

Storage Center Pre-Deployment Tech Note

This guide provides the information and instructions needed to prepare for a Storage Center version 6.6 and later deployment or for performing an upgrade to Storage Center 6.6 or later from a previous version of Storage Center.

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Revision History

Document Number: 680-135-001

Revision	Date	Description
A	August 2017	Initial release
B	September 2017	Updated Dell SSH settings
C	April 2019	Updated additional Dell SSH settings

Introduction

The following components require attention before either deploying Storage Center or upgrading from an earlier version of Storage Center.

- **SupportAssist:** In Storage Center version 6.6, the PhoneHome feature was enhanced and renamed SupportAssist. Upgrading to Storage Center 6.6 or later may require network firewall changes to maintain the transition between Phone Home and SupportAssist.
- **Uninterruptible Power Supply (UPS) and Standby Power Supply (SBS):** UPS/SBS ensures that Storage Center is protected in the event of a power surge or potential outage by conditioning incoming power to only deliver clean power to sensitive equipment and provide battery backup power.

Worksheet to Record System Information

Use the following worksheet to record the information that is needed to install the Storage Center.

Storage Center Information

Record the following information about the Storage Center network and the administrator user.

Table 1. Storage Center Network and Administrator

Storage Center Network

Service Tag _____

Table 1. Storage Center Network and Administrator (continued)

Management IPv4 address (Storage Center management address)	----- . ----- . ----- . -----
Controller IPv4 address (Controller 1 MGMT port)	----- . ----- . ----- . -----
Controller IPv4 address (Controller 2 MGMT port)	----- . ----- . ----- . -----
Subnet mask	----- . ----- . ----- . -----
Gateway IPv4 address	----- . ----- . ----- . -----
Domain name	-----
DNS server address	----- . ----- . ----- . -----
Secondary DNS server address	----- . ----- . ----- . -----
Storage Center Administrator	
Password for the default Storage Center Admin user	-----
Email address of the default Storage Center Admin user	-----

iSCSI Fault Domain Information

For a storage system with iSCSI front-end ports, record network information for the iSCSI fault domains. This information is needed to complete the **Discover and Configure Uninitialized Storage Centers** wizard.

i **NOTE:** For a storage system deployed with two Ethernet switches, Dell EMC recommends setting up each fault domain on a separate subnet.

Table 2. iSCSI Fault Domains

iSCSI Fault Domain 1

Target IPv4 address	----- . ----- . ----- . -----
Subnet mask	----- . ----- . ----- . -----
Gateway IPv4 address	----- . ----- . ----- . -----
IPv4 address for storage controller module 1: port 1	----- . ----- . ----- . -----
IPv4 address for storage controller module 2: port 1	----- . ----- . ----- . -----
(Four port HBA only) IPv4 address for storage controller module 1: port 3	----- . ----- . ----- . -----
(Four port HBA only) IPv4 address for storage controller module 2: port 3	----- . ----- . ----- . -----

iSCSI Fault Domain 2

Target IPv4 address	----- . ----- . ----- . -----
Subnet mask	----- . ----- . ----- . -----
Gateway IPv4 address	----- . ----- . ----- . -----
IPv4 address for storage controller module 1: port 2	----- . ----- . ----- . -----
IPv4 address for storage controller module 2: port 2	----- . ----- . ----- . -----
(4-port HBA only) IPv4 address for storage controller module 1: port 4	----- . ----- . ----- . -----
(4-port HBA only) IPv4 address for storage controller module 2: port 4	----- . ----- . ----- . -----

Additional Storage Center Information

Network Time Protocol (NTP) and Simple Mail Transfer Protocol (SMTP) server information is optional. Proxy server information is also optional, but it may be required to complete the **Discover and Configure Uninitialized Storage Centers** wizard.

Table 3. NTP, SMTP, and Proxy Servers

NTP server IPv4 address	----- . ----- . ----- . -----
SMTP server IPv4 address	----- . ----- . ----- . -----
Backup SMTP server IPv4 address	----- . ----- . ----- . -----
SMTP server login ID	-----
SMTP server password	-----
Proxy server IPv4 address	----- . ----- . ----- . -----

Fibre Channel Zoning Information

For a storage system with Fibre Channel front-end ports, record the physical and virtual WWNs of the Fibre Channel ports in Fault Domain 1 and Fault Domain 2. This information is displayed on the **Review Front-End** page of the **Discover and Configure Uninitialized Storage Centers** wizard. Use this information to configure zoning on each Fibre Channel switch.

Table 4. Fault Domain WWNs

Physical WWNs in Fault Domain 1

Physical WWN of storage controller 1: port 1	-----
Physical WWN of storage controller 2: port 1	-----
(4-port HBA only) Physical WWN of storage controller 1: port 3	-----
(4-port HBA only) Physical WWN of storage controller 2: port 3	-----

Virtual WWNs in Fault Domain 1

Virtual WWN of storage controller 1: port 1	-----
Virtual WWN of storage controller 2: port 1	-----
(4-port HBA only) Virtual WWN of storage controller 1: port 3	-----
(4-port HBA only) Virtual WWN of storage controller 2: port 3	-----

Physical WWNs in Fault Domain 2

Physical WWN of storage controller 1: port 2	-----
Physical WWN of storage controller 2: port 2	-----
(4-port HBA only) Physical WWN of storage controller 1: port 4	-----
(4-port HBA only) Physical WWN of storage controller 2: port 4	-----

Virtual WWNs in Fault Domain 2

Virtual WWN of storage controller 1: port 2	-----
Virtual WWN of storage controller 2: port 2	-----
(4-port HBA only) Virtual WWN of storage controller 1: port 4	-----
(4-port HBA only) Virtual WWN of storage controller 2: port 4	-----

Using SupportAssist

SupportAssist is a support tool that collects and stores system state information and transmits it to technical support. SupportAssist provides service requests, automatic support case creation based on event alerting, automatic health checks, remote software updates, real-time troubleshooting, and customer support. After installation and setup, SupportAssist sends the initial configuration information for the Storage Center to technical support.

i **NOTE:** SupportAssist system state information is only used for diagnostic purposes and customer support. The SupportAssist Agreement must be accepted and SupportAssist must be enabled to set up automatic software updates and

send diagnostic data to technical support. It is available to all Storage Center customers, but response time and assistance are based on the validity and level of your support contract.

Configure the Firewall

SupportAssist requires opening TCP ports 22, 443, and 8443 on the firewall to allow outbound communication from Storage Center to the Internet and technical support. If these configurations are not made, technical support cannot monitor and confirm whether an update is successful.

NOTE: Firewall settings **must** be configured before updating to Storage Center 6.6 or later.

The following steps outline the firewall configuration process:

1. Verify that TCP ports **22**, **443**, and **8443** allow outbound communication.
2. If your network requires that hosts use a proxy server to reach the Internet, configure Storage Center to use the SupportAssist proxy.
For information about configuring the SupportAssist proxy, see the *Storage Center System Manager Administrator's Guide* or the *Storage Manager Administrator's Guide*.
3. Set up the firewall to allow outbound communication from the controller Eth 0 IP addresses and also from the shared management IP for Storage Center.

NOTE: If the system uses an Storage Manager Data Collector server, the firewall must allow outbound communication from Storage Manager Data Collector IP address to the SupportAssist servers.

4. Configure Storage Center and Storage Manager Data Collector with a Domain Name System (DNS) server to resolve the public DNS names to the associated public IP addresses.

For most systems, the firewall configuration process is complete. For systems requiring advanced firewall settings, configure the firewall using the settings in the following tables.

Advanced Firewall Settings for Storage Center 6.6 and Later

The following tables provide advanced firewall settings for Storage Center version 6.6 and later.

Table 5. SupportAssist Settings

Hostname	Public IP Address	TCP Port
web1.compellent.com	76.164.8.136	443
stor.g2.ph.dell.com	143.166.135.120 (Primary)	443
stor.g2.ph.dell.com	143.166.147.96 (Secondary)	443
stor.g3.ph.dell.com	143.166.135.19 (Primary)	443
stor.g3.ph.dell.com	143.166.147.73 (Secondary)	443

Table 6. Secure Console Settings

Hostname	Public IP Address	TCP Port
es-mc-ssh-ssh1.compellent.com	76.164.8.174	22
es-mc-ssh-ssh2.compellent.com	76.164.8.175	22
es-mc-ssh-ds1.compellent.com	76.164.8.173	8443
sshdisp.g3.ph.dell.com	76.164.8.173	8443 10001-10008

Choosing a UPS or SBS

Selecting the appropriate Uninterruptible Power Supply (UPS) and Standby Power Supply (SBS) components ensures that only clean power is delivered to Storage Center and that the system is protected from power surges and outages.

There are different levels of UPS/SBS protection available:

- Online UPS
- Line-Interactive SBS
- Off-Line SBS

NOTE: Each of these UPS/SBS types typically provides 5–15 minutes of battery backup time when loaded to full output capacity. Longer backup times may be achieved by overrating the UPS/SBS size.

Online UPS

Online UPS provides the best type of UPS/SBS protection available. It protects Storage Center from irregular voltage from an incoming utility, provides sufficient backup battery capabilities, and is enhanced with an electronic firewall between the incoming utility power and Storage Center.

technical support recommends using an online UPS for Storage Center protection for the following reasons:

- Online UPS provides an electronic layer of protection from variations in power quality through the use of circuit tiers. The incoming AC utility voltage passes through a surge protection process where it is converted to DC and filtered by capacitors. This tier removes line noise, high voltage transients, harmonic distortion, and any other 50/60 Hertz (Hz) related issues.
- Online UPS provides a voltage regulator stage where the DC is filtered through a second set of storage capacitors giving UPS the ability to sustain constant output during a low voltage condition or *brown-out*.
- Online UPS passes the regulated DC voltage to an inverter stage where it creates true sine wave output power.
- The Online UPS capacitors act as an energy storage reservoir allowing the UPS to work through momentary power interruptions.
- The Online UPS battery performs a seamless transition by replacing the energy source during a power outage.

Line-Interactive SBS

Line-interactive SBS provides a mid-level of UPS/SBS protection. Much like an off-line SBS, it protects Storage Center from power surges and provides backup battery protection. Unlike off-line SBS, it has the added feature of providing a minimal incoming voltage regulating transformer that protects Storage Center from powering down during extended periods of low voltage power from the incoming utility or *brown-out* conditions.

NOTE: If you choose a line-interactive SBS, select one that accepts extended battery packs and has an inverter with true sine wave output. For more information about sine wave output, see [Off-Line SBS](#).

Off-Line SBS

Off-line SBS provides the most basic type of UPS/SBS protection available. It protects Storage Center from power surges and provides rudimentary backup battery protection.

Off-line SBS connects Storage Center directly to incoming utility power, similar to a common surge-protection power strip. If the incoming utility voltage falls below a predetermined level, the off-line SBS turns on its internal DC-AC inverter circuitry powered from an internal storage battery. It then mechanically switches the connected components to its DC-AC inverter with a relatively high switch-over rate.

technical support does not recommend relying on an off-line SBS for Storage Center protection for the following reasons:

- Because off-line SBSs are designed to operate from a standard 120 volt, 60 Hz sine wave utility source, it may only provide sine wave output to Storage Center when operating normally from the utility line. If they switch to their internal DC-AC inverter, they may not deliver pure sine waves. This action may cause Storage Center to appear as if it is operating normally, but may actually be damaged with long-term use.

NOTE: If you choose an off-line SBS, select one that has an inverter with true sine wave output.

- Most off-line SBS units are not capable of accepting additional battery packs for extended battery operation. These units are designed to prevent overheating and only operate as long as the internal battery capacity allows.

- During a low-voltage condition or *brown-out*, an off-line SBS switches over to battery backup which may become fully discharged and consequently power down Storage Center.

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.

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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.