

Dell Storage Center OS Version 7 Software Update 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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About this Guide

This guide describes the contents of the Storage Center update packages and provides the instructions needed to update the Storage Center software and firmware using Dell Storage Manager.

Revision History

Document Number: 680-025-018

Revision	Date	Description
A	May 2016	Initial release in support of Storage Center OS Version 7
B	August 2016	Updated the minimum Storage Center version
C	May 2017	Updated for Storage Center version 7.2.10

Audience

Storage administrators responsible for updating Storage Center software are the target audience for this guide. The intended reader has a working knowledge of storage and networking concepts.

Contacting Dell

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services might not be available in your area.

To contact Dell for sales, technical support, or customer service issues, go to www.dell.com/support.

- For customized support, enter your system service tag on the support page and click **Submit**.
- For general support, browse the product list on the support page and select your product.

Related Publications

The following documentation is available for Dell storage components managed using Dell Storage Manager.

- *Dell Storage Manager Installation Guide*
Contains installation and setup information.
- *Dell Storage Manager Administrator's Guide*
Contains in-depth feature configuration and usage information.
- *Dell Storage Client Administrator's Guide*
Provides information about the Dell Storage Client and how it can be used to manage a Storage Center.
- *Dell Storage Manager Release Notes*
Provides information about Storage Manager releases, including new features and enhancements, open issues, and resolved issues.
- *Dell Storage Manager Online Help*
Provides context-sensitive help for the Client, Data Collector Manager, and Server Agent.



Getting Started

This section provides essential information about Storage Center and Storage Manager system requirements and recommended best practices used to install the latest Storage Center update packages.

Minimum Storage Center Configuration Requirements

Before you install a software update, make sure that the Storage Center meets the following configuration requirements.

- Storage Center 7.2.10 is supported on SC9000, SC7020, and SC5020 series storage systems. The storage system must be running Storage Center 6.7.1 or later to update to Storage Center 7.2.10.
- Storage Center 7.1 is supported on SC9000, SC8000, SC7020, SC4020, and SCv2000 series storage systems. The storage system must be running Storage Center 6.6.4 or later to update to Storage Center 7.1.

Dell Storage Manager Requirements

Dell Storage Manager requires the following components.

Component	Requirements
Operating system	Any of the following 32-bit or 64-bit operating systems (with the latest service packs): • Windows 7 • Windows 8 • Windows 8.1 • Windows 10 • Windows Server 2008 Any of the following 64-bit operating systems: • Windows Server 2008 R2 • Windows Server 2012 • Windows Server 2012 R2 • Red Hat Enterprise Linux 6.7 • Red Hat Enterprise Linux 7 • Red Hat Enterprise Linux 7.1 • SUSE Linux Enterprise 12 • Oracle Linux 6.5 • Oracle Linux 7.0  NOTE: Windows Server Core is not supported.
CPU	32-bit (x86) or 64-bit (x64) microprocessor with Windows OS  NOTE: Linux versions of the Dell Storage Client support only 64-bit microprocessors.
Software	Microsoft .NET Framework 4.0 (Windows only)
Web browser	Any of the following web browsers: • Internet Explorer • Firefox • Google Chrome



Component	Requirements
	Microsoft Edge
	 NOTE: Other web browsers may work but are not officially supported.

Storage Center Updates

Storage Center updates are bundled together as a single downloadable update package. An update package includes the latest updates for the following storage system components:

- Dell Storage Center operating system software
- Storage Center firmware
- Enclosure firmware
- Disk firmware

Software Update Types

Within a software update package, an individual update component is classified according to the method in which it can be installed. The method you use to install updates affects your infrastructure differently.

 **NOTE: Before applying updates, understand the impact of the update on Storage Center infrastructure and plan the update process carefully to avoid unplanned downtime.**

- Required** — Required components must be installed as part of the update.
- Deferrable** — Deferrable components can be installed later; however, doing so can negatively affect the reliability of the components whose firmware is not being updated.
- Service Affecting** — Service affecting components can be installed only when Storage Center is temporarily taken out-of-service. During the outage, all systems and services using volumes from Storage Center must be powered down correctly to avoid data loss and unplanned system disruption.
- Non-Service Affecting** — Non-service affecting components can be installed either when Storage Center is in service or during a scheduled outage. Although these components are designed to not cause system disruption, the way in which Storage Center is configured can affect performance. During a non-service affecting update, the firmware update process occurs as a rolling controller update. This process results in a controller failover event that causes the host initiators to log out and then log back in to the volumes connected to the SAN. If you have implemented the Dell Storage best practices for host settings (for example, multipath IO, HBA settings, time-outs) and fabric design (cabling, number of front-end ports), the logout/login process has minimal effect on host volumes. The update process should not affect data access, data integrity, or result in any data loss.

 **NOTE: When performing a non-service affecting update, reduce the impact of the controller restart operation on the host OS and applications by verifying that the correct configuration and best practices are applied to each newly configured host. Dell recommends that every host that accesses Storage Center volumes or that has large updates applied to its OS, has at least one failover test.**

The following table shows which components affect service during installation.

Table 1. Storage Center with a Single Controller

	Service Affecting	Non-Service Affecting
Storage Center Firmware Update	Yes	
Enclosure Firmware Update. Depending on the components for a specific release, enclosure firmware may or may not be non-service affecting.	Yes	Yes
Disk Firmware Update. Disk firmware upgrades may be service affecting or non-service affecting depending on the drive. A drive that supports an in-service upgrade, is a drive that can: Process IOs and other commands while receiving firmware blocks.	Yes	Yes

	Service Affecting	Non-Service Affecting
• Boot and ready new firmware in three seconds.		

Table 2. Storage Center with Dual Controllers

	Service Affecting	Non-Service Affecting
Storage Center Firmware Update		Yes
Enclosure Firmware Update. Depending on the components for a specific release, enclosure firmware may or may not be non-service affecting.	Yes	Yes
Disk Firmware Update. Disk firmware upgrades may be service affecting or non-service affecting depending on the drive. A drive that supports an in-service upgrade, is a drive that can: • Process IOs and other commands while receiving firmware blocks. • Boot and ready new firmware in three seconds.	Yes	Yes

Decide How to Apply Updates

Within an update package, an individual update component is classified by the method in which the update component can be installed. It is critical to know which updates can impact Storage Center operation.

The following list outlines the software update process and the implications to the storage system. For more information, see [Software Update Types](#).

- The installation process automatically reboots Storage Center storage controller(s) when required by the components being updated.
- Disk firmware, when applied in-service, does not require a system boot.
- For dual-controller Storage Centers, installation reboots the storage controllers in sequence or simultaneously, depending on the components being updated. A service outage is required when the storage controllers are rebooted simultaneously.
- To install deferrable components, those that are not required and that do not affect service, plan for applying the updates during a time at which the Storage Center is least busy.

 **NOTE: If you do not install deferrable components when you install the required components, it can negatively impact the reliability of the components whose firmware is not being updated. Dell recommends that you schedule a service outage and apply deferrable component updates as soon as possible.**

- To install components that affect service, plan for and schedule a service outage during which to apply the updates. You may also want to install components that are non-service affecting during the schedule outage.

 **CAUTION: Do not manually restart the Storage Center storage controllers during the update process. Updating is a software-controlled process.**

Validate Host Best Practices

To reduce the impact of the controller restart operation on the host operating system and applications when applying non-service affecting updates, verify that the correct configuration and best practices are applied to the host.

 **NOTE: Dell recommends that each host has at least one failover test where the redundancy of the HBAs, fabrics, and storage controllers is tested and validated. Validate every newly configured host that is accessing Storage Center volumes or when large update packages are applied to the host operating system. See the *Dell Storage Manager Administrator's Guide* for more information about HBA server settings and iSCSI settings best practices.**



Adding or Upgrading Enclosures

If you are adding or upgrading enclosures, check the update status and install software updates before discovering the new or changed enclosures in Storage Manager.

1. Check update status.
2. Install updates as needed.
3. Cable the enclosure. For more information, see the storage controller deployment or connectivity guides.
4. Use Storage Manager to scan for new disks. For more information, see the *Dell Storage Manager Administrator's Guide*.



NOTE: Storage Center does not automatically detect new disks or enclosures. You must use Storage Manager to manually scan for new disks.

Updating the Storage Center Software

This section provides the instructions needed to check for Storage Center update packages, install available updates, and perform the tasks required to finalize the update process. After choosing an update, the software update process runs without user intervention. When the software update finishes, some final tasks are required to verify that the update is successful.

Checking for Storage Center Updates

The Update Storage Center wizard compares your Storage Center software version to the latest version available from Dell, and then provides software update options.

 **NOTE: Dell SupportAssist must be enabled to use the Update Storage Center wizard.**

1. Log in to the Dell Storage Client and then click the **Storage** tab.

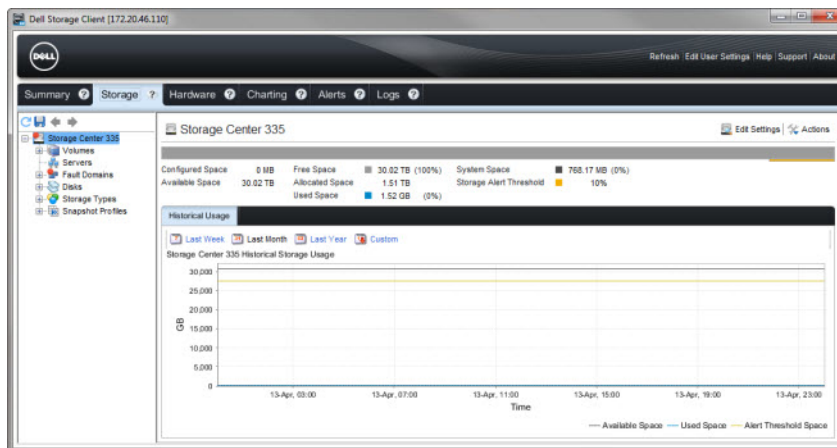


Figure 1. Dell Storage Client Storage Tab

2. From the navigation tree, select the Storage Center for which you want to check for software updates.
3. In the upper-right corner, select **Actions→System→Check for Update**.

The Update Storage Center wizard starts and displays a status window while it checks for updates. After the wizard finishes checking for updates, it displays the current updates available, lists the update installation options, and provides update package component details.

 **NOTE: If automatic updates are configured to start automatically after checking for updates, if the wizard finds a software update, it starts the update immediately. If automatic updates are not configured to start automatically, a download and installation options dialog box opens and lists the available software update choices.**

If the Storage Center software is up-to-date, the following status message displays.

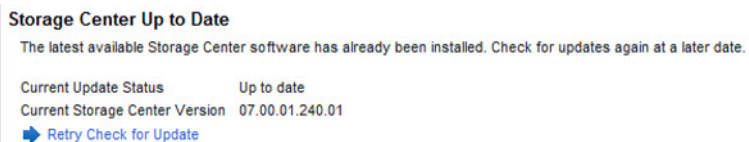


Figure 2. Storage Center Up to Date Status

If software updates are automatically configured to check for updates and then install them immediately, the process starts. If the Update Storage Center wizard finds available updates and the system is not configured to automatically install them, the following **Update Available** page opens.

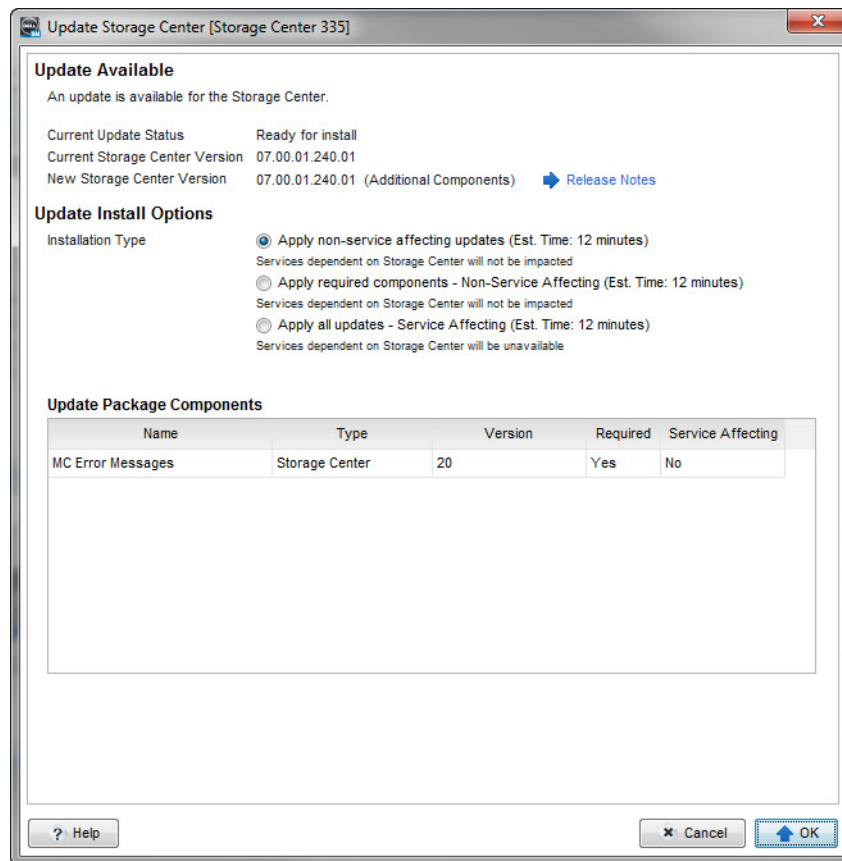


Figure 3. Storage Center Update Available Status

The following Update Install Options are available:

- **Apply non-service affecting updates**
Services dependent on Storage Center will not be impacted
- **Apply required components — Non-Service Affecting**
Services dependent on Storage Center will not be impacted
- **Apply all updates — Service Affecting**
Services dependent on Storage Center will be unavailable

Applying Storage Center Updates

Before applying Storage Center updates, consider the storage system implications and follow the recommendations in this guide.

1. Select an update option.

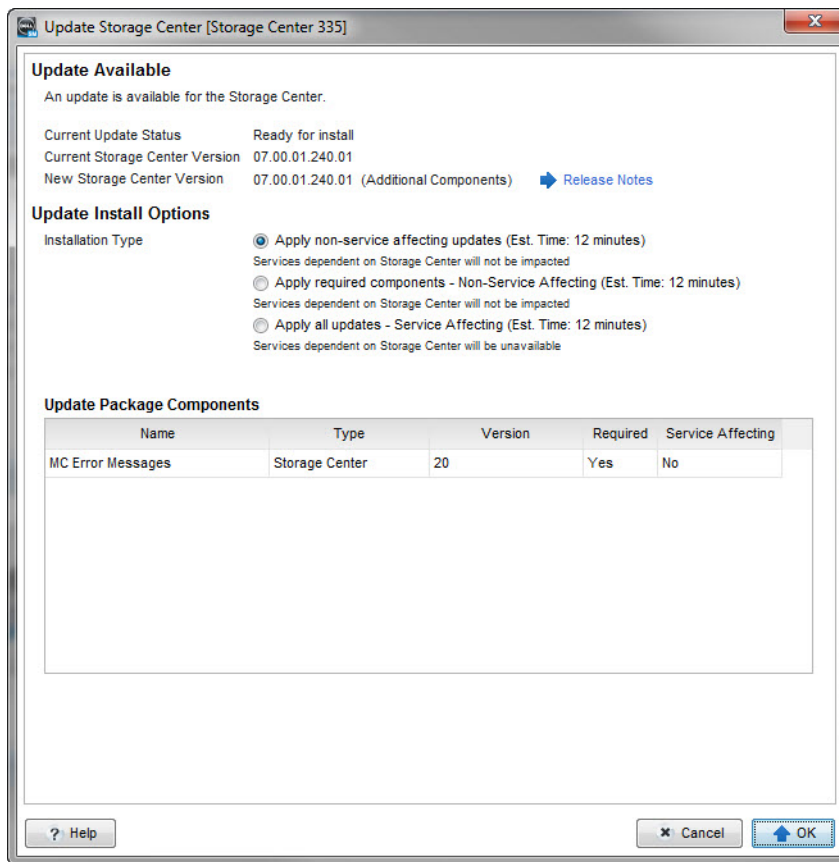


Figure 4. Storage Center Update Available

NOTE: Selecting **Apply all Updates — Service Affecting** displays a warning message. Only users with administrative privileges can apply service-affecting updates.

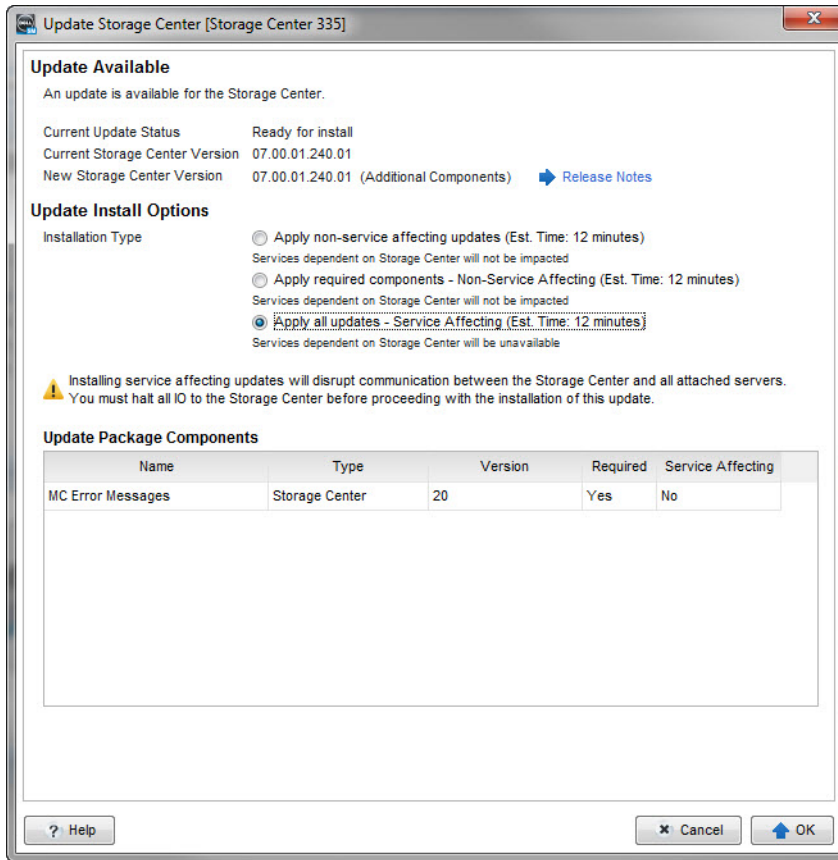


Figure 5. Service-Affecting Update Warning

- Click **OK**. If the updates are service affecting, provide a Storage Center administrative user name and password.

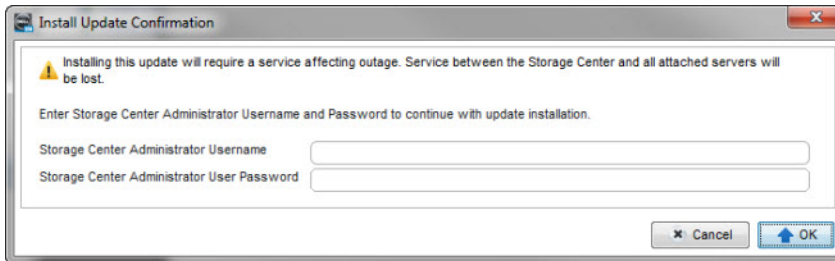


Figure 6. Install Update Confirmation

NOTE: If there are available updates and you would like to install them later, a status banner appears at the top of the Summary page. Click **Install Updates** to update to the latest Storage Center software when you are ready.

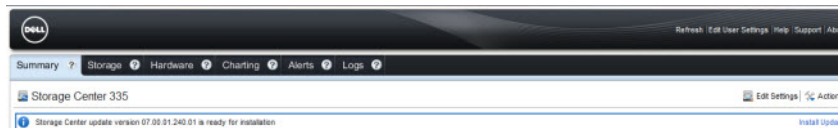


Figure 7. Install Updates Link

Completing the Update

After successfully installing the software updates, reconnect to the Storage Center.

Rebalance Ports

If a controller has been added or taken offline, ports can become unbalanced. If local ports are unbalanced, you are prompted to balance the ports by a message at the top of the Summary tab.



NOTE: Front-end ports are automatically rebalanced when using SCv2000 series controllers. Manual port rebalance is not necessary.

1. Click the **Storage** view.
2. In the Storage pane, select a Storage Center.
3. Click the **Summary** tab.
4. In the banner message, click **Rebalance Ports**. The **Rebalance Ports** dialog box appears to display progress, and closes when the rebalance operation is complete.

Check for Additional Updates

After the update is complete, check for Storage Center updates that may have become available after the Storage Center release.

1. Select **Actions** → **System** → **Check for Update**.
2. If an update is available, follow the installation instructions in [Checking for Storage Center Updates](#).

