Dell™ OpenManage™

Deployment Toolkit Version 3.2

Command Line Interface Reference Guide

Notes and Cautions

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

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

Information in this document is subject to change without notice.
© 2009 Dell Inc. All rights reserved.

Reproduction of these materials in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: *Dell*, the *DELL* logo, *OpenManage,* and *PowerEdge* are trademarks of Dell Inc.; *Microsoft*, *Windows*, *Windows NT*, *Vista*, and *Windows Server* are registered trademarks of Microsoft Corporation in the United States and/or other countries; *Novell*, *NetWare*, and *SUSE* are registered trademarks of Novell, Inc. in the United States and other countries; *Red Hat* and *Red Hat Enterprise Linux* are registered trademarks of Red Hat, Inc. in the United States and/or other countries; *Intel*, *Pentium*, and *EtherExpress* are registered trademarks of Intel Corporation in the United States and/or other countries; *AMD*, *AMD Opteron*, *AMD-V*, and *AMD PowerNow*! are trademarks of Advanced Micro Devices, Inc. in the United States and/or other countries; *UNIX* is a registered trademark of The Open Group in the United States and other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

December 2009

Contents

1 Introduction 9

What's New in This Release **9**

Requirements **9**

Toolkit Utilities **10**

Overview 10

System Configuration Utility 10

RAID Configuration Utility 10

RAC Configuration Utility 10

Disk Partitioning Utility 10

Replication **11**

Other Dell Documents You Might Need **13**

Obtaining Technical Assistance **14**

2 Command Syntax Overview 15

Command Line Syntax 15

Case Sensitivity 17

Command Line Option Delimiters 17

Read and Write Commands 18

File Input and Output Commands 18

Log Files 18

Help Option 19

Error Checking and Error Messages **19**

3 SYSCFG 21

Features **21**

SYSCFG General Options **22**

SYSCFG for BIOS Configuration **27**

Options for BIOS Configuration 27

SYSCFG for BMC and Remote Access Controller Configuration **84**

BMC and Remote Access Controller Configuration Options 85

SYSCFG for State Configuration **127**

SYSCFG Options for State Configuration 127

SYSCFG for System Configuration **129**

Options for System Configuration 129

SYSCFG for IPv6 Configuration **139**

PCI Reporting **140**

Environment Variable File 141

4 RAIDCFG 143

Features **143**

Supported RAID Controllers **143**

RAIDCFG Dependencies **144**

RAIDCFG Options and Arguments **144**

RAID Configuration Utility Options and Arguments . . . **150**

General Help 151

Enumerating RAID Controllers 152

Creating Virtual Disks 154
Enumerating Array Disks 167
Initializing Virtual Disks 176
Importing and Clearing Foreign Configurations 177
Deleting Virtual Disks 179
Assigning and Unassigning Global Hot Spares 180
Setting Environment Variables 181
RAID Replication Options 186
Miscellaneous Options 188

Quick Reference to RAIDCFG Commands 190

5 UPINIT 193

Features 193

Creating a Partition Using UPINIT 193

UPINIT Dependencies 194

UPINIT Options and Arguments 194

6 RACADM 201

Features 201

RACADM Options 202
Error Messages 206

RAC Configuration Utility Options, Subcommands, and Arguments 206
racadm Command 207
config/getconfig 209
getconfig Subcommand Description 211

fwupdate 213
Synopsis 213
Description 214
Input 214
Output 216
Examples 216
Updating the Firmware 216
getssninfo 217
getsysinfo 219
getraclog 222
Synopsis 222
Description 222
Output 223
Restrictions 223
gettracelog 223
Synopsis 223
Description 223
Output 223
help 224
racdump 224
racreset 225
racresetcfg 227
setrac 228

DRAC Property Database Group and Object Definitions 229

A Messages and Codes 231

SYSCFG Error Codes and Messages 231
Failure Messages 231

UPINIT Common Error Codes and Messages 241
Failure Messages 241

UPINIT Linux-Specific Error Codes and Messages **242**

UPINIT Windows PE-Specific Error Codes and Messages **243**

RAIDCFG Error Codes and Messages **243**

Failure Messages 243

RACADM Firmware Error Codes and Messages **257**

RACADM Utility Error Codes and Messages **259**

B BMC Platform Events Filter Alert Messages 263

C Sample File Formats 265

Sample SYSCFG Utility .ini File Format **265**

Sample RAIDCFG Utility .ini File Format **281**

Sample RACADM Utility .ini File Format **282**

D Summary of SYSCFG and RAIDCFG Options 289

SYSCFG Options **289**

RAIDCFG Options **318**

Index 323

1

Introduction

Dell™ OpenManage™ Deployment Toolkit (DTK) includes a set of utilities for configuring and deploying Dell PowerEdge™ systems. DTK is designed for customers who need to build scripted installations in order to deploy large numbers of systems in a reliable fashion without having to dramatically change their current deployment processes.

DTK consists of command line utilities to configure various system features, sample scripts to perform common deployment tasks, and documentation for each utility. You can use DTK in a Microsoft® Windows® Preinstallation Environment (Windows PE) or a Linux environment.

What's New in This Release

This release of DTK includes support for:

- New SYSCFG options for BIOS configuration
- Support for Series 7 PERC controllers
- Support for S100 and S300 software RAID controllers

NOTE: For the list of PowerEdge systems supported for this version of DTK, see the **readme.txt** file in the root folder or on the Dell Support website at **support.dell.com/manuals**.

Requirements

For Windows PE, the DTK utilities support Windows PE version 2005 (created using 32-bit version of Microsoft Windows Server® 2003, Service Pack 1 [SP1]) and Windows PE 2.0 (created using 32-bit and 64-bit version built on the Windows Vista® kernel).

For embedded Linux, the DTK utilities can be run on Red Hat® Enterprise Linux® (version 4, update 4) 32-bit.

Toolkit Utilities

Overview

DTK contains utilities that allow you to configure the BIOS, baseboard management controller (BMC), remote access controller (RAC), RAID controllers, and hard-drive partitions on supported Dell systems. Additionally, the utilities can be integrated with the sample files provided with the toolkit to fully configure one-to-many target systems in a scripted mass system deployment.

NOTE: In a Linux environment, the DTK utilities do not have a **.exe** extension.

System Configuration Utility

The SYSCFG utility performs the following tasks:

- Reports and sets BIOS configuration options
- Reports and sets BMC/RAC configuration options
- Reports and sets user-configurable states
- Reports system information, including PCI device detection

RAID Configuration Utility

The RAIDCFG utility reports and sets RAID configuration options.

RAC Configuration Utility

The RACADM utility reports and sets RAC configuration options for Dell Remote Access Controller (DRAC) III (Linux only) and DRAC 4.

NOTE: DRAC 5 is configured by SYSCFG.

Disk Partitioning Utility

The UPINIT script creates, formats, and populates a Dell Utility Partition.

Replication

File Format

The **-i** and **-o** options use a **.ini** file format for SYSCFG options. All name/value entries that follow the `[syscfg]` section header in the **.ini** file belong to the SYSCFG utility. For an example of the **syscfg.ini** file, see "Sample SYSCFG Utility .ini File Format."

SYSCFG Replication Rules

Not all BIOS and BMC options can be replicated using a **.ini** file. For example, boot sequence and device sequence are only replicated if a device name list can be supplied. A numerical device list cannot be replicated since these index values can change from system to system. In addition, because the service tag information is static, it is not commented out in the output file or replicated. See the description of each option for further replication information.

The **syscfg.ini** file cannot be used across different systems. The file output operation places system identification information at the beginning of the `[syscfg]` section. This information is used to determine if the file can be accepted as input for a system. The following information is used for system identification:

- System ID Byte(s)
- System Name
- BIOS Version

If these values do not match the values found on the system, the file input operation fails.

The following is the SYSCFG behavior during replication:

- Options not available in SYSCFG are termed invalid options. If SYSCFG encounters an invalid option in the **syscfg.ini** file, the SYSCFG utility terminates.
- Unsupported options are options available in SYSCFG but not applicable on certain systems. If SYSCFG encounters an unsupported option, SYSCFG logs this option and continues to the next option.

  For example, the **virtualization** option is not available on *x*8*xx* series systems.

- Unsupported arguments are arguments valid in SYSCFG but not applicable on certain systems. If SYSCFG encounters an unsupported argument, SYSCFG terminates.

  For example, `syscfg --embsataraid=ahci` is not applicable on some *x*9*xx* series systems.

- SYSCFG logs a message in the log file for each option processed in the **syscfg.ini** file. To generate the log file, use the **logfile** option.

RAID Replication

The RAID replication feature reads the RAID configuration information from the source system and creates a **raid.ini** file. This **raid.ini** file can be applied on the RAID configurations of the target system. The RAID replication requires both, the source system and the target system to have similar RAID controllers.

RACADM Replication

The **RACREP.BAT** sample script applies RAC configuration options to the target system based on the configuration information that has been saved in a configuration file. User input is optional, depending on variables set in the **RACREP.BAT** sample script. This script uses the **RACADM.EXE** utility to configure the RAC in the target system using the RAC configuration file, **raccfg.ini**. The **raccfg.ini** configuration file is passed as the first parameter to the **RACREP.BAT** script. If this parameter is not passed, the default variable values used in this script are set in the **TKENVSET.BAT** scripts. An optional second parameter can be passed to this file, which specifies the IP address used in configuring the RAC. The **raccfg.ini** file is generated with the **RACCAP.BAT** sample script.

Other Dell Documents You Might Need

Besides this *Command Line Interface Reference Guide*, you can find the following guides on the Dell OpenManage documentation page of the Dell Support website at **support.dell.com/manuals**.

- The *Dell OpenManage Deployment Toolkit User's Guide* provides best practice procedures that focus on the basic tasks for successful deployment of Dell systems.
- The *Dell Systems Software Support Matrix* provides information about the various Dell systems, the operating systems supported by these systems, and the Dell OpenManage components that can be installed on these systems.
- The *Dell OpenManage Installation and Security User's Guide* provides additional information about performing an unattended installation of Dell OpenManage Server Administrator on systems running supported Windows, Red Hat Enterprise Linux, and SUSE® Linux Enterprise Server operating systems.
- The *Dell OpenManage Server Administrator User's Guide* provides information on using Server Administrator on supported operating systems.
- The *Dell Update Packages User's Guide* provides information about obtaining and using Dell Update Packages as part of your system update strategy.
- For information on terms used in this document, see the *Glossary* on the Dell support website.

Additionally, the Deployment Toolkit **readme.txt** file, which is available as part of the DTK download and on the Dell Support website at **support.dell.com**, provides the latest available information about the installation and operation of the DTK components.

Obtaining Technical Assistance

If at any time you do not understand a procedure described in this guide or if your product does not perform as expected, help tools are available to assist you. For more information about these help tools, see "Getting Help" in your system's *Hardware Owner's Manual*.

Additionally, Dell Enterprise Training and Certification is available; see **www.dell.com/training** for more information. This service may not be offered in all locations.

2

Command Syntax Overview

Syntax refers to the way a command and its parameters are entered. Dell™ OpenManage™ Deployment Toolkit (DTK) Command Line Interface (CLI) commands can be arranged in any order in a command line instance as long as they conform to the basic command line syntax.

Command Line Syntax

The general usage models of the DTK utilities are as follows:

- SYSCFG

  ```
  syscfg option1 [arg1] ... optionX [argX]
  ```

  OR

  ```
  syscfg bmcoption1 bmcsuboption1
  [arg1]...bmcsuboptionX [argX]
  ```

- RAIDCFG

  ```
  raidcfg [mandatory options] <optional arguments>
  ```

- RACADM

  ```
  racadm <options> <subcommand> <subcommand_options>
  ```

- UPINIT

  ```
  For WinPE:upinit --disk=0 --size=32 --file=
  t:\upimage.bin
  ```

  ```
  For Linux:upinit --disk=/dev/sda --size=32 --file=
  /tmp/upimage.bin
  ```

The DTK command line switches, configuration file formatting, and error reporting follow similar style and behavior. However, individual DTK utilities can sometimes differ from one another in significant ways. You should familiarize yourself with the command line syntax and utility-specific options and arguments for each utility before using DTK.

NOTE: Some of the command line options in DTK are followed by an asterisk. Such options are used for reporting purposes only.

Table 2-1 lists the generic command line characters and arguments present in the command line options with a short description of these characters.

Table 2-1. Command Line Syntax

Element	Description
-	Single-character options are prefixed with a preceding hyphen (-). **NOTE:** This delimiter is not applicable to Baseboard Management Controller (BMC) suboptions.
--	Multi-character options are prefixed with two (2) preceding hyphens (--).
utilname	Generic designation for a DTK utility name.
o	Generic single-character designation for an option.
optionX	Generic multi-character designation for a utility name, where X can be used to distinguish multiple options used in the same command line instance.
argX	Generic designation for an argument, where X can be used to distinguish multiple arguments used in the same command line instance.
[mandatory option]	Generic designation for a mandatory argument.
<optional argument>	Generic designation for an optional argument.
<*string*>	Generic designation for a string.
<*filename*>	Generic designation for a filename.
[ ]	Indicates a component of the command line. Enter only the information within the brackets, not the brackets themselves.
...	Indicates that the previous argument can be repeated several times in a command. Enter only the information, not the ellipsis (...) itself.

|	Separates two mutually exclusive choices in a syntax line. For example:
	`usb: Turns the usb controller on or off.`
	`Argument: enable | disable | legacy`
	Enter only one choice: `--usb=enable`, `--usb=disable`, or `--usb=legacy.`

Case Sensitivity

- Command line options, pre-defined and user-defined arguments, and filenames given as arguments are all case sensitive.
- Unless specified otherwise, enter all commands, options, arguments, and command line switches in lowercase letters.

Command Line Option Delimiters

- Single-character options are prefixed with a preceding hyphen (-).
- Multi-character options are prefixed with two (2) preceding hyphens (--).

Example: `utilname -o --option`

Table 2-2 lists some examples of valid and invalid DTK command lines.

Table 2-2. DTK Command Line Examples

Valid/ Invalid	DTK Command Line	Example
valid	`syscfg --option1 --option2`	`syscfg --asset --floppy`
invalid	`syscfg --option1=argument --option2 --option3`	`syscfg --asset=1750 --floppy --bootseq`
valid	`syscfg -o=filename --option1 --option2`	`syscfg -o=/tmp/myfile.txt --floppy --bootseq`
valid	`syscfg -l=filename --option1 --option2`	`syscfg -l= /tmp/myfile.txt --floppy --bootseq`
valid	`syscfg -i=filename --option1 --option2`	`syscfg -i= /tmp/myfile.txt --floppy --bootseq`
valid	`syscfg --option=argument bmcoption --option1=argument`	`syscfg --embnic=on pcp --hostname=webserver`

NOTE: Options that specify **report** or **set** actions should not be mixed in a command line instance.

NOTE: Example 2 is invalid because the **report** and **set** actions are used in the same command line.

NOTE: Examples 3, 4, and 5 are valid because the aliases use neither **report** nor **set** actions.

Read and Write Commands

Options can report a certain value or set of values based on the presence of an argument. These **read** or **write** actions are implied in the DTK command line arguments. The **get**, **read**, **set**, or **write** commands, for example, are not required.

NOTE: Options that specify **read** or **write** actions should not be mixed in a command line instance.

Table 2-3. Read and Write Command Examples

Valid/Invalid	DTK Command Line Example
valid	`syscfg --option1 --option2`
valid	`syscfg --option1=arg --option2=arg`
invalid	`syscfg --option1=arg --option2`

File Input and Output Commands

- File input is specified by the `-i <filename>` command, where `<filename>` is the name of the input file.
- File output is specified by the `-o <filename>` command, where `<filename>` is the name of the output file.

Log Files

The `-l <filename>` or `--logfile <filename>` option records information output on the command line to the specified log file. Each new line of output is preceded by a time stamp.

If the log file already exists, information is appended to the file. This allows multiple tools to use the same log file to record information. This option should be used instead of redirection to record a utility's output since time data can assist with task diagnosis.

The log duplicates all standard output and error information to the specified file. Each log file begins with a time stamp and utility name. For example, *YYYY/MM/DD HH:MM:SS <utilname> - <output text>*.

The following is an example of the logging behavior:

```
2003/11/28 10:23:17 syscfg - option1=on
2003/11/28 10:23:17 syscfg - option2=on
2003/11/28 10:23:17 syscfg - option3=off
```

NOTE: The log files may contain sensitive information such as passwords and authentication information. To protect such information, it is recommended that only the administrator access the log files.

Help Option

The **-h** and **--help** options display general usage information for the utility. If the argument matches a valid option, that option's usage information is displayed. If the option has arguments, the arguments are displayed, separated by a | character. If the argument does not match a valid option, a usage error is given (and usage information is displayed). This option cannot be replicated.

Error Checking and Error Messages

The DTK utilities check your commands for correct syntax when you enter them. When a command is executed successfully, a message displays stating that your command has been successful. Unrecognized or invalid options and arguments result in a usage error that displays the DTK utility name and version along with a short message. For information about the error messages, see "Messages and Codes."

3

SYSCFG

This section documents the Deployment Toolkit (DTK) system configuration utility. It describes the command line parameters, configuration file format, and individual executables used to configure server BIOS and baseboard management controller (BMC) settings, DTK state settings, and system information including PCI device detection.

Features

The SYSCFG utility has the following general features:

- Displays help and usage information
- Outputs configuration options to a file or screen
- Reads configuration options from a file or CLI parameters
- Configures BMC/remote access controller (RAC) users, local area network (LAN) channel and serial channel settings, BMC/RAC platform event filter (PEF) settings, and BMC/RAC serial-over-LAN (SOL) settings
- Configures the nonmaskable interrupt (NMI) and power button
- Reports the BMC/RAC firmware version, BMC/RAC device global unique identifier (GUID), and BMC/RAC LAN channel and serial channel information
- Reports BMC/RAC session information
- Clears BMC/RAC system event log (SEL)
- Restores BMC/RAC factory defaults
- Records and reports the state data value
- Displays system configuration information
- Returns specific error codes and messages
- Logs activity to a given filename
- Configures the BIOS features

NOTE: In Microsoft® Windows® Preinstallation Environment (Windows PE), the SYSCFG utility is located in **\dell\toolkit\tools** directory. In Linux, you can find it in in the **/opt/dell/toolkit/bin** directory.

SYSCFG General Options

NOTE: Some of the options in SYSCFG are followed by an asterisk. These commands do not accept any suboptions or arguments. The values associated with these commands are those that are reported by the BIOS. These values cannot be modified.

Table 3-1 lists the SYSCFG general options.

Table 3-1. SYSCFG General Options

Options	Suboptions	Valid Arguments	Description

No option	NA	NA	If an option is not given, the SYSCFG utility outputs usage information. The usage information is displayed in the format shown below.
			Example:
			`A:>syscfg`
			`syscfg version 1.X.123 A06`
			`© 2005 Dell Inc. All rights reserved.`
			`Usage: syscfg --option[=argument] or`
			`syscfg --option [argument] or`
			`syscfg option --suboption [=suboptionargument]`
			`For more information about a particular command, use the option '-h' followed by the command name.`
			`Example: syscfg -h bmcversion.`
			`Options without preceding delimiters have suboptions.`
			`Example: syscfg lancfgparams`
			`Options with preceding delimiters do not have suboptions.`
			`Example: syscfg --powerbutton`
			`option1 option4 option7`
			`option2 option5 option8`
			`option3 option6 option9`

Table 3-1. SYSCFG General Options *(continued)*

Options	Suboptions	Valid Arguments	Description

--envar		valid filename
		valid path
		media should be writable
			When used with the **–s** option, this option stores the environment variable data to a file. This file can be called from other scripts to set the environment variable. The value of <*filename*> need not be specified if the DTKENVSCR environment variable is set to a valid filename. In this case, the filename pointed to by DTKENVSCR is used to store the environment variable data.
			Example:
			`syscfg --mem -s=temp --envar= z:\scripts\file.bat`
			When used without the **-s** option, **--envar** takes the default variable.
			Linux Example:
			`syscfg --svctag --envar= /tmp/myvars.txt`
			`svctag = 2G8LC1S`
			`syscfg_var = '2G8LC1S'`
			`source /tmp/myvars.txt`
			Windows PE Example:
			`syscfg --svctag --envar= i:\myvars.bat`
			`svctag = 2G8LC1S`
			`syscfg_var = '2G8LC1S'`
			`call i:\myvars.bat`

Table 3-1. SYSCFG General Options *(continued)*

Options	Suboptions	Valid Arguments	Description

-h
or
--help
	NA	none
		or
		<valid option name>
			Without an argument, this option displays general usage information for the utility. If the argument matches a valid option, that option's usage information is displayed. If the option has arguments, the arguments are displayed, separated by a | character. If the option has suboptions, all suboptions, valid arguments, and a description are listed. If the argument does not match a valid option, a usage error is given (and usage information is displayed). This option cannot be replicated.
			Example:
			`A:>syscfg -h lanchannelaccess`
			`lanchannelaccess: Reports LAN channel access information.`
			`Suboptions:`
			`pefalerting: Enable or disable PEF (Platform Event Filter) alerting.`
			`Arguments: enable | disable`
			`ipmioverlan: Enable or disable IPMI over LAN access.`
			`Arguments: disable | alwaysavail`
			`channelprivlmt: Sets the maximum privilege level that can be accepted on the LAN channel.`
			`Arguments: user | operator | administrator`

Table 3-1. SYSCFG General Options *(continued)*

Options	Suboptions	Valid Arguments	Description
-i or --infile	NA	<*filename*>	This option directs the SYSCFG utility to take input from a .**ini** file. The utility searches the file for a section heading identical to the utility name. An error is returned if the file or section is not found. If the section is found, each name/value pair is applied to the system. The names must match a valid option, and the arguments must be in the proper format for the option. If an option is not available on a system and it is specified in a file, the utility ignores the option. If any errors are found in the format of the names or values, an error is returned and the options are not applied to the system. If this option is used with other function command options, they are applied in the order in which they appear on the command line, overriding any previous commands. This option can be replicated. Example: `A:>syscfg -i filename.ini`
-l or --logfile	NA	<*filename*>	This option logs the command line output to a time-stamped file. The utility either appends the information to an existing log file or creates a new file. The log file contains the same information as the standard output, plus timestamp information. Users should use this option instead of redirection for task diagnosis. This option can be replicated. See "Log Files" for more information. Example: `A:>syscfg -l logfile`

Table 3-1. SYSCFG General Options *(continued)*

Options	Suboptions	Valid Arguments	Description
-o or --outfile	NA	<*filename*>	This option prints all replicable options to the specified filename. The format of the output is in a **.ini** format, with the utility name as the section header. If a file with the same name already exists, the information is appended to the file. If this option is used with other function commands, the commands are applied in the order in which they appear. This option captures replicable BMC and BIOS options. Example: `A:>syscfg -o filename.ini`

-s	NA	<*string*>	This option prints the variable name and the value assigned to it to the console. This option when used with --envar, picks up the environment variable data and stores it in a file. This file can be called from a script. See "--envar" for more information.
			Example:
			`A:>syscfg -s ENVNAME --svctag`
			`svctag=SERVICE`
			`ENVNAME=SERVICE`

--version*			This option displays the version information, current time, and date for the utility. This option cannot be replicated.
			Example:
			`A:>syscfg --version`
			`syscfg version 1.X.XX AXX`
			`© 2005 Dell Inc. All rights reserved.`
			NOTE: The asterisk is not part of the command syntax.

SYSCFG for BIOS Configuration

SYSCFG uses BIOS interfaces to manipulate boot order and BIOS settings. It configures all options available on the BIOS setup screen, including boot order, embedded device configuration, and asset tag management.

Options for BIOS Configuration

Table 3-2 documents valid options and arguments along with a description of their expected behavior. Options and arguments are case sensitive. All options and pre-defined arguments are lowercase unless stated otherwise.

NOTE: Some of the following options or arguments might not be available on all systems due to the BIOS version or hardware feature set. Running SYSCFG without arguments displays only those options that are valid for your system.

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration

Option	Valid Arguments	Description	Applicable Systems

--acpower	on, off, last	This option sets the behavior for the system after AC power is lost. This option specifies how the system responds to the restoration of AC power and is particularly useful in systems that are turned off using a power strip. When set to **on**, the system turns on after AC is restored. When set to **off**, the system does not turn on after AC is restored. When set to **last**, the system turns on if the system was on when AC power was lost; if the system was off when AC power was lost, the system remains off when power is restored.
		This option is available on all supported systems. This value can be replicated.
		Example:
		`A:>syscfg --acpower=on`
		`acpower=on`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--adjcacheprefetch	enable, disable	When this option is set to **enabled**, the processor fetches the cache line containing the currently requested data, and the adjacent cache line.
		When this option is set to **disabled**, the processor fetches only the cache line containing the currently requested data.
		Example:
		`A:>syscfg --adjcacheprefetch=enable`
		`adjcacheprefetch=disable`
			All Dell PowerEdge systems

--asset	<*string*>	This option reports or sets the customer-programmable asset tag number for a system. The maximum length of an asset tag is 10 characters. Asset tag values cannot contain any spaces. This option is available on all supported systems. This value can be replicated. Example: `A:>syscfg --asset=`*`ASSETTAG`* `asset=`*`ASSETTAG`*	All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--assignintr	standard, distributed	This option controls the interrupt assignment of PCI devices in the system. This option is set to **standard** by default, causing standard interrupt routing that uses interrupt A, B, C, and D for all PCIe devices. When set to **distributed**, the interrupt routing is swizzled at the MCH root ports to minimize sharing of interrupts across all PCIe (and PCI-X in the Programmable Interrupt Controller (PIC) mode) devices.
		Example:
		`A:>syscfg --assignintr= standard`
		`assignintr=standard`
			All Dell PowerEdge systems

--bezelir	enable, disable	This option enables or disables the ESM to monitor and log front bezel intrusion conditions.
		Example:
		`A:>syscfg --bezelir= enable`
		`bezelir=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--bootmode	uefi, bios	This option enables booting to Unified Extensible Firmware Interface (UEFI) -capable operating systems or ensures compatibility with operating systems that do not support UEFI.
		Example:
		`A:>syscfg --bootmode=uefi`
		`bootmode=uefi`
			Dell PowerEdge *xx*1*x* systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--bootseq	numerical list, separated by commas or list of device names, separated by commas	This option sets the boot order for a system. Without an argument, this option prints the boot order list. The argument must be formatted as a comma-separated numerical list with no spaces. The list must be within the bounds of the current boot list, i.e. the low and high numbers must match, and the same number of entries must be supplied. This option is available on all supported systems. Systems that use a numerical list for boot order cannot be replicated. Some systems also allow the boot order to be expressed as a list of device names. Device names are formatted as a *name.location.instance* string, where *name* is the name of the device, *location* is either **slot** or **embedded** (**emb**), and *instance* is the numerical position of the device. Some device name examples are shown below. Systems that support a list of device names for boot order can be replicated.	All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

		Numerical Lists Examples:
		`A:>syscfg --bootseq= 2,3,4,5,1,6`
		`The following devices are set in the boot sequence:`
		`Device 2:* usbcdrom.slot.1 - USB CD-ROM device`
		`Device 3:* virtualcd.slot.1 – VIRTUAL CDROM`
		`Device 4:* hdd.emb.0 - Hard drive C:`
		`Device 5:* nic.emb.1 - MBA v2.5.12  Slot 0500`
		`Device 1:* virtualfloppy.slot.1 - VIRTUAL FLOPPY`
		`Device 6:* usbfloppy.slot.1 - USB Floppy device`
		NOTE: The asterisk indicates that the device is enabled in the BIOS.	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

		Device Name Examples
		Example of device names:
		`nic.slot.1` (network adapter 1 in PCI slot)
		`nic.emb.1` (network adapter 1 on system board)
		`hdd.emb.0` (hard drive C:)
		`cdrom.emb.0` (CD drive)
		Device Name Lists Examples
		Example 1:
		`#syscfg --bootseq`
		`The following devices are set in the boot sequence:`
		`Device 2:* cdrom.emb.0 - IDE CD-ROM device`
		`Device 3:* hdd.emb.0 - Hard drive C:`
		`Device 5:* virtual.slot.1 - VIRTUALCDROM DRIVE`
		`Device 1:* floppy.emb.0 - Diskette drive A:`
		`1226`	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
		Device 6:* virtual.slot.2 - VIRTUALFLOPPY DRIVE Device 4:* nic.emb.1 - IBA GE Slot 0638 v1226 Example 2: #syscfg --bootseq= nic.emb.1,virtual.slot. 1 The following devices are set in the boot sequence: Device 4:* nic.emb.1 - IBA GE Slot 0638 v VIRTUALFLOPPY DRIVE Device 2:* cdrom.emb.0 - IDE CD-ROM device Device 3:* hdd.emb.0 - Hard drive C: Device 5:* virtual.slot.1 - VIRTUALCDROM DRIVE Device 1:* floppy.emb.0 - Diskette drive A: The asterisk indicates that the device is enabled in the BIOS.	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--bootseqretry	enable, disable	This option enables or disables the boot sequence retry feature. When set to **enable**, the system re-attempts to set the boot order after a 30-second timeout if the last boot attempt has failed. This option can be replicated.
		`A:>syscfg --bootseqretry=enable`
		`bootseqretry=enable`
			All Dell PowerEdge systems

--cmosdefaults	enable, disable	This option requests a default CMOS value during the next reboot. The default values are **on** and **off**.
		`A:>syscfg --cmosdefaults=enable`
		`cmosdefaults=disable`
			Dell PowerEdge *xx*9*x* and later systems

--conboot	enable, disable	This option configures or reports whether console redirection occurs after boot. This option is available on all supported systems that support console redirection. This option can be replicated.
		Example:
		`A:>syscfg --conboot=enable`
		`conboot=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--conred	serial1, serial2, off, bmcsol, mmb	This option configures or reports the communication port for console redirection. If this option is set to a serial port, then the serial port option is not available. See the descriptions for "--serial1" and "--serial2." If only one serial port is present on a system, the **serial2** argument is not available. This option can be replicated.
		Example:
		`A:>syscfg --conred= serial1`
		`conred=serial1`
			All Dell PowerEdge systems

--conterm	vt100, ansi	This option configures or reports the terminal type for console redirection. This option is available on all supported systems that support console redirection. This option can be replicated.
		Example:
		`A:>syscfg --conterm= vt100`
		`conterm=vt100`
			All Dell PowerEdge systems

--cpuc1e	enable, disable	This option enables or disables C1-E. By default, it is enabled. This option can be replicated.
		Example:
		`A:>syscfg --cpuc1e= enable`
		`cpuc1e=enable`
			Dell PowerEdge *xx*1*x* systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--cpucore	1, 2, 4, 6, 8, 10, 12, all	This option controls the number of enabled cores in each processor. The default value is set to the maximum number of cores per processor.
		Example:
		`A:>syscfg --cpucore=1`
		`cpucore=1`
			Dell PowerEdge *xx*9*x* and later systems

--cpuxdsupport	enable, disable	This option enables or disables the execute disable (XD) feature of the CPU.
		Example:
		`A:>syscfg --cpuxdsupport=enable`
		`cpuxdsupport=enable`
			Dell PowerEdge *xx*9*x* and later systems running on Intel® processors

--cstates	enable, disable	This option enables or disables the power c states of the processor.
		`A:>syscfg --cstates=enable`
		`cstates=enable`
			Dell PowerEdge *xx*1*x* systems

--dbpm	enable, disable	This option enables or disables demand-based power management. This option can be replicated.
		Example:
		`A:>syscfg --dbpm=enable`
		`dbpm=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--devseq	numerical list, separated by commas or list of device names, separated by commas	This option sets the hard-drive sequence for a system. Without an argument, this option displays the device list. The argument must be formatted as a comma-separated numerical list of device index values. The list must be within the bounds of the current boot list. For example, the low and high numbers must match. Systems that use a numerical list for boot order cannot be replicated. This option is available on all supported systems. Some systems allow the boot order to be expressed as a list of device names. Systems that support device names also support replication of the boot order through the output file option. Device names are formatted as a *name.location.instance* string, where *name* is the name of the device, *location* is either **slot** or **embedded** (**emb**), and *instance* is the numerical position of the device. Some device name examples are shown below. Systems that support a list of device names for boot order can be replicated.	All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

	numerical list, separated by commas
	or
	list of device names, separated by commas
		Example 1:
		`A:>syscfg --devseq`
		`The following devices are set in the disk device sequence:`
		`Device 1:* hdd.emb.0 - System BIOS boot devices`
		`Device 2:* scsiraid.slot.3 - PERC 4/SC Adapter(bus 02 dev 02)`
		`Device 3:* usbkey.slot.0 - Hard-disk-emulated USB flash drive`
		Example 2:
		`A:>syscfg --devseq= hdd.emb.1,scsiraid.emb.1`
		`The following devices are set in the disk device sequence:Device 1:* hdd.emb.0 - System BIOS boot devices`
		`Device 2:* scsiraid.emb.1 - AIC-7899, A:00 Seagate`
		NOTE: The asterisk indicates that the device is enabled in the BIOS.	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embhypervisor	off, on	This option enables or disables the embedded hypervisor port.
		Example:
		`A:>syscfg --embhypervisor=on`
		`embhypervisor=on`
			All Dell PowerEdge systems

--embideraid	on, off	This option enables or disables the embedded IDE RAID controller. This option is only valid for supported systems that have IDE ROMB. This option can be replicated.
		Example:
		`A:>syscfg --embideraid=on`
		`embideraid=on`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embnic1	on, off, onnopxe, onwithiscsi	This option turns the first embedded NIC on with PXE on, off, or on without PXE enabled. This option is only valid for supported systems that have an NIC. If the NIC is enabled without PXE, it is not found in the boot order. If the NIC is turned on with PXE, it is placed at the end of the boot order. The **onnopxe** argument is not supported on all systems.
		The **onwithiscsi** argument enables the embedded NIC to boot from the iSCSI server. The **embnic1** option can be replicated.
		Example:
		`A:>syscfg --embnic1= onnopxe`
		`embnic1=onnopxe`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embnic2	on, off, onnopxe, onwithiscsi	This option turns the second embedded NIC on with PXE enabled, off, or on without PXE enabled. This option is only valid for supported systems that have two embedded NICs. If the second NIC is enabled without PXE, it is not found in the boot order. If the second NIC is turned on with PXE, it is placed at the end of the boot order. The **onnopxe** argument is not supported on all systems. This option can be replicated.
		The **onwithiscsi** argument enables the embedded NIC to boot from the iSCSI server. The **embnic2** option can be replicated.
		Example:
		`A:>syscfg --embnic2= onnopxe`
		`embnic2=onnopxe`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embnic3	on, off, onnopxe, onwithiscsi	This option turns the third embedded NIC on with PXE enabled, off, or on without PXE enabled. This option is only valid for supported systems that have three embedded NICs. If the second NIC is enabled without PXE, it is not found in the boot order. If the third NIC is turned on with PXE, it is placed at the end of the boot order. The **onnopxe** argument is not supported on all systems. This option can be replicated.
		The **onwithiscsi** argument enables the embedded NIC to boot from the iSCSI server. The **embnic3** option can be replicated.
		Example:
		`A:>syscfg --embnic3=onnopxe`
		`embnic3=onnopxe`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embnic4	on, off, onnopxe, onwithiscsi	This option turns the fourth embedded NIC on with PXE enabled, off, or on without PXE enabled. This option is only valid for supported systems that have four embedded NICs. If the fourth NIC is enabled without PXE, it is not found in the boot order. If the fourth NIC is turned on with PXE, it is placed at the end of the boot order. The **onnopxe** argument is not supported on all systems. This option can be replicated.
		The **onwithiscsi** argument enables the embedded NIC to boot from the iSCSI server. The **embnic4** option can be replicated.
		Example:
		`A:>syscfg --embnic4=onnopxe`
		`embnic4=onnopxe`
			All Dell PowerEdge systems

--embnic1nic2	enable, disable	This option enables or disables the operating system interface of the first and second embedded NIC controllers.
		Example:
		`A:>syscfg --embnic1nic2=enable`
		`--embnic1nic2=enable`
			Dell PowerEdge 1855, PowerEdge 6850, and PowerEdge *xx*1*x* systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embnic3nic4	enable, disable	This option enables or disables the operating system interface of the third and fourth embedded NIC controllers.
		Example:
		`A:>syscfg --embnic3nic4=enable`
		`--embnic3nic4=enable`
			Dell PowerEdge *xx*1*x* systems

--embnics	on, off	This option enables or disables both embedded NICs. This option is only present on systems that do not support the **embnic1** and **embnic2** options. This option can be replicated.
		Example:
		`A:>syscfg --embnics=on`
		`embnics=on`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embnic1pxe	enable, disable	This option enables or disables PXE on the first embedded NIC. If PXE is disabled, the first NIC is not found in the boot order. If PXE is enabled, the first NIC is placed at the end of the boot order. This option is only present on systems that do not support the **embnic1** option. This option can be replicated.
		Example:
		`A:>syscfg --embnic1pxe=enable`
		`embnic1pxe=enable`
			All Dell PowerEdge systems

--embnic2pxe	enable, disable	This option enables or disables PXE on the second embedded NIC. If PXE is disabled, the second NIC is not found in the boot order. If PXE is enabled, the second NIC is placed at the end of the boot order. This option is only present on systems that do not support the **embnic2** option. This option can be replicated.
		Example:
		`A:>syscfg --embnic2pxe=disable`
		`embnic2pxe=disable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embsataraid	off, combined, ata, raid, qdma	This option configures an embedded SATA RAID controller. This option can be replicated.
		`off` — disables the embedded SATA RAID controller.
		`combined` — sets the SATA RAID controller to combined mode.
		`ata` — sets SATA RAID controller to ATA mode.
		`raid` — sets SATA RAID controller to RAID mode.
		`qdma` — sets the SATA RAID controller to support ATAPI devices at transfer rates much higher than PIO. A device driver must be installed on your system to use the QDMA mode.
		Example:
		`A:>syscfg --embsataraid=off`
		`embsataraid=off`
			All Dell PowerEdge systems

--embscsi1	on, off	This option enables or disables the first embedded SCSI controller. This option is only valid for supported systems that have an embedded SCSI controller. This option can be replicated.
		Example:
		`A:>syscfg --embscsi1=on`
		`embscsi1=on`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embscsi2	on, off	This option enables or disables the second embedded SCSI controller. This option is only valid for supported systems that have an embedded SCSI controller. This option can be replicated.
		Example:
		`A:>syscfg --embscsi2=on`
		`embscsi2=on`
			All Dell PowerEdge systems

--embscsiraid	raid, off, scsi	This option enables or disables the embedded SCSI RAID controller. This option is only valid for supported systems that have SCSI ROMB. Some systems do not support the **scsi** argument. This option can be replicated.
		CAUTION: If you change the controller from SCSI to RAID mode, data loss may occur. Backup any data you need to save before changing modes.
		Example:
		`A:>syscfg --embscsiraid=raid`
		`embscsiraid=raid`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embscsiraidchb	raid, scsi	This option sets the second channel on an embedded RAID controller to SCSI or RAID. This option is only valid for supported systems that support RAID/RAID and RAID/SCSI settings for channels A and B. This option can be replicated.
		Example:
		`A:>syscfg --embscsiraidchb=raid`
		`embscsiraidchb=raid`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--extserial	com1, com2, rad	This option sets the behavior of the external serial connector. When set to **com1**, the BIOS maps the external serial connector to COM port 1. The **com1** setting is the default.
		
		When set to **com2**, the external serial connector is routed to the COM2 interface. Terminal escape sequences can toggle the external connector between the system (COM2) and the remote access device.
		
		When set to **rad**, the external serial connector is routed to the remote access device interface. Terminal escape sequences can toggle the external connector between the system (COM2) and the remote access device.
		
		This option can be replicated.
		
		Example:
		
		`A:>syscfg --extserial=com1`
		
		`extserial=com1`
		
		On *x9xx* systems, the **--serialcomm** option can be used with the external serial (**--extserial**) option instead of the **--conred** option.
			All Dell PowerEdge systems except PowerEdge 1955

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--embsdcard	off, on	This option enables or disables the embedded SD card port.
		Example:
		`A:>syscfg --embsdcard=off`
		`embsdcard=off`
			Dell PowerEdge *xx*1*x* systems

--embvideoctrl	enable, disable	This option enables or disables the embedded video controller.
		Example:
		`A:>syscfg --embvideoctrl=enable`
		`embvideoctrl=enable`
			Dell PowerEdge *xx*1*x* systems

--fiberchannel	enable, disable	This option enables or disables embedded fiber channel. This option can be replicated.
		Example:
		`A:>syscfg --fiberchannel=enable`
		`fiberchannel=enable`
			All Dell PowerEdge systems

--f1f2promptonerror	enable, disable	This option enables or disables the BIOS to prompt F1 or F2 error codes.
		Example:
		`A:syscfg --f1f2promptonerror=enable`
		`f1f2promptonerror=enable`
			Dell PowerEdge *xx*0*x* and later systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--floppy	auto, off, readonly	This option sets the diskette drive controller to auto, off, or read-only. This option is available on all supported systems that have a supported diskette drive. This option can be replicated.
		Example:
		`A:>syscfg --floppy=auto`
		`floppy=auto`
			All Dell PowerEdge systems

--formfactor	N/A	This option displays the geometry of modular Dell PowerEdge systems. This is a read-only option and can have the following values: halfheight (the modular system occupies 1 slot of the chassis), halfheight-dualwidth (the modular system occupies 2 horizontal slots of the chassis), fullheight (the modular system occupies 2 vertical slots of the chassis), and fullheight-dualwidth (the modular system occupies 4 slots of the chassis).
		Example:
		`A:>syscfg --formfactor=fullheight,dualwidth`
		`formfactor=fullheight,dualwidth`
			Dell PowerEdge modular systems

--fsbr	115200, 57600, 19200, 9600	This option sets the console redirection fail safe baud rate in bps. Example: `A:>syscfg --fsbr=9600` fsbr=9600	All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--hddfailover	off, on	This option specifies the device in the **Hard Disk Drive Sequence** menu that has not been attempted in the boot sequence.When set to **on**, all devices are attempted in an order in which they are configured. When set to **off**, only the first device in the hard disk sequence is attempted. This option can be replicated.
		Example:
		`A:>syscfg --hddfailover=on`
		`hddfailover=on`
			All Dell PowerEdge systems

--htassist	enable, disable	This option enables or disables the probe filter chipset option. Some applications may have lower performance when the chipset feature is disabled.
		Example:
		`A:>syscfg --htassist=enable`
		`htassist=enable`
			Dell PowerEdge systems running on AMD Opteron™ processors

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--hwprefetcher	enable, disable	When set to **enable**, the processor pre-empts what data might be needed next. When some data is found, it loads several steps in advance.
		When set to **disable**, the processor does not pre-empt.
		This option can be replicated.
		Example:
		`A:>syscfg --hwprefetcher=enable`
		`hwprefetcher=enable`
			All Dell PowerEdge systems

--idecdrom	auto, off	This option enables or disables the CD drive. This option can be replicated.
		Example:
		`A:>syscfg --idecdrom=auto`
		`idecdrom=auto`
			All Dell PowerEdge systems

--idracgui	enable, disable	Enables and disables the iDRAC GUI. This option can be replicated.
		Example:
		`A:>syscfg --idracgui=disable`
		`idracgui=disable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--integratedraid	enable, disable	This option enables or disables the integrated RAID controller. This option can be replicated.
		Example:
		`A:>syscfg --integratedraid=disable`
		`integratedraid=disable`
			All Dell PowerEdge systems

--integratedsas	enable, disable	This option enables or disables the integrated SAS controller. This option can be replicated.
		Example:
		`A:>syscfg --integratedsas=enable`
		`integratedsas=enable`
			All Dell PowerEdge systems

--internalusb	off, on	This option enables or disables all the user-accessible USB ports. This option can be replicated.
		Example:
		`A:>syscfg --internalusb=on`
		`internalusb=on`
			All Dell PowerEdge systems

--ioat	enable, disable	This option enables or disables the I/O Acceleration Technology (I/OAT) DMA Engine option. This option must be enabled only if the hardware and software support I/OAT on your system. This option can be replicated.
		Example:
		`A:>syscfg --ioat=enable`
		`ioat=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--lcd	default, none, user, idracipv4address, idracmacaddress, ossystemname, servicetag, ipv6address, ambienttemp, systemwatts	This option determines whether to display the default string (model name and number for Dell PowerEdge systems earlier than *xx*1*x*, and service tag for Dell PowerEdge systems *xx*1*x* and later) or a user-defined string on the front-panel LCD. This option can be replicated.
		Example:
		`A:>syscfg --lcd=default`
		`lcd=default`
			The idracipv4address, idracmacaddress, ossystemname, servicetag, ipv6address, ambienttemp, and systemwatts arguments are available only on Dell PowerEdge *xx*1*x* systems.

--lcd1	<*string*>	This option sets the first line of user-defined text on the system LCD. This option can be replicated. **NOTE:** Before setting user strings for this option, ensure that `--lcd` is set to **user**. **NOTE:** If you have a PowerEdge *x6xx*, *x7xx*, or *x8xx* system, you need to reboot your system for the settings to take effect.	All Dell PowerEdge systems
--lcd2	<*string*>	This option sets the second line of user-defined LCD strings.	All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--logicproc	enable, disable	This option enables or disables logical processing for a system. This option is available on all systems that support logical processing (Hyperthreading). This option can be replicated.
		Example:
		`A:>syscfg --logicproc=enable`
		`logicproc=enable`
			All Dell PowerEdge systems

--lpt	lpt1, lpt2, lpt3, disable	This option configures or reports the I/O address of the LPT (parallel) port. This option is available on all supported systems with an LPT port. This option is recorded to an output file for replication.
		Example:
		`A:>syscfg --lpt=lpt1`
		`lpt=lpt1`
			All Dell PowerEdge systems

--lptmode	ps2, at	This option configures or reports the mode of an LPT (parallel) port. This option is available on all supported systems with an LPT port. This option is recorded to an output file for replication.
		Example:
		`A:>syscfg --lptmode=ps2`
		`lptmode=ps2`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--memintleave	enable, disable	This option enables or disables the memory interleave mode. This option can be replicated.
		Example:
		`A:>syscfg --memintleave=enable`
		`memintleave=enable`
			All Dell PowerEdge systems

--memoperatingmode	optimizer, mirror, advancedecc	This option selects the memory operating mode. This feature is active only if a valid memory configuration is detected.
		Example:
		`A:>syscfg --memoperatingmode=optimizer`
		`memoperatingmode=optimizer`
			Dell PowerEdge *xx*1*x* systems

--memremap	off, auto	This option enables or disables memory remapping.
		`A:>syscfg --memremap=off`
		`memintleave=off`
			All Dell PowerEdge systems

--memtest	enable, disable	This option enables or disables the POST extended memory test.
		Example:
		`A:>syscfg --memtest=disable`
		`memtest=disable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--mouse	off, on	This option turns the mouse controller on or off. This option can be replicated.
		Example:
		`A:>syscfg --mouse=off`
		`mouse=off`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--nextboot	valid device name (from the **--bootseq** option device list)	This option sets the specified device as the first device in the boot order for the next boot cycle only. The device must be a device from the **--bootseq** option device list. Run the **--bootseq** option to see a list of available device names.
		See --bootseq for more information. This option is not replicated.
		Example 1:
		`A:>syscfg --bootseq`
		`Device 1: floppy.emb.0 - Diskette Drive A:`
		`Device 2: cdrom.emb.0 - CD-ROM device`
		`Device 3: hdd.emb.0 - Hard Drive C:`
		`Device 4: nic.emb.1 - Intel Boot Agent Version 4.0.17`
		`Device 5: nic.emb.2 - Intel Boot Agent Version 4.0.17`
		Example 2:
		`A:>syscfg --nextboot= nic.emb.1`
		`nextboot=nic.emb.1`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--noraidprompt*	NA	This option specifies that the BIOS must not prompt for confirmation when changing the mode of a RAID controller. This option can only be used with the **--embscsiraid** or **--embscsiraidchb** options. Without this option, the user is prompted during POST to confirm the change of a RAID controller from RAID(SCSI) to SCSI(RAID). This option is not replicated. **CAUTION: When changing a RAID controller from SCSI to RAID or from RAID to SCSI, data is lost on the affected hard drives. The warning message for this data is not displayed if you use the --noraidprompt option. To avoid data loss, back up any information on the hard drives before changing the type of controller used with the drives.**	All Dell PowerEdge systems

		Example:
		`A:>syscfg --embscsiraid=raid --noraidprompt`
		`embscsiraid=raid`
		NOTE: The asterisk is not part of the command syntax.	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--numlock	on, off	This option enables or disables the keyboard number lock during POST. This option is not replicated.
		Example:
		`A:>syscfg --numlock=on`
		`numlock=on`
			All Dell PowerEdge systems

--oldsetuppwd	<*string*>	This option is required to set a new setup password when a setup password is currently set. The setup password locks the BIOS setup screen. The argument string supplied to this option is the current password. If this password is not correct, the new setup password is not applied to the system. Generally, passwords are limited to alphanumeric characters and cannot exceed 32 characters in length. This option is not replicated.
		Example:
		`A:>syscfg --setuppwd=`*`asetuppassword`* `--`
		`oldsetuppwd=`
		`currentpassword`
		`The password has been set. Please use a warm reboot to apply the password to the system.`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--oldsyspwd	<*string*>	This option supplies the current system password for the BIOS. This option is only given when setting the new system password. If this password does not match the current system password, the new password is not applied to the system. The system password is required when booting the system. The argument string supplied to this option will be the password. Generally, passwords are limited to alphanumeric characters and cannot exceed 32 characters in length. This option is not replicated. Example 1: `A:>syscfg --syspwd=`*`anotherpassword`* `--oldsyspwd=`*`password`* `The password has been set. Please use a warm reboot to apply the password to the system.`	All Dell PowerEdge systems

		Example 2:
		`A:>syscfg --syspwd= asyspassword --oldsyspwd= currentpassword`
		`The old password entered is incorrect. The new password will not be set. Please try again.`	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--opticaldrivectrl	enable, disable	This option enables or disables the optical CD-ROM controller.
		Example:
		`A:>syscfg --opticaldrivectrl=enable`
		`opticaldrivectrl=enable`
			All Dell PowerEdge systems

--osmode	enable, disable	This option enables or disables operating system installation mode for installing operating systems. Enabling this option causes the BIOS to only report 256 MB to the operating system. Some operating systems cannot be installed if a system has more than 2 GB of memory.
		This option can be replicated.
		Example:
		`A:>syscfg --osmode=enable`
		`osmode=enable`
			All Dell PowerEdge systems

--oswatchdogtimer	enable, disable	If your system stops responding, the watchdog timer aids in the recovery of your operating system. When this option is set to **enable**, the operating system is allowed to initialize the timer. When set to **disable** (the default), the timer will have no effect on the system.
		Example:
		`A:>syscfg --oswatchdogtimer=enable`
		`oswatchdogtimer=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--ovrwrt*	NA	This option is only used with the **-o** option to cause the output file to be overwritten if a file of the same name already exists. This option cannot be replicated.
		Example:
		`A:>syscfg -o=`*`filename`*`.ini --ovrwrt`
		`The file `*`filename`*` has been overwritten.`
		NOTE: The asterisk is not part of the command syntax.
			All Dell PowerEdge systems

power **NOTE:** For details about the **power** suboptions and arguments, see Table 3-4.			Dell PowerEdge *xx*1*x* systems

--powerbutton	enable, disable	This option enables or disables the power button for a system. This option is recorded to an output file for replication. This option is available on all supported systems.
		Example:
		`A:>syscfg --powerbutton=enable`
		`powerbutton=enable`
		NOTE: The system must be rebooted for BIOS options to take effect.
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--pwdlock	lock, unlock	This option locks the system password. If the system password is locked, it can be modified only through the F2 screen with the setup password. This option can be replicated.
		Example:
		`A:>syscfg --pwdlock= lock`
		`pwdlock=lock`
			All Dell PowerEdge systems

--redmem	off, spare, mirror, raid	This option allows selection of the desired redundant memory mode, or disables redundant memory. This option can be replicated.
		Example:
		`A:>syscfg --redmem=off`
		`redmem=off`
		NOTE: The system must be rebooted for BIOS options to take effect.
			All Dell PowerEdge systems except *xx*1*x*

--rptkeyerr	enable, disable	This option configures or reports whether the BIOS reports keyboard errors during POST. This option can be replicated.
		Example:
		`A:>syscfg --rptkeyerr= disable`
		`rptkeyerr=disable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--sata0	auto, off	This option enables or disables SATA port 0. This option can be replicated.
		Example:
		`A:>syscfg --sata0=auto`
		`sata0=auto`
		NOTE: This option maps to **--sata_a** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

--sata1	auto, off	This option enables or disables SATA port 1. This option can be replicated.
		Example:
		`A:>syscfg --sata1=auto`
		`sata1=auto`
		NOTE: This option maps to **--sata_b** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

--sata2	auto, off	This option enables or disables SATA port 2. This option can be replicated.
		Example:
		`A:>syscfg --sata2=auto`
		`sata2=auto`
		NOTE: This option maps to **--sata_c** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--sata3	auto, off	This option enables or disables SATA port 3. This option can be replicated.
		Example:
		`A:>syscfg --sata3=auto`
		`sata3=auto`
		NOTE: This option maps to **--sata_d** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

--sata4	auto, off	This option enables or disables SATA port 4. This option can be replicated.
		Example:
		`A:>syscfg --sata_4=auto`
		`sata_4=auto`
		NOTE: This option maps to **--sata_e** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

--sata5	auto, off	This option enables or disables SATA port 5. This option can be replicated.
		Example:
		`A:>syscfg --sata_5=auto`
		`sata_5=auto`
		NOTE: This option maps to **--sata_f** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--sata6	auto, off	This option enables or disables SATA port 6. This option can be replicated.
		Example:
		`A:>syscfg --sata_6=auto`
		`sata_6=auto`
		NOTE: This option maps to **--sata_g** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

--sata7	auto, off	This option enables or disables SATA port 7. This option can be replicated.
		Example:
		`A:>syscfg --sata_7=auto`
		`sata_7=auto`
		NOTE: This option maps to **--sata_h** for PowerEdge *x9xx* systems.
			All Dell PowerEdge systems

--snoopfilter	enable, disable	This option enables or disables the snoop filter option from the system BIOS.
		Example:
		`A:>syscfg --snoopfilter=enable`
		`snoopfilter=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--serial1	disable, com1, com3, com1_bmc, bmcserial, bmclan, rac	This option configures or reports the first serial port communication port. This option can be replicated.
		bmcserial — maps serial port 1 to BMC Serial.
		bmclan — routes the serial traffic destined for serial1 out to NIC1.
		com1_bmc — maps serial port 1 to COM port 1 BMC.
		rac — maps serial port 1 to the RAC device.
		Example:
		`A:>syscfg --serial1=rac`
		`serial1=rac`
			All Dell PowerEdge systems

--serial2	auto, disable, com2, com4	This option configures or reports the second serial port communication port. This option can be replicated.
		Example:
		`A:>syscfg --serial2= disable`
		`serial2=disable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--serialcomm	on, com1cr, com2cr, off	This option sets the behavior of the serial port communication. When set to **on**, the BIOS enables COM port 1 and COM port 2. These ports are made available for use by the operating system or applications. BIOS Console Redirection is disabled. When set to **com1cr**, this option tells the BIOS to enable COM port 1 and COM port 2. These ports are made available for use by the operating system or applications. BIOS Console Redirection is through COM port 1. When set to **com2cr**, this option tells the BIOS to enable COM port 1 and COM port 2. These ports are made available for use by the operating system or applications. BIOS Console Redirection is through COM port 2. When set to **off**, this option tells the BIOS to disable COM port 1 and COM port 2. This option is replicated. of the **--conred** option.	All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

		Example:
		`A:>syscfg --serialcomm=on`
		`serialcomm=on`
		On *x9xx* systems, the **--serialcomm** option can be used with the external serial (**--extserial**) option instead	

--setuppwd	<*string*>	This option sets the setup password for the BIOS. The setup password locks the BIOS F2 screen. The argument string supplied to this option is the password. Generally, passwords are limited to alphanumeric characters and cannot exceed 32 characters in length. If a current setup password is set, it must be given through the **--oldsetuppwd** option. This option is not replicated.
		Example 1:
		`A:>syscfg --setuppwd=asetuppassword`
		`The password has been set. Please use a warm reboot to apply the password to the system.`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

		Example 2:
		`A:>syscfg --setuppwd= asetuppassword --oldsetuppwd= currentpassword`
		`The password has been set. Please use a warm reboot to apply the password to the system.`
		Example 3:
		`A:>syscfg --setuppwd= asetuppassword --oldsetuppwd= currentpassword`
		`The old password entered is incorrect. The new password will not be set. Please try again.`
		NOTE: You cannot disable your password using DTK. To disable your password, you must use the system BIOS.	

--sma	enable, disable	This option enables or disables processor sequential memory access.
		Example:
		`A:>syscfg --sma=disable`
		`sma=disable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--slotname*	NA	This option reports the slot name of the blade.
		Example:
		`A:>syscfg --slotname`
		`slotname=Slot5`
			Dell Blade systems

--sriov	enable, disable	This option enables or disables support for SRIOV devices.
		Example:
		`A:>syscfg --sriov= disable`
		`sriov=disable`
			All Dell PowerEdge *xx*1*x* systems

--svctag*	NA	This option reports the service tag for a system. If used with the **-s** general option, the environment variable is set to the service tag.
		Example:
		`A:>syscfg --svctag`
		`svctag=113CD1S`
		NOTE: The asterisk is not part of the command syntax.
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--syspwd	<*string*>	This option sets the system password for the BIOS. The system password is required when booting the system. The argument string supplied to this option is the password. Generally, passwords are limited to alphanumeric characters and cannot exceed 32 characters in length. If a current system password is set, it must be given through the **--oldsyspwd** option. This option is not replicated. Example 1: `A:>syscfg --syspwd=`*`password`* `The password has been set. Please use a warm reboot to apply the password to the system.`	All Dell PowerEdge systems
		Example 2: `A:>syscfg --syspwd=`*`password`* `--oldsyspwd=`*`password`* `The password has been set. Please use a warm reboot to apply the password to the system.` **NOTE:** You cannot disable your password using DTK. To disable your password, you must use the system BIOS.	

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems
--sysrev	NA	This option reports the system revision. This is a read-only option.	All Dell PowerEdge systems
tpm **NOTE:** For details about the **tpm** suboptions and arguments, see Table 3-3.			Dell PowerEdge *xx*0*x* and later systems

--turbomode	enable, disable	This option enables or disables core-based turbo mode. Turbo mode is a feature on Intel processors that allows one processor core to increase it's frequency by one bin whenever the other core has gone into an idle state.
		Example:
		`A:>syscfg --turbomode= enable`
		`--turbomode=enable`
			Dell PowerEdge *xx*1*x* systems running on Intel processors

--usb	on, legacy, off	This option sets or reports the status of the USB port. When set to **on**, USB keyboards and mice function only for systems with operating systems that have native USB support. When set to **legacy**, USB keyboards and mice are supported through the BIOS to function in operating systems that do not natively support USB. This option can be replicated.
		Example:
		`A:>syscfg --usb=on`
		`usb=on`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--usbflash	auto, fdd, hdd	This option sets or reports the emulation for a USB flash device. The USB flash device can be set to emulate a hard drive (**hdd**) or a diskette drive (**fdd**). This option can be replicated.
		Example:
		`A:>syscfg --usbflash= auto`
		`usbflash=auto`
			All Dell PowerEdge systems except Dell PowerEdge *xx*9*x* and later

--usbports	enable, enablebackonly, disable	This option enables or disables USB ports. When set to **enable**, it enables all user accessible USB ports. When set to **enablebackonly**, the front user-accessible ports are disabled. When set to **disable**, both front and back user accessible ports are disabled.
		This option can be replicated.
		Example:
		`A:>syscfg --usbports= enable`
		`usbports=enable`
			All Dell PowerEdge systems

Table 3-2. SYSCFG Options and Arguments for BIOS Configuration *(continued)*

Option	Valid Arguments	Description	Applicable Systems

--virtualization	enable, disable	This option enables or disables virtualization in the CPU. When set to **enable**, it enables the additional hardware capabilities provided by Virtualization Technology in applicable CPUs.
		When set to **disable**, it disables the additional hardware capabilities provided by Virtualization Technology.
		This option can be replicated.
		Example:
		`A:>syscfg --virtualization=enable`
		`virtualization=enable`
			All Dell PowerEdge systems

--virtualmedia	enable, disable	This option enables or disables virtual media in Dell Remote Access Controller (DRAC) 5.
		Example:
		`A:>syscfg --virtualmedia=enable`
		`virtualmedia=enable`
			Dell PowerEdge *xx*9*x* and *xx*0*x* monolithic systems

--virtualmediakey	enable, disable	This option enables or disables Virtual Media key on iDRAC.
		Example:
		`A:>syscfg --virtualmediakey=enable`
		`virtualmediakey=enable`
			Dell PowerEdge *xx*1*x* systems or systems with iDRAC 6

Table 3-3 lists the suboptions and arguments for the **tpm** option.

Table 3-3. Suboptions and Arguments for the tpm Option

Option	Suboption	Arguments	Description
tpm	--tpmsecurity	off	Does not report the presence of TPM to the operating system.
		onwithpbm	Directs the BIOS to store the TCG compliant measurements to the TPM during a POST operation.
		onwithoutpbm	Directs the BIOS to bypass the pre-boot measurements.
			Example:
			`A:>syscfg tpm --tpmsecurity = onwithoutpbm -- setuppwdoverride`
	--tpmactivation	enabled	Enables and activates the TPM feature.
		disabled	Disables and deactivates the TPM feature.
		nochange	Does not alter the operational state of the TPM feature.
			Example:
			`A:>syscfg tpm -- tpmactivation=enabled -- setuppwdoverride`
		NOTE: You cannot set **tpmactivation** when **tpmsecurity** is set to **off**.	
		NOTE: After setting **tpmactivation** to **enabled** or **disabled**, if you reboot your system, DTK displays the '`TPM Configuration Honoured system will reset and the system reboots again`' message and reboots once again.	
		NOTE: When you set **tpmactivation** to **enabled** or **disabled**, DTK displays the value of **tpmactivation** as **nochange**. However, the TPM feature is activated/deactivated when you reboot the system.	

Table 3-3. Suboptions and Arguments for the tpm Option *(continued)*

Option	Suboption	Arguments	Description
	--tpmclear	NA	Clears the contents of the TPM chip without erasing the **tpmsecurity** and **tpmactivation** settings. Example: `A:>syscfg tpm --tpmactivation=enabled --tpmclear --setuppwdoverride`
	--undotpmclear	NA	Undoes the result of the **tpmclear** setting. If you specify this setting before specifying the **tpmclear** setting, the 'There is currently no pending TPM Clear request' message is displayed. Example: `A:>syscfg tpm --tpmactivation=enabled --undotpmclear --setuppwdoverride`
	--valsetuppwd	<*string*>	Validates the setup password for TPM authentication. If you try to change DTK settings, you will be prompted to enter this password to access the settings. Example: `A:>syscfg tpm --tpmactivation=enabled --tpmclear --valsetuppwd=<setup_password>`
	--setuppwdoverride	NA	On systems that do not have a setup password configured, if you set this option, you will not be prompted for a password to access DTK settings. `A:>syscfg tpm --tpmactivation=enabled --tpmclear --setuppwdoverride`

Table 3-4 lists the suboptions and arguments for the **power** option.

Table 3-4. Suboptions and Arguments for the power Option

Option	Suboption	Arguments	Description
power	--profile	<*powerprofile*> where *powerprofile* can be maxperformance, osctl, apc	Displays the settings similar to the BIOS setup screen for the respective profile. Reboot the system for the settings to take effect. If power profiles are not available on the platform, an error message is displayed. `A:>syscfg power --profile= maxperformance -- setuppwdoverride`
		custom	Creates the custom profile. Reboot the system for the settings to take effect. `A:>syscfg power --profile= custom --setuppwdoverride`
	-- cpupowermode	min, max, osdbpm, systemdbpm	Allows you to set the CPU power and performance management to minimum power, maximum performance, operating system DBPM, or system DBPM mode. `A:>syscfg power --profile= custom --cpupowermode=min -- setuppwdoverride`
	-- memorypower mode	min, 800, 1067, 1333, max	Allows you to set memory power and performance management to minimum power mode, maximum power mode, 800Mhz, 1067Mhz, or 1333Mhz. `A:>syscfg power --profile= custom --memorypowermode=min --setuppwdoverride`

Table 3-4. Suboptions and Arguments for the power Option *(continued)*

Option	Suboption	Arguments	Description
	--fanpowermode	min, max	Allows you to set the fan algorithm to the minimum power optimized or maximum performance optimized mode. `A:>syscfg power --profile=custom --fanpowermode=min --setuppwdoverride`
	NOTE: Set the value of **--profile** to **custom** to change the values of **cpupowermode**, **memorypowermode**, and **fanpowermode**.		
	--profile	NA	Displays the profile set and the respective profile parameters.
	--cap		Displays the values of budgetcap, and the maximum and minimum power thresholds in Watts.
	--cap <*budgetcap*> --unit <*unit*>	<*budgetcap*> is the limit for power consumption in Watts, or btuphr, or percent. <*unit*> is the unit of the <*budgetcap*> value and can be watt, or btuphr, or percent.	The value of <*budgetcap*> must be between the maximum and minimum threshold values, else an error is displayed. If the unit is btuphr, it is converted in to Watts using the formula "Watt = BTU/hr /3.413". If the unit is percent, the formula is "Power Cap (Watts) = [Power supply rating for input power (Watts) - Min potential power (Watts)] * Power Cap (%) + Min potential power (Watts)]" `A:>syscfg power --cap=<value> --unit=watt --setuppwdoverride`
	--maxpowercap		Displays the value of the maximum power threshold.
	--minpowercap		Displays the value of the minimum power threshold.

Table 3-4. Suboptions and Arguments for the power Option *(continued)*

Option	Suboption	Arguments	Description
	--valsetuppwd	<*string*>	Validates the setup password for power authentication. If you try to change the DTK settings, you are prompted to enter this password to access the settings. `A:>syscfg power --profile= maxperformance --valsetuppwd= <setup_password>`
	--setuppwdoverride	NA	Does not prompt you for a password to access the DTK settings on systems that do not have a setup password configured. `A:>syscfg power --profile= maxperformance -setuppwdoverride`

SYSCFG for BMC and Remote Access Controller Configuration

SYSCFG configures BMC and Remote Access Controller settings.

NOTE: Some of the following options or arguments might not be available on all systems.

NOTE: For options that use text strings such as username, password, hostname, and community string, using some characters such as <space>, <, >, |, or = on the command line can be misinterpreted by the command line parser and cause errors.

NOTE: The following options or arguments are also applicable to DRAC 5.

The following tables document valid options, suboptions, and arguments along with a description of the expected behavior of each option and suboption. Options, suboptions, and arguments are case sensitive. All options, suboptions, and pre-defined arguments are lowercase unless explicitly stated otherwise.

The following section documents all the valid options, suboptions, and their arguments along with a description of the expected behavior using an example. Some features that need to be noted while reading this section are:

- Unless otherwise specified, all suboptions to options are optional.
- If a suboption is not specified for an option, all valid suboption values are displayed for the option. If suboptions are specified, then only those suboptions are reported.
- Wherever options or suboptions take empty strings as input, the string NULL should be input. For example, options such as **username** and suboptions such as **commstring** and **hostname** can take an empty string as input.

BMC and Remote Access Controller Configuration Options

Table 3-5 lists the options, suboptions, and pre-defined arguments for configuring your system BMC and remote access controller (RAC).

Table 3-5. BMC and Remote Access Controller Configuration Options

Option	Suboption	Valid Arguments	Description	Applicable Systems
bmcversion			Displays the version information for the BMC and the BMC firmware. This option cannot be replicated.	All Dell PowerEdge systems
	--devid	NA	Reports the BMC device ID.	
	--devrevision	NA	Reports the BMC device revision.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--majorfwrevision	NA	Reports the BMC device major firmware revision.	

	--minorfwrevision	NA	Reports the BMC device minor firmware revision.
			Example:
			`A:>syscfg bmcversion`
			`devid=32`
			`devrevision=0`
			`majorfwrevision =0`
			`minorfwrevision =40`	

--controlpanelaccess	NA	viewandmodify, viewonly, disabled	This option sets or gets the access level for the Liquid Crystal Display (LCD).
			Example:
			`A:>syscfg --controlpanelaccess= viewandmodify`
			`controlpanelaccess= viewandmodify`
				Dell PowerEdge *xx*1*x* systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

--clearsel*	NA	NA	Clears the SEL. This option cannot be replicated.
			Example:
			`A:>syscfg --clearsel`
			`Clearing SEL...`
			NOTE: The asterisk is not part of the command syntax.
				All Dell PowerEdge systems

--deviceguid*	NA	NA	Displays the GUID for the BMC. This option cannot be replicated.
			Example:
			`A:>syscfg --deviceguid`
			`deviceguid= XXXXXXXXXX`
			NOTE: The asterisk is not part of the command syntax.
				All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

--encryptkey	NA	<*hexadecimal number*>	Encrypts the IPMI sessions.
			The hexadecimal number entered as an argument is not case sensitive although the value returned by the **encryptkey** option is always in uppercase.
			The value returned is appended with zeroes so that it is always 40 characters long.
			Example:
			`A:>syscfg --encryptkey=abcd`
			`encryptkey=ABCD00000000000000000000000000000000000000`
				All Dell PowerEdge systems

--identify	NA	0–254 **NOTE:** Use 0 to stop flashing the LED.	Flashes the identification LED for a specified number of seconds.	Dell PowerEdge systems with a BMC.

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

--kvmstatusonlcd		active, inactive	This option configures the vKVM session status on the LCD.
			Example:
			`A:>syscfg --kvmstatusonlcd=active`
			`kvmstatusonlcd=active`
				Dell PowerEdge *xx*1*x* systems

lanchannelaccess or lca			Sets or displays the LAN channel access settings such as alerting, IPMI over LAN, and user privilege. This option can be replicated.	All Dell PowerEdge systems
	--pefalerting	enable, disable	Enables or disables PEF alerts. This suboption can be replicated.	
	--ipmioverlan	disable, alwaysavail	Sets the LAN channel access mode. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

	--channelprivlmt	user, operator, administrator	Sets the maximum privilege level accepted for the LAN channel. This suboption can be replicated.
			
			Example (to configure the LAN channel with alerts and IPMI over LAN enabled):
			
			`A:>syscfg lanchannelaccess --pefalerting=enable --ipmioverlan=alwaysavail`
			
			`lanchannelaccess pefalerting=enable ipmioverlan=alwaysavail`	

lanchannelinfo or lci			Displays media and protocol information about the LAN channel. This option cannot be replicated.	All Dell PowerEdge systems
lancfgparams or lcp			Configures and displays LAN configuration parameters. This option can be replicated.	All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--ipaddrsrc	static, dhcp	Sets the IP address source for the LAN channel. This suboption can be replicated.	
	--ipaddress	<*ipaddress*>	Sets the IP address for the LAN channel. This suboption cannot be replicated.	
	--subnetmask	<*subnetmask*>	Sets the subnet mask for the LAN channel. This suboption can be replicated.	
	--gateway	<*gateway*>	Sets the gateway for the LAN channel. This suboption can be replicated.	
	--commstring	<*string*>	Sets the community string (maximum of 16 printable ASCII characters) used in a platform event trap (PET). This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--destipaddr	<*ipaddress*>	Sets the destination IP address for the alert destination specified with the **alertdest** suboption. The **destipaddr** suboption is dependent on the **alertdest** suboption. If the **alertdest** suboption is not specified on the command line, the first alert destination (`alertdest=1`) is set with this IP address. This suboption can be replicated.	
	--alertdest	1, 2, 3, 4	Sets the destination for the LAN alert. This suboption can be replicated.	
	--vlantag	enable, disable	Enables or disables VLAN tagging. This suboption can be replicated.	
	--vlanid	<string>	Sets the 12-bit VLAN ID. This suboption can be replicated.	
	--vlanpriority	0–7	Sets the VLAN priority value. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--macaddress	NA	Displays the BMC MAC address. This suboption cannot be replicated.	
	--nicselection	shared, sharedfailover, dedicated, sharedreceiveonall	Sets the operating mode of the NIC to **shared/sharedfailover/dedicated/sharedreceiveonall**. Some of these options are not applicable on certain systems. **NOTE:** The **sharedreceiveonall** argument is available only on *xx*1*x* systems.	
	--fullduplex	enable, disable	Enables or disables full duplex on the RAC network interface.	
	--autoneg	enable, disable	Enables or disables autonegotiation.	
	--speed	10,100	Sets the network interface speed to 10 or 100 Mbps.	
	--dnsdhcp	enable, disable	Enables or disables obtaining the DNS server IP address through DHCP.	
	--dnsserver1	<ipaddress>	Sets the IP address of the primary DNS server for domain name resolution.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--dnsserver2	<ipaddress>	Sets the IP address of the secondary DNS server for domain name resolution.	
	--dnsregisterrac	enable, disable	Enables or disables binding of the RAC name to the IP address.	
	--dnsracname	<string>	Sets the name of the RAC.	
	--domainnamefromdhcp	enable, disable	Enables or disables getting the RAC domain name through DHCP.	
	--domainname	<string>	Sets the domain name of the RAC.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
			Example 1 (to display the current LAN configuration settings): A:>syscfg --lancfgparams lancfgparams destipaddr= 192.168.100.15 vlantag=enable vlanid=1000 vlanpriority=7 macaddress= 0:6:5b:fb:c8:a7 commstring= public ipaddrsrc= static ipaddress= 192.168.100.10 subnetmask= 255.255.255.0 gateway= 192.168.100.1	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			Example 2 (to set the LAN configuration parameters):
			`A:>syscfg lancfgparams --destipaddr= 192.168.100.15 --vlantag= enable --vlanid=1000 --vlanpriority= 7 --commstring= public --ipaddrsrc= static --ipaddress= 192.168.100.10 --subnetmask= 255.255.255.0 --gateway= 192.168.100.1`
			`lancfgparams destipaddr= 192.168.100.15 vlantag=enable vlanid=1000 vlanpriority=7 macaddress= 0:6:5b:fb:c8:a7 commstring= public ipaddrsrc= static ipaddress= 192.168.100.10 subnetmask= 255.255.255.0 gateway= 192.168.100.1`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
lanuseraccess or lua			Configures the privilege level and channel accessibility associated with a specified User ID for the LAN channel.	All Dell PowerEdge systems
	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller	Sets the User ID. This suboption can be replicated.	
	--usrprivlmt	user, operator, administrator, noaccess	Sets the maximum BMC user privilege level for the LAN channel for the userid specified using the **userid** suboption. This suboption can be replicated. This suboption is dependent on the **userid** suboption.	
	--currentenabled userids	NA	Reports the number of currently enabled User IDs on the LAN channel.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

	--useridswithfixednames	NA	Reports the number of User IDs with fixed names on the LAN channel.
			Example 1 (to enable User ID 2 on the LAN channel with administrator privileges):
			`A:>syscfg lanuseraccess --userid=2 --usrprivlmt= administrator`
			`userid=2 usrprivlmt= administrator`
			Example 2 (to enable User ID 4 on the LAN channel with user privileges):
			`A:>syscfg lanuseraccess --userid=4 --usrprivlmt= user`
			`userid=4 usrprivlmt=user`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

--loaddefaults*	NA	NA	Restores the BMC to the defaults originally loaded on the controller. This option is used to return the BMC to a known-good state. This option cannot be replicated.
			NOTE: The NMI, power button, and SOL defaults are not reset by using this option.
			Example:
			`A:>syscfg --loaddefaults`
			`Loading defaults...`
			NOTE: The asterisk is not part of the command syntax.
				All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

--nextboot	NA	valid device name (from the **--bootseq** option device list)	This option sets the specified device as the first device in the boot order for the next boot cycle only. The device must be a device from the **--bootseq** option device list. Run the **--bootseq** option to see a list of available device names. See --bootseq for more information. This option is not replicated.
			Example 1:
			`A:>syscfg --bootseq`
			`Device 1: floppy.emb.0 - Diskette Drive A:`
			`Device 2: cdrom.emb.0 - CD-ROM device`
			`Device 3: hdd.emb.0 - Hard Drive C:`
			`Device 4: nic.emb.1 - Intel Boot Agent Version 4.0.17`
				All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			`Device 5: nic.emb.2 - Intel Boot Agent Version 4.0.17`
			Example 2:
			`A:>syscfg --nextboot= nic.emb.1`
			`nextboot= nic.emb.1`	

--nmibutton	NA	enable, disable	This option enables or disables the NMI button.
			This option can be replicated.
			Example:
			`A:>syscfg --nmibutton= enable`
			`nmibutton= enable`
				All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
passwordaction			Configures and tests the password for the specified User ID. This option cannot be replicated. All three suboptions, **action**, **userid**, and **password**, must be included in the command line. **NOTE:** 20 byte passwords are not supported for this option.	All Dell PowerEdge systems
	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller	Specifies the BMC User ID. This suboption cannot be replicated.	
	--action	setpassword, testpassword	Sets or tests the password for the specified User ID. This suboption cannot be replicated.	
	--password	<*string*>	Sets the password (maximum of 16 printable ASCII characters) for the specified BMC User ID. This suboption cannot be replicated. Example (to set and test the password for User ID 3):	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
			A:>syscfg passwordaction --userid=3 --action= setpassword --password= bmcmaster passwordaction userid=3 action= setpassword password= ********* A:>syscfg passwordaction --userid=3 --action= testpassword --password= bmcmastor Password test failed.	
pefcfgparams or pcp			Configures and displays PEF configuration parameters. This option can be replicated.	All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--filter	fanfail, voltfail, discretevoltfail, tempwarn, tempfail, intrusion, redundegraded, redunlost, procwarn, procfail, powerwarn, powerfail, hardwarelogfail, autorecovery, batterywarn, batteryfail, powerabsent, procabsent, systempower-warn, systempower-fail	Specifies a PEF value. This suboption can be replicated. See "BMC Platform Events Filter Alert Messages" for a complete list of all possible PEF messages along a description of each event. **NOTE:** The **fanfail** option is not supported on *x0xx* systems.	
	--filteraction	powercycle, reset, powerdown, powerreduction, none	Sets the event filter action for the filter specified using the **filter** suboption. This suboption depends on the **filter** suboption. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--hostname	<*string*>	Sets the host name (maximum of 62 printable ASCII characters) for the BMC. This suboption can be replicated. The **--hostname** string must comprise only these characters: hyphen (-), underscore (_), and period (.). The length of the **--hostname** string must be 48 characters or less for *x*8*xx* systems and 62 characters or less for *x*9*xx* systems and later.	
	--filteralert	enable, disable	Enables or disables alerts for the filter specified using the **filter** suboption. This suboption is dependent on the **filter** suboption. This suboption can be replicated.	
	--alertpolnum	1, 2, 3, 4	Specifies the alert policy entry number. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

	--alertpolstatus	enable, disable	Enables or disables the alert policy specified using the **alertpolnum** suboption. This suboption can be replicated. This suboption is dependent on the **alertpolnum** suboption.
			
			Example (to set the PEF configuration parameters):
			
			Example 1 (To configure the PEF so that the system is powered down in response to a fan failure event):
			
			`A:>syscfg pefcfgparams --filter= fanfail --filteraction= powerdown`
			
			`pefcfgparams filter=fanfail filteraction= powerdown`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			Example 2 (To configure the PEF so that a PEF alert is not sent to the destination IP address in response to a chassis intrusion event):
			`A:>syscfg pefcfgparams --filter= intrusion --filteralert= disable`
			`pefcfgparams filter= intrusion filteralert= disable`	

--powerbutton	NA	enable, disable	This option enables or disables the power button. This option can be replicated.
			Example:
			`A:>syscfg --powerbutton= enable`
			`powerbutton= enable`
				All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
--powerctl	NA	powerdown </argument>	This option performs a chassis powerdown and controls the reset of the system. Powerdown shuts off the system.	All Dell PowerEdge systems
		powercycle </argument>	Powercycle shuts off the system and automatically turns on your system after a few seconds.	
		reset </argument>	Resets the system.	
		softshutdown </argument>	In Linux, the system shuts down immediately. In Windows PE, this option does not work. **NOTE:** This option applies only to PowerEdge systems that are configured with a BMC. This argument requires ACPI support to function properly.	
--racreset	NA	NA	This option resets the RAC. It cannot be accompanied with any other option. This option cannot be replicated.	All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
--serialchannel-access or sca			Sets or displays the channel access settings for the serial channel. This option can be replicated.	All Dell PowerEdge systems
	--ipmioverserial	disable, alwaysavail	Sets the serial channel access mode. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

	--channelprivlmt	user, operator, administrator	Sets the maximum privilege level accepted for the serial channel. This suboption can be replicated.
			Example (to configure the serial channel with IPMI over serial disabled and the maximum privilege level set to administrator):
			`A:>syscfg serialchannelaccess`
			`--ipmioverserial=disable`
			`--channelprivlmt=administrator`
			`serialchannelaccess`
			`ipmioverserial=disable`
			`channelprivlmt=administrator`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
--serialchannelinfo or sci			Displays media and protocol information about the serial channel. This option cannot be replicated.	All Dell PowerEdge systems
	--mediumtype	NA	Displays the medium type for the serial channel. This suboption cannot be replicated.	
	--prottype	NA	Displays the protocol type for the serial channel. This suboption cannot be replicated.	
	--ssnsupport	NA	Displays the session support information for the serial channel. This suboption cannot be replicated.	
	--activessncount	NA	Displays the number of sessions that are activated on the serial channel. This suboption cannot be replicated.	
			Example:	
			`A:>syscfg serialchannelinfo`	
			`--mediumtype`	
			`mediumtype= asynch`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
serialcfgparams or scp			Configures and displays serial configuration parameters. This option can be replicated.	All Dell PowerEdge systems
	--connectionmode	basic, terminal	Sets the connection mode used to perform IPMI messaging to the BMC. This suboption can be replicated.	
	--msgcommflowctrl	noflowctrl, rtscts	Sets the IPMI message communication flow control. This suboption can be replicated.	
	--msgcommdtrhangup	NA	Reports the IPMI message communication DTR hang-up. This suboption cannot be replicated.	
	--msgcommbitrate	9600, 19200, 57600, 115200	Sets the IPMI message communication baud rate in bits per second (bps). This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--tmcfglineediting	enable, disable	Sets the line editing value for terminal mode configuration. This suboption can be replicated.	
	--tmcfgdelctrl	del, bksp	Sets the delete control value for terminal mode configuration. This suboption can be replicated.	
	--tmcfgechoctrl	echo, noecho	Sets the echo control value for terminal mode configuration. This suboption can be replicated.	
	--tmcfghandshakectrl	enable, disable	Sets the handshake control value for terminal mode configuration. This suboption can be replicated.	
	--tmcfgnewlineseq	noterm, crlf, null, cr, lfcr,lf	Sets the new line sequence value for terminal mode configuration. This suboption can be replicated.	
	--tmcfginputnewlineseq	cr, null	Sets the input new line sequence value for terminal mode configuration. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			Example (to display the current serial configuration settings):
			`A:> syscfg serialcfgparams`
			`serialcfgparams`
			`tmcfgdelctrl=del`
			`tmcfgechoctrl=echo`
			`tmcfghandshakectrl=enable`
			`connectionmode=terminal`
			`tmcfgnewlineseq=crlf`
			`msgcommflowctrl=rtscts`
			`tmcfginputnewlineseq=cr`
			`msgcommdtrhangup=disable`
			`msgcommbitrate=19200`
			`tmcfglineediting=enable`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
serialuseraccess or sua			Configures the privilege level and channel accessibility associated with a specified User ID for the serial channel. This option can be replicated.	All Dell PowerEdge systems
	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller	Sets the User ID. This suboption can be replicated.	
	--usrprivlmt	user, operator, administrator, noaccess	Sets the maximum BMC user privilege level for the serial channel for the User ID specified using the **userid** suboption. This suboption can be replicated. This suboption is dependent on the **userid** suboption.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--currentenabledusers	NA	Reports the number of currently enabled User IDs on the serial channel. This suboption can be replicated.	
	--useridswithfixednames	NA	Reports the number of User IDs with fixed names on the serial channel. This suboption can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			Example 1 (to enable User ID 2 on the serial channel with administrator privileges):
			`A:>syscfg serialuseraccess`
			`--userid=2`
			`--usrprivlmt=administrator`
			`--status=enable`
			`userid=2`
			`usrprivlmt=administrator`
			`status=enable`
			Example 2 (to enable User ID 4 on the serial channel with user privileges):
			`A:>syscfg serialuseraccess`
			`--userid=4`
			`--usrprivlmt=user`
			`--status=enable`
			`userid=4`
			`usrprivlmt=user`
			`status=enable`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

solaction			This option enables or disables Serial-Over-LAN (SOL) access for a particular user. This option can be replicated.
			`A:>syscfg solaction --userid=2 --action=disable`
			`solaction userid=2 action=disable`
				All Dell PowerEdge systems

	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller	Specifies the BMC user ID. This suboption can be replicated.	
	--action	enable, disable	Enables or disables the user ID specified using the userid suboption. This suboption can be replicated and is dependent on the userid suboption.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
solcfgparams			Configures and displays SOL configuration parameters. This option can be replicated.	All Dell PowerEdge systems
	--solenable	enable, disable	Enables or disables whether the SOL payload type can be activated. This option can be replicated.	
	--solprivlevel	user, operator, administrator	Sets the minimum user privilege level required to activate the SOL. This option can be replicated.	
	--solcharaccuminterval	1–255	Sets the Character Accumulate Interval in 5-ms increments (1–255). This sets the typical amount of time that the BMC will wait before transmitting a partial SOL character data packet. This option can be replicated.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--solcharsendthreshold	1–255	Specifies that the BMC will automatically send an SOL character data packet containing this number of characters in increments of 5 (1–255) as soon as this number of characters (or greater) has been accepted from the baseboard serial controller into the BMC. This option can be replicated. **NOTE:** On *x8xx* systems, the maximum limit for **--solcharsendthreshold** is 200. On *x9xx* systems, the maximum limit is 255. On the Dell PowerEdge SC1435 system, the maximum limit is 255.	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
	--solbitrate	9600, 19200, 57600, 115200	Sets the serial channel communication bit rate (in bps) with the BMC when SOL is activated. This option can be replicated. **NOTE:** The arguments for **--solbitrate** vary with various generations of Dell systems. If an argument valid for a particular generation is entered for another generation, the 'Parameter out of range' error is displayed. Valid arguments are: 19200 - for *x*8*xx* systems 57600 - for *x*9*xx* systems that do not have DRAC 5 installaed 115200 - for *x*9*xx* systems that have DRAC 5 installaed	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			Example 1 (to display the current SOL configuration):
			`A:> syscfg solcfgparams`
			`solcfgparams solenable= enable solprivlevel= administrator solcharaccumint erval=25 solcharsendthre shold=25 solbitrate=9600`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

solcfgparams			Example 2 (to set the SOL configuration parameters):
			`A:>syscfg solcfgparams --solenable= disable --solprivlevel= administrator -- solcharaccumint erval=25 -- solcharsendthre shold=100 --solbitrate= 9600`
			`solcfgparams solenable= disable solprivlevel= administrator solcharaccumint erval=25 solcharsendthre shold=100 solbitrate=9600`
				All Dell PowerEdge systems

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
ssninfo			Displays information about the number of possible active sessions and the number of currently active sessions on all channels on the BMC. This option cannot be replicated.	All Dell PowerEdge systems
	--maxactivessns	NA	Displays the maximum possible active BMC sessions. This suboption cannot be replicated.	
	--currentactivessns	NA	Displays the number of currently active sessions on all channels of the BMC. This suboption cannot be replicated.	
			Example:	
			`A:>syscfg ssninfo`	
			`currentactivessns=1`	
			`maxactivessns=4`	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
useraction			Enables and disables BMC, sua, and lua user IDs. This option can be replicated.	All Dell PowerEdge systems
	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller	Specifies the BMC user ID. This suboption can be replicated.	
	--action	enable, disable	Enables or disables the user ID specified using the **userid** suboption. This suboption can be replicated. This suboption is dependent on the **userid** suboption. Example (to disable User ID 3): `A:>syscfg useraction --userid=3 --action=disable` *`useraction userid=3 action=disable`*	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems
username			Sets the BMC User ID and username. This option can be replicated.	All Dell PowerEdge systems
	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller	Specifies the User ID. This suboption can be replicated.	
	--name	<*string*>	Sets the username (maximum of 16 printable ASCII characters) for the User ID specified using the **userid** suboption. This suboption can be replicated. This suboption is dependent on the **userid** suboption. Example 1 (to configure User ID 3 with a user name): `A:>syscfg username --userid=3 --name=` *`bmcmaster`* `username userid=3 name=`*`bmcmaster`*	

Table 3-5. BMC and Remote Access Controller Configuration Options *(continued)*

Option	Suboption	Valid Arguments	Description	Applicable Systems

			Example 2 (to display the username for User ID 3):
			`A:>syscfg username -- userid=3 --name`
			`username`
			`userid=3`
			`name=bmcmaster`	

--version*	NA	NA	Displays the version information for the SYSCFG utility. **NOTE:** The asterisk is not part of the command syntax.	

SYSCFG for State Configuration

The SYSCFG utility allows the user to write a state data value on a system. This value is preserved across reboot or power-off operations. Users can use this state data value for storing important state information, such as the progress of a multi-reboot deployment process.

SYSCFG Options for State Configuration

Table 3-6 documents all valid options and arguments along with a description of the expected behavior of each option.

NOTE: Some of the following options or arguments might not be available on all systems.

Table 3-6. SYSCFG Options and Arguments for State Configuration

Option	Valid Arguments	Description

-b
or
--byte
	<*string*>	This option specifies a value to write to state data. The format of the argument must be in decimal format unless the **-x** option is given. If the **-x** option is given, the value is interpreted as hexadecimal format. The value can optionally contain 0x. The decimal range is 0–255, and the hexadecimal range is 0x00–0xFF.
		Example:
		`A:>syscfg -b 1`
		`The state byte has been set to 1.`
		`A:>syscfg -b 2 -x`
		`The state byte has been set to 0x02.`

-r
or
--read*
	NA	This option reads the value of state data. When used with the **-x** option, the value is reported in hexadecimal format (0xNN).
		Example:
		`A:>sysfg -r -x`
		`The state byte has been set to 0x02.`
		`A:>syscfg -r`
		`The state byte has been set to 2.`
		NOTE: The asterisk is not part of the command syntax.

-x
or
--hex
	None	This option specifies that a value should be in hexadecimal format.
		Example:
		`A:>sysfg -r -x`
		`The state byte has been set to 0x01.`
		`A:>sysfg -x -b 0x02`
		`The state byte has been set to 0x02.`

SYSCFG for System Configuration

SYSCFG enables system configuration and reporting. It reports system identification values, processor types and speeds, memory size, and detects device using PCI scan.

Options for System Configuration

Table 3-7 documents valid options and arguments along with a description of the expected behavior of each option. Options and arguments are case sensitive. All options and pre-defined arguments are lowercase unless stated otherwise.

NOTE: Some of the following options or arguments might not be available on all systems.

Table 3-7. SYSCFG Options and Arguments for System Configuration

Option	Valid Arguments	Description

--asset	None	This option reports the customer-programmable asset tag number for a system. This option displays the asset tag for a system. For modular systems, the **SYSCFG** utility reports the asset tag for both the server module and the asset tag for its chassis.
		Example:
		`A:>syscfg--asset`
		`asset=ASSET`

--biosver*	None	This option reports the BIOS version for a system. If used with the **-s** option, the environment variable is set to the BIOS version.
		Example:
		`A:>syscfg --biosver`
		`biosver=A08`
		NOTE: The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

--chassvctag*	None	This option reports the chassis service tag for modular systems.
		Example:
		`A:>syscfg --chassvctag`
		`chassvctag=SVCTAG1`

--cpucount*	None	This command reports the number of processors found on the system.
		Example 1:
		`A:>syscfg --cpucount`
		`cpucount=1`
		Example 2:
		`A:>syscfg --cpucount`
		`cpucount=2`
		NOTE: The asterisk is not part of the command syntax.

--cpuspeed*	None	This option reports the speed of all processors in a system.
		Example:
		`A:>syscfg --cpuspeed`
		`cpuspeed=1000MHz`
		NOTE: The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

--envfile	<*filename*>	This option reads the environment variable file (included in DTK as **sys.ini**) and sets environment variables to names in the file, based on the system's information. Primarily, this command performs a PCI scan and matches the vendor/device numbers of the devices to those specified in the environment variable file. For more information, see the "Environment Variable File" section.
		Example:
		`A:>syscfg --envfile sys.ini`
		`DELLNIC1=INTEL PRO100`
		`DELLNIC2=INTEL PRO100`
		`DVIDEO1=RAGEXL`
		`DIDE1=PEQUR/ROSS IDE`
		`DSCSI1=AIC-7899`

--mem*	None	This option reports the amount of system memory physically installed in the system, not the amount of memory available to an operating system. If used with the **-s** option, the environment variable is set to the amount of system memory. The last two characters of the memory value indicate the order of magnitude used (KB or MB).
		Example:
		`A:>syscfg --mem`
		`mem=256MB`
		NOTE: The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

-n	<*filename*>	This option specifies an input file to use for resolving PCI vendor and device numbers to strings. The file must be present (with read rights) and contain a properly formatted list. See "PCI Reporting" for more information. This option must be used with the **--pci** option.
		Example:
		`A:>syscfg -n pci.txt --pci`
		`PCI Bus: 2, Device: 4, Function: 0`
		`  Vendor:    8086 - Intel Corp.`
		`  Device:    1229 - 82557/8/9 [Ethernet Pro 100]`
		`  Sub Vendor:8086 - Intel Corp.`
		`  Sub Device:1017 - EtherExpress PRO/100+ Dual Port Server Adapter`
		`  Slot:      01`
		`  Class:     02 - Network`
		`  SubClass:  00 - Ethernet`

--ovrwrt*	None	When used with the **--outfile** option, this option specifies that the output file should be overwritten if it exists. Example: `A:>syscfg -outfile=out.ini --ovrwrt` **NOTE:** The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

--pci*	None	This option performs a scan of all PCI buses and displays the results. The utility uses an open source **pci.ids** file for vendor/device name resolution. The utility looks for a file called **pci.ids** in the current working directory. If the file is not found in the current working directory, the directory containing the SYSCFG executable is searched. If the **-n** option is used to specify a filename, this filename is used for resolution. If a specific filename is not given and the **pci.ids** file cannot be found, `Unknown` will be printed for all vendor and device codes.
		For more information, see the "PCI Reporting" section.
		Example 1 (the **pci.ids** filename is specified in the command line instance):
		`A:>syscfg -n pci.ids --pci`
		`PCI Bus: 0, Device: 0, Function: 0`
		`  Vendor:  1166 - ServerWorks`
		`  Device:  0012 - CMIC-LE`
		`  Slot:  00`
		`  Class:  06 - Bridge`
		`  SubClass:  00 - CPU/PCI`
		`PCI Bus: 0, Device: 0, Function: 1`
		`  Vendor:  1166 - ServerWorks`
		`  Device:  0012 - CMIC-LE`
		`  Slot:  00`
		`  Class:  06 - Bridge`
		`  SubClass:  00 - CPU/PCI`
		`PCI Bus: 0, Device: 0, Function: 2`
		`  Vendor:  1166 - ServerWorks`
		`  Device:  0000 - Unknown`

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description
		Slot: 00 Class: 06 - Bridge SubClass: 00 - CPU/PCI
	None	Example 2 (the **pci.ids** file is located in the same directory as the utility so that names resolve): A:>syscfg --pci PCI Bus: 0, Device: 0, Function: 0 Vendor: 1166 - ServerWorks Device: 0012 - CMIC-LE Slot: 00 Class: 06 - Bridge SubClass: 00 - CPU/PCI PCI Bus: 0, Device: 0, Function: 1 Vendor: 1166 - ServerWorks Device: 0012 - CMIC-LE Slot: 00 Class: 06 - Bridge SubClass: 00 - CPU/PCI PCI Bus: 0, Device: 0, Function: 2 Vendor: 1166 - ServerWorks Device: 0000 - Unknown Slot: 00 Class: 06 - Bridge SubClass: 00 - CPU/PCI

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

	None	Example 3 (a **pci.ids** file does not exist):
		`A:>syscfg --pci`
		`PCI Bus: 0, Device: 0, Function: 0`
		`Vendor: 1166 - Unknown`
		`Device: 0012 - Unknown`
		`Slot: 00`
		`Class: 06 - Bridge`
		`SubClass: 00 - CPU/PCI`
		`PCI Bus: 0, Device: 0, Function: 1`
		`Vendor: 1166 - Unknown`
		`Device: 0012 - Unknown`
		`Slot: 00`
		`Class: 06 - Bridge`
		`SubClass: 00 - CPU/PCI`
		`PCI Bus: 0, Device: 0, Function: 2`
		`Vendor: 1166 - Unknown`
		`Device: 0000 - Unknown`
		`Slot: 00`
		`Class: 06 - Bridge`
		`SubClass: 00 - CPU/PCI`
		NOTE: The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

-s	<*string*>	This option sets an environment variable to the value of a function command option. The string argument must be alphanumeric without any spaces or symbols. The variable name is upper-cased before being set. This option must be used with at least one function command.
		Example:
		`A:>syscfg -s ENVNAME --svctag`
		`ENVNAME=SERVICE`

--slot*	None	This option reports the slot of a modular system. If the system is not modular, the slot is reported as 0. If used with the **-s** option, the environment variable is set to the slot.
		Example 1 (for a modular system):
		`A:>syscfg --slot`
		`slot=1`
		Example 2 (for a non-modular system):
		`A:>syscfg --slot`
		`slot=0`
		NOTE: This option is valid for PowerEdge 1855 systems only. The asterisk is not part of the command syntax.

--svctag*	None	This option reports the service tag for a system. If used with the **-s** option, the environment variable is set to the BIOS version.
		Example:
		`A:>syscfg --svctag`
		`svctag=113CD1S`
		NOTE: The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

--sysasset	None	This option reports the system asset tag for modular systems.
		Example:
		`A:>syscfg --sysasset`
		`sysasset=ASSET01`

--sysid*	None	This function command reports the unique system id bytes for a server. Servers contain a unique ID value based on their model. The ID value is reported as a hexadecimal value with a leading 0x, lowercase hexadecimal letters, and zero-padded to 2 bytes. If used with the **-s** general option, the environment variable is set to the system ID.
		Example:
		`A:>syscfg --sysid`
		`sysid=0x00df`
		NOTE: The asterisk is not part of the command syntax.

--sysname*	None	This function command reports the system identification string for a server, which is the string displayed under the Dell logo during POST. If used with the **-s** option, the environment variable is set to the system name.
		Example:
		`A:>syscfg --sysname`
		`sysname=PowerEdge 1550/1000`
		NOTE: The asterisk is not part of the command syntax.

Table 3-7. SYSCFG Options and Arguments for System Configuration *(continued)*

Option	Valid Arguments	Description

--syssvctag*	None	This option reports the system service tag for a modular system.
		Example:
		`A:>syscfg --syssvctag`
		`syssvctag=BLADE01`
		NOTE: The asterisk is not part of the command syntax.

--uuid*	None	This option reports the UUID for a system. The UUID is a unique system identifier used in PXE requests.
		Example:
		`A:>syscfg --uuid`
		`uuid=44454C4C-5300-104C-8044-B1C04F423131`
		NOTE: The asterisk is not part of the command syntax.

SYSCFG for IPv6 Configuration

Table 3-8 lists all valid options and arguments for IPv6 configuration along with a description of each option. These options are applicable only if the DRAC in your system supports IPv6.

Table 3-8. SYSCFG Options and Arguments for IPv6 Configuration

Option	Suboption	Valid Argument	Description
lancfgparamsv6 or lcpv6	--ipv6	enable, disable	Loads or unloads the IPv6 stack. `A:> syscfg lcpv6 --ipv6= enable`
	--ipsrcv6=static --ipaddrv6= <*ipv6address*> --prefixlengthv6= < *prefixlengthv6*> --gatewayv6=< *ipv6gatewayaddress*>	NA	Allows you to manually configure IPv6 addresses. `A:>syscfg lcpv6 -- ipsrcv6=static -- ipaddrv6= 1234:1234:1234::1234 -- prefixlengthv6=32 -- gatewayv6= 1234:1234:1234::1`
	--ipsrcv6=auto	NA	Automatically configures the IPv6 addresses. `A:> syscfg lcpv6 -- ipsrcv6=auto`
	--dnssrcv6 =auto	NA	Automatically configures the DNS address. `A:> syscfg lcpv6 -- dnssrcv6=auto`
	--dnssrcv6=static --dnsserver1v6= <*ipv6dnsserver1address*>	NA	Allows you to manually set the DNS address.

Table 3-8. SYSCFG Options and Arguments for IPv6 Configuration

Option	Suboption	Valid Argument	Description
	--linklocaladdripv6 = *<linklocaladdripv6>*		Allows you to view IPv6 addresses. `A:> syscfg lcpv6 --linklocaladdripv6= 134.56.45.233`
	--gatewayv6= *<gatewayv6>*		Allows you to view IP gatewayv6 address.

PCI Reporting

The scan of the PCI bus will use a file to resolve PCI vendor and device codes to vendor information strings. The format of the PCI output is as follows:

```
PCI Bus: 2, Device: 4, Function: 0

  Vendor:     8086 - Intel Corp.

  Device:     1229 - 82557/8/9 [Ethernet Pro 100]

  Sub Vendor:8086 - Intel Corp.

  Sub Device:1017 - EtherExpress PRO/100+ Dual Port
Server Adapter

  Slot:       01

  Class:      02 - Network

  SubClass:   00 - Ethernet
```

If the file for vendor resolution is not present, the utility will print `Unknown` next to a vendor name. If the file for environment variable names is not present, the utility will fail the environment variable operation.

The **pci.ids** file is located at **\DELL\TOOLKIT\TOOLS** on Windows systems and **/opt/dell/toolkit/bin** on Linux systems. For more information and examples, see the --pci option in Table 3-7.

Environment Variable File

The environment variable file can be used for discovering and recording system information to environment variables. The file consists of several .ini-formatted sections that map PCI vendor/device numbers to environment variable values. The environment variable file is **sys.ini** in **\DELL\TOOLKIT\TOOLS** on Windows systems and on Linux systems, you can find it in **/opt/dell/toolkit/bin**. For example, the `[DELLNIC]` section header designates that an environment variable named `dellnic1` should be set to the value of the name/value pair whose name matches the NIC's vendor/device number. If multiple NICs are present on a system, the environment variables are numbered sequentially: `dellnic1`, `dellnic2`, and so on.

Environmental Variable File Excerpt (sys.ini)

```
[DELLNIC]

;environment variable will be set to INTELPRO100F for
vendor 8086, dev 1001

8086,1001=INTELPRO1000F

;environment variable will be set to INTELPRO100T for
vendor 8086, dev 1004

8086,1004=INTELPRO1000T

;environment variable will be set to INTELPRO100XT for
vendor 8086, dev 1008

8086,1008=INTELPRO1000XT
```

The names of the environment variables can be changed in the `Variable Names` section. If a name is changed, the section that corresponds to that name must be changed as well.

Also available in the **.ini** file is a section that maps the system ID number to a string. This string can be used to identify the system during the discovery phase of deployment. The section name is the environment variable that will be set to the value of the name/value pair whose name matches the system ID. To change the name of the environment variable, change the value of the `MACHINE` name in the `Variable Names` section, and change the corresponding section name.

4

RAIDCFG

This section documents the Deployment Toolkit (DTK) RAID configuration utility. The RAIDCFG utility provides a single command line tool that can configure all supported RAID controllers.

Features

The RAID configuration utility has the following general features:

- Displays help and usage information.
- Reads configuration options from the Command Line Interface (CLI) parameters.
- Enumerates RAID controllers, physical disks, and virtual disks.
- Creates and deletes virtual disks.
- Logs activity to a given filename.
- Returns specific error codes and messages.
- Assigns and unassigns global and dedicated hot spares.

NOTE: In Microsoft® Windows® Preinstallation Environment (Windows PE), you can find the RAIDCFG utility in **\DELL\TOOLKIT\TOOLS**. In Linux, you can find it in **/opt/dell/toolkit/bin**.

Supported RAID Controllers

The RAIDCFG utility supports the following RAID controllers:

- Series 7 PERC controllers
- S100 and S300 software RAID controllers (Not supported on 64-bit systems)
- PERC 3/DC, PERC 3/QC, PERC 3/SC (Not supported on 64-bit systems)
- PERC 4/SC, PERC 4/DC, PERC 4/Di, PERC 4/IM (Not supported on 64-bit systems)
- PERC 4e/DC, PERC 4e/Di, PERC 4e/Si (Not supported on 64-bit systems)

- PERC 5/E Adapter, PERC 5/I Integrated, PERC 5/i Adapter
- CERC SATA 1.5/6-Channel (CH), CERC SATA 1.5/2S, and PERC 3/Di (These controllers are supported in Linux only.)
- SAS 5iR Integrated, SAS 5iR Adapter
- SAS 6iR Integrated, SAS 6iR Adapter
- PERC 6/E Adapter, PERC 6/i Integrated, PERC 6/i Adapter
- PERC 6/i Integrated for modular systems

RAIDCFG Dependencies

For the RAIDCFG utility to run successfully in Windows PE, it requires that the mr2kserv utility be located in the same directory as RAIDCFG. The RAIDCFG utility also requires that **lsivil.dll** (for Windows) or **lsivil.so** (for Linux) and **sasvil.dll** (for Windows) or **sasvil.dll** (for Linux) be in the same directory as RAIDCFG.

The mr2kserv is a service that is automatically started by the DTK startup script. This service is required to configure all LSI RAID controllers in Windows PE and provides Plug and Play support.

RAIDCFG Options and Arguments

Table 4-1 lists all of the valid options, parameters, and arguments for the RAIDCGFG utility. For more information on valid RAIDCFG options and their specific uses, see "RAID Configuration Utility Options and Arguments."

Mandatory command line options must be present in the command. Optional command line options can be typed in any order after all mandatory options have been typed. Many options have both a short and long format. Short and long format options cannot be used in the same command line instance.

Table 4-1 shows some examples of valid and invalid short and long format command line instances. See "RAID Configuration Utility Options and Arguments" for an explanation of the specific order for each option. See Table 4-15 for a list of frequently used RAID commands.

NOTE: Some of the following options or arguments might not be available on all systems.

Table 4-1. RAIDCFG Short and Long Format Options

Option	Valid Arguments	Short Description	Mandatory or Optional
No option -h -? or /?	NA	Displays general usage information for the utility. The usage information consists of a comprehensive list of valid options, parameters, and arguments.	Optional. See Table 4-2 for specific usage information.
-ac or action	cvd or createvdisk	Creates a virtual disk. **NOTE:** When providing multiple physical disks for the createvdisk command, do not separate the disks with spaces. For example, `-ad=1:4, 1:5` causes an error. The correct syntax for displaying multiple physical disks is `-ad=1:4,1:5,1:6`.	See Table 4-4 for specific usage information.
-ac or action	dvd or deletevdisk	Deletes a virtual disk.	See Table 4-9 for specific usage information.
-ac or action	rghs or removeglobalhotspare	Unassigns all global hot spares to disks on the specified controller.	Optional. See Table 4-10 for specific usage information.
-ac or action	sghs or setglobalhotspare	Assigns the specified disks as global hot spares on the specified controller.	Optional. See Table 4-10 for specific usage information.
-ad or adisk	NA	Specifies an array disk command.	See Table 4-5 for specific usage information.

Table 4-1. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-ad or adisk	ch:targ, ch:targ, ... or ch:targ:lun,... or ch:targ:enc channel:target, or channel:target:lun , or channel:target:enclosure	Specifies an array disk. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure. **NOTE:** You can also use pdisk or -pd instead of adisk or -ad to specify an array disk.	Optional. See Table 4-5 for specific usage information.
-c or controllerid	<*valid controller ID number*>	Specifies a RAID controller.	See Table 4-3 for specific usage information.
-cp or cachepolicy	d, c	Specifies the virtual disk cache policy.	Optional. See Table 4-4 for specific usage information.
-ctrl or controller	NA	Displays a list of the supported RAID controllers in the system, along with select property information.	Mandatory, must be typed in the correct order. See Table 4-3 for specific usage information.
-envc or envcommand	<*string*>	Sets a user-defined environmental variable (<*string*>) to the value returned from a function call.	See Table 4-11 for specific usage information.

Table 4-1. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-envn or envname	<*string*>	Sets the environment variable (<*string*>) that equates to the value returned from a function call.	See Table 4-11 for specific usage information.
-fd or failoverdrive	ch:targ, ch:targ, ... or ch:targ:lun,... or ch:targ:enc channel:target, or channel:target:lun, or channel:target:enclosure	Specifies the location of the failover drive in an array. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure. **NOTE:** From DTK 2.4 onwards, the **-fd** option creates dedicated hot spares instead of global hot spares. To set global hot spares, see Table 4-10.	Optional. See Table 4-4 for specific usage information.
-i	<*filename*>	Reads the RAID configuration information from the given **.ini** filename and creates the RAID configurations on the specified controllers.	Mandatory. See Table 4-13 for specific usage information.
-l or logfile	<*filename*>	Logs command line output to a file.	Optional. See Table 4-14 for specific usage information.

Table 4-1. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-o	<*filename*>	Reads the RAID configurations from all available controllers and write these configurations in the given **.ini** filename.	Mandatory. See Table 4-13 for specific usage information.
-r or raid	<*valid RAID level number*>	Sets the RAID level for the array. Valid RAID values are 0, 1, 5, 10, 50. If no value is specified for RAID, 0 is taken as the default level.	Optional. See Table 4-4 for specific usage information.
-rp or readpolicy	ra, ara, nra, rc, nrc	Sets the read policy for the virtual disk.	Optional. See Table 4-4 for specific usage information.
-se or setenvironment	NA	Sets a user-defined environment variable to the value returned from the function call. Function calls are: `getcontrollerslots`, `getfirmware`, `getcontrollertype`, `getadisks`, `getadiskcount`, `getfreeadisks`, `getfreeadiskcount`, `getfreeadisksize`, `gethotspares`.	Mandatory. See Table 4-11 for specific usage information.
-si or silent	NA	Does not display any information on the terminal console.	Optional. See Table 4-14 for specific usage information.

Table 4-1. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-sz or size	<*number*>	Sets the maximum size on the virtual disk in MB or GB if the size is not provided. The default size is in MB. If GB follows the number, the size is expressed in GB.	Optional. See Table 4-4 for specific usage information.
-sp or spanlength	<*number*>	The span size of RAID 5, which is a mandatory parameter for RAID 50. **NOTE:** Spanlength is applicable only for RAID 50. The minimum permissible spanlength value is 3. The number of array disks for creating virtual disks should not be a prime number and should be divisible by the specified spanlength.	Mandatory. See Table 4-4 for specific usage information.
-ssz or stripesize	<*number*>	Sets the stripe size on the virtual disk in KB. **NOTE:** When creating virtual disks, do not specify the units for chunk (stripe) size. The units are always listed in KB.	Optional. See Table 4-4 for specific usage information.
-vd or vdisk	NA	Displays the virtual disks under all of the controllers along with the physical array disks that make up the virtual disks.	See Table 4-6 for specific usage information.
-vd or vdisk	<*valid virtual disk ID number*>	Displays the specified virtual disk.	Optional. See Table 4-6 for specific usage information.

Table 4-1. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-ver or version	NA	Displays the version number of the utility.	Optional. See Table 4-14 for specific usage information.
-wp or writepolicy	wb, wt, wc, nwc, fwb	Sets the write policy for a virtual disk. The valid arguments are: **wb** (write-back caching), **wt** (write-through caching), **wc** (write-caching), **nwc** (no-write-caching), and **fwb** (force-write-back).	Optional. See Table 4-14 for specific usage information.

RAID Configuration Utility Options and Arguments

The following tables document valid options, parameters, and arguments along with a description of the expected behavior of each option. Options, parameters, and pre-defined arguments are case sensitive and entered in lowercase, unless stated otherwise. The information is grouped by task in the following sections:

- General Help
- Enumerating RAID Controllers
- Creating Virtual Disks
- Enumerating Array Disks
- Initializing Virtual Disks
- Importing and Clearing Foreign Configurations
- Deleting Virtual Disks
- Assigning and Unassigning Global Hot Spares
- Setting Environment Variables
- RAID Replication Options
- Miscellaneous Options

NOTE: Some of the following options or arguments might not be available on all systems.

General Help

Table 4-2 lists the RAIDCFG general help options.

Table 4-2. General Help

Options	Parameters	Valid Arguments	Description

No option
-h
-?
or
/?
	NA	NA	Displays general usage information for the utility. The usage information consists of a comprehensive list of valid options, parameters, and arguments. This option is optional and can be added to the command line in any order.
			Example:
			`A:>raidcfg -h`
			`Provides users with general help options that may be used with this utility.`
			`[raidcfg]`
			`Version 2.4`
			`Help: options in <> are mandatory`
			`options in [] are optional and can be in any order after mandatory ones.`
			`raidcfg <controller>`
			`raidcfg <-ctrl>`
			`Lists all controllers on the host and select property information.`
			`...`
			—output continues, listing all possible option/parameter/argument combinations—

Enumerating RAID Controllers

Table 4-3 lists the RAIDCFG options, parameters, and pre-defined arguments for enumerating RAID controllers.

Table 4-3. Enumerating RAID Controllers

Mandatory Options and Arguments	Optional Parameters	Valid Parameters Arguments	Description

-ctrl
or
controller
	NA	NA	Lists all the RAID controllers on the host system, along with select property information. This option is mandatory.
			Example:
			`Controller_ID/Slot_ID: 0`
			`Controller_PCI_ID: 2:14:0`
			`Controller_Name: PERC 4e/Di`
			`Channels: 2`
			`No.of Virtual_Disks: 1`
			`Array_Disks: 0:0:0,1:2:0,1:3:0,1:4:0,1:5:0`
			`Firmware Version: 513O`
			
			`Controller_ID/Slot_ID: 3`
			`Controller_PCI_ID: 3:11:0`
			`Controller_Name: PERC 4/DC`
			`Channels: 2`
			`No.of Virtual_Disks: 0`
			`Firmware Version: 350O`
			
			`RAIDCFG Command successful!`

Table 4-3. Enumerating RAID Controllers *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameters Arguments	Description

	-c
	or
	controllerid
		<*valid controller ID number*>	Displays the properties for the RAID controller with the specified controller ID. This option combination is mandatory.
			Example:
			`A:>raidcfg -ctrl -c=2`
			`Controller_ID/Slot_ID: 2`
			`Controller_PCI_ID: 8:14:0`
			`Controller_Name: PERC 4e/DC`
			`Channels: 2`
			`Virtual_Disks: 1`
			`Firmware Version: 521S`
			`RAIDCFG Command successful!`

Creating Virtual Disks

Table 4-4 lists the RAIDCFG options, parameters, and pre-defined arguments for creating virtual disks.

NOTE: If you create a virtual disk on Windows PE, you need to reboot your system.

NOTE: On CERC SATA 1.5/2S, CERC SATA 1.5/6CH, SAS 5/iR, and SAS 6/iR controllers, use the entire array disk to create a virtual disk.

Table 4-4. Creating Virtual Disks

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description

-ctrl -ac=cvd -c=*id* -ad= *ch:targ,ch:targ,* ... [or *ch:targ:encl,...]* or controller action= createvdisk controllerid= *id* adisk= *channel:target: lun,... channel:target: lun,...* [or *channel:target: enclosure,...]*	NA	NA	Creates a virtual disk comprising the properties supplied. This option combination is mandatory.
			For SCSI controllers, the value of lun should always be 0.
			For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.
			Example:
			`A:>raidcfg -ctrl -ac=cvd -c=2 -ad=1:4,1:8 -r=1 -ssz=32 -cp=d -rp=nra -wp=wt -fd=1:1`
			`RAIDCFG command successful!`

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
	-cp or cachepolicy	d, c	Sets the cache policy for the virtual disk. The valid arguments are: **d** — (Direct I/O) Reads are not buffered in cache memory. **c** — (Cache I/O) All reads are buffered in cache memory. **NOTE:** This option is not supported on the following controllers: CERC SATA 1.5/6 CH, CERC SATA 1.5/2S, and PERC 3/Di. **NOTE:** The PERC 4/IM controller has a fixed set of read, write, and cache policies. If you set any of these policies while creating a virtual disk, your settings will be ignored. The **-cp** option is optional and can be added to the command line in any order after the mandatory option combination. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
	-fd or failoverdrive	ch:targ, ch:targ, ... or ch:targ:lun,... or ch:targ:enc channel:target, or channel:target:lun, or channel:target:enclosure	Sets the failover drive for the virtual disk. The **-fd** option is optional and can be added to the command line in any order after the mandatory option combination. **NOTE:** From DTK 2.4 onwards, the **-fd** option creates dedicated hot spares instead of global hot spares. For information about setting global hot spares, see Table 4-10. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
	-r or -raid	0, 1, 5, 6, 10, 50, 60	Sets the RAID type or level for the virtual disk. **NOTE:** If this option is not specified for any RAID controller, RAID 0 is taken as the default. The valid arguments are: **0** — RAID 0 uses data striping, which is writing data in equal-sized segments across the array disks. RAID 0 does not provide data redundancy. **1** — RAID 1 is the simplest form of maintaining redundant data. In RAID 1, data is mirrored or duplicated on one or more drives. **5** — RAID 5 provides data redundancy by using data striping in combination with parity information. Rather than dedicating a drive to parity, the parity information is striped across all disks in the array. **6** — RAID 6 is an extension of RAID 5 and uses an additional parity block. It uses block-level striping with two parity blocks distributed across all member disks. RAID 6 provides protection against double disk failures and failures while a single disk is rebuilding. In case there is only one array, RAID 6 may be a better option than a hotspare disk. **10** — RAID 10 is a stripe of mirrors. Multiple RAID 1 mirrors are created, and a RAID 0 stripe is created over these.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
			50 — RAID 50 is a dual level array that uses multiple RAID 5 sets in a single array. A single hard drive failure can occur in each of the RAID 5 without any loss of data on the entire array. Although the RAID 50 has increased write performance, when a hard drive fails and reconstruction takes place, performance decreases, data/program access is slower, and transfer speeds on the array are affected. **60** — RAID 60 is a combination of RAID 6 and RAID 0. A RAID 0 array is striped across RAID 6 elements. It requires at least 8 disks.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -ac=cvd -c=*id* -ad= *ch:targ,ch:targ,* ... [or *ch:targ:encl,...]* or controller action= createvdisk controllerid= *id* adisk= *channel:target: lun*, *channel:target: lun,...* [or *channel:target: enclosure,...]*	-rp or readpolicy	ra, ara, nra, rc, nrc	Sets the SCSI read policy for the virtual disk. Specify the SCSI read policy for the logical drive. The valid arguments are: **ra** — (read-ahead) The controller reads sequential sectors of the disk when seeking data. **ara** — (Adaptive Read-Ahead) The controller initiates read-ahead only if the two most recent read requests accessed sequential sectors of the disk. If subsequent read requests access random sectors of the disk, the controller reverts to No-Read-Ahead policy. The controller continues to evaluate whether or not read requests are accessing sequential sectors of the disk and can initiate read-ahead if necessary. **nra** — (No-Read-Ahead) The controller does not read sequential sectors of the disk when seeking data. **NOTE:** The **ra**, **ara**, and **nra** options are supported on the following RAID controllers only: • PERC 3/DC, PERC 3/QC, PERC 3/Di, PERC 3/SC • PERC4/SC, PERC 4/DC, PERC 4/Di, PERC 4/IM, PERC4e/DC, PERC 4e/Di, PERC 4e/Si • PERC 5/E Adapter, PERC 5/I Integrated, PERC 5/i Adapter • PERC 6/i Integrated, PERC 6/i Adapter, PERC 6/E Adapter

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
			NOTE: The PERC 4/IM controller has a fixed set of read, write, and cache policies. If you set any of these policies while creating a virtual disk, your settings will be ignored. **rc** — (Read-Caching) Enables read caching. **nrc** — (No-Read-Caching) Disables read caching. **NOTE:** The **rc** and **nrc** options are supported on the following RAID controllers only: CERC SATA 1.5/CH and PERC 3/Di. The **-rp** option is optional and can be added to the command line in any order after the mandatory option combination. **CAUTION: If the controller is changed from SCSI to RAID mode, expect data loss to occur. Back up any data you want to save before changing the modes.**

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -ac=cvd -c=*id* -ad= *ch:targ,ch:targ, ...* [or *ch:targ:encl,...]* or controller action= createvdisk controllerid= *id* adisk= *channel:target: lun,... channel:target: lun,...* [or *channel:target: enclosure,...]*	-sp or spanlength	<*number*>	Creates a virtual disk comprised of the properties supplied. The **-sp** option is optional and can be the added to the command line in any order after the mandatory option combination. **NOTE:** Spanlength is applicable only for RAID 50 and RAID 60. The minimum permissible spanlength value for RAID 50 is 3 and for RAID 60 is 4. The number of array disks for creating a virtual disk should not be a prime number and should be divisible by the specified spanlength. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -ac=cvd -c=*id* -ad= *ch:targ,ch:targ,* ... [or *ch:targ:encl,...]* or controller action= createvdisk controllerid= *id* adisk= *channel:target: lun, channel:target: lun,...* [or *channel:target: enclosure,...]*	-ssz or stripesize	<*number*>	Sets the stripe size for the virtual disk. The stripe size is the amount of array disk space used on each array disk included in the stripe. A valid argument is a number that is less than the size of the virtual disk. The **-ssz** option is optional and can be added to the command line in any order after the mandatory option combination. However, do not specify a unit for stripe size when creating virtual disks. The unit is always displayed in KB. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -ac=cvd -c=*id* -ad= ch:targ,ch:targ, ... [or *ch:targ:encl,...]* or controller action= createvdisk controllerid= *id* adisk= *channel:target: lun*, *channel:target: lun,...* [or *channel:target: enclosure,...]*	-str or strict	<number>	Strict (-str parameter) is the percentage of expected array disk utilization. Example: `A:> raidcfg -ctrl -ac= cvd -c=0 -ad=0:0,0:1 -r= 1 -str=20` If the unused portion of an array disk is greater than the above percent, raidcfg will abort. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -ac=cvd -c=*id* -ad= *ch:targ,ch:targ,* ... [or *ch:targ:encl,...]* or controller action= createvdisk controllerid= *id* adisk= *channel:target: lun,... channel:target: lun,...* [or *channel:target: enclosure,...]*	-sz or -size	<*number*>	Sets the maximum size of the virtual disk in MB or GB. A valid argument is a number representing the maximum size for the virtual disk. The **-sz** option is optional and can be the added to the command line in any order after the mandatory option combination. The minimum virtual disk size that you can create for various controllers is given below. • For CERC-SATA 1.5/6ch controllers: RAID 0: 10MB RAID 1: 9MB RAID 5: 9MB • For PERC 3 controllers: RAID 0: 10MB RAID 1: 10MB RAID 5: 10MB • For PERC 4 (except PERC 4/IM) controllers: RAID 0: 10MB RAID 1: 10MB RAID 5: 10MB

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
			• For PERC 5 controllers: RAID 0: 100MB RAID 1: 100MB RAID 5: 100MB • For PERC 6 controllers: RAID 0: 100MB RAID 1: 100MB RAID 5: 100MB RAID 6: 100MB RAID 60: 100MB • PERC 7 controllers: RAID 0: 100MB RAID 1: 100MB RAID 5: 100MB RAID 6: 100MB RAID 10: 100MB RAID 50: 100MB RAID 60: 100MB • Software RAID controllers: RAID 0: 100MB RAID 1: 100MB RAID 5: 100MB RAID 10: 100MB **NOTE:** If this option is not provided, RAIDCFG will determine the maximum possible virtual disk size and create it. RAID 10, RAID 50, and RAID 60 do not accept this option.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
	-wp or writepolicy	wb, wt, wc, nwc	Sets the write policy for the virtual disk. The valid arguments are: **wb** — (Write-Back Caching) sets the controller to send a write-request completion signal as soon as the data is in the controller cache but has not yet been written to disk. **wt** — (Write-Through Caching) sets the controller to send a write-request completion signal only after the data is written to the disk. **NOTE:** The **wb** and **wt** options are supported on the following RAID controllers only: • PERC 3/DC, PERC 3/QC, PERC 3/Di, PERC 3/SC • PERC 4/IM, PERC 4/SC, PERC 4/Di, PERC 4/DC, PERC 4e/DC, and PERC 4e/Di • PERC 5/E Adapter, PERC 5/I Integrated, PERC 5/i Adapter • PERC 6/i Integrated, PERC 6/i Adapter, PERC 6/E Adapter **NOTE:** The PERC 4/IM controller has a fixed set of read, write, and cache policies. If you set any of these policies while creating a virtual disk, your settings will be ignored. **wc** — (Write-Caching) sets the controller to send a write-request completion signal only after the data is written to the disk.

Table 4-4. Creating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
			nwc — (No-Write-Caching) specifies that the controller does not send a write-request completion signal after the data is written to the disk. **NOTE:** The **wc** and **nwc** options are supported on the following RAID controllers only: CERC SATA 1.5/CH and PERC 3/Di. The **-wp** option is optional and can be added to the command line in any order after the mandatory option combination. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure.

Enumerating Array Disks

Table 4-5 lists the RAIDCFG options, parameters, and pre-defined arguments for enumerating array disks (hard drives).

Table 4-5. Enumerating Array Disks (Hard Drives)

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-ad -c=*id*
or
adisk controllerid=*id*
	NA	NA	Lists all the array disks attached to the specified RAID controller. This option combination is mandatory.
			NOTE: You can also use pdisk or -pd instead of adisk or -ad to specify an array disk.
			NOTE: The following example displays output of a Series 7 controller.
			NOTE: Software controller does not display the **NegSpeed**, **CapSpeed**, **Certified** and **Supported** parameters.
			Example:
			`A:>raidcfg -ad -c=2`
			`Controller: PERC H700 Adapter`
			`****** Physical Drive ******`
			`Vendor: DELL(tm)`
			`Model: ST9146703SS`
			`Protocol: SAS`
			`Media: HDD`
			`NegSpeed: 6144 Mbps`
			`CapSpeed: 6144 Mbps`
			`Certified: YES`
			`Supported: YES`
			`Location: 0:0:1`
			`Size: 139392 MB (136 GB)`
			`Avail: 0 MB`

Table 4-5. Enumerating Array Disks (Hard Drives) *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description
			****** Physical Drive ****** Vendor: DELL(tm) Model: ST9146703SS Protocol: SAS Media: HDD NegSpeed: 6144 Mbps CapSpeed: 6144 Mbps Certified: YES Supported: YES Location: 0:1:1 Size: 139392 MB (136 GB) Avail: 0 MB ****** Physical Drive ****** Vendor: DELL(tm) Model: ST9146703SS Protocol: SAS Media: HDD NegSpeed: 6144 Mbps CapSpeed: 6144 Mbps Certified: YES Supported: YES Location: 0:2:1 Size: 139392 MB (136 GB) Avail: 139392 MB (136 GB)

Table 4-5. Enumerating Array Disks (Hard Drives) *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description
			RAIDCFG Command successful! ****** Physical Drive ****** Vendor: DELL(tm) Model: ST9146703SS Protocol: SAS Media: HDD NegSpeed: 6144 Mbps CapSpeed: 6144 Mbps Certified: YES Supported: YES Location: 0:3:1 Size: 139392 MB (136 GB) Avail: 139392 MB (136 GB ****** Physical Drive ****** Vendor: DELL Model: ST9146802SS Protocol: SAS Media: HDD NegSpeed: 3072 Mbps CapSpeed: 3072 Mbps Certified: YES Supported: YES Location: 0:4:1 Size: 139392 MB (136 GB) Avail: 139392 MB (136 GB) RAIDCFG command successful!

Table 4-5. Enumerating Array Disks (Hard Drives) *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-ad -c=*id*
or
adisk controllerid=*id*
	-vd=*id*
	vdisk=*id*
		<*valid virtual disk*>	Lists the array disks that make up the virtual disk on the specified RAID controller. This option combination is mandatory.
			Example:
			`A:>raidcfg -ad -c=2 -vd=0`
			`Controller: PERC 4e/DC`
			`Drive Vendor: FUJITSU`
			`Drive Model: MAP3367NC`
			`Drive Location: 0:0:0`
			`Drive Size: 34680 MB`
			`Drive Avail: 0 MB`
			`****** Physical Drive ******`
			`Drive Vendor: SEAGATE`
			`Drive Model: ST336607LC`
			`Drive Location: 0:1:0`
			`Drive Size: 34680 MB`
			`Drive Avail: 0 MB`
			`RAIDCFG Command successful!`

Table 4-5. Enumerating Array Disks (Hard Drives) *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-ad -c=*id*
or
adisk controllerid=*id* vdisk=*id*
	-ad=*ch:targ,ch:targ,...*
	adisk=*channel:target, channel:target,...*
		<*valid array disk*>
		<*valid array disk*>
			Displays information about the specified array disk. This option combination is mandatory.
			Example:
			`A:>raidcfg -ad -c=2 -ad= 0:1,0:2`
			`Controller: PERC 4e/DC`
			
			`****** Physical Drive ******`
			`Drive Vendor: SEAGATE`
			`Drive Model: ST336607LC`
			`Drive Location: 0:1:0`
			`Drive Size: 34680 MB`
			`Drive Avail: 0 MB`
			`****** Physical Drive ******`
			`Drive Vendor: FUJITSU`
			`Drive Model: MAP3367NC`
			`Drive Location: 0:2:0`
			`Drive Size: 34680 MB`
			`Drive Avail: 34680 MB`
			`RAIDCFG Command successful!`

Table 4-6 lists the RAIDCFG options, parameters, and pre-defined arguments for enumerating virtual disks.

Table 4-6. Enumerating Virtual Disks

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-vd
or
vdisk
	NA	NA	Lists the virtual disks for each controller along with the array disks that make up each virtual disk. This option is mandatory.
			Example:
			`A:>raidcfg -vd`
			`Controller: PERC 4e/DC`
			`Virtual disk not found`
			`Controller: PERC 4e/DC`
			`VDisk ID: 0`
			`Size: 34680 MB`
			`Type: RAID 1`
			`Read Policy: Normal Read Ahead`
			`Write Policy: Writeback`
			`Cache Policy: Direct_IO`
			`Drives: 0:0:0,0:1:0`
			`Controller: PERC 4/SC`
			`Virtual disk not found`
			`Controller: PERC 4/SC`
			`Virtual disk not found`
			`RAIDCFG Command successful!`

Table 4-6. Enumerating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-vd
or
vdisk
	-c
	or
	controller id
		<valid controller ID number>	Lists all the virtual disks under the indicated controllers. Each virtual disk is displayed with the physical disk that comprises it. The **-c** option is optional and can be added to the command line in any order after the mandatory option.
			Example:
			`A:>raidcfg -vd -c=2`
			`Controller: PERC 4e/DC`
			`VDisk ID: 0`
			`Size: 34680 MB`
			`Type: RAID 1`
			`Read Policy: Normal Read Ahead`
			`Write Policy: Writeback`
			`Cache Policy: Direct_IO`
			`Drives: 0:0:0,0:1:0`
			`RAIDCFG Command successful!`

Table 4-6. Enumerating Virtual Disks *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-vd -c=*id*
or
vdisk controllerid=*id*
	-vd
	or
	vdisk
		<*valid virtual disk ID number*>	Displays details about a single virtual disk under the indicated controller. The **-vd -c=** *id* option combination is mandatory. The second **-vd** option is optional and can be added to the command line in any order after the mandatory option combination.
			Example:
			`A:>raidcfg -vd -c=2 -vd=0`
			`Controller: PERC 4e/DC`
			`VDisk ID: 0`
			`Size: 34680 MB`
			`Type: RAID 1`
			`Read Policy: Normal Read Ahead`
			`Write Policy: Writeback`
			`Cache Policy: Direct_IO`
			`Drives: 0:0:0,0:1:0`
			`Dedicated HS: 1:2:0`
			`RAIDCFG Command successful!`

Initializing Virtual Disks

Table 4-7 lists the RAIDCFG options, parameters, and pre-defined arguments for initializing selected virtual disks.

Table 4-7. Initializing Virtual Disks

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-vd -c=*id* -vd=*id* -ac=fi or vdisk controllerid=*id* vdisk=*id* action=fastinit	NA	<*valid virtual disk ID number*>	This option initializes the selected virtual disk in the selected controller with the **fastinit** command. This feature is supported on PERC 5 and later controllers and is not supported on SAS controllers. Using the **fastinit** command on unsupported controllers returns an error. Example: `A:>raidcfg -vd -c=2 -vd=2 -ac=fi`
-vd -c=*id* -vd=*id* -ac=sli or vdisk controllerid=*id* vdisk=*id* action=slowinit	NA	<*valid virtual disk ID number*>	This option initializes the selected virtual disk in the selected controller with the **slowinit** command. This feature is supported on PERC 5 and later controllers and is not supported on SAS controllers. Using the **slowinit** command on unsupported controllers returns an error. Example: `A:>raidcfg -vd -c=2 -vd=2 -ac=sli`
-vd -c=*id* -vd=*id* -ac=sli or vdisk controllerid=*id* vdisk=*id* action=cancelinit	NA	<*valid virtual disk ID number*>	This option cancels the initialization of the virtual disk with the **cancelinit** command. This feature is supported on PERC 5 and later controllers and is not supported on SAS controllers. Using the **cancelinit** command on unsupported controllers returns an error. Example: `A:>raidcfg -vd -c=2 -vd=2 -ac=ci`

Importing and Clearing Foreign Configurations

Table 4-8 lists the RAIDCFG options, parameters, and pre-defined arguments for foreign configurations.

Table 4-8. RAIDCFG Options for Foreign Configurations

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -c=*id* -ac= fgnimp or controller controllerid=*id* action= foreignimport	NA	<*valid virtual disk ID number*>	Imports the foreign configuration detected in the selected controller. This feature is supported on PERC 5 and later controllers and is not supported on SAS controllers. If you use this argument on a controller that does not have a foreign configuration, the "No Foreign configuration present in the controller" message is displayed. Example: `A:>raidcfg -ctrl -c=2 -ac=fgnimp`
-ctrl -c=*id* -ac= fgnclr or controller controllerid=*id* action= foreignclear	NA	<*valid virtual disk ID number*>	Clears the foreign configuration detected in the selected controller. This feature is supported on PERC 5 and later controllers and is not supported on SAS controllers. If you use this argument on a controller that does not have a foreign configuration, the "No Foreign configuration present in the controller" message is displayed. Example: `A:>raidcfg -ctrl -c=2 -ac=fgnclr`

Table 4-8. RAIDCFG Options for Foreign Configurations *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-ctrl -c=*id* -ac= fgnrvr or controller controllerid=*id* action= foreignrecover	NA	<*valid virtual disk ID number*>	Recovers the foreign configuration detected in the selected controller. This feature is supported from the PERC 5 and later controllers and is not supported on SAS controllers. If you use this argument on a controller that has no foreign configuration, the "No Foreign configuration present in the controller" message is displayed. Example: `A:>raidcfg -ctrl -c=2 -ac=fgnrvr`

Deleting Virtual Disks

Table 4-9 lists the RAIDCFG options, parameters, and pre-defined arguments for deleting virtual disks.

NOTE: If you delete a virtual disk on PERC 4/IM on Windows PE, you need to reboot the system.

Table 4-9. Deleting Virtual Disks

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-vd -ac=dvd -c=*id*
or
vdisk action= deletevdisk controllerid= *id*
	NA	NA	Deletes all virtual disks on the indicated controller. This option combination is mandatory.
			Example:
			`A:>raidcfg -vd -ac=dvd -c=2`
			`RAIDCFG command successful!`

-vd -ac=dvd -c=*id*
or
vdisk action= deletevdisk controllerid= *id*
	-vd
	or
	vdisk
		<*valid virtual disk ID number*>	Deletes the indicated virtual disk on the indicated controller. The **-vd -ac=dvd -c=***id* option combination is mandatory.
			The second **-vd** option is optional and can be added to the command line in any order after the mandatory option.
			Example:
			`A:>raidcfg -vd -ac=dvd -c=2 -vd=0`
			`RAIDCFG command successful!`

NOTE: When virtual disks are being created, the RAID controller starts the background initialization operation. Virtual disks cannot be deleted until this operation completes. This limitation affects mostly PERC 3/Di and CERC SATA controllers.

NOTE: If the **raid.ini** file contains the **[Reset]** section, then the RAIDCFG utility removes all the hot spares (dedicated and global) and virtual disks on the specified RAID controllers in the system.

Assigning and Unassigning Global Hot Spares

Table 4-10 lists the RAIDCFG options, parameters, and pre-defined arguments for assigning and unassigning global hot spares.

Table 4-10. Assigning and Unassigning Global Hot Spares

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-ctrl -ac=sghs -c=*id* -ad|-pd=*ch:targ:encl,ch:targ:encl*	NA	NA	Assigns the specified disks as global hot spares on the specified controller.
			Example:
			`A:>raidcfg -ctrl -ac=sghs -c=2 -ad=0:1,0:2`
			
			`RAIDCFG command successful!`

-ctrl ac=rghs -c=*id* -ad|-pd=*ch:targ:encl,ch:targ:encl*	NA	NA	Unassigns all global hot spares to disks on the specified controller.
			Example:
			`A:>raidcfg -ctrl -ac=rghs -c=2`
			
			`RAIDCFG command successful!`

Setting Environment Variables

Table 4-11 lists the RAIDCFG options, parameters, and pre-defined arguments for setting the CLI environment.

Table 4-11. Setting Environment

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-se -envn=<*string*> -envc=<*function*>
or
setenvironment envname=<*string*> envcommand=<*function*>
	NA	NA	Sets a user-defined environment variable to the value returned from the `getcontrollerslots` function call. This option combination is mandatory.
			Example:
			`A:>raidcfg -se -envn=CNTRL -envc=getcontrollerslots`
			`CNTRL=0 1 2`
			`RAIDCFG command successful!`

-se -envn=<*string*> -envc=<*function*> or setenvironment envname=<*string*> envcommand=<*function*>	-f or filename	<*filename*>	When used, this option captures the environment output to the given filename. This option either appends the information to an existing file or creates a new file.

Table 4-11. Setting Environment *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

-se -envn=<*string*> -envc=<*function*> -c=*id*
or
setenvironment envname=<*string*> envcommand=<*function*> controllerid=*id*
	NA	NA	Sets a user-defined environment variable to the value returned from the `getfirmware`, `getcontrollertype`, `getadisks`, `getadiskcount`, `getfreeadisks`, `getfreeadiskcount`, `getfreeadisksize`, or `gethotspares` function call. This option combination is mandatory.
			Example:
			`A:>raidcfg -se -envn=FIRMWARE -envc=getfirmware -c=2`
			`FIRMWARE=531T`
			
			`RAIDCFG command successful!`

Table 4-12 lists the function calls of the **setenvironment** option.

Table 4-12. Function Calls of the setenvironment Option

Function Call	Description

getfirmware	Returns the firmware version of the specified controllers.
	Example:
	`A:>raidcfg -se -envn=FIRMWARE -envc= getfirmware -c=2`
	`FIRMWARE=531T`
	
	`RAIDCFG command successful!`

getcontrollertype	Returns `LSI` for LSI controllers and `ADAP` for Adaptec controllers.
	Example:
	`A:>raidcfg -se -envn=CONTROLLERTYPE -envc= getcontrollertype -c=2`
	`CONTROLLERTYPE=LSI`
	
	`RAIDCFG command successful!`

getadisks	Returns the array disks attached to the controller.
	Example:
	`A:>raidcfg -se -envn=ADISKS -envc=getadisks -c=2`
	`ADISKS=0:0:1,0:1:1,0:2:1`
	
	`RAIDCFG command successful!`

Table 4-12. Function Calls of the setenvironment Option *(continued)*

Function Call	Description

getfreeadiskcount	Returns the number of free array disks found in the specified controller.
	Example:
	`A:>raidcfg -se -envn=FREEADISKCOUNT -envc= getfreeadiskcount -c=2`
	`FREEADISKCOUNT=2`
	
	RAIDCFG command successful!

getfreeadisksize	Returns the total size of the free array disks in megabytes.
	Example:
	`A:>raidcfg -se -envn=FREEADISKSIZE -envc= getfreeadisksize -c=2`
	`FREEADISKSIZE=15346`
	
	RAIDCFG command successful!

gethotspares	Returns the global hot spares (global failover disks) found on the specified controller.
	Example:
	`A:>raidcfg -se -envn=HOTSPARES -envc= gethotspares -c=2`
	`HOTSPARES=1:8:1,1:9:1`
	
	RAIDCFG command successful!

Table 4-12. Function Calls of the setenvironment Option *(continued)*

Function Call	Description

getfreeadisks	Returns the free array disks.
	`A:>raidcfg -se -envn=GETFREEADISKS -envc= getfreeadisks -c=2`
	`GETFREEADISKS=0:3:1,0:4:1`
	
	RAIDCFG command successful!

getadiskcount	Returns the total number of array disks.
	`A:>raidcfg -se -envn=GETADISKCOUNT -envc= getadiskcount -c=2`
	`GETADISKCOUNT=1`
	
	RAIDCFG command successful!

RAID Replication Options

Table 4-13 lists the RAID replication options.

Table 4-13. RAID Replication Options

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description
-i	NA	<*filename*>	Reads the RAID configuration information from the given **.ini** filename and creates the RAID configurations on the specified controllers. This option is mandatory. Example: `A:> raidcfg -i=\tmp\raid.ini`

-o	NA	<*filename*>	Reads the RAID configurations from all available controllers and writes these configurations in the **raid.ini** file under the **/tmp** directory (in Linux systems). This option is mandatory.
			Example:
			`A:> raidcfg -o=\tmp\raid.ini`
			`The contents of the raid.ini file are:`
			`[vdisk0]`
			`controllerid=0`
			`size=123456`
			`raid=5`
			`readpolicy=ra`
			`writepolicy=wt`
			`stripesize=32`
			`cachepolicy=d`
			`adisk=0:0:1,0:1:1,0:2:1`
			`[vdisk1]`

Table 4-13. RAID Replication Options *(continued)*

Mandatory Options and Arguments	Optional Parameters	Valid Parameter Arguments	Description

			`controllerid=0`
			`size=65345`
			`raid=1`
			`readpolicy=ra`
			`writepolicy=wt`
			`stripesize=64`
			`cachepolicy=d`
			`adisk=0:3:1,0:4:1`
			If the controller uses global hot spares, the **raid.ini** file contains the following section:
			`[GlobalHotspare0]`
			`controllerid=0`
			`failoverdrive=0:8:0`

Miscellaneous Options

Table 4-14 lists all other RAIDCFG options, parameters, and pre-defined arguments.

Table 4-14. Miscellaneous Optional Parameters

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

any	-l
	or
	logfile
		<*filename*>	Logs command line output to a file. The utility either appends the information to an existing log file or creates a new file. The log file contains the same information as standard output. This option is optional and can be added to the command line in any order after the mandatory options have been added.
			Example:
			`A:>raidcfg -ctrl -l=log.txt`
			`Controller_ID/Slot_ID: 0`
			`Controller_PCI_ID: 4:2:1`
			`Controller_Name: Dell PERC 3/Di`
			`Channels: 2`
			`Virtual_Disks: 0`
			`Firmware Version: V2.8-0[6064]`
			`Controller_ID/Slot_ID: 2`
			`Controller_PCI_ID: 2:0:0`
			`Controller_Name: PERC 3/DC`
			`Channels: 2`
			`Virtual_Disks: 0`
			`Firmware Version: 1.74`
			`RAIDCFG command successful!`

Table 4-14. Miscellaneous Optional Parameters *(continued)*

Mandatory Options and Arguments	Optional Parameter	Valid Parameter Arguments	Description

any	-si
	or
	silent
		NA	Does not display any information on the terminal console. This option is optional and can be added to the command line in any order after any mandatory options have been added.
			Example:
			`A:>raidcfg -ctrl -si`
			`RAIDCFG command successful!`

any	-ver
	or
	version
		NA	Displays the version number of the RAIDCFG utility. This option is optional and can be added to the command line in any order after any mandatory options have been added.
			Example:
			`A:>raidcfg -ver`
			`RAIDCFG V2.4`
			`Copyright (c) 2005-2007 Dell Inc.`
			`RAIDCFG Command successful!`

Quick Reference to RAIDCFG Commands

Table 4-15 lists the basic RAIDCFG commands.

Table 4-15. Basic RAIDCFG Commands

Purpose	Command	Description
To list all the RAID controllers in a system	`raidcfg -ctrl`	Lists all the RAID controllers in the system. Note the slot ID of the controllers. You will need it for all the other commands.
To list all the disks attached to a particular controller	`raidcfg adisk -c=slotid`	Lists all the disks attached to the controller. The slot ID is obtained from the first command. Note the drive location of the disks. You will need this information later.
To create a virtual disk with all the default settings	`raidcfg -ctrl -ac=cvd -c=slotid -ad=x:y,x:y,...`	Creates a virtual disk of maximum available size for type RAID 0. RAID 0 is the default. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands.
To create a virtual disk of a certain size with all the default settings	`raidcfg -ctrl -ac=cvd -c=slotid -ad=x:y,x:y,... -sz=5GB`	Creates a virtual disk of 5GB size for type RAID 0. RAID 0 is the default. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands.
To create a virtual disk of a certain size and make it RAID 1	`raidcfg -ctrl -ac=cvd -c=slotid -ad=x:y,x:y -sz=5GB -r=1`	Creates a virtual disk of 5GB size for type RAID 1. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands.

Table 4-15. Basic RAIDCFG Commands *(continued)*

Purpose	Command	Description
To create a virtual disk of a certain size and make it RAID 5	`raidcfg -ctrl -ac=cvd -c= slotid -ad= x:y,x:y,x:y,... -sz=5GB -r=5`	Creates a virtual disk of 5GB size for type RAID 5. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands.
To create a virtual disk of a certain size and make it RAID 1 with a hot spare	`raidcfg -ctrl -ac=cvd -c= slotid -ad= x:y,x:y -sz=5GB -r=1 -fd=x:y`	Creates a virtual disk of 5GB size for type RAID 1. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands. The option <-fd> stands for failover drive and requires the drive location of the drive you want the dedicated hot spare to be in. The drive location is obtained from the second command.
To create a virtual disk of RAID 10	`raidcfg -ctrl -ac=cvd -c= slotid -ad= x:y,x:y,x:y,x:y -r=10`	Creates a virtual disk of max size for type RAID 10. The slot ID in<-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands. The drive location is obtained from the second command.
To create a virtual disk of RAID 50	`raidcfg -ctrl -ac=cvd -c= slotid -ad= x:y,x:y,x:y,x:y ,x:y,x:y -r=50 -sp=x`	Creates a virtual disk of maximum size for type RAID 50. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands. The drive location is obtained from the second command.

Table 4-15. Basic RAIDCFG Commands *(continued)*

Purpose	Command	Description
To create a virtual disk of RAID 6	`raidcfg -ctrl -ac=cvd -c= slotid -ad= x:y,x:y,x:y,x:y ,x:y,x:y -r=6 -sp=x`	Creates a virtual disk of maximum size for type RAID 6. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands. The drive location is obtained from the second command. **NOTE:** The minimum number of drives required to create a virtual disk of RAID 6 is 4.
To create a virtual disk of RAID 60	`raidcfg -ctrl -ac=cvd -c= slotid -ad= x:y,x:y,x:y,x:y ,x:y,x:y -r=60 -sp=x`	Creates a virtual disk of maximum size for type RAID 60. The slot ID in <-c=slotid> and the array disks in <-ad=...> are obtained from the first two commands. The drive location is obtained from the second command. **NOTE:** The minimum number of drives required to create a virtual disk of RAID 60 is 8.
To view all the virtual disks in a system	`raidcfg vdisk`	Lists the virtual disks on a system for all RAID controllers.
To view all the virtual disks for a specific controller	`raidcfg vdisk -c=slotid`	Lists all the virtual disks on a specific controller. The slot ID in <-c=slotid> is obtained from the first command.
To delete a specific virtual disk on a controller	`raidcfg vdisk -ac=dvd -c= slotid -vd= vdiskid`	Deletes a specific virtual disk on a controller. The slot ID in <-c=slotid> is obtained from the first command and the vdiskid in <-vd=vdiskid> is obtained from command 10.

5

UPINIT

The UPINIT utility is used to make a utility partition (UP) on a hard drive, format the partition, and extract the partition contents onto the disk.

Features

The UPINIT utility has the following general features:

- Displays help and usage information.
- Returns specific error codes and messages.

NOTE: In Microsoft® Windows® Preinstallation Environment (Windows PE), you can find the UPINIT utility in **\DELL\TOOLKIT\TEMPLATES\SCRIPTS**. In Linux, you can find it in **/opt/dell/toolkit/templates/scripts**.

Creating a Partition Using UPINIT

The size of the virtual disk where a utility partition is to be created must be a minimum of 8 GB.

UPINIT performs the following steps:

- Ensures that the UP image file is present and readable.
- Ensures that no partitions are present on the target disk.
- Creates a utility partition of type Dell Utility (DE)

  If there is an existing UP, UPINIT does not create a new one. It only updates the existing UP. If no UP is found, UPINIT exits.
- Updates the boot sector with the UP boot sector image. If required, it updates the master boot record as well.
- Mounts the partition.

- Uncompresses the UP file onto the UP image.
- Unmounts the partition.

NOTE: On Windows PE, UPINIT runs as a batch file. In Linux, it is a shell script that uses standard Linux commands to accomplish the same tasks done by the Windows PE counterpart. Both command lines are identical and the output of the two utilities will be identical if the same image is used.

UPINIT Dependencies

In Linux, UPINIT looks for the following files:

- **mbr** file in the **dell/drmk** directory
- **sysdrmk** in the **dell/toolkit/bin** directory

In Windows, UPINIT looks for the following files:

- **createup.cfg**, **mountup.cfg**, **umountup.cfg, listup.cfg** in the **DELL\TOOLKIT\TEMPLATE\SCRIPTS** directory
- **sysdrmk.exe** in the **DELL\TOOLKIT\TOOLS** directory

UPINIT Options and Arguments

Table 5-1 lists the valid options and arguments for the UPINIT utility.

Table 5-1. UPINIT Options and Arguments

Option	Valid Arguments	Description

none	none	If no options are given, the tool will output usage information. The usage information will be printed in the format shown below.
		Example 1:
		`A:>upinit`
		`upinit version 1.0`
		`© 2005 Dell Inc. All rights reserved`
		`upinit.sh --disk|-d=disk --size|-s= size --file|-f=file [--overwrite|-o] [--help|-h]`
		`--help or -h prints help.`
		`--disk or -d disk device on which to create the Dell Utility Partition.`
		`--size or -s Size in MB for the Dell Utility Partition.`
		`--file or -f filename of Dell Utility Partition Image File.`
		`--overwrite or -o Installs the Dell Utility partition over an existing one.`
		Example 2:
		`upinit --disk=/dev/sda --size=32 --file=upimg.bin`
		`In the example, upinit creates a Dell Utility Partition of size 32 MB on /dev/sda using upimg.bin file.`
		NOTE: The **--overwrite** option should be used for upgrading/downgrading purposes. The **--size** option is not required when using the **--overwrite** option because the **--overwrite** option does not resize an existing Dell™ Utility Partition. If any partitions exist, they will not be deleted.

Table 5-1. UPINIT Options and Arguments *(continued)*

Option	Valid Arguments	Description

-h	none	This function command requires an argument that matches a valid option. If the argument matches a valid option, that option's usage information is displayed. This option cannot be used with other options.
		Windows PE Example:
		`upinit version 1.0`
		`Copyright (c) 2002-2006 Dell Inc.`
		`This utility creates a utility partition for your system.`
		`This utility requires a Utility Partition image file (upimg.bin) which can be found under /opt/dell/toolkit/systems folder in the Deployment Toolkit ISO. For more information, please consult the Deployment Toolkit Documentation.`
		Usage:
		`upinit.bat [--overwrite] --disk=ID or -d=ID --size=size or -s=size`
		`--file=file or -f=file`
		`--help or -h prints usage.`
		`--disk or -d ID of the disk on which to create the Dell Utility Partition.`
		`--size or -s Size in MB for the Dell Utility Partition.`
		`--file or -f Filename of the Dell Utility Partition Image File.`
		`--overwrite or -o Overwrites an existing Dell Utility Partition.`
		Example:
		`upinit --disk=0 --size=32 --file= upimg.bin`

Table 5-1. UPINIT Options and Arguments *(continued)*

Option	Valid Arguments	Description

		In the example, upinit creates a Dell Utility Partition of size 32 MB using the **upimg.bin** image file.
		The **--overwrite** option should be used for upgrading/downgrading purposes. The **--size** option is not required when using the **--overwrite** option because the **--overwrite** option does not resize an existing Dell Utility Partition. If any partitions exist, they will not be deleted.
		Linux Example:
		`upinit version 1.0`
		`Copyright (c) 2002-2006 Dell Inc.`
		`This utility creates a utility partition for your system.`
		`This utility requires a Utility Partition image file (upimg.bin) which can be found under /opt/dell/toolkit/systems folder in the Deployment Toolkit ISO. For more information, please consult the Deployment Toolkit Documentation.`
		Usage:
		`upinit.sh --disk|-d=disk --size|-s= size --file|-f=file [--overwrite|-o] [--help|-h]`
		`--help or -h prints help.`
		`--disk or -d disk device on which to create the Dell Utility Partition.`
		`--size or -s Size in MB for the Dell Utility Partition.`
		`--file or -f filename of Dell Utility Partition Image File.`

Table 5-1. UPINIT Options and Arguments *(continued)*

Option	Valid Arguments	Description

		`--overwrite or -o Installs the Dell Utility partition over an existing one.`
		Example:
		`upinit --disk=/dev/sda --size=32 --file=upimg.bin`
		In the example, upinit creates a Dell Utility Partition of size 32 MB on **/dev/sda** using the **upimg.bin** file.
		The **--overwrite** option should be used for upgrading/downgrading purposes. The **--size** option is not required when using the **--overwrite** option because the **--overwrite** option does not resize an existing Dell Utility Partition. If any partitions exist, they will not be deleted.

disk	integer, required (Windows) string, required (Linux)	Specifies the disk on which to create a utility partition. This disk will be checked to ensure that there are no existing partitions. Utility will exit with an error if the disk has partitions other than a utility partition. Use option --overwrite to overwrite an existing utility partition. Example: A:> upinit **--**disk=0 --size=32 --file=c:\upimage.bin (WinPE Example) # upinit --disk=/dev/hda --size=32 --file=/home/BIN/upimage.bin (Linux Example)
size	integer, required	The size of the utility partition to create. The created utility will be at least the size specified by size and be as close to actual size as drive geometry will allow. Example: `A:> upinit --disk=0 --size=32 --file=c:\upimage.bin`

Table 5-1. UPINIT Options and Arguments *(continued)*

Option	Valid Arguments	Description
file	string, required	Specifies a file that will be decompressed onto the utility partition. This file will be checked for existence and availability before any partitions are created on the disk. If the file is not specified, the utility will simply create the utility partition, format it, and exits. It will be up to the user to mount and populate the utility partition. It is very unlikely that the user will NOT specify the utility partition format. Example: `A:> upinit --disk=0 --size=32 --file= c:\upimage.bin`
--overwrite	string, optional	Overwrites an existing utility partition. It does not create a new partition or delete an existing partition.

6

RACADM

The RACADM utility provides a scriptable interface that allows you to locally or remotely configure your remote access controller (RAC).

Using the RACADM utility, you can enter command line options to configure RAC properties. When you enter command line options, the RACADM utility sets or retrieves object property values in the RAC properties database.

You can also use the RACADM utility to write scripts that will automatically configure multiple RACs. For example, when configuring in batch mode, a series of calls to the RACADM utility can perform actions such as upgrading RAC firmware, setting a property to a specific value, and reading the configuration of the RAC. All command switches are case sensitive. For more information about configuring multiple RACs, see "RAC Configuration File" in the *Dell Remote Access Controller Racadm User's Guide*.

CAUTION: Commands and code samples in this section are RAC-specific. Some commands or samples may not be applicable to your RAC. Also, the -r option for performing racadm commands remotely is not available for the RACADM utility.

NOTE: In Microsoft® Windows® Preinstallation Environment (Windows PE), you can find the RACADM utility in **\DELL\TOOLKIT\TOOLS.** In Linux, you can find it in **/opt/dell/toolkit/bin**. The RAC service must be started before issuing racadm commands. In Linux systems, the RAC service is started by the **racsvc3.sh** (for DRAC III, DRAC III/XT, ERA, ERA/O, and ERA/MC RACs) or the **racsvc4.sh** (for DRAC 4/P and DRAC 4/I RACs) script located at **/opt/dell/toolkit/bin**. In Windows systems, the RAC service is called racsvc and is located at **\DELL\DRIVERS\RAC 4**.

Features

The RAC configuration utility has the following general features:

- Displays help and usage information.
- Configures RAC information.
- Saves RAC configuration information to a configuration file.
- Logs activity to a given filename.
- Returns specific error codes and messages.

RACADM Options

Table 6-1 lists the options and arguments for the RACADM utility that apply to deployment. For more information about the valid RACADM options, see "RAC Configuration Utility Options, Subcommands, and Arguments."

NOTE: Some of the following options or arguments might not be available on all systems.

Table 6-1. RACADM Options

RACADM Options and Arguments	RACADM Subcommands	Short Description
-i	NA	Tells the RACADM utility to interactively query the user for the user's user name and password.
-l<*integer*>	NA	Specifies the log level for debug. See "Log/Verbose Levels." **NOTE:** Ensure that you run this option from a writable folder.
-L<*filename*>	NA	Specifies the location for the debug log file.
-p<*password*>	NA	Specifies the password used to authenticate the command transaction. If the **-p** option is used, the **-i** option is not allowed.
-u<*username*>	NA	Specifies the user name that is used to authenticate the command transaction. If not specified, the default user name `racadmusr` is used. If the **-u** option is used, the **-p** option must be used, and the **-i** option (interactive) is not allowed.
-v<*integer*>		Specifies the verbose level for screen output. See "Log/Verbose Levels."
	clearasrscreen	Clears the last automatic server restart (ASR) (crash) screen.
	clrraclog	Clears the RAC log.

Table 6-1. RACADM Options *(continued)*

RACADM Options and Arguments	RACADM Subcommands	Short Description
	clrsel	Clears RAC system event log (SEL).
	config	Configures the RAC. See "config/getconfig" for more information about the subcommand options and arguments.
	coredump	Displays the last RAC coredump.
	coredumpdelete	Deletes the last RAC coredump.
	fwupdate	Updates the firmware on the RAC. See "fwupdate" for more information about the subcommand options and arguments.
	getconfig	Gets the RAC configuration data. See "config/getconfig" for more information about the subcommand options and arguments.
	getniccfg	Displays the current network settings.
	getssninfo	Retrieves session information for one or more currently active or pending sessions from the Session Manager's session table. See "getssninfo" for more information about the subcommand options and arguments.
	getraclog	Displays the RAC log. See "getraclog" for more information about the subcommand options and arguments.
	getractime	Displays the current RAC time.
	getsel	Displays records from the SEL.
	getssninfo	Displays the session information. See "getssninfo" for more information about the subcommand options and arguments.
	getsvctag	Displays the service tag information.

Table 6-1. RACADM Options *(continued)*

RACADM Options and Arguments	RACADM Subcommands	Short Description
	getsysinfo	Retrieves session information for one or more currently active or pending sessions from the Session Manager's session table. See "getsysinfo" for more information about the subcommand options and arguments.
	gettracelog	Displays the RAC diagnostic trace log. See "gettracelog" for more information about the subcommand options and arguments.
	help	Lists all of the subcommands available to use with the RACADM utility and provides a short description for each. See "getraclog" for more information about the subcommand options and arguments.
	localauthenticate	Enables or disables the local operating system authentication.
	localConRedirDisable	Performs local vKVM disable from local system.
	racdump	Displays status and general RAC information. See "racdump" for more information about the subcommand options and arguments.
	racreset	Resets the RAC. See "racreset" for more information about the subcommand options and arguments.
	racresetcfg	Resets all database configuration parameters to default values; equivalent to a soft reset. See "racresetcfg" for more information about the subcommand options and arguments.

Table 6-1. RACADM Options *(continued)*

RACADM Options and Arguments	RACADM Subcommands	Short Description
	setrac	Sets RAC parameters from the managed system. See "setrac" for more information about the subcommand options and arguments.
	serveraction	Performs system power management operations.
	setniccfg	Modifies the network configuration properties.
	sslcertupload	Uploads an SSL (Secure Socket Layer) certificate to the RAC.
	sslcertdownload	Downloads an SSL certificate from the RAC.
	sslcertview	Displays the SSL certificate information.
	sslcsrgen	Generates a certificate CSR (certificate signing request) from the RAC.
	sslkeyupload	Uploads an SSL key to the RAC.
	testemail	Tests RAC e-mail notifications.
	testtrap	Tests RAC SNMP trap notifications.
	version	Displays the RACADM version information.
	vmdisconnect	Disconnects virtual media connections.
	vmkey	Performs virtual media key operations.
	usercertupload	Uploads a user certificate to the DRAC.
	usecertview	Displays the user certificate information.

Error Messages

When using RACADM utility commands and subcommands, you may encounter one or more of the following errors:

- Local error messages occur when problems occur with syntax, typographical errors, incorrect names, and so on.

  Example:

  ```
  racadm <subcmd> : ERROR : <message>
  ```

- Transport error messages occur when the RACADM utility communication paths to the RAC are not accessible.

  Example:

  ```
  racadm <subcmd> : Transport : ERROR : <message>
  ```

- RAC firmware errors occur when a fault exists in the RAC firmware operation.

  Example:

  ```
  racadm <subcmd> : Firmware : ERROR : <message>
  ```

RAC Configuration Utility Options, Subcommands, and Arguments

The following sections document all valid options, subcommands, and arguments along with a description of the expected behavior of many option-subcommand-argument combinations. Options, subcommands, and arguments are case sensitive. All options, subcommands, and pre-defined arguments are lowercase unless explicitly stated otherwise.

- racadm Command
- config/getconfig
- fwupdate
- getssninfo
- getsysinfo
- getraclog
- racdump

- racreset
- racresetcfg
- setrac

NOTE: Some of the following options or arguments might not be available on all systems.

racadm Command

Table 6-2. racadm Command Help Option

Command	Definition
racadm	Command line status and configuration utility for RACs.

Description

Without options, the RACADM utility executes the **help** command, which displays a list of available tests and a one-line description of each. The RACADM utility help <*subcommand*> displays any syntax and command line options.

racadm Syntax

```
racadm <options> <subcommand> <subcommand_options>
```

racadm Options

The base **racadm** command has the following options and arguments:

Table 6-3. Base racadm Command Options and Arguments

Option	Description
-l <*lvl*>	Specifies the log level for debug. **NOTE:** Ensure that you run this option from a writable folder.
-v <*lvl*>	Specifies the verbose level for screen output.
-L <*file*>	Specifies a debug log file.

Enabling and Disabling Remote Security

NOTE: It is recommended that you run these commands on your local system. You must reset the RAC controller to enable these commands.

Enter the following command to enable remote security:

```
racadm config -g cfgRacTuning -o
cfgRacTuneRemoteRacadmEnable 1
```

Enter the following command to disable remote security:

```
racadm config -g cfgRacTuning -o
cfgRacTuneRemoteRacadmEnable 0
```

Log/Verbose Levels

Table 6-4. Log/Verbose Levels

Option	Description
0x1	Standard out messages
0x2	Standard error messages
0x4	Debug messages

Example:

```
racadm -l 0x3 -L log <subcommand [subcommand_options]>
```

The argument 0x3 for the log level is the OR of STDOUT and STDERR messages. Both of these message types are written to the filename **log**. The verbose, or **-v**, option defaults to 0x3, or STDOUT, STDERR.

racadm Subcommands/Arguments

Table 6-5. racadm Subcommands and Arguments

Command	Description
config/getconfig	Configures the RAC and displays the RAC configuration.
fwupdate	Executes or gets status on RAC firmware updates.
getsysinfo	Displays general RAC and system information.
getraclog	Lists RAC subcommands.

Table 6-5. racadm Subcommands and Arguments *(continued)*

Command	Description
getraclog <*subcommand*>	Lists usage statement for the specified subcommand.
racdump	Dumps RAC status and state information for debug.
racreset	Resets the RAC.
racresetcfg	Resets the RAC to the default configuration.
setrac	Sets time, managed system name, operating system name, and type from the managed system to the RAC.

config/getconfig

Table 6-6. config/getconfig Subcommands

Command	Definition
config	Configures the RAC.
getconfig	Gets the RAC configuration data.

Synopsis

```
racadm config [-p -c] -f <filename>

racadm config -g <groupName> -o <objectName> [-i
<index>] <Value>
```

NOTE: Option **-f** excludes the use of the **g**, **o**, and **i** options.

```
racadm getconfig [-p] -f <filename>

racadm getconfig -g <groupName> [-i <index>]

racadm getconfig -u <username>

racadm getconfig -h
```

config Subcommand Description

The configuration subcommand allows the user to set RAC configuration parameters individually or to batch them as part of a configuration file. After the **.cfg** file has been correctly parsed, each object is read. If the content is the same, a write to the RAC does not occur. If the data is different, that RAC object is written with the new value.

Input

Table 6-7. config Subcommand Options

Option	Description
-f	The **-f** <*filename*> option causes config to read the contents of the file specified by <*filename*> and configure the RAC. The file must contain data in the format specified in "Parsing Rules."
-p	The **-p**, or password option, directs **config** to delete the password entries contained in the config file **-f** <*filename*> after the configuration is complete.
-g	The **-g** <*groupName*>, or group option, must be used with the **-o** option. The <*groupName*> specifies the group containing the object that is to be set.
-o	The **-o** <*objectName*> <*Value*>, or object option, must be used with the **-g** option. This option specifies the object name that is written with the string <*Value*>.
-i	The **-i** <*index*>, or index option, is only valid for indexed groups and can be used to specify a unique group. The <*index*> is a decimal integer from 1–16. The index is specified here by the index value, not a named value.
-c	The **-c**, or check option, is used with the **config** subcommand and allows the user to parse the **.cfg** file to find syntax errors. If errors are found, the line number and a short description of what is incorrect are displayed. Writes do not occur to the RAC. This option is a check only.

Output

This subcommand generates error output upon encountering either of the following:

- Invalid syntax, group name, object name, index, or other invalid database members
- RACADM utility transport failures

If errors are not encountered, this subcommand returns an indication of how many configuration objects that were written out of how many total objects were in the **.cfg** file.

getconfig Subcommand Description

The **getconfig** subcommand allows the user to retrieve RAC configuration parameters on an individual basis, or all the configuration groups may be retrieved and saved into a file.

Input

Table 6-8. getconfig Subcommand Options

Option	Description
-f	The **-f** <*filename*>, or **filename** option, causes **getconfig** to create the file <*filename*>. It then reads all the configuration data from the RAC and places it into the file <*filename*>. The created file is a format that can be used with the **racadm config -f** <*filename*> command.
-p	The **-p**, or **password** option, causes **getconfig** to include password information in the file for all passwords except for the user passwords (which are stored encrypted and cannot be decrypted). A **# cfgUserAdmPassword** line is displayed as an indication that the password is present, but password text is not displayed.
-g	The **-g** <*groupName*>, or **group** option, can be used to display the configuration for a single group. The **groupName** is the name for the group used in the **racadm.cfg** files. If the group is an indexed group, use the **-i** option.
-h	The **-h**, or **help** option, displays a list of all available configuration groups so the user may enter the desired group. This option is useful when you do not remember exact group names.

Table 6-8. getconfig Subcommand Options *(continued)*

Option	Description
-i	The **-i** <*index*>, or **index** option, is valid only for indexed groups and can be used to specify a unique group. The <*index*> is a decimal integer from 1 through 16. If **-i** <*index*> is not specified, a value of 1 is assumed for groups, which are tables that have multiple entries. The index is specified by the index value, not a "named" value.
-u	The **-u** <*username*>, or **user name** option, can be used to display the configuration for the specified user. The <*username*> option is the log in user name for the user.

Output

This subcommand generates error output upon encountering either of the following:

- Invalid syntax, group name, object name, index, or other invalid database members
- RACADM utility transport failures

If errors are not encountered, this subcommand displays the contents of the specified configuration.

Examples

- `racadm getconfig -g cfgLanNetworking`

  Displays all of the configuration parameters (objects) that are contained in the group **cfgLanNetworking**.

- `racadm config -g cfgLanNetworking -o cfgNicIpAddress 10.35.10.100`

  Sets the **cfgNicIpAddress** configuration parameter (object) to the value 10.35.10.110. This IP address object is contained in the group **cfgLanNetworking**.

- `racadm getconfig -f myrac.cfg`

  Reads *all* of the configuration objects, from all of the RAC group configuration parameters and place them in a file called **myrac.cfg**.

- `racadm config -f myrac.cfg`

  Configures or reconfigures the RAC. The **myrac.cfg** file may be created from the command specified in the previous example if the RAC has a desired configuration to be replicated. The **myrac.cfg** file may also be edited manually as long as the parsing rules are followed.

  NOTE: The **myrac.cfg** file does not contain password information. To include this information in the file, it must be input manually. If you want to remove password information from the **myrac.cfg** file, use the **-p** option.

- `racadm getconfig -h`

  Displays a list of the available configuration groups on the RAC.

- `racadm getconfig -u root`

  Displays the configuration parameters for the user named root.

fwupdate

NOTE: To use this command, you must have **Configure DRAC 4** permission.

Table 6-9 describes the **fwupdate** subcommand.

Table 6-9. fwupdate

Subcommand	Definition
fwupdate	Updates the firmware on the Dell Remote Access Controller (DRAC 4).

Synopsis

```
racadm fwupdate -u [-w] [-D]

racadm fwupdate -s

racadm fwupdate -g [-u ] [-w][-D] [-a <IP address>]
[-f <path/file>]

racadm fwupdate -c

racadm fwupdate -p -f <update filename> [-u] [-w] [-D]
```

Description

The **fwupdate** subcommand allows the caller to update the firmware on the DRAC 4. The user may:

- Start updating a firmware update file that has previously been loaded into the RAM disk update area.
- Check the status of the firmware update process.
- Instruct the DRAC 4 firmware to get the firmware update file from a TFTP server and load it into the RAM disk area.

  The user may specify the IP address and path/filename or IP address and directory, or use the default values found in the database. The user may also specify that the update be started after loading, or to terminate and make a separate call to start the update process.
- Load the update file into the DRAC 4 RAM disk area.

Input

Table 6-10 describes the **fwupdate** subcommand options.

NOTE: The **-p** and **-u** options are not supported for the serial/telnet console.

Table 6-10. fwupdate Subcommand Options

Option	Description
-u	The **update** option performs a checksum of the firmware update file and starts the actual update process. If this option is typed by itself, it is assumed that a firmware update file has already been loaded into the RAM disk using the **-g** or **-p** options. This option may also be used along with the **-g** or **-p** options. After the firmware update file has been loaded, the update process is started within the same call. At the end of the update, the DRAC 4 performs a soft reset.
-w	The **wait** option represents a delay in seconds to wait before proceeding with the update. The **-w** option is only valid with the **-u** option.
-s	The **status** option returns the current status of where you are in the update process. This option is always typed by itself. Do not type the **-s** options with other options. If you do, the status will display as if it was the only option typed.

Table 6-10. fwupdate Subcommand Options *(continued)*

Option	Description
-g	The **get** option instructs the firmware to get the firmware update file from the TFTP server and place it in the RAM disk area. The user may also specify the **-a** and/or the **-f** or **-d** options that are described next. In the absence of the **-a** or **-f** options the defaults are read from properties contained in the group **cfgRemoteHosts**, using properties **cfgRhostsFwUpdateIpAddr** and **cfgRhostsFwUpdatePath**.
-a	The **IP Address** option specifies the IP address of the TFTP server.
-d	The **-d,** or **directory**, option specifies the directory on the TFTP server or on the DRAC 4's host server where the firmware update file resides. Do not use the **-f** option with the **-d** option.
-c	The **-c**, or **checksum**, option allows the user to verify an update file that has been loaded into the RAM disk area. The update file can be loaded by one of the two loading mechanisms (racadm CLI or TFTP). This option essentially gets the size of the firmware update file and calculates the checksum, and verifies the file token. The TFTP interface verifies the checksum after loading automatically. This option is used mainly when using FTP. The **-c** option is not used with other options. (The **-u** option will *always* checksum before programming. It can be used along with the **-u** option).
-D	After the update is complete, the DRAC 4 is reset. Upon boot, a call is made to reset all firmware configuration parameters to the default values. For more information, see "racresetcfg."
-p	The **-p**, or **put**, option is used when you want to FTP the firmware update file from the managed system to the DRAC 4. If the **-f** option is used, the name of the update image must be **firming.dm1**. The update file is sent by way of FTP into the DRAC 4. Checksum runs on the newly loaded image. If the checksum is not correct, an error message is displayed. The user is not required to use **fwupdate** **-s** option to do this. If you type the **-u** option on the same command line, the update process starts.

Output

Displays a message indicating which operation is being performed.

Examples

- **racadm fwupdate -g - a 143.166.154.143 -f firmimg.dm1**

  In this example, the **-g** option tells the firmware to download the firmware update file from a location (specified by the **-f** option) on the TFTP server at a specific IP address (specified by the **-a** option). The update file is then loaded into RAM disk. Since the **-u** option is not present, an update does *not* occur.

- **racadm fwupdate -s**

  This option reads the current status of the firmware update.

- **racadm fwupdate -u**

  The **-u** option starts the update process. This command assumes that a valid firmware update file has been previously loaded using the **-g** or **-p** option. The update file checksum is verified for correctness before proceeding.

- **racadm fwupdate -g -u -a 143.166.154.143 -f firmimg.dm1**

  In this example, the **-g** option tells the firmware to download the firmware update file from a location (specified by the **-f** option) on the TFTP server at a specific IP address (specified by the **-a** option). The update file is then loaded into RAM disk. The **-u** option tells the firmware to proceed with the update after the firmware is loaded.

Updating the Firmware

If you use the **-f** option, specify the **firmimg.dm1** file.

If you are updating your firmware *locally*, use one of the following commands to update your firmware:

```
racadm fwupdate -p -u -d <directory>
racadm fwupdate -p -u -f <filename>
```

Example:

```
racadm fwupdate -p -u -d \my\updatefiles\path
racadm fwupdate -p -u -f
\my\updatefiles\path\<filename>
```

If you are updating your firmware *remotely*, use the following command to update your firmware:

```
racadm <RAC_IP> -u <user> -p <password> fwupdate -g -
u -a <TFTP_IP> -d <TFTP_dir_path>
```

NOTE: The **-p** option does not support remote firmware updates.

getssninfo

Table 6-11. getssninfo Subcommand

Command	Definition
getssninfo	Retrieves session information for one or more currently active or pending sessions from the Session Manager's session table.

Synopsis

```
racadm getssninfo [-A] [-u <username> | *]
```

Description

The **getssninfo** command returns a list of currently active or pending users and optionally includes summary session table information. The summary information provides the total number of sessions in each of the following defined Session Manager states:

- Free
- Preliminary
- Unvalidated
- Valid
- Invalid

Input

Table 6-12. getssninfo Subcommand Options

Option	Description
-A	The **-A** option eliminates the printing of data headers.
-u	The **-u <***username***>** user name option limits the printed output to only the detail session records for the given user name. If an * symbol is given as the user name, all users are listed. Summary information is not printed when this option is specified.

Output

None

Examples

- `racadm getssninfo`

  Session table summary status:

  ```
  1  VALID

  15 AVAILABLE
  ```

```
Type      User     IP Address    Login Date/Time Consoles
--------- -------  ------------ ------------    ----------

Web       RAC      root          Thu, 06 Mar     NONE
                   192.168.1.23  2003 10:32:39
                                 GMT-06:00
```

- `racadm getssninfo  -A`

  ```
  1 15

  "Web" "RAC\root" 192.168.1.23 "Thu, 06 Mar 2003
  10:32:39 GMT-06:00" "NONE"
  ```

- `racadm getssninfo -A -u *`

  ```
  "Web" "RAC\root" 192.168.1.23 "Thu, 06 Mar 2003
  10:32:39 GMT-06:00" "NONE"
  ```

getsysinfo

Table 6-13. getsysinfo Subcommand

Command	Definition
getsysinfo	Displays RAC information, system information, and watchdog status information.

Synopsis

```
racadm getsysinfo [-d] [-s] [-w] [-A][-c]
```

Description

The **getsysinfo** command returns information about the RAC, system, or watchdog status, depending on the command options. The order of data on output is always the same: RAC information, system information, and watchdog information.

Input

Table 6-14. getsysinfo Subcommand Options

Option	Description
-d	Displays RAC information.
-s	Displays system information.
-w	Displays watchdog information.
-A	Eliminates the printing of headers/labels.
-c	Displays chassis information.

If a **-d**, **-s**, or **-w** option is not specified, then these three options are used as defaults.

Output

Every data element is output as a string with the exception of the following:

- System information/operating system type
- Watchdog information/recovery action

Enumeration values or bitmaps are defined for these elements. When the **-A** (API) option is included on the command, the enumeration/bit value of the element is listed in the output. Otherwise, the enumeration or bit value is mapped to a string before being output.

The following bullet items define the mapping of values to strings:

Table 6-15. Mapping of Values to Strings

Value	Description
System information/operating system type	A bitmap defines three subfields for this value, as follows: • IA type - Bit position 0 (least significant bit): 0 = 32 bit, 1 = 64 bit • Major operating system - Bit positions 1–7: 000000 = Microsoft Windows 000001 = Red Hat® Enterprise Linux®, 000010 = Novell® NetWare® • Minor operating system - Bit positions 8–15: 0 = Red Hat Linux, 00000000 = Windows NT®, 00000001 = Windows 2000, 0 = NetWare
Watchdog recovery action	An enumeration defines the meaning of this value: • 0 = no-action • 1 = hard-reset • 2 = power-down • 3 = power-cycle

Examples

- `racadm getsysinfo -A -w -s`

  ```
  "123456" "PowerEdge 1650" "A08" "EF23VQ-0023" ""
  0x100 "Server1"

  "Microsoft Windows 2000 version 5.0, Build Number
  2195, Service Pack 2" "1.60"

  "Watchdog Info:" 2 39 40
  ```

- `racadm getsysinfo -w -s`

  ```
  System Information:

  System ID       = 123456

  System Model    = PowerEdge 1650

  BIOS Version    = A08

  Asset Tag       = EF23VQ-0023

  Service Tag     = 2MP9Z01

  Hostname        = Server1

  OS name         = Microsoft Windows 2000 version
  5.0,

                    Build 2195 Service Pack 2

  ESM Version     = 1.60

  Watchdog Information:

  Recovery Action           = Power Down

  Present countdown value   = 36

  Initial countdown value   = 40
  ```

getraclog

CAUTION: The system may hang if this command is run. You may have to powercycle the system if it hangs.

NOTE: To use this command, you must have **Log In DRAC 4** permission.

Table 6-16 describes the **getraclog** command.

Table 6-16. getraclog

Command	Definition
getraclog -i	Displays the number of entries in the DRAC 4 log.
getraclog	Displays the DRAC 4 log entries.

Synopsis

```
racadm getraclog -i

racadm getraclog [-A] [-c count] \[-s start-record]
[-v] [-V] [-m]
```

Description

NOTE: The command name and the **racadm** subcommand names may be different. This behavior is normal.

The **getraclog -i** command displays the number of entries in the DRAC 4 log.

The following options allow the **getraclog** command to read entries:

- **-A** — Provides API-formatted output (no header).
- **-c** — Provides the maximum count of entries to be returned.
- ***<blank>*** — Displays the entire log; racadm and serial only (default).
- **-s** — Provides the associated number of the first displayed entry (default = 0 [list begins with the first DRAC 4 log entry]).
- **-v** — Provides *verbose* output.
- **-V** — Provides *Very verbose* output.
- **-m** — Displays 24 rows at a time, and queries for more (such as the UNIX® **more** command).

Output

One line of output is displayed for each DRAC 4 log entry.

Restrictions

The output buffer size is too big for execution across IPMI transport.

gettracelog

CAUTION: The system may hang if this command is run. You may have to powercycle the server if it hangs.

NOTE: To use this command, you must have **Log In DRAC 4** permission.

Table 6-17 describes the **gettracelog** command.

Table 6-17. gettracelog

Command	Definition
gettracelog -i	Displays the number of entries in the DRAC 4 trace log.
gettracelog	Displays the DRAC 4 trace log entries.

Synopsis

```
racadm gettracelog -i
racadm gettracelog -m
```

Description

The **gettracelog -i** command displays the number of entries in the DRAC 4 trace log. The **gettracelog** command (without the **-i** option) reads entries.

The **-m** option displays 24 rows at a time, and queries for more (such as the UNIX more command).

Output

One line of output is displayed for each trace log entry.

help

Table 6-18. help Subcommand

Command	Definition
help	Lists all of the subcommands available to use with the RACADM utility and provides a short description for each.

Synopsis

```
racadm help

racadm help <subcommand>
```

Description

The **help** subcommand lists all of the subcommands that are available under the **racadm** command along with a one-line description. You may also enter a subcommand after **help** to get the syntax for a specific subcommand.

Input

None

Output

racadm help displays a complete list of subcommands.

racadm help <*subcommand*> displays usage information for the specified subcommand only.

racdump

Table 6-19. racdump Subcommand

Command	Definition
racdump	Displays status and general RAC information.

Synopsis

```
racadm racdump
```

Description

The **racdump** subcommand provides a single command to get a dump, status, and general RAC board information with a single command.

The following commands are executed as a result of the single **racdump** subcommand:

- getsysinfo
- coredump
- memmap
- netstat
- getssninfo
- getsensors

Input

None

Output

The output of the individual commands are displayed.

racreset

Table 6-20. racreset Subcommand

Command	Definition
racreset	Resets the RAC.

Synopsis

```
racadm racreset [hard | soft | graceful] [delay]
```

Description

The **racreset** subcommand issues a reset to the RAC. The user is allowed to select how many seconds of delay occur before the reset sequence is started. The reset event is written into the RAC log.

The default option is **soft**. If you do not enter an option, the RACADM utility waits three seconds and then runs the **soft** option with the **racreset** subcommand.

NOTE: A reboot is not necessary to apply configuration settings to the RAC. When the configuration settings affect other system components, on the other hand, a reboot is necessary for the affected components to detect the changes. For example, if remote floppy boot is enabled by the **RACADM** utility, the remote floppy image will not be accessible by the system until the next reboot.

Input

CAUTION: You must reboot your system after performing a hard reset of the RAC as described in the following table.

Table 6-21. racreset Subcommand Options

Option	Description
hard	A *hard* reset resets the entire RAC and is as close to a power-on reset as can be achieved using software. The RAC log, database, and selected daemons are shutdown gracefully prior to the reset. A hard reset should be considered as a final effort. PCI configuration is lost.
soft	A *soft* reset is a microprocessor and microprocessor subsystem reset that resets the processor core to restart the software. PCI configurations are preserved. The RAC log, database, and selected daemons are shutdown gracefully prior to the reset.
graceful	A *graceful* reset is the same as a soft reset.
<*delay*>	The user is allowed to select how many seconds of delay occur before the reset sequence is started. A valid delay entry is between 1–60 seconds. The default is 3 seconds.

Output

None

Examples

- `racadcm racreset soft 1`

  Start the RAC soft reset sequence in 1 second.

- `racadm racreset soft 20`

  Start the RAC soft reset sequence after 20 seconds.

racresetcfg

Table 6-22. racresetcfg Subcommand

Command	Definition
racadm racresetcfg	Resets all database configuration parameters to default values; equivalent to a soft reset.

Synopsis

```
racadm racresetcfg
```

Description

The **racresetcfg** command removes all database property entries that have been configured by the user. The database has default properties for all entries that are used to restore the card back to its original default settings. After resetting the database properties, the RAC resets automatically.

CAUTION: Before using this command, ensure that you want to restore your database to its original default state with default user `root` and default password `calvin`.

NOTE: After issuing a **racresetcfg** subcommand, stop and then restart the following services: Server Agent, Server Agent Event Monitor, and SNMP. See the *Dell OpenManage Server Administrator's User's Guide* for information on stopping and restarting the services in your operating system.

Input

None

Output

None

setrac

Table 6-23. setrac Subcommand

Command	Definition
setrac	Sets RAC parameters from the managed system.

Synopsis

```
racadm setrac [-h -o -T -d]
```

Description

This command sets time, managed system name, operating system name, or operating system type from the managed system to the RAC. If no options are entered, all four parameters are set. The **-d** option allows the user to display the parameters only without actually writing them to the RAC firmware. Any combination of options, or no options, may be entered.

Input

Table 6-24. setrac Subcommand Options

Option	Description
-h	Gets the `Hostname` from the managed system and writes it to the RAC. This parameter is available for viewing using the **getsysinfo** command, and under the object ID interface using **config/getconfig** as [**ifcRacManagedNodeOs**] **ifcRacMnOsHostname**.
-o	Gets the `OS Name` from the managed system and writes it to the RAC. This parameter is available for viewing under the object ID interface using **config/getconfig** as [**ifcRacManagedNodeOs**] **ifcRacMnOsName**.
-T	Gets the `OS Type` from the managed system and writes it to the RAC. This parameter is available for viewing using the **getsysinfo** command and under the object ID interface using **config/getconfig** as [**ifcRacManagedNodeOs**] **ifcRacMnOsOsType**.
-d	The **-d**, or **display** option, allows the user to get the `UTC time`, `Hostname`, `OS Name`, and `OS Type` from the managed system and display these items only. Parameters are not written to the RAC. If the **-d** option is entered along with other options, then those parameters are displayed only.

Output

A message is displayed indicating the values obtained from the managed system, and if they are being written to the RAC or only displayed.

Examples

- `racadm setrac -d`

  Only the parameter values are displayed.

- `racadm setrac -h`

  The UTC time and managed system name are taken from the managed system and written to the RAC.

DRAC Property Database Group and Object Definitions

The Dell Remote Access Controller (DRAC) III, DRAC 4, DRAC 5, iDRAC, and iDRAC6 property database contain the configuration information for the DRAC III, DRAC 4, DRAC 5, iDRAC, and iDRAC6 controllers respectively.

For the property database group and object definitions of DRAC and iDRAC, see the following guides on the Dell Support site at **support.dell.com**:

- *Integrated Dell Remote Access Controller User Guide*
- *Dell Remote Access Controller 5 User's Guide*
- *Dell Remote Access Controller 4 User's Guide*
- *Dell Remote Access Card III User's Guide*

A

Messages and Codes

This section documents the error messages and codes used in Dell™ OpenManage™ Deployment Toolkit (DTK).

SYSCFG Error Codes and Messages

The SYSCFG utility checks your commands for correct syntax and valid input. When you enter a command, a message is displayed stating the results of the command.

Failure Messages

The SYSCFG utility failure messages provide error codes to help diagnose why some commands do not succeed.

Table A-1 lists SYSCFG error codes and messages.

Table A-1. SYSCFG Error Codes and Messages

Error Code	Message
0	Success
1	Attempt to read write-only parameter.
2	Password cannot exceed 16 characters.
3	A BMC was either not detected or is not supported.
4	This username is already in use. Enter a unique username.
5	Access mode not supported.
6	Cannot return number of requested data bytes.
7	User ID 1 cannot be assigned a username.
8	Cannot execute duplicated request.
9	There was an error clearing the SEL.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
10	Clear SEL cannot be accompanied with any other option.
11	racreset cannot be accompanied with any other option.
12	Cannot execute command. Command, or request parameter(s), not supported in present state.
13	Command not supported on given channel.
14	The community string may only contain printable ASCII characters.
15	Destination unavailable. Cannot deliver request to selected destination.
16	Cannot execute command. Insufficient privilege level.
17	Command illegal for specified sensor or record type.
18	Invalid commstring value.
19	Hardware subsystem error. Invalid data field in request.
20	Invalid destination IP address.
21	The GUID is invalid.
22	Invalid gateway.
23	Invalid hostname.
24	Invalid IP address.
25	Invalid DNS IP address.
26	Invalid sub net mask.
27	Invalid value for PEF. PEF value should be between 1 and 16.
28	Reservation Canceled or Invalid Reservation ID.
29	Invalid Time to live value.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
30	Invalid VLANID value.
31	Invalid Command. Used to indicate an unrecognized or unsupported command.
32	Command invalid for given LUN.
33	Load defaults cannot be accompanied with any other option.
34	There was an error loading the defaults.
35	Node Busy. Command could not be processed because command processing resources are temporarily unavailable.
36	Out of space. Command could not be completed because of a lack of storage space required to execute the given command operation.
37	This parameter is not supported.
38	Parameter out of range. One or more parameters in the data field of the Request are out of range.
39	The password may only contain printable ASCII characters.
40	Password test failed.
41	Request data length invalid.
42	Request data field length limit exceeded.
43	Requested Sensor, data, or record not present.
44	Request data truncated.
45	Command response could not be provided.
46	Command response could not be provided. BMC initialization or initialization agent in progress.
47	Command response could not be provided. Device in firmware update mode.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
48	Command response could not be provided. SDR Repository in update mode.
49	Cannot execute command, SEL erase in progress.
50	Attempt to set the 'set in progress' value when not in the 'set in complete' state.
51	The SOL character accumulate interval is invalid.
52	The SOL character send threshold is invalid.
53	The SOL retry interval is invalid.
54	Command completed successfully.
55	Time-out while processing command. Response unavailable.
56	Unspecified error.
57	The password may only contain printable ASCII characters.
58	Username cannot exceed 16 characters.
59	Invalid VLANID value. Enter in dddd format.
60	Attempt to write read-only parameter.
61	BMC is busy.
62	Response data did not return successfully.
63	BMC time out error.
64	Option '%s' requires an argument.
65	The asset tag for this system is not available.
66	The asset tag cannot be more than 10 characters long.
67	The required BIOS interfaces cannot be found on this system.
68	The BIOS version information is not available.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
69	There is not enough free system memory to complete the BIOS update.
70	The BIOS update file version is a different version class (A00, X00) than the current system BIOS. Use the --force option to use this BIOS image.
71	The BIOS update file version is older than the current system bios. Use the --force option to use this BIOS image.
72	The BIOS update file version is identical to the current system bios. Use the --force option to use this BIOS image.
73	The sequence list must be a comma-separated numerical list of valid unique boot device numbers (ex: 2, 1, 3).
74	The sequence list must be a comma-separated list of valid unique device names (ex: nic.emb.1, hdd.emb.1) or a comma-separated numerical list of valid unique boot device numbers (ex: 2, 1, 3).
75	There was an error setting the sequence.
76	The list is not formatted correctly. See the help for more details.
77	The size of returned buffer is larger than the size of allocated buffer.
78	There was a problem getting the state byte.
79	The state byte is not available on this system.
80	There was a problem setting the state byte.
81	The state byte must be a value between 0 and 255 decimal.
82	The CPU information is not available.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
83	The dependent option '%s' required for this subcommand is missing in the command line.
84	Duplicate sub command '%s' has been entered.
85	The script file does contain not a valid DTK environment script signature.
86	The format of the environment variable is incorrect.
87	The --envar option can only be used for a single option.
88	The --envar option can only be used for report operations.
89	The individual sub commands should be specified for the -s option.
90	Getting external serial connector settings failed.
91	Setting external serial connector settings failed.
92	There was an error opening the file.
93	File does not have write permission.
94	The file contains invalid options.
95	The replication information does not match for this system.
96	There can only be one section in the input file.
97	Bad ini file, the section cannot be found.
98	The format of the bios image file is incorrect.
99	Report operations and set operations must be separate.
100	Help is not available for the option.
101	The -x (--hex) option can only be used with -b or -r.
102	Input file '%s' not found.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
103	Input file '%s' cannot be read.
104	Invalid argument for option '%s'.
105	Function table lookup error.
106	The machine ID was not found in the file '%s'.
107	The system memory information is not available.
108	Mode can only be used with the --pci option.
109	The device name or index must be present in the boot order.
110	The output file '%s' could not be opened. Please make sure the path exists and the media is not write protected.
111	Could not write to output file, disk may be full.
112	The current password must be supplied with a new password using --oldsyspwd.
113	The current password must be supplied with a new password using --oldsetuppwd.
114	The current password can only be supplied when setting a new password.
115	Actions are not allowed for this filter. Only alerts are allowed.
116	There was an error getting the option '%s'.
117	The option '%s' is not available or cannot be configured through software.
118	There was an error setting the option '%s'.
119	The -n (--namefile) option can only be used with --pci.
120	The password may only contain alphanumeric characters.
121	The BIOS passwords have been disabled via jumper.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
122	The password length must be between 1 and 32.
123	This password is locked and can only be unlocked by the admin user.
124	There was an error setting the password.
125	The LCD string length must be between 1 and %s.
126	The LCD string may only contain alphanumeric characters.
127	There was an error setting the LCD string.
128	The second channel can only be set if the RAID controller is set to RAID.
129	The set operation '%s' requires sub commands.
130	The service tag for this system is not available.
131	The system ID value is not available.
132	The system information string is not available.
133	A system error has occurred.
134	Usage error.
135	The uuid information is not present on this system
136	Version cannot be accompanied with any other option.
137	The self-identify blinker timer should be set to 0..255 second(s).
138	Encrypt key is too long.
139	Encrypt key is invalid, accepted characters are 0 to 9 or A to F.
140	Parameter has been temporarily disabled due to a dependency on other settings.
141	The old password supplied is incorrect. The new password will not be set. Please try again.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
142	Cannot stat /etc/omreg.cfg file. Please ensure /etc/omreg.cfg file is present and is valid for your environment. You can copy this file from the DTK iso.
143	Getting nicselection settings failed.
144	HAPI Driver Load Error.
145	Filter action power reduction is only supported for the system power warn/fail filters.
146	TPM Clear settings requires setup password.
147	There is currently no TPM Clear request pending.
148	Password is not required for retrieving the '%s' options.
149	Setup password is required for setting the '%s' options.
150	Invalid Password override.
151	Invalid TPM set option.
152	There was an error setting the TPM option.
153	There is no setup password installed on this system.
154	The setup password supplied is incorrect. Please try again.
155	Profile should be custom for setting cpupowermode, memorypowermode and fanmode.
156	There was an error setting the Power Option.
157	The power cap value entered is out of range. Please try again.
158	The power cap value entered must be between 0 to 100 if unit is percent.
159	Invalid IPv6 address. The IPv6 address cannot be link-local or multicast.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
160	Invalid IPv6 address. The IPv6 address specified has incorrect address format.
161	Invalid IPv6 address. The gateway address specified has incorrect address format.
162	Invalid IPv6 address. The Primary DNS server address specified has incorrect address format.
163	Invalid IPv6 address. The Secondary DNS server address specified has incorrect address format.
164	Invalid IPv6 address. The gateway address specified is invalid.
165	Invalid configuration. Attempting to apply IPv6 configuration on a non supported platform.
166	Invalid IPv6 configuration. Attempt to set DNS server address manually while DNS address source is set to auto.
167	Invalid IPv6 configuration. Attempt to set IPv6 address manually while IPv6 address source is set to auto.
168	Invalid IPv6 configuration. Attempting to apply IPv6 configuration without loading IPv6 stack.
169	Invalid IPv4 configuration. Attempting to apply IPv4 configuration with IPv4 disabled.
170	Invalid IPv6 configuration. Ipv6 address cannot be specified without specifying prefix-length.
171	Invalid IPv6 configuration. dnssrcv6 cannot be set to auto when ipsrcv6 is set to manual.
172	Error while executing IPMI Set command.
173	Error while executing IPMI Get command.
174	Error during Trap Alert.
175	Unspecified error.

Table A-1. SYSCFG Error Codes and Messages *(continued)*

Error Code	Message
176	Getting LCD settings failed.
177	Invalid configuration. Attempting to set cap when capenable is set to disable.
178	Invalid configuration. Attempting to set cap when hardware does not support setting.
179	Invalid Configuration Option.
180	Cannot execute command. Parameter is illegal because command sub-function has been disabled or is unavailable.

UPINIT Common Error Codes and Messages

The UPINIT utility checks your commands for correct syntax. When you enter a command, a message is displayed stating the results of the command.

Failure Messages

The UPINIT utility failure messages provide error codes to help diagnose why some commands do not succeed.

Table A-2 lists error codes and messages common to Linux and Microsoft®Windows® PE environments.

Table A-2. UPINIT Common Error Codes and Messages

Error Code	Message
0	Dell Utility Partition created successfully.
1	Error: Disk ID not specified.
2	Error: SIZE not specified.
3	Error: Utility Partition Image file not specified.
4	Error: DRMK Path not specified.

Table A-2. UPINIT Common Error Codes and Messages *(continued)*

Error Code	Message
5	Error: Dell Utility Partition already exits. Please use --overwrite option to upgrade or overwrite.
6	Error: Partitions exists. Please clear all the partitions before running upinit.sh.
7	Error: DOS file(s) not found at the specified path.
8	Error: UP IMAGE not found at the specified location.
9	Error: format failed.
10	Error: Invalid size. Size should be a number between 32 and 2000.
11	Error: sysdrmk failed.
12	System Error.
13	Error: Invalid Argument: <argument>.
14	Error: Unzip failed.

UPINIT Linux-Specific Error Codes and Messages

Table A-3 lists error codes and messages specific to the Linux environment.

Table A-3. UPINIT Linux-Specific Error Codes and Messages

Error Code	Message
31	Error: Invalid disk specified.
32	Error: Mount failed.
33	Cannot create mount point <mount point>. File exists.
34	Error: fdisk failed.

UPINIT Windows PE-Specific Error Codes and Messages

Table A-4 lists error codes and messages specific to the Windows PE environment.

Table A-4. UPINIT Windows PE-Specific Error Codes and Messages

Error Code	Message
31	Error: DISKPART failed.
32	Error: DISKPART command file not found.

RAIDCFG Error Codes and Messages

The RAIDCFG utility checks your commands for correct syntax when you enter them. When you enter a command, a message displays stating the results of the command.

Failure Messages

The RAIDCFG utility failure messages provide error codes to help diagnose why some commands do not succeed. See Table A-5 for a list of the error codes and the associated messages.

Table A-5 lists RAIDCFG error codes and messages.

Table A-5. RAIDCFG Error Codes and Messages

Error Code	Message
0	RAIDCFG Command successful!
1	Error! Incorrect Syntax.
2	Failure!
3	Illegal operation
4	Unsupported operation
5	Device not found.
6	Format boot drive illegal

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
7	Buffer too small.
8	Virtual Disk contains boot partition. Use force option to delete.
9	Init boot drive failed.
10	Format boot drive failed.
11	Cannot write boot drive.
12	Unsupported RAID value.
13	Invalid RAID configuration.
14	Span depth not in range.
15	RAID 1 failed.
16	Exactly 2 array disks are required to create a RAID 1 virtual disk.
17	Unsupported stripe size value.
18	RAID 5 only.
19	RAID 5 error.
20	A minimum of 3 array disks are required to create a RAID 5 virtual disk.
21	RAID 0 failed.
22	RAID 10 failed.
23	RAID 50 failed.
24	RAID 5 not supported.
25	RAID 50 not supported.
26	Size too small for given RAID type.
27	Wrong number of disks for RAID 1-concatenated.
28	Insufficient space to mirror disks.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
29	Create Mirror not supported.
30	Disk in use.
31	Disk Lock operation failed.
32	Disk locked.
33	Disk Unlock operation failed.
34	Disk Unlocked.
35	Disk failed on rebuild.
36	Hot Spare not free.
37	Disk Diagnostic failed.
38	Disk Rebuild failed.
39	Disk Format failed.
40	Cancel of Disk Diagnostic failed.
41	Cancel of Disk Rebuild failed.
42	Cancel of Disk Format failed
43	Assign Hot Spare failed
44	Disk too Small for Hot Spare.
45	Unassign Hot Spare failed.
46	Prepare Disk for Removal failed.
47	Disk Online failed.
48	Disk Offline failed.
49	UnMount Operation failed.
50	Mount Operation failed.
51	Cannot Format Array Disk.
52	Bad chunk size.
53	Invalid disk.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
54	Virtual disk not found.
55	Virtual disk locked.
56	Drive in use.
57	Reached maximum physical size.
58	Reached maximum count of virtual disks.
59	There is not enough free space on the array disk(s) to allow the operation to complete; the size of the virtual disk is too large; or communication to the array disk(s) has been lost.
60	Limit your array disk selection to those disks already included in another single virtual disk or to those array disks that are not used at all by another virtual disk.
61	Invalid Parameter
62	Failed drive cannot be added.
63	The controller cannot support the number of array disks that you have selected. Choose a smaller number.
64	Delete virtual disk failed. Controller busy.
65	Delete virtual disk failed.
66	Create virtual disk failed.
67	Create virtual disk failed. Controller busy.
68	Create virtual disk failed. Failed to map virtual disk to operating system disk.
69	Create virtual disk failed. Failed to map virtual disk to operating system disk.
70	Virtual disk initialization failed.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
71	Virtual disk initialization failed. Controller busy.
72	Virtual disk reconstruction failed. Controller busy.
73	Virtual disk resynching failed. Controller busy.
74	Flush Virtual disk's cache failed on controller.
75	Virtual disk partition specified not found.
76	Unsupported cache policy value.
77	Unsupported write policy value.
78	Unsupported read policy value.
79	Cancel initialization on virtual disk failed.
80	Cancel reconstruction on virtual disk failed.
81	Cancel resynchronization on virtual disk failed.
82	The maximum number of virtual disks that can be created has been reached.
83	The new virtual disk must use only the remaining free space on the array disks used in the last virtual disk you created. Select all array disks that are used in the last virtual disk you created.
84	You have selected an array disk that is in a degraded or failed state. Choose another array disk.
85	Delete the last created virtual disk first.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
86	Virtual disk initialized for use and no override requested.
87	Virtual disk type requested is invalid for the attempted operation.
88	Virtual disk Move operation failed. Cannot rename, virtual disk is already in use.
89	Failover invalid.
90	Virtual disk resynching.
91	Virtual disk resynch failed.
92	Virtual disk reconstruct failed.
93	Cannot format a virtual disk that contains a boot or system partition.
94	Cannot initialize a virtual disk that contains a boot or system partition.
95	Virtual disk Copy failed.
96	Virtual disk mirror set required.
97	Virtual disk Create - Read-only failed.
98	Virtual disk Create - Read-write failed.
99	Virtual disk - Clear-to-zero failed.
100	Virtual Disk Requires Non Multilevel.
101	Virtual Disk Promote Operation failed.
102	Specified virtual disk has no drive letter assigned to it.
103	Cannot expose virtual disk.
104	Cannot reconfigure virtual disk.
105	Cannot stop the reconfiguration of the virtual disk.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
106	SMART report count not supported.
107	Operations on hidden virtual disks are not allowed.
108	Virtual disk is in use.
109	The virtual disk is in use. It cannot be reconfigured at this time.
110	Virtual disk operation is temporarily unavailable. Initialization in progress.
111	Virtual disk operation is temporarily unavailable. Reconstruction in progress.
112	Virtual disk operation is temporarily unavailable. Rebuild in progress.
113	Virtual disk operation is temporarily unavailable. Check consistency in progress.
114	Specified virtual disk too small.
115	Virtual disk operation not supported. Size too small.
116	Operation is temporarily unavailable. Space in use.
117	Cannot reconfigure to the given RAID level.
118	Cannot reconfigure from current RAID level to the given RAID level.
119	One of the array disks selected for the virtual disk is already in use.
120	Virtual disk operation not supported. Cannot use non-RAID disk.
121	Controller Read Configuration failed.
122	Controller Write Configuration failed.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
123	Controller cache flush failed.
124	Enable alarm on controller failed.
125	Disable alarm on controller failed.
126	Quiet alarm on controller failed.
127	Controller failed to perform the task.
128	Specified bus not found for controller.
129	Call to set cache mode on the controller failed.
130	Unexpected controller error.
131	Controller out of memory.
132	Invalid controller state.
133	Controller failed.
134	Controller busy.
135	Controller does not exist.
136	Controller name is invalid.
137	Controller is iterated.
138	Rename of virtual disk was not successful.
139	The controller was not able to erase the file system from the specified virtual disk.
140	The controller was not able to add space to the specified concatenation set.
141	The controller was not able to get the status of the specified mirror set.
142	The controller was not able to set the requested failover space.
143	The controller cannot get the failover space information.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
144	Controller cannot unmirror the specified virtual disk.
145	The controller could not split the specified virtual disk.
146	The controller could not lock the specified virtual disk.
147	Controller IO paused.
148	No controller parameter support.
149	Controller does not recognize parameter symbol.
150	Controller Battery Recondition failed.
151	Controller Get disk signature failed.
152	Controller Read Flags failed.
153	Controller Set Flags failed.
154	Controller Remove Snap Shot failed.
155	Controller not supported.
156	Controller device initialization failure.
157	Partner controller already opened read-write.
158	No partner controller found.
159	The virtual disk is not valid for requested operation.
160	Cannot communicate with controller.
161	Set operation failed.
162	Operation to update error count of SMART device has failed.
163	Operation to clear error count of SMART device has failed.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
164	Driver could not execute.
165	Cannot delete virtual disk.
166	Cannot set temperature probe. Invalid value entered.
167	Cannot set enclosure tag. Invalid value entered.
168	Cannot set enclosure alarm.
169	Temperature probe value out of range.
170	Cannot set cache mode.
172	Data will be lost on the secondary disk and a reboot will be forced.
173	Cluster Services (MSCS) is running. Deleting a virtual disk that contains a cluster resource can result in unpredictable errors or system hangs (quorum disk). You should shut down cluster services before deleting cluster resources. Are you sure you want to proceed?
174	Cannot perform Create Virtual Disk or Delete Virtual Disk while the other server in a cluster is online. Please shut one of the servers down and retry the operation.
176	Invalid array disks or failover drives selected for reconfigure/create operation. Please make sure that all array disks and failover drives associated with the virtual disk are selected.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
177	The maximum number of partitions have already been created on one of the selected array disk(s). Each array disk can hold portions (partitions) of up to 10 virtual disks. This virtual disk cannot be created because one or more array disk(s) have reached the partition limit.
178	The virtual disk is in use. Please close any applications that use the virtual disk and unmount any file systems that reside on the virtual disk.
179	The firmware version is not supported. Please update the firmware from http://support.dell.com.
180	The specified device does not have enough free space to be used as failover space for the specified virtual disk.
181	The operation failed. Please rescan the controller and retry the operation.
182	The operation cannot be performed while a task is running on the specified virtual disk.
183	The specified virtual disk has no dead disk segments.
184	The operation cannot be performed at this time. The firmware can recondition a battery that has a Degraded or Power Low state. The firmware will not recondition a battery that is functioning normally or that has a Ready, Failed or Missing state.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
185	The version of the controller firmware installed on your system does not support this operation.
186	There are no disks of the correct type available to be assigned as a hot spare.
187	There are no disks of sufficient size available to be assigned as a hot spare.
188	There are no disks of the correct type and sufficient size available to be assigned as a hot spare.
189	The Create Virtual Disk task was successful but the operating system may not be aware of the new virtual disk.
191	The import of foreign configurations is complete. Some configurations could not be imported.
192	Enable alarm command failed. The enclosure processor is busy or a firmware download is in progress.
193	Disable alarm command failed. The enclosure processor is busy or a firmware download is in progress.
194	Quiet alarm command failed. The enclosure processor is busy or a firmware download is in progress.
195	An error occurred while resetting a temperature probe.
200	No array disks found!
201	Invalid Virtual Disk ID!

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
202	RAID Type & Size are required to create a virtual disk. Ensure that the RAID type and the size are correct.
203	Invalid Environment command!
204	File is not writable!
205	Setting Environment Variable Command failed!
206	Filename is not provided!
207	Invalid Strict option! Please provide a valid number between 1 and 100.
208	Span depth is not needed for this RAID type.
209	Array disk(s) cannot be part of virtual disk(s) and also be hotspares.
210	Cannot have silent and logfile switch with the same command.
211	Invalid array disk(s)!
212	Invalid failover disk(s)!
213	Creation of a virtual disk on this RAID controller requires the use of the entire disk space of the array disks. The size or -sz parameter is not needed.
214	Invalid size given! size=max or -sz=max is not supported for this RAID controller.
215	The value given for envname or -envn is null or too long.
216	Invalid virtual disk size!
217	The strict option provided failed! Virtual disk is not created.

Table A-5. RAIDCFG Error Codes and Messages *(continued)*

Error Code	Message
218	Unable to determine optimum size for Virtual disk. Ensure that the array disks are of the same protocol (i.e. SAS, SATA, SCSI). If there is a mismatch of the array disks then the RAIDCFG will not be able to determine the optimum size. In addition, also ensure that there is drive size available for the specified virtual disk.
219	One or more array disks selected to create virtual disk or hotspare doesn't have enough disk space. Please make sure that all the array disks and failover drives selected have enough free space.
220	The number of array disks provided is incorrect for the requested RAID Type! RAID 1 requires exactly 2 array disks, RAID 5 requires at least 3 array disks, RAID 10 requires at least 4 array disks and RAID 50 requires at least 6 array disks.
221	Input file cannot be read.
222	Input file not found.
223	Error in opening the file.

RACADM Firmware Error Codes and Messages

Table A-6 lists RACADM firmware error codes and messages.

Table A-6. RACADM Firmware Error Codes and Messages

Error Code	Message
1	UNKNOWN COMMAND.
2	OUTPUT ERROR
3	TOO FEW ARGUMENTS
4	UNKNOWN PARAMETER
5	CAN'T LOCK RESOURCE
6	RESOURCE LOCKED
7	USER NOT IN DATABASE
8	WRONG PASSWORD
9	LOGIN INCORRECT
10	NOT ACCESSIBLE VIA TELNET CONNECTION
11	ACCESS DENIED
12	INVALID ARGUMENT
13	INVALID GROUP NAME
14	USER DATABASE FULL
15	CAN'T CHANGE FACTORY DEFAULT
16	USER ALREADY IN DATABASE
17	CLOSING TELNET CONNECTION
18	USER DATABASE NOT INITIALIZED
19	INVALID COMMAND SHELL CALL
20	INVALID INPUT FILE
21	TFTP ERROR
22	PCI ERROR

Table A-6. RACADM Firmware Error Codes and Messages *(continued)*

Error Code	Message
23	SERVER IS IN GRAPHICS MODE
24	SYSTEM DATE AND TIME NOT SET
25	OUT OF MEMORY
26	ACCESS LOCKED
27	PAGING ERROR
28	PAGING ALREADY IN PROGRESS
29	ERROR ACCESSING DEVICE
30	WRONG NUMBER OF ARGUMENTS
31	NO SCREEN FOR ASR STORED
32	CAN'T ADD HISTORY MONITOR
33	INVALID IDENTIFIER
34	CANNOT WRITE TO FLASH
35	FIRMWARE FILE INVALID
36	CANNOT READ REGISTER
37	CANNOT UNLOCK RESOURCE
38	TIME OUT
39	SERVER IN TEXT MODE
40	WRONG GRAPHICS MODE
41	CONFIG SPACE LOCKED
42	MASTER LOCKED
43	ASB BUS LOCKED
44	HISTORY MONITORS NOT YET AVAILABLE
45	NO VALID VALUE FOR THIS FIELD
46	DIAGNOSTIC TASK ERROR
47	DIAGNOSTIC TASK IS ALREADY RUNNING

Table A-6. RACADM Firmware Error Codes and Messages *(continued)*

Error Code	Message
48	NO DIAGNOSTIC TASK RUNNING
49	READ ONLY
50	SNARFING IS NOT AVAILABLE
51	TEXT RESOLUTION OF SERVER CHANGED
52	MODULE NOT LOADED
53	IPMI ERROR
54	ERROR IN DIAGNOSTIC FUNCTION

RACADM Utility Error Codes and Messages

Table A-7 lists RACADM utility error codes and messages.

Table A-7. RACADM Error Codes and Messages

Error Code	Message
513	An unknown failure occurred.
514	Librac library not initialized.
515	An invalid parameter was passed into function.
516	Invalid DRSTYPE specified.
517	Librac library already initialized.
518	Invalid transport type specified.
519	Invalid library user.
520	A connection to the RAC controller could not be established.
521	Failed to perform read operation with RAC controller.
522	Failed to perform write operation with RAC controller.

Table A-7. RACADM Error Codes and Messages *(continued)*

Error Code	Message
523	Invalid message ID.
524	Invalid message type.
525	Invalid response message.
526	Specified user buffer is too small to hold data.
527	Authentication failed - Invalid user name or password.
528	Invalid CHAP protocol response encountered.
529	CHAP buffer too small.
530	Timeout occurred.
531	Insufficient user privileges to perform operation.
532	TFTP write error encountered.
533	TFTP read error encountered.
534	TFTP local file write error encountered.
535	TFTP local file read error encountered.
536	TFTP write request failed.
537	TFTP read request failed.
538	Failed to open file.
539	Failed to load socket library.
540	Invalid socket library.
541	Unable to resolve HostName.
542	Failed to create socket.
543	Socket read operation failed.
544	Socket write operation failed.
545	Failed to create SSL context object.

Table A-7. RACADM Error Codes and Messages *(continued)*

Error Code	Message
546	Failed to create SSL BIO object.
547	Unable to create SSL socket connection.
548	Failed to initialize socket.
549	Failed to login to RAC successfully.
550	Invalid session ID specified.
551	Failed to logout from RAC successfully.
552	Command execution failed.
553	FTP Get operation failed.
554	FTP Put operation failed.
555	Failed to initialize FTP interface.
556	Failed to load SSL library.
557	Failed to initialize librac library.
558	Invalid session ID.
559	SpcmpObjectName failed.
560	SpcmpObjectIdGet failed.
561	SpcmpObjectIdSet failed.
562	Failed to send SPCMP message to RAC.
563	Invalid transport session info.
564	LAN Proxy error - please make sure your proxy settings are configured correctly.
565	RAC service not currently installed.
566	RAC service is not started.
567	RAC service is starting.
568	RAC controller not present.
569	RAC controller is currently resetting.

B

BMC Platform Events Filter Alert Messages

All possible Platform Event Filter (PEF) Alert Messages along with a description of each event are listed in Table B-1.

Table B-1. BMC PEF Alert Events

Event	Description
Fan Probe Failure	The fan is running too slow or not at all.
Voltage Probe Failure	The voltage is too low for proper operation.
Discrete Voltage Probe Failure	The voltage is too low for proper operation.
Temperature Probe Warning	The temperature is approaching excessively high or low limits.
Temperature Probe Failure	The temperature is either too high or too low for proper operation.
Chassis Intrusion Detected	The system chassis has been opened.
Redundancy (PS or Fan) Degraded	Redundancy for the fans and/or power supplies has been reduced.
Redundancy (PS or Fan) Lost	No redundancy remains for the system's fans and/or power supplies.
Processor Warning	A processor is running at less than peak performance or speed.
Processor Failure	A processor has failed.
PPS/VRM/DCtoDC Warning	The power supply, voltage regulator module, or DC-to-DC converter is pending a failure condition.
Power Supply/VRM/D2D Failure	The power supply, voltage regulator module, or DC-to-DC converter has failed.
Hardware log is full or emptied	Either an empty or a full hardware log requires administrator attention.

Table B-1. BMC PEF Alert Events *(continued)*

Event	Description
Automatic System Recovery	The system is hung or is not responding and is taking an action configured by Automatic System Recovery.
System Power Probe Warning	The system is setting actions when a power consumption probe detects a warning value.
System Power Probe Failure	The system is setting actions when a power consumption probe detects a failure value.

C

Sample File Formats

This appendix lists the sample SYSCFG utility **.ini**, RAIDCFG utility **.ini**, and the RACADM utility **.ini** files.

Sample SYSCFG Utility .ini File Format

```
[syscfg]

sysname=PowerEdge R805

sysid=0221

biosver=0.2.6

;svctag=VSPT067

;do not edit information above this line

acpower=last

asset=

bootseq=
nic.emb.1,nic.emb.2,nic.emb.3,satacdrom.emb.0,nic.emb
.4

bootseqretry=enable

conboot=enable

conterm=vt100

dbpm=disable

embhypervisor=on

embnic1=on

embnic2=onwithiscsi

embnic3=onwithiscsi

embnic4=onwithiscsi
```

```
extserial=com1
fsbr=115200
integratedsas=enable
internalusb=on
lancfgparams
alertdest=1
destipaddr=0.0.0.0
lancfgparams
alertdest=2
destipaddr=0.0.0.0
lancfgparams
alertdest=3
destipaddr=0.0.0.0
lancfgparams
alertdest=4
destipaddr=0.0.0.0
commstring=public
gateway=192.168.0.1
;ipaddress=192.168.0.120
ipaddrsrc=static
nicselection=dedicated
autoneg=enable
dnsserver1=0.0.0.0
dnsserver2=0.0.0.0
dnsdhcp=disable
dnsracname=megh
```

```
dnsregisterrac=disable
domainname=
domainnamednsdhcp=disable
fullduplex=enable
speed=100Mbps
subnetmask=255.255.255.0
vlanid=1
vlanpriority=0
vlantag=disable
lanchannelaccess
ipmioverlan=alwaysavail
channelprivlmt=administrator
pefalerting=disable
lanuseraccess
userid=2
usrprivlmt=administrator
lanuseraccess
userid=3
usrprivlmt=noaccess
lanuseraccess
userid=4
usrprivlmt=noaccess
lanuseraccess
userid=5
usrprivlmt=noaccess
lanuseraccess
```

```
userid=6
usrprivlmt=noaccess
lanuseraccess
userid=7
usrprivlmt=noaccess
lanuseraccess
userid=8
usrprivlmt=noaccess
lanuseraccess
userid=9
usrprivlmt=noaccess
lanuseraccess
userid=10
usrprivlmt=noaccess
lanuseraccess
userid=11
usrprivlmt=noaccess
lanuseraccess
userid=12
usrprivlmt=noaccess
lanuseraccess
userid=13
usrprivlmt=noaccess
lanuseraccess
userid=14
usrprivlmt=noaccess
```

```
lanuseraccess
userid=15
usrprivlmt=noaccess
lanuseraccess
userid=16
usrprivlmt=noaccess
lcd=default
lcd1=jagan!
memtest=enable
nmibutton=disable
numlock=on
opticaldrivectrl=enable
oswatchdogtimer=enable
pefcfgparams
alertpolnum=1
alertpolstatus=enable
pefcfgparams
alertpolnum=2
alertpolstatus=enable
pefcfgparams
alertpolnum=3
alertpolstatus=enable
pefcfgparams
alertpolnum=4
alertpolstatus=enable
pefcfgparams
```

```
filter=fanfail
filteralert=enable
filteraction=none
pefcfgparams
filter=discretevoltfail
filteralert=enable
filteraction=none
pefcfgparams
filter=tempwarn
filteralert=enable
filteraction=none
pefcfgparams
filter=tempfail
filteralert=enable
filteraction=none
pefcfgparams
filter=intrusion
filteralert=enable
filteraction=none
pefcfgparams
filter=redundegraded
filteralert=enable
filteraction=none
pefcfgparams
filter=redunlost
filteralert=enable
```

```
filteraction=none
pefcfgparams
filter=procwarn
filteralert=enable
filteraction=none
pefcfgparams
filter=procfail
filteralert=enable
filteraction=none
pefcfgparams
filter=powerwarn
filteralert=enable
filteraction=none
pefcfgparams
filter=powerfail
filteralert=enable
filteraction=none
pefcfgparams
filter=hardwarelogfail
filteralert=enable
pefcfgparams
filter=autorecovery
filteralert=enable
pefcfgparams
filter=procabsent
filteralert=enable
```

```
filteraction=none
pefcfgparams
filter=powerabsent
filteralert=enable
filteraction=none
pefcfgparams
filter=batterywarn
filteralert=enable
filteraction=none
pefcfgparams
filter=batteryfail
filteralert=enable
filteraction=none
pefcfgparams
filter=systempowerwarn
filteralert=enable
filteraction=none
pefcfgparams
filter=systempowerfail
filteralert=enable
filteraction=none
hostname=DTK2.4-host
powerbutton=enable
pwdlock=unlock
rptkeyerr=enable
serialcfgparams
```

```
connectionmode=basic
msgcommbitrate=57600
msgcommflowctrl=rtscts
tmcfgdelctrl=bksp
tmcfgechoctrl=echo
tmcfghandshakectrl=enable
tmcfginputnewlineseq=cr
tmcfglineediting=enable
tmcfgnewlineseq=crlf
serialchannelaccess
ipmioverserial=alwaysavail
channelprivlmt=administrator
serialcomm=on
serialuseraccess
userid=2
usrprivlmt=administrator
serialuseraccess
userid=3
usrprivlmt=noaccess
serialuseraccess
userid=4
usrprivlmt=noaccess
serialuseraccess
userid=5
usrprivlmt=noaccess
serialuseraccess
```

```
userid=6
usrprivlmt=noaccess
serialuseraccess
userid=7
usrprivlmt=noaccess
serialuseraccess
userid=8
usrprivlmt=noaccess
serialuseraccess
userid=9
usrprivlmt=noaccess
serialuseraccess
userid=10
usrprivlmt=noaccess
serialuseraccess
userid=11
usrprivlmt=noaccess
serialuseraccess
userid=12
usrprivlmt=noaccess
serialuseraccess
userid=13
usrprivlmt=noaccess
serialuseraccess
userid=14
usrprivlmt=noaccess
```

```
serialuseraccess
userid=15
usrprivlmt=noaccess
serialuseraccess
userid=16
usrprivlmt=noaccess
solaction
userid=2
action=enable
solaction
userid=3
action=disable
solaction
userid=4
action=disable
solaction
userid=5
action=disable
solaction
userid=6
action=disable
solaction
userid=7
action=disable
solaction
userid=8
```

```
action=disable
solaction
userid=9
action=disable
solaction
userid=10
action=disable
solaction
userid=11
action=disable
solaction
userid=12
action=disable
solaction
userid=13
action=disable
solaction
userid=14
action=disable
solaction
userid=15
action=disable
solaction
userid=16
action=disable
solcfgparams
```

```
solbitrate=57600
solcharaccuminterval=10
solcharsendthreshold=220
solenable=enable
solprivlevel=administrator
sysid=0221
sysname=PowerEdge R805
tpm
tpmactivation=nochange
tpmsecurity=onwithoutpbm
usbports=enable
useraction
userid=2
action=enable
useraction
userid=3
action=disable
useraction
userid=4
action=disable
useraction
userid=5
action=disable
useraction
userid=6
action=disable
```

```
useraction
userid=7
action=disable
useraction
userid=8
action=disable
useraction
userid=9
action=disable
useraction
userid=10
action=disable
useraction
userid=11
action=disable
useraction
userid=12
action=disable
useraction
userid=13
action=disable
useraction
userid=14
action=disable
useraction
userid=15
```

```
action=disable
useraction
userid=16
action=disable
username
userid=2
name=root
username
userid=3
name=NULL
username
userid=4
name=NULL
username
userid=5
name=NULL
username
userid=6
name=NULL
username
userid=7
name=NULL
username
userid=8
name=NULL
username
```

```
userid=9
name=NULL
username
userid=10
name=NULL
username
userid=11
name=NULL
username
userid=12
name=NULL
username
userid=13
name=NULL
username
userid=14
name=NULL
username
userid=15
name=NULL
username
userid=16
name=NULL
;uuid=44454C4C530010508054D6C04F303637
virtualization=disable
virtualmedia=enable
```

Sample RAIDCFG Utility .ini File Format

```
[Reset]
controllerid=1,2,3,6
[vdisk0]
controllerid=4
size=139392
raid=1
readpolicy=ra
writepolicy=wb
stripesize=64
cachepolicy=d
adisk=0:1:1,0:0:1
[vdisk1]
controllerid=4
size=139392
raid=1
readpolicy=ra
writepolicy=wb
stripesize=64
cachepolicy=c
adisk=0:3:1,0:2:1
[vdisk2]
controllerid=2
size=278784
raid=0
readpolicy=ra
```

```
writepolicy=wb
stripesize=64
cachepolicy=d
adisk=0:5:1,0:4:1
failoverdrive=0:9:1
[vdisk3]
controllerid=4
size=278784
raid=5
readpolicy=ra
writepolicy=wb
stripesize=64
cachepolicy=c
adisk=0:8:1,0:7:1,0:6:1
[GlobalHotspare0]
controllerid=0
failoverdrive=0:8:0
```

Sample RACADM Utility .ini File Format

```
[idRacInfo]
#idRacType=0x05
#idRacProductInfo=Dell Remote Access Controller 4/I
#idRacDescriptionInfo=This system component provides
a complete set of #remote management functions for
Dell PowerEdge servers.
#idRacVersionInfo=1.20 (Build 01.17)
idRacName=DRAC 4/I
```

```
idRacMisc=

[cfgLanNetworking]
cfgNicEnable=1
cfgNicIpAddress=10.98.8.121
cfgNicNetmask=255.255.255.0
cfgNicGateway=192.168.0.1
cfgNicUseDhcp=0
#cfgNicMacAddress=00:11:43:34:5f:4a
cfgDNSServersFromDHCP=0
cfgDNSServer1=192.168.0.5
cfgDNSServer2=192.168.0.6
cfgDNSRegisterRac=0
cfgDNSRacName=RAC-HHS7C1S
cfgDNSDomainNameFromDHCP=0
cfgDNSDomainName=MYDOMAIN

[cfgCurrentLanNetworking]
#cfgNicCurrentIpAddress=10.98.8.121
#cfgNicCurrentNetmask=255.255.255.0
#cfgNicCurrentGateway=192.168.0.1
#cfgNicCurrentDhcpWasUsed=0
#cfgDNSCurrentDhcpWasUsed=0
#cfgDNSCurrentServer1=192.168.0.5
#cfgDNSCurrentServer2=192.168.0.6
#cfgDNSCurrentDomainName=MYDOMAIN
```

```
[cfgRemoteHosts]
cfgRhostsSmtpEmailEnable=1
cfgRhostsFwUpdateTftpEnable=1
cfgRhostsSmtpServerIpAddr=127.0.0.1
cfgRhostsFwUpdateIpAddr=192.168.0.4
cfgRhostsFwUpdatePath=

[cfgUserAdmin]
#cfgUserAdminIndex=1
cfgUserAdminUserName=root
#cfgUserAdminPassword=
cfgUserAdminPrivilege=0
cfgUserAdminAlertFilterRacEventMask=0x300000
cfgUserAdminAlertFilterSysEventMask=0x77777
cfgUserAdminEmailEnable=0
cfgUserAdminEmailAddress=
cfgUserAdminEmailCustomMsg=

[cfgSessionManagement]
cfgSsnMgtMaxSessions=0x4
cfgSsnMgtMaxSessionsPerUser=0x4

[cfgSerial]
cfgSerialBaudRate=115200
cfgSerialConsoleEnable=0
```

```
cfgSerialConsoleQuitKey=<CR>~.
cfgSerialConsoleIdleTimeout=0x12c
cfgSerialConsoleShellType=0x2
cfgSerialConsoleNoAuth=0
cfgSerialConsoleCommand=
cfgSerialTelnetEnable=0
cfgSerialCom2RedirEnable=1
cfgSerialTelnet7fIsBackspace=0

[cfgNetTuning]
cfgNetTuningNicMtu=0x5dc
cfgNetTuningIpTtl=0x40
cfgNetTuningTcpSrttBase=0x0
cfgNetTuningTcpSrttDflt=0x6
cfgNetTuningTcpReXmtMin=0x2
cfgNetTuningTcpReXmtMax=0x80
cfgNetTuningIpSubnetsAreLocal=0x1
cfgNetTuningIpReassTtl=0x3c
cfgNetTuningTcpMsl=0x3c
cfgNetTuningNicAutoneg=1
cfgNetTuningNic100MB=1
cfgNetTuningNicFullDuplex=1

[cfgOobSnmp]
cfgOobSnmpTrapsEnable=1
cfgOobSnmpAgentEnable=1
```

```
cfgOobSnmpAgentCommunity=public

[cfgRacTuning]
cfgRacTuneFwUpdateResetDelay=0x46
cfgRacTuneD3debugEnable=1
cfgRacTuneRemoteRacadmEnable=1
cfgRacTuneHostCom2BaudRate=57600
cfgRacTuneHttpPort=0x50
cfgRacTuneHttpsPort=0x1bb
cfgRacTuneTelnetPort=0x17
cfgRacTuneConRedirPort=0x170c

[ifcRacManagedNodeOs]
ifcRacMnOsHostname=(none)
ifcRacMnOsOsName=Linux 2.4.21-20.ELIhugemem
ifcRacMnOsOsType=0x2

[cfgRacSecurity]
cfgRacSecCsrKeySize=0x400
cfgRacSecCsrCommonName=
cfgRacSecCsrOrganizationName=
cfgRacSecCsrOrganizationUnit=
cfgRacSecCsrLocalityName=
cfgRacSecCsrStateName=
cfgRacSecCsrCountryCode=
cfgRacSecCsrEmailAddr=
```

```
[cfgRacVirtual]
cfgVirAtapiSvrPort=0xe54
cfgVirMediaDisable=0
cfgFloppyEmulation=0

[cfgActiveDirectory]
cfgADRacDomain=
cfgADRacName=
cfgADEnable=0
cfgADAuthTimeout=0x78
cfgADRootDomain=
```

D

Summary of SYSCFG and RAIDCFG Options

This appendix contains a summary of all the SYSCFG and RAIDCFG options.

SYSCFG Options

Table D-1 lists all the SYSCFG options and gives a brief description of these options. For details on these options, see the section, "SYSCFG".

Table D-1. SYSCFG Options

Options	Suboptions	Valid Arguments	Description	Replicated
--envar	NA	<*filename*> <*pathname*> media should be writable	When used with the **–s** option, this option stores the environment variable data to a file so that this file can be called from other scripts.	
-h or --help	NA	none or <*valid option name*>	Without an argument, this option displays general usage information for the utility.	No
-i or --infile	NA	<*filename*>	Directs the SYSCFG utility to take input from a **.ini** file.	Yes
-l or --logfile	NA	<*filename*>	Logs the command line output to a time-stamped file.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
-o or --outfile	NA	<*filename*>	Outputs all replicable options to the specified filename. The format of the output is in a **.ini** format, with the utility name as the section header.	
-s	NA	<*string*>	Prints the variable name and the value assigned to it to the console.	
--version*	NA		Displays the version information, current time, and date for the utility.	No
--acpower	NA	on, off, last	Specifies the behavior of the system after AC power is lost.	Yes
-- adjcacheprefetch	NA	enable, disable	Enables the processor to fetch the cache line containing the currently requested data and prefetch the following cache line or fetch only the cache line containing the currently requested data.	Yes
--assignintr	NA	standard, distributed	Controls the interrupt assignment of PCI devices in the system.	
--asset	NA	<*string*>	Sets the asset tag value.	Yes
--bezelir	NA	enable, disable	Enables or disables the ESM to monitor and log front bezel intrusion conditions.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--bootseq	NA	numerical list, separated by commas or list of device names, separated by commas	Sets the boot order.	Yes (for systems that support a list of device names only)
--bootseqretry	NA	enable, disable	Enables or disables the boot sequence retry feature.	Yes
--cmosdefaults	NA	enable, disable	Enables or disables the CMOS defaults to be on or off in the next boot.	Yes
--conboot	NA	enable, disable	Enables or disables console redirection after boot.	Yes
--conred	NA	off, serial1, serial2, bmcsol, mmb	Sets console redirection to a particular port.	Yes
--conterm	NA	vt100, ansi	Sets console redirection terminal type.	Yes
--cpucore	NA	1, 2, 4	Allows the user to control the number of enabled cores in each processor. The maximum number of cores per processor is enabled by default.	Yes
--cpuxdsupport	NA	enable, disable	Enables or disables the execute disable (XD) feature of the CPU.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--cstates	NA	enable, disable	Enables or disables the power c states of the processor. Available only on *xx*1*x* systems.	Yes
--dbpm	NA	enable, disable	Enables or disables demand-based power management.	Yes
--devseq	NA	numerical list, separated by commas or list of device names, separated by commas	Sets the boot order for hard drives. **NOTE:** This option appears only if your system is configured with two or more bootable storage controllers. If your system is not configured with bootable storage controllers and this option is included in the configuration file, the utility generates a usage error.	Yes (for systems that support a list of device names only)
--embhypervisor	NA	enable, disable	Enables or disables the embedded hypervisor port.	Yes
--embideraid	NA	on, off	Enables or disables the embedded IDE RAID controller.	Yes
--embnic1	NA	on, off, onnopxe, onwithiscsi	Enables or disables the first embedded network interface controller (NIC).	Yes
--embnic2	NA	on, off, onnopxe, onwithiscsi	Enables or disables the second embedded NIC.	Yes
--embnic3	NA	on, off, onnopxe, onwithiscsi	Enables or disables the third embedded NIC.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--embnic4	NA	on, off, onnopxe, onwithiscsi	Enables or disables the fourth embedded NIC.	Yes
--embnic1nic2	NA	enable, disable	Enables or disables the operating system interface of the first and second embedded NIC controllers. Available only on Dell™ PowerEdge™ 1855, PowerEdge 6850, and *xx*1*x* systems.	Yes
--embnic3nic4	NA	enable, disable	Enables or disables the operating system interface of the third and fourth embedded NIC controllers. Available only on *xx*1*x* systems.	Yes
--embnics	NA	on, off	Enables or disables the embedded NICs.	Yes
--embnic1pxe	NA	enable, disable	Enables or disables Pre-boot eXecution Environment (PXE) on the first embedded NIC.	Yes
--embnic2pxe	NA	enable, disable	Enables or disables PXE on the second embedded NIC.	Yes
--embsataraid	NA	off, combined, ata, raid, qdma	Configures the embedded SATA (Serial Advanced Technology Attachment) RAID controller.	Yes
--embscsi1	NA	on, off	Enables or disables the first SCSI controller.	Yes
--embscsi2	NA	on, off	Enables or disables the second SCSI controller.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--embscsiraid	NA	raid, off, scsi or raid, off	Enables or disables the embedded SCSI RAID controller.	Yes
--embscsiraidchb	NA	raid, scsi	Sets the second channel of the embedded SCSI RAID controller to operate in RAID or SCSI mode.	Yes
--embvideoctrl	NA	enable, disable	Enables or disables the embedded video controller.	Yes
--extserial	NA	com1, com2, rad	Sets the behavior of the external serial connector.	Yes
--fiberchannel	NA	enable, disable	Enables or disables embedded fiber channel.	Yes
--floppy	NA	auto, off, readonly	Enables or disables the diskette drive controller.	Yes
--formfactor	NA	NA	Displays the geometry of modular Dell PowerEdge systems. Read-only option and can have the following values: halfheight (the modular system occupies 1 slot of the chassis), halfheight-dualwidth (the modular system occupies 2 horizontal slots of the chassis), fullheight (the modular system occupies 2 vertical slots of the chassis), and fullheight-dualwidth (the modular system occupies 4 slots of the chassis).	No

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--fsbr	NA	115200, 57600, 19200, 9600	Sets the console redirection fail safe baud rate.	Yes
--hwprefetcher	NA	enable, disable	Enables or disables hardware prefetching by the processor.	Yes
--hddfailover	NA	off, on	Specifies which device in the hard disk drive sequence menu is attempted in the boot sequence.	Yes
--htassist	NA	enable, disable	Enables or disables the probe filter chipset option. Some applications may have lower performance when the chipset feature is disabled.	Yes
-i or --infile	NA	<*filename*>	Reads BIOS configuration options from a file. A file can be generated with the **-o** option.	No
--idecdrom	NA	auto, off	Enables or disables the CD drive controller.	Yes
--idectrl	NA	auto, off	Enables or disables the IDE controller.	Yes
--idracgui	NA	enable, disable	Enables or disables iDRAC GUI.	Yes
--integratedraid	NA	enable, disable	Enables or disables the integrated RAID controller.	Yes
--integratedsas	NA	enable, disable	Sets the behavior for the integrated SAS controller.	Yes
--internalusb	NA	off, on	Enables or disables the internal USB.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--ioat	NA	enable, disable	Enables or disables the I/O Acceleration Technology (I/OAT)\nDMA Engine option.	Yes
--lcd	NA	default, none, user, idracipv4address, idracmacaddress, ossystemname, servicetag, ipv6address, ambienttemp, systemwatts	Selects whether to display the default string (model name and number) or a user-defined string in the front-panel LCD (Liquid Crystal Display). The idracipv4address, idracmacaddress, ossystemname, servicetag, ipv6address, ambienttemp, and systemwatts arguments are available only on *xx*1*x* systems.	Yes
--lcd1	NA	<*string*>	Sets the first line of user-defined LCD strings. **NOTE:** Before setting user strings for this option, ensure that `--lcd` is set to **user**. **NOTE:** If you have a Dell™ PowerEdge™ *x6xx, x7xx,* or *x8xx* system, you need to reboot your system for the settings to take effect.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--lcd2	NA	<*string*>	Sets the second line of user-defined LCD strings. **NOTE:** Before setting user strings for this option, ensure that `--lcd` is set to **user**. **NOTE:** If you have a Dell™ PowerEdge™ *x6xx*, *x7xx*, or *x8xx* system, you need to reboot your system for the settings to take effect.	Yes
--logicproc	NA	enable, disable	Enables or disables the logical processor (Hyperthreading).	Yes
--lpt	NA	disable, lpt1, lpt2, lpt3	Disables or sets the parallel port address.	Yes
--lptmode	NA	at, ps2	Sets the parallel port mode.	Yes
--mem*	NA	none	Reports the size of system memory. **NOTE:** The asterisk is not part of the command syntax.	Yes
--memintleave	NA	enable, disable	Enables or disables the memory interleave mode.	Yes
--memoperating mode	NA	optimizer, mirror, advancedecc	Selects the memory operating mode. This feature is active only if a valid memory configuration is detected. This option is available only on *xx1x* systems.	Yes
--memremap	NA	off, auto	Enables or disables memory remapping.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--memtest	NA	enable, disable	Enables or disables the power-on self-test (POST) extended memory test.	Yes
--mouse	NA	on, off	Turns the mouse controller on or off.	Yes
--noraidprompt*	NA	none	Disables the POST prompt message when the SCSI controller type is changed. **NOTE:** The asterisk is not part of the command syntax.	No
--numlock	NA	on, off	Enables or disables the keyboard number lock.	Yes
--oldsetuppwd	NA	<*string*>	Confirms the existing setup password when setting a new setup password.	No
--oldsyspwd	NA	<*string*>	Confirms the existing system password when setting a new system password.	No
--opticaldrivectrl	NA	enable, disable	Enables or disables the optical CD-ROM controller.	Yes
--osmode	NA	enable, disable	Enables or disables the operating system installation mode.	Yes
--oswatchdogtimer	NA	enable, disable	If your system stops responding, this option aids in the recovery of your operating system. When set to **enabled**, the operating system is allowed to initialize the timer. When set to **disabled** (the default), the timer will have no effect on the system.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--ovrwrt*	NA	none	Overwrites the file contents when used with the **-o** option. **NOTE:** The asterisk is not part of the command syntax.	No
power	--profile	maxperformance, osctl, apc	Displays the settings similar to the BIOS setup screen for the respective profile.	Yes
		custom	Creates the custom profile.	
	--cpupowermode	min, max, osdbpm, systemdbpm	Allows you to set the CPU power and performance management to minimum power, maximum performance, operating system DBPM, or system DBPM mode.	
	--memorypowermode	min, 800, 1067, 1333, max	Allows you to set memory power and performance management to minimum power or maximum power mode, or 800Mhz, 1067Mhz, or 1333Mhz.	
	--fanpowermode	min, max	Allows you to set the fan algorithm to the minimum power optimized or maximum performance optimized mode.	
	--cap		Displays the values of budgetcap, and the maximum and minimum power thresholds in Watts.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
	--cap --unit	<*budgetcap*> watt, or btuphr, or percent where <*budgetcap*> is the limit for power consumption in Watts, or btuphr, or percent.	The value of <*budgetcap*> must be between the maximum and minimum threshold values, else an error is displayed.	
	--maxpowercap		Displays the value of the maximum power threshold.	
	--minpowercap		Displays the value of the minimum power threshold.	
	--valsetuppwd	<*string*>	Validates the setup password for power authentication. If you try to change DTK settings, you will be prompted to enter this password to access the settings.	
	--setuppwdoverride		Does not prompt you for a password to access DTK settings on systems that do not have a setup password configured.	
--powerbutton	NA	enable, disable	Enables or disables the front bezel power button.	Yes
--pwdlock	NA	lock, unlock	Enables or disables the ability to set the system password.	No

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--redmem	NA	off, spare, mirror, raid	Sets the redundant memory mode. If you perform operations that change the **--redmem** option, you must immediately reboot the system. This applies to command line usage as well as **--infile** usage. Additionally, the **--redmem** option should not be issued with any other command and should be immediately followed by a system reboot. This is important when you develop scripts that can alter the **--redmem** setting. Not available on *xx*1*x* systems.	Yes
--rptkeyerr	NA	enable, disable	Enables or disables the reporting of keyboard errors during POST.	Yes
--sata0	NA	auto, off	Enables or disables SATA port 0. **NOTE:** This option maps to **--sata_a** for PowerEdge *x9xx* systems.	Yes
--sata1	NA	auto, off	Enables or disables SATA port 1. **NOTE:** This option maps to **--sata_b** for PowerEdge *x9xx* systems.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--sata2	NA	auto, off	Enables or disables SATA port 2. **NOTE:** This option maps to **--sata_c** for PowerEdge *x9xx* systems.	Yes
--sata3	NA	auto, off	Enables or disables SATA port 3. **NOTE:** This option maps to **--sata_d** for PowerEdge *x9xx* systems.	Yes
--sata4	NA	auto, off	Enables or disables SATA port 4. **NOTE:** This option maps to **--sata_e** for PowerEdge *x9xx* systems.	Yes
--sata5	NA	auto, off	Enables or disables SATA port 5. **NOTE:** This option maps to **--sata_f** for PowerEdge *x9xx* systems.	Yes
--sata6	NA	auto, off	Enables or disables SATA port 6. **NOTE:** This option maps to **--sata_g** for PowerEdge *x9xx* systems.	Yes
--sata7	NA	auto, off	Enables or disables SATA port 7. **NOTE:** This option maps to **--sata_h** for PowerEdge *x9xx* systems.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--serial1	NA	disable, com1, com3, com1_bmc, bmcserial, bmclan, rac	Sets the behavior for serial port 1.	Yes
--serial2	NA	auto, disable, com2, com4	Sets the behavior for serial port 2.	Yes
--serialcomm	NA	on, com1cr, com2cr, off	Sets the behavior of serial port communication.	Yes
--setuppwd	NA	<*string*>	Sets the setup password for the system BIOS.	No
--sma	NA	enable, disable	Enables or disables processor sequential memory access.	Yes
--slot*	NA	none	Reports the slot number for a modular system. **NOTE:** This option is valid for PowerEdge 1855 systems only. The asterisk is not part of the command syntax.	Yes
--snoopfilter	NA	enable, disable	Enables or disables the snoop filter option from the system BIOS.	Yes
--svctag*	NA	none	Reports the service tag for the system. **NOTE:** The asterisk is not part of the command syntax.	No
--syspwd	NA	<*string*>	Sets the system password for the system BIOS.	No
tpm	--tpmsecurity	off, onwithpbm, onwithoutpbm	Configures the TPM security feature.	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
	--tpmactivation	enabled, disabled, nochange	Enables or disables the TPM activation feature.	Yes
	--tpmclear	NA	Clears the contents of the TPM chip without erasing the **tpmsecurity** and **tpmactivation** settings.	No
	--undotpmclear	NA	Undoes the result of the **tpmclear** setting. If you specify this setting before specifying the **tpmclear** setting, the '**There is currently no pending TPM Clear request**' message is displayed.	No
	--valsetuppwd	<*string*>	Validates the setup password for TPM authentication. If you try to change DTK settings, you will be prompted to enter this password to access the settings.	No
	--setuppwdoverride	NA	On systems that do not have a setup password configured, if you set this option, you will not be prompted for a password to access DTK settings.	No
--turbomode	NA	enable, disable	Enables or disables core-based turbo mode.	Yes
--usb	NA	on, off, legacy	Enables or disables the USB port.	Yes
--usbflash	NA	auto, fdd, hdd	Sets the emulation of a USB flash device to **auto**, diskette (**fdd**), or hard drive (**hdd**).	Yes

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--usbports	NA	enable, enablebackonly, disable	Enables or disables USB ports.	Yes
--virtualization	NA	enable, disable	Enables or disables virtualization in the CPU.	Yes
--virtualmedia	NA	enable, disable	Enables or disables virtual media in Dell Remote Access Controllers 5 (DRAC 5).	Yes
bmcversion	--devid --devrevision --majorfwrevision --minorfwrevision	NA	Displays revision information for the BMC and the firmware.	
--controlpanelaccess	NA	viewandmodify, viewonly, disabled	Sets or gets the access level for the Liquid Crystal Display (LCD).	Yes
--clearsel	NA	NA	Clears the SEL.	
--deviceguid	NA	NA	Displays the GUID for the BMC.	
--encryptkey	NA	<*hexadecimal number*>	Encrypts the Intelligent Platform Management Interface (IPMI) sessions.	Yes
--identify	NA	0–254	Flashes the identification LED for a specified number of seconds.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
lanchannelaccess or lca	--pefalerting	enable, disable	Sets or displays the LAN channel access settings such as alerting and user privilege limits.	
	--ipmioverlan	disable, alwaysavail		
	--channelprivlmt	user, operator, administrator		
lanchannelinfo or lci	--mediumtype	NA	Displays media and protocol information about the LAN channel.	
	--prottype	NA		
	--ssnsupport	NA		
	--activessncount			
lancfgparams or lcp	--ipaddrsrc	static, dhcp	Configures and displays LAN configuration parameters.	
	--ipaddress	<*ipaddress*>		
	--subnetmask	<*subnetmask*>		
	--gateway	<*gateway*>		
	--commstring	<*string*>		
	--destipaddr	<*destipaddress*>		
	--alertdest	1, 2, 3, 4		
	--vlantag	enable, disable		
	--vlanid	0–4095		
	--vlanpriority	0–7		
	--macaddress	NA		

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
	--nicselection	shared, sharedfailover, dedicated		

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
	--fullduplex	enable, disable		
	--autoneg	enable, disable		
	--speed	10,100		
	--dnsdhcp	enable, disable		
	--dnsserver1	<*ipaddress*>		
	--dnsserver2	<*ipaddress*>		
	--dnsregisterrac	enable, disable		
	--dnsracname	<*string*>		
	--domainnamefromdhcp	enable, disable		
lanuseraccess or lua	--usrprivlmt	user, operator, administrator, noaccess	Configures and displays user access parameters for the LAN channel.	
	--userid	2–10	Returns the number of User IDs with fixed names.	
	--currentenableduserids	NA		
	--useridswithfixednames	NA		

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--loaddefaults	NA	NA	Restores the BMC to the defaults that were originally loaded on the controller. This option is used to return the BMC to a known-good state.	
--nextboot	NA	<*device name*>	Sets the device for the next boot operation only.	
--nmibutton	NA	enable, disable	Enables or disables the NMI button.	
passwordaction	--action	setpassword, testpassword	Configures and displays passwords associated with User IDs.	
pefcfgparams or pcp	--filter	fanfail, voltfail, discretevoltfail, tempwarn, tempfail, intrusion, redundegraded, redunlost, procwarn, procfail, powerwarn, powerfail, hardwarelogfail, autorecovery, batterywarn, batteryfail, powerabsent, procabsent, systempowerwarn, systempowerfail	Configures and displays PEF configuration parameters. See "BMC Platform Events Filter Alert Messages" for a complete list of all possible PEF messages along a description of each event. **NOTE:** The **voltfail** option is not supported on *x9xx* systems and onwards.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
	--filteraction	powercycle, reset, powerdown, powerreduction, none		
	--hostname	<*string*>		
	--filteralert	enable, disable		
	--alertpolnum	1, 2, 3, 4		
	--alertpolstatus	enable, disable		
--powerbutton	NA	enable, disable	Enables or disables the power button.	
--powerctl	NA	powerdown</argument> powercycle</argument> reset</argument> softshutdown</argument>	Performs a chassis powerdown and controls the reset of the system.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--racreset	NA	NA	Resets the RAC. It cannot be accompanied with any other option.	No
serialchannelaccess or sca	--ipmioverserial	disable, alwaysavail	Sets or displays the channel access settings for the serial channel.	
	--channelprivlmt	user, operator, administrator		
serialchannelinfo or sci	--mediumtype	NA	Displays serial channel information.	
	--prottype	NA		
	--ssnsupport	NA		
	--activessncount	NA		

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
serialcfgparams or scp	--connectionmode	basic, terminal	Configures and displays serial configuration parameters.	
	--msgcommflowctrl	noflowctrl, rtscts	**NOTE:** The BMC firmware does not support serial port Point-to-Point Protocol (PPP) configurations.	
	--msgcommdtrhangup	NA		
	--msgcommbitrate	9600, 19200, 57600, 115200		
	--tmcfglineediting	enable, disable		
	--tmcfgdelctrl	del, bksp		
	--tmcfgechoctrl	echo, noecho		
	--tmcfghandshakectrl	enable, disable		
	--tmcfgnewlineseq	noterm, crlf, null, cr, lfcr, lf		
	--tmcfginputnewlineseq	cr, null		

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
serialuseraccessor sua	--usrprivlmt	user, operator, administrator, noaccess	Configures and displays user access parameters for the serial channel.	
	--userid	2–10		
	--currentenableduserids	NA		
	--useridswithfixednames	NA		
--solaction			Enables or disables Serial-Over-LAN (SOL) access for a particular user.	
	--userid	2–10 if your system has a DRAC 4 controller 2–16 if your system has a DRAC 5 controller		
	--action	enable, disable		

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
solcfgparams	--solenable	enable, disable	Configures and displays SOL configuration parameters.	
	--solprivlevel	user, operator, administrator		
	--solcharaccuminterval	*1–255*		
	--solcharsendthreshold	*1–255*		
	--solbitrate	9600, 19200, 57600, 115200		
ssninfo	--maxactivessns	NA	Displays information about the number of possible active sessions and the number of currently active sessions on all channels on the controller.	
	--currentactivessns	NA		
useraction	--userid	2–10	Enables and disables User IDs for the **serialchannelaccess** and **lanchannelaccess** options.	
	--action	enable, disable		
username	--name	*<string>*	Assigns user names to a given User ID and displays user names associated with a given User ID.	
	--userid	2–10		
--version	NA	NA	Displays the version information for the SYSCFG utility.	
-b	NA	*<string>*	Specifies the value to write to state data.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
-r or --read	NA	NA	Reads the value of state data.	
-x	NA	NA	Specifies that the state data value should be in hexadecimal format.	
--asset	NA	NA	Reports the asset tag for a system.	
--biosver	NA	NA	Reports the BIOS version for a system.	
--chassvctag	NA	NA	Reports the chassis service tag for modular systems.	
--cpucount	NA	NA	Reports the number of processors in a system.	
--cpuspeed	NA	NA	Reports the speed of all processors in a system.	
--envfile	NA	<*string*>	Specifies the input file to use for resolving PCI vendor, device, and class codes to environment variables and names.	
--mem	NA	NA	Reports the amount of system memory in a system.	
--n	NA	<*string*>	Specifies an input file to use for resolving PCI vendor and device numbers to strings.	
--ovrwrt	NA	NA	Overwrites the specified file contents when used with the **-o** option.	
--pci	NA	NA	Scans all PCI buses and reports the results.	
--slot	NA	NA	Reports the slot of a modular system.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
--svctag	NA	NA	Reports the service tag for a system.	
--sysasset	NA	NA	Reports the asset tag for a server module in a modular system chassis.	
--sysid	NA	NA	Reports the unique system ID bytes for a system.	
--sysname	NA	NA	Reports the system identification string for a system.	
--syssvctag	NA	NA	Reports the service tag for a server module in a modular system chassis.	
--uuid	NA	NA	Reports the unique universal identifier (UUID) for a system.	
lancfgparamsv6	--ipv6	enable, disable	Loads or unloads the IPv6 stack.	Yes
	--ipsrcv6=static --ipaddrv6=*<ipv6address>* --prefixlengthv6=*<prefixlengthv6>* --gatewayv6=*<ipv6gatewayaddress>*		Allows you to manually configure IPv6 addresses.	
	--ipsrcv6=auto		Automatically configures the IPv6 addresses.	

Table D-1. SYSCFG Options *(continued)*

Options	Suboptions	Valid Arguments	Description	Replicated
	--dnssrcv6 = auto		Automatically configures the DNS address.	
	--dnssrcv6= static --dnsserver1v6 = <ipv6dnsserver1address>		Allows you to manually set the DNS address.	
	--linklocaladdripv6= <linklocaladdripv6>		Allows you to view IPv6 addresses.	
	--gatewayv6= <gatewayv6>		Allows you to view IP gatewayv6 address.	

RAIDCFG Options

Table D-2 lists all the RAIDCFG options and gives a brief description of these options. For details on these options, see the section, "RAIDCFG".

Table D-2. RAIDCFG Short and Long Format Options

Option	Valid Arguments	Short Description	Mandatory or Optional
No option -h -? or /?	NA	Displays general usage information for the utility. The usage information consists of a comprehensive list of valid options, parameters, and arguments.	Optional. See Table 4-1 for specific usage information.
-ac or action	cvd or createvdisk	Creates a virtual disk. **NOTE:** When providing multiple physical disks for the createvdisk command, do not separate the disks with spaces. For example, `-ad=1:4, 1:5` causes an error. The correct syntax for displaying multiple physical disks is `-ad=1:4,1:5,1:6`.	See Table 4-4 for specific usage information.
-ac or action	dvd or deletevdisk	Deletes a virtual disk.	See Table 4-9 for specific usage information.
-ad or adisk	NA	Specifies an array disk command.	See Table 4-5 for specific usage information.

Table D-2. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-ad or adisk	ch:targ, ch:targ, ... or ch:targ:lun,... or ch:targ:enc channel:target, or channel:target:lun, or channel:target:enclosure	Specifies an array disk. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure. **NOTE:** You can also use pdisk or -pd instead of adisk or -ad to specify an array disk.	Optional. See Table 4-5 for specific usage information.
-c or controllerid	<*valid controller ID number*>	Specifies a RAID controller.	See Table 4-3 for specific usage information.
-cp or cachepolicy	d, c	Specifies the virtual disk cache policy.	Optional. See Table 4-4 for specific usage information.
-ctrl or controller	NA	Displays a list of the supported RAID controllers in the system, along with select property information.	Mandatory, must be typed in the correct order. See Table 4-3 for specific usage information.
-envc or envcommand	<*string*>	Sets a user-defined environmental variable (<*string*>) to the value returned from a function call.	See Table 4-11 for specific usage information.
-envn or envname	<*string*>	Sets the environment variable (<*string*>) that equates to the value returned from a function call.	See Table 4-11 for specific usage information.

Table D-2. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-fd or failoverdrive	ch:targ, ch:targ, ... or ch:targ:lun,... or ch:targ:enc channel:target, or channel:target:lun, or channel:target:enclosure	Specifies the location of the failover drive in an array. For SCSI controllers, the value of lun should always be 0. For SAS controllers, the value of enclosure can be non-zero, in which case you need to specify values for channel, target, and enclosure. **NOTE:** From DTK 2.4 onwards, the **-fd** option creates dedicated hot spares instead of global hot spares. To set global hot spares, see Table 4-10.	Optional. See Table 4-4 for specific usage information.
-i	<*filename*>	Reads the RAID configuration information from the given **.ini** filename and creates the RAID configurations on the specified controllers.	Mandatory. See Table 4-13 for specific usage information.
-l or logfile	<*filename*>	Logs command line output to a file.	Optional. See Table 4-14 for specific usage information.
-o	<*filename*>	Reads the RAID configurations from all available controllers and write these configurations in the given **.ini** filename.	Mandatory. See Table 4-13 for specific usage information.
-r or raid	<*valid RAID level number*>	Sets the RAID level for the array. Valid RAID values are 0, 1, 5, 10, 50. If no value is specified for RAID, 0 is taken as the default level.	Optional. See Table 4-4 for specific usage information.

Table D-2. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-rp or readpolicy	ra, ara, nra, rc, nrc	Sets the read policy for the virtual disk.	Optional. See Table 4-4 for specific usage information.
-se or setenvironment	NA	Sets a user-defined environment variable to the value returned from the function call. Function calls are: `getcontrollerslots, getfirmware, getcontrollertype, getadisks, getadiskcount, getfreeadisks, getfreeadiskcount, getfreeadisksize, gethotspares.`	Mandatory. See Table 4-11 for specific usage information.
-si or silent	NA	Does not display any information on the terminal console.	Optional. See Table 4-14 for specific usage information.
-sz or size	<*number*>	Sets the maximum size on the virtual disk in MB or GB if the size is not provided. The default size is in MB. If GB follows the number, the size is expressed in GB.	Optional. See Table 4-4 for specific usage information.
-sp or spanlength	<*number*>	The span size of RAID 5, which is a mandatory parameter for RAID 50. **NOTE:** Spanlength is applicable only for RAID 50. The minimum permissible spanlength value is 3. The number of array disks for creating virtual disks should not be a prime number and should be divisible by the specified spanlength.	Mandatory. See Table 4-4 for specific usage information.

Table D-2. RAIDCFG Short and Long Format Options *(continued)*

Option	Valid Arguments	Short Description	Mandatory or Optional
-ssz or stripesize	<*number*>	Sets the stripe size on the virtual disk in KB. **NOTE:** When creating virtual disks, do not specify the units for chunk (stripe) size. The units are always listed in KB.	Optional. See Table 4-4 for specific usage information.
-vd or vdisk	NA	Displays the virtual disks under all of the controllers along with the physical array disks that make up the virtual disks.	See Table 4-6 for specific usage information.
-vd or vdisk	<*valid virtual disk ID number*>	Displays the specified virtual disk.	Optional. See Table 4-6 for specific usage information.
-ver or version	NA	Displays the version number of the utility.	Optional. See Table 4-14 for specific usage information.
-wp or writepolicy	wb, wt, wc, nwc	Sets the write policy for a virtual disk. The valid arguments are: **wb** (write-back caching), **wt** (write-through caching), **wc** (write-caching), and **nwc** (no-write-caching).	Optional. See Table 4-14 for specific usage information.

Index

D

disk partitioning
  UPINIT, 193

disk partitioning utilities, 10

disk partitioning utility, 10

DTK utilities
  overview, 10

E

error codes, 231

error messages, 19, 231

F

features
  RACADM, 201
  RAIDCFG, 143
  SYSCFG, 21
  UPINIT, 193

M

messages and codes, 231

O

options
  RACADM, 202

options and arguments
  RAIDCFG, 144
  UPINIT, 194

overview
  DTK utilities, 10

R

RAC configuration utilities
  RACADM, 10

RAC configuration utility, 10

RACADM, 201
  features, 201
  options, subcommands, and arguments, 206

RACADM subcommands
  config/getconfig, 209
  getssninfo, 217
  getsysinfo, 219
  help, 224
  racdump, 224
  racreset, 225
  racresetcfg, 227
  setrac, 228

RAID configuration utilities, 10

RAID configuration utility
  RAIDCFG, 10

RAIDCFG, 143

error codes and messages, 243
features, 143
options and arguments, 144, 150
supported RAID controllers, 143, 193, 201
replication, 11
requirements, 9

S

SYSCFG, 21
error checking and messages, 231
features, 21
options and arguments, 27
system configuration and update utilities, 10
SYSCFG, 10

U

UPINIT, 193
creating a partition, 193
features, 193
options and arguments, 194
utility, 193
utilities
disk partitioning, 10
RAC configuration, 10
RACADM, 10, 201
RAIDCFG, 10, 143
SYSCFG, 10, 21
UPINIT, 193
utility
UPINIT, 193
utility types
RAID configuration, 10
system configuration and update, 10

W

what's new, 9