Handling the Firmware Update Dependency by using Lifecycle Controller 3.00.00.00 in the 14th generation Dell EMC PowerEdge servers

This technical white paper provides information about handling dependency while updating or rolling back firmware in pre-boot environment by using the Lifecycle Controller user interface.

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Revisions

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Executive summary

iDRAC9 with Lifecycle Controller firmware version 3.00.00.00 enables Dell Update Package (DUP) dependency feature for all the Dell PowerEdge servers. Prior to the 3.00.00.00 release, a situation could have occurred where a firmware may have dependencies on a previous version of firmware to be installed on a given component or even another component.

Now, with this version of firmware, customers who want to use the Lifecycle Controller user interface for firmware update with dependencies can see required dependencies and block the new firmware updates in case all required dependency firmware are not installed. This will result in proper firmware update or rollback.

This technical white paper will explain how to detect and report the necessary Update Package dependencies to help the customer understand and apply these dependencies in a proper order.
1 Firmware update dependency

In pre-boot interface, firmware update is supported by using Dell Update Package (DUP). This update may have a dependency on a previous version of firmware to be installed on a given component or even another component.

For example, consider a situation where Version 3.x of a NIC firmware can update version 2.x without any issue, but version 3.x cannot update firmware versions older than version 2.x because of some constraint. Version 3.x is said to be dependent on version 2.x. It is also possible that version 3.x of NIC firmware may require version 2.x of BIOS firmware to be installed before it can update the NIC card. Therefore, Version 3.x of NIC firmware has a dependency on the BIOS firmware being 2.x. There are many real world examples of this and other scenarios that create an update dependency.

There are many real-world examples of this and other scenarios that create an update dependency.

Firmware dependencies are in categories of Hard- and Soft requisites.

1. Hard Dependency: Dependency that must be met in order to apply an update.
2. Soft Dependency: Dependency that does not block an update, but will result in limited functionality until resolved.
3. No dependency

1.1 Deployment and configuration guide

In older versions of Lifecycle Controller, dependencies were not checked for firmware update or rollback before performing. In the 14th generation PowerEdge servers, Lifecycle Controller will display a list of required or recommended dependencies. Lifecycle Controller will block new firmware updates/rollbacks in case a required dependency firmware is not installed.
Handling the Firmware Update Dependency by using Lifecycle Controller 3.00.00.00 in the 14th generation Dell EMC PowerEdge servers

Flow diagram to get dependencies by using Lifecycle Controller user interface

Figure 1 Flow diagram to get dependencies by using Lifecycle Controller user interface
2.1 **Viewing dependency information**

On the Lifecycle Controller User Interface, firmware update can be done using FTP server, local drive (CD/DVD/USB) and network share (CIFS/NFS/HTTP server) repositories. Upon selecting the repository, entering the repository access details and the path to the Update Package files, a comparison page that lists the differences between the current and available versions will be displayed. The comparison table contains the information regarding a component’s current version installed on the server and available version with the Update Package. The last two columns of this table are Prerequisite information and the Status of the dependencies.

The comparison page is displayed. The comparison page table contains the information about component (Update Package name), current version installed on the server, and available version with the Update Package. Last two columns of the table are prerequisites and status provides information about dependencies.

![Comparison Table showing Dependency Information](image)

Figure 2  Comparison Table showing Dependency Information
2.2 Hard dependencies

In case of a hard dependency, where the update package cannot be selected and applied, the Prerequisite column indicates Required. The Status column will indicate Prerequisites Required.

1. Click Required.
   A pop-up with a critical error will be displayed. The Prerequisite firmware will be listed in the pop up message. For example, Enterprise UEFI Diagnostics version 4301 X00 is the dependency to be fulfilled.

2. To resolve this dependency, see Resolving dependencies.

![Image displaying information about required hard dependency](image.png)

Figure 3 Image displaying information about required hard dependency
2.3 Soft dependencies

The update package can be selected and applied with limited features. The Prerequisite column will indicate the status as Recommended. The Status column indicates as Ready to Apply, or the same value as a DUP without requisites.

1. When you click Recommended, a message is displayed as shown in the screen shot here.
2. To resolve this dependency, see Resolving dependencies.

![Soft dependency](image)

Figure 4  Soft dependency

2.4 No dependencies

N/A will be displayed for the firmware which has not dependency information.
3 Resolving dependencies

For more information about viewing and resolving dependencies, see the *iDRAC9 with Lifecycle Controller User’s Guide* available on the support site. On iDRAC9, click F1 to view the Online Help documentation.

3.1 Technical white paper
The Dependency feature is supported only on all the 14G PowerEdge servers having iDRAC with Lifecycle Controller versions 3.00.00.00 or later.

3.2 Technical support and resources
- [Dell.com/support](https://www.dell.com/support) is focused on meeting customer needs with proven services and support.
- [Dell TechCenter](https://www.delltechcenter.com) is an online technical community where IT professionals have access to numerous resources for Dell EMC software, hardware and services.
- [Storage Solutions Technical Documents](https://www.dell.com/EMC) on Dell TechCenter provide expertise that helps to ensure customer success on Dell EMC Storage platforms.