Dell PowerStore T and Q Models

Networking Guide for Initial Deployment

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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.

Contents

Preface

As part of an improvement effort, revisions of the software and hardware are periodically released. Some functions that are described in this document are not supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information about product features. Contact your service provider if a product does not function properly or does not function as described in this document.

NOTE: PowerStore X model customers: For the latest how-to technical manuals and guides for your model, download the *PowerStore 3.2.x Documentation Set* from the PowerStore Documentation page at dell.com/powerstoredocs.

Where to get help

Support, product, and licensing information can be obtained as follows:

- **Product information**—For product and feature documentation or release notes, go to the PowerStore Documentation page at dell.com/powerstoredocs.
- **Troubleshooting**—For information about products, software updates, licensing, and service go to Dell Support and locate the appropriate product support page.
- **Technical support**—For technical support and service requests, go to Dell Support and locate the **Service Requests** page. To open a service request, you must have a valid support agreement. Contact your Sales Representative for details about obtaining a valid support agreement or to answer any questions about your account.

1

Overview

This chapter includes the following information.

Topics:

PowerStore T and Q model appliances overview

PowerStore T and Q model appliances support Block (Storage Area Network (SAN)), File (Network Attached Storage (NAS)), and Virtual Volume (vVol) workloads with the software stack deployed directly on the bare metal of the system.

PowerStore T and Q models include:

- 500 T
- 1000 T
- 1200 T
- 3000 T
- 3200 T and Q
- 5000 T
- 5200 T
- 7000 T
- 9000 T
- 9200 T

Supporting documentation

The following are additional documents to assist with PowerStore deployment:

- *PowerStore Quick Start Guide*
- *PowerStore Planning Guide*
- *Hardware Information Guide for PowerStore 1000, 1200, 3000, 3200, 5000, 5200, 7000, 9000, and 9200*
- *Hardware Information Guide for PowerStore 500T Model*
- *Installation and Service Guide for PowerStore 1000, 1200, 3000, 3200, 5000, 5200, 7000, 9000, and 9200*
- *Installation and Service Guide for PowerStore 500T Model*

Initial deployment of PowerStore T and Q model appliances

Initial deployment of PowerStore requires that the Management switch and network are configured.

Once the Management switch is configured and connected to the PowerStore nodes, discover the PowerStore appliance and configure the networks in the PowerStore Manager **Initial Configuration Wizard**.

After initial deployment is complete, PowerStore is configured to support Fibre Channel (FC) and NVMe/FC connectivity. Two Top-of-Rack switches are required to support more storage services such as iSCSI or NVMe/TCP host connectivity, replication, import, clustering, or Network Attached Storage (NAS). For details see the *PowerStore T and Q models Networking Guide for Storage Services*.

Supported switches

The planning and requirements sections of this guide prepares for deployment of a PowerStore appliance with any supported switch. The configuration steps provided in this guide, however, are specific steps to deploy PowerStore with Dell PowerSwitch Series S4148-ON switches.

If deploying PowerStore with switches other than S4148-ON switches, see the *PowerStore Simple Support Matrix* available at dell.com/powerstoredocs for details.

2

Prepare to configure the Management switch and networks

This chapter includes the following information.

Topics:

Reserve network resources for initial deployment

Work with a network administrator to complete the following worksheet and reserve the necessary resources for initial deployment of a PowerStore appliance.

For details about the requirements and network resources that are used to deploy a PowerStore appliance see Switch and network requirements for initial deployment.

Once completed, the *Management Network Preparation Worksheet* provides a list of resources that are required to configure the Management switch for initial deployment of a PowerStore appliance.

NOTE: Optionally reserve the necessary resources to configure the Top-of-Rack (ToR) switches for more storage services. For details, see the *PowerStore T and Q Network Guide for Storage Services*.

Table 1. Management Network Preparation Worksheet

Step	Step details	Notes
1.	Print this table to record the reserved resources.	
2.	Print the Initial Configuration Worksheet to record the resources required to create networks in PowerStore the first time you create a cluster.	
3.	Record the Management switch ports to connect to:	
	Node A management 1 GbE port to	
	Node B management 1 GbE port to	
4.	Optionally, record the port on the Management switch to use for remote discovery.	
5.	Record the VLAN ID that is used on the Management switch for:	
	Management and Remote Discovery (same when untagged)	
6.	Reserve and record the IP addresses necessary to configure the switch below:	
	Management IP address for Management switch	
	Default gateway	
	NTP server	
7.	Work with your network administrator to determine the management upstream connections and record:	
	The port on the Management switch that is connected to Management upstream A	
	The port on the Management switch that is connected Management to upstream B	

Table 1. Management Network Preparation Worksheet (continued)

Step	Step details	Notes
	The port channel ID for the Management switch	
8.	Once the above steps are completed, continue to work with your network administrator to complete the *Initial Configuration Worksheet* below to ensure that: • The network configuration on the switch aligns with the network configuration that is done in PowerStore Manager. • The necessary network resources are reserved to complete the initial configuration of PowerStore clusters and PowerStore networks.	
9.	Determine whether to use a direct connection or a remote connection to discover PowerStore. Once PowerStore is successfully discovered, continue through the **Initial Configuration Wizard** to create the first PowerStore cluster.	

For a sample of a completed *Management Network Preparation Worksheet* for Dell PowerSwitch Series see, Example of completed Management Network Preparation Worksheet.

Complete the required fields in the Initial Configuration Worksheet

Once completed the *Initial Configuration Worksheet*, provides a list of resources that are required to run through PowerStore **Initial Configuration Wizard** which must be completed before access to PowerStore Manager is provided.

The **Initial Configuration Wizard** is automatically launched after PowerStore is discovered. The following information is required to run though Initial configuration of PowerStore.

Table 2. Initial Configuration Worksheet (blank)

Initial Login Information			
Use the following default user credentials when you log in to the PowerStore Manager for the first time.			
Default Username	Admin		
Default Password You must enter a new admin password to complete the initial configuration of the PowerStore cluster.	Password 123#	**New Admin Password**	
Cluster Details For resource management, efficiency, and availability purposes, appliances act as a single component that is called a cluster.			
Cluster Name			
Storage Configuration Select either: Unified (Default Block and File Storage) or Block Optimized	Unified		
	Block Optimized		
Appliance Service Tags Enter the service tag. The service tag appears on the black tag on the front of the base enclosure. When the systems arrive identify the base enclosures that you want to configure as a cluster and record their service tags. Drive Failure Tolerance Level			Single Drive Failure or Double Drive Failure
			Single Drive Failure or

Table 2. Initial Configuration Worksheet (blank) (continued)

<table>
<tr><td colspan="4">Initial Login Information</td></tr>
<tr><td rowspan="3">Next to each appliance select the drive failure tolerance level to set. The drive failure tolerance level indicates the number of concurrent drive failures that the appliance can sustain without causing a data unavailable or data loss event. The single drive fault tolerance level meets availability requirements for all drive types and capacity points. But the double drive failure tolerance can provide higher resiliency and protection.

Ensure that there are at least the following number of SSD drives in the enclosure:
● At least six for single drive failure tolerance
● Seven for double drive failure tolerance
NOTE: Once set, the drive failure tolerance level for an appliance cannot be changed.</td><td colspan="2"></td><td>Double Drive Failure</td></tr>
<tr><td colspan="2"></td><td>Single Drive Failure
or
Double Drive Failure</td></tr>
<tr><td colspan="2"></td><td>Single Drive Failure
or
Double Drive Failure</td></tr>
<tr><td colspan="4">Management Network
Your cluster requires a dedicated set of IP addresses for the cluster and Management network.
The Management network Connects the cluster to services such as DNS and NTP. The IP Addresses in the management network are used to address the cluster, appliances, controllers, and internal hosts.</td></tr>
<tr><td colspan="2">Cluster IP Address
(One IP address for each PowerStore cluster.)
This address is used to manage the cluster.</td><td colspan="2"></td></tr>
<tr><td>VLAN (Optional, defaults to untagged)</td><td>Netmask/Prefix Length</td><td>Gateway</td><td>IP Addresses
Three IPs for each PowerStore appliance</td></tr>
<tr><td></td><td></td><td></td><td>Required for Managment Network</td></tr>
<tr><td colspan="4">Infrastructure Services
Record IP addresses for your DNS and NTP servers. It is recommended that you specify at least two addresses for DNS and NTP servers each.</td></tr>
<tr><td colspan="2">DNS Servers</td><td></td><td></td></tr>
<tr><td colspan="2">NTP Servers</td><td></td><td></td></tr>
<tr><td colspan="2">Out-of-Band Management Switch (Management switch) information
You can provide read-only credentials for the switches.</td><td>Management switch 1</td><td>Management switch 2</td></tr>
<tr><td colspan="2">Protocol (SSH/SNMP)</td><td></td><td></td></tr>
<tr><td colspan="2">IP Address</td><td></td><td></td></tr>
<tr><td colspan="2">Port</td><td></td><td></td></tr>
<tr><td colspan="2">User Credentials/Community String</td><td></td><td></td></tr>
<tr><td colspan="4">vCenter Information (Optional)
Record your existing vCenter administrator login credentials. The initial configuration workflow automatically creates a data center and ESXi cluster, and associates them with your cluster.
NOTE: Ensure that the vCenter Server is accessible on the network.</td></tr>
</table>

Table 2. Initial Configuration Worksheet (blank) (continued)

Initial Login Information	
vCenter Server IP Address/Host Name	
vCenter Administrator Username	
vCenter Administrator Password	
PowerStore appliance Admin Credentials Enter the PowerStore appliance administrator credentials for vCenter to access the PowerStore appliance.	
Admin Username	
Password This is the user-defined password that is provided after initial login to the PowerStore appliance.	

For a sample of a completed *Initial Configuration Worksheet* for Dell PowerSwitch Series see, Get your completed Initial Configuration Worksheet.

If adding storage services after initial configuration, see the *PowerStore T and Q Network Guide for Storage Services* to reserve the network resources that are required to configure more storage services.

3

Switch and network requirements for initial deployment

This chapter includes the following information.

Topics:

Management switch connectivity

Deployment with at least one out-of-band management switch is required for all PowerStore deployments.

Node to Management switch connectivity requirements

The Management switch must be connected through the 1 GbE management port on each of the appliance base enclosure nodes as demonstrated in the following diagrams.

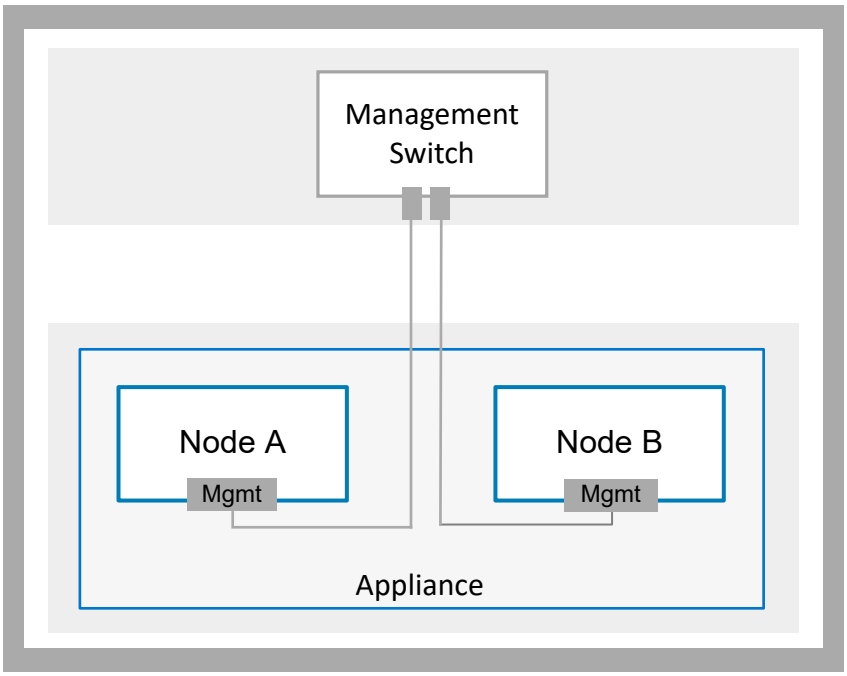


Figure 1. Management switch network topology

NOTE: For remote discovery of PowerStore, the Management switch ports must support untagged native VLAN traffic.

The following diagram shows where the management ports are located on the PowerStore base enclosure nodes.

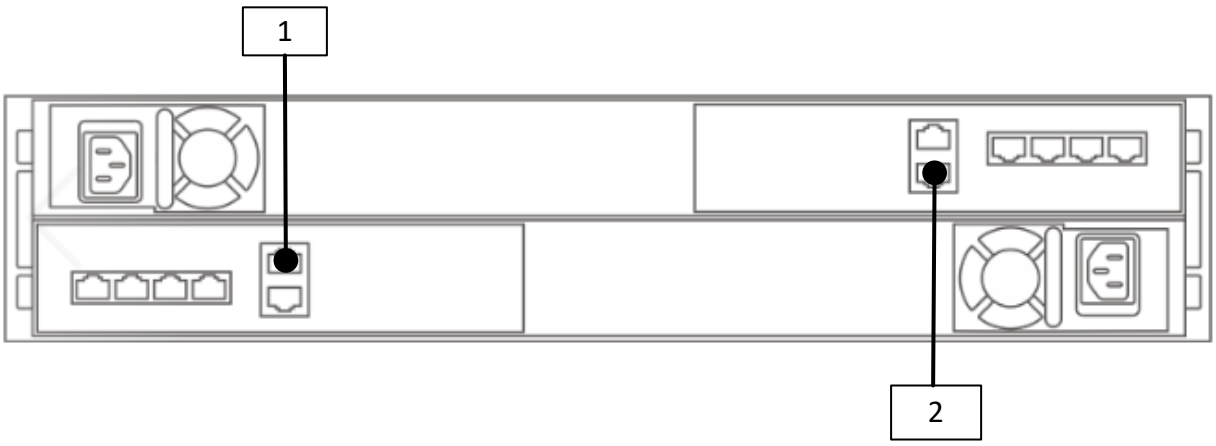


Figure 2. PowerStore base enclosure node management ports

Identifier	Description
1	Node A Management Port
2	Node B Management Port

Management switch with upstream connections

The following image shows an example of a management switch that connects to two Management upstream switches.

NOTE: The following diagram is an example of connectivity to the management upstream switches. Work with your network administrator to configure connectivity to the management upstream switches.

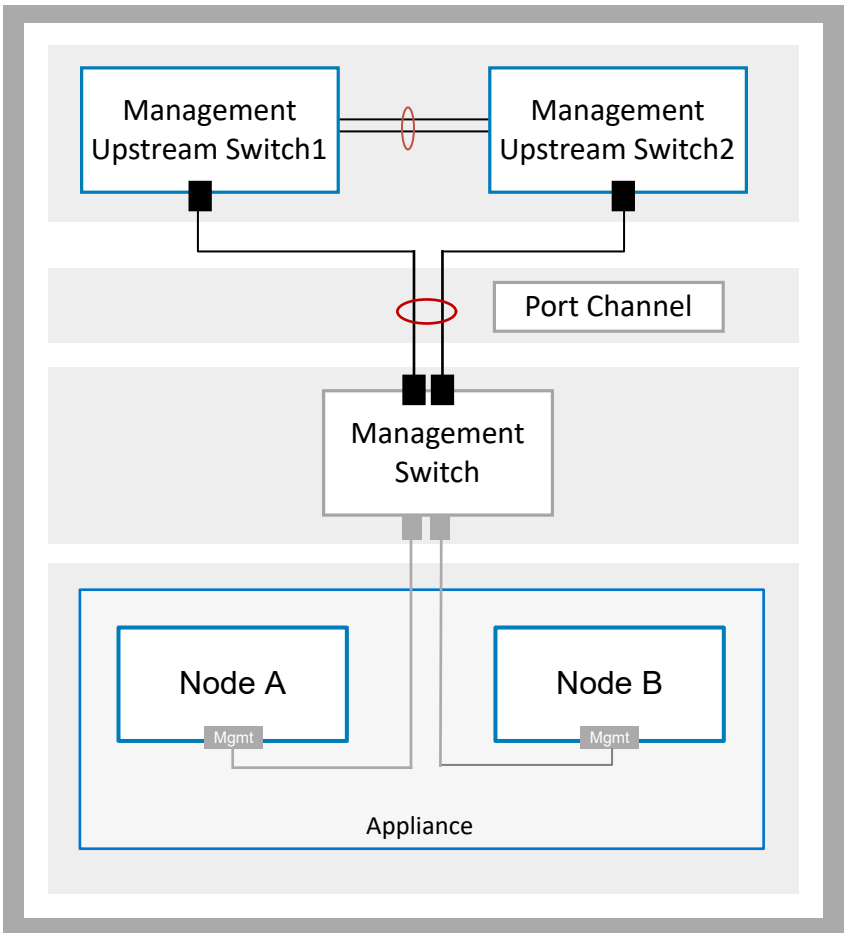


Figure 3. Management switch connectivity to the upstream switches

Types of networks required for initial deployment

PowerStore requires all networks to be unique. It is highly recommended to deploy PowerStore with multiple and unique VLANs to separate the traffic. However, if only one VLAN is available, you can deploy PowerStore with a single VLAN and multiple unique subnets as demonstrated below.

The following networks must be configured on the Management switch for initial deployment.

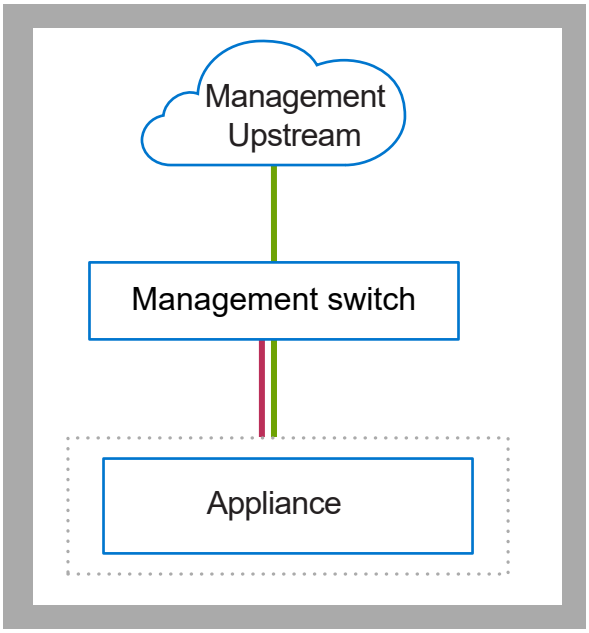


Figure 4. PowerStore logical network traffic

Subnet	Description
	Management network traffic which provides access to: • Infrastructure services such as DNS, NTP, and SMTP • PowerStore REST API, PowerStore Manager, and PowerStore CLI • SupportAssist • VASA provider
	PowerStore automatically generates the remote discovery network which is broadcasted as untagged traffic over the management port. **NOTE:** Remote discovery is optional. You can also discover the PowerStore appliance using a direct connection. For details see: Discovering PowerStore appliances.

All traffic is transported through the Dedicated 1 GbE Management port on the base enclosure nodes.

Ensure that PowerStore can communicate through the subnets that are shown above. Consult your network vendor documents to ensure that all traffic is being routed properly for all networks that PowerStore is using.

VLAN options during initial deployment

The following diagrams show examples of the different VLAN options for initial deployment of PowerStore.

NOTE: This document provides examples for configuring the Management network with untagged VLANs.

Untagged Management VLAN

When the management VLAN is untagged, remote discovery and management of PowerStore runs over the native VLAN.

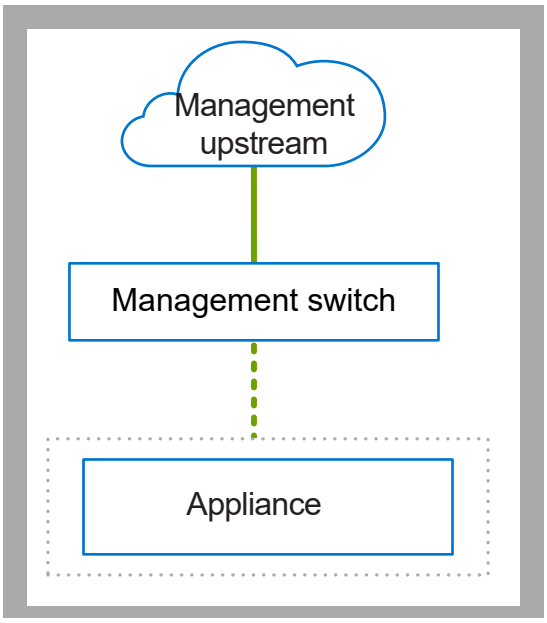


Figure 5. PowerStore networks with the Management VLAN untagged

Identifier	Description	Sample VLAN ID	Subnet
———	Remote discovery	100	169.254.x.x/16
———	PowerStore Management	100	y.y.y/24
- - - - - - -	Untagged Traffic	N/A	N/A
———	Tagged traffic	N/A	N/A

Tagged Management VLAN

When the management VLAN is tagged, remote discovery of PowerStore runs over the native VLAN and the management traffic runs over the tagged VLAN.

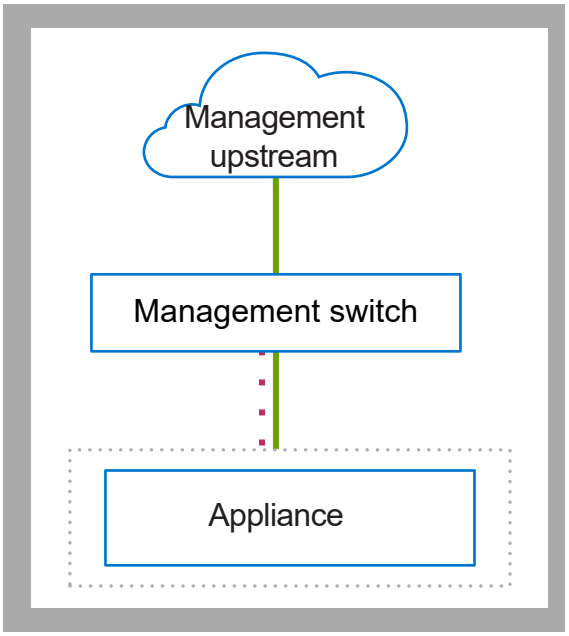


Figure 6. PowerStore networks with the Management VLAN tagged

Identifier	Description	Sample VLAN ID	Subnet
	PowerStore management	100	y.y.y/24
	Remote Discovery	101	169.254.x.x/16
	Untagged Traffic	N/A	N/A
	Tagged traffic	N/A	N/A

IP requirements for initial deployment

Reserved IP addresses are required to configure the networks in the PowerStore Manager, Initial Configuration Wizard (ICW), which runs automatically after PowerStore is discovered.

Management network IP address requirements

Reserve four IP addresses for the management network:

- Three IP addresses per appliance are assigned as follows:
  - One to Node A
  - One to Node B
  - One to the appliance
- One IP per cluster

Optionally, choose to assign either IPv4 or IPv6 addresses to the management network. Different IP versions cannot be assigned to the same network. For example, the four IPs assigned to the management network must all be either IPv4 or IPv6.

For details see the Initial Configuration Worksheet.

NOTE: It is recommended to reserve extra IP addresses to accommodate adding more appliances in the future.

Storage networks

There are no IP requirements for the Storage network during initial configuration. However, IP addresses are required for the Storage networks that are configured after initial configuration in the PowerStore Manager, REST API, or CLI. For details see the *PowerStore T and Q Networking Guide for Storage Services*.

4

Configuring Dell PowerSwitch Series for Initial Deployment

This chapter includes the following information.

Topics:

Configuring with Dell PowerSwitch Series S4148 switches overview

This section describes the steps to deploy PowerStore with a single appliance cluster, with a single base enclosure that is connected to a Dell PowerSwitch Series S4148 Management switch.

If you are configuring PowerStore with third-party switches, see the proprietary documentation for commands and specific details.

Test

Install the Management switch into the cabinet

For instructions to install a Dell PowerSwitch S4148F-ON switch as the Management switch, see the *Dell PowerSwitch S4100-On Series Installation Guide* at: Dell Support.

If you are deploying a PowerStore appliance with another Dell switch, or a third-party switch, see the switch proprietary documentation for commands and specific details to install the switch into the cabinet.

Get your completed Management Network Preparation Worksheet

The *Management Network Preparation Worksheet* below has been completed with the network resources that are used in the configuration examples that are provided in this document.

If you are not configuring your networks with the same resources that are demonstrated in this guide, you can complete a new *Management Network Preparation Worksheet* with the resources that are used in your environment. To access a blank worksheet, see Management Network Preparation Worksheet.

Table 3. Management Network Preparation Worksheet (completed)

Step	Step details	Notes
1.	Print this table to record the reserved resources.	
2.	Print the *Initial Configuration Worksheet* to record the additional network resources you will use to create networks in PowerStore the first time you create a cluster.	

Table 3. Management Network Preparation Worksheet (completed) (continued)

Step	Step details	Notes
3.	Record the Management switch ports to connect to:	
	Node A management 1 GbE port to	**Management switch port 2**
	Node B management 1 GbE port to	**Management switch port 53**
4.	Optionally, record the port on the Management switch to use for remote discovery.	**Management switch port 1**
5.	Record the VLAN IDs that can be used on the Management switch:	
	Management and Remote Discovery (same when untagged)	**100**
6.	Reserve and record the IP addresses necessary to configure the switch below:	
	Management IP address for Management switch	**100.0.100.50/24**
	Default gateway	**100.0.100.1**
	NTP server	**100.0.100.200**
7.	Work with your network administrator to determine the management upstream connections and record:	
	The port on the Management switch connected to Management upstream A	**Management switch port 25**
	The port on the Management switch connected Management to upstream B	**Management switch port 26**
	The port channel ID for the Management switch	**port channel 10**
8.	Once you complete steps above, you have the necessary information to configure the switches. Continue to work with your network administrator to complete the *Initial Configuration Worksheet* now to ensure that: • Your network configuration on the switch aligns with the network configuration that will be done in PowerStore. • You reserve the necessary network resources to complete the initial configuration of the PowerStore appliance.	
9.	Determine if you will use a direct connection or a remote connection to discover your PowerStore. Once you have successfully discovered your PowerStore, you are guided through the **Initial Configuration Wizard** to create your first PowerStore cluster.	

Steps to configure the Management switch for initial deployment

Initial deployment requires a minimum of one Management switch.

This document describes the steps to deploy PowerStore with a single appliance cluster with a single base enclosure that is connected to a Dell PowerSwitch Series S4148 Management switch.

Steps to configure the Management switch include:

1. Establish a terminal session to the Management switch.
2. Validate the switch version and licensing.
3. Configure the Management switch.
4. If you have not done so already, cable the Management switch to the base enclosure nodes.

Once you have configured and cabled the Management switch to the base enclosure nodes, validate the configuration before discovering the PowerStore appliance. For validation options see: Validate the Management switch configuration.

Establish a terminal session to the switch

Perform the following steps to establish a terminal session to the serial console port on the Dell PowerSwitch Series S4148 switch.

These steps are specific to establishing connections to Dell PowerSwitch S4148-ON switches.

For console serial port cable requirements, and further details see the *Dell PowerSwitch S4100-ON Series Installation Guide* at the Dell PowerSwitch Support page.

You must establish a terminal session to each of the switches to configure the switches for deployment.

1. Power on the switch.
2. Use a serial cable to connect to the serial console port, which is the top port that is on the PSU-side of the PowerSwitch.

Identifier	Description
1	Serial Port
2	Management Port

3. Open a terminal emulator program, such as PuTTY, on the host.
4. Configure the serial connection in the terminal emulator program using the following settings.

Table 4. Serial connection settings

Setting	Value
Speed(baud)	115200 (9600 for micro-USB port)
Data bits	8
Stop bits	1
Parity	None
Flow control	None

5. Connect to the switch using the terminal emulator program.
6. Enter the switch login credentials. The default username and password are:
   - Username: **admin**
   - Password: **admin**
7. Enter global configuration mode.

```
configure terminal
```

8. It is recommended that you change the password after logging into the switch for the first time. Use the following command to change the switch password.

```
username admin password <NEW_PASSWORD> role sysadmin
```

Validate the switch version and licensing

Before you configure the switch and networks, check the switch operating system version and licensing.

If you are required to upgrade your switch operating system, or install the switch license see the *OS10 Enterprise Edition User Guide* for details.

1. Establish a terminal connection to the switch and press the **Enter** key after you have connected.
2. Run the command `show version` to display the operating system version. Dell Technologies recommends upgrading to the latest release available on Dell Digital Locker (dell.com/support/software/).

```
OS10# show version
Dell Networking OS10-Enterprise
Copyright (c) 1999-2018 by Dell Inc. All Rights Reserved.
OS Version: 10.5.x.x
Build Version: 10.5.x.x.x
Build Time: 2018-09-26T17:20:01-0700
System Type: S4148F-ON
Architecture: x86_64
Up Time: 2 weeks 04:34:35
```

3. Verify that the license was installed on the switches.

   Run the command `show license status` to display the license installation. The `License Type:` field should indicate `PERPETUAL`. If an evaluation license is installed, licenses purchased from Dell Technologies are available for download on Dell Digital Locker (dell.com/support/software/).

```
OS10# show license status

System Information
---------------------------------------------------------
Vendor Name : Dell
Product Name : S4148F-ON
Hardware Version: A00
Platform Name : x86_64-dellemc_s4100_c2538-r0
PPID : CN00Y2VTCES0082O0038
Service Tag : D8MSG02
License Details
----------------
Software : OS10-Enterprise
Version : 10.5.x.x
License Type : PERPETUAL
License Duration: Unlimited
License Status : Active
License location: /mnt/license/D8MSG02.lic
---------------------------------------------------------
```

   NOTE: If OS10EE was preinstalled, a perpetual license is already installed on the switch.

4. Repeat the steps for each switch.

Configure the Management switch

When deploying PowerStore, perform the following steps to configure the out-of-band (OOB) management switch settings.

Each Management switch must have the following ports available to connect to PowerStore:

- Two ports for connectivity to the Management Uplink switch
- Two ports to connect to PowerStore
- Optional, one port for remote discovery

1. Establish a terminal connection to the switch.
2. Enter global configuration mode.

```
configure terminal
```

3. Configure a hostname for the switch.

```
hostname powerStoreMgmtSwitch
```

4. Create a management VLAN.

```
interface vlan 100
description managementNetwork
no shutdown
exit
```

5. If performing remote discovery, optionally configure an Ethernet interface on the switch for the remote discovery workstation.

```
interface ethernet 1/1/1
description discoveryWorkstation
switchport access vlan 100
no shutdown
exit
```

6. Configure the management IP address for the switch.

NOTE: The following command sample assumes the automatic IP assignment through Dynamic Host Configuration Protocol (DHCP) is enabled on the switch. If automatic IP assignment through DHCP is not enabled, then do not include `no ip address dhcp` in the commands below.

```
interface mgmt 1/1/1
no shutdown
no ip address dhcp
ip address 100.0.100.50/24
exit
```

7. Configure the management route (default gateway) for the switch.

```
management route 0.0.0.0/0 100.0.100.1
exit
```

8. Configure an NTP server for the switch.

```
ntp server 100.0.100.200
exit
```

9. Configure Ethernet ports on the switch that connect to the PowerStore management ports.

```
interface ethernet 1/1/2
description "PowerStoreNodeA_MgmtPort"
no shutdown
switchport mode access
switchport access vlan 100
exit

interface ethernet 1/1/53
description "PowerStoreNodeB_MgmtPort"
no shutdown
switchport mode access
switchport access vlan 100
exit
```

10. Create the port channel for the uplinks.

```
interface port-channel 10
description Uplink
no shutdown
switchport mode trunk
switchport access vlan 1
switchport trunk allowed vlan 100
```

```
exit

interface ethernet 1/1/25
description Uplink_Ports
no shutdown
channel-group 10 mode active
no switchport
flowcontrol receive off
flowcontrol transmit off
exit

interface ethernet 1/1/26
description Uplink_Ports
no shutdown
channel-group 10 mode active
no switchport
flowcontrol receive off
flowcontrol transmit off
exit
```

Cable the Management switch

Cable the Management switch to the appliance base enclosure nodes and the management uplink.

Examples in this guide demonstrate deploying the PowerStore appliance with Dell PowerSwitch S4148-ON switches.

Cable the management ports on the nodes to the Management switch

The Management switch is connected through the 1 GbE management port on each of the appliance base enclosure nodes.

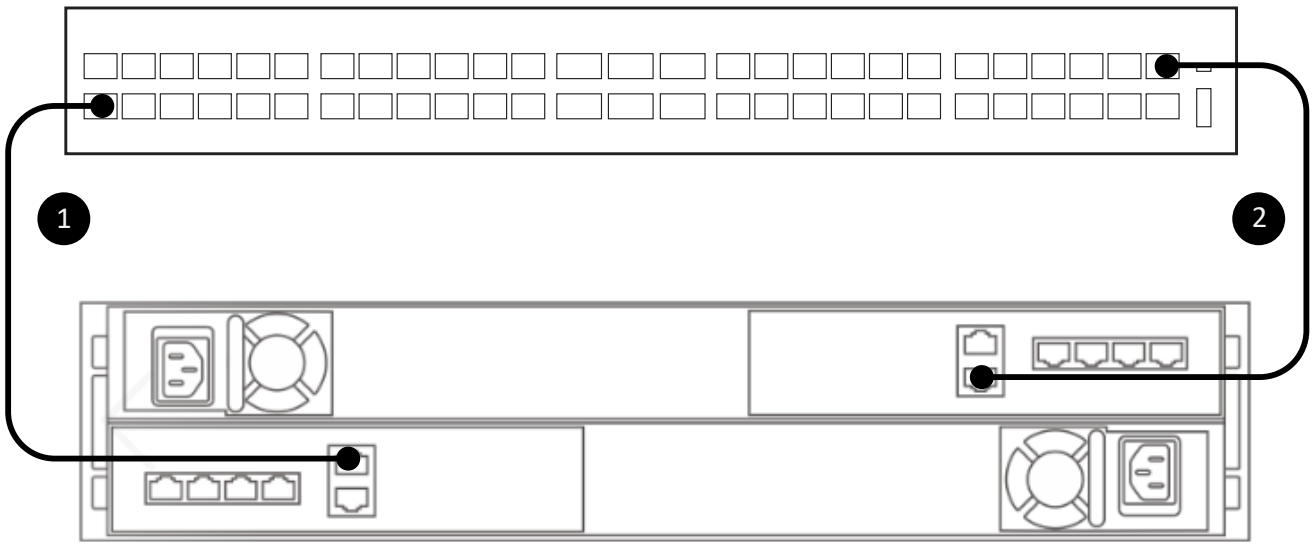


Figure 7. Base enclosure appliance connection to the Management switch

1	Connect the management 1 GbE port of the bottom node (A) to port 2 of the Management switch.
2	Connect the management 1 GbE port of the top node (B) to port 53 of the Management switch.

Cable the Management switch to the management uplink

The Management switch must also be cabled to the management uplink. Work with your network administrator to configure connectivity to the management upstream switches.

NOTE: The following diagram is an example of connectivity to the management upstream switches.

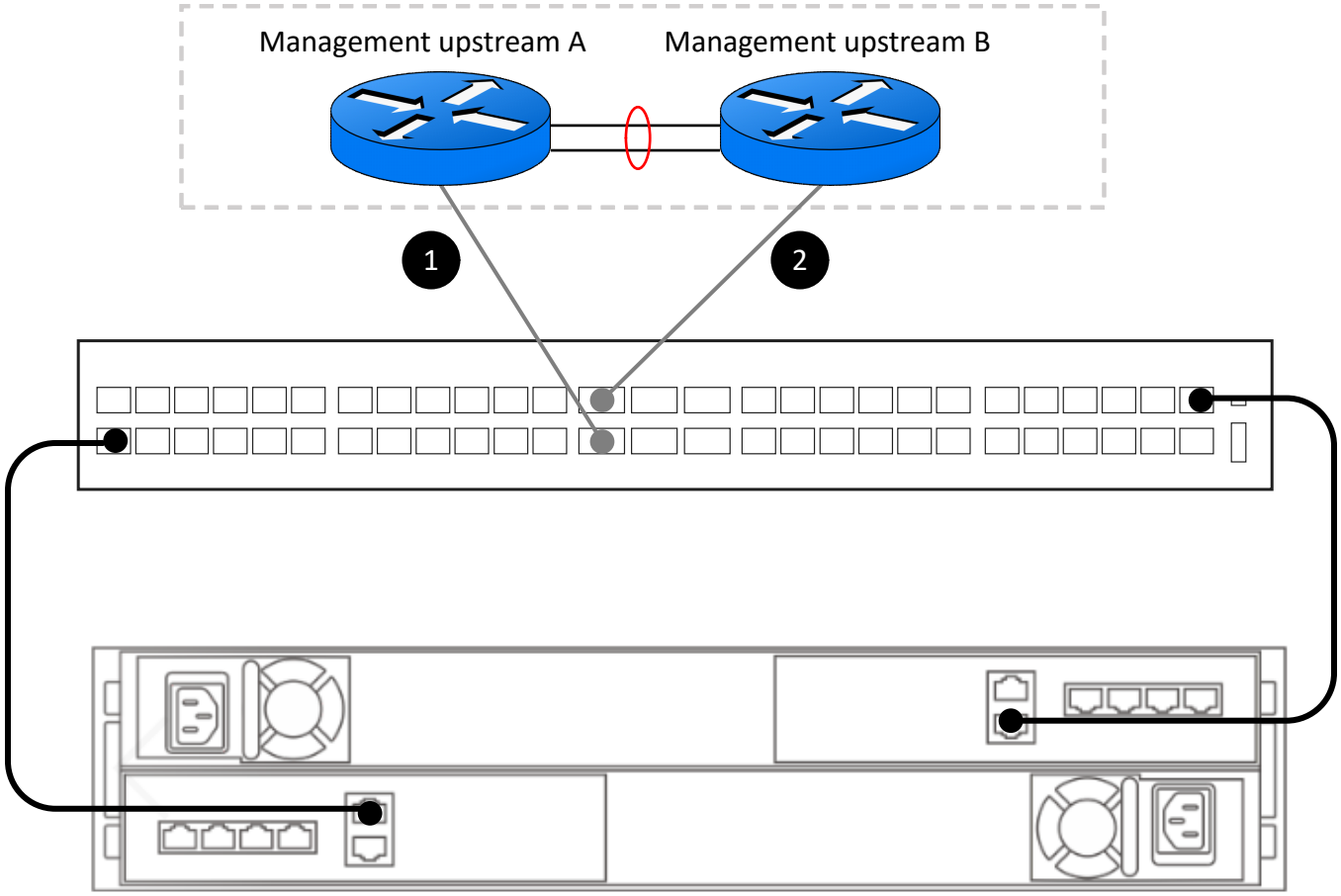


Figure 8. Management switch connection to management upstream switches

1	Connect Management switch port 25 to the Management Upstream A. .
2	Connect Management switch port 26 to the Management Upstream B.

Validate the configuration on the Management switch

After you have configured the Management switch, and cabled the switches to your PowerStore nodes, validate the switch configuration before discovering PowerStore.

1. Establish a terminal session to the switch.
2. Validate the interface status.

```
show interface status | grep up
```

```
Port            Description     Status   Speed    Duplex   Mode Vlan Tagged-Vlans
Eth 1/1/1       discoveryWork.. up       1000M    full     A    100  -
Eth 1/1/2       PowerStoreNod.. up       1000M    full     A    100  -
Eth 1/1/25      Uplink_Ports    up       100G     full     -
```

```
Eth 1/1/26      Uplink_Ports    up       100G     full     -
Eth 1/1/53      PowerStoreNod.. up       1000M    full     A    100  -
```

3. Validate the port channel configuration.

```
show port-channel summary
```

```
Flags:  D - Down    I - member up but inactive    P - member up and active
        U - Up (port-channel)    F - Fallback Activated
--------------------------------------------------------------------------------
Group Port-Channel           Type     Protocol  Member Ports
--------------------------------------------------------------------------------
10   port-channel10   (U)     Eth      DYNAMIC   1/1/25(P) 1/1/26(P)
```

4. Validate the VLAN configuration

```
show vlan
```

```
Codes: * - Default VLAN, M - Management VLAN, R - Remote Port Mirroring VLANs
Q: A - Access (Untagged), T - Tagged
    NUM    Status    Description                    Q Ports
    1      Active                                   A
Eth1/1/3-1/1/24,1/1/29-1/1/52,1/1/54
                                                    A Po10
    100    Active    managementNetwork              T Po10
                                                    A Eth1/1/1-1/1/2,1/1/53
```

5. Validate the link layer discovery protocol (LLDP) configuration

```
show lldp neighbors
```

```
Loc PortID          Rem Host Name        Rem Port Id                    Rem Chassis Id
--------------------------------------------------------------------------------------
ethernet1/1/1       Not Advertised       a0:36:9f:d4:fb:2e
a0:36:9f:d4:fb:2e
ethernet1/1/2       Dell PowerStore  00:60:16:9d:02:5c            cyc-coreos
ethernet1/1/25      MGMT-01                ethernet1/1/31
68:4f:64:68:c7:1d
ethernet1/1/26      MGMT-02              ethernet1/1/31
68:4f:64:58:9f:a5
ethernet1/1/53      Dell PowerStore  00:60:16:9e:e6:2c            cyc-coreos
mgmt1/1/1           MGMT-01              ethernet1/1/41
68:4f:64:68:c7:1d
```

6. Review the running configuration for the Management switch.

```
 show running-configuration
```

For an example of the running configuration output see Running configuration of PowerSwitch Series used in PowerStore deployments.

5

Discovering PowerStore Appliances

This appendix contains the following information.

Topics:

Discovery with a direct connection

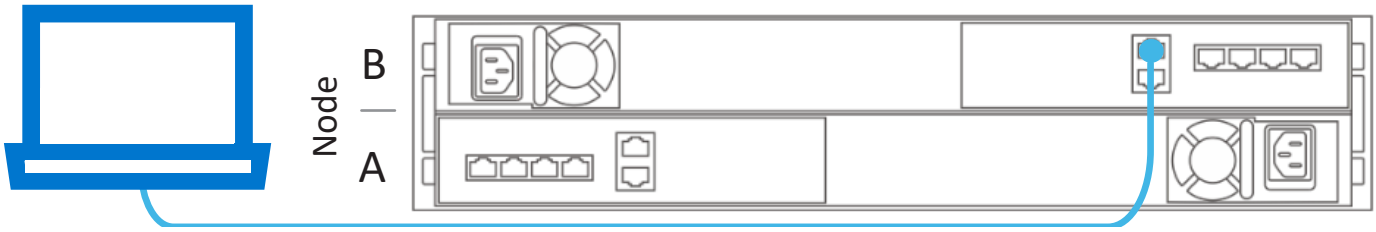
It is recommended that PowerStore be discovered with a direct connection. A direct connection requires that the workstation is in the same physical location as the base enclosure.

Ensure that the Network adapter on the workstation is configured as follows:

- Connected directly to the PowerStore service port on Node B.
- Configured with a static IP address on the service LAN port (128.221.1.0/24) with no gateway address defined (128.221.1.249; 255.255.255.0; no gateway).
- Able to ping the IP address of the service LAN port (128.221.1.251) on Node B.

1. Connect your workstation or laptop to the service port on Node B of the enclosure.

   NOTE: This procedure only applies when physically present in the data center. If there is no direct access to the base enclosure, skip these steps and see Discovery with remote connection.



2. In a web browser, enter one of the following:

Internet Protocol (IP) version	Use
IPv4	https://128.221.1.251
IPv6*	https://[fd3c:1080:221:1::fb]

   *Discovery with IPv6 is only supported on PowerStoreOS versions 4.1 and later.

3. Connect to PowerStore Manager and begin the initial configuration process using the following default credentials:
   - Username: admin
   - Default password: Password123#

Discovery with a remote connection

When there is no direct access to the base enclosure, discover PowerStore systems remotely using a static IP.

Review the following before discovering with one of the static IP addresses reserved for PowerStore discovery.

- Connect your workstation or virtual machine directly to the same switch that the base enclosure is cabled to or is on the same VLAN as the native or untagged network of the PowerStore management network connection:

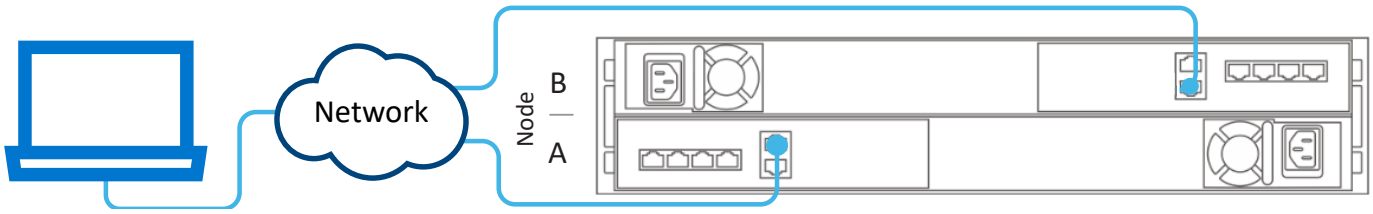


Figure 9. PowerStore connectivity for remote discovery

- Create a second network interface controller that uses the same native or untagged network as the PowerStore management network connection.
- Verify whether there is an IP address starting with 169.254.0.x/16 subnet setup available to use as the IP address of the second network interface controller. If such an IP address is not available, set the IP address of the second network interface controller to 169.254.1.2 with netmask 255.255.0.0 and no gateway address defined. This address cannot be overwritten by any other address ranges (whether DHCP or static IP addresses are used).

  NOTE: To avoid duplicate IP addresses, ensure that there is only one laptop or virtual machine in the same native or untagged network with the 169.254.x.x IP address.

1. From your workstation or virtual machine, open a web browser, and enter one of the IP addresses reserved for PowerStore discovery.
   - http://169.254.0.10
   - http://169.254.0.20
   - http://169.254.0.30
   - http://169.254.0.40
   - http://169.254.0.50
2. Log in to PowerStore Manager and begin the initial configuration process using the following default credentials:
   - Username: admin
   - Default password: Password123#

6

Initial configuration of the PowerStore appliance

This chapter includes the following information.

Topics:

Initial Configuration Wizard

Once you have discovered the PowerStore appliance, you are redirected to the **Initial Configuration Wizard** (ICW) to configure the networks for the PowerStore cluster.

The **Initial Configuration Wizard** (ICW) prompts you to enter the necessary network information for the initial configuration of the PowerStore appliance.

See your completed Initial Configuration Worksheet while running through the ICW. The **Initial Configuration Worksheet** should have been completed with the information that is required to complete initial deployment of the PowerStore appliance.

Note the following while you are running through the **ICW**.

Table 5. Prepare to run through the Initial Configuration Wizard (ICW)

Fields	Description
Login credentials	Use the default username and password the first time you log in to PowerStore. However, you must change the admin password before you can continue through the **Initial Configuration Wizard** (ICW). Be sure to note down the new admin password you have entered for the cluster in the completed Initial Configuration Worksheet. A sample of this password has not been provided.
Cluster Details	Select: • **Block-optimized** for Fibre Channel only deployments with the option of adding services after initial configuration such as iSCSI or NVMe/TCP host connectivity, Replication, Block import, and Clustering. • **Unified** is the default selection. With a Unified deployment, you have the option of adding any of the Block-optimized options, Network Attached Storage (NAS) services, and File Mobility. If you do not select **Unified** now, you must contact your service provider before you can add NAS services in the future.
Management network	Tagging the Native VLAN requires that the physical switch is configured to accept the tagged VLAN ID. If no VLAN ID is specified during initial configuration of a cluster, the network traffic will be sent as untagged. When the traffic is untagged, the physical switch will apply the Native VLAN to the traffic. If you want to use the native VLAN for any of your PowerStore networks, do not check the Use VLAN Tagging field in the PowerStore **Initial Configuration Wizard**. When the network traffic is not tagged (based on the 802.1q standard) the network takes on the native VLAN. The traffic on that network is passed as untagged in PowerStore, and the Native VLAN is applied to the untagged traffic through the switch.
vCenter Information	PowerStore clusters use a specific implementation of virtualization concepts that are based in a VMware vSphere framework. PowerStore appliances are designed to be integrated with VMware vSphere. These integrations include: • vCenter Server • Virtual machines • Virtual volumes

Table 5. Prepare to run through the Initial Configuration Wizard (ICW) (continued)

Fields	Description
	• Protocol Endpoints • VASA provider • Storage containers • Storage Policy Based Management For details see PowerStore Virtualization Infrastructure Guide.

Get your completed Initial Configuration Worksheet

You should have worked with your network administrator to complete the Initial Configuration Worksheet.

The following worksheet has been completed with the resources that are configured on the Dell PowerSwitch Series S4148-ON Top-of-Rack switches. If configuring the environment with alternative network resources, complete the blank worksheet available in this guide at Initial Configuration Worksheet (blank).

Also, be sure to note down the admin password that you defined for the cluster in the completed **Initial Configuration Worksheet** below. A sample of a user-defined password is not provided.

Table 6. Initial Configuration Worksheet (completed)

Initial Login Information			
Use the following default user credentials when you log in to the PowerStore Manager for the first time.			
Default Username	Admin		
Default Password You must enter a new admin password to complete the initial configuration of a PowerStore Manager cluster.	Password123#	**New Admin Password**	
Cluster Details For resource management, efficiency, and availability purposes, appliances act as a single component that is called a cluster.			
Cluster Name	**`PowerStoreTCluster`**		
Storage Configuration Select either: Unified (Default Block and File Storage) or Block Optimized	**`Unified`** If deploying into a single VLAN, ensure to configure a unique subnet for each type of network.		
	Block Optimized		
Appliance Service Tags Enter the service tag. The service tag appears on the black tag on the front of the base enclosure. When the systems arrive identify the base enclosures to configure as a cluster and record their service tags. Drive Failure Tolerance Level Next to each appliance select the drive failure tolerance level to set. The drive failure tolerance level indicates the number of concurrent drive failures that the appliance can sustain without causing a data unavailable or data loss event. The single drive fault tolerance level meets availability requirements for all drive types and capacity points. But the double drive failure tolerance can provide higher resiliency and protection.	**`CNR42W2`**	**`Single Drive Failure`** Or Double Drive Failure	
	N/A	Single Drive Failure Or Double Drive Failure	
	N/A	Single Drive Failure Or Double Drive Failure	
	N/A	Single Drive Failure Or	

Table 6. Initial Configuration Worksheet (completed) (continued)

Initial Login Information			
Ensure that there are at least the following number of SSD drives in the enclosure: • At least six for single drive failure tolerance • Seven for double drive failure tolerance **NOTE:** Once set, the drive failure tolerance level for an appliance cannot be changed.			Double Drive Failure
Management Network Your cluster requires a dedicated set of IP addresses for the cluster and Management network. The Management network Connects the cluster to services such as DNS and NTP. The IP Addresses in the management network are used to address the cluster, appliances, controllers, and internal hosts.			
Cluster IP Address (One IP address for each PowerStore cluster) This address is used to manage the cluster.		`192.168.1.10`	
VLAN ID(Optional, defaults to untagged)	**Netmask/Prefix Length**	**Gateway**	**IP Addresses** Required: Three IPs for each PowerStore appliance
`Untagged`	`255.255.255.0/24`	`192.168.1.1`	**Required for Managment Network**`192.168.1.11-13`
Infrastructure Services Record IP addresses for your DNS and NTP servers. It is recommended to specify at least two addresses for DNS and NTP servers each.			
DNS Server		`100.0.100.200`	`100.0.100.201`
NTP Server		`100.0.100.200`	`100.0.100.201`
Out-of-Band Management Switch (Management switch) information You can provide read-only credentials for the switches.		`MgmtSwitch`	N/A
Protocol (SSH/SNMP)		`SSH`	N/A
IP Address		`100.0.100.50`	N/A
Port		`22`	N/A
SSH Username		`admin`	N/A
Switch Password		`Password123!`	N/A
vCenter Information (Optional) Record your existing vCenter administrator login credentials. The initial configuration workflow automatically creates a data center and ESXi cluster, and associates them with your cluster. **NOTE:** Ensure that the vCenter Server is accessible on the network.			
vCenter Server IP Address/Host Name		N/A	
vCenter Administrator Username		N/A	

Table 6. Initial Configuration Worksheet (completed) (continued)

Initial Login Information	
vCenter Administrator Password	N/A
PowerStore appliance Admin Credentials Enter the PowerStore appliance administrator credentials for vCenter to access the PowerStore appliance.	
Admin Username	N/A
Password This is the user-defined password that is provided after initial login to the PowerStore appliance.	N/A

A

Switch worksheets for deploying with Storage Services

This appendix contains the following information.

Topics:

Switch resources for Storage services worksheet

Work with your network administrator to complete the *Switch Resources for Storage services Worksheet* and reserve the necessary resources to configure the two Top-of-Rack (ToR) switches required for Storage services.

For a sample of a completed *Switch Resources for Storage services Worksheet* for Dell PowerSwitch Series, see the *PowerStore T and Q Networking Guide for Storage Services*.

NOTE: This section assumes initial deployment of PowerStore has been completed, and the Management switch and network have been successfully configured.

Optionally, work with a network administrator to complete the *Network configuration worksheet for Storage services* in the following section, to reserve the necessary resources to create the Storage networks in PowerStore Manager.

Network configuration worksheet for Storage services

You must reserve the following resources to create Storage networks in PowerStore Manager.

Network requirements to create Block-optimized storage networks in PowerStore Manager

The following resources and information are required for each iSCSI, NVMe/TCP, and Replication network you create in PowerStore Manager.

Table 7. Network configuration worksheet for additional Block-optimized storage services (blank)

Resource	iSCSI	NVMe/TCP	Replication and Block Import
Storage Network Name			
Purpose A storage network can be purposed for iSCSI, NVMe/TCP, Replication (and Block Import), or a combination of all three protocols.			
(Optional) VLAN ID			

Table 7. Network configuration worksheet for additional Block-optimized storage services (blank) (continued)

Resource	iSCSI	NVMe/TCP	Replication and Block Import
For better security and performance, it is recommended that you specify a unique VLAN ID for each type of network. If you are deploying into a single VLAN, ensure that you configure a unique subnet for the Management and each Storage network. Use the same VLAN IDs that were used to configure your Storage networks on the switch.			
Netmask/Prefix Length			
Gateway			
Storage Network IP addresses You must reserve a minimum of two IP addresses for each Storage network you are adding. (One IP address per node.)			
(Optional) Global Storage Discovery IP It is recommended that you choose to create this IP address. It is used as the single highly available floating IP address for hosts to discover storage from your cluster.			
Map Storage for Appliance/ Network Interface (Include the port or Link Aggregation (LACP bond) for each appliance to which the storage is mapped).			

Network requirements to create NAS server networks in PowerStore Manager

The following resources and information are required for each NAS server network that you create in PowerStore Manager.

Table 8. Network configuration worksheet for NAS storage service (blank)

Resource	NAS
Network Name	
(Optional) VLAN ID For better security and performance, it is recommended that you specify a unique VLAN ID for each type of network. If you are deploying into a single VLAN, ensure that you configure a unique subnet for the Management, Storage, and NAS networks. Use the same VLAN IDs that were used to configure your storage networks on the switch.	

Table 8. Network configuration worksheet for NAS storage service (blank) (continued)

Resource	NAS
Netmask/Prefix Length	
Gateway	
Network IP addresses You must reserve a minimum of one IP address for NAS Server production. Optionally, you can reserve additional IP addresses for NAS Server backups.	
Map Storage for Appliance/Network Interface Include the Node ports, or port channel on which the networks are configured.	
If configuring a Fail-Safe Network, record the following information. **NOTE:** You must define the port or link aggregation for Node A. The same port or link aggregation is automatically created on Node B.	
Primary port or Link Aggregation to include in the FSN.	
Secondary port or Link Aggregation to include in the FSN.	

Network requirements to create File Import networks in PowerStore Manager

The following resources and information are required for each NAS server network that you create in PowerStore Manager.

NOTE: File import requires that a File Mobility network is created in PowerStore Manager. For details, see the *PowerStore Networking Guide for Storage Services*.

Table 9. Network configuration worksheet for File Import (blank)

Resource	File Import
(Optional) VLAN ID	
Netmask/Prefix Length	
Gateway	
Network IP addresses A minimum of One IP address is required for each active file import session. However, a File Import interface can be reused for File Import when no other session is using it.	
(Optional) Global Storage Discovery IP It is recommended that you choose to create this IP address. It is used as the single highly available floating IP address for hosts to discover storage from your cluster.	
Map Storage for Appliance/Network Interface Include the Node ports, or port channel on which the networks are configured.	

B

Other Dell PowerSwitch Series configuration operations

This appendix contains the following information.

Topics:

Dell SmartFabric Services

Dell SmartFabric Services enable an end to end automated fabric with up to 98% of the tasks automated offering simplicity and agility towards day-two network operations for cluster and network expansion. The single pane of management with vCenter allows users to operate and perform life cycle management of one or more fabrics from within vCenter.

If you are interested in applying Dell SmartFabric services to your PowerStore networks deployment, see the following documents for more information:

- Dell SmartFabric Services with Dell PowerStore Reference Architecture Guide
- PowerStore: Configuring SmartFabric for a PowerStore environment

You can also see SolVe Online for steps to configure the Top-of-Rack switches using SmartFabric.

Dell SmartFabric Storage Software

Dell SmartFabric Storage Software (SFSS) automates storage connectivity for your NVMe IP Storage Area Network (SAN). It allows host and storage interfaces to register with a Centralized Discovery Controller, enables storage administrators to create and activate zoning configurations and then automatically notifies hosts of new storage resources. Hosts automatically connect to these storage resources. For more information, see the *Dell SmartFabric Storage Software Deployment Guide*.

Reset the switch to factory settings

If necessary, you can reset the Dell PowerSwitch Series S4148-ON switches to the default factory settings.

NOTE: If you reset the switch, all the existing configuration is lost, and if the switch is being used, there is a disruption in traffic.

When a Dell PowerSwitch Series S4148-ON switch is reset to the factory default settings:

- Telnet is disabled.
- SSH is enabled.
- DHCP is enabled.
- The default switch username and password are both `admin`.

NOTE: Dell Technologies recommends changing the admin password during the first login.

```
OS10# delete startup-configuration
Proceed to delete startup-configuration [confirm yes/no(default)]:y

OS10# reload
```

```
System configuration has been modified. Save? [yes/no]:n
Proceed to reboot the system? [confirm yes/no]:y
```

Running configuration of PowerSwitch Series used in PowerStore deployments

Use the following command to generate a running configuration file when Dell PowerSwitch Series S4148 switches are used for the Management and Top-of-Rack (ToR) switches:

```
 show running-configuration
```

Example of running configuration for the Management switch

```
! Version 10.5.x.x
! Last configuration change at Mar  19 04:19:20 2020
!
snmp-server contact http://www.dell.com/support
hostname powerstoreMgmtSwitch
interface breakout 1/1/25 map 100g-1x
interface breakout 1/1/26 map 100g-1x
interface breakout 1/1/29 map 100g-1x
interface breakout 1/1/30 map 100g-1x
username admin password
$6$rounds=656000$.zmPnShW0cq6sTTl$8VG.h5byJqnohgTkw3Vhn5yAU7SKQtpOLOaaYmcxEXiDLWw4jOma/
Di/1dEJQlYStbN.fbwrsTltlX8hdwQlG. role sysadmin
ntp server 100.0.100.200
iscsi enable
iscsi target port 860
iscsi target port 3260
aaa authentication login default local
aaa authentication login console local
!
class-map type application class-iscsi
!
policy-map type application policy-iscsi
!
interface vlan1
 no shutdown
!
interface vlan100
 description managementNetwork
 no shutdown
!
interface port-channel10
 description Uplink
 no shutdown
 switchport mode trunk
 switchport access vlan 1
 switchport trunk allowed vlan 100
!
interface ethernet1/1/1
 description discoveryWorkstation
 no shutdown
 switchport access vlan 100
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/2
 description PowerStoreNodeA_MgmtPort
 no shutdown
 switchport access vlan 100
 flowcontrol receive off
 flowcontrol transmit off
!
```

```
interface ethernet1/1/3
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/4
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/5
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/6
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/7
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/8
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/9
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/10
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/11
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/12
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/13
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/14
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/15
```

```
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/16
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/17
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/18
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/19
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/20
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/21
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/22
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/23
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/24
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/25
 description Uplink
 no shutdown
 channel-group 10 mode active
 no switchport
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/26
 description Uplink
 no shutdown
 channel-group 10 mode active
 no switchport
 flowcontrol receive off
```

```
 flowcontrol transmit off
!
interface ethernet1/1/29
 no shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/30
 no shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/31
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/32
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/33
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/34
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/35
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/36
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/37
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/38
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/39
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/40
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
```

```
!
interface ethernet1/1/41
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/42
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/43
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/44
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/45
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/46
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/47
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/48
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/49
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/50
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/51
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/52
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
```

```
interface ethernet1/1/53
 description PowerStoreNodeB_MgmtPort
 no shutdown
 switchport access vlan 100
 flowcontrol receive off
 flowcontrol transmit off
!
interface ethernet1/1/54
 shutdown
 switchport access vlan 1
 flowcontrol receive off
 flowcontrol transmit off
!
interface mgmt1/1/1
 no shutdown
 no ip address dhcp
 ip address 100.0.100.50/24
 ipv6 address autoconfig
!
management route 0.0.0.0/0 100.0.100.1
!
support-assist
```