

Dell Systems Build And Update Utility Version 2.4 User's Guide



Notes, Cautions, and Warnings

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

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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Dell OpenManage Systems Build and Update Utility

Dell OpenManage Systems Build and Update Utility (SBUU) is a Graphical User Interface (GUI) based for deployment and update of your Dell systems. It is available at support.dell.com and as part of the *Dell Systems Management Tools and Documentation* DVD. It has modules such as Server OS Installation (SOI), Firmware Update, and Hardware Configuration. The modules enable you to update BIOS and firmware in the pre-operating system environment, apply the BIOS settings on the current system or on multiple systems, and install the operating system.

Information Organization In The Guide


To	See
Configure your system hardware.	Configuring Your System Hardware
Install an operating system on your system.	Installing The Operating System
Create customized bootable media to deploy multiple systems (different platforms) of your choice.	Using SBUU In Different Scenarios
Update your system firmware (Baseboard Management Controller [BMC], Dell Remote Access Controller [DRAC], Redundant Array of Independent Disks [RAID]) and BIOS in a pre-operating system environment.	Updating Your System Firmware

What's New In This Release

The release highlights of SBUU are:

- Added support for the following operating systems:
 - 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)
 - VMware ESXi 5.5 Flash and HDD
 - VMware ESXi 5.1 U2 Flash and HDD
 - VMware ESXi 5.0 U3 Flash and HDD
- Added support for the following Adapter cards:
 - 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 OCm14104-UX-D Quad Port 10Gb DA/SFP+ Rack NDC
- Added support for Dell PowerEdge M820VRTX, PowerEdge R220, and PowerEdge R920.
- Added support for Dell PERC 9 controllers (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.
- Deprecated support for the following operating systems:
 - SUSE Linux Enterprise Server 10 SP4
 - SUSE Linux Enterprise Server 11 SP2
 - Red Hat Enterprise Linux 6.4 (64-bit)
 - VMware ESXi 5.1 U1 HDD and Flash
 - VMware ESXi 5.0 U2 HDD and Flash

 **NOTE:** For a complete list of supported Dell PowerEdge systems and supported operating systems, see the [osmatrix.html](#) available at `OMDVD\html\en\platform\osmatrix` in the *Dell Systems Management Tools and Documentation DVD*.

Going forward, Dell recommends using Dell Lifecycle Controller 2 as replacement for SBUU as SBUU is deprecated. Dell Lifecycle Controller 2 provides improved capabilities such as:

- Updating the system firmware.
- Installing an operating system.
- Updating the firmware and BIOS on multiple systems in a pre-operating system environment.
- Configuring the system hardware.
- Customizing the Server Update Utility (SUU) and using it to update the system.


For more information, see the following documents available at dell.com/support/manuals:


- *Dell Lifecycle Controller 2 Version <Version Number> User's Guide*
- *Dell Lifecycle Controller 2 Web Services Interface Guide*
- *Lifecycle Controller Integration Best Practices*

Prerequisites

This section lists the prerequisites for using SBUU and other helpful information:

- Dell system with minimum memory of 512 MB.
- DVD drive, Dell Server Updates media, and Dell Systems Management Tools and Documentation media (to install Dell OpenManage System Administrator).
- A Network File System (NFS) or multiple Samba network shares.


 **NOTE:** If you do not have network connectivity for the system you are deploying, make sure that you have multiple USB drives.

 **NOTE:** This is not applicable for PowerEdge SC systems.

- Basic knowledge of RAID, BIOS, BMC, and DRAC.

Lifecycle Controller GUI Transition


1. Insert the *Dell Systems Management Tools and Documentation* media in your media drive.
The boot menu is displayed.
2. On the screen, select **Try it now – Boot to Lifecycle Controller** to reboot the system to Lifecycle Controller.

 **NOTE:** Lifecycle Controller boot is supported on PowerEdge 12G and 11G systems. You have an option to use Lifecycle Controller GUI or continue with SBUU.

 **NOTE:** Make sure that iDRAC 6/BMC and UEFI BIOS is preset and configured, and System Services and Intelligent Platform Management Interface (IPMI) are enabled.


Firmware Update Module

The **Firmware Update** module in SBUU enables you to update the BIOS and firmware versions of your Dell systems in a pre-operating system environment. This module:

- Inventories your system
 - Enables you to select your own repository
 - Generates a comparison report
-  **NOTE:** A comparison report is a comparison of the currently installed version of each component on the existing system with the repository component version for the same system.
- Enables you to upgrade the system components

Updating Your System Firmware

1. On the **Dell Systems Build and Update Utility Home** screen, click **Firmware Update** on the left pane.
The **Repository Selection** screen is displayed.
2. Specify the location where the update files repository resides. The options available are:
 - **NFS Share**
 - **SMB Share**
 - **CD/DVD Media**
 - **USB**

 **NOTE:** To compare your system component status with a different version of the Server Update Utility, provide the location of the Server Update Utility on the **Repository Selection** screen.

If you select **NFS Share**, enter the **IP Address/Hostname** and **Network Share** details.

If you select **SMB Share**, enter the **IP Address/Hostname**, **Network Share**, **User Name**, and **Password** details.

3. Click **Continue**.


The comparison report is displayed on the **Comparison Report** screen.

If the media is unavailable the following error message appears:


Unable to recognize the media. It may be blank, damaged, or the format is not supported.

4. Click **OK** and insert the media.

5. Click **Continue**.

 **NOTE:** You can selectively upgrade components depending on your requirement. However, you cannot perform selective downgrades.

6. Select any components that you want to upgrade and click **Systems Build and Update Utility Home**.

 **NOTE:** SBUU saves the information about the repository and the selections you made on the **Comparison Report** screen. These updates are applied during the actual deployment.

7. To update your current system, click **Apply/Export Configuration**.

The **Configure Apply/Export Options** screen is displayed.


8. Select **Apply Configuration to Current System** and click **Apply/Export**.

The progress bar is displayed after which your system reboots with the firmware updates configured.

Hardware Configuration Module

The **Hardware Configuration** module in SBUU enables you to configure your system's BMC, DRAC, RAID, and BIOS.

After you save the configuration settings, you can use the tool to generate the **.ini** file and apply these configuration settings across multiple systems.

 **NOTE:** Fully Qualified Domain Name (FQDN) feature is available on Dell PowerEdge 12G and later systems. On systems prior to 12G, provide a valid IP address in the text box.


Configuring Your System Hardware On Your Current System

1. On the **Systems Build and Update Utility Home** screen, click **Hardware Configuration** on the left pane.

The **Configuration Status Summary** screen is displayed.

2. On the **Component** screen, click the individual component buttons to configure the components.

- **RAID**
- **BMC/DRAC/iDRAC**
- **BIOS**

 **NOTE:** If you configure RAID manually and use SBUU to install an operating system on a master system, manually configure RAID on the target system as well.

3. Click **Save Settings** → **Go Back to Configuration Summary**.

4. Click **Save Settings and Go Back to Home Page**.

5. Click **Apply/Export Configuration**.

The **Configure Apply/Export Options** screen is displayed with the **Apply Configuration to Current System** option selected, by default.

6. Click **Apply/Export**.

A progress bar is displayed indicating that the configuration changes you saved in step 3 are being applied to your system.


After the changes are applied, your system reboots automatically and is ready for use with the updated configuration.

Configuring Your System Hardware On Your Current System For Multiple Systems

1. On the **Systems Build and Update Utility Home** screen, click **Change near System(s) Selection** on the left pane.

The **Select System(s)** screen is displayed.

2. Select the system(s) on which you want to deploy the hardware configuration.

 **NOTE:** To generate a bootable ISO image to deploy a hardware configuration to multiple systems, select all the required systems on the **Select System(s)** screen.

3. Click **Save Settings**.

The **Systems Build and Update Utility Home** screen is displayed listing the selected systems under **System(s) Selection**.

4. Click **Hardware Configuration** on the left pane.

The **Configuration Status Summary** screen is displayed.

5. On the **Component** screen, click the individual component buttons to configure the components.

- **RAID**
- **BMC/DRAC/iDRAC**
- **BIOS**

6. After you configure fields on each component screen, click **Save Settings** → **Go Back to Configuration Summary**.


7. Click **Save Settings and Go Back to Home Page**.

8. Click **Apply/Export Configuration**.

The **Configure Apply/Export Options** screen is displayed with the **Create Auto-Deployment Bootable Image** option selected, by default.

9. Click **Destination** and specify the location where you want to save the bootable ISO image.

10. Click **Continue**, and then click **Apply/Export**.

 **NOTE:** If the destination you specified is not a bootable USB key, burn the ISO image using any media burning software application.

11. Boot the selected system(s) with the bootable media you created.

The deployment starts automatically and you are not prompted for any inputs. The system reboots as and when required until the selected system(s) are ready with the updated configuration.

Server Operating System Installation Module

The **Server Operating System Installation** (SOI) module in SBUU enables you to install Dell-supported operating systems on your Dell systems. SOI also maps the operating system you want to install on your system and installs the requisite drivers. It has a simple interface to configure Dell-supported storage controllers.

You can use SOI to:

- Deploy an operating system on your *bare-metal* Dell system.
- *Repurpose* your system.


Installing The Operating System

To install the operating system:


 **NOTE:** The following procedure uses the Red Hat Enterprise Linux version 6.5 (64-bit) operating system as an example.

1. On the **Systems Build and Update Utility Home** screen, click **Server OS Installation** on the left pane. The **Set the Date and Time** screen is displayed.

 **NOTE:** To install ESXi flash or ESXi HDD, insert a SD card or USB drive.

 **NOTE:** For Dell PowerEdge 12G systems, on selecting the ESXi flash version for installation, SBUU enables the embedded SD card and internal USB through DTK `syscfg`. To apply these tokens, the system enters Lifecycle Controller.

2. Make the required changes and click **Continue**.
The **Select an Operating System to Install** screen is displayed.
3. Select **Red Hat Enterprise Linux 6.5 64-bit, Create Utility Partition**, and click **Continue**.

 **NOTE:** The utility partition does not have DOS-based RAID tools.


The **Select RAID Configuration** screen is displayed.

4. Select one of the following options and click **Continue**.
 - **Apply RAID Configuration specified in Hardware Configuration**
 - **Retain existing configuration on the system**

The **Configure the Disk Partition for Red Hat Enterprise Linux 6.5 64-bit** screen is displayed.

5. Select the file system for boot partition, enter the size of the virtual disk, and click **Continue**.
The **Network Adapter(s) Configuration** screen is displayed.
6. Specify the required information about the network adapters on your system and click **Continue**.
The **Enter Configuration Information for Red Hat Enterprise Linux 6.5 64-bit** screen is displayed.
7. Specify the required details and click **Continue**.
The **Operating System Installation Summary** screen is displayed.
8. Click **Back** to change the settings if required.
To save your configuration and export it for later use, click **Go Back to Home Page** and go to step 9.

To immediately apply the configuration on your system, click **Apply Now** and go to step 11.

 **NOTE:** The **Apply Now** option is enabled only if no system is not selected on the **Select System (s)** screen.

9. In the **Systems Build and Update Utility Home** screen that is displayed, click **Apply/Export Configuration**.

By default, the **Configure Apply/Export Options** screen is displayed with the **Apply Configuration to Current System** option selected.

You can export the operating system installation configuration for later use by selecting **Export Configuration**.

10. Click **Apply/Export**.


The **Script Generation Progress** screen is displayed indicating that the configuration is being saved.

11. If the operating system ISO file is available, select **Use Operating system ISO** and provide the NFS/ CIFS share or DVD containing the operating system files that can be used by SBUU. Else, proceed to step 12.


12. Insert the operating system media, when prompted.

SBUU copies the operating system files to your system and launches the operating system installer. Your system may reboot multiple times.


The operating system is installed and you can now install Server Administrator. The files to install Server Administrator are saved on the system and the Install Server Administrator icon is saved on the desktop.

 **NOTE:** Although an Fibre Channel (FC) card is present with a supported controller, SBUU may display some errors. To prevent any errors, download the drivers for these devices from the *Dell Systems Service and Diagnostics Tools on the Dell Systems Management Tools and Documentation DVD* or support.dell.com.

Installing Citrix XenServer 6.2 Using Dell Systems Management Tools And Documentation DVD

 **NOTE:** The following procedure uses the iDRAC console as an example for installing the Citrix XenServer 6.2.

1. In the iDRAC console, select **Virtual Console/Media** → **Launch Virtual Console**.
2. Click **Add Image** and navigate to the location where the *Dell Systems Management Tools and Documentation DVD* is located.
3. Select the check box next to the **Mapped** field.

 **NOTE:** If SBUU is booted from a virtual media for the first time, select the language and accept the license agreement.

The **Systems Build and Update Utility** home page screen is displayed.

4. Click **Hardware Configuration** → **RAID** → **Create Virtual Disk**.

The **Create Virtual Disk** window is displayed.

5. Select the **Controller**, **Array Disk**, and **RAID Level**.

6. Click **Save Settings** to create the RAID.

7. On the left pane, click **Server OS Installation**.

The **Set the Date and Time** screen appears.

8. Set the date and time and click **Continue**.

The **Select an Operating System to Install** screen appears.

9. Select the **Citrix Xen Server 6.2** option and click **Continue**.

The **Select RAID Configuration** screen appears.

10. Select one of the following options and click **Continue**.

- **Apply RAID Configuration specified in HW Config**
- **Retain existing configuration on the system**

The **Operating System Installation Summary** page is displayed.

11. Click **Go back to Homepage** and click **Apply/Export Configuration**.

12. On the **Configure Apply/Export Options** screen, click **Apply/Export** to proceed with the operating system installation.


The system prompts you to insert the **Citrix Xen Server Media**. You can provide the media using the Virtual media option, or by inserting the CD.

13. Reboot the system using the operating system CD.
14. Select the keyboard type and language.
15. Select the driver source and press <F9>. The driver source options are:
 - **Local Media**
 - **HTTP or FTP**
 - **NFS**


The **Welcome to XenServer — Version <version number>** screen appears.

16. Insert the CDs and after the drivers are loaded, click **OK**.
17. On the **End User License agreement** screen, click **Accept EULA**.
18. On the **Virtual Machine Storage** screen, select the storage disk and click **OK**.
19. On the **Select the Installation Source** screen, select the local media option.
20. Configure the password and click **OK**.
21. Select the Network Interface Card (NIC) and click **OK**.
22. Select the (DHCP) or static IP.
23. Configure the host name and DNS as required.
24. Select the time zone.
25. Select the system time and click **Install XenServer**.
26. Remove the CDs after the installation is complete.

Installing Microsoft Windows 2012 (64-bit) Using SBUU ISO

 **NOTE:** The following procedure uses the iDRAC console as an example for installing the Windows Server 2012 (64-bit).

1. In the iDRAC console, select **Virtual Console/Media** → **Launch Virtual Console**.
2. Click **Add Image** and navigate to the location where the SBUU ISO image is located.
3. Select the check box next to the **Mapped** field of the SBUU ISO image.

 **NOTE:** WinPE is required for booting SBUU on systems running Windows operating systems.


The **Systems Build and Update Utility** home page is displayed.

4. Click **Hardware Configuration** → **RAID** → **Create Virtual Disk**.
The **Create Virtual Disk** screen is displayed.
5. Select the **Controller, Array Disk, and RAID Level**.
6. Click **Save Settings** to create the RAID.
7. On the left pane, click **Server OS Installation**.
The **Set the Date and Time** screen is displayed.
8. Set the date and time and click **Continue**.
The **Select an Operating System to Install** screen is displayed.
9. Select the **Windows Server 2012 x64 operating system** option and click **Continue**.
The **Select RAID Configuration** screen is displayed.
10. Select one of the following options and click **Continue**.
 - **Apply RAID Configuration specified in Hardware Configuration**
 - **Retain existing configuration on the system**

The **Operating System Installation Summary** page is displayed.

11. Click **Go back to Homepage** and click **Apply/Export Configuration**.
12. On the **Configure Apply/Export Options** screen, click **Apply/Export** to proceed with the operating system installation.

From SBUU 2.2 and later, you do not have to insert the Dell Windows OS install support pack for WinPE. It is bundled in the *Systems Management Tools and Documentation* DVD.

 **NOTE:** To use Virtual Media to mount WinPE, unmount any existing operating system that is mounted. The system allows only one virtual media mount at any instance.

The WinPE files are copied. The system boots from the hard disk and prompts for providing the Windows operating system media.


13. Provide the operating system media so that the files are copied and continues the installation.
14. After the installation is complete, the system prompts you to set the administrator password.

Accessing Documents From Dell Support Site

You can access the required documents in one of the following ways:

- From the following links:
 - For all Systems Management documents — dell.com/softwaresecuritymanuals
 - For Enterprise Systems Management documents — dell.com/openmanagemanuals
 - For Remote Enterprise Systems Management documents — dell.com/esmmanuals
 - For Serviceability Tools documents — dell.com/serviceabilitytools
 - For Client Systems Management documents — dell.com/OMConnectionsClient
 - For OpenManage Connections Enterprise Systems Management documents — dell.com/OMConnectionsEnterpriseSystemsManagement
 - For OpenManage Connections Client Systems Management documents — dell.com/OMConnectionsClient
- From Dell Support site as follows:
 - Go to dell.com/support/manuals.
 - In the **Tell us about your Dell system** section, under **No**, select **Choose from a list of all Dell products** and click **Continue**.
 - In the **Select your product type** section, click **Software and Security**.
 - In the **Choose your Dell Software** section, click the required link from the following:
 - * **Client System Management**
 - * **Enterprise System Management**
 - * **Remote Enterprise System Management**
 - * **Serviceability Tools**
 - To view the document, click the required product version.
- Using search engines as follows:
 - Type the name and version of the document in the **Search** box.

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:

1. Visit **dell.com/support**
2. Select your support category.
3. Verify your country or region in the Choose a Country/Region drop-down menu at the top of page.
4. Select the appropriate service or support link based on your need.

Launching SBUU

You can launch Dell Systems Build and Update Utility (SBUU) on a local system or a remote system.


Launching SBUU On A Local System

To launch SBUU locally, you can use the *Dell Systems Management Tools and Documentation* media, the SBUU ISO image or the bootable USB media:

1. Insert the relevant media in your system's optical drive/USB drive.
2. Reboot your system.
The boot menu screen is displayed.
For creating a bootable USB media, see [Creating Bootable USB](#).

Launching SBUU On A Remote System

To launch SBUU on a remote system:

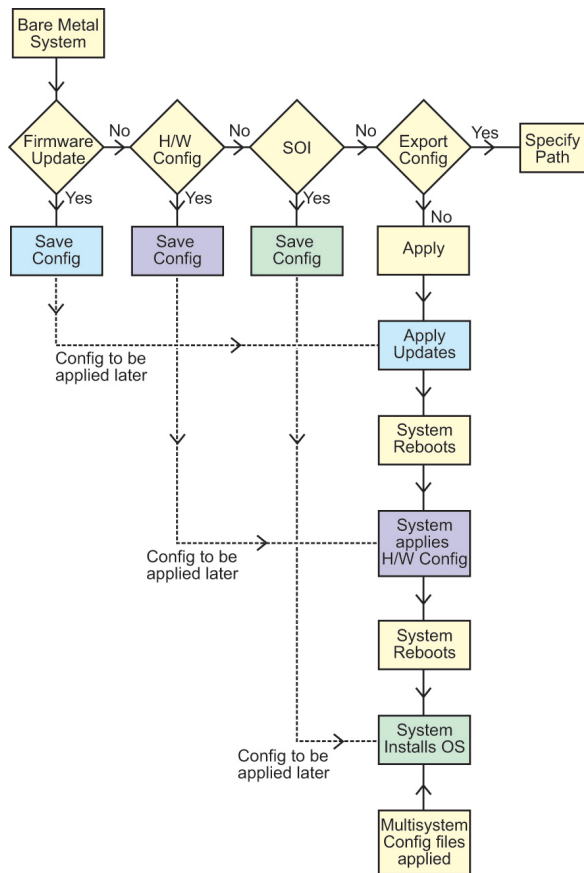
1. In the relevant Dell Remote Access Controller (DRAC) version, click **Media**.
The **Virtual Media** screen is displayed.
For more information, see the *Dell Remote Access Controller User's Guide* at dell.com/support/manuals.
 **NOTE:** You are prompted to install the Virtual Media ActiveX control if it is not already installed on the system.
2. Set the **Attach/Detach Status** to **Attached**.
3. Specify the location of the **ISO Image File**.
To access the location of SBUU bootable media or the ISO image of the *Dell Systems Management Tools and Documentation* media, select your system drive location or browse to identify the **ISO Image File**, as appropriate.
4. Click **Connect**.
The **Virtual Media Status** screen is displayed indicating that the *Dell Systems Management Tools and Documentation* media is now connected to your host system.
5. Click **Power Management**.
6. To boot the host system with the SBUU media, select **Power Cycle System**, and click **Apply**.
7. Click **Console**.
The **Console Redirection** screen is displayed.
8. Click **Connect**.
You can now access the boot menu screen on your host system from your client system and proceed to using SBUU remotely.


Using SBUU In Different Scenarios

This section describes some of the possible scenarios in which you can use the Dell Systems Build and Update Utility (SBUU).


Deploying Your Current Bare-Metal Dell System


In this scenario, you can see how to update and deploy your current system.




1. Update your system firmware, if required.
See [Firmware Update Module](#).
2. Configure your system hardware and make sure you click **Save Settings** before you navigate away from a component screen.
See [Hardware Configuration Module](#).
 -  **NOTE:** Ensure that you configure Redundant Array of Independent Disks (RAID) to proceed beyond the **Configure RAID** screen in the **Configure Server Operating System Installation** module.
3. Click **Configure** against **Server OS Installation** on the **Systems Build and Update Utility Home** or click **Server OS Installation** on the left pane.
See [Server Operating System Installation Module](#).
You can view, edit, or reset the configuration for the module(s) by clicking **View**, **Edit**, or **Reset**, respectively.
4. On the **Systems Build and Update Utility Home**, click **Apply/Export Configuration**.
The **Configure Apply/Export Options** screen is displayed.

5. Provide your inputs as required and click **Continue**.

 **NOTE:** You can choose to configure the multi-system configuration file so that system settings are taken from this file.

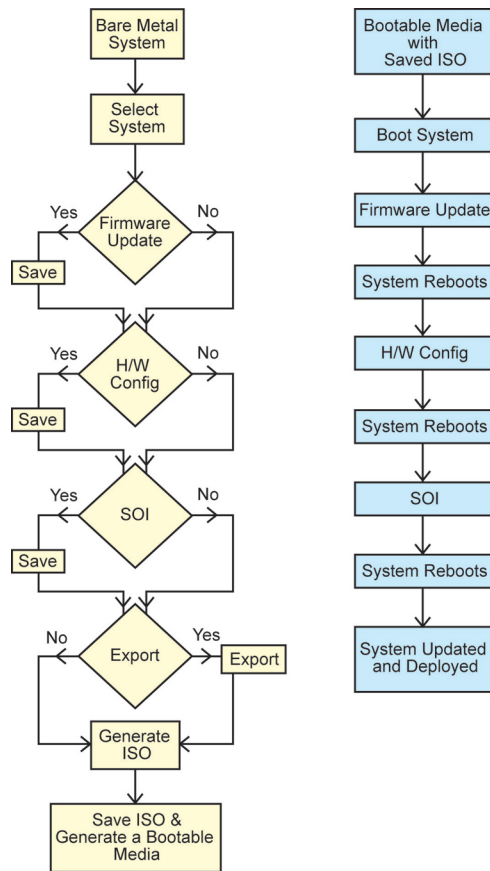
 **NOTE:** Make sure you select the **Exit on Failure** option to exit SBUU when a failure occurs. The system may become unstable if this option is not selected.

The progress screen is displayed, after which the unattended update or deployment begins. SBUU continues with hardware configuration and operating system installation, as per your configuration.

 **NOTE:** If any of the firmware updates requires a system reboot, your system reboots automatically.


Deploying More Than One System With The Same Configuration

In this scenario, you can deploy more than one supported system with the same configuration (that is, having the same cards, controllers, hard drive, memory, and so on), for example, 50 Dell PowerEdge R720 systems.



1. On the **Systems Build and Update Utility Home** screen, click **Change** against **System(s) Selection** on the left pane.

The **Select System(s)** screen is displayed.

 **NOTE:** Make sure that you click **Select Systems** to enable the **Create Auto-deployment Bootable Image** on the **Select Options** screen.

2. Select **PowerEdge R720** from the list and click the right arrow.
3. Click **Save Settings** and return to the **Systems Build and Update Utility Home** screen.
4. Configure the Systems Build and Update Utility modules.

 **NOTE:** Follow step 1 through step 4 in [Deploying Your Current Bare-Metal Dell System](#).

5. Create an ISO image.

For more information, see [Creating An ISO image](#).

Deploying More Than One System With Slightly Different Configurations

In this scenario, you can deploy more than one supported system with slightly different configurations. For example, you can configure 50 PowerEdge R720 systems with different cards, controllers, hard drives, memory, and so on.

- The controller type must be the same as that you configured.

- The configured RAID level and RAID policy must be supported by the existing controller.
 - ✎ **NOTE:** Serial Attached SCSI (SAS) 5 and SAS 6 controllers require a minimum of two disks.
 - ✎ **NOTE:** SAS 5i/R, SAS 6i/R, H200, and Software RAID controllers require a minimum of two physical disks to create RAID 0 and RAID 1.
- The number of disks and the disk size must be the same or more.
- The available disks must be of the same type.

After the prerequisites are complete, follow the steps in [Deploying More Than One System With The Same Configuration](#).

Deploying Multiple Systems Of Different Models

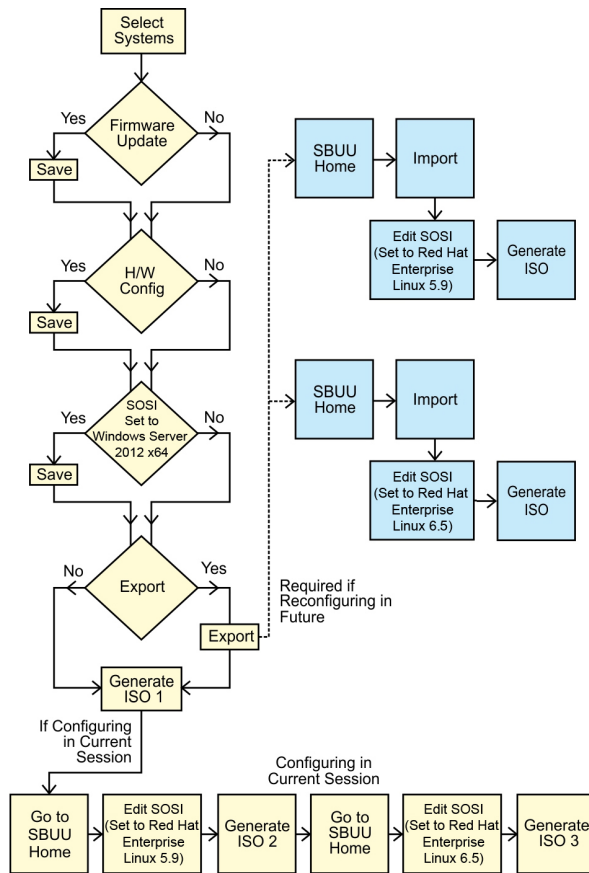
In this scenario, you can deploy multiple systems of different models; for example, you can deploy 25 PowerEdge R720 systems, 50 PowerEdge R620 systems, and 25 PowerEdge T620 systems.


- Make sure that all the systems you want to deploy are selected on the **Select System(s)** screen.
- The components that need to be updated must be selected in the **Firmware Update** module.
- The relevant options for all the systems must be selected in the **Hardware Configuration** module.
- The systems that are selected have supported operating systems that can be installed on them.

After the prerequisites are complete, follow steps in [Deploying More Than One System With The Same Configuration](#).

Deploying Multiple Systems With The Same Configuration And Different Operating Systems

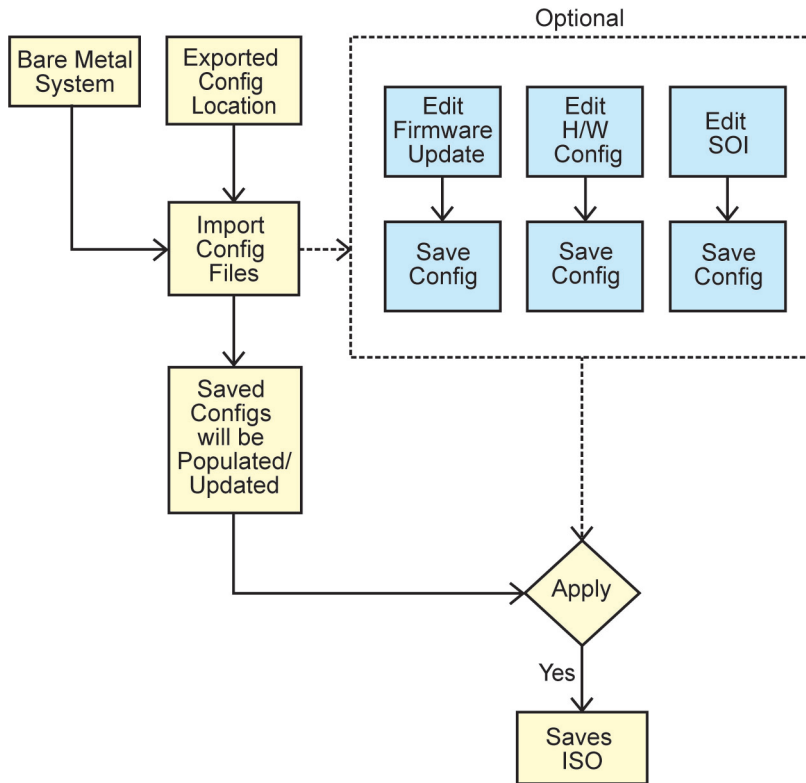
In this scenario, you can update and deploy multiple systems with the same configuration and different operating systems. For example, you can deploy 50 PowerEdge R720 systems with the Microsoft Windows Server 2012 (64-bit) operating system and another 50 PowerEdge R720 systems with the Red Hat Enterprise Linux 6.5 (64-bit) operating system.



1. To deploy an operating system (for example, Windows Server 2012 (64-bit)), create a bootable ISO image.
For more information, see [Creating An ISO image](#).
2. On the **Systems Build and Update Utility Home** screen, click **Server Operating System Installation**.
3. On the **Select an Operating System to Install** screen, select **Windows Server 2012 x64**.
 -  **NOTE:** In another session, you can export the configuration to import it later. To export, click **Import Saved Configuration** on the **Systems Build and Update Utility Home** screen and export the configuration.
4. On the **Systems Build and Update Utility Home** screen, click **Server Operating System Installation** and select another operating system, for example, Red Hat Enterprise Linux 5.9 (64-bit), export the configuration for this operating system, and generate an ISO image.
5. Similarly, configure and generate an ISO image for a third operating system, for example, Red Hat Enterprise Linux 6.5 (64-bit).
You now have three ISO images for the three operating systems you want to install on multiple systems.
6. Create two different bootable media for the ISO images, respectively.
7. To install the required operating systems, boot the corresponding number of systems with the corresponding bootable media.

Reusing Configuration Files

In this scenario, you can import and reuse a configuration file that you created and exported in an earlier session. You can use this configuration file and create multiple ISO images with slightly different configurations. This configuration can be used for the current system or for multiple systems. However, you need to create separate ISO images for every variation of the multiple systems deployment. For the current system, you can directly apply the configuration you imported, with slight modifications, if required.



NOTE: The GUI fields are populated when you import the configuration file. You can edit the modules, as required. If you make any changes on the **System(s) Selection** screen all existing configuration for the three modules are reset.

1. On the **Systems Build and Update Utility Home** screen, click **Import Saved Configuration**. The **Import Configuration** screen is displayed.
2. Specify the location from where you want to import the configuration file and click **Continue**. The progress screen is displayed, followed by the **Imported Configuration File Details** screen.
3. Click **Systems Build and Update Utility Home**.
4. Edit the existing configuration for the **Firmware Update**, **Hardware Configuration**, and **Server Operating System Installation** modules, if required.
5. Create the ISO image for this configuration.
For more information, see [Creating An ISO image](#).

Creating Bootable USB Device

You can create a bootable USB key from the Dell OpenManage media image on Red Hat Enterprise Linux and SUSE Linux Enterprise operating systems.

To create a bootable USB:

1. Connect the USB key to the system.



NOTE: Make sure that no other USB media is mounted on the system.



NOTE: Make sure that the size of the USB key is more than the media image.

2. Insert the Dell OpenManage media in the system.

3. To see all the connected USB media devices, type the following command:

```
/media/cdrom/server_assistant/driver_tool/src/make_bootable_usb.sh --scan
```

4. To create the bootable USB media from the Dell OpenManage media, type the following command:

```
/media/cdrom/server_assistant/driver_tool/src/make_bootable_usb.sh <path-to-mounted-dvd> <path-to-usb-device>
```

For example:

```
/media/cdrom/server_assistant/driver_tool/src/make_bootable_usb.sh /media/cdrom/dev/sdb
```

5. Remove the USB key and use this key to boot the target system.



NOTE: If the Linux automount feature is active on the USB device, unmount the USB before removing it.

Creating An ISO Image

To create an ISO image:

1. On the **Systems Build and Update Utility Home** screen, click **Apply/Export Configuration**.

The **Configure Apply/Export Options** screen is displayed.

2. Select the **Create Auto-deployment Bootable Image** option and click **Destination** to specify the location where you want to save the ISO image.

3. On the **ISO Save Location** screen, specify the location where you want to save the ISO image and click **Continue**.

If you choose USB as the location, you can also make the USB key bootable.

The **Configure Apply/Export Options** screen is displayed.

4. Click **Apply/Export**.

The ISO image is created.

You can create a bootable media to boot the systems that you want to update or deploy.

Frequently Asked Questions

This chapter contains important information about the different modules in Dell Systems Build Update Utility (SBUU), including answers to some frequently asked questions.

Q: What does the repository contain?

A: The repository contains the updated BIOS, firmware, and driver components for Dell systems.

The *Dell Server Updates* media includes the repository.

Q: What should I do if I face any prerequisite failure during the update process?

A: See the *Server Update Utility User's Guide* at dell.com/support/manuals to rectify this failure.

Q: I want to use my custom repository for firmware updates using SBUU.

A: If you want to use your custom repository for firmware updates using SBUU, you need a Linux repository. To generate a Linux repository, use the Dell Repository Manager or the SBUU DVD. Also, you must ensure that the repository contains updates for the system on which you want to run firmware updates.

Q: What should I do if I want to downgrade the firmware?


A: Use the *Dell Server Updates* media to downgrade the firmware on your system. You cannot downgrade the firmware using the **Firmware Update** module.

Q: What should I do if some of the updates fail?

A: Reboot your system and try using the latest repository to update the firmware. Also, see the *Server Update Utility User's Guide* at dell.com/support/manuals for more information.

Q: I want to use a USB key as my source repository.

A: If you are using a USB key as your source repository, insert the USB key when prompted.

 **NOTE:** It is recommended that you do not boot your system to SBUU with the USB key inserted in your system. This is because SBUU may not detect a USB key that is inserted before you boot the system.

Q: How do I access the command line interface?

A: To access the command line interface, from the boot menu, select **Linux Command Line Interface**.

Q: How do I know which components to configure?

A: Select the system that you want to configure. In the left pane, SBUU displays the components that you can configure. Click the component. The right pane displays the options that you can configure for the selected component.

Q: Where do I get more information on RAID controllers?

A: For more details on RAID controllers, see the *Dell OpenManage Deployment Toolkit Command Line Interface Reference Guide* at dell.com/openmanagemanuals.

Q: How do I know which BIOS setup options are available on my system?

A: Go to the boot menu screen and select **Linux Command Line Interface**. Use the SYSCFG tool to see the list of options available on your system.

Q: When setting the boot sequence for devices, what happens if I choose a device that is not on my system?

A: The configuration utility selects the boot devices in the sequence that you specify for boot order. However, if you choose a device that is not present on your system, the utility ignores the device, selects the remaining boot devices, and lists them based on the specified order.

Q: What happens if I create a virtual disk by specifying the size?

A: If you create a virtual disk by specifying the size (instead of using the **Maximum possible size** option), subsequent virtual disks that you create are bound to the controller and the array disk that you selected. This condition is valid until you exhaust all the available space on that array disk.

Q: What happens if I want to delete a virtual disk that is one of the virtual disks that was created using a particular array disk?

A: All the virtual disks created on that array disk are selected for deletion.

Q: What should I do if I am not able to configure Redundant Array of Independent Disks (RAID) using SBUU?

A: Ensure that the **Fast Initialization** parameter of the RAID controller is set to **ON** and try again. This setting is the factory default for all RAID controllers.

Q: Using SBUU, can I configure RAID on a system with a SATA 2s controller connected to a hard drive?

A: SBUU does not support RAID configuration on any system with a SATA 2s controller connected to a hard drive. To configure RAID on such a system, use the <Ctrl><A> option or set the hard drive configuration to Native mode through BIOS.

Q: I have multiple SCSI and RAID controllers on my system. How can I set the order in which SBUU looks for controllers?

A: SBUU uses the controller listed first in the BIOS boot order list. If you want to use another controller for the operating system, go to the BIOS setup (by pressing <F2> as the system starts) and set the controller as the first boot device.

Q: What should I do if I find one or more virtual disks are in a failed or degraded state?

A: Do not start the server setup program. Use the RAID controller's firmware utility (by using <Ctrl><A>, <Ctrl><M>, or <Ctrl><C> while booting) to reset the RAID controller's state.

Q: How can I configure RAID for disks that are displayed in Legacy mode?

A: On Cost Effective RAID Controller (CERC) ATA or CERC SATA RAID controller cards, disks that are displayed in Legacy mode is not available for RAID configuration in SBUU. If you want to use Legacy mode disks as part of a RAID container, use the RAID controller firmware utility to initialize the disks. However, if all disks are in Legacy mode, SBUU may fail to configure RAID on the controller.

Q: What happens if I install a new operating system on my system that already has an operating system?

A: If you already have an operating system on your system, and you use the **Server Operating System Installation (SOI)** to install a different operating system, the existing operating system is removed and data is deleted from your system.

Q: Can I install Microsoft Windows Server 2008 and VMware ESX Server operating systems?

A: Yes, you can. However, for operating systems such as Windows Server 2008 and VMware ESX Server, the native Graphical User Installation tool provided by the operating system installation media is used.

Q: What happens if I disconnect the network connection while I am copying the operating system image from a Server Message Block (SMB) share?

A: If you disconnect the network connection while the operating system image is copying, an error message is displayed indicating that the network is being disconnected. A **Reboot** button is also enabled. However, the operating system installation process does not resume after you reconnect the network cable. You need to reboot your system.

Q: What happens if I use the SOI to configure RAID controllers on my system that has virtual disks configured on the controller?

A: If you have virtual disks configured on your controller and you use the **SOI** to configure RAID controllers on your system, the existing virtual disks are deleted.

Q: Where can I get information about support for operating systems and RAID controllers?

A: Some operating systems are not supported with some RAID controllers. See the **readme.text** file in the root folder for details.

Q: Where can I get information on support for storage controllers and operating systems?

A: Depending on the storage controllers on your system, some operating systems may not be supported. See **readme.txt** in the root folder of the *Dell Systems Management Tools and Documentation* media or the online help for details.

Q: Why does the deployment fail when I configure the server along with Alert destination?

A: Alert destination accepts both IP address and string. Server's iDRAC alert destination format validation does not accept strings with special characters and invalid strings. Even if they are accepted during the configuration, it may lead to server deployment failure.

Q: I have a new Dell server and I could not boot into SBUU successfully.

A: Check if the firmware of the server components are the latest. If not, update the firmware using Dell OpenManage Server Update Utility (SUU) and boot the server with SBUU.

Q: What is span length?

A: Span length enables you to select the number of array disks in a span for the nested RAID levels (RAID-10, RAID-50, and RAID-60). The default (minimum permissible) span length value is 2 for RAID-10, 3 for RAID-50, and 4 for RAID-60.