DELL EMC DEPLOYMENT TOOL KIT (DTK) PORTING GUIDE

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# Table of Contents

1. Overview .................................................................................................................. 4
2. Linux build setup ...................................................................................................... 4
   2.1 How to get DTK ELI distribution and kernel version ................................................. 4
   2.3 Windows build setup .............................................................................................. 4
   2.4 How to get Windows ADK ....................................................................................... 5
3. Software Package Download ....................................................................................... 6
   3.1 Downloading Linux pre-boot DTK ELI ................................................................. 6
   3.2 Downloading Windows Self extractable DTK Binary ................................................. 6
4. Building Driver Source ............................................................................................. 7
5. Adding New Drivers ................................................................................................. 8
   5.1 How to add driver into DTK ELI (Linux) ................................................................. 8
      5.1.1 DTK ELI root filesystem .................................................................................. 9
      5.1.2 Create <initrd.img> using Dracut tool .............................................................. 9
      5.1.3 Sample dracut.conf file .................................................................................. 9
   5.2 Adding new driver for Windows bootable image .................................................... 10
      5.2.1 How to inject new driver on the WinPE ............................................................ 10
6. Supporting new Platforms ....................................................................................... 12
   6.1 Adding new platform into DTK ELI (Linux) ............................................................ 12
      6.1.1 Create <initrd.img> by adding system ID ........................................................ 13
   6.2 Adding new platform into Windows Bootable Image ............................................. 13
7. Extracting RAMDISK ............................................................................................... 15
8. Driver Injection to RAMDISK .................................................................................. 16
9. Sample Script Download ......................................................................................... 16
   9.1 DTK to RACADM Convertor ................................................................................ 16
10. Creating a Bootable ISO ......................................................................................... 17
   10.1 Creating Linux bootable ISO ................................................................................ 17
   10.2 Creating Windows bootable ISO ........................................................................... 17
11. Alternate configuration tools .................................................................................... 18
12. Reference manuals ................................................................................................. 19
## Version Tracking

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Changes</th>
<th>By</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/11/2017</td>
<td>0.1</td>
<td>Initial draft</td>
<td>Ramesha HE</td>
</tr>
<tr>
<td>20/11/2017</td>
<td>0.2</td>
<td>Updated marketing comments and added two new sections 11 &amp; 12.</td>
<td>Ramesha HE</td>
</tr>
<tr>
<td>11/12/2017</td>
<td>1.0</td>
<td>Updated marketing comments</td>
<td>Ramesha HE</td>
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1 Overview

This Porting guide is an orientation towards DTK deprecation plan, for an existing user to self-sustain DTK environment and a smooth transition from DTK to RACADM. This guide used as a reference manual to add boot critical drivers and controller to support for the Dell Power Edge server platforms till 14G.

This document helps to understand DTK utilities and scripts and transition guidelines for RACADM deployment and configuration of Dell PowerEdge servers in Windows and Linux environments.

To update or modify the DTK pre-boot environment user should have the following prerequisite setup for Linux and Windows operating systems.

2 Linux build setup

DTK Linux ELI is based out of CentOS 7.x distribution, to modify or update on released DTK ELI environment, user should have a similar operating system distribution build environment corresponding to DTK ELI release version. While setting up the build environment for DTK ELI update or modification, select identical kernel version which is carried on the DTK bootable ELI.

The build environment should be included with all the development packages, build packages and kernel header packages to modify the DTK pre-boot environment.

2.1 How to get DTK ELI distribution and kernel version

You can download the DTK bootable ELI from support.dell.com and extract the distribution and kernel version to setup their build environment using below commands after booting into DTK ELI.

1. `cat /etc/centos-release` (i.e. gets you the ELI distribution version)
2. `uname -a` (i.e. gets you the ELI kernel version )

2.3 Windows build setup

DTK Windows release has a self-extractable binary which contain boot critical drivers, operating system installation sample scripts and system configuration tools. To create a DTK pre-boot image user should install Microsoft Assessment and Deployment Kit (Windows ADK) based on ADK support matrix.
The following matrix should be used to create a DTK windows bootable image to support Microsoft Windows distributions.

<table>
<thead>
<tr>
<th>Windows ADK version</th>
<th>Build Environment (Operating System used to install ADK)</th>
<th>Bootable Image used for supporting Microsoft Windows.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 8 (WinPE 4.0)</td>
<td>Windows Server 2012 OS</td>
<td>Windows Server 2012 OS</td>
</tr>
<tr>
<td>Windows 8.1 (WinPE 5.x)</td>
<td>Windows Server 2012 R2 OS</td>
<td>Windows Server 2012 R2 OS</td>
</tr>
<tr>
<td>Windows 10 (WinPE 10.0)</td>
<td>Windows Server 2016 OS</td>
<td>Windows Server 2016 OS</td>
</tr>
</tbody>
</table>

2.4 How to get Windows ADK

Windows ADK can be downloaded and installed from [https://docs.microsoft.com/en-us/windows-hardware/get-started/adk-install](https://docs.microsoft.com/en-us/windows-hardware/get-started/adk-install)
3 Software Package Download

DTK last and earlier releases will continue to be available post DTK deprecation on web download for 11G to 14G supported server platforms. You can download DTK Linux and Windows releases binaries by selecting platform and operating system from www.support.dell.com.

3.1 Downloading Linux pre-boot DTK ELI

- Go to www.support.dell.com
- Go to All products / Servers, Storage, & Networking / PowerEdge
- Select PowerEdge R940
- Go to Drivers & downloads
- Select Category as System Management and Operating system type as Red Hat Enterprise Linux 7, and download the DTK Pre-BOOT ISO.

Example:

3.2 Downloading Windows Self extractable DTK Binary.

- Go to www.support.dell.com
- Go to All products / Servers, Storage, & Networking / PowerEdge
- Select PowerEdge R940
- Go to Drivers & downloads
- Select Category as System Management and Operating system type as Windows Server 2012 R2, and download Windows Self extractable binary.

Example:
4 Building Driver Source

DTK pre-boot environment carries boot critical drivers to support new Dell server hardware components like PERC, Network controller and Chipset etc.

DTK Linux ELI uses CentOS 7.x distribution, requires new driver to support the Dell server component hardware along with inbox drivers. The component vendors support pre compiled driver binaries only on Red Hat and SUSE Enterprise distribution.

New Dell server components require a driver source compilation to get a binaries to work on DTK ELI environment. To get the driver binaries following steps need to be performed:

1. Download the driver from support.dell.com
2. Unzip driver source file on Linux build environment

Example:

```
[root@localhost driverfix]# ls
Intel_LAN_18.5.0_Linux_Source_X09.tar.gz
[root@localhost driverfix]# tar zxfv Intel_LAN_18.5.0_Linux_Source_X09.tar.gz
[root@localhost driverfix]# cd Intel_LAN_18.5.0_Linux_Source_X09/
[root@localhost Intel_LAN_18.5.0_Linux_Source_X09]# ls
readme.txt release.txt
```

3. Follow the steps explained in README.TXT or INSTALL.TXT of driver source.

Example:

```
[root@localhost Intel_LAN_18.5.0_Linux_Source_X09]# ls
make
[root@localhost Intel_LAN_18.5.0_Linux_Source_X09]# cd make
[root@localhost make]# ls
make
```

4. On successful compilation of the driver source produce a “*.ko” binary files.

Example:

```
[root@localhost Intel_LAN_18.5.0_Linux_Source_X09]# ls
make
[root@localhost Intel_LAN_18.5.0_Linux_Source_X09]# cd make
[root@localhost make]# ls
*.ko
```

5. Copy *.ko file as explained in the section 5 (Adding New Drivers)
5 Adding New Drivers

New driver injection into DTK bootable image to support PERC, Network and Chipset hardware is critical. PERC controller driver used for VD creation and Network driver used for OS Deployment. You should follow the steps mentioned below to inject the drivers.

5.1 How to add driver into DTK ELI (Linux)

Download the DTK image as explained in the Section 3, mount bootable ISO and copy the content into new repository `<NewDTKImage>` on DTK Linux build environment.

1. Create a directory name `<NewDTKImage>` in DTK Linux build environment.
2. Copy downloaded `<DTKELI.ISO>` to `<NewDTKImage>` folder.
3. Create a directory `<isomount>` to mount the Bootable ISO inside `<NewDTKImage>` folder.
4. Mount `<DTKELI.ISO>` on `<isomount>` folder using “-oloop” option
5. Create a new directory `<ramdisk>` inside `<NewDTKImage>` and copy `initrd.img` form `<isomount>/isolinux/SA.2` path to `<ramdisk>` folder.
6. Create a new directory `<isoimage>` inside `<NewDTKImage>` and copy all the content from mount folder `<isomount>` to `<isoimage>`.

Example:

```
[root@localhost newDTKImage]# ls
BoottableDTKELI.ISO
[root@localhost newDTKImage]# mkdir isomount
[root@localhost newDTKImage]# mount -o loop BootableDTKELI.ISO isomount/mount: /dev/loop0 is write-protected, mounting read-only
[root@localhost newDTKImage]# ls isomount/
docs EFI efiboot.img isolinux LICENSE README RPMs
[root@localhost newDTKImage]# mkdir ramdisk
[root@localhost newDTKImage]# cp isomount/isolinux/SA.2 ramdisk/
[root@localhost newDTKImage]# ls ramdisk/
docs EFI efiboot.img isolinux LICENSE README RPMs
[root@localhost newDTKImage]# cd ramdisk/
[root@localhost ramdisk]# ls
```

7. Change directory to `<ramdisk>` and check the compressed cpio archive file `<SA.2`
8. Rename `<SA.2>` to `<SA.gz>` and uncompress using “gunzip” tool.
9. Copy SA into new folder `<initrad>` inside `<ramdisk>` and extract (SA) using cpio tool.
5.1.1 DTK ELI root filesystem
Extracted “cpio” archive (SA) on “initrad” repository used as root filesystem, should modify or update the driver for newer hardware components on this repository.

Example:

```
[root@localhost ramdisk]# cp /isoimage/isolinux/SA.2 .
[root@localhost ramdisk]# ls
SA.2
[root@localhost ramdisk]# file SA.2
SA.2: gzip compressed data, from Unix, last modified: Thu Nov 2 19:03:25 2017, max compression
[root@localhost ramdisk]# mv SA.2 SA.gz
[root@localhost ramdisk]# gunzip SA.gz
[root@localhost ramdisk]# ls
SA
[root@localhost ramdisk]# file SA
SA: ASCII cpio archive (SVR4 with no CRC)
[root@localhost ramdisk]# mkdir initrd
[root@localhost ramdisk]# mv SA initrd/
[root@localhost ramdisk]# cd initrd/
SA
[root@localhost initrd]# cpio -idv < SA
```

5.1.2 Create <initrd.img> using Dracut tool
1. Copy newly complied driver binary (i.e. `i40e.ko`) into “<initrd root filesystem path>/lib/modules/3.10.0-327.el7.x86_64/extra/”
2. Add new driver as explained in the section for Sample dracut.conf file and create a new SA.2 image as explained in the example.
3. Copy new SA.2 image into `<NewDTKImage/isoimage/isolinux/>` path and create the new DTK bootable ISO as explained in section 10.

Example:

```
[root@localhost initrd]# ls
bin boot dev etc home init lib lib64 media mnt opt proc root run SA sbin shutdown srv sys sysroot tmp usr var

[root@localhost initrd]# cd ...
[root@localhost ramdisk]# dracut SA.img 3.10.0-327.el7.x86_64 -c dracut.conf --include /root/NewDTKImage/ramdisk/Initrd/ /
[root@localhost ramdisk]# dracut SA.img
```

5.1.3 Sample dracut.conf file
Sample Dracut.conf file is a reference to create a (SA.2) initial ramdisk image with the new drivers.
5.2 Adding new driver for Windows bootable image

DTK windows pre-boot image should be created, due to Microsoft WinPE (Windows Pre-boot Environment) re-distribution license limitation. Pre-complied drivers for the newer server hardware support are available on [www.support.dell.com](http://www.support.dell.com). Download the respective WinPE drivers and extract the Microsoft certified drivers from Dell software bundle (SWB) and inject into WinPE as outlined in the below matrix:

<table>
<thead>
<tr>
<th>OS Type and repository</th>
<th>ADK (WinPE Version)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Server 2012 (win2012)</td>
<td>WinPE4.x (i.e. repository name in DTK)</td>
</tr>
<tr>
<td>Microsoft Server 2012 R2 (win2012_r2)</td>
<td>WinPE5.x (i.e. repository name in DTK)</td>
</tr>
<tr>
<td>Microsoft Server 2016 (win2016)</td>
<td>WinPE10.x (i.e. repository name in DTK)</td>
</tr>
</tbody>
</table>

5.2.1 How to inject new driver on the WinPE

Download and extract information of DTK Windows self-extractible image as explained in section 3.2.

Steps to inject new drivers:

1. Click on self-extractable DTK release
2. Extracted DTK Windows release shows below repository structure.
3. **Copy respective component driver from the extracted software bundle, based on matrix listed in section 5.2.**
   
   Example (i.e. User wants to support new Intel network controller on Windows server 2012 R2 operating system):
   
   - Get the driver from the Intel SWB folder win2012_r2
   - Copy WinPE5.x->nic->Intel->{SWB NAME}

   **NOTE:** Copy driver binaries onto the respective component named directory to add the support for new hardware.

4. **Remove the following lines from “WinPE.x_driverinst.bat” file to add newer driver support into WinPE bootable image.**

   ```
   @echo ------------------------------
   @echo ~~~0(extract cab file at proper location)
   @echo ------------------------------
   for /F "delims= " %%i in ('dir /ad /b ') do rmdir "%%i" /s/q || del "%%i" /s/q
   expand ..\..\dell_winpe5x_x64.cab -F:* ..\..\Drivers\n   ```

5. **Select build server shows in tables on section 2.3 and follow steps explained section 10 to create a Windows Bootable Image.**
6. Supporting new Platforms

DTK Bootable image performs platform check during boot process, if there is a mismatch in the system ID during boot, system is redirected to reboot screen. To support new PowerEdge server in DTK follow steps as below.

6.1 Adding new platform into DTK ELI (Linux)

Download the DTK ELI image as explained on the section 3 and mount bootable ISO and copy the content into new repository `<NewDTKImage>` on DTK Linux build environment.

1. Create a directory name `<NewDTKImage>` in DTK Linux build environment.
2. Copy downloaded `<DTKELI.ISO>` to `<NewDTKImage>` folder.
3. Create a directory `<isomount>` to mount the Bootable ISO inside `<NewDTKImage>` folder.
4. Mount `<DTKELI.ISO>` on `<isomount>` folder using “-o loop” option
5. Create a new directory `<ramdisk>` inside `<NewDTKImage>` and copy `<initrd.img>` from `<isomount/isolinux/SA.2>` path to `<ramdisk>` folder.
6. Create a new directory `<isoimage>` inside `<NewDTKImage>` and copy all the content from mount folder `<isomount>` to `<isoimage>`.

Example:

```
[root@localhost newDTKImage]# ls
BoottableDTKELI. ISO
[root@localhost newDTKImage]# mkdir isomount
[root@localhost newDTKImage]# mount -o loop BootableDTKELI.ISO isomount/
mount: /dev/loop0 is write-protected, mounting read-only
[root@localhost newDTKImage]# ls isomount/
docs EFI efiboot.img isolinux LICENSEING README RPMs
[root@localhost newDTKImage]# mkdir ramdisk
[root@localhost newDTKImage]# cp isomount/isolinux/SA.2 ramdisk/
[root@localhost newDTKImage]# mkdir isoimage
[root@localhost newDTKImage]# cp isomount/* isoimage/ -r
[root@localhost newDTKImage]# ls isoimage/
docs EFI efiboot.img isolinux LICENSEING README RPMs
[root@localhost newDTKImage]# ls isoimage/
```

7. Change directory to `<ramdisk>` and check the compressed cpio archive file `<SA.2>`
8. Rename `<SA.2>` to `<SA.gz>` and uncompress using “gunzip” tool.
9. Copy `<SA>` into new folder `<initrd>` inside `<ramdisk>` and extract `<SA>` using “cpio” tool.
Example:

```
[root@localhost ramdisk]# cp ../isoimage/isolinux/SA.2 .
[root@localhost ramdisk]# ls
SA.2
[root@localhost ramdisk]# file SA.2
SA.2: gzip compressed data, from Unix, last modified: Thu Nov 2 10:03:25 2017, max compression
[root@localhost ramdisk]# mv SA.2 SA.gz
[root@localhost ramdisk]# gunzip SA.gz
[root@localhost ramdisk]# ls
SA
[root@localhost ramdisk]# file SA
SA: ASCII cpio archive (SVR4 with no CRC)
[root@localhost ramdisk]# mkdir initrd
[root@localhost ramdisk]# mv SA initrd/
[root@localhost ramdisk]# cd initrd/
[root@localhost initrd]# ls
SA
[root@localhost initrd]# cpio -idv < SA
```

Extracted “cpio” archive (SA) on “initrad” repository used as root filesystem, should modify or update the driver for newer hardware components on this repository.

```
[root@localhost initrd]# ls
bin boot dev etc home init lib lib64 media mnt opt proc root run SA sbin shutdown srv sys sysroot tmp usr var
```

6.1.1 Create <initrd.img> by adding system ID

1. Added system ID into “<initrd root filesystem path>/opt/dell/toolkit/bin/sys.ini”
   
   Example:
   
   
   ```
   07F7=PER7415
   07F9=PER7425
   07FC=PER840
   
   <System ID> = <Platform Name>
   ```

2. Copy dracut.conf section 5.1.3 (dracut.conf) into <ramdisk> folder and create a new SA.2 image as explained in the example.

   ```
   [root@localhost initrd]# cd ...
   [root@localhost DTKImage/ramdisk/initrd]
   [root@localhost initrd]# vi ./opt/dell/toolkit/bin/sys.ini
   [root@localhost initrd]# cd ..
   [root@localhost DTKImage/ramdisk]
   [root@localhost ramdisk]# dracut SA.img 3.10.0-327.el7.x86_64 -c dracut.conf --include /root/NewDTKImage/ramdisk/initrd/`
   ```

3. Copy new SA.2 image into <NewDTKImage/isoimage/isolinux/> path and create the new DTK bootable ISO as explained in section 10.

6.2 Adding new platform into Windows Bootable Image

Download and extract information of DTK Windows self-extractable image as explained in section 3.2.

Steps to add new platform into DTK Windows release:

1. Click on self-extractable DTK release
2. Extracted DTK Windows release shows below repository structure
3. **Modify “sys.ini” file add system ID and platform name.**
   - Goes to Dell->Toolkit->Tools->sys.ini and edit to add new system ID and platform.

   Example:
   
   ```
   07F7=PER7415
   07F9=PER7425
   07FC=PER840
   
   <System ID> = <Platform Name>
   ```

4. **Select build server shows in tables on section 2.3 and follow steps explained section 10 to create a Windows Bootable Image.**
7. Extracting RAMDISK

DTK bootable ELI ISO carries the required boot critical drivers inside initial RAMDISK. RAMDISK in DTK named as SA.2 carries root filesystem for pre-boot environment.

**Steps To modify the SA.2 (RAMDISK):**

1. Download DTK ELI image as explained on the section 3 and mount bootable ISO
2. Copy SA.2 RAMDISK image `isomount/isolinux/SA.2` from mount path.
3. Rename **SA.2** to **SA.gz** and decompress using “gunzip” tool.

```bash
[root@localhost ramdisk]# cp ../isoimage/isolinux/SA.2 .
[root@localhost ramdisk]# ls SA.2
SA.2: gzip compressed data, from Unix, last modified: Thu Nov 2 19:03:25 2017, max compression
[root@localhost ramdisk]# gunzip SA.gz
[root@localhost ramdisk]# ls SA
SA
[root@localhost ramdisk]# ls
SA
[root@localhost ramdisk]# cd initrd/
[root@localhost initrd]# ls
SA
[root@localhost initrd]# ls
bin boot dev etc home init lib lib64 media mnt opt proc root run SA sbin shutdown srv sys sysroot tmp usr var
```

Extracted “cpio” archive (SA) on “initrad” repository used as root filesystem, modify or update and add support for newer hardware components and platforms.
8. Driver Injection to RAMDISK

As prerequisite, you should complete the steps explained in the section 7, before proceeding to driver injection into RAMDISK (SA.2).

1. Copy newly complied driver into “<initrd base directory>/lib/modules/3.10.0-327.el7.x86_64/extra/”

2. Add new driver as explained in the section 5.1.3 (dracut.conf) file and create a new SA.2 image as explained below.

Example:

```
[root@localhost initrd]$ pwd
/root/NovoDTKImage/ramdisk/initrd
[root@localhost initrd]$ ls
bin boot dev etc home init lib lib64 media mnt opt proc root run SA shim shutdown srv sys sysroot tmp usr var
[root@localhost initrd]$ cp /root/driverfix/Intel LNM 18.5.0 Linux Source x09/x140e-2.1.31/src/x140e.ko /lib/modules/3.10.0-327.el7.x86_64/extra/ -i
[root@localhost initrd]$ cd ...
[root@localhost ramdisk]$ dracut SA.ang 2.1B-327.el7.x86_64 -c dracut.conf --include /root/NovoDTKImage/ramdisk/initrd/ /
[root@localhost ramdisk]$ ls
dracut.conf initrd SA.ang
[root@localhost ramdisk]$ ls SA.ang
SA.ang: gzip compressed data, from Unix, last modified: Sun Nov 12 14:24:12 2017, max compression
[root@localhost ramdisk]$ cp -w /isoimage/isoLinux/SA.2? y
[root@localhost ramdisk]$]
```

9. Sample Script Download

All the sample scripts used in DTK ELI and Windows build are uploaded in Dell Tech Center portal and are referenced here.

http://en.community.dell.com/techcenter/extras/m/mediagallery/20444856

<Windows_SampleScript.zip> (i.e. zip file contains Windows OS deployment for all supported OS scripts, DTKtoRACADM convertor and driver injection scripts for all supported WinPE)

http://en.community.dell.com/techcenter/extras/m/mediagallery/2044857

<Linux_SampleScript.zip> (i.e. archive file contains Linux OS deployment for all supported OS scripts and DTKtoRACADM convertor)

9.1 DTK to RACADM Convertor

The DTK SYSCFG deployment scripts are converted to equivalent RACADM scripts, which helps in migration to utilize RACADM in the deployment solution. The utility has the conversion tool for converting the SYSCFG scripts in both environments: Microsoft Windows and Linux operating systems. Starting 12th generation of PowerEdge servers and later, selected set of SYSCFG commands are a part of the DTK sample scripts.

10. Creating a Bootable ISO

DTK Bootable ISO is available only for Linux environment. But Windows ISO need to be created by you, based on the operating system and Windows ADK type. In case you have customized Linux bootable ISO to add new driver and platforms you have to re-create the bootable ISO as explained in following sections.

10.1 Creating Linux bootable ISO

1. Download DTK ELI image as explained in the section 3 and mount bootable ISO
2. Create a directory <isomount> to mount the Bootable ISO inside
3. Create a directory <newisomount> and copy all the contents from the <isomount> location
4. Overwrite the SA.2 image with the modified new SA.2 image on
   “<newisomount>/isomount/isolinux/”
5. Run the following command on the DTK ELI build environment to create a new Bootable ISO ELI


Example:

![Example Image]

10.2 Creating Windows bootable ISO

Choose the Windows build environment as explained in section 2.3.

1. For creation of WinPE4.0 (For more information, see Dell Deployment ToolKit User’s Guide 6.1)
   - Use Windows Server 2012 OS where ADK can be installed
   - Download and extract DTKx.x.x-WINPE-xxxx.exe at any location on local box.
   - Go to Start->Program->Windows kit->windows ADK
   - Open "Deployment and Imaging Tools Environment" as an administrator
   - Navigate(cd) to path $drive\Dell\x64\Drivers\winpe4.x
   - Run WINPE4.0\driverinst.bat <WIMPATH> <DTKPATH>
     where <WIMPATH> is the destination path to create the directory structure for Windows PE and <DTKPATH> is the path for the Dell drivers in the extracted DTK toolkit.
   - For example, WINPE4.0\driverinst.bat C:\WinPE40 C:\DELL\x64\DRIVERS.
2. For creation of WinPE5.x (For more information, see Dell Deployment ToolKit User's Guide 6.1)

- Use Windows Server 2012 R2 OS where we can install ADK.
- Download and extract DTKx.x.x-WINPE-xxxx.exe at any location on local box.
- Go to Start->Program->Windows kit->windows ADK
- Open "Deployment and Imaging Tools Environment" as an administrator
- Navigate(cd) to path $drive\Dell\x64\Drivers\winpe5.x
- Run WINPE5.x_driverinst.bat <WIMPATH> <DTKPATH>
  where <WIMPATH> is the destination path to create the directory structure for Windows PE and <DTKPATH> is the path for the Dell drivers in the extracted DTK toolkit.
- For example, WINPE5.x_driverinst.bat C:\WinPE50 C:\DELL\x64\DRIVERS.

3. For creation of WinPE10.x (For more information, see Dell Deployment ToolKit User's Guide 6.1)

- Use Windows Server 2016 OS where ADK can be installed.
- Download and extract DTKx.x.x-WINPE-xxxx.exe at any location on local box.
- Go to Start->Program->Windows kit->windows ADK
- Open "Deployment and Imaging Tools Environment" as an administrator
- Navigate(cd) to path $drive\Dell\x64\Drivers\winpe10.x
- Run WINPE10.x_driverinst.bat <WIMPATH> <DTKPATH>
  where <WIMPATH> is the destination path to create the directory structure for Windows PE and <DTKPATH> is the path for the Dell drivers in the extracted DTK toolkit.
- For example, WINPE10.x_driverinst.bat C:\WinPE10 C:\DELL\x64\DRIVERS.

11 Alternate configuration tools

DTK support pre-boot configuration tools, such as SYSCFG and RAIDCFG which is used for configuring BIOS and PERC controllers. On post deprecation of DTK i.e. 15G onwards only RACADM would support those new platforms and that DTK will be sustained for currently shipping and earlier supported platforms (11G to 14G) until those platforms themselves pass their end of support life (EOSL) threshold. Dell recommends DTK customers to transition to RACADM tools for configuring the BIOS and PERC controller in pre-boot environment.

Please refer below URL for RACADM CLI Guide & user manual:

http://topics-cdn.dell.com/pdf/idrac9-lifecycle-controller-v3.00.00.00_user's%20guide_en-us.pdf

RACADM Wiki link:

12 Reference manuals

DTK User Guide:

DTK Installation Guide:

DTK Command Line Interface Reference Guide:

RACADM Command Line Interface Guide:

RACADM User Guide:
http://topics-cdn.dell.com/pdf/idrac9-lifecycle-controller-v3.00.00.00_user's%20guide_en-us.pdf

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