

Dell OpenManage
Deployment Toolkit
Version 4.0

Readme



What's New

The new features for this release include:

- Added support for SUSE Enterprise Linux 11 SP2 (64-bit).
- Deprecated the following operating systems:
 - Red Hat Enterprise Linux 6.0 (64-bit)
 - Red Hat Enterprise Linux 5.5 (32-bit and 64-bit)
 - SUSE Enterprise Linux 11 SP1 (64-bit)
 - Microsoft Windows Server 2003 R2 (32-bit and 64-bit)
 - Microsoft Windows Server 2003 (32-bit and 64-bit)
- Support for Dell PowerEdge yx2x systems.
- On PowerEdge yx2x systems, all the SYSCFG options are grouped as per the BIOS. SYSCFG configures and reports the current and pending BIOS attributes.
- If the system has setup password, BIOS configuration using SYSCFG requires the setup password.
- Attributes such as ipv6, power budget, dynamic DNS, and dedicated NIC configurations are available only with the appropriate installed license.

Supported Systems

For a complete list of supported Dell PowerEdge systems, see the Dell Systems Software Support Matrix available at support.dell.com/manuals. On the Manuals page, click Software-> Systems Management -> Dell OpenManage Releases. Click the appropriate product version to access the Support Matrix.

Supported Operating Systems

DTK utilities support Red Hat Enterprise Linux Server version 5.5, update 4 (32-bit). Using DTK utilities we can deploy the following Linux operating systems:

- Red Hat Enterprise Linux 6.1
- Red Hat Enterprise Linux 5.7 (32-bit and 64-bit)
- SUSE Enterprise Linux 10 SP4
- SUSE Enterprise Linux 11 SP2

Hardware and Software Requirements

Before installing the DTK components for embedded Linux, ensure that you have:

- The DTK ISO image, which contains the utilities, sample scripts, sample configuration files, and documentation you need to deploy your Dell system.
- A Linux workstation that has at least 200 MB of free hard-drive space.
- When building customized Linux ISOs, you might need to incorporate the following Red Hat Package Managers (RPMs) and scripts provided by DTK to ensure a successful build:
 - `dell.tar.gz` - Dell Deployment Toolkit which contains the DTK tools and sample scripts.
 - `omreg.cfg` - Configuration file for instrumentation software. Edit this file, if required, to point to where the DTK tools are placed. The modified file should be under the location `"/etc."`
 - `start-hapi.sh` - Startup script to load and configure the HAPI drivers. You need to run this script to load the OpenIPMI Modules and to create files required by HAPI.
 - `start-raid.sh` - Contains basic setup for RAID to work. You need to run this script to create device nodes required by RAIDCFG and files required by HAPI.
 - `start-stage3.sh` - A sample DTK startup script that loads all the modules and drivers required for the ISO to work. You will have to replicate this setup in your customized Linux ISO.
- If you have the DTK CD mounted under `"/mnt/cdrom,"` you can extract the DTK tools, scripts, and other essentials to build your customized ISO image under the `"tools"` folder at the root of the CD.

Installation

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

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 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"](http://support.dell.com).

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. The batch scripts and configuration files need to be modified to reflect the unique information for each system being deployed. Many options are available to optimize this process.
- You can use a system BIOS configuration profile generated for all systems belonging to the same generation. For example, "syscfg_xx2x.ini" for xx2x systems, and so on.
- Because of security reasons, the "ssh" and "scp" services are not available from DTK 3.1.1 onwards. The mount command is available in the DTK CD.

Upgrade

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.

Tool Notes

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.
- You may need to reboot your system for certain options to be enabled. Dell recommends you use the "reboot" command on shell prompt or press the "Ctrl+Alt+Del" keys.
- It is required to perform a warm reboot after applying the syscfg settings changes on Dell PowerEdge yx2x systems.
- If you perform operations that change the "--redmem" option, reboot your system immediately. This 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:
 - 57600 for PowerEdge x9xx systems without Dell Remote Access Controller 5 (DRAC 5).
 - 115200 for PowerEdge x9xx systems with DRAC 5.

If you enter an unsupported baud rate, you may receive an error, "Parameter out of range."

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 mode to RAID mode, data loss may occur. Back up any data you require before changing the modes.

Open Issues and Resolutions

RAIDCFG Issues

- You cannot delete a virtual disk on CERC SATA 2S when RAID 1 is created with the "--clear" option. The virtual disk can be cleared from the controller BIOS.
- You can assign up to 10 Global Hotspares using Raidcfg. Use The Dell OpenManage Server Administrator Storage Management for assigning more than 10 Global Hot spares.

- DTK does not support Non RAID (Volume) mode on S100/S300 controller.
- S300 controller Cachepolicy setting is "Not Applicable". Hence VD created with different cachepolicy settings from OROM utility will be displayed as "Not Applicable".
- USB keys should not be mounted to the /tmp directory. Inside the /tmp directory, create a new directory and mount the USB to this.
- On Dell PERC H310 controllers, conversion of a RAID Capable Disk to Non-RAID disk and vice versa is not supported using raidcfg.

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 allows to set to apc, though apc is not supported on R815. syscfg does not throw an error message.
- The option for "powerctl," "softshutdown," causes your system to reboot. If you use a customized kernel with Advanced Configuration and Power Interface (ACPI) support, this option will work as designed.
- Using the "solcfgparams" option may produce an error message saying "Hardware subsystem error" when an invalid value is used. This does not indicate a problem with the hardware. Check the option value and try again.
- The "--solbitrate" option in "solcfgparams" and the "--msgcommbitrate" option in "serialcfgparams" accept a baud rate of 57600.
- 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 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 set to "Off" during the next reboot.

RACADM Issues

- The "racadm gettracelog" option may cause the system to hang. You may need to restart the system.
- 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:
 - #cfgRacTuneCtrlIEConfigDisable=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.

Operating System Installation Issues

- Installation of legacy Red Hat Enterprise Linux operating systems may fail due to lack of support for new hardware. You should modify the '%post' section of "ks.cfg" to update to a newer version of the kernel or install the drivers from this section.
- The default root password for Linux installation is "root123." This could be changed to be encrypted in the template "ks.cfg" provided.
- The Red Hat Enterprise Linux operating system installation may fail on systems equipped with multiple RAID and/or SCSI controllers, whether installed on the system board or in PCI slots. This failure may occur when using "Server Setup" or performing a manual installation. When two or more RAID or SCSI controllers are present, install Red Hat Enterprise Linux with only one configured RAID or SCSI controller. Configure the other controllers after you install the Red Hat Enterprise Linux operating system.
- When deploying SUSE Linux Enterprise Server version 11 on PowerEdge M915 using DTK automated script (autoinst.xml), do the following:
 1. In device map section, <device_map_entry>


```

          <firmware>hd0</firmware>
          <linux>/dev/sdc</linux>
          </device_map_entry>
          
```

 change hd0 to /dev/sdc
 2. In grub config section, change /dev/sda5 to /dev/sda6

If installer reports any missing packages, delete those packages from autoinst.xml

Instrumentation Issues

- The "/opt/dell/srvadmin" directory in the DTK ISO image should be writable. This enables the instrumentation services to work properly.
- The file "omreg.cfg" should be present in the "/etc/" directory for the tools to function properly. This is applicable if DTK is being customized to fit in an embedded Linux environment other than the Dell-provided embedded Linux.

Corrected Problems

Issue 1

DF456385: Raid 10 configuration fails in DTK.

Description: Raidcfg fails to create Raid 10 on system with 6 drives and when all 6 drives are included in Raid configuration.

Global Support

For information on technical support, visit www.dell.com/contactus.

For information on documentation support, visit support.dell.com/manuals. On the **Manuals** page, click **Software ->Systems Management**. Click on the specific product on the right-side to access the documents.

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