Dell Openmanage Deployment Toolkit 5.1.1 for Embedded Linux

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

5.1.1

Release Date

June 2015

Previous Version

5.1.0

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 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 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) provided by DTK to ensure a successful build:
  - dtk-scripts
  - raidcfg
  - syscfg

If you have the DTK CD mounted under "/mnt/cdrom," you can extract the DTK RPMs to build your customized ISO image under the "RPMs" folder at the root of the CD.

Operating Systems Requirements

Using DTK utilities you can deploy the following Linux operating systems:

- Red Hat Enterprise Linux 7.0 (64–bit)
- Red Hat Enterprise Linux 6.6 (64–bit)
- SUSE Linux Enterprise Server 11 SP3 (64–bit)
- SUSE Linux Enterprise Server 12 (64–bit)

What's New

- Support for the following:
- Dell PowerEdge R530XD
- Dell PowerEdge R930
- Red Hat Enterprise Linux 6.6 (64–bit)

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/).

This product carries GNU Bash update packages to fix the Shellshock vulnerability (CVE-2014-7169 and CVE-2014-6271).

DTK operating system deployment limitation:

DTK does not support operating system deployment, when multiple boot VDs exist on a single controller or when the server has multiple boot controllers. If multiple boot controllers   exist on the server, the boot VD must be created on any one of the controllers, and the boot   VD must be set as first boot device in system BIOS.

> DTK does not support Linux operating system deployment in Non RAID (Volume) and SWRAID mode on s100/s300/S110/S130 controllers.

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.
- To enable certain options, to reboot your system. 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's 12th generation of PowerEdge 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 legacy attribute values enable and disable are also supported for Dell's 12th generation of PowerEdge 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 Dell's 12th generation of PowerEdge systems.

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.
- RAIDCFG does not support deletion of bootable virtual disk (Boot VD) in preboot environment or on booting.

Known Issues

Network limitation

On spanning tree-enabled network, SUSE Linux Enterprise Server 12 operating system installation on Dell Power Edge systems might not be successful due to DHCP client time-out.

Workaround: Add "netwait=90" in the boot loader option of the "suseinst.sh" script.

For example, kernel /linux/linux autoyast=$DT_SUSE_AUTOINST install=$DT_OS_IMG_PATH netwait=90

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.
- 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 result in an error message saying "Hardware subsystem error" when an invalid value is used. It does not indicate a problem with the hardware. Check the option value and try again.
- 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.
- The legacy attribute values enable and disable are also supported for Dell's 12th generation of PowerEdge 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 Dell's 12th generation of PowerEdge systems.
- DTK 5.1.1 is not supported 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.
- 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.

Operating System Installation Issues

- Installation of legacy Red Hat Enterprise Linux operating systems may fail due to lack of support for new hardware. Modify the '%post' section of "ks.cfg" to update to a newer version of the kernel or use driver disk to install drivers.
- 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
3) If installer reports any missing packages, delete the packages from autoinst.xml.

Instrumentation Issues

The "/opt/dell/srvadmin" directory in the DTK ISO image should be writable. It enables the instrumentation services to work properly.

Installation Prerequisites

Before extracting Deployment Toolkit components, ensure that you have:

- The DTK ISO image available at dell.com/support.
- 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 "dell.com/support."

Installation Procedure

For complete installation and deployment instructions, see the "Dell OpenManage Deployment Toolkit User's Guide and the Dell OpenManage Deployment Toolkit Installation Guide available at dell.com/openmanagemanuals."."

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 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 shell scripts and configuration files to reflect the unique information for each system being deployed. Many options are available to optimize this process.

- Because of security reasons, the "ssh" and "scp" services are not available in DTK. The mount command is available in the DTK CD.

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

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

Go to **dell.com/contactdell**.