESTABLISHED
tcp        0      0 192.168.0.1:199             192.168.0.1:53986           ESTABLISHED
tcp        0      0 192.168.0.1:199             192.168.0.1:53985           ESTABLISHED


================================================================================
 Session Information
================================================================================
No active sessions currently exist.

================================================================================
 Process Information
================================================================================
  PID USER       VSZ STAT COMMAND
    1 root      5236 S    {systemd} /sbin/init
    2 root         0 SW   [kthreadd]
    3 root         0 SW   [ksoftirqd/0]
    6 root         0 SW   [watchdog/0]
    7 root         0 SW<  [khelper]
    8 root         0 SW   [kdevtmpfs]
    9 root         0 SW<  [netns]
  153 root         0 SW   [sync_supers]
  155 root         0 SW   [bdi-default]
  157 root         0 SW<  [kblockd]
  166 root         0 SW   [khubd]
16233 root     40916 S    racadm racdump
16246 root      3824 S    sh -c /bin/ps
16247 root      3828 R    /bin/ps
26851 root         0 SW   [kworker/u:3]


================================================================================
 RAC Firmware Build Log
================================================================================
BLD_TAG=idracfw_bldtag_3.00.00.00_691231_1800_00
BLD_VERSION=3.00.00.00
BLD_NUMBER=69.12.31
BLD_DATE=2.00.00.00.733
BLD_TYPE=idrac
BLD_KERNEL=ZIMAGE
```

racreset

Table 90. Details of racreset

racreset	
Description	Resets iDRAC. The reset event is logged in the iDRAC log. To run this subcommand, you must have the Configure iDRAC permission and configure user privilege. **NOTE:** After you run the `racreset` subcommand, iDRAC may require up to two minutes to return to a usable state. **NOTE:** You can run `racadm racreset --wait` command using local RACADM.
Synopsis	`racadm racreset`
Input	• Not applicable.

Table 90. Details of racreset (continued)

racreset	
Example	• iDRAC reset `racadm racreset`

racresetcfg

Table 91. Details of racresetcfg

racresetcfg	
Description	Deletes your current iDRAC configuration and resets iDRAC to the factory default settings based on the options provided. If you run `racresetcfg` from a network client for example, a supported web browser, SSH, or Remote RACADM), use the default IP address which is 192.168.0.120. The `racresetcfg` subcommand does not reset the **cfgDNSRacName** object. To run this subcommand, you must have the `Configure iDRAC` privilege and `Configure User` privilege. **NOTE:** Certain firmware processes must be stopped and restarted to complete the reset to defaults. iDRAC becomes unresponsive for about 30 seconds while this operation completes.
Synopsis	• RAC reset operation initiated successfully. It may take several minutes for the RAC to come online again. `racadm racresetcfg` • `racadm racresetcfg -f` • `racadm racresetcfg [-all]` • `racadm racresetcfg [-rc]`
Input	• `-f`—Force `racresetcfg`. If any vFlash partition creation or formatting is in progress, iDRAC returns a warning message. You can perform a force reset using this option. • `-all`—Discard all settings and reset user to shipping value. • `-rc`—Discard all settings and reset user to default user name and password. **NOTE:** When you perform `racresetcfg -rc` on Stomp and Noble/VRTX servers, by default, the DHCP is disabled.

Example	• Reset the configuration on iDRAC.
	`racadm racresetcfg`
	The RAC configuration has initiated restoration to factory defaults. Wait up to a minute for this process to complete before accessing the RAC again.
	• Reset when vFlash partition creation is in progress.
	`racadm racresetcfg`
	A vFlash SD card partition operation is in progress. Resetting the iDRAC may corrupt the vFlash SD card. To force `racresetcfg`, use the `-f` flag.
	• Reset all iDRAC's configurations to default, and preserve the user and network settings.
	`racadm racresetcfg -f`
	• Reset all iDRAC's configurations to default, and reset the user to shipping value.
	`racadm racresetcfg -all`

Table 91. Details of racresetcfg (continued)

racresetcfg	
	• Reset all iDRAC's configurations to default, and reset the user to root/calvin. `racadm racresetcfg -rc`

recover

Table 92. Details of Recover sub-command

Recover sub-command	
Description	Allows you to recover the previous version of the firmware. **NOTE:** To run this subcommand, you must have the Server Control privilege.
Synopsis	To recover the BIOS firmware: `racadm recover <FQDD>` **NOTE:** BIOS.Setup.1-1 is the supported FQDD
Input	`FQDD`— Specify the FQDD of the device for which the recovery is required.
Examples	To recover the BIOS firmware: `racadm recover BIOS.Setup.1-1` RAC1234: Recovery operation initiated successfully. Check the Lifecycle logs for the status of the operation by running RACADM command "racadm lclog view".

remoteimage

Table 93. Details of remoteimage

remoteimage	
Description	Connects, disconnects, or deploys either media file or directory on a remote server. **NOTE:** Attach directory feature is only supported on 15th generation and newer PowerEdge servers. To run this subcommand, you must log in with virtual media privilege for iDRAC.
Synopsis	• `racadm remoteimage -d` • `racadm remoteimage -s` • `racadm remoteimage -c [-u <username> -p <password> -l <image_path>]`
Input	• `-c`—Connect the image. • `-d`—Disconnect image. • `-u`—User name to access shared folder. • `-p`—Password to access shared folder. • `-l` —Image location on the network share; use single quotation marks around the location. • `-s` —Display current status.

Table 93. Details of remoteimage (continued)

remoteimage	

	NOTE: Use a forward slash (/) when providing the image location. If backward slash (\) is used, override the backward slash for the command to run successfully. For example:
	`racadm remoteimage -c -u user -p xxx -l /\/\192.168.0.2/\CommonShare/\diskette`
	NOTE: The following options only apply to connect and deploy actions
	• `-u` —Username. User name to access the network share. For domain users, you can use the following formats:
	  ○ domain/user
	  ○ domain\user
	  ○ user@domain
	• `-p` —Password to access the network share.

Example	• Disable Remote File Sharing. • `racadm remoteimage -d Disable Remote File Started. Please check status using -s option to know Remote File Share is ENABLED or DISABLED.` • Check Remote File Share status. • `racadm remoteimage -s Remote File Share is Enabled UserName Password ShareName //192.168.0/xxxx/dtk_3.3_73_Linux.iso` • Deploy a remote image on iDRAC CIFS Share. • `racadm remoteimage -c -u admin -p xxx -l //192.168.0.32/dev/OM840.iso` • Deploy a remote image on iDRAC NFS Share. • `racadm remoteimage -c -u root -p password -l '192.168.1.113:/opt/nfs/Test` **NOTE:** In the above example, `Test` is a folder name . • Deploy a remote image on iDRAC HTTP Share. • `racadm remoteimage -c -u "user" -p "xxx" -l http://shrloc/foo.iso` • Deploy a remote image on iDRAC HTTPS Share. • `racadm remoteimage -c -u "user" -p "xxx" -l https://shrloc/foo.iso` **NOTE:** -p and -u options are not mandatory in case of HTTP/HTTPS based **remoteimage** commands.

remoteimage2

Table 94. Details of remoteimage2

remoteimage2	
Description	Connects, disconnects, or deploys either media file or directory on a remote server. To run this subcommand, you must log in with virtual media privilege for iDRAC. **NOTE:** Use this command to attach second remote image simultaneously. **NOTE:** Attach directory feature is only supported on 15th generation and newer PowerEdge servers.
Synopsis	• `racadm remoteimage2 -d` • `racadm remoteimage2 -s` • `racadm remoteimage2 -c [-u <username> -p <password> -l <image_path>]`
Input	• `-c`—Connect the image. • `-d`—Disconnect image.

Table 94. Details of remoteimage2 (continued)

remoteimage2	
	• `-u`—User name to access shared folder. • `-p`—Password to access shared folder. • `-l` —Image location on the network share; use single quotation marks around the location. • `-s` —Display current status. **NOTE:** Use a forward slash (`/`) when providing the image location. If backward slash (`\`) is used, override the backward slash for the command to run successfully. For example: `racadm remoteimage2 -c -u user -p xxx -l /\/\192.168.0.2/\CommonShare/\diskette` **NOTE:** The following options only apply to connect and deploy actions • `-u` —Username. User name to access the network share. For domain users, you can use the following formats: ○ domain/user ○ domain\user ○ user@domain • `-p` —Password to access the network share.

Example	• Disable Remote File Sharing.
	`racadm remoteimage2 -d`
	`Disable Remote File Started. Please check status using -s option to know Remote File Share is ENABLED or DISABLED.`
	• Check Remote File Share status. `racadm remoteimage2 -s Remote File Share is Enabled UserName Password ShareName //192.168.0/xxxx/dtk_3.3_73_Linux.iso`
	• Deploy a remote image on iDRAC CIFS Share. `racadm remoteimage2 -c -u admin -p xxx -l //192.168.0.32/dev/Test`
	NOTE: In the above example, `Test` is a folder name.
	• Deploy a remote image on iDRAC NFS Share. `racadm remoteimage2 -c -u root -p password -l '192.168.1.113:/opt/nfs/OM840.iso`
	• Deploy a remote image on iDRAC HTTP Share.
	`racadm remoteimage2 -c -u "user" -p "xxx" -l http://shrloc/foo.iso`
	• Deploy a remote image on iDRAC HTTPS Share. `racadm remoteimage2 -c -u "user" -p "xxx" -l https://shrloc/foo.iso`
	NOTE: -p and -u options are not mandatory in case of HTTP/HTTPS based **remoteimage2** commands.

rollback

Table 95. Details of rollback

rollback	
Description	Allows you to roll back the firmware to an earlier version.
Synopsis	`racadm rollback <FQDD> [--reboot]`

Table 95. Details of rollback (continued)

rollback	
	NOTE: To get the list of available rollback versions and FQDDs, run the `racadm swinventory` command.
Input	• `<FQDD>`: Specify the FQDD of the device for which the rollback is required. • `--reboot`: Performs a graceful system reboot after the BIOS firmware rollback.

Example	• To perform BIOS firmware rollback:
	`racadm rollback iDRAC.Embedded.1-1`
	`RAC1056: Rollback operation initiated successfully.`
	• To perform a graceful system reboot after BIOS firmware rollback:
	`racadm rollback BIOS.Setup.1-1 --reboot`

sekm

Table 96. Details of sekm

sekm	
Description	The sekm subcommand is used to enable and disable sekm support for a server, rekey sekm-supported devices on a server, and test the SSL connection to a given sekm server. To run this subcommand, you must have the following privileges: • **Enable**—server control and configure iDRAC privileges • **Disable**—server control and configure iDRAC privileges • **Rekey**—server control and configure iDRAC privileges • **Testserverconnection**—server control and configure iDRAC privileges • **Getstatus**—login privileges

Synopsis	**NOTE:** To run enable, disable, and testserverconnection commands, the target server must have sekm license.
	`racadm sekm getstatus`
	`racadm sekm enable`
	NOTE: When you execute `racadm sekm enable`, a job ID is returned, query this job id to see the status of sekm. If the query reports failure, check the job ID config results or Lifecycle Controller(LC) logs to find the reason for failure.
	`racadm sekm disable`
	`racadm sekm disable -purgeKMSKeys`
	`racadm sekm rekey <IDRAC FQDD>`
	`racadm sekm testserverconnection -p -i <index of the sekm server>`
	`racadm sekm testserverconnection -s -i <index of the sekm server>`
	`racadm sekm enable -passphrase <password>`

Input	• `-i`—Index of the sekm server to test

Table 96. Details of sekm (continued)

sekm	
	• -p—Indicates primary sekm server • -s—Indicates secondary sekm server • -purgeKMSKeys—Purge the Key Management Server keys • -passphrase—To enter a passphrase when updating encryption mode from iLKM to sekm.

Example	To get sekm status:
	`racadm sekm getstatus`
	To enable sekm feature:
	`racadm sekm enable`
	To disable sekm feature:
	`racadm sekm disable`
	To disable sekm feature and purge KMS keys:
	`racadm sekm disable -purgeKMSKeys`
	To request iDRAC to rekey all the devices:
	`racadm sekm rekey iDRAC.Embedded.1`
	To test primary sekm server connection:
	`racadm sekm testserverconnection -p -i 1`
	To test the secondary sekm server connection:
	`racadm sekm testserverconnection -s -i 1`
	To change security mode to sekm from ilkm:
	`racadm sekm enable -passphrase password`
	NOTE: Only one primary server is supported. Option -i should be 1.
	NOTE: For **sekm getstatus**, the returned values and their meaning are as follows:
	• **Disabled**—sekm functionality has been disabled on iDRAC and no sekm functions are available.
	• **Enabled**—sekm functionality has been enabled on iDRAC and all sekm functions are available.
	• **Failed**—iDRAC is unable to communicate with the sekm server.
	• **Unverified Changes Exist**—Changes have been made to the sekm configuration but not yet enabled using the `racadm sekm enable` command.

serialcapture

Table 97. Details of serialcapture

serialcapture	
Description	The serialcapture subcommand is used to is used to export and clear serial data captured from the system. To run this subcommand, you must have the following privileges:
Synopsis	**NOTE:** To run clear and export commands, the target server must have iDRAC Datacenter license.

Table 97. Details of serialcapture (continued)

serialcapture	

	To clear serial data.
	`racadm serialcapture clear`
	To export serial data.
	`racadm serialcapture export -u <shareuser> -p <sharepassword> -l <NFS/CIFS/HTTP/HTTPS share> -f <FileName>`

Input	• `-f`—Filename of the exported serial data. • `-u`—Username of the remote share to where the file must be exported. The username must be specified as domain/username. • `-p`—Password for the remote share to where the file must be exported. • `-l`—Network share location to where the serial data captured must be exported. For more information on NFS or CIFS or HTTP or HTTPS share, see section on Usage examples.

Example	To clear serial data buffer.
	`racadm serialcapture clear`
	To export serial data to CIFS share.
	`racadm serialcapture export -u cifsuser -p cifspassword -l //1.2.3.4/cifsshare -f datafile`
	To export serial data to NFS share.
	`racadm serialcapture export -u nfssuser -p nfspassword -l 1.2.3.4:/nfsshare -f datafile`
	To export serial data to HTTP share.
	`racadm serialcapture export -u httpuser -p httppassword -l http:/1.2.3.4/httpshare -f datafile`
	To export serial data to HTTPS share.
	`racadm serialcapture export -u httpsuser -p httpspassword -l https:/1.2.3.4/cifsshare -f datafile`

sensorsettings

Table 98. sensorsettings

sensorsettings	
Description	Allows you to perform threshold settings of the sensor. To run this subcommand, you must have **Configure iDRAC** privilege. **NOTE:** An error message is displayed when the following is performed: • A set operation is performed on an unsupported FQDD. • Out of range settings is entered. • Invalid sensor FQDD is entered. • Invalid threshold level filter is entered.
Synopsis	`racadm sensorsettings set <FQDD> -level Min <value>`

Table 98. sensorsettings (continued)

sensorsettings	
Input	• <FQDD> — Sensor or corresponding sensor FQDD which needs a threshold configuration. Run the command, racadm getsensorinfo to view the sensor FQDD. The R/W field in the output getsensorinfo indicates if the sensor thresholds can be configured. Replace the <FQDD> field with the corresponding sensor FQDD that needs a threshold configuration. • -level — threshold level for the sensor setting. Values are Max or Min.
Examples	To set the minimum noncritical threshold level for a power sensor type. `racadm sensorsettings set iDRAC.Embedded.1#SystemBoardCPUUsage -level Max 95` **NOTE:** The entered value must be lesser or higher than the sensor critical threshold limit.

serveraction

Table 99. serveraction

serveraction	
Description	Enables you to perform power management operations on the blade system. To run this subcommand, you must have the Execute Server Control Commands permission.
Synopsis	`racadm serveraction <action> -f`
Input	<action> — Specifies the power management operation to perform. The options are: • hardreset — Performs a force reset (reboot) operation on the managed system. • powercycle — Performs a power-cycle operation on the managed system. This action is similar to pressing the power button on the system's front panel to turn off and then turn on the system. • powerdown — Powers down the managed system. • powerup — Powers up the managed system. • powerstatus — Displays the current power status of the server (ON or OFF). • graceshutdown — Performs a graceful shutdown of the server. If the operating system on the server cannot shut down completely, then this operation is not performed. • nmi — Generates the Non-masking interrupt (NMI) to halt the system operation. The NMI sends a high-level interrupt to the operating system, which causes the system to halt the operation to allow critical diagnostic or troubleshooting activities. **NOTE:** The halt system operation does not occur on systems running the Linux operating system. • -f — Force the server power management operation. This option is applicable only for the PowerEdge-VRTX platform. It is used with powerdown,powercycle, and hardreset options. **NOTE:** The actionpowerstatus is not allowed with -a option.
Output	Displays an error message if the requested operation is not completed, or a success message if the operation is completed.

Example	Get Power Status on iDRAC
	`racadm serveraction powerstatus`
	`Server Power Status: ON`
	`racadm serveraction powercycle`
	`Server power operation successful`

setled

Table 100. Details of setled

setled	
Description	Sets the state (blinking or not blinking) of the LED on the specified module. To run this subcommand, you must have the Configure iDRAC permission.
Synopsis	`racadm setled -l <ledState>`

Input	• `-l <ledState>` — Specifies the LED state. The values are:
	  ○ 0 — No Blinking
	  ○ 1 — Blinking

Example	• From iDRAC stop LED from blinking.
	`racadm setled -l 0`
	`RAC0908: System ID LED blink off.`
	• From iDRAC start LED to blink.
	`racadm setled -l 1`
	`RAC0907: System ID LED blink on.`

setniccfg

Table 101. Details of setniccfg

setniccfg	
Description	Sets the iDRAC IP address for static and DHCP modes. To run this subcommand, you must have the **Configure iDRAC** privilege. **NOTE:** The terms NIC and Ethernet management port may be used interchangeably.
Synopsis	• `racadm setniccfg -d` • `racadm setniccfg -d6` • `racadm setniccfg -s <IPv4Address> <netmask> <IPv4 gateway>` • `racadm setniccfg -s6 <IPv6 Address> <IPv6 Prefix Length> <IPv6 Gateway>` • `racadm setniccfg -o`
Input	• `-d` — Enables DHCP for the NIC. It is enabled by default. • `-d6` — Enables AutoConfig for the NIC (default is disabled). • `-s` — Enables static IP settings. The IPv4 address, netmask, and gateway must be specified. Otherwise, the existing static settings are used. `<ipaddress>`, `<netmask>`, and `<gateway>` must be typed as dot-separated strings. `racadm setniccfg -s 192.168.0 255.255.255.0 192.168.0` • `-s6` — Enables static IPv6 settings. The IPv6 address, Prefix Length, and the IPv6 Gateway can be specified. • `-o` — Enable or disable NIC.

Table 101. Details of setniccfg (continued)

setniccfg	

Example	• To Configure static IPv4 address for iDRAC NIC
	`racadm setniccfg -s 192.168.0 255.255.255.0 192.168.0`
	`Static IP configuration enabled and modified successfully`
	• Configure DHCP mode for iDRAC IPv4
	`racadm setniccfg -d`
	`DHCP is now ENABLED`
	• Configure DHCP mode for iDRAC IPv6
	`racadm setniccfg -d6`
	`DHCP6 is now ENABLED`

spdm

Table 102. Details of spdm

spdm	
Description	The spdm command is used to display inventory of spdm capable devices, list spdm capable FQDDs, and to collect and export the hardware and software identity of spdm devices. **NOTE:** This command is enabled for Emulex cards only.

Synopsis	`racadm spdm list`
	`racadm spdm <FQDD>`
	`racadm spdm export -f <filename> -c <FQDD> -t <identity cert type> -u <username> -p <password> -l <CIFS/NFS share>`

Input	• `-f <filename>`—File name • `-c <FQDD>`—FQDD of SPDM device • `-t <identity cert type>`—Type of identity o `t 0` — Hardware identity **NOTE:** SPDM command only supports hardware identification certificates. • `-u <username>`—Username for the remote share where the file must be exported. Username in a domain can be given as domain/username. • `-p <password>`—Password for the remote share where the file must be exported. • `-l <CIFS/NFS share>`—Network share location where the SPDM identity must be exported.

Example	To list the FQDDs which are spdm capable:
	`racadm spdm list`
	To display the inventory of spdm capable devices:
	`racadm spdm FC.Slot.1-1`
	To export the hardware identity to a remote CIFS share::
	`racadm spdm export -f MyCert.cert -c FC.Slot.1-1 -t 0 -u admin -p mypass -l //10.94.161.103/share`

Table 102. Details of spdm (continued)

spdm	
	To export the hardware identity to a remote NFS share:: `racadm spdm export -f MyCert.cert -c FC.Slot.1-1 -t 0 -u admin -p mypass -l 10.94.161.103:/share`

sshpkauth

Table 103. Details of sshpkauth

sshpkauth	
Description	Enables you to upload and manage up to 4 different SSH public keys for each user. You can upload a key file or key text, view keys, or delete keys. This command has three mutually exclusive modes determined by the options — `upload`, `view`, and `delete`. To run this subcommand, you must have Configure user privilege.
Synopsis	• `racadm sshpkauth -i svcacct -k <key_index> -t <PK_key_text>` • `racadm sshpkauth -i svcacct -k <key_index> -f <PK_key_text>` • `racadm sshpkauth -v -i svcacct -k all|<key_index>` • `racadm sshpkauth -d -i svcacct -k all|<key_index>`
Input	• `-i <user_index>` — Index for the user. • `-k [<key_index> | all]` — Index to assign the PK key being uploaded. `all` only works with the `-v` or `-d` options. `<key_index>` must be between 1 to 4 or `all` on iDRAC. • `-t <PK_Key_Text>` — Key text for the SSH Public key. • `-f <filename>` — File containing the key text to upload. **NOTE:** The `-f` option is not supported on SSH or serial RACADM. • `-v` — View the key text for the index provided. • `-d` — Delete the key for the index provided.

Example

- Upload an invalid key to iDRAC User 2 in the first key space using a string.

```
$ racadm sshpkauth -i 2 -k 1 -t "This is invalid key
Text"
```

```
ERROR: Key text appears to be corrupt
```

- Upload a valid key to iDRAC User 2 in the first key space using a file.

```
$ racadm sshpkauth -i 2 -k 1 -f pkkey.key
```

```
Key file successfully uploaded.
```

- Get all keys for User 2 on iDRAC.

```
$ racadm sshpkauth -v -i 2 -k all
```

```
******************** User ID 2 ******************
```

```
Key ID 1:
```

```
ssh-rsa    AAAAB3NzaC1yc2EAAAABIwAAAIEAzzy+k2npnKqVEXGXIzo0sbR6JgA5YNbWs3ekoxXV
               fe3yJVpVc/
5zrrr7XrwKbJAJTqSw8Dg3iR4n3vUaP+lPHmUv5Mn55Ea6LHUslAXFqXmOdlThd
               wilU2VLw/iRH1ZymUFnut8ggbPQgqV2L8bsUaMqb5PooIIvV6hy4isCNJU=
1024-bit RSA, converted from OpenSSH by xx_xx@xx.xx
```

```
Key ID 2:
```

```
Key ID 3:
```

```
Key ID 4:
```

sslcertdelete

Table 104. Details of sslcertdelete

sslcertdelete	
Description	Command to delete a custom signing certificate from iDRAC. To run this subcommand for web server certificates, you must have **Login to iDRAC** and **Configure iDRAC** privileges and for others only **Configure iDRAC** privilege is required.
Synopsis	• `racadm sslcertdelete -t <type>` • `racadm sslcertdelete -t 8 -i <instance(1 or 2)>`

Input	• `-t`—Specifies the type of certificate to delete. The type of certificate is:
	  ○ `3`—Custom signing certificate
	  ○ `4`—Client trust certificate for SSL
	  ○ `6`—SEKM SSL certificate
	  ○ `7`—KMS CA certificate
	  ○ `8`—Rsyslog Server CA
	  ○ `12`—Rsyslog Server CA cert
	  ○ `13`—Rsyslog Client trust cert
	  ○ `16`—Custom certificate
	• `-i`—Instance value should be 1 or 2. This is applicable only for Rsyslog Server CA certificate(-t 8).

Output	The following information is displayed: • The custom signing certificate was deleted. • The iDRAC resets and may be offline temporarily. • Telemetry certificate deleted successfully.

Example	• Use Remote RACADM to delete the custom signing certificate.
	`$ racadm -r 192.168.0 -u root -p xxx sslcertdelete -t 3`
	• Use Remote RACADM to delete the Client Trust certificate for SSL.
	`$ racadm -r 192.168.0 -u root -p xxx sslcertdelete -t 4`

Table 104. Details of sslcertdelete (continued)

sslcertdelete	
	• Use Remote RACADM to delete the telemetry certificate. `racadm -r 192.168.0 -u root -p xxx sslcertdelete -t 8 -i 1`

sslcertdownload

Table 105. Details of sslcertdownload

sslcertdownload	
Description	Downloads an SSL certificate from iDRAC to the client's file system. To run this subcommand for web server certificates, you must have **Login to iDRAC** and **Configure iDRAC** privileges and for others only **Control and Configure System** privilege is required. **NOTE:** This subcommand is only supported on the remote interface(s).
Synopsis	• `racadm sslcertdownload -f <filename> -t <type>` • `racadm sslcertupload -t 8 -i <instance(1 or 2)>`
Input	• `-f`—Specifies the target filename on local file system to download the certificate. • `-t <type>`—Specifies the type of certificate to download, either the CA certificate for Directory Service or the server certificate. ○ `1`—Server Certificate ○ `2`—Active Directory ○ `3`—Custom Signing Certificate ○ `4`—Client Trust Certificate for SSL ○ `6`—SEKM SSL certificate ○ `7`—KMS CA certificate ○ `8`—Rsyslog Server CA ○ `9`—RSA CA certificate ○ `10`—SCEP CA certificate ○ `11`—SCV Signed Certificate **NOTE:** This input is available for local RACADM only. ○ `12`—Rsyslog Server CA Cert ○ `13`—Rsyslog Client trust Cert ○ `14`—IEEE 802.1X Custom Certificate ○ `15`—IEEE 802.1X Server CA Certificate ○ `16`—Custom certificate ○ `17`—IEEE 802.1X Custom Signing Certificate • `-i`—Instance value should be 1 or 2. This is only applicable for Rsyslog Server CA Certificate(`-t 8`).
Output	• Returns 0 when successful and non-zero number when unsuccessful. • `racadm sslcertdownload -t 8 -i 1` Telemetry certificate downloaded successfully.

Example	• Download server certificate:
	`racadm -r 192.168.0 -u root -p xxx sslcertdownload -t 1 -f cert.txt`
	• Download Active Directory certificate:
	`racadm -r 192.168.0 -u root -p xxx sslcertdownload -t 2 -f ad_cert.txt`
	• Download telemetry certificate:
	`racadm -r 192.168.0 -u root -p xxx sslcertdownload -t 8 -i 1`

NOTE: This command is not supported in the firmware RACADM interface as it is not a file system.

sslcertupload

Table 106. Details of sslcertupload

sslcertupload	
Description	Uploads a custom SSL server or CA certificate for Directory Service from the client to iDRAC. To run this subcommand, you must have the following privilege: • Active Directory certificate - **Configure iDRAC** and **Configure Users**. • Public Key Cryptography Standards (PKCS) format - **Configure iDRAC**. • Client Trust certificate for SSL format - **Configure iDRAC** • Web server certificate- **Login to iDRAC** and **Configure iDRAC** **NOTE:** For this command, files without extension or no extension are allowed.
Synopsis	• `racadm sslcertupload -t <type> -f <filename> -p <passphrase>` • `racadm sslcertupload -t 8 -i <instance(1 or 2)>`

Input	• `-f`—Specifies the source filename in the local file system of the certificate uploaded.
	• `-p`—Pass phrase for the Public Key Cryptography Standards file.
	• `-t`—Specifies the type of certificate to upload. The type of certificate must be:
	  ○ `1`—Server certificate
	  ○ `2`—CA certificate for Directory Service
	  ○ `3`—Public Key Cryptography Standards (PKCS) format
	  ○ `4`—Client Trust certificate for SSL format
	  ○ `6`—SEKM SSL certificate
	  ○ `7`—KMS CA certificate
	  ○ `8`—Rsyslog Server CA
	  ○ `9`—RSA CA certificate
	  ○ `10`—SCEP CA certificate
	  ○ `12`—Rsyslog Server CA Cert
	  ○ `13`— Rsyslog Client trust Cert
	  ○ `14`— IEEE 802.1X Custom Certificate
	  ○ `15`— IEEE 802.1X Server CA Certificate
	  ○ `16`—Custom certificate
	  ○ `17`— IEEE 802.1X Custom Signing Certificate
	• `-i`—Instance value should be 1 or 2. This is applicable only for Rsyslog Server CA certificate(`-t 8`).

Output	• `racadm -r 192.168.0.2 -u root -p xxx sslcertupload -t 2 -f cert.txt` Certificate that is successfully uploaded to the RAC. • `racadm sslcertupload -t 8 -i 1` Telemetry certificate uploaded successfully.

Example	• Uploading a server certificate:
	`racadm -r 192.168.0.2 -u root -p xxx sslcertupload -t 1 -f cert.txt`
	• Uploading web server certificate and key:
	`racadm -r 192.168.0.2 -u root -p xxx sslcertupload -t 6 -f cert.txt -k key.txt`
	• Uploading Active Directory certificate:
	`racadm -r 192.168.0.2 -u root -p xxx sslcertupload -t 2 -f ad_cert.txt`

Table 106. Details of sslcertupload (continued)

sslcertupload	

	• Uploading Client Trust certificate for SSL:
	`racadm -r 192.168.0.2 -u root -p xxx sslcertupload -t 4 -f https_cert.cer`
	• Uploading a telemetry certificate:
	`racadm -r 192.168.0.2 -u root -p xxx sslcertupload -t 8 -i 1`

sslcertview

Table 107. Details of sslcertview

sslcertview	
Description	Displays the SSL server or CA certificate that exists on iDRAC.
Synopsis	• `racadm sslcertview -t <type> [-A]` • `racadm sslcertview -t <type> -i <instance>`
Input	• `-t`—Specifies the type of certificate to view: ○ `1`—Server Certificate ○ `2`—Active Directory ○ `4`—Client Trust certificate for SSL ○ `6`—SEKM SSL certificate ○ `7`—KMS CA certificate ○ `8`—Rsyslog CA certificate ○ `9`—RSA CA certificate ○ `10`—SCEP CA certificate ○ `12`—Rsyslog Server CA cert ○ `13`—Rsyslog Client trust cert ○ `14`—IEEE 802.1X Custom Certificate ○ `15`—IEEE 802.1X Server CA Certificate ○ `17`—IEEE 802.1X Custom Signing Certificate • `-A`—Prevents printing headers or labels. • `-i`—Instance value should be 1 or 2. This is applicable only for Rsyslog Server CA certificate (`-t 8`) **NOTE:** If a certificate is generated using a comma ',' as one of the parameters, command displays the partial name in the following fields only until the comma: • Organization Name • Common Name • Location Name • State Name The rest of the string is not displayed.

Output	• `racadm sslcertview -t 1`
	
	`Serial Number` `01`
	Subject Information:
	`Country Code (CC)` `US`
	`State (S)` `Texas`
	`Locality (L)` `Round Rock`
	`Organization (O)` `Dell Inc.`
	`Organizational Unit (OU)` `Remote Access Group`
	`Common Name (CN)` `iDRAC Default certificate`
	Issuer Information:

Table 107. Details of sslcertview (continued)

sslcertview	
	Country Code (CC) US State (S) Texas Locality (L) Round Rock Organization (O) Dell Inc. Organizational Unit (OU) Remote Access Group Common Name (CN) iDRAC Default certificate Valid From May 15 23:54:19 2017 GMT Valid To May 12 23:54:19 2027 GMT • racadm sslcertview -t 1 -A 00 US Texas Round Rock Dell Inc. Remote Access Group iDRAC default certificate US Texas Round Rock Dell Inc. Remote Access Group iDRAC default certificate May 15 23:54:19 2017 GMT May 12 23:54:19 2027 GMT
Example	• To view the server certificate: racadm -r 192.168.0.2 -u root -p xxx sslcertview -t 1 racadm -r 192.168.0.2 -u root -p xxx sslcertview -t 8 -i 1 • To view the server certificate with headers and labels omitted: racadm -r 192.168.0.2 -u root -p xxx sslcertview -t 1 -A racadm -r 192.168.0.2 -u root -p xxx sslcertview -t 8 -i 1 -A

sslcsrgen

Table 108. Details of sslcsrgen

sslcsrgen	
Description	Generates and downloads a certificate signing request (CSR) file to the client's local file system. The CSR can be used for creating a custom SSL certificate that can be used for SSL transactions on iDRAC. To run this subcommand, you must have the Configure iDRAC privilege.
Synopsis	• `racadm sslcsrgen -g` • `racadm sslcsrgen [-g] [-f <filename>]` • `racadm sslcsrgen -s` • `racadm sslcsrgen -g -t <csr_type>` • `racadm sslcsrgen -g -f <filename> -t <csr_type>` • `racadm sslcsrgen -s -t <csr_type>`

Input	• `-g`—Generates a new CSR.
	• `-s`—Returns the status of a CSR generation process (generation in progress, active, or none).
	• `-f`—Specifies the filename of the location, `<filename>`, where the CSR is downloaded.
	NOTE: The `-f` option is only supported on the remote interfaces.
	• `-t` —Specifies the type of CSR to be generated. The options are:
	  ○ 1—SSL cert
	  ○ 2—Factory Identity Cert
	  ○ 3—SEKM SSL Cert
	  ○ 4—Rsyslog SSL Cert

Output	If no options are specified, a CSR is generated and downloaded to the local file system as `sslcsr` by default. The `-g` option cannot be used with the `-s` option, and the `-f` option can only be used with the `-g` option. The `sslcsrgen -s` subcommand returns one of the following status codes: • CSR was generated successfully. • CSR does not exist.

Example	• Display the status of CSR operation:
	`racadm sslcsrgen -s`
	• Generate and download a CSR to local file system using remote RACADM
	`racadm -r 192.168.0.120 -u <username> -p <password> sslcsrgen -g -f csrtest.txt`
	• Generate and download a CSR to local file system using local RACADM
	`racadm sslcsrgen -g -f c:\csr\csrtest.txt`
	• Generate a new certificate signing request for SSL type
	`racadm sslcsrgen -g -t 1`
	• Display the status of the current CSR operation for SSL type
	`racadm sslcsrgen -s -t 1`

Table 108. Details of sslcsrgen (continued)

sslcsrgen	

	• Generate a new certificate signing request for Rsyslog SSL Cert
	`racadm sslcsrgen -g -t 4`
	• Display the status of the current CSR operation for Rsyslog SSL Cert
	`racadm sslcsrgen -s -t 4`

NOTE: Before a CSR can be generated, the CSR fields must be configured in the RACADM `iDRAC.Security` group. For example:

```
racadm set iDRAC.security.commonname MyCompany
```

NOTE: In or SSH console, you can only generate and not download the CSR file.

sslkeyupload

Table 109. Details of sslkeyupload

sslkeyupload	
Description	Uploads SSL key from the client to iDRAC. To run this subcommand, you must have the **Login and Configure iDRAC** privileges.
Synopsis	`racadm sslkeyupload -t <type> -f <filename>`
Input	• `-t` — Specifies the key to upload. The value is: o `1` — SSL key used to generate the server certificate. • `-f` — Specifies the filename of the SSL key that must be uploaded.
Output	If upload is successful, the message `SSL key successfully uploaded to the RAC` is displayed. if upload is unsuccessful, error message is displayed.
Example	`racadm sslkeyupload -t 1 -f c:\sslkey.txt`

sslresetcfg

Table 110. Details sslresetcfg

sslresetcfg	
Description	Restores the web-server certificate to factory default and restarts web-server. The certificate takes effect 30 seconds after the command is entered. To run this subcommand, you must have the Configure iDRAC privilege.
Synopsis	`racadm sslresetcfg`
Input	N/A
Example	`racadm sslresetcfg` `Web server is restarting to complete the certificate update. Please wait for a few minutes for this process to complete.`

storage

Table 111. storage command parameters and options

storage	
Description	Allows you to run the commands to control storage arrays. To run this subcommand for configuring the storage properties, you must have the server control permission.

Synopsis	**Inventory**
	NOTE: You can also run the command using `raid` in place of the `storage` command.
	• To view the help details for get command, run the following command:
	`racadm storage help get`
	• To generate and view information about the inventory of storage root node, run the following command:
	`racadm storage get status`
	• To generate and view information about the inventory of controllers, run the following command:
	`racadm storage get controllers -o`
	`racadm storage get controllers -o -p <property names separated by comma>`
	• To get the list of controllers, run the following command:
	`racadm storage get controllers`
	• To get the properties of a controller, run the following command:
	`racadm storage get controllers:<Controller FQDD>`
	NOTE: HBA, BOSS-N1, and PERCs connected using a slimline cable will have FQDDs starting with `SL`. Example - `NonRaid.SL.5-1`, `AHCI.SL.5-1`, `RAID.SL.5-1` and so on.
	• To generate and view information about the inventory of batteries, run the following command:
	`racadm storage get batteries -o`
	`racadm storage get batteries --refkey <Controller FQDDs separated by comma>`
	`racadm storage get batteries --refkey <Controller FQDDs separated by comma> -o`
	`racadm storage get batteries --refkey <Controller FQDDs separated by comma> -o -p <property names separated by comma>`

Table 111. storage command parameters and options (continued)

storage	

	• To generate and view information about the inventory of virtual disks, run the following command:
	`racadm storage get vdisks`
	`racadm storage get vdisks --refkey <Controller FQDDs separated by comma>`
	`racadm storage get vdisks --refkey <Controller FQDDs separated by comma> -o`
	`racadm storage get vdisks --refkey <Controller FQDDs separated by comma> -o -p <property names separated by comma>`
	• To generate and view information about the inventory of enclosures, run the following command:
	NOTE: FQDD of certain Backplanes may not be the same in Software Inventory and Hardware Inventory.
	`racadm storage get enclosures -o`
	`racadm storage get enclosures --refkey <Connector FQDDs separated by comma>`
	`racadm storage get enclosures --refkey <Connector FQDDs separated by comma> -o -p <property names separated by comma>`
	• To get the list of enclosures, run the following command:
	`racadm storage get enclosures`
	• To get the properties of an enclosure, run the following command:
	`racadm storage get enclosures:<Enclosure FQDD>`
	• To generate and view information about the inventory of physical disk drives, run the following command:
	`racadm storage get pdisks`
	`racadm storage get pdisks -o`
	`racadm storage get pdisks -o -p <property names separated by comma>`
	`racadm storage get pdisks --refkey <Enclosure/Backplanes FQDDs separated by comma>`
	`racadm storage get pdisks --refkey <Enclosure/Backplanes FQDDs separated by comma> -o`
	`racadm storage get pdisks --refkey <Enclosure/Backplanes FQDDs separated by comma> -o -p <property names separated by comma>`
	• To get the list of physical disks, run the following command:
	`racadm storage get pdisks`

Table 111. storage command parameters and options (continued)

storage	

	• To get the properties of a physical disk, run the following command:
	`racadm storage get pdisks:<PD FQDD>`
	• To get a list of physical disks in a virtual disk, run the following command:
	`racadm storage get pdisks -vdkey:<VD FQDD>`
	• To generate and view information about the inventory of fans, run the following command:
	`racadm storage get fans --refkey <Enclosure FQDDs separated by comma>`
	`racadm storage get fans --refkey <Enclosure FQDDs separated by comma > -o`
	`racadm storage get fans --refkey <Enclosure FQDDs separated by comma> -o -p <property names separated by comma>`
	• To generate and view information about the inventory of EMMs, run the following command:
	`racadm storage get emms -refkey <Enclosure FQDDs separated by comma>`
	`racadm storage get emms --refkey <Enclosure FQDDs separated by comma> -o`
	`racadm storage get emms --refkey <Enclosure FQDDs separated by comma> -o -p <property names separated by comma>`
	• To generate and view information about the inventory of PSU, run the following command:
	`racadm storage get psus -refkey <Enclosure FQDDs separated by comma>`
	`racadm storage get psus --refkey <Enclosure FQDDs separated by comma> -o`
	`racadm storage get psus --refkey <Enclosure FQDDs separated by comma> -o -p <property names separated by comma>`
	Configuration
	NOTE: For any storage operation executed, creating a configuration job is needed for the operation to be applied. Only storage operations that don't need a configuration job to apply the changes are blink/unblink. Also supported is the ability to stack multiple storage operations for one configuration job. Examples are `execute reset config`, `create VD`, `assign hotspare` and `create configuration job`. For more details on creating configuration job, refer to `jobqueue help create` command. Below are the supported input options for storage operations:
	• `--refkey`—Specifies the controller or enclosure FQDDs.
	• `-name`—Specifies the new name for the virtual disk.
	NOTE: You can use alphanumeric characters, spaces, dashes, and underscores in the disk name. Any other special character that you enter is removed and replaced by a space while creating a virtual disk.
	• `-size`—Specifies the new size for the virtual disk. It should be more than the current size.
	○ `b`—Specifies the size in bytes
	○ `k`—Specifies the size in kilobytes
	○ `m`—Specifies the size in megabytes
	○ `g`—Specifies the size in gigabytes
	○ `t`—Specifies the size in terabytes
	• `-rl`—Sets the storage level.

Table 111. storage command parameters and options (continued)

storage	
	○ r0—storage 0-Striping ○ r1—storage 1-Mirroring ○ r5—storage 5-Striping with Parity ○ r6—storage 6-Striping with Extra Parity ○ r10—storage 10-Spanned Striping with Mirroring ○ r50—storage 50-Spanned Striping with Parity ○ r60—storage 60-Spanned Striping with Extra Parity • -new_rl—Specifies the new possible raid level for the virtual disk ○ r0—RAID0 ○ r1—RAID1 ○ r5—RAID5 ○ r6—RAID6 **NOTE:** This is a mandatory option must provide with RLM operation. Possible raid migrations with disk addition are R0-R1, R0-R5/R6,R1-R0/R5/R6, R5-R0/R6, R6-R0/R5. Possible raid migrations without disk addition are R1-R0, R5-R0, R6-R0/R5. • -wp{wt|wb|wbf}—Sets the write policy to Write Through, Write Back, or Write Back Force • -rp {nra|ra|ara}—Sets the read policy to No Read Ahead, Read Ahead, Adaptive Read Ahead • -ss—Specifies the stripe size to use. • -pdkey:<PD FQDD list>—Specifies the physical disk drive to use in the virtual disk. • -dcp—Sets the Disk Cache Policy in the Virtual Disk. ○ enabled—Allows the virtual disk to use the cache. ○ disabled—Does not allow the virtual disk to use the cache. ○ default—Uses the default cache policy. For SAS drives, use the disabled option and for SATA drives, use the enabled option by default. • -name <VD name>—Specifies the name of the virtual disk. • -size <VD size>—Specifies the size of each virtual disk. ○ b—Specifies the size in bytes ○ k—Specifies the size in kilobytes ○ m—Specifies the size in megabytes ○ g—Specifies the size in gigabytes ○ t—Specifies the size in terabytes • -sc—Number of spans in a virtual disk (required for multi-span RAID level) **NOTE:** ○ From PERC9 storage controller onwards, if the value of controller.SupportRAID10UnevenSpans is supported, you can enter only 0 for this option while creating RAID level 10. The created RAID10 virtual disk displays the spandepth as 1 (default). ○ For other controllers: ▪ The default value for multi-span RAID levels is 2 and for basic RAID level is 1. ▪ For hybrid RAID levels such as RAID10, RAID50, and RAID60, this option is mandatory. ▪ The value for-sc option can be 0 only for RAID10. • -T10PIEnable—Creates a virtual disk with protection information. • -sd <SecureDisk>—Set the secure disk to encrypt the VD. ○ enabled—Enable the encryption in VD. ○ disabled—Disable the encryption in VD. • -key <Key id>—Specifies the key id. • -passwd <passphrase>—Specifies the passphrase. • -newpasswd <passphrase>—Specifies the new passphrase. • -assign {yes | no}—Assigns or unassigns the disk as a hotspare.

Table 111. storage command parameters and options (continued)

storage	

	• `-type { ghs | dhs}`—Assigns a global or dedicated hotspare.
	• `-vdkey:<VD FQDD>`—Assigns the dedicated hotspare to the specified virtual disk. This option is required for dedicated hotspare.
	• `-state <start|stop>`—`start` value starts a patrol read operation. `stop` value stops a running patrol read operation.
	NOTE:
	o To start the operation, the `Controller.PatrolReadMode` must be in `Manual` mode.
	o The values displayed for properties such as `Patrol Read`, `Check Consistency Rate`, `Rebuild Rate`, `BGI Rate`, and `Reconstruction Rate` are displayed in percentage.
	• `-speed`—Specifies the initialization of the Virtual disk.
	o `fast`—Performs fast initialization.
	o `full`—Performs slow initialization.
	• `blink: <FQDD>` or `unblink: <FQDD>`—`<FQDD>` can be physical disk drives, virtual disks, or PCIeSSD.
	• `<PCIeSSD FQDD>`—Specifies the PCIeSSD FQDD.
	• `<PCIeSSD controller|enclosure FQDD>`—Specifies the PCIeSSD controller or enclosure FQDD.
	• `preparetoremove`—Specifies the PCIeSSD drive to prepare for removal.
	NOTE: Ensure that ISM is installed and running to perform the `preparetoremove` operation.
	• `cryptographicerase`—Specifies the PCIeSSD, SED (Self encrypting drive) or ISE device to perform the cryptographic erase operation.
	NOTE: If running this operation on an ISE or SED device, it must not be a part of a RAID volume. If the device is part of a RAID volume, delete the volume first and then run `cryptographicerase`.
	• `-mdtype { windows | linux}`—Specifies the metadata type for the physical disk conversion to RAID
	NOTE: SWRAID only supports mdtype.
	• `-mode`—Specifies the PERC key management type.
	• `-f : <filename>`—The filename to export the identity.
	• `-u : <username>` —Username of the remote share to where the file must be exported.
	• `-p : <password>`—Password for the remote share to where the file must be exported.
	• `-l : <CIFS or NFS share>`—Network share location to where the file must be exported.
	• `<FQDD>`—FQDD of the controller.
	• `-t : <identity>`—Identity type to be exported.
	`0 = Hardware identity`
	• To view the help details for a configuration command, run the following command:
	`racadm storage help <command>`
	`where command can take below values`
	`converttoraid, converttononraid, controllers, clearconfig,`
	`createsecuritykey, createvd, deletesecuritykey,`
	`deletevd, encryptvd, enclosures, emms,exportcertificate, fans,`
	`hotspare, importconfig, ccheck, cryptographicerase, preparetoremove,`
	`blink, unblink, cancelcheck, renamevd, cancelbgi, rebuild,`
	`cancelrebuild, capacityexpanon, modifysecuritykey, psus, pdisks,`

Table 111. storage command parameters and options (continued)

storage	
	`resetconfig, tempprobes, vdisks, patrolread, forceonline, forceoffline,replacephysicaldisk,unlock,and setbootvd.` **NOTE:** iSM must be running on the operating system to run the preparetoremove method: • To create, delete, and secure the virtual disks, to start or stop the consistency check on the specified virtual disk, run the following command: `racadm storage createvd:<Controller FQDD> -rl {r0|r1|r5|r6|r10|r50|r60} [-wp {wt|wb|wbf}] [-rp {nra|ra|ara}] [-ss {1k|2k|4k|8k|16k|32k|64k| 128k|256k|512k|1M|2M|4M|8M|16M}]-pdkey:<comma separated PD FQDD> [-dcp {enabled|disabled|default}] [-name <VD name>] [-size <VD size>{b|k|m|g| t}] [-T10PIEnable] [-sd <secureDisk>]`  **NOTE:** ○ T10PI is no longer supported on PERC controllers. ○ If the `<VD name>` exceeds 15 characters when running the `createvd` command, it gets corrected to a length of 15 characters once the command is completed successfully.  `racadm storage init:<VD FQDD> -speed {fast|full}`  `racadm storage deletevd:<VD FQDD>`  `racadm storage encryptvd:<VD FQDD>`  `racadm storage createsecuritykey:<Controller FQDD> -key <Key id> -xxx <passphrase>`  `racadm storage modifysecuritykey:<Controller FQDD> -key <Key id>-xxx <old passphrase> -xxx <new passphrase>`  `racadm storage deletesecuritykey:<Controller FQDD>`  `racadm storage ccheck:<VD FQDD>`  `racadm storage cancelcheck:<VD FQDD>`  • To set virtual disk as bootvd and replace physical disk in virtual disk:  `racadm storage setbootvd:<Controller FQDD> -vd <VD FQDD >`  `racadm storage replacephysicaldisk:<Source PD FQDD > -dstpd <Destination PD FQDD>`

Table 111. storage command parameters and options (continued)

storage	

	• To rename, expansion and raid level migration of the virtual disks and, to rebuild, cancel rebuild and cancel the back-ground initialization, run the following command:
	`racadm storage renamevd:<VD FQDD > -name <new_vd_name>`
	`racadm storage capacityexpansion:<VD FQDD > -size <new size VD> -pdkey <PD FQDDs>`
	`racadm storage capacityexpansion:<VD FQDD> -size <new size>.`
	`racadm storage discardcache:<Controller FQDD>`
	`racadm storage rebuild:<PD FQDD>`
	`racadm storage cancelrebuild:<PD FQDD>`
	`racadm storage cancelbgi:<VD FQDD>`
	• To convert the physical disk drives and assign or delete a hotspare. To scan physical disks that are connected to a controller and detect problem, run the following command:
	`racadm storage converttononraid:<PD FQDD>`
	`racadm storage converttoraid:<PD FQDD>`
	`-mdtype <metadataType>`
	NOTE: Convert to RAID or Non RAID is not supported on PERC 10 (RAID mode) and BOSS controller cards. PERC10 in eHBA mode supports convert to RAID or Non-RAID.
	NOTE: `-mdtype` is only supported for SWRAID controllers.
	`racadm storage hotspare:<PD FQDD> -assign yes -type dhs -vdkey: <VD FQDD>`
	`racadm storage hotspare:<PD FQDD> -assign yes -type ghs`
	`racadm storage hotspare:<PD FQDD> -assign no`
	`racadm storage patrolread:<Controller FQDD> -state start|stop`
	NOTE: If the `-assign` option is `no`, you cannot add other options. If the `-assign` option is `yes` and if the `-type` option is not present, the global hotspare (ghs) is created by default.
	• To reset, clear, and import the storage configuration to the controller, run the following command:
	`racadm storage importconfig:<Controller FQDD>`
	`racadm storage resetconfig:<Controller FQDD>`
	`racadm storage clearconfig:<Controller FQDD>`

Table 111. storage command parameters and options (continued)

storage	

	• To unlock foreign configuration:
	`racadm storage unlock:<Controller FQDD> -key <Key id> -passwd <passphrase>`
	• To start or stop a blink or identify operation on the specified storage device, run the following command:
	`racadm storage blink:<FQDD>`
	`racadm storage blink:<PCIeSSD FQDD>`
	`racadm storage unblink:<FQDD>`
	`racadm storage unblink:<PCIeSSD FQDD>`
	NOTE:
	○ The start or stop a blink feature is not supported for HHHL PCIe SSD devices.
	• To force a physical disk online, offline
	`racadm storage forceonline:<PD FQDD>`
	`racadm storage forceoffline:<PD FQDD>`
	NOTE: The `forceoffline` command can only be executed on Optimal VDs. If the VD is in a Degraded state, the command will be rejected.
	NOTE: Forcing a physical drive offline or online may result in loss of data. For more information, see the latest PERC User's Guide.
	• To prepare the PCIeSSD drive for removal:
	`racadm storage preparetoremove <PCIeSSD FQDD>`
	NOTE: The Prepare to Remove task is not supported for HHHL PCIe SSD devices.
	• To perform a cryptographic erase operation on PCIeSSD device, run the following command:
	`racadm storage cryptographicerase:<PCIeSSD FQDD>`
	• To perform a cryptographic erase operation on PCIeSSD device using PSID, run the following command:
	`racadm storage cryptographicerase:<SED FQDD> -psid <PSID>`
	• To request iDRAC to rekey all devices:
	`racadm storage rekey:<Controller FQDD>`
	• To export the storage controller identity certificate to a CIFS or NFS share, run the following command:
	NOTE: This command supports both IPV4 and IPV6 formats. IPV6 is applicable for CIFS and NFS type remote shares.
	NOTE: This feature is only supported on storage controllers which support SPDM (Example: PERC 12).

Table 111. storage command parameters and options (continued)

storage	
	`racadm storage exportcertificate:<FQDD> -l <CIFS or NFS share> -u <username> -p <password> -f <filename> -t <identity>`
Input	• `-o`—Specifies the optimized version. • `-p`—Specifies the property name.

Example

Inventory

- To view the help details for get command, run the following command:

```
racadm>>storage help get
racadm storage help get
Storage monitoring and inventory of hardware RAID connected to the system.

Usage:

racadm storage get status
racadm storage help <ObjectType1>
racadm storage help <ObjectType2>
racadm storage get <ObjectType1>
racadm storage get <ObjectType1> -o
racadm storage get <ObjectType1> -o -p <PropertyNames separated by comma>
racadm storage get <ObjectType1>:<FQDD's of ObjectType1 separated by comma> -p
<property names separated by comma>
racadm storage get <ObjectType1>:<FQDD's of ObjectType1 separated by comma>
racadm storage get <ObjectType2> --refkey <reference keys separated by comma>
racadm storage get <ObjectType2> --refkey <reference keys separated by comma> -o
racadm storage get <ObjectType2> --refkey <reference keys separated by comma> -o
 -p <property names separated by comma>

-------------------------------------------------------------------------------

Valid Options:

:<ObjectType1>     : possible object types like controllers,batteries ...
        controllers       : controllers info
        batteries         : batteries info
        vdisks            : vdisks info
        pdisks            : pdisks info
        fans              : fans info
        emms              : emms info
        tempprobes        : tempprobes info
        psus              : psus info
        enclosures        : enclosures info
:<ObjectType2>     : Possible objects info
        vdisks            : vdisks info
        pdisks            : pdisks info
        fans              : fans info
        emms              : emms info
        tempprobes        : tempprobes info
        psus              : psus info
        enclosures        : enclosures info
-o                 : Displays all the properties of the selected Key or Object.
-p                 : Displays the property names with filter.
FQDD's             : Displays all the properties of the FQDD's Key.
--refkey           : Displays all the reference key of Object type.
help               : Displays each object type help.

NOTE: Maximum Property names can be specified in -p option is = 10.
NOTE: Maximum FQDD's or refkey can be specified is = 3.

-------------------------------------------------------------------------------

Usage Examples:
```

```
racadm storage get controllers
racadm storage get psus
racadm storage get controllers -o
racadm storage get controllers -o -current
racadm storage get enclosures -o
racadm storage get controllers -o -p name,status
racadm storage get vdisks -o -p layout,status
racadm storage get controllers:RAID.INTEGRATED.0
racadm storage get emms:EMM.Slot.0:ENCLOSURE.EXTERNAL.0-0:RAID.INTEGRATED
.0
racadm storage get controllers:RAID.INTEGRATED.0 -p status
racadm storage get emms:EMM.Slot.0:ENCLOSURE.EXTERNAL.0-0:RAID.INTEGRATED
.0 -p status
racadm storage get batteries --refkey RAID.INTEGRATED.0
racadm storage get pdisks --refkey ENCLOSURE.EXTERNAL.0-0:RAID.INTEGRATED.0
racadm storage get batteries --refkey RAID.INTEGRATED.0 -o -p status,state,name
racadm storage get fans --refkey RAID.INTEGRATED.0 -o -p status,speed,name
```

- To generate and view information about the inventory of controllers, virtual disks, storage enclosures, and physical disk drives.
  - To generate and view information about the inventory of storage root node. This command retrieves the status of the inventory for storage root node.

    ```
    racadm storage get status
    raid Root Node Status : Ok
    ```

    - To generate and view information about the inventory of controllers connected to the server.

      NOTE: If you set the NVMe mode to Non-Raid, then SWRAID RollupStatus is displayed as Unknown.

      ```
      racadm storage get controllers
      RAID.Integrated.1-1
      ```

      The following command is an optimized version and displays the full controller objects along with their keys:

      ```
      racadm storage get controllers -o
      RAID.SL.3-1
         Status                                = Ok
         DeviceDescription                     = RAID Controller in SL 3
         RollupStatus                          = Ok
         Name                                  = PERC H965i Front (Embedded)
         FirmwareVersion                       = 8.8.0.0.18-30
         DriverVersion                         = 8.5.1.0.0
         RebuildRate                           = Not supported
         BgiRate                               = 30
         CheckConsistencyRate                  = 30
         ReconstructRate                       = 30
         PatrolReadRate                        = 30
         PatrolReadMode                        = Automatic
         PatrolReadState                       = Stopped
         CheckConsistencyMode                  = Normal
         LoadBalanceSetting                    = Auto
         CopybackMode                          = ON with SMART
         PreservedCache                        = Not Present
         CacheMemorySize                       = 8361 MB
         PersistHotspare                       = Enabled
         KeyID                                 = null
         SpindownUnconfiguredDrives            = Enabled
         SpindownHotspare                      = Disabled
         Timeintervalforspindown               = 30 (Minutes)
         SecurityStatus                        = Encryption Capable
         EncryptionMode                        = Disabled
         EncryptionCapability                  = Local Key Management and Secure
      Enterprise Key Manager Capable
         SasAddress                            = 0x5F4EE0806EB89200
         PciDeviceId                           = 0xa5
         PciSubdeviceId                        = 0x22cc
         PciVendorId                           = 0x1000
         PciSubvendorId                        = 0x1028
         PciBus                                = 0xae
      ```

```
   PciDevice                              = 0x0
   PciFunction                            = 0x0
   BusWidth                               = Unknown
   SlotLength                             = Unknown
   SlotType                               = Unknown
   MaxCapableSpeed                        = 24 Gb/s
   LearnMode                              = Not supported
   T10PICapability                        = Not Capable
   SupportRAID10UnevenSpans               = Not Supported
   SupportEnhancedAutoForeignImport       = Supported
   EnhancedAutoImportForeignConfig        = Enabled
   SupportControllerBootMode              = Supported
   ControllerBootMode                     = Continue Boot On Error
   RealtimeConfigurationCapability        = Capable
   RaidMode                               = None
   SharedSlotAssignmentAllowed            = Not Applicable
   bootVD                                 = None
   CurrentControllerMode                  = RAID
   SupportEnhancedHBA                     = Not Supported
   AutoConfigBehavior                     = Off
   CPUAffinity                            = 0
   SPDMCapability                         = Capable
   SPDMVersion                            = 1.1.0.0
   SPDMDigestAndCertificate               = Enabled
   SPDMChallengeAuthResponse              = Enabled
   SPDMMeasurements                       = Enabled
   SPDMEncryption                         = Disabled
   SPDMDeviceCertStatus                   = Success
   SPDMDeviceChallengeStatus              = Success
```

The following command displays the filtered property values for all returned controller objects:

```
storage get controllers -o -p Name
RAID.Slot.2-1
Name              = PERC H965i Front (Embedded) (PCI Slot 2)
```

The following examples show the pending operation when used with `storage get <object>` commands: To list storage objects without displaying the properties:

- This operation displays `vdisk`, which has pending operation:

  ```
  racadm storage get vdisks -pending
  DISK.Virtual.267386880:RAID.Slot.5-1
  ```

- This operation displays controllers, which have pending operations:

  ```
  racadm storage get controllers -pending
  RAID.Integrated.1-1
  ```

- This operation displays `pdisk`, which has pending operation:

  ```
  racadm storage get pdisks -pending
  Disk.Bay.20:Enclosure.Internal.0-1:RAID.Integrated.1-1
  ```

- This operation displays enclosures, which have pending operations:

  ```
  racadm storage get enclosures -pending
  Enclosure.Internal.0-1:RAID.Integrated.1-1
  ```

  Changing the attribute by using `racadm set storage` or storage configuration command displays the storage object in the `-pending` command output. If there are no pending objects, the following error message is displayed:

  ```
  racadm storage get pdisks -pending
  ERROR: STOR0103 : No physical disks are displayed.
  Check if the server has power, physical disks are available, and physical
  disks are connected to the enclosure or backplane.
  ```

The following examples show the pending operation while listing the properties: By default, if there is no change in properties, the `-pending` command displays the current value. If the property has any pending objects, the `-pending` command displays the pending value.

- This operation displays the current state of `pdisk`, which is in `Ready` state:

```
racadm>> racadm storage get pdisks -o -p state
Disk.Bay.4:Enclosure.Internal.0-1:RAID.Integrated.1-1
   State                              = Ready
```

- This operation displays state of a `pdisk` on which `createvd` operation is pending:

```
racadm>> racadm storage get pdisks -o -p state -pending
Disk.Bay.4:Enclosure.Internal.0-1:RAID.Integrated.1-1
```

The following command provides the properties of the specified SATA/SAS physical disk as a member of HW controller:

NOTE: PDISK property RaidType is not applicable for HWRAID and will be displayed/populated with the value Unknown.

```
storage get pdisks:Disk.Bay.0:Enclosure.Internal.0-1:RAID.Slot.1-1
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Slot.1-1
   Status                           = Ok
   DeviceDescription                = Disk 0 in Backplane 1 of RAID Controller
in Slot 1
   RollupStatus                     = Ok
   Name                             = Solid State Disk 0:1:0
   State                            = Ready
   OperationState                   = Not Applicable
   PowerStatus                      = On
   Size                             = 3576.375 GB
   FailurePredicted                 = NO
   RemainingRatedWriteEndurance     = 100 %
   SecurityStatus                   = Not Capable
   BusProtocol                      = SAS
   MediaType                        = SSD
   AvailableSpare                   = 100 %
   DeviceSidebandProtocol           = NVMe-M11.0
   UsedRaidDiskSpace                = 0.001 GB
   AvailableRaidDiskSpace           = 3576.375 GB
   Hotspare                         = NO
   Manufacturer                     = HGST
   ProductId                        = HUSTR7638ASS200
   Revision                         = S524
   SerialNumber                     = 4LV04PNX
   PartNumber                       = MY0C4DFRSN2007BK0007A00
   NegotiatedSpeed                  = 12.0 Gb/s
   ManufacturedDay                  = 2
   ManufacturedWeek                 = 47
   ManufacturedYear                 = 2017
   ForeignKeyIdentifier             = null
   SasAddress                       = 0x5000CCA08700468D
   WWN                              = 0x5000CCA08700468D
   FormFactor                       = 2.5 Inch
   RaidNominalMediumRotationRate    = 1
   T10PICapability                  = Not Capable
   BlockSizeInBytes                 = 512
   MaxCapableSpeed                  = 12 Gb/s
   RaidType                         = Unknown
   SystemEraseCapability            = CryptographicErasePD
   SelfEncryptingDriveCapability    = Not Capable
   EncryptionCapability             = Not Capable
   CryptographicEraseCapability     = Capable
   Certified                        = Yes
   NonRAIDDiskCachePolicy           = Not Applicable
   EncryptionProtocol               = None
```

- The following command displays the output for Backplane 1 objects along with their properties:

```
racadm storage get enclosures:Enclosure.Internal.0-1:NonRAID.Integrated.1-1
   Enclosure.Internal.0-1:NonRAID.Integrated.1-1
   State                          = Ready
   Status                         = Ok
   DeviceDescription              = Backplane 1 on Connector 0 of Integrated
Storage Controller 1
   RollupStatus                   = Ok
   Name                           = BP15G+ 0:1
   BayId                          = 1
   FirmwareVersion                = 1.04
   SasAddress                     = 0x34CC98F03FF22300
   SlotCount                      = 8
   PCI Express Generation         = Not Applicable
```

- To generate and view information about the inventory of batteries that are connected to the controller, run the following command:

```
racadm storage get batteries
```

The following command is an optimized version and displays the batteries along with their keys:

```
racadm storage get batteries -o
Battery.Integrated.1:RAID.Integrated.1-1
Name                           = Battery
DeviceDescription              = Battery on Integrated raid Controller 1
Status                         = Ok
State                          = Ready
```

The following command displays the filtered property values for all battery objects:

```
racadm storage get batteries -o -p Name
Battery.Integrated.1:RAID.Integrated.1-1
Name  = Battery
```

The following command displays all battery keys that are connected to the controllers:

```
racadm storage get batteries --refkey RAID.Integrated.1-1
Battery.Integrated.1:RAID.Integrated.1-1
```

The following command is an optimized and filtered version:

```
racadm storage get batteries --refkey RAID.Integrated.1-1 -o -p Name
Battery.Integrated.1:RAID.Integrated.1-1
Name                           = Battery
```

- To generate and view information about the inventory of virtual disks that are connected to the controller, run the following command:

```
racadm storage get vdisks
Disk.Virtual.0:RAID.Integrated.1-1
```

The following command displays all virtual disk keys that are connected to the controllers:

```
racadm storage get vdisks --refkey RAID.Integrated.1-1
Disk.Virtual.0:RAID.Integrated.1-1
```

The following command is an optimized and filtered version:

```
racadm storage get vdisks -o -p DeviceDescription,OperationalState
Disk.Virtual.0:RAID.Integrated.1-1
DeviceDescription        = Virtual Disk 0 on Integrated raid Controller 1
OperationalState         = Not applicable
```

- To generate and view information about the inventory of virtual disks, run the following command:

```
racadm storage get vdisks -o
Disk.Virtual.2:RAID.Integrated.1-1
Status                                                                          Ok
DeviceDescription        Virtual Disk 2 on Integrated RAID Controller 1
Name                     OS
RollupStatus             Ok
State                    Online
OperationalState         Not applicable
Layout                   Raid-0
Size                     278.88 GB
SpanDepth                1
AvailableProtocols       SAS
MediaType                HDD
ReadPolicy               Read Ahead
WritePolicy              Write Back
StripeSize               64K
DiskCachePolicy          Default
BadBlocksFound           NO
Secured                  NO
RemainingRedundancy      0
EnhancedCache            Not Applicable
T10PIStatus              Disabled
BlockSizeInBytes         512
```

- To generate and view information about the inventory of storage enclosures that are connected to the connector. This command displays all enclosure objects for the connector FQDD.

```
racadm storage get enclosures -o
Enclosure.Internal.0-1:RAID.Integrated.1-1
Status                                                                          Ok
State                    Ready
DeviceDescription        Backplane 1 on Connector 0 of Integrated RAID Controller 1
RollupStatus             Ok
Name                     BP13G+EXP 0:1
BayId                    1
FirmwareVersion          0.23
SasAddress               0x500056B31234ABFD
SlotCount                24
```

The following command displays all enclosure keys that are connected to the connectors:

```
racadm storage get enclosures --refkey RAID.Integrated.1-1
Enclosure.Internal.0-1:RAID.Integrated.1-1
```

The following command is an optimized and filtered version:

```
racadm storage get enclosures --refkey RAID.Integrated.1-1 -o -p Name
Enclosure.Internal.0-1:RAID.Integrated.1-1
Name = BP12G+EXP 0:1
```

- To generate and view information about the inventory of physical disk drives connected to the enclosure or backplanes, run the following command:

```
racadm storage get pdisks
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Integrated.1-1
```

The following command is an optimized version and displays the full controller objects along with their keys:

```
racadm storage get pdisks -o
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Slot.4-1
   Status                          = Ok
   DeviceDescription               = Disk 0 in Backplane 1 of RAID Controller in
Slot 4
   RollupStatus                    = Ok
   Name                            = Physical Disk 0:1:0
   State                           = Online
   OperationState                  = Not Applicable
   PowerStatus                     = Spun-Up
   Size                            = 1117.250 GB
```

```
   FailurePredicted                  = NO
   RemainingRatedWriteEndurance      = Not Applicable
   SecurityStatus                    = Not Capable
   BusProtocol                       = SAS
   MediaType                         = HDD
   UsedRaidDiskSpace                 = 200.001 GB
   AvailableRaidDiskSpace            = 917.250 GB
   Hotspare                          = NO
   Manufacturer                      = SEAGATE
   ProductId                         = ST1200MM0099
   Revision                          = ST31
   SerialNumber                      = WFK1BNX3
   PartNumber                        = CN0G2G54SGW0087A01RHA00
   NegotiatedSpeed                   = 12.0 Gb/s
   ManufacturedDay                   = 5
   ManufacturedWeek                  = 28
   ManufacturedYear                  = 2018
   ForeignKeyIdentifier              = null
   SasAddress                        = 0x5000C500B8ED7081
   FormFactor                        = 2.5 Inch
   RaidNominalMediumRotationRate     = 10000
   T10PICapability                   = Not Capable
   BlockSizeInBytes                  = 512
   MaxCapableSpeed                   = 12 Gb/s
   RaidType                          = None
   SystemEraseCapability             = SecureErasePD
   SelfEncryptingDriveCapability     = Not Capable
   EncryptionCapability              = Not Capable
   CryptographicEraseCapability      = Capable
```

The following command displays the filtered property values for all returned controller objects:

```
racadm storage get pdisks -o -p State
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Integrated.1-1
State = Online
```

The following command displays all physical disk drive keys that are connected to the enclosures:

```
racadm storage get pdisks --refkey RAID.Integrated.1-1
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Integrated.1-1
```

The following command is an optimized version and displays all disk objects for the enclosure FQDD:

```
racadm storage get pdisks -o
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Slot.4-1
   Status                            = Ok
   DeviceDescription                 = Disk 0 in Backplane 1 of RAID Controller in
Slot 4
   RollupStatus                      = Ok
   Name                              = Physical Disk 0:1:0
   State                             = Online
   OperationState                    = Not Applicable
   PowerStatus                       = Spun-Up
   Size                              = 1117.250 GB
   FailurePredicted                  = NO
   RemainingRatedWriteEndurance      = Not Applicable
   SecurityStatus                    = Not Capable
   BusProtocol                       = SAS
   MediaType                         = HDD
   UsedRaidDiskSpace                 = 200.001 GB
   AvailableRaidDiskSpace            = 917.250 GB
   Hotspare                          = NO
   Manufacturer                      = SEAGATE
   ProductId                         = ST1200MM0099
   Revision                          = ST31
   SerialNumber                      = WFK1BNX3
   PartNumber                        = CN0G2G54SGW0087A01RHA00
   NegotiatedSpeed                   = 12.0 Gb/s
   ManufacturedDay                   = 5
   ManufacturedWeek                  = 28
   ManufacturedYear                  = 2018
   ForeignKeyIdentifier              = null
```

```
   SasAddress                        = 0x5000C500B8ED7081
   FormFactor                        = 2.5 Inch
   RaidNominalMediumRotationRate     = 10000
   T10PICapability                   = Not Capable
   BlockSizeInBytes                  = 512
   MaxCapableSpeed                   = 12 Gb/s
   RaidType                          = None
   SystemEraseCapability             = SecureErasePD
   SelfEncryptingDriveCapability     = Not Capable
   EncryptionCapability              = Not Capable
   CryptographicEraseCapability      = Capable
```

The following command is an optimized and filtered version:

```
racadm storage get pdisks --refkey Enclosure.Internal.0-1:RAID.Integrated.1-1 -o -p
State
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Integrated.1-1
State = Online
```

- To generate and view information about the inventory of fans that are connected to the enclosure. The following command displays all the fan keys that are connected to the enclosures:

  ```
  racadm storage get fans --refkey <Enclosure FQDDs separated
  by comma>
  ```

  The following command displays all the fan objects for the enclosure FQDD:

  ```
  racadm storage get fans --refkey <Enclosure FQDDs separated
  by comma > -o
  ```

  ```
  racadm storage get fans --refkey <Enclosure FQDDs separated
  by comma> -o -p <property names separated by comma>
  ```

- To generate and view information about the inventory of EMMs connected to the enclosure. The following command returns all the EMM keys that are connected to the enclosures:

  ```
  racadm storage get emms -refkey <Enclosure FQDDs separated
  by comma>
  ```

  The following command is an optimized version and displays all the EMM objects for the enclosure FQDD:

  ```
  racadm storage get emms --refkey <Enclosure FQDDs separated
  by comma> -o
  ```

  The following command is an optimized and filtered version:

  ```
  racadm storage get emms --refkey <Enclosure FQDDs separated
  by comma > -o -p <property names separated by comma>
  ```

- To generate and view information about the inventory of PSU connected to the enclosure. The following command displays all the PSUs connected to the enclosures:

  ```
  racadm storage get psus --refkey <Enclosure FQDDs separated
  by comma>
  ```

  The following command is an optimized version and displays all the PSUs objects for the enclosure FQDD:

  ```
  racadm storage get psus --refkey <Enclosure FQDDs separated
  by comma > -o
  ```

  The following command is an optimized and filtered version:

  ```
  racadm storage get psus --refkey <Enclosure FQDDs separated
  by comma> -o -p <property names separated by comma>
  ```

- To get the list of enclosures and properties of the PCIeSSD enclosure.

- The following command provides the list of enclosures:

```
racadm storage get enclosures
Enclosure.Internal.0-1:RAID.Integrated.1-1\
Enclosure.Internal.0-1:PCIeExtender.Slot.3
```

- The following command provides the properties of the specified PCIeSSD enclosure:

```
racadm storage get enclosures:Enclosure.Internal.0-1:PCIeExtender.Slot.3
Enclosure.Internal.0-1:PCIeExtender.Slot.3
RollupStatus = Ok
DeviceDescription = Enclosure.Internal.0-1:PCIeExtender.Slot.3
Name = PCIe SSD BP 1
SlotCount = 4
FirmwareVersion = 0.80
PcieSSDBusId = 182
PcieSSDDeviceId = 0
PcieSSDFunctionId = 0
```

- To get the list of physical disks and properties of the specified PCIeSSD physical disk. The following command provides the list of physical disks:

```
racadm storage get pdisks
Disk.Bay.0:Enclosure.Internal.0-1:RAID.Integrated.1-1
Disk.Bay.1:Enclosure.Internal.0-1:RAID.Integrated.1-1
Disk.Bay.2:Enclosure.Internal.0-1:RAID.Integrated.1-1
Disk.Bay.3:Enclosure.Internal.0-1:RAID.Integrated.1-1
Disk.Bay.4:Enclosure.Internal.0-1:RAID.Integrated.1-1
Disk.Bay.5:Enclosure.Internal.0-1:RAID.Integrated.1-1
Disk.Bay.8:Enclosure.Internal.0-1:PCIeExtender.Slot.3
Disk.Bay.6:Enclosure.Internal.0-1:PCIeExtender.Slot.3
Disk.Bay.7:Enclosure.Internal.0-1:PCIeExtender.Slot.3
Disk.Bay.9:Enclosure.Internal.0-1:PCIeExtender.Slot.3
```

The following command provides the properties of the specified PCIe SSD physical disk as a member of SW RAID:

```
racadm storage get pdisks:Disk.Bay.0:Enclosure.Internal.0-1
Disk.Bay.0:Enclosure.Internal.0-1
   Status                          = Ok
   DeviceDescription               = PCIe SSD in Slot 0 in Bay 1
   Name                            = PCIe SSD in Slot 0 in Bay 1
   State                           = Ready
   Size                            = 931.250 GB
   BusProtocol                     = NVMe
   MediaType                       = SSD
   AvailableSpare                  = 100 %
   Model                           = Dell Express Flash NVMe P4510 1TB SFF
   ProductId                       = a54
   SerialNumber                    = PHLJ9106019V1P0FGN
   DeviceProtocol                  = NVMe-MI1.0
   DeviceSidebandProtocol          = NVMe-M11.0
   Manufacturer                    = Intel
   PCIeNegotiatedLinkWidth         = x2
   PCIeCapableLinkWidth            = x4
   MaxCapableSpeed                 = 8 GT/s
   NegotiatedSpeed                 = 8 GT/s
   FormFactor                      = 2.5 Inch
   Revision                        = VDV1DP23
   RemainingRatedWriteEndurance    = 100 %
   FailurePredicted                = NO
   PcieSSDBusId                    = 101
   PcieSSDDeviceId                 = 0
   PcieSSDFunctionId               = 0
   RAIDStatus                      = Ready
   HotSpareStatus                  = No
   AvailableRaidDiskSpace          = 930.750 GB
   FreeSizeInBytes                 = 930.75 GB
   RaidType                        = Windows Software RAID
   SasAddress                      = Not Applicable
   WWN                             = 0x3b5cd8a65c06bfd6
   Certified                       = Not Applicable
   NonRAIDDiskCachePolicy          = Not Applicable
```

```
   OperationState                   = Not Applicable
   PowerStatus                      = On
   SecurityStatus                   = Not Capable
   UsedRaidDiskSpace                = 0.500 GB
   T10PICapability                  = Not Capable
   BlockSizeInBytes                 = 512
   SystemEraseCapability            = CryptographicErasePD
   EncryptionCapability             = Not Capable
   CryptographicEraseCapability     = Capable
   EncryptionProtocol               = None
   PartNumber                       =
   ForeignKeyIdentifier             = null
   RaidNominalMediumRotationRate    = 0
```

To get the list of controllers and properties of the PCIeSSD controller: The following command provides the list of controllers:

```
racadm storage get controllers
RAID.Integrated.1-1
PCIeExtender.Slot.3
```

The following command provides the properties of the specified PCIe SSD controller:

```
racadm storage get controllers:PCIeExtender.Slot.3
PCIeExtender.Slot.3
RollupStatus = Ok
DeviceDescription = PCIe Extender in PCIe Slot 3
Status = Ok
Name = PCIeExtender 3 (PCI Slot 3)
```

The following command provides the properties of the specified PCIe SSD physical disk as a member of HW controller:

```
racadm storage get pdisks:Disk.Bay.4:Enclosure.Internal.0-1:RAID.SL.8-1
Disk.Bay.4:Enclosure.Internal.0-1:RAID.SL.8-1
   Status                           = Ok
   DeviceDescription                = Disk 4 in Backplane 1 of RAID Controller in
SL 8
   Name                             = Solid State Disk 0:1:4
   State                            = Ready
   Size                             = 931.000 GB
   BusProtocol                      = PCIe
   MediaType                        = SSD
   AvailableSpare                   = 100 %
   Model                            = Dell Express Flash NVMe P4510 1TB SFF
   ProductId                        = Dell Express Flash NVMe P4510 1TB SFF
   SerialNumber                     = BTLJ928309UK1P0FGN
   DeviceProtocol                   = NVMe-MI1.0
   DeviceSidebandProtocol           = NVMe-M11.0
   Manufacturer                     = Intel
   PCIeNegotiatedLinkWidth          = x2
   PCIeCapableLinkWidth             = x4
   MaxCapableSpeed                  = 8 GT/s
   NegotiatedSpeed                  = 8 GT/s
   FormFactor                       = 2.5 Inch
   Revision                         = VDV1DP23
   RemainingRatedWriteEndurance     = 100 %
   FailurePredicted                 = NO
   PcieSSDBusId                     = Not Applicable
   PcieSSDDeviceId                  = Not Applicable
   PcieSSDFunctionId                = Not Applicable
   RAIDStatus                       = Ready
   HotSpareStatus                   = No
   AvailableRaidDiskSpace           = 931.000 GB
   FreeSizeInBytes                  = 931.00 GB
   RaidType                         = None
   SasAddress                       = Not Applicable
   WWN                              = 0x140ce5ce4d25c
   Certified                        = Yes
   NonRAIDDiskCachePolicy           = Not Applicable
   OperationState                   = Not Applicable
   PowerStatus                      = On
```

```
    SecurityStatus                    = Not Capable
    UsedRaidDiskSpace                 = 0.001 GB
    T10PICapability                   = Not Capable
    BlockSizeInBytes                  = 512
    SystemEraseCapability             = CryptographicErasePD
    EncryptionCapability              = Not Capable
    CryptographicEraseCapability      = Capable
    EncryptionProtocol                = None
    PartNumber                        = CN0FJ9YXPESIT9AD010TA02
    ForeignKeyIdentifier              = null
    RaidNominalMediumRotationRate     = 0
```

Configuration

- To view the help details for a configuration command, run the following command:

```
racadm>> racadm storage help createvd
Storage configuration of hardware RAID connected to the system.

Usage:
racadm storage createvd:<Controller FQDD> -rl {r0|r1|r5|r6|r10|r50|r60}[-wp {wt|wb|
wbf}] [-rp {nra|ra|ara}]
[-ss {1k|2k|4k|8k|16k|32k|64k|128k|256k|512k|1M|2M|4M|8M|16M}]
-pdkey:<comma separated PD FQDD> [-dcp {enabled|disabled|default}]
[-name <VD name>] [-size <VD size>{b|k|m|g|t}] [-T10PIEnable]
--------------------------------------------------------------------------------

Options :
-rl                 : Set the RAID Level
 r0                 : RAID 0  - Striping
 r1                 : RAID 1  - Mirroring
 r5                 : RAID 5  - Striping with Parity
 r6                 : RAID 6  - Striping with Extra Parity
 r10                : RAID 10 - Spanned Striping with Mirroring
 r50                : RAID 50 - Spanned Striping with Parity
 r60                : RAID 60 - Spanned Striping with Extra Parity
 -wp {wt | wb | wbf}    : Set the write policy to Write Through or Write Back or
Write Back Force
 -rp {nra|ra|ara}       : Set the read policy to No Read Ahead, Read Ahead, Adaptive
Read Ahead
 -ss                    : Specify the stripe size to use
 -pdkey:<PD FQDD list>  : The PDs to use in the VD.
 -dcp                   : Set the Disk Cache Policy in the VD
 enabled           : Enabled - Allow the disk to use it's cache
 disabled          : Disabled - Disallow the disk from using it's cache
 default           : Default - Use the default cache policy.
 SAS Drives  - Use Disabled by Default
 SATA Drives - Use Enabled by Default
 -name <VD name>        : The name to give the VD
 -size <VD size>        : The size of the VD
 b                : Specify the size in bytes
 k                : Specify the size in kilobytes
 m                : Specify the size in megabytes
 g                : Specify the size in gigabytes
 t                : Specify the size in terabytes
 -sc              : Spandepth: Number of spans in a virtual disk

Note:
 - This option is mandatory for hybrid raid level like RAID 10, RAID50 and RAID60.
 - The default value is one for basic RAID levels.
 - If RAID10 Uneven Span is Supported then for RAID10:
 -    -sc option will be optional.
 -    Will allow only 0 value for this option.
 -T10PIEnable                : To create a VD with PI
--------------------------------------------------------------------------------
Description :
Create a VD.
--------------------------------------------------------------------------------

Examples :
racadm storage createvd:RAID.Integrated.1-1 -rl r0
-pdkey:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
```

- To create, delete, and secure the virtual disks.

- The following command creates a virtual disk:

```
racadm storage createvd:RAID.Integrated.1-1 -rl r0
-pdkey:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
```

- The following command starts an initialization operation on a specified virtual disk:

```
racadm storage init:Disk.Virtual.0:RAID.Integrated.1-1 -speed fast
```

- The following command deletes the specified virtual disk:

```
racadm storage deletevd:Disk.Virtual.0:RAID.Integrated.1-1
```

- The following command encrypts the specified virtual disk:

```
racadm storage encryptvd:Disk.Virtual.0:RAID.Integrated.1-1
```

NOTE: Virtual disk must be created with either SED or NVMe drives behind PERC.

NOTE: The `storage createsecuritykey`, `storage modifysecuritykey`, `storage deletesecuritykey` commands are deprecated.

- To convert the physical disk drive and assign hotspare.
  - The following command converts the specified nonstorage physical disk drive to a storage capable physical disk drive:

```
racadm storage converttoraid:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
```

  - The following command converts the specified physical disk drive to a nonstorage physical disk drive:

```
racadm storage
converttononraid:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
```

  - The following command assigns or unassigns a global or dedicated Hot spare:

```
racadm storage hotspare:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
-assign no
```

```
racadm storage hotspare:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
-assign yes -type ghs
```

```
racadm storage hotspare:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
-assign yes -type dhs -vdkey:Disk.Virtual.0:RAID.Integrated.1-1
```

  - The following command converts the specified nonstorage physical disk to a storage capable physical disk with windows meta data

```
racadm storage converttoraid:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
-mdtype windows
```

- To reset, clear, and import the storage configuration to the controller.
  - The following command imports the current foreign configuration from the controller:

```
racadm storage importconfig:RAID.Integrated.1-1
```

  - The following command deletes all virtual disks and unassigns hot spare from the associated controller:

```
racadm storage resetconfig:RAID.Integrated.1-1
```

  - The following command clears the current foreign configuration from the controller:

```
racadm storage clearconfig:RAID.Integrated.1-1
```

NOTE: After a `resetconfig` or `clearconfig` operation, the data cannot be reversed.

- To blink or unblink the PCIeSSD device.
  - The following command blinks the specified PCIeSSD device:

    ```
    racadm storage blink:Disk.Bay.8:Enclosure.Internal.0-1:PCIeExtender.Slot.3
    STOR095 : Storage operation is successfully completed.
    ```

  - The following command unblinks the specified PCIeSSD device:

    ```
    racadm storage unblink:Disk.Bay.8:Enclosure.Internal.0-1:PCIeExtender.Slot.3
    STOR095 : Storage operation is successfully completed.
    ```

- To prepare the specified PCIeSSD device for removal, run the following command:

  ```
  racadm storage preparetoremove: Disk.Bay.8:Enclosure.Internal.0-1:PCIeExtender.Slot.3
  STOR089 : Successfully accepted the storage configuration operation.
  To apply the configuration operation, create a configuration job with --realtime
  option.
  To create the required commit jobs, run the jobqueue command.
  For more information about the jobqueue command, enter the RACADM command "racadm
  help jobqueue”
  ```

- To perform a cryptographic erase operation on the specified PCIeSSD device, run the following command:

  ```
  racadm storage secureerase: Disk.Bay.8:Enclosure.Internal.0-1:PCIeExtender.Slot.3
  RAC1040 : Successfully accepted the storage configuration operation.
  To apply the configuration operation, create a configuration job, and then restart
  the server.
  To create the required commit and reboot jobs, run the jobqueue command.
  For more information about the jobqueue command, enter the RACADM command "racadm
  help jobqueue”
  ```

- To perform a cryptographic erase operation on PCIeSSD, SED or ISE (Instant Scramble Erase) device, run the following command:

  ```
  racadm storage cryptographicerase:<SED FQDD>
  ```

- To request iDRAC to rekey only a specific storage controller:

  ```
  racadm storage rekey:RAID.Integrated.1-1
  ```

- To enable security on the HBA controller:

  ```
  racadm storage security:NonRAID.Slot.3-1 -enable
  ```

- To disable security on the HBA controller:

  ```
  racadm storage security:NonRAID.Slot.3-1 -disable
  ```

- To enable security on a physical disk:

  ```
  racadm storage encryptpd:Disk.Bay.0:Enclosure.Internal.0-0:RAID.Integrated.1-1
  ```

- Export the hwidentity of a controller to a CIFS or NFS share:
  - The following command exports the hwidentity of a controller to a CIFS share:

    ```
    racadm storage exportcertificate:RAID.SL.1-1 -l //192.168.0.130/share -u myuser -p
    mypass -f file -t 0
    ```

  - The following command exports the hwidentity of a controller to a NFS share:

    ```
    racadm storage exportcertificate:RAID.SL.1-1 -l 192.168.0.130:/myshare -u myuser -p
    mypass -f file -t 0
    ```

Storage Properties

This section provides details for storage controller, pdsik and vdisk properties.

Table 112. Storage controller properties

Property Name	Description	Possible values
Status	This property specifies the current status of the controller	• Unknown • Ok • Warning • Failed
DeviceDescription	This property specifies the type and location of controller	An alphanumeric string
RollupStatus	Rollup status indicates combined status of controller and its attached components	• Unknown • Ok • Warning • Failed
Name	This property specifies the name of the controller	A string value that comes directly from the device
PciSlot	This property specifies if the controller is inserted in any PCI slot	An integer value
FirmwareVersion	This property specifies the current firmware version of the controller	An alphanumeric value. Other characters such as "." and "-" are also allowed
RebuildRate	The Rebuild Rate is the percentage of the system's resources dedicated to rebuilding a failed disk when a rebuild is necessary	• "Not supported" • An integer value
BgiRate	The Background Initialization (BGI) rate is the percentage of the system's resources dedicated to performing the background initialization of a virtual disk after it is created	• "Not supported" • An integer value
CheckConsistencyRate	The Check Consistency rate is the percentage of the system's resources dedicated to performing a check consistency on a redundant virtual disk	• "Not supported" • An integer value
ReconstructRate	The Reconstruct Rate is the percentage of the system's resources dedicated to reconstructing a disk group after adding a physical disk or changing the RAID level of a virtual disk residing on the disk group	• "Not supported" • An integer value
PatrolReadRate	The Patrol Read Rate is the percentage of the system's resources dedicated to perform Patrol Read	• "Not supported " • An integer value
PatrolReadMode	Patrol Read is a feature for identifying disk errors in order to avoid disk failures, data loss or corruption. The Patrol Read only runs on disks that are being used in a virtual disk or that are hot spares	• Not Supported • Disabled • Automatic • Manual • Unknown
PatrolReadState	Patrol Read State specifies the current Patrol Read operation state	• Stopped • Running • Unknown
CheckConsistencyMode	Check Consistency feature is used to verify the accuracy of the redundant (parity) information	• Not Supported • Normal • Stop On Error • Unknown

Table 112. Storage controller properties (continued)

Property Name	Description	Possible values
LoadBalanceSetting	This property represents the ability to automatically use both controller ports connected to the same enclosure to route I/O requests	• Not Supported • Auto • Disabled • Unknown
CopybackMode	This property represents the mode of restoring configuration of a virtual disk when a failed physical disk is replaced in an array	• Not supported • On • ON with SMART • OFF • Unknown
PreservedCache	This property indicates if the controller has preserved cache in it or not	• Not Present • Present • Unknown
CacheMemorySize	This property specifies the size of the preserved cache present in the controller	• "Not supported " • Integer value in MB
PersistHotSpare	This property enables or disables the persistent hotspare of the controller	• Disabled • Enabled • Not Applicable
KeyID	This property specifies the security KeyId assigned when security on the controller is enabled	• "Null" • Some string value
SpindownUnconfiguredDrives	This property spins down the unconfigured disks if they are unattended for a specified interval of time	• Disabled • Enabled • Not Applicable
SpindownHotspare	This property spins down the hot spares if no read-write operation takes place on the hot spare in a specified interval of time.	• Disabled • Enabled • Not Applicable
Timeintervalforspindown	This property sets the time interval after which the hot spares and unconfigured drives spins down	An integer value in minutes
SecurityStatus	This property specifies the controller security capability and current controller security status	• Not Capable • Encryption Capable • Security Key Assigned • Disabled • Enabled
EncryptionMode	This property represents the encryption mode on the controller. It could be used to set the encryption mode to Local Key Management or Dell Key Management on the controller through Server Configuration Profile (SCP) feature. It is configurable through Server Configuration Profile (SCP) feature only.	• None • Local Key Management • Secure Enterprise Key Manager • Secure Enterprise Key Manager Pending • Secure Enterprise Key Manager Failed • Unsupported • Not Applicable
EncryptionCapability	This property specifies the controller security capability	• None • Local Key Management Capable • Secure Enterprise Key Manager Capable

Table 112. Storage controller properties (continued)

Property Name	Description	Possible values
		• Local Key Management and Secure Enterprise Key Manager Capable • Capable • Not Capable
SasAddress	This property specifies the SAS address of the controller	• "Not Applicable" • A hexadecimal string
PciDeviceId	This property specifies the PCI Device Id assigned to the controller inserted in PCI slot	A hexadecimal string
PciSubdeviceId	This property specifies the PCI sub device Id assigned to the controller inserted in the PCI slot	A hexadecimal string
PciVendorId	This property specifies the PCI vendor Id assigned to the controller inserted in the PCI slot	A hexadecimal string
PciSubvendorId	This property specifies the PCI sub vendor Id assigned to the controller inserted in the PCI slot	A hexadecimal string
PciBus	This property specifies the PCI Bus details of the controller inserted in the PCI slot	A hexadecimal string
PciDevice	This property specifies the PCI device details of the controller inserted in the PCI slot	A hexadecimal string
PciFunction	This property specifies the PCI function details of the controller inserted in the PCI slot	A hexadecimal string
BusWidth	This property specifies the PCI bus width details of the controller inserted in the PCI slot	• Other • Unknown • 1x or x1 • 2x or x2 • 4x or x4 • 8x or x8 • 12x or x12 • 16x or x16 • 32x or x32
SlotLength	This property specifies the PCI slot length of the controller inserted in the PCI slot	• Other • Unknown • Short Length • Long Length • 2.5 Drive Form Factor • 3.5 Drive Form Factor
SlotType	This property specifies the PCI slot type of the controller inserted in the PCI slot	• Other, • Unknown • PCI Express • PCI Express x1 • PCI Express x2 • PCI Express x4 • PCI Express x8 • PCI Express x16

Table 112. Storage controller properties (continued)

Property Name	Description	Possible values
		• PCI Express Gen2 • PCI Express Gen2 x1 • PCI Express Gen2 x2 • PCI Express Gen2 x4 • PCI Express Gen2 x8 • PCI Express Gen2 x16 • PCI Express Gen3 • PCI Express Gen3 x1 • PCI Express Gen3 x2 • PCI Express Gen3 x4 • PCI Express Gen3 x8 • PCI Express Gen3 x16 • PCI Express Gen4 • PCI Express Gen4 x1 • PCI Express Gen4 x2 • PCI Express Gen4 x4 • PCI Express Gen4 x8 • PCI Express Gen4 x16 • PCI Express Gen5 • PCI Express Gen5 x1 • PCI Express Gen5 x2 • PCI Express Gen5 x4 • PCI Express Gen5 x8 • PCI Express Gen5 x16
MaxCapableSpeed	This property specifies the maximum drive capable speed that the controller supports	• 1.5 Gb/s • 3.0 Gb/s • 6.0 Gb/s • 12.0 Gb/s • 2.5 GT/s • 5 GT/s • 8 GT/s • 16 GT/s • Unknown • 24 Gb/s • 32 GT/s
LearnMode	The Battery Learn Mode controls a RAID Controller's Battery Learn Cycle	• Not supported • Automatic • Warn • Disabled • Unknown
T10PICapability	This property specifies if the controller supports T10 PI. This is a read only property	• Not capable • Capable • Unknown
SupportRAID10UnevenSpans	This property specifies if the controller supports uneven spans for RAID 10.This is a read only property	• Not Supported • Supported • Unknown
SupportEnhancedAutoForeignImport	This property specifies if the controller supports enhanced auto import of foreign configuration. This is a read only property	• Not Supported • Supported • Unknown

Table 112. Storage controller properties (continued)

Property Name	Description	Possible values
EnhancedAutoImportForeignConfig	This property specifies Enhanced Auto Import of Foreign Configuration setting on the controller	• Not Supported • Disabled • Enabled
SupportControllerBootMode	This property specifies if the controller supports setting of controller boot mode. This is a read only property	• Not Supported • Supported • Unknown
ControllerBootMode	This property indicates the Controller Boot Mode setting on the controller	• User Mode • Continue Boot on Error • Headless Mode • Continue on Error • Headless Safe Mode • Safe Mode on Error • Unknown
RealtimeConfigurationCapability	This property specifies if controller supports side band monitoring	• Capable • Incapable
RaidMode	This property specifies the meta data mode of the controller. It is applicable only for SW RAID controller	• None • Linux • Windows • Mixed
SharedSlotAssignmentAllowed	This property specifies if controller supports slot assignment sharing	• Yes • No • Not Applicable
BootVD	This property specifies the FQDD of the virtual disk which is set to Boot Vd under this controller	• "None" • String value displaying the FQDD of Virtual disk
CurrentControllerMode	This property specifies if current controller mode is RAID or HBA/ EnhancedHBA. If enhanced HBA is supported by PERC,then this object will display EnhancedHBA otherwise it will display HBA	• Not Supported • RAID • HBA • EnhancedHBA • NONE
SupportEnhancedHBA	This property specifies if the controller supports enhanced Host Bus Adapter mode	• Supported • Not Supported
AutoConfigBehavior	This property specifies the current value of the auto configuration behavior of the controller	• Non-RAID Disk • RAID0 • OFF • RAID-0 Write Back • RAID-0 Write Through • Secured RAID-0 Write Through • Secured RAID-0 Write Back • Secured Non-RAID Disk • Not Applicable
CPUAffinity	The controller CPU affinity indicates which CPU is managing the controller	• "Not applicable" • An integer value

Table 113. Storage PDisk Properties

Property Name	Description	Possible values
Status	This property specifies the current status of the physical disk	• Unknown • Ok • Warning • Failed
DeviceDescription	This property specifies the type and location of the physical disk	An alphanumeric value
RollupStatus	This property specifies the overall health status of the physical disk	• Unknown • Ok • Warning • Failed
Name	This property specifies the name of the physical disk	A string value
State	This property specifies the current state of the physical drive	• Unknown • Ready • Online • Foreign • Offline • Blocked • Failed • Degraded • Non-Raid • Removed • Charging • Learning • Low Power • Over Temp • Under Temp • Read Only • Physical Layer Failure • Transport Layer Failure • Protocol Command Failure • Sanitize In Progress • Sanitize failed • Unusable • Not Applicable"
PowerStatus	This property specifies the current state of spinning platters of the drive	• Spun-Up • Spun-Down • Transition • On • Unknown
Size	This property specifies the size of the physical drive	An alphanumeric string value. Space and "." are also allowed
BusProtocol	This property specifies the bus communication protocol of the drive	• SAS • SATA • Unknown • NVMe • PCIe
MediaType	This property specifies the media type of the drive	• HDD • SSD • Unknown

Table 113. Storage PDisk Properties (continued)

Property Name	Description	Possible values
AvailableSpare	This property specifies how many blocks have failed and have been reallocated with reserved blocks	• "Not Applicable" • An integer value
Model	This property specifies the drive model	• "Unknown" • String value
ProductId	This property specifies the drive product ID flashed during production	• "Not Available" • String value
SerialNumber	This property specifies the serial number of the drive	• "Unknown" • Alphanumeric value
DeviceSidebandProtocol	This property specifies the protocol used for drive's side band communication	• "Not Available"
Manufacturer	This property specifies the manufacturer of the drive	An alphanumeric value. Spaces are also allowed
PCIeNegotiatedLinkWidth	This property specifies the maximum PCI link width that the drive supports for communication	• x1 • x2 • x4 • x8 • x16 • x32 • Not Applicable
PCIeCapableLinkWidth	This property specifies the current PCI link width used for drive communication	• x4 • x8 • x16 • Not Applicable
MaxCapableSpeed	This property specifies the maximum speed that the drive supports for communication	• Unknown • 1.5 Gb/s • 3 Gb/s • 6 Gb/s • 12 Gb/s • 24 Gb/s
NegotiatedSpeed	This property specifies the current speed used for drive communication	• Unknown • 2.5 GT/s • 5 GT/s • 8 GT/s • 16 GT/s • 32 GT/s
FormFactor	This property specifies the physical form factor of the drive	• Unknown • 1.8 Inch • 2.5 Inch • 3.5 Inch • add-in card • M.2 • EDSFF-E1.L • E3.S • E3.S 2T • E3.L • E3.L 2T
Revision	This property specifies the current firmware version flashed on the drive	An integer value

Table 113. Storage PDisk Properties (continued)

Property Name	Description	Possible values
RemainingRatedWriteEndurance	This property specifies the number of program/erase (P/E cycles) that can be applied to a block of flash memory before the storage media becomes unreliable	• Unavailable • Not Applicable • Dynamic value
FailurePredicted	This property indicates if a failure is predicted in the drive or not	• Unavailable • NO • YES • Unknown
PcieSSDBusId	This property specifies the PCIe Bus ID	• "Not Applicable" • An integer value
PcieSSDDeviceId	This property specifies the PCIe Device ID	• "Not Applicable" • An integer value
PcieSSDFunctionId	This property specifies the PCIe function ID	• "Not Applicable" • An integer value
ErrorRecoverable	This property specifies if the drive is capable of recovering from errors	• Yes • No • Not Applicable
RAIDStatus	This property specifies the current state of the drive	• Unknown • Ready • Online • Foreign • Offline • Blocked • Failed • Degraded • Non-RAID
HotSpareStatus	This property specifies if the drive is assigned as Hot spare or not. If drive is assigned as Hot spare, it will display if the drive is dedicated or global hot spare	• No • Dedicated • Global
AvailableRaidDiskSpace	This property specifies the free space available in the drive	An alphanumeric value. Space and "."values are also allowed
FreeSizeInBytes	This property specifies the free space available in the drive in bytes	An alphanumeric value. Space and "." values are also allowed
RaidType	This property specifies the RAID type of the drive	• Unknown • MD Software RAID • Windows Software RAID
SasAddress	This property specifies the SAS address of the physial drive	• "Not Applicable" • An alphanumeric value
Certified	This property specifies if the drive is certified	• No • Yes • Not Applicable
NonRAIDDiskCachePolicy	When this feature is enabled, the physical disk writes data to the physical disk cache before writing it to the physical disk. Because it is faster to write data to the cache than to a disk,	• Default • Enabled • Disabled • Unknown • Not Applicable

Table 113. Storage PDisk Properties (continued)

Property Name	Description	Possible values
	enabling this feature improves system performance.	
OperationState	This property specifies if there is any operation in progress on the drive. If an operation is in progress, it displays the operation in progress	• Unknown • Ready • Online • Offline • Failed • Foreign • Blocked • Non-Raid • Removed • Copy Back • Clear • Rebuilding • Not Applicable"
PowerStatus	This property specifies the current state of the spinning platters of the drive	• Spun-Up • Spun-Down • Transition • On • Unknown
SecurityStatus	This property specifies the current security status of the drive	• Encryption Capable • Secured • Locked • Secured_by_Foreign • Not Capable • Unknown
UsedRaidDiskSpace	This property specifies the amount of used space in the drive	An alphanumeric value. Space and "." values are also allowed
T10PICapability	This property specifies if the drive is T10 PI capable	• Not Capable • Capable • Unknown
SystemEraseCapability	This property specifies the type of erase drive supported	• Not Supported • OverwritePD • CryptographicErasePD • Unknown
EncryptionCapability	This property specifies if the security can be enabled on the drive	• Capable • Not Capable
EncryptionProtocol	This property specifies the security protocol used by the drive when the security is enabled	• None • TCG Enterprise SSC • TCG Opal SSC
PartNumber	This property specifies the part number of the physical drive	An alphanumeric value. Hyphen (-) is also allowed
ForeignKeyIdentifier	This property is present in the drive to identify if the drive becomes foreign	An alphanumeric value
RaidNominalMediumRotationRate	This property specifies the nominal medium rotation rate	An integer value
CPUAffinity	CPU affinity property indicates which CPU is managing the drive	• "Not supported" • An integer value

Table 114. Storage VDisk Properties

Property Name	Description	Possible values
Status	This property specifies the current status of the virtual disk	• Unknown • Ok • Warning • Failed
DeviceDescription	This property specifies the type and location of the virtual disk	An alphanumeric string
Name	This property specifies the name of the virtual disk	String value
RollupStatus	This property specifies the overall health status of the virtual disk	• Unknown • Ok • Warning • Failed
State	This property displays the current virtual disk state	• Unknown • Ready • Online • Foreign • Offline • Blocked • Failed • Degraded • Non-Raid • Removed • Charging • Learning • Low Power • Over Temp • Under Temp • Read Only • Physical Layer Failure • Transport Layer Failure • Protocol Command Failure • Sanitize In Progress • Sanitize failed • Unusable • Not Applicable
OperationalState	This property specifies if any operations are in progress on virtual disk and the current status	• Ready • Degraded • Failed • Resyncing • Reconstructing • Background Initialization • Initializing • Unknown • Not applicable • Online
Layout	This property displays the virtual disk layout	• Volume • RAID-0 • RAID-1 • RAID-2 • RAID-3 • RAID-4

Table 114. Storage VDisk Properties (continued)

Property Name	Description	Possible values
		• RAID-5 • RAID-6 • RAID-7 • RAID-8 • RAID-9 • RAID-10 • RAID-30 • RAID-50 • RAID-60 • ConcatRaid-1 • ConcatRaid-5 • VendorRaid • Unknown
Size	This property displays the size of the virtual disk	An alphanumeric value. Space and "." values are also allowed
SpanDepth	This property specifies the current span depth of the virtual disk	An integer value
AvailableProtocols	This property specifies the communication protocol of drives that are part of virtual disk	• SAS • SATA • Unknown • NVMe • PCIe
MediaType	This property specifies the media type of drives that are part of virtual disk	• HDD • SSD • Unknown
ReadPolicy	This property specifies whether the controller should read sequential sectors of the virtual disk when seeking data	• Read Ahead • Adaptive Read Ahead • No Read Ahead • Unknown
WritePolicy	This property specifies whether the controller sends a write request completion signal as soon as the data is in the cache or after it has been written to disk	• Write Back • Write Through • Force Write Back • Unknown
StripeSize	This property displays the stripe size of the virtual disk. It is configurable through Server Configuration Profile (SCP) feature only	• Default • 512B • 1K • 2K • 4K • 8K • 16K • 32K • 64K • 128K • 256K • 512K • 1MB • 2MB • 4MB • 8MB • 16MB

Table 114. Storage VDisk Properties (continued)

Property Name	Description	Possible values
		• Unknown
DiskCachePolicy	This property is used to set the physical disk caching policy of all members of a virtual disk. When this feature is enabled, the physical disk writes data to the physical disk cache before writing it to the physical disk	• Default • Enabled • Disabled • Unknown • Not Applicable
BadBlocksFound	This property indicates if the virtual disk has any bad blocks	• Yes • No • Unknown
Secured	This property indicates if the virtual disk secured or not	• Yes • No • Unknown
RemainingRedundancy	This property specifies how much redundancy is remaining in virtual disk	An integer value
EnhancedCache	This property specifies if the virtual disk supports cache enhancement	• Yes • Not Applicable
T10PIStatus	This property displays the virtual disk T10PI Status	• Disabled • Enabled • Unknown
BlockSizeInBytes	This property displays the block size of the virtual disk	An integer value

supportassist

Table 115. Details of supportassist

supportassist	
Description	Allows you to perform supportassist operations such as: • `collect` : Collects the supportassist data and exports to local share, or remote share, or Dell site depending on the parameters given in the command. You can specify the type of the logs to be in the collect command. To run this command, user must accept the End User License Agreement (EULA). **NOTE:** When performing the `collect` operation on chassis system, ensure that you use the `-t Debug` option. • `register` : Allows registration of supportassist to enable related features. • `exportlastcollection` : Exports the last collected supportassist data to the share which is mentioned in the command or to the default share. Default share can be configured using the supportassist attributes. • `accepteula` : Accepts the End User License Agreement (EULA). • `geteulastatus`: Provides the status of the End User License Agreement (EULA). • `uploadlastcollection` : Upload last collection to Dell supportassist server. • `exposeismintallertohostos`: Exposes iSM installer to host OS, so that user can install the iSM from host side. • `autocollectscheduler`: Provides options to create view, and clear the time-based automatic collections. User must perform registration for this feature. **NOTE:** All the commands except `accepteula`,`geteulastatus` , and `autocollectscheduler` will create job ID to track the progress of the operation.

Table 115. Details of supportassist (continued)

supportassist	
	NOTE: SupportAssist `register`, `collect --upload`, `uploadlastcollection` and `autocollectscheduler view/create/clear` commands are not supported in iDRAC 7.00.00.00 and later versions. Running these commands will generate an EEMI message with the EEMI ID SRV156.

Synopsis	• To perform supportassist operation by specifying the type of the operation.
	`racadm supportassist <support assist command type>`
	• To collect the data and store it in the iDRAC.
	`racadm supportassist collect -t <logtype>`
	• To collect the data and export to network share
	`racadm supportassist collect -t <logtype> -l <CIFS/NFS/TFTP/FTP share> -u <username> -p <password>`
	• To collect the data and export to HTTP/HTTPS share
	`racadm supportassist collect -t <logtype> -l <HTTP/HTTPS share> -u <username> -p <password> -port <port number>`
	• To collect the data and upload to Dell supportassist server.
	`racadm supportassist collect -t <logtype> -upload`
	• To collect the data and export to local share. This is only allowed from remote and local RACADM.
	`racadm supportassist collect -t <logtype>  -f <filename>`
	• To collect the data and export to remote share and to Dell supportassist server.
	`racadm supportassist collect -t <logtype> -l <CIFS or NFS share location> -u <username> -p <password> --upload`
	• To collect telemetry reports.
	`racadm supportassist collect -t TelemetryReports`
	• To collect all the gpu-related logs:
	`racadm supportassist collect -t gpudebug`
	NOTE: There is a timeout issue when this command is run through local share from remote RACADM.
	• To Export the last collected supportassist data to a remote share.
	`racadm supportassist exportlastcollection -l <CIFS/NFS/TFTP/FTP share> -u myuser -p mypass`
	• To Export the last collected supportassist data to HTTP/HTTPS share.
	`racadm supportassist exportlastcollection -l <HTTP/HTTPS share> -u myuser -p mypass -port <port number>`
	• To export the last collected supportassist data to the default network share.
	`racadm supportassist exportlastcollection`

Table 115. Details of supportassist (continued)

supportassist	
	• To accept End User License Agreement (EULA) `racadm supportassist accepteula` • To check End User License Agreement (EULA) status `racadm supportassist geteulastatus` • To register iDRAC for supportassist features `racadm supportassist register -pfname <primary first name> -plname <primary last name> -pmnumber <primary number> -panumber <primary alternate number> -pmailid <primary email id> -sfname <secondary first name> -slname <secondary last name> -smnumber <secondary number> -sanumber <secondary alternate number>-smailid <secondary email id> -company <company name> -street1 <street1 name> -street2 <street2 name> -city <city name> -state <state name> -country <country name> -zip <zip or postal code>` • To upload last collection to Dell supportassist server. `racadm supportassist uploadlastcollection` • To expose iSM installer to host operating system. `racadm supportassist exposeismsinstallertohostos` • To schedule auto collection of supportassist data weekly. `racadm supportassist autocollectscheduler create -time <time> -dow <DayofWeek> -rp <repeat>` • To schedule auto collection of supportassist data monthly. `racadm supportassist autocollectscheduler create -time <time> -dom <DayOfMonth> -rp <repeat>` `racadm supportassist autocollectscheduler create -time <time> -wom <WeekOfMonth> -dow <DayofWeek> -rp <repeat>` • To schedule auto collection of supportassist data quarterly. `racadm supportassist autocollectscheduler create -time <time> -wom <WeekOfMonth> -dow <DayofWeek> -rp <repeat>` • To view the auto collection data `racadm supportassist autocollectscheduler view` • To clear the auto collection data `racadm supportassist autocollectscheduler clear`
Input	• `-t`—Specifies the types of logs to be included in the export data. o `-sysinfo`—System information o `-osAppAll`—OS and Application data o `-ttylog`—Storage log information o `-Debug`—iDRAC debug logs o `-GpuDebug`—iDRAC GPU debug logs • `-l`—Specifies the network share location. • `-u`—Specifies the user name of the remote share. • `-p`—Specifies the password of the remote share.

Table 115. Details of supportassist (continued)

supportassist	
	• -f—Specifies the target filename of the exported data. **NOTE:** The filename must have .zip as the extension. • -port— Specifies the port number. **NOTE:** This is an optional parameter. If this option is not specified, the default port number is used. • -pfname—Specifies the primary user's first name for the registration. • -plname—Specifies the primary user's last name for the registration. • -pmnumber—Specifies the primary user' s number. • -panumber—Specifies the primary user' s alternative number. • -pmailid—Specifies the primary user' s email address. • -sfname—Specifies the secondary user' s first name. • -slname—Specifies the secondary user' s last name. • -smnumber—Specifies the secondary user' s number. • -sanumber—Specifies the secondary user' s alternate number. • -smailid—Specifies the secondary user' s email address. • -company—Specifies the company name. • -street1—Specifies the street address of the company. • -street2—Specifies the secondary street address of the company. • -city—Specifies the name of the city. • -state—Specifies the name of the state. • -country—Specifies the name of the country. • -zip—Specifies the zip or postal code. • -time—Specifies the time to schedule a supportassist collection in HH:MM 12-hour format. • -dom—Specifies the day of the month to schedule a supportassist collection. Valid values are 1-28, L(Last day) or '*' (default - any day). If -dom option is included in the command, then -wom and -dow options should not be included. • -wom—Specifies the week of the month to schedule a supportassist collection. Valid values are 1-4, L(Last week) or '*' (default - any week). If -wom option is included in the command, then only -dow option should be included. -dom should not be included. • -dow — Specifies the day of the week to schedule a supportassist collection. Valid values sunday, monday,...saturday '*' (default - any day). • -rp — Specifies the repeat parameter weekly, or monthly, or quarterly. Weekly is allowed only with dow parameter. Monthly/quarterly is allowed either with dom or dow and wom together.

Example

- To collect the system information data.

```
racadm supportassist collect
```

- To collect the filtered data.

```
racadm supportassist collect --filter
```

- To collect the data and export to an FTP share.

```
racadm supportassist collect -t Debug -l ftp://192.168.10.24/share -u myuser -p mypass
```

- To collect the data and export to a TFTP share.

```
racadm supportassist collect -t Debug -l tftp://192.168.10.24/share
```

- To collect the data and export to an CIFS share.

```
racadm supportassist collect -t sysinfo -l //192.168.10.24/share -u myuser -p mypasss
```

- To collect the data and export to a HTTP share.

```
racadm supportassist collect -t TTYLog -l http://192.168.10.24/share -u myuser -p
mypass -port 8080
```

- To collect the data and export to an HTTPS share.

```
racadm supportassist collect -t Debug -l https://192.168.10.24/share -u myuser -p
mypass -port 8080
```

- To export the last collected supportassist data to an FTP share

```
racadm supportassist exportlastcollection -l ftp://192.168.10.24/share -u myuser -p
mypass
```

- To collect the data and export to an NFS network share:

```
racadm supportassist collect -l 10.94.161.103:/supportassist_share
```

- To collect the data and upload to the Dell supportassist server.

```
 racadm supportassist collect --upload
```

- To collect the data and export to a local share. This is allowed only from a remote or a local RACADM.

```
 racadm supportassist collect -f tsr.zip
```

- To collect the data and export to a remote share and to the Dell supportassist server.

```
 racadm supportassist collect -t Debug -l //192.168.10.24/share -u myuser -p mypass
--upload
```

- To collect telemetry report.

```
racadm supportassist collect -t TelemetryReports
```

- To collect all the gpu-related logs:

```
racadm supportassist collect -t gpudebug
```

- To export the last collected supportassist data to a CIFS share

```
 racadm supportassist exportlastcollection -l //192.168.10.24/share -u myuser -p
mypass
```

- To export the collected supportassist data to the default network share.

```
 racadm supportassist exportlastcollection
```

- To accept the End User License Agreement (EULA).

```
 racadm supportassist accepteula
```

- To check the End User License Agreement (EULA) status.

```
 racadm supportassist geteulastatus
```

- To register the iDRAC for supportassist features.

```
racadm supportassist register -pfname abc -plname xyz -pmnumber 1234567890 -panumber
1234567899 -pmailid abc_xyz@Dell.com -sfname abc -slname xyz -smnumber 1234567890
-sanumber 7777799999 -smailid abc_xyz@dell.com -company dell -street1
xyztechpark -street2 -city bangalore -state karnataka -country india -zip
123456
```

- To upload the last collection to the Dell supportassist server.

```
 racadm supportassist uploadlastcollection
```

- To expose the iSM installer to the host operating system for the iSM installation.

```
racadm supportassist exposeismminstallertohostos
```

- To schedule auto collection of supportassist data weekly.

```
racadm supportassist autocollectscheduler create -time 4:05am -dow sunday -rp weekly
```

- To schedule auto collection of the supportassist data monthly.

```
racadm supportassist autocollectscheduler create -time 7:55pm -dom 20 -rp monthly
```

- To schedule auto collection of the supportassist data quarterly.

```
racadm supportassist autocollectscheduler create -time 7:55am -wom 2 -dow monday -rp
quarterly
```

- To view the auto collection schedule.

```
racadm supportassist autocollectscheduler view
```

- To clear the auto collection schedule.

```
racadm supportassist autocollectscheduler clear
```

swinventory

Table 116. Details of swinventory

swinventory	
Description	Displays the list of software objects and associated properties that are installed on a server. **NOTE:** Lifecycle Controller and CSIOR should not be enabled to run this subcommand.
Synopsis	`racadm swinventory`
Input	`racadm swinventory`

Output	`racadm swinventory`
	
	`-------------------------SOFTWARE INVENTORY-----------------------`
	`ComponentType = FIRMWARE`
	`ElementName = Chassis PSU.Slot.1`
	`FQDD = PSU.ChassisSlot.1-1-1`
	`InstallationDate = 2022-09-09T09:27:32Z`
	`Current Version = 00.18.31`
	`HashValue = NA`
	`SidebandUpdate = No`
	`PLDMCapabilitiesDuringUpdate = 0x0`
	`PLDMFDPCapabilitiesDuringUpdate = 0x0`
	`----------------------------------------------------------------------`
	
	`ComponentType = FIRMWARE`
	`ElementName = Integrated Dell Remote Access Controller`
	`FQDD = iDRAC.Embedded.1-1`
	`InstallationDate = NA`
	`Rollback Version = 6.00.30.00`
	`HashValue = NA`
	`SidebandUpdate = No`
	`PLDMCapabilitiesDuringUpdate = 0x0`
	`PLDMFDPCapabilitiesDuringUpdate = 0x0`
	`----------------------------------------------------------------------`
	
	`ComponentType = FIRMWARE`

Table 116. Details of swinventory (continued)

swinventory	

```
ElementName = Integrated Dell Remote Access Controller
FQDD = iDRAC.Embedded.1-1
InstallationDate = 2022-09-09T09:27:10Z
Current Version = 6.10.00.00
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
----------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Intel(R) Ethernet Connection 25G 4P E823-C-st LOM -
00:00:00:00:01:03
FQDD = NIC.Embedded.1-4-1
InstallationDate = 2020-09-20T10:52:57Z
Current Version =
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
----------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Intel(R) Ethernet Connection 25G 4P E823-C-st LOM -
00:00:00:00:01:00
FQDD = NIC.Embedded.1-1-1
InstallationDate = 2020-09-20T10:52:52Z
Current Version =
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
----------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Intel(R) Ethernet Connection 25G 4P E823-C-st LOM -
00:00:00:00:01:01
FQDD = NIC.Embedded.1-2-1
InstallationDate = 2020-09-20T10:52:50Z
Current Version =
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
----------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Intel(R) Ethernet Connection 25G 4P E823-C-st LOM -
00:00:00:00:01:02
FQDD = NIC.Embedded.1-3-1
InstallationDate = 2020-09-20T10:52:51Z
Current Version =
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
----------------------------------------------------------------------

ComponentType = BIOS
ElementName = BIOS
FQDD = BIOS.Setup.1-1
InstallationDate = NA
Rollback Version = 0.2.6
HashValue =
645cc8f9c5c2f39dbff535681f130569edd64dadf8514b361ebd1de97e96b410
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
```

Table 116. Details of swinventory (continued)

swinventory	

```
-------------------------------------------------------------------------

ComponentType = BIOS
ElementName = BIOS
FQDD = BIOS.Setup.1-1
InstallationDate = 2022-04-01T21:14:16Z
Current Version = 0.3.5
HashValue =
645cc8f9c5c2f39dbff535681f130569edd64dadf8514b361ebd1de97e96b410
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = BIOS
ElementName = BIOS
FQDD = BIOS.Setup.1-1
InstallationDate = NA
Available Version = 0.2.3
HashValue =
645cc8f9c5c2f39dbff535681f130569edd64dadf8514b361ebd1de97e96b410
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = APPLICATION
ElementName = Lifecycle Controller
FQDD = USC.Embedded.1:LC.Embedded.1
InstallationDate = 2022-09-09T09:27:13Z
Current Version = 6.10.00.00
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = System CPLD
FQDD = CPLD.Embedded.1
InstallationDate = 2022-04-02T00:28:39Z
Current Version = 0.1.7
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = TPM
FQDD = TPM.Integrated.1-1
InstallationDate = 2022-04-01T17:08:09Z
Current Version = NotAvailable
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = APPLICATION
ElementName = Diagnostics
FQDD = Diagnostics.Embedded.1:LC.Embedded.1
InstallationDate = 2020-09-20T10:45:17Z
Current Version = 0
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
```

Table 116. Details of swinventory (continued)

swinventory	

```
-------------------------------------------------------------------------

ComponentType = APPLICATION
ElementName = OS Drivers Pack
FQDD = DriverPack.Embedded.1:LC.Embedded.1
InstallationDate = 2020-09-20T10:45:17Z
Current Version = 0
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = APPLICATION
ElementName = iDRAC Service Module Installer
FQDD = ServiceModule.Embedded.1
InstallationDate = 2020-09-20T10:45:17Z
Current Version = 0
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Integrated PCIe SSD 3 Disk 1
FQDD = PCIeSSD.Integrated.3-1
InstallationDate = 2022-07-18T23:05:31Z
Current Version = 0.6.0
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Integrated PCIe SSD 4 Disk 1
FQDD = PCIeSSD.Integrated.4-1
InstallationDate = 2022-08-02T15:31:56Z
Current Version = 0.1.8
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Integrated PCIe SSD 2 Disk 1
FQDD = PCIeSSD.Integrated.2-1
InstallationDate = 2022-07-18T23:05:57Z
Current Version = 0.6.0
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------

ComponentType = FIRMWARE
ElementName = Chassis CM Embedded
FQDD = MC.Chassis.1-1-1
InstallationDate = 1970-01-01T00:00:00Z
Current Version = 0.13
HashValue = NA
SidebandUpdate = No
PLDMCapabilitiesDuringUpdate = 0x0
PLDMFDPCapabilitiesDuringUpdate = 0x0
-------------------------------------------------------------------------
```

Table 116. Details of swinventory (continued)

swinventory	
	ComponentType = FIRMWARE ElementName = Witness MCU Embedded FQDD = MCU.Embedded.1-1:System.Integrated.1-1:System.Chassis.1-1 InstallationDate = 2022-04-26T19:16:27Z Current Version = 0.10 HashValue = NA SidebandUpdate = No PLDMCapabilitiesDuringUpdate = 0x0 PLDMFDPCapabilitiesDuringUpdate = 0x0 ---------- ComponentType = FIRMWARE ElementName = Witness BIOS Embedded FQDD = BIOS.Setup.1-1:System.Integrated.1-1:System.Chassis.1-1 InstallationDate = 1970-01-01T00:00:00Z Current Version = 0.0.0 HashValue = NA SidebandUpdate = No PLDMCapabilitiesDuringUpdate = 0x0 PLDMFDPCapabilitiesDuringUpdate = 0x0 ----------

NOTE: Configuration changes and firmware updates that are made within the operating system may not reflect properly in the inventory until you perform a server restart.

switchconnection

Table 117. Details of switchconnection

switchconnection	
Description	Provides the switch port details of iDRAC and server network ports. Refresh switch port details of all ports in the server. To run this command, you must have the `Login` privilege.
Synopsis	• `racadm switchconnection view` • `racadm switchconnection view [iDRAC FQDD | NIC FQDD]` • `racadm switchconnection refresh`
Input	• `<iDRAC FQDD | NIC FQDD>` — is the fully qualified device descriptor of iDRAC or NIC.

Examples	• To provide switch port details of all iDRAC and server network port
	`racadm switchconnection view`
	• To provide switch port details of requested FQDD NIC.Integrated.1-1-1:BRCM
	`racadm switchconnection view NIC.Integrated.1-1-1:BRCM`
	• To refresh switch port details of all ports in the server
	`racadm switchconnection refresh`

systemerase

Table 118. systemerase

systemerase	
Description	Allows you to erase the components to remove the server from use.

Synopsis	• To erase a specific component.
	`racadm systemerase <component>`
	• To erase multiple components.
	`racadm systemerase <component>,<component>,<component>`

Input	• `<component>`—the valid types of components are: ○ `bios`—To reset the BIOS to default. ○ `diag`—To erase embedded diagnostics. ○ `drvpack`—To erase embedded OS driver pack. ○ `dpu`—Erase all the user configurations from the supported DPUs. ○ `idrac`—To reset the iDRAC to default. ○ `lcdata`—To erase Lifecycle Controller data. ○ `allaps`—To reset all apps. ○ `cryptographicerasepd`—To erase the physical disk. This supports SED, NVMe drives, and PCIe cards ○ `overwritepd`—To overwrite physical disk. This supports SAS and SATA drives. ○ `percnvcache`—To erase NV cache. ○ `reinstallfw`— To reinstall same firmware version detected for supported devices. ○ `vflash`—To erase vFlash. ○ `nvdimm`—To erase all NonVolatileMemory. **NOTE:** When BIOS is selected for System Erase, the server is turned off and the iDRAC is reset at the end of the Automated Task Application. To complete the process of BIOS reset, the server power must be restored. When the server is turned on, during POST, the BIOS completes the process of resetting to the default properties. At the completion of the reset process, the server is again turned off. Resetting the BIOS also includes the erasing of BIOS-related nonvolatile settings that are used by the OS and embedded in the UEFI applications. **NOTE:** When the racadm systemerase command is executed, the iDRAC will take the following actions if the: • Server is powered off—it is powered on. • Server is powered on—a graceful system reboot will be executed. • ACPI is enabled on the server— a graceful shutdown occurs within a minute or two. • ACPI is not enabled—a forced shutdown occurs and it may require up to ten minutes to complete. Following the server reboot, the Lifecycle Controller will execute the System Erase job to carry out the requested actions. All actions performed by the System Erase operations are recorded to the Lifecycle Log, including details of all devices erased. When these actions are completed, the server will be powered off and remain in this state, allowing service personnel to perform any needed posterase actions such as drive removal or hardware reconfiguration. When the server is powered on to return to service, the Lifecycle Controller will collect the system inventory and reflect any hardware or firmware changes made after the System Erase.
Examples	• `racadm systemerase bios` • `racadm systemerase diag` • `racadm systemerase drvpack`

Table 118. systemerase (continued)

systemerase	
	• `racadm systemerase dpu` • `racadm systemerase idrac` • `racadm systemerase lcdata` • `racadm systemerase bios,diag,drvpack` • `racadm systemerase bios,idrac,lcdata` • `racadm systemerase allapps` • `racadm systemerase cryptographicerasepd` • `racadm systemerase overwritepd` • `racadm systemerase percnvcache` • `racadm systemerase reinstallfw` • `racadm systemerase vflash` • `racadm systemerase cryptographicerasepd,vflash,percnvcache` • `racadm systemerase nvdimm`

systemperfstatistics

Table 119. Details of systemperfstatistics

systemperfstatistics	
Description	Allows you to view and manage the system performance monitoring operations.

Synopsis	• To view the FQDD's of system performance monitoring sensors
	`racadm systemperfstatistics view`
	• To list the usage statistics of a specific sensor
	`racadm systemperfstatistics <sensor_FQDD>`
	• To reset the utilization peaks of system performance monitoring sensors
	`racadm systemperfstatistics PeakReset <FQDD>`
	• To run the peakreset operation you must have configure iDRAC privilege.

Examples:

- To view the FQDD's of system performance monitoring sensors

```
racadm systemperfstatistics view
[key = iDRAC.Embedded.1#SystemBoardCPUUsageStat]
[key = iDRAC.Embedded.1#SystemBoardIOUsageStat]
[key = iDRAC.Embedded.1#SystemBoardMEMUsageStat]
[key = iDRAC.Embedded.1#SystemBoardSYSUsageStat]
```

- To list the usage statistics of a specific sensor

```
racadm systemperfstatistics iDRAC.Embedded.1#SystemBoardCPUUsageStat

Minimum Readings
Last Hour     = 0% [At Mon, 05 May 2017 17:13:04]
Last Day      = 0% [At Mon, 05 May 2017 15:59:53]
Last Week     = 0% [At Mon, 05 May 2017 15:59:53]

Maximum Readings
Last Hour     = 0% [At Thu, 01 Jan 1970 00:00:00]
Last Day      = 0% [At Thu, 01 Jan 1970 00:00:00]
Last Week     = 0% [At Thu, 01 Jan 1970 00:00:00]

Average Readings
Last Hour     = 0%
Last Day      = 0%
Last Week     = 0%

Peak Readings
Last Week     0% [At Mon, 05 May 2017 15:58:35]
```

- To reset the peak utilization of a specific sensor

```
racadm systemperfstatistics PeakReset iDRAC.Embedded.1#SystemBoardCPUUsageStat
RAC1163: The peak utilization value of Out-Of-Band performance monitoring sensor CPU
Usage is successfully reset.
```

techsupreport

Table 120. Details of techsupreport subcommand

techsupreport	
Description	Allows you to perform the technical support report operations. Tech Support Report (TSR) is now known as SupportAssist Collections and the new term is used in all documentation and GUI. To maintain compatibility across server generations, the RACADM command has been retained as techsupreport. The types of operations are: • `collect`—Collects the technical support report data to export. You can specify the various types of logs to be in the report. This operation generates a Job ID. Use this Job ID to check the status of the collect operation. To run this operation, you must have the Server Control Commands permission. • `export`—Exports the collected Tech Support Report data. To run this subcommand, you must have the Execute Server Control Commands permission. • `getupdatetime`—Gets the timestamp of the last operating system application data collection. • `updateosapp`—Updates the operating system application data collection. To run this subcommand, you must have the Execute Server Control Commands permission.

Synopsis	• To perform the technical support report operation by specifying the type of operation.
	`racadm techsupreport <tech support report command type>`
	• To collect the report data.
	`racadm techsupreport collect [-t <type of logs>]`
	• To export the collected report data.
	`racadm techsupreport export -l <CIFS,NFS,TFTP,FTP> -u <username> -p <password>`
	• To get the timestamp of the last operating system application data collection.
	`racadm techsupreport getupdatetime`

Table 120. Details of techsupreport subcommand (continued)

techsupreport	

	• To update the operating system application data collection.
	`racadm techsupreport updateosapp -t <type of OS App logs>`
	• To export the collected report data to local share.
	`racadm techsupreport export -f <filename>`

Input	• `-t`—type of logs. You can specify any of the following values that are separated by a ',' (comma) ○ `SysInfo`—System Information ○ `OSAppNoPII`—Filtered OS and Application data ○ `OSAppAll`—OS and Application data ○ `TTYLog`—TTYLog data **NOTE:** ○ For updating the operating system application data collection, enter the value `OSAppNoPII` or `OSAppAll` to the `-t` option. ○ If no value is specified and system information data is collected. ○ To perform the OSLog collection, ensure that ISM is installed and running. ○ TTYLog includes PCIeSSD data. • `-l`—network share location to export the report • `-u`—user name for the remote share to export the report • `-p`—password for the remote share to export the report • `-f`—target filename for the exported log. **NOTE:** The filename must have .zip as the extension.

Examples	• To collect the system information data.
	`racadm techsupreport collect –t <type of logs>`
	• To collect the system information and TTYLog data.
	`racadm techsupreport collect -t SysInfo,TTYLog`
	• To collect the operating system application data.
	`racadm techsupreport collect -t OSAppAll`
	• To export the collected Tech Support Report, to an FTP share
	`racadm techsupreport export -l ftp://192.168.0/share -u myuser -p xxx`
	• To export the collected Tech Support Report, to a TFTP share
	`racadm techsupreport export -l tftp://192.168.0/share`
	• To export the collected Tech Support Report, to a CIFS share.
	`racadm techsupreport export -l //192.168.0/share -u myuser -p xxx`
	• To export the collected Tech Support Report, to an NFS share.
	`racadm techsupreport export -l 192.168.0:/share`
	• To export the collected Tech Support Report to the local file system.
	`racadm techsupreport export -f tsr_report.zip`

testalert

Table 121. Details of testalert

testalert	
Description	Tests FQDN supported SNMP trap notifications. To run this subcommand, you must have the Test Alert User Access.
Synopsis	`racadm testalert -i <index>`
Input	`-i` — Specifies the index of the trap test. `index` must be an integer from 1 to 8 on iDRAC.
Output	`Success: Test trap sent successfully` `Failure: Unable to send test trap`

Example	• Test a trap with index as 1.
	`racadm testalert -i 1`
	`Test trap sent successfully.`
	• Test a trap that has not been configured yet.
	`racadm testalert -i 2`
	`ERROR: Trap at specified index is not currently enabled.`

testemail

Table 122. Details of testemail

testemail	
Description	Sends a test email from iDRAC to a specified destination. Prior to running the test email command, make sure that the SMTP server is configured. The specified index in the **idrac.EmailAlert** group must be enabled and configured properly. For more information, see Integrated Dell Remote Access Controller RACADM CLI Guide .
Synopsis	`racadm testemail -i <index>`
Input	`-i <index>` — Specifies the index of the email alert to test.
Output	`Success: Test e-mail sent successfully Failure: Unable to send test e-mail`

Example	Commands for the **idrac.EmailAlert** group:
	• Enable the alert.
	`racadm set idrac.EmailAlert.1.Enable 1`
	• Set the destination email address.
	`racadm set idrac.EmailAlert.1.Address user1@mycompany.com`
	• Set the custom message that is sent to the destination email address.
	`racadm set idrac.emailalert.1.CustomMsg "This is a test!"`

Table 122. Details of testemail (continued)

testemail	

	• Make sure that the SMTP IP address is configured properly.
	`racadm set idrac.remotehosts.SMTPServerIPAddress 192.168.0`
	• View the current email alert settings.
	`racadm get idrac.EmailAlert.<index>`
	where `<index>` is a number from 1 to 8.

testrsyslogconnection

Table 123. Details of testrsyslogconnection

testrsyslogconnection	
Description	Allows you to check the connection with Telemetry rsyslog server. The Telemetry feature requires iDRAC9 DataCenter or OpenManage Enterprise Advanced license to run this command.
Synopsis	`racadm testrsyslogconnection`
Input	`testrsyslogconnection`
Output	A test connection to the rsyslog server was successful.
Example	To test a Telemetry rsyslog connection: `racadm testrsyslogconnection`

testtrap

Table 124. Details of testtrap

testtrap	
Description	Tests the RAC's SNMP trap alerting feature by sending a test trap from iDRAC to a specified destination trap listener on the network. To run this subcommand, you must have the **Test Alert** permission. **NOTE:** • Before you run the `testtrap` subcommand, make sure that the specified index in the `RACADM iDRAC.SNMPAlert` group is configured properly. • The indices of `testtrap` subcommand is co-related to the indices of **iDRAC.SNMPAlert** group.
Synopsis	`racadm testtrap -i <index>`
Input	`-i <index>` — Specifies the index of the trap configuration that must be used for the test. Valid values are from 1 to 4.

Example	• Enable the alert.
	`racadm set idrac.emailalert.1.CustomMsg 1`
	`racadm set iDRAC.SNMPAlert.1.State 1`
	• Set the destination email IP address.
	`racadm set iDRAC.SNMPAlert.1.Destination 192.168.0`

Table 124. Details of testtrap (continued)

testtrap	
	• View the current test trap settings. `racadm get iDRAC.SNMPAlert.<index>` where `<index>` is a number from 1 to 8

traceroute

Table 125. Details of traceroute

traceroute	
Description	Traces network path of the routers as the packets traverse from the system to a destination IPv4 address. To run this subcommand, you must have the Execute Diagnostic Commands permission.
Synopsis	`racadm traceroute <IPv4 address>`
Input	`IPv4` — Specifies IPv4 address.
Output	`traceroute to 192.168.0.1 (192.168.0.1), 30 hops max, 40 byte packets` `1 192.168.0.1 (192.168.0.1) 0.801 ms 0.246 ms 0.253 ms`

traceroute6

Table 126. Details of traceroute6

traceroute6	
Description	Traces the network path of routers as the packets traverse from the system to a destination IPv6 address. To run this subcommand, you must have the Execute Diagnostic Commands permission.
Synopsis	`racadm traceroute6 <IPv6address>`
Input	<IPv6address> – Specifies IPv6 address.

Output	`traceroute to fd01::1 (fd01::1) from fd01::3,`
	`30 hops max, 16 byte packets`
	`1 fd01::1 (fd01::1) 14.324 ms 0.26 ms 0.244 ms`

update

Table 127. Details of update subcommand

update subcommand	
Description	Allows you to update the firmware of devices on the server. The supported firmware image file types are: • `.exe` — Windows-based Dell Update Package (DUP) • `.d9` • `.pm`

Table 127. Details of update subcommand (continued)

update subcommand	
	• .sc The supported catalog files are: • .xml • xml.gzip **NOTE:** • Updating the platforms from the repository is not supported for IPv6. • The firmware update through FTP has a limitation of file name up to 64 characters. • Depending on the network traffic, the HTTP packet transfer may fail if you perform update operation from a remote RACADM through a local share. In such cases, retry the operation. If the issue persists, use remote RACADM with the CIFS or NFS share. • The supported share types for single file or DUP updates are CIFS, NFS, HTTP, and HTTPS. For Repository updates, the supported share types are CIFS, NFS, FTP, TFTP, and HTTP. • When a port number is appended to an IP address for firmware update, the job fails with an internal error. • racadm update command mounts a partition on the iDRAC as a USB device when run from the local host Operating System.

Synopsis	For single file or DUP update:
	`racadm update -f <updatefile>`
	`racadm update -f <updatefile> -l <location> -u <username for CIFS share> -p <password for CIFS share>`
	`racadm update -f <updatefile> -l <location>`
	For Repository updates
	`racadm update -f <catalog file> -t <Repository type> -l <location> \ -u <username for CIFS share> -p <password for CIFS share> \ [-a <restart>] [--verifycatalog]`
	`racadm update -f <catalog file> -t <Repository type> \ -e <FTP server with the path to the catalog file> [-a <restart>] \[--verifycatalog]`
	`racadm update -f <catalog file> -t <Repository type> \ -e <FTP server with the path to the catalog file> [-a <restart>] \ -ph <proxy ip> -pu <proxy user> -pp <proxy pass> -po <proxy port> \ -pt <proxy type>`
	`racadm update viewreport`

Input	For single file or DUP update: • -f: <updatefile>—Update filename (Windows DUP, .d9,.pm, .sc) only. • -u: < username for CIFS share>—Specifies username of the remote share that stores the update file. Specify username in a domain as domain/username. • -p: <password for CIFS share—Specifies password of the remote share that stores the update file. • -l: <location>—Specifies network share location that stores the update file. For more information on NFS or CIFS share, see section on Usage examples • –reboot—Performs a graceful system reboot after the firmware update.

Table 127. Details of update subcommand (continued)

update subcommand	
	NOTE: By default, when argument `--reboot` is used iDRAC performs a graceful server reboot. For iDRAC to perform a forced server reboot when argument `--reboot` is used, configure the attribute `System.Job.RebootJobType` and set the current value to `Powercycle`. For Example: get System.Job.RebootJobType set System.Job.RebootJobType Powercycle • `-f: <updatefile>`—Update filename . For update from repository `.xml` files are allowed. If a file name is not specified for repository update, Catalog.xml is taken as default. If a file name is not specified for repository update, then the `Catalog.xml` is taken as default. • `-u: < username for CIFS share>`—Username of the remote share that stores the update file. Specify username in a domain as domain/username. • `-p: <password for CIFS share` — Specifies password of the remote share that stores the update file. • `-l: <location>`—Specifies network share location (CIFS/NFS/HTTP/HTTPS/FTP), that stores the update file. For more information on network share, see section on Usage examples . The maximum length of the location must be 96 characters. • `-a: <restart>` — This option indicates if the server should be restarted after the update from repository operation completes. Must be one of the below: ○ TRUE : restart after update completes ○ FALSE : do not restart after update completes **NOTE:** These options are case insensitive. • `-t:Repository type>`—Specifies the type of repository being used for the update. Must be one of the below: ○ FTP: Repository is FTP ○ TFTP: Repository is TFTP ○ HTTP: Repository is HTTP ○ HTTPS: Repository is HTTPS ○ CIFS: Repository is CIFS ○ NFS: Repository is NFS **NOTE:** These options are case insensitive. If the repository update functionality is to be invoked, this option is necessary. • `-e:<FTP server with the path to the catalog file>`—Specifies the Server path for the FTP, TFTP, HTTP, and HTTPS. • `-ph : <proxy ip>`—Specifies the IP address of the proxy server. • `-pu : <proxy user>`—Specifies the user name for proxy credentials. • `-pp : <proxy pass>`—Specifies the password for proxy credentials. • `-po : <proxy port>`—Specifies the port for proxy server. • `-pt : <proxy type>`—Specifies the proxy type. Must be one of the below: ○ HTTP: Proxy is HTTP ○ SOCKS4: Proxy is SOCKS4 **NOTE:** ○ If the repository has to be through a proxy, the proxy server address, proxy username and the proxy password are necessary. The Lifecycle Controller must be enabled for repository update. ○ This command supports both IPV4 and IPV6 formats. IPV6 is applicable only for CIFS and NFS remote share.

Table 127. Details of update subcommand (continued)

update subcommand	
Output	Firmware update job for `<filename>` is initiated. This firmware update job may take several minutes to complete depending on the component or firmware being updated. To view the progress of the job, run the `racadm jobqueue view` command. For repository update command, the output is: `Update from repository operation has been initiated. Check the progress of the operation using "racadm jobqueue view -i JID_809364633532" command.` For devices that perform update process without rebooting the host, the update status changes from `Downloading` to `Completed`. For devices that require host reboot to perform update process, the update status changes from `Downloading` to `Scheduled`. When the status is displayed as `Scheduled`, reboot the host to start the update process. The following devices require host reboot to perform the update process: ● Backplanes ● BIOS ● Complex programmable logic device (CPLD) ● Hard disk drives ○ Solid-state drives (SSD) ● Network interface cards (NIC) or Fibre Channel (FC) cards ● PCIe SSD devices ● Power supply unit (PSU) ● Storage controllers

Example	For single file or DUP updates:
	● Upload the update file from a remote FTP share
	`racadm update -f <updatefile> -u admin -p mypass -l ftp://1.2.3.4/share`
	● Upload the update file from a remote FTP share and to perform a graceful system reboot after update:
	`racadm update -f <updatefile> -u admin -p mypass -l ftp://1.2.3.4/share --reboot`
	● Upload the update file from a remote CIFS share:
	`racadm update -f <updatefile> -u admin -p mypass -l //1.2.3.4/share`
	● Upload the update file from a remote CIFS share and under a user domain "dom":
	`racadm update -f <updatefile> -u dom/admin -p mypass -l //1.2.3.4/share`
	● Upload the update file from a remote NFS share:
	`racadm update -f <updatefile> -l 1.2.3.4:/share`
	● Upload the update file from a remote HTTP share:
	`racadm update -f <updatefile> -u admin -p mypass -l http://1.2.3.4/share`
	● Upload the update file from a remote HTTPS share:
	`racadm update -f <updatefile> -u admin -p mypass -l https://1.2.3.4/share`
	● Upload the update file from the local file system using Local RACADM.
	`racadm update -f <updatefile>`
	● Upload the Update file from a remote CIFS share and to perform a graceful system reboot after update:
	`racadm update -f <updatefile> -u admin -p mypass -l //1.2.3.4/share --reboot`

Table 127. Details of update subcommand (continued)

update subcommand	

	• Upload the Update file from a remote NFS share and to perform a graceful system reboot after update:
	`racadm update -f <updatefile> -l 1.2.3.4:/share --reboot`
	• Upload the update file from a remote HTTP share and to perform a graceful system reboot after update:
	`racadm update -f <updatefile> -u admin -p mypass -l http://1.2.3.4/share --reboot`
	• Upload the Update file from the local file system using local racadm and to perform a graceful system reboot after update:
	`racadm update -f <updatefile> --reboot`
	For Repository updates:
	• Perform update from an FTP repository and to apply the updates, reboot the server:
	`racadm update -f Catalog.xml -l //192.168.11.10/Repo -u test -p passwd -a TRUE -t CIFS`
	• Generate a comparison report using about the available updates in the repository:
	`racadm update -f Catalog.xml -l 192.168.11.10:/Repo -t NFS -a FALSE --verifycatalog`
	• Perform update from an FTP repository and reboot the server to apply the updates:
	`racadm update -f Catalog.xml -e 192.168.11.10/Repo/MyCatalog -a TRUE -t FTP`
	• Perform update from an FTP repository with authentication and reboot the server to apply the updates
	`racadm update -f Catalog.xml -e 192.168.11.10/Repo/MyCatalog -u user -p mypass -a TRUE -t FTP`
	• Perform update from a HTTP repository and restart the server to apply the updates.
	`racadm update -f Catalog.xml -e 192.168.11.10/Repo/MyCatalog -a TRUE -t HTTP`
	• Perform update from a TFTP repository and restart the server to apply the updates.
	`racadm update -f Catalog.xml -e 192.168.11.10/Repo/MyCatalog -a TRUE -t TFTP`
	NOTE:
	• Perform update from an FTP repository through a proxy server.
	`racadm update -f Catalog.xml -e 192.168.11.10/Repo/MyCatalog -a TRUE -ph 145.140.12.56 -pu prxyuser -pp prxypass -po 80 -pt http -t FTP`
	• Perform update from an downloads.dell.com
	`racadm update -f Catalog.xml.gz -e downloads.dell.com/Catalog -a TRUE -t HTTPS`
	• View the comparison report generated when --verifycatalog is used.
	`racadm update viewreport`

usercertupload

Table 128. Details of usercertupload

usercertupload	
Description	Uploads a user certificate or a user CA certificate from the client to iDRAC. To run this subcommand, you must have the Configure iDRAC permission.
Synopsis	`racadm usercertupload -t <type> [-f <filename>] -i <index>`

Input	• `-t` — Specifies the type of certificate to upload, either the CA certificate or server certificate.
	  ○ `1`=user certificate
	  ○ `2`=user CA certificate
	• `-f` — Specifies the filename of the certificate that must be uploaded. If the file is not specified, the `sslcert` file in the current directory is selected.
	• `-i` — Index number of the user. Valid values 2–16.

Output	If upload is successful, the message `User certificate successfully uploaded to the RAC.` If unsuccessful, appropriate error message is displayed.
Example	To upload user certificate for user 6. `racadm usercertupload -t 1 -f c:\cert\cert.txt -i 6`

usercertview

Table 129. Details of usercertview

usercertview	
Description	Displays the user certificate or user CA certificate that exists on iDRAC.
Synopsis	`racadm usercertview -t <type> [-A] -i <index>`

Input	• `-t` —Specifies the type of certificate to view, either the user certificate or the user CA certificate.
	  ○ 1=user certificate
	  ○ 2=user CA certificate
	• `-A` —Prevents printing headers or labels.
	• `-i` —Index number of the user. Valid values are 2–16.

Example	To view user certificate for user 6.
	`racadm usercertview -t 1 -i 6`
	`Serial Number : 01`
	`Subject Information:`
	`Country Code (CC) : US`
	`State (S) : Texas`
	`Locality (L) : Round Rock`
	`Organization (O) : Dell Inc.`
	`Common Name (CN) : iDRAC default certificate`
	`Issuer Information:`
	`Country Code (CC) : US`
	`State (S) : Texas`
	`Locality (L) : Not Available`
	`Organization (O) : Dell Inc.`
	`Organizational Unit (OU): Remote Access Group`

Table 129. Details of usercertview (continued)

usercertview	

	`Common Name (CN) : iDRAC default certificate`
	
	`Valid From : May 7 23:54:19 2017 GMT`
	`Valid To : May 4 23:54:19 2027 GMT`
	
	NOTE: Not Available is displayed for attribute values in the certificate that are not populated or configured.

vflashpartition

Table 130. Details of vflashpartition subcommand

vflashpartition	
Description	Manages the partitions on the vFlash SD card. **NOTE:** • To run this subcommand, you must have the iDRAC Enterprise license. • After iDRAC restart, the status of the previous operation performed on the partition(s) is erased.
Synopsis	`racadm vflashpartition <create | delete | status | list> -i<index> -o<label> -e<emulation type> -s<size> -f<format type> -t<partition type> -l<path> -u<user> -p<password> -a`

Input	• `-o` — Label that is displayed when the partition is mounted on the operating system. This option must be a string of up to six alphanumeric characters. VFLASH is the only accepted volume label for non-Dell SD card.
	• `-e` — Emulation type must be either floppy, cddvd, or hdd.
	  ○ `floppy` — emulates a floppy disk
	  ○ `cddvd` — emulates a CD or DVD
	  ○ `hdd` — emulates a hard disk
	• `-s` — Partition size in MB.
	• `-f` — Format type for the partition based on the type of the file system. Valid options are `raw`, `ext2`, `ext3`, `fat16`, and `fat32`.
	• `-t` — Create a partition of the following type:
	  ○ `empty` — Creates an empty partition
	  ○ `image` — Creates a partition using an image relative to iDRAC.
	  Creation of a partition may be unsuccessful if:
	  ○ The network share is not reachable.
	  ○ The user name or password provided is not correct.
	  ○ The file provided does not exist.
	  ○ The memory available on the SD card is lesser than size of the image file.
	• `-l` — Specifies the remote path relative to iDRAC.
	• `-u` — User name for accessing the remote image.
	• `-p` — Password for accessing the remote image.
	• `-a` — Display the status of operations on all the existing partitions.
	• `list` — Lists the existing partitions and its properties.

Example	• Create a 20MB empty partition. `racadm vflashpartition create -i 1 -o Drive1 -e hdd -t empty -f fat16 -s 20`

Table 130. Details of vflashpartition subcommand (continued)

vflashpartition	

	• Create a partition from a remote image.
	`racadm vflashpartition create -i 1 -o Drive1 -e cddvd -t image -l //ipaddress/sharefolder/isoimge.iso -u username -p xxx`
	A new partition is created. By default, the created partition is read-only. This command is case-sensitive for the image filename extension. If the filename extension is in uppercase, for example FOO.ISO instead of FOO.iso, then the command returns a syntax error.
	NOTE:
	○ This feature is not supported in Local RACADM.
	○ Creating vFlash partition from an image file on the CFS or NFS IPv6 enabled network share is not supported.
	• Delete a partition.
	`racadm vflashpartition delete -i 1`
	• Status of operation on partition 1.
	`racadm vflashpartition status -i 1`
	• Status of all the existing partitions.
	`racadm vflashpartition status -a`
	• List all the existing partitions and its properties.
	`racadm vflashpartition list`

vflashsd

Table 131. Details of vflashsd

vflashsd	
Description	Allows you to initialize or get the status of the vFlash SD card. The initialize operation removes all the existing partitions and resets the card. The status operation displays the status of the last operation performed on the card. To run this subcommand, you must have the Access Virtual Media privilege. **NOTE:** After you restart the iDRAC, the status of the previous initialize operation is erased.
Synopsis	• `racadm vflashsd initialize` • `racadm vflashsd status`
Input	• `Initialize`— performs initialize operation on SD card. • `Status` — indicates to view the progress or status report of the initialize operation.
Output	If initialization is in progress, the message `Initialization of the vFlash SD Card is now in progress` is displayed. If unsuccessful, appropriate error message is displayed. If the status of the last operation performed is successful, the message `LastAction Progress Status==========Initialize SD Card 100 % Complete` is displayed. If unsuccessful, appropriate error message is displayed.

vmdisconnect

Table 132. Details of vmdisconnect

vmdisconnect	
Description	Allows you to end another Virtual Media session. After the session ends, the web-based interface reflects the correct connection status. Enables an iDRAC user to disconnect all active Virtual Media sessions. The active Virtual Media sessions are displayed on iDRAC web-based interface or by running the RACADM subcommands `remoteimage` or `getssninfo`. To run this subcommand, you must have the Access Virtual Media permission.
Synopsis	`racadm vmdisconnect`

witnessnodepoweraction

Table 133. Details of witnessnodepoweraction

witnessnodepoweraction	
Description	The witnessnodepoweraction command is used to perform witness node power management operations.
Synopsis	`racadm witnessnodepoweraction <action>`
Input	`<action>` – Specifies the witness node power management operation to perform. The possible values are: • `powerdown` : power witness node off • `powerup` : power witness node on • `hardreset` : force hard witness node power reset • `reseat` : re-seat witness node • `powerstatus` : display current power status of witness node

Example	To power down witness node:
	`racadm witnessnodepoweraction powerdown`
	To get the witness node power status:
	`racadm witnessnodepoweraction powerstatus`
	To power on witness node:
	`racadm witnessnodepoweraction powerup`
	To force witness node power hard reset:
	`racadm witnessnodepoweraction hardreset`
	To re-seat witness node:
	`racadm witnessnodepoweraction reseat`

4

Legacy and New Groups and Objects

NOTE: To avoid errors in the scripts, ensure that you use the New Groups and Objects along with the new subcommands. For the list of deprecated and new subcommands, see the section Deprecated and New Subcommands

Table 134. Legacy and New Groups and Objects

Legacy Groups and Objects	New Groups and Objects
idRacInfo	iDRAC.Info
idRacType	Type
idRacProductInfo	Product
idRacDescriptionInfo	Description
idRacVersionInfo	Version
idRacBuildInfo	Build
idRacName	Name
cfgActiveDirectory	iDRAC.ActiveDirectory
cfgADEnable	Enable
cfgADRacDomain	RacDomain
cfgADRacName	RacName
cfgADAuthTimeout	AuthTimeout
cfgADType	Schema
cfgADDomainController1	DomainController1
cfgADDomainController2	DomainController2
cfgADDomainController3	DomainController3
cfgADGlobalCatalog1	GlobalCatalog1
cfgADGlobalCatalog2	GlobalCatalog2
cfgADGlobalCatalog3	GlobalCatalog3
cfgADCertValidationEnable	CertValidationEnable
cfgADSSOEnable	SSOEnable
cfgADDcSRVLookupEnable	DCLookupEnable
cfgADDcSRVLookupbyUserdomain	DCLookupByUserDomain
cfgADDcSRVLookupDomainName	DCLookupDomainName
cfgADGcSRVLookupEnable	GCLookupEnable
cfgADGcRootDomain	GCRootDomain
cfgLanNetworking	iDRAC.Nic
cfgNicEnable	Enable
cfgNicMacAddress	MACAddress
cfgDNSRacName	DNSRacName

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgNicSelection	Selection
cfgNicFailoverNetwork	Failover
cfgDNSDomainName	DNSDomainName
cfgDNSDomainNameFromDHCP	DNSRacName
cfgDNSRegisterRac	DNSRegister
cfgNicVLanEnable	VLanEnable
cfgNicVLanID	VLanID
cfgNicVLanPriority	VLanPriority
cfgIpv4LanNetworking	iDRAC.IPv4
cfgNicIPv4Enable	Enable
cfgNicIpAddress	Address
cfgNicNetmask	NetMask
cfgNicGateway	Gateway
cfgNicUseDhcp	DHCPEnable
cfgDNSServersFromDHCP	DNSFromDHCP
cfgDNSServer1	DNS1
cfgDNSServer2	DNS2
cfgIpv6LanNetworking	iDRAC.IPv6
cfgIPv6Enable	Enable
cfgIPv6Address1	Address1
cfgIPv6Gateway	Gateway
cfgIPv6PrefixLength	PrefixLength
cfgIPv6AutoConfig	AutoConfig
cfgIPv6LinkLocalAddress	LinkLocalAddress
cfgIPv6Address2	Address2
cfgIPv6Address3	Address3
cfgIPv6Address4	Address4
cfgIPv6Address5	Address5
cfgIPv6Address6	Address6
cfgIPv6Address7	Address7
cfgIPv6Address8	Address8
cfgIPv6Address9	Address9
cfgIPv6Address10	Address10
cfgIPv6Address11	Address11
cfgIPv6Address12	Address12
cfgIPv6Address13	Address13
cfgIPv6Address14	Address14

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgIPv6Address15	Address15
cfgIPv6DNSServersFromDHCP6	DNSFromDHCP6
cfgIPv6DNSServer1	DNS1
cfgIPv6DNSServer2	DNS2
cfgServerPower	System.ServerPwr
cfgServerPowerStatus	Status
cfgServerActualPowerConsumption	Realtime.Power
cfgServerMinPowerCapacity	Cap.MinThreshold
cfgServerMaxPowerCapacity	Cap.MaxThreshold
cfgServerPeakPowerConsumption	Max.Power
cfgServerPeakPowerConsumptionTimestamp	Max.Power.Timestamp
cfgServerPowerConsumptionClear	Max.PowerClear
cfgServerPowerCapWatts	Cap.Watts
cfgServerPowerCapBtuhr	Cap.BtuHr
cfgServerPowerCapPercent	Cap.Percent
cfgServerPowerCapEnable	Cap.Enable
cfgServerPowerLastHourAvg	Avg.LastHour
cfgServerPowerLastDayAvg	Avg.LastDay
cfgServerPowerLastWeekAvg	Avg.LastWeek
cfgServerPowerLastHourMinPower	Min.LastHour
cfgServerPowerLastHourMinTime	Min.LastHour.Timestamp
cfgServerPowerLastHourMaxPower	Max.LastHour
cfgServerPowerLastHourMaxTime	Max.LastHour.Timestamp
cfgServerPowerLastDayMinPower	Min.LastDay
cfgServerPowerLastDayMinTime	Min.LastDay.Timestamp
cfgServerPowerLastDayMaxPower	Max.LastDay
cfgServerPowerLastDayMaxTime	Max.LastDay.Timestamp
cfgServerPowerLastWeekMinPower	Min.LastWeek
cfgServerPowerLastWeekMinTime	Min.LastWeek.Timestamp
cfgServerPowerLastWeekMaxPower	Max.LastWeek
cfgServerPowerLastWeekMaxTime	Max.LastWeek.Timestamp
cfgServerPowerInstHeadroom	Realtime.Headroom
cfgServerPowerPeakHeadroom	Max.Headroom
cfgServerActualAmperageConsumption	Realtime.Amps
cfgServerPeakAmperage	Max.Amps
cfgServerPeakAmperageTimeStamp	Max.Amps.Timestamp
cfgServerCumulativePowerConsumption	EnergyConsumption

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgServerCumulativePowerConsumptionTimeStamp	EnergyConsumption.StarttimeStamp
cfgServerCumulativePowerClear	EnergyConsumption.Clear
cfgServerPowerPicEAllocation	PCIePowerAllocation
cfgServerPowerSupply	System.Power.Supply
cfgServerPowerSupplyIndex	Index
cfgServerPowerSupplyInputStatus	LineStatus
cfgServerPowerSupplyMaxInputPower	MaxInputPower
cfgServerPowerSupplyMaxOutputPower	MaxOutputPower
cfgServerPowerSupplyOnlineStatus	Status
cfgServerPowerSupplyFwVer	FwVer
cfgServerPowerSupplyCurrentDraw	CurrentDraw
cfgServerPowerSupplyType	Type
cfgServerPowerBusMonitoring	PMBusMonitoring
cfgUserAdmin	iDRAC.Users
cfgUserAdminIndex	NA
cfgUserAdminUserName	UserName
cfgUserAdminPassword	Password
cfgUserAdminEnable	Enable
cfgUserAdminPrivilege	Privilege
cfgUserAdminIpmiLanPrivilege	IpmiLanPrivilege
cfgUserAdminIpmiSerialPrivilege	IpmiSerialPrivilege
cfgUserAdminSolEnable	SolEnable
cfgRemoteHosts	iDRAC.SysLog
cfgRhostsSyslogEnable	SysLogEnable
cfgRhostsSyslogServer1	Server1
cfgRhostsSyslogServer2	Server2
cfgRhostsSyslogServer3	Server3
cfgRhostsSyslogPort	Port
cfgRhostsFwUpdateTftpEnable	FwUpdateTFTPEnable
cfgRhostsFwUpdateIpAddr	FwUpdateIPAddr
cfgRhostsFwUpdatePath	FwUpdatePath
cfgRhostsSmtpServerIpAddr	SMTPServerIPAddress
cfgEmailAlert	iDRAC.EmailAlert
cfgEmailAlertIndex	NA
cfgEmailAlertEnable	Enable
cfgEmailAlertAddress	Address
cfgEmailAlertCustomMsg	CustomMsg

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgSsnMgtSshIdleTimeout	iDRAC.SSH
	Enable
	Port
	Timeout
cfgSsnMgtRacadmTimeout	iDRAC.Racadm
	Enable
	Timeout
cfgSsnMgtConsRedirMaxSessions	iDRAC.VirtualConsole
	EncryptEnable
	Enable
	PluginType
	LocalVideo
	Port
	MaxSessions
	Timeout
	AccessPrivilege
cfgSsnMgtWebserverTimeout	iDRAC.Webserver
	Enable
	HttpPort
	Timeout
	HttpsPort
	LowerEncryptionBitLength
[cfgSerial]	iDRAC.Serial
cfgSerialBaudRate	BaudRate
cfgSerialConsoleEnable	Enable
cfgSerialConsoleIdleTimeout	IdleTimeout
cfgSerialConsoleNoAuth	NoAuth
cfgSerialConsoleCommand	Command
cfgSerialHistorySize	HistorySize
cfgSerialConsoleQuitKey	QuitKey
cfgSerialCom2RedirEnable	Enable
cfgSerialSshEnable	iDRAC.SSH
[cfgOobSnmp]	iDRAC.SNMP
cfgOobSnmpAgentEnable	AgentEnable
cfgOobSnmpAgentCommunity	AgentCommunity
cfgNetTuningNic100MB	iDRAC.Nic
cfgNetTuningNicFullDuplex	iDRAC.Nic

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgNetTuningNicMtu	iDRAC.Nic
cfgNetTuningNicAutoneg	iDRAC.Nic
cfgRacTuneRemoteRacadmEnable=1	iDRAC.Racadm
cfgRacTuneWebserverEnable=1	iDRAC.Webserver
cfgRacTuneHttpPort=80	iDRAC.Webserver
cfgRacTuneHttpsPort=443	iDRAC.Webserver
cfgRacTuneSshPort=22	iDRAC.SSH
cfgRacTuneConRedirEnable=1	iDRAC.VirtualConsole
cfgRacTuneConRedirPort=5900	iDRAC.VirtualConsole
cfgRacTuneConRedirEncryptEnable=1	iDRAC.VirtualConsole
cfgRacTuneLocalServerVideo=1	iDRAC.VirtualConsole
cfgRacTuneIpRangeEnable=0	RangeEnable
cfgRacTuneIpRangeAddr=192.168.1.1	RangeAddr
cfgRacTuneIpRangeMask=255.255.255.0	RangeMask
cfgRacTuneTimezoneOffset=0	TimeZoneOffset
cfgRacTuneDaylightOffset=0	DaylightOffset
cfgRacTuneAsrEnable=1	iDRAC.ASRConfig.Enable
cfgRacTunePlugintype=0	iDRAC.VirtualConsole
cfgRacTuneCtrlEConfigDisable=0	PrebootConfig
cfgRacTuneLocalConfigDisable=0	LocalConfig
cfgRacTuneVirtualConsoleAuthorizeMultipleSessions=0	iDRAC.VirtualConsole
ifcRacManagedNodeOs	System.ServerOS
ifcRacMnOsHostname	HostName
ifcRacMnOsOsName	OSName
cfgRacSecurity	iDRAC.Security
cfgRacSecCsrKeySize	CsrKeySize
cfgRacSecCsrCommonName	CsrCommonName
cfgRacSecCsrOrganizationName	CsrOrganizationName
cfgRacSecCsrOrganizationUnit	CsrOrganizationUnit
cfgRacSecCsrLocalityName	CsrLocalityName
cfgRacSecCsrStateName	CsrStateName
cfgRacSecCsrCountryCode	CsrCountryCode
cfgRacSecCsrEmailAddr	CsrEmailAddr
cfgRacVirtual	iDRAC.VirtualMedia
cfgVirMediaAttached	Attached
cfgVirtualBootOnce	BootOnce
cfgVirMediaFloppyEmulation	FloppyEmulation

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgLDAP	iDRAC.LDAP
cfgLdapEnable	Enable
cfgLdapServer	Server
cfgLdapPort	Port
cfgLdapBaseDN	BaseDN
cfgLdapUserAttribute	UserAttribute
cfgLdapGroupAttribute	GroupAttribute
cfgLdapGroupAttributeIsDN	GroupAttributeIsDN
cfgLdapBindDN	BindDN
cfgLdapBindPassword	BindPassword
cfgLdapSearchFilter	SearchFilter
cfgLdapCertValidationEnable	CertValidationEnable
cfgLdapRoleGroup	iDRAC.LDApRole
cfgLdapRoleGroupIndex	NA
cfgLdapRoleGroupDN	DN
cfgLdapRoleGroupPrivilege	Privilege
cfgStandardSchema	iDRAC.ADGroup
cfgSSADRoleGroupIndex	NA
cfgSSADRoleGroupName	Name
cfgSSADRoleGroupDomain	Domain
cfgSSADRoleGroupPrivilege	Privilege
cfgIpmiSerial	iDRAC.IPMISerial
cfgIpmiSerialConnectionMode	ConnectionMode
cfgIpmiSerialBaudRate	BaudRate
cfgIpmiSerialFlowControl	FlowControl
cfgIpmiSerialChanPrivLimit	ChanPrivLimit
cfgIpmiSerialLineEdit	LineEdit
cfgIpmiSerialDeleteControl	DeleteControl
cfgIpmiSerialEchoControl	EchoControl
cfgIpmiSerialHandshakeControl	HandshakeControl
cfgIpmiSerialNewLineSequence	NewLineSeq
cfgIpmiSerialInputNewLineSequence	InputNewLineSeq
cfgIpmiSol	iDRAC.IPMISol
cfgIpmiSolEnable	Enable
cfgIpmiSolBaudRate	BaudRate
cfgIpmiSolMinPrivilege	MinPrivilege
cfgIpmiSolAccumulateInterval	AccumulateInterval

Table 134. Legacy and New Groups and Objects (continued)

Legacy Groups and Objects	New Groups and Objects
cfgIpmiSolSendThreshold	SendThreshold
cfgIpmiLan	iDRAC.IPMILan
cfgIpmiLanEnable	Enable
cfgIpmiLanPrivilegeLimit	PrivLimit
cfgIpmiLanAlertEnable	AlertEnable
cfgIpmiEncryptionKey	EncryptionKey
cfgIpmiPetCommunityName	CommunityName
cfgUserDomain	iDRAC.UserDomain
cfgUserDomainIndex	NA
cfgUserDomainName	Name
cfgSmartCard	iDRAC.SmartCard
cfgSmartCardLogonEnable	SmartCardLogonEnable
cfgSmartCardCRLEnable	SmartCardCRLEnable
cfgVFlashSD	iDRAC.vFlashSD
cfgVFlashSDSize	Size
cfgVFlashSDLicensed	Licensed
cfgVFlashSDAvailableSize	AvailableSize
cfgVFlashSDHealth	Health
cfgVFlashSDEnable	Enable
cfgVFlashSDWriteProtect	WriteProtect
cfgVFlashSDInitialized	Initialized
cfgVFlashPartition	iDRAC.vFlashPartition
cfgVFlashPartitionIndex	NA
cfgVFlashPartitionSize	Size
cfgVFlashPartitionEmulationType	EmulationType
cfgVFlashPartitionFlashOSVolLabel	VolumeLabel
cfgVFlashPartitionFormatType	FormatType
cfgVFlashPartitionAccessType	AccessType
cfgVFlashPartitionAttachState	AttachState
cfgServerInfo	iDRAC.ServerBoot
cfgServerBootOnce	BootOnce
cfgServerFirstBootDevice	FirstBootDevice
cfgLogging	iDRAC.Logging
cfgLoggingSELOEMEventFilterEnable	SELOEMEventFilterEnable
cfgIpmiPetAlertEnable	Enable
cfgIpmiPetAlertDestIpAddr	DestAddr

Topics:

- cfgSSADRoleGroupPrivilege (Read or Write)

cfgSSADRoleGroupPrivilege (Read or Write)

Table 135. cfgSSADRoleGroupPrivilege

cfgSSADRoleGroupPrivilege	
Description	Use the bit mask numbers listed in the table below to set role-based authority privileges for a Role Group.
Legal Values	• For iDRAC: 0x00000000 to 0x000001ff
Default	<blank>

Example

```
racadm get -g cfgStandardSchema -i 1
```

```
# cfgSSADRoleGroupIndex=1
cfgSSADRoleGroupName=blsys-1
cfgSSADRoleGroupDomain=
cfgSSADRolGroupPrivilege=3081
```

Table 136. Role Group privileges and their Bit Masks

Role Group Privilege	Bit Mask
Login to iDRAC	0x00000001
Configure iDRAC	0x00000002
Configure Users	0x00000004
Clear Logs	0x00000008
Execute Server Control Commands	0x00000010
Access Virtual Console	0x00000020
Access Virtual Media	0x00000040
Test Alerts	0x00000080
Execute Debug Commands	0x00000100

5

Error Codes

An error code or a return code is an integer value which represents the status of a command that is run. Running any valid racadm command generates an error code.

To view an error code, you need to run another command after completion of the original command as below:

- `echo$?`—for Linux operating system
- `echo %errorlevel%`—for Windows operating system

0	Success
1	Generic failure examples • All iDRAC internal failures • Any read/write failures of iDRAC internal data • Failures due to unknown reasons
2	• When an invalid or out of range value is specified for any argument. • When the length of an argument (filename/path) is larger than allowed.
3	• When racadm command entered is incorrect/invalid. • When any command/option entered is not supported with the current interface/platform.
4	Syntax of the command is not correct, or invalid number of arguments are passed to the command.
5	When current iDRAC user does not have privileges to run the command.
6	When current iDRAC user does not have the required iDRAC license, or the existing license has expired.
7	When iDRAC does not have enough resources.
8	When iDRAC is running a similar job.
9	Failures (Write failures, invalid share details, mount failures, and so on) related to remote shares (CIFS/NFS/FTP/TFTP/HTTP/HTTPS).
10	Failure to transfer data from/to local interface
11	• When lockdown mode is enabled. • When dependent feature is disabled. • When dependent attributes are not configured/invalid.
12	Unable to connect to iDRAC remotely (remote racadm connect failures).
13	Issues related to IPMI failures.
14	Failure to transfer data from remote Interface.
15	Any session-related issues or state of the command.
16	Commands failing due to Invalid Keys/Signing Error.
17	Syntax of the command is correct but arguments that are passed to the command are not correct (Invalid FQDD, Invalid Object Specified).