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DELL Technologies Storage Center Version 7 Software Update User Guide

Contents

DELL Technologies Storage Center Version 7 Software Update

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

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
D	April 2018	Updated for Storage Center version 7.3
E	August 2018	Updated for Storage Center version 7.3.2
F	November 2018	Updated for Storage Center version 7.3.5
G	August 2019	Updated for Storage Center version 7.4.2
H	February 2020	Updated for Storage Center version 7.4.10
I	May 2021	Updated for Storage Center version 7.5

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 **Dell.com/support**.

- For customized support, type 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 storage components managed using Dell Storage Manager and Unisphere for SC Series.

- Storage Center Release Notes Provides information about new features and known and resolved issues for the Storage Center software.
- Storage Center Update Utility Administrator's Guide Describes how to use the Storage Center Update Utility to install Storage Center software updates. Updating Storage Center software using the Storage Center Update Utility is intended for use only by sites that cannot update Storage Center using standard methods.
- Storage Manager Administrator's Guide Provides instructions for using the Storage Manager software.
- Unisphere and Unisphere Central Administrator's Guide Provides instructions and information for managing storage systems using Unisphere and Unisphere Central.
- Storage Manager Release Notes Provides information about Storage Manager software releases, including new features, enhancements, fixed issues, and known issues.

Notes, cautions, and warnings

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

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.

Topics:

- Storage Center Configuration Requirements
- Storage Manager Client Requirements
- Storage Center Updates
- Software Update Types
- Decide How to Apply Updates
- Validate Host Best Practices
- Adding or Upgrading Enclosures

Storage Center Configuration Requirements

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

Storage Center Version	Min. Version to Update	Supported Storage Systems
7.5	7.3.11	SC9000, SC8000, SC7020, SC5020, SC4020, SCv3000 series, and SCv2000
7.4	6.7.1 , 6.6.4*	SC9000, SC8000, SC7020, SC5020, SC4020, SCv3000 series, and SCv2000
7.3	6.7.1	SC9000, SC8000, SC7020, SC5020, SC4020, SCv3000 series, and SCv2000 series
7.2	6.7.1	SC9000, SC8000, SC7020, SC5020, SC4020, SCv3000 series, and SCv2000 series
7.1	6.6.4	SC9000, SC8000, SC7020, SC4020, and SCv2000 series

NOTE: *A direct update from Storage Center version 6.6 to later supported Storage Center versions is initiated when Dell Storage Manager version 2018 R1.10 or later is installed. See Update Version 6.6 Software for instructions.

Storage Manager Client Requirements

The following table lists the Storage Manager Client requirements:

Table 1. Storage Manager Client Requirements

Component	Requirements
Operating system	Any of the following 64-bit operating systems: • Windows 8.1 • Windows 10 • Windows Server 2012 R2 • Windows Server 2016 • Windows Server 2019 • SUSE Linux Enterprise 12 • SUSE Linux Enterprise 15 • Red Hat Enterprise Linux 7.5

Component	Requirements
	• Red Hat Enterprise Linux 7.6 • Red Hat Enterprise Linux 8.0 • Oracle Linux 7.0 • Oracle Linux 7.3 • Oracle Linux 7.6 ⓘ NOTE: Windows Server Core is not supported.
CPU	64-bit (x64) microprocessor with two or more cores
Software	Microsoft .NET Framework 4.5 or later (Windows only)
Linux VM Client Access	• VMware vSphere Client • Hyper-V Manager
Web browser	Any of the following web browsers: • Google Chrome • Internet Explorer 11 • Mozilla Firefox ⓘ NOTE: Google Chrome is the recommended browser. Other web browsers might 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:

- 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-ofservice. 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 EMC 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 EMC 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.

Component	Service Affecting	Non-Service Affecting
Storage Center with a Single Controller		
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 updates 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
Storage Center with Dual Controllers		
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.
- Write cache is disabled during the entire software update, including during disk firmware updates if included.
- 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 EMC 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 nonservice affecting updates, verify that the correct configuration and best practices are applied to the host.

NOTE: Dell EMC 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 or the Dell EMC Storage Compatibility Matrix for SC, PS and FS Series Arrays 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.

Steps

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 or the Dell EMC Unisphere and Unisphere Central for SC Series 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.

Topics:

- Update Storage Center Software Using Storage Manager
- Update Storage Center Software Using Unisphere
- Update Storage Center Version 6.6 Software

Update Storage Center Software Using Storage Manager
Update Storage Center software with either the Storage Manager connected directly to a Storage Center, or through a Data Collector

- **Prerequisites**
  - Storage Center must be version 6.7 or later to perform this update. (See Update Version 6.6 Software to update version 6.6 software.)
  - SupportAssist must be enabled or the Storage Center Update Utility must be configured.
- **About this task**

  The options displayed in the Storage Center software update dialog boxes depend on the type of update performed on the Storage Center.
- **Steps**
  1. If the Storage Manager is connected to a Data Collector, select a Storage Center from the Storage view.
  2. In the right pane, select Actions > System > Check for Update. The Update Storage Center dialog box opens and the Storage Center checks for an update.
  3. (Optional) Click Release Notes for information about the update.
  4. Select an Installation Type:
     - To apply only non-service affecting updates, select Apply non-service affecting updates.
     - To apply non-service affecting updates to required components, select Apply required components — Non-Service Affecting.
     - To apply all updates including those affecting service, select Apply all updates — Service Affecting.
       NOTE: Service-affecting installation types require a controller outage. Service will be interrupted.
  5. Click OK.
  6. (Optional) If the update is service-affecting, the Install Update Confirmation dialog opens. Type the Storage Center Administrator username and password to continue.
  7. Click OK.

     The Update Storage Center dialog opens. This dialog displays details of the installation process and updates those details every 30 seconds. This is also displayed as a blue message bar in the Summary tab, and in the update status column of the Storage Center details. In case of an update failure, click Retry to restart the interrupted process. If the update is service affecting, the connection between Storage Manager and Storage Center will be lost.
  8. If necessary, change the operation mode to Normal after the update is complete.
     - **a.** In the Storage Center Storage view, click Edit Settings. The Storage Center Settings dialog box opens.
     - **b.** Click the General tab.
     - **c.** In the Operation Mode field, select Normal.
     - **d.** Click OK.

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

- **Prerequisites**

  NOTE: Front-end ports are automatically rebalanced when using SCv2000 and SCv3000 series controllers. It is not necessary to rebalance ports manually.

- **Steps**

  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 progress dialog box opens, and closes when the rebalance operation is complete.

Update Storage Center Software Using Unisphere

Update Storage Center software with Unisphere Central for SC Series connected either directly to a Storage Center or through a Data Collector.

- **Prerequisites**

  - Storage Center must be version 6.7 or later to perform this update. (See Update Version 6.6 Software to update version 6.6 software.)
  - SupportAssist must be enabled or the Storage Center Update Utility is configured.

- **About this task**

  The options displayed in the Storage Center software update dialog boxes depend on the type of update performed on the Storage Center.

- **Steps**

  1. If you are connected to a Data Collector, select a Storage Center from the drop-down list in the left navigation pane of Unisphere Central.
  2. Click ![icon]Summary.

     The Summary view is displayed.
  3. Click (More Actions) and select Check for Update. The Update Storage Center wizard opens and the Storage Center checks for an update.
  4. Select an Update Action:
     - Select Download Update and click Download Update to download the update.
     - Select Download and Install Now to download and apply the update immediately.
  5. (Optional) Click Release Notes for information about the update.
  6. Select an Installation Type:
     - To apply only non-service affecting updates, select Apply non-service affecting updates.
     - To apply non-service affecting updates to required components, select Apply required components — Non-Service Affecting.
     - To apply all updates including those affecting service, select Apply all updates — Service Affecting.
  7. Click Install Update.
  8. Click OK.
  9. (Optional) If the update is service-affecting, the Install Update Confirmation dialog opens. Type the Storage Center

     Administrator username and password to continue.
  10. Click OK.

      If the update is service affecting, the connection between Unisphere and Storage Center will be lost.

11. If necessary, change the operation mode to Normal after the update is complete.

     ○ **a.** In the Storage Center view, click (Settings).

       The Storage Center Settings dialog box opens.

     ○ **b.** In the Storage Center Setting dialog box, click the General tab.

     ○ **c.** In the Operation Mode field, select Normal.

     ○ **d.** Click OK.

Rebalance Ports

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

- **About this task**

  NOTE: Front-end ports are automatically rebalanced when using SCv2000 and SCv3000 series controllers. It is not necessary to rebalance ports manually.

- **Steps**

  1. If you are connected to a Data Collector, select a Storage Center from the drop-down list in the left navigation pane of Unisphere Central.

  2. Click Summary.

     The Summary view is displayed.

  3. In the banner message, click Rebalance Ports.

     The Rebalance Ports progress dialog box opens, and closes when the rebalance operation is complete.

Update Storage Center Version 6.6 Software

Storage Manager version 2018 R1.10 or later can only be used to update from Storage Center version 6.6 to a later version of software. No other system management functionality is available until you update to a supported version of Storage Center software. You will be guided through the following process to complete the software update.

- **Prerequisites**

  ○ SupportAssist must be enabled or the Storage Center Update Utility must be configured.

  ○ Storage Manager Client version 2018 R1.10 or later must be used to perform this update.

  ○ You must connect directly to the Storage Center.

  ○ You must have Administrator privileges to perform this update.

- **Steps**

  1. Connect to a Storage Center running version 6.6 software. Storage Manager Client opens to the Summary tab. A message in the tab states that an update is required.

  2. Click Check for Update.

     The Update Storage Center dialog box opens and the Storage Center checks for an update.

  3. (Optional) Click Release Notes for information about the update.

  4. Select an Update Action:

     1. Select Download and Install Now.

  5. Select an Installation Type:

     ○ To apply only non-service affecting updates, select Apply non-service affecting updates.

     ○ To apply non-service affecting updates to required components, select Apply required components — Non-Service Affecting.

- To apply all updates including those affecting service, select Apply all updates — Service Affecting.

    NOTE: Service-affecting installation types require a controller outage. Service will be interrupted.

6. Click OK.

    When the files are ready to install, the Update Storage Center dialog box shows that the update is available.

7. Click OK.

8. (Optional) If the update is service-affecting, the Install Update Confirmation dialog opens. Type the Storage Center Administrator username and password to continue.

9. Click OK.

    The Update Storage Center dialog opens. This dialog displays details of the installation process and updates those details every 30 seconds. In case of an update failure, click Retry to restart the interrupted process. This update is service affecting, the connection between Storage Manager and Storage Center will be lost.

Rebalance Ports
If a controller has been added or taken offline, ports can become unbalanced. If ports are unbalanced, you are prompted to balance the ports by a message at the top of the Summary tab.
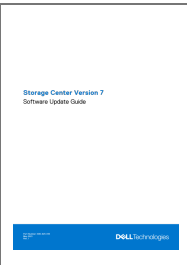
- **About this task**

    NOTE: Front-end ports are automatically rebalanced when using SCv2000 and SCv3000 series controllers. It is not necessary to rebalance ports manually.

- **Steps**

    1. If you are connected to a Data Collector, select a Storage Center from the drop-down list in the left navigation pane of Unisphere Central.

    2. Click Summary.

        The Summary view is displayed.

    3. In the banner message, click Rebalance Ports. The Rebalance Ports progress dialog box opens, and closes when the rebalance operation is complete.

Documents / Resources

Storage Center Version 7 Software Update Guide DELLTechnologies	**DELL Technologies Storage Center Version 7 Software Update** [pdf] User Guide SCv2000, Storage Center Version 7 Software Update, Software Update

References

- **Support | Dell US**