

**Dell Openmanage
Deployment Toolkit
4.4 For Microsoft
Windows
Preinstallation
Environment**
Release Notes

Release Type and Definition

Deployment ToolKit

The Dell OpenManage Deployment Toolkit (DTK) includes a set of utilities, scripts, and sample configuration files that to deploy and your Dell system. You can use DTK to build script-based and RPM-based installation for deploying large number of systems on a preoperating system environment in a reliable way, without changing their current deployment processes.

In addition to the command line utilities used to configure various system features, DTK also provides sample scripts and configuration files to perform common deployment tasks and documentation.

Version

4.4

Release Date

March 2014

Previous Version

4.3

Importance

RECOMMENDED: Dell recommends applying this update during your next scheduled update cycle. The update contains feature enhancements or changes that will help keep your system software current and compatible with other system modules (firmware, BIOS, drivers and software).

Platforms Affected

For a complete list of supported Dell PowerEdge systems and supported Operating systems, see the Dell Systems Software Support Matrix available in the required version of OpenManage Software at dell.com/openmanagemanuals.

What Is Supported

Hardware and Software Requirements

Before beginning the deployment process, ensure that you have:

- Advanced knowledge of Windows.
- Windows Automated Installation Kit (AIK) or Windows Assessment and Deployment Kit (ADK) to build Windows PE.
- An unzip utility.
- Working knowledge of Microsoft Remote Installation Services (RIS) and
- Automated Deployment Services (ADS) (including setting up of RIS and ADS environments), or any other third-party deployment system or tool.

- Working knowledge of Windows Deployment Services (WDS) or any other third-party deployment system or tool for Windows PE.
- A workstation with the following capabilities:
 - A writable CD/DVD drive and CD/DVD writing software
 - Network access
- A target system with a CD/DVD drive if you are performing a local deployment or network access if you are performing a network deployment.
- All Deployment Toolkit utilities, sample scripts, and sample configuration files.
- All required Windows PE drivers, operating system drivers, and the Dell utility partition image file.
- A minimum BIOS version is recommended on some of the platforms for all the DTK options to work correctly. In general, it is good practice to use the latest ("n") version of BIOS firmware or the "n-1" version that is available on "support.dell.com."

For more information see the Dell Systems Software Support Matrix available in the required version of OpenManage Software at dell.com/openmanagemanuals.

Operating System Requirements

The following operating systems are supported in this release:

DTK utilities (SYSCFG and RAIDCFG) and scripts (sample) support Windows PE 3.0, Windows PE 4.0, and Windows PE 5.0.

Note: For Microsoft WinPE and OS deployment support limitations refer to <http://technet.microsoft.com/en-us/library/hh824993.aspx>

DTK helps to deploy the following Microsoft Windows Server operating systems:

- Windows Server 2012 R2 Foundation, Essentials, Standard, and Datacenter editions
- Windows Server 2012 Foundation, Essentials, Standard, and Datacenter editions
- Windows Server 2008 SP2 (32-bit and 64-bit)
- Windows Server 2008 R2 SP1 (64-bit)

What's New

The new features for this release include:

- Support for deployment of Windows operating system in Unified Extensible Firmware Interface (UEFI) mode.
- Using DTK utilities you can deploy the following operating system:
 - Microsoft Windows Server 2012 R2 Datacenter, Foundation, Essentials, and Standard editions

- Novell SUSE Linux Enterprise Server 11 SP3 (64-bit)
- Red Hat Enterprise Linux 6.5 (64-bit)
- RAIDCFG extends support to Dell PERC 9 (H730P Adapter) with the following features:
 - RAID 10 virtual disk with uneven span.
 - Advanced 4K sector hard disk drives.
 - T10 Protection Information (PI) for data integrity.
- Support for USB bootable DTK embedded Linux ISO image. See Using USB.
- Availability of DTK in Systems Management Tools and Documentation DVD.
- RAIDCFG configuration supports the following options configured through RAID controller BIOS:
 - Configuring the boot mode of the controller.
 - Configuring the auto import property of the controller.
 - Rebuilding physical disks associated with a virtual disk.
 - Configuring the array disk state to online or offline.
 - Converting RAID to Non-RAID and vice versa on an array disk.
 - Replacing the physical disk of a virtual disk.
 - Executing consistency check on a virtual disk.
 - Erasing the encrypted physical disk.
 - Displaying the following in the array disk details:
 - Power state
 - Disk State
 - S.M.A.R.T. state
 - Maximum Device Link Rate
 - Negotiated Link Rate
 - Secured State
 - Encryption Capability

NOTE: See the Dell OpenManage Deployment Toolkit Command Line Interface Reference Guide available at dell.com/openmanagemanuals.

- Support for the following Dell PowerEdge servers:
 - R920
 - M820VRTX
 - R220
- Added support for the following Network Interface Cards (NICs), Converged Network Adapters (CNAs), and Fiber Channels (FCs):–
 - Mellanox ConnectX-3 Dual Port 10 GbE DA/SFP+ Network Adapter
 - Mellanox ConnectX-3 Dual Port 10 GbE KR Blade Mezzanine Card
 - Mellanox ConnectX-3 Dual Port 40 GbE QSFP+ Network Adapter
 - Emulex OCe14102-UX-D Dual Port 10Gb SFP+ CNA
 - Emulex OCm14102-U3-D Dual Port 10Gb KR Blade Mezz
 - Emulex OCm14102-U2-D Dual Port 10Gb KR Blade NDC
 - Emulex OiCm14104-UX-D Quad Port 10Gb DA/SFP+ Rack NDC
- Deprecated support for the following operating systems:
 - SUSE Linux Enterprise Server 10 SP4
 - Red Hat Enterprise Linux 6.4 (64-bit)

- SUSE Linux Enterprise Server 11 SP2

NOTE: For the list of supported operating systems and Dell servers, see the Dell Systems Software Support Matrix at dell.com/openmanagemanuals.

Important Notes

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

SYSCFG

Some options may not be present on all systems, which may be due to the BIOS version or hardware feature set. The usage information generated by running SYSCFG without arguments shows only those options that are valid for your system.

The "--devseq" option is present only if you have an available, bootable hard-disk partition. If this option is present in the configuration file, but not present on your system, you will receive a usage error.

It is required to perform a warm reboot after applying the syscfg settings changes on Dell PowerEdge 12G systems.

If you perform operations that change the "--redmem" option, reboot your system immediately. It is applicable to both command line and "--infile" usage.

NOTE: 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.

For options that use text strings such as username, password, hostname, and community string, using characters such as <space>, "<", ">", "|", "=" on the command line can be misinterpreted by the command line parser and may cause errors. To avoid such errors, use only alphanumeric characters.

If you set the username using syscfg username option, Serial Over Lan (SOL) access for the corresponding user will be enabled by default. You can disable SOL access for a user using "syscfg solaction --userid=<userid> --action=disable" command.

The maximum reliably supported baud rates (--solbitrate) are:

- o 57600 for PowerEdge 9G systems without Dell Remote Access Controller 5 (DRAC 5).
- o 115200 for PowerEdge 9G systems with DRAC 5.
- o If you enter an unsupported baud rate, you may receive an error, "Parameter out of range."

The legacy attribute values enable and disable are also supported for 12G systems for backward compatibility. In future releases these arguments might be deprecated. Try to use the values displayed in help message for BIOS options for 12G server.

DTK 4.4 does not boot on Dell PowerEdge T100. PowerEdge T100 has a BIOS version that is incompatible with the current HAPI drivers.

RAIDCFG

When creating virtual disks, the chunk (stripe) size is always in KBs. Do not specify any units of measure for the chunk size.

When providing multiple physical disks for the "create virtual disk" command, do not separate the disks with spaces.

For example, "-ad=1:4, 1:5" causes an error. The correct way to input multiple physical disks is "-ad=1:4,1:5,1:6" or "-ad=1:4:0,1:5:0,1:6:0".

If you change the controller mode from SCSI to RAID mode, data loss may occur. Back up any data you require before changing the modes.

Known Issues

SYSCFG Issues

In DRAC 5, the `--virtualmedia` and `--vflash` options do not work if there is an active virtual media session. Disconnect the virtual media using the DRAC GUI. Log into DRAC. Click Media > Virtual Media > Disconnect.

The `syscfg --bootseq` command detects CD-ROM with SAS/SATA controllers as `unk.emb.1`.

On R815, `syscfg power --profile` option sets `apc`. Though `apc` is not supported on R815, `syscfg` does not throw an error message.

On Windows PE 3.0, when you run the `syscfg` command to list all available options, if you press CTR + C before the command fully executes, an error message is displayed. Click OK. You can ignore the message.

The option for "powerctl," which is "softshutdown," does not work on Windows PE.

The `--solbitrate` option in "solcfgparams" and the `--mgscommbitrate` option in "serialcfgparams" accept a baud rate of 57600, but tools such as "ipmish" and "solproxy" do not function at that baud rate for PowerEdge systems.

On PowerEdge 1950, 2950 and PowerVault NX 1950 systems with internal USB, BIOS setting configuration for internal USB Port is possible only if User Accessible/external (UA) USB ports are set to "All Ports On." If UA USB ports are not set to "All Ports On" and if you try to configure the BIOS setting for the internal USB port using SYSCFG, the configuration will appear to be successful but the changes will not take effect after the next reboot. If UA USB ports settings are changed from "All Ports On" to "All Ports Off" or "Only Back Ports On," the USB port will be automatically to "Off" during the next reboot.

The legacy attribute values `enable` and `disable` are also supported for 12G systems for backward compatibility. In future releases, these arguments might be deprecated. Try to use the values shown in help message for BIOS options for 12G server.

DTK 4.4 does not boot on Dell PowerEdge T100. PowerEdge T100 has a BIOS version that is incompatible with the current HAPI drivers.

RAIDCFG Issues

You can assign up to 10 Global hot spares using `Raidcfg`. Use the Dell OpenManage Server Administrator Storage Management for assigning more than 10 Global hot spares.

`Raidcfg` does not support Non RAID (Volume) mode on s100/s300/S110 controller.

S300 controller `CachePolicy` setting is "Not Applicable". Hence VD created with different `cachepolicy` settings from OROM utility will be displayed as "Not Applicable".

On Dell PERC H310 controllers, conversion of a RAID Capable Disk to Non-RAID disk and vice versa is not supported using `raidcfg`.

RACADM Issues

If you use virtual media to boot into Windows PE, executing certain RACADM commands may cause Windows PE to crash.

After generating the `rac` configuration file using the `"racadm getconfig -f <file_name>"` command, comment out the following properties in the configuration file before you update a configuration using the `"racadm config -f <file_name>"` command:

```
#cfgRacTuneCtrlEConfigDisable=0
#cfgRacTuneLocalConfigDisable=0
```

VLAN objects (cfgNicVlanEnable, cfgNicVlanId, and cfgNicVlanPriority) displayed using the local RACADM command "racadm getconfig -g cfgLanNetworking" or VLAN objects generated in the configuration file using the local RACADM command "racadm getconfig -f <file name>" do not contain the leading "#" symbol, which indicates that they are read-only.

Windows PE Issues

Running partcfg.bat may fail when virtual media is enabled. For the hard disk, partcfg.bat uses the driver letter "c:". When virtual media is enabled, sometimes, the virtual device gets assigned with the drive letter "c:" And, partcfg.bat execution fails. To run partcfg.bat successfully, either disable the virtual media or use the diskpart command to assign a free driver letter for partcfg.bat.

Windows PE 3.0 and 4.0 for 64-bit do not support racadm.exe for DRAC 4.

Installation Prerequisites

Before extracting Deployment Toolkit components, ensure that you have:

- The DTK ISO image available at support.dell.com.
- A workstation that has
 - 512 MB RAM
 - A writable CD drive and CD-writing software (optional)
 - Network access

A minimum BIOS version is recommended on some of the platforms for all the DTK options to work properly. In general, it is a good practice to use the latest ("n") version of BIOS firmware or the "n-1" version that is available on "support.dell.com."

Installation Procedure

For complete installation and deployment instructions, see the "Dell OpenManage Deployment Toolkit User's Guide."

Installation and Configuration Notes

The sample scripts are provided as examples for customers who want to develop their own deployment process. Some customers may find that the scripts work well in their environment, while some customers may need to develop their own scripts entirely from scratch. Customers deploying multiple systems need to provide unique information for each server when appropriate. For example, system host names, IP addresses, and BIOS asset tags need to be unique for each system. Modify the batch scripts and configuration files to reflect the unique information for each system being deployed. Many options are available to optimize this process.

Upgrading From Previous Versions

When upgrading from a previous release of the DTK, ensure that you create environment for the new DTK version separately from the previous version of DTK. This step is necessary because the environments and requirements for the new DTK versions are completely different.

Contacting Dell

NOTE: Dell provides several online and telephone-based support and service options. If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area.

To contact Dell for sales, technical support, or customer-service issues:

1. Go to **dell.com/contactdell**.
2. Select your country or region from the interactive world map. When you select a region, the countries for the selected regions are displayed.
3. Select the appropriate language under the country of your choice.
4. Select your business segment. The main support page for the selected business segment is displayed.
5. Select the appropriate option depending on your requirement.

NOTE: If you have purchased a Dell system, you may be asked for the Service Tag.

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