

Cisco Nexus 9504

Switch Configuration Guide for Dell EMC SC Series and Dell PS Series SANs

[Abstract](#)

This document illustrates how to configure the Cisco® Nexus® 9504 chassis with Dell EMC™ SC Series or Dell PS Series storage using Dell EMC best practices.

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Revisions

Date	Description
June 2016	Initial release
July 2018	Combined steps for PS Series and SC Series storage

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1 Introduction

This document illustrates how to configure a Cisco® Nexus® 9504 chassis for use with Dell EMC™ SC Series or Dell™ PS Series storage using Dell EMC best practices. The recommended configuration when using a single chassis is to configure two I/O modules.

1.1 Document conventions

Table 1 lists the formatting conventions used in this document.

Table 1 Document conventions

Item	Convention	Example
Code samples	Monospace	System configuration has been modified.
Parameters	Italic	Dell(<i>profile-name</i>)#
Command-line commands	Bold	OS# show version
Command-line user-supplied variables	Bold, italic, brackets	< <i>vlan-id</i> >

1.2 Audience

This switch configuration guide describes an optimal configuration following Dell EMC best practices for an SC Series or PS Series iSCSI SAN and is intended for storage or network administrators and deployment personnel.

1.3 Switch details

Table 2 provides an overview of the switch configuration.

Table 2 Switch specifications

Cisco Nexus 9504	
Switch vendor	Cisco
Switch model	Nexus 9504
Switch NX-OS	7.0(3)11(2)

Note: For proper functionality, the switch must be at the NX-OS version shown in Table 2 before proceeding with this configuration. Using previous NX-OS versions may have unpredictable results.

Note: The latest NX-OS updates and documentation can be found at: www.cisco.com. This site requires a login credential.

1.4 Cabling diagram

Refer to one of the following cabling sections that is applicable to your storage system: PS Series (section 1.4.1) or SC Series (section 1.4.2).

1.4.1 PS Series cabling diagram

The cabling diagram shown in Figure 1 represents the Dell EMC recommended method for deploying servers and PS Series storage arrays.

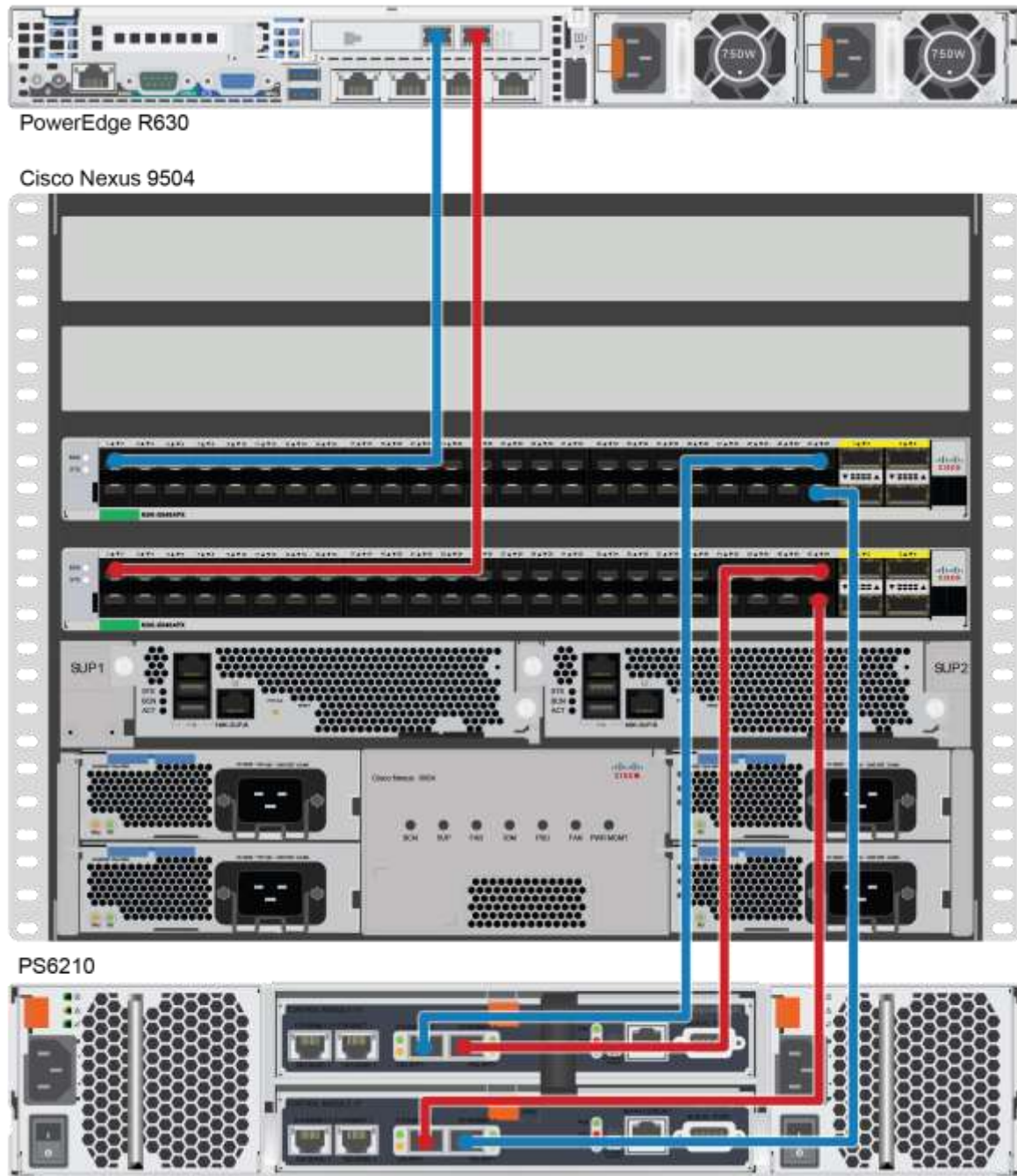


Figure 1 PS Series cabling diagram

1.4.2 SC Series cabling diagram

The cabling diagram shown in Figure 2 represents the Dell EMC recommended method for deploying servers and SC Series storage arrays.

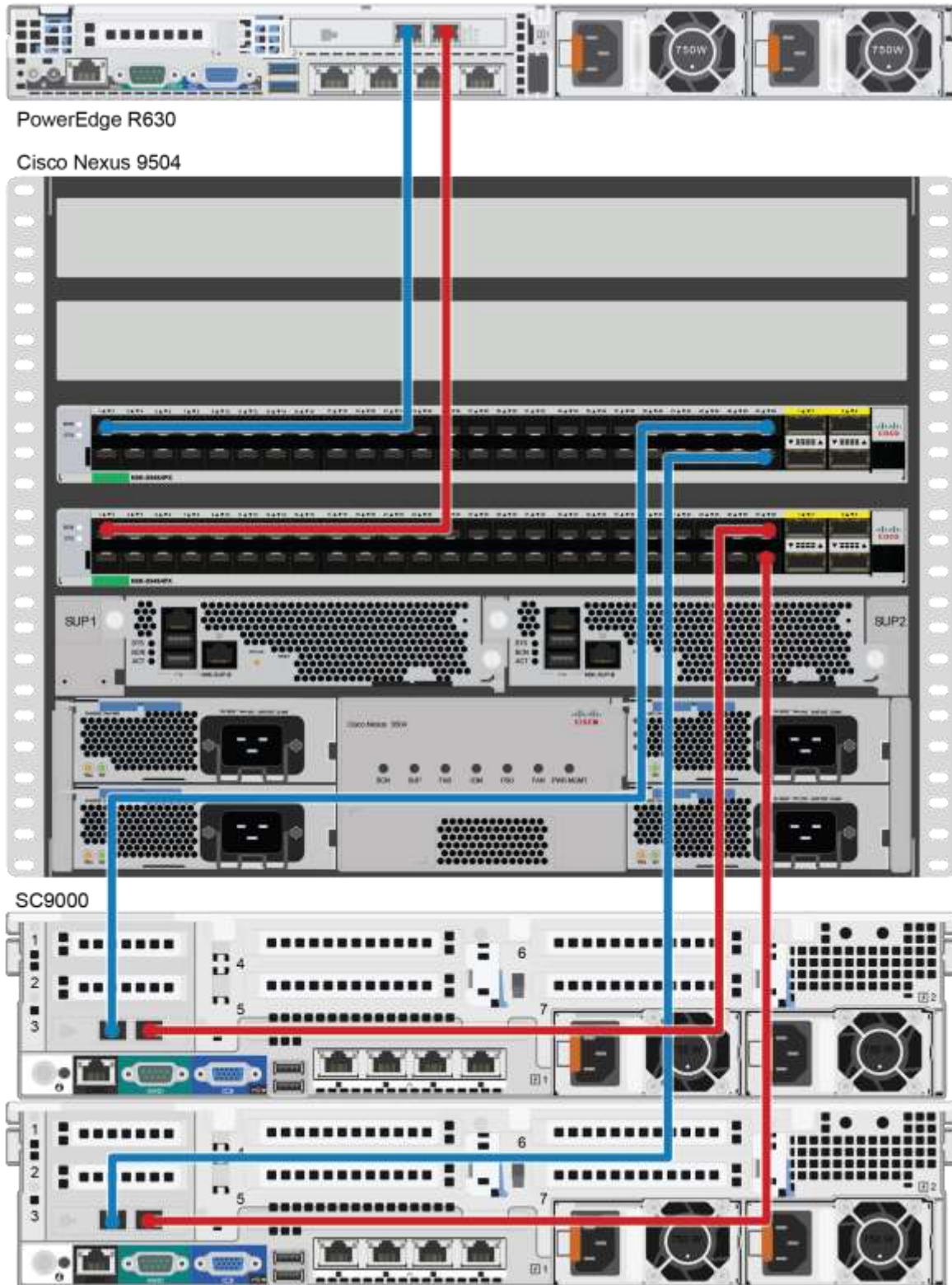


Figure 2 SC Series cabling diagram

2 Dell EMC recommended switch configuration

The steps in this section show how to configure a single Cisco Nexus 9504 chassis with two I/O modules that are installed in slot 1 and slot 2.

Note: The configuration steps in this section are only recommended when the switch is used as a dedicated SAN for iSCSI traffic (not shared with LAN traffic).

2.1 Hardware configuration

Note: Do not connect any server NIC or storage controller cables to the switch before performing the following configuration steps.

1. Power on the chassis.
2. Connect a serial cable to the active supervisor management port.
3. Using PuTTY or another terminal utility, open a serial connection session to the switch.
4. Open the terminal emulator and configure it to use the serial port (COM1, COM2). Configure serial communications for 9600 N, 8, 1, and no flow control.
5. Perform all CLI steps in sections 2.2 to 2.10.
6. Connect all server NIC and storage controller cables to the switch. See section 1.4 for example cabling diagrams.

2.2 Delete startup configuration

Note: This example assumes a switch at its default configuration settings. Using the **write erase** command sets the startup configuration file to its default settings. Always back up your configuration settings prior to performing any configuration changes.

```
switch#write erase
Warning: This command will erase the startup-configuration
Do you wish to proceed anyway ? (y/n) [n] y
switch# reload
This command will reboot the system
Do you want to continue? (y/n) [n] y
```

Note: The switch will reboot.

2.3 Run basic system configuration

The following steps use the setup utility to configure connectivity for basic management of the system.

After the switch fully reboots, the following prompts appear:

```
Abort Power On Auto Provisioning and continue with normal setup?(yes/no) [n]: y
---- System Admin Account Setup ----
Do you want to enforce secure password standard (yes/no): yes
Enter the password for "admin": <password>
Confirm the password for "admin": <password>
```

```
---- Basic System Configuration Dialog VDC: 1 ----
```

This setup utility will guide you through the basic configuration of the system. Setup configures only enough connectivity for management of the system.

Please register Cisco Nexus9000 Family devices promptly with your supplier. Failure to register may affect response times for initial service calls. Nexus9000 devices must be registered to receive entitled support services.

Press Enter at anytime to skip a dialog. Use ctrl-c at anytime to skip the remaining dialogs.

```
Would you like to enter the basic configuration dialog (yes/no): yes
Create another login account (yes/no) [n]: n
Configure read-only SNMP community string (yes/no) [n]: n
Configure read-write SNMP community string (yes/no) [n]: n
Enter the switch name : <switch name>
Continue with Out-of-band (mgmt0) management configuration? (yes/no) [y]: y
Mgmt0 IPv4 address : <IP address>
Mgmt0 IPv4 netmask : <netmask>
Configure the default gateway? (yes/no) [y]: y
IPv4 address of the default gateway : <gateway>
Configure advanced IP options? (yes/no) [n]: n
Enable the telnet service? (yes/no) [n]: y
Enable the ssh service? (yes/no) [y]: n
Configure the ntp server? (yes/no) [n]: n
Configure default interface layer (L3/L2) [L2]: L2
Configure default switchport interface state (shut/noshut) [shut]: shut
Configure CoPP system profile (strict/moderate/lenient/dense/skip) [strict]: skip
```

The following configuration will be applied:

<Your settings displayed here>

```
Would you like to edit the configuration? (yes/no) [n]: n
Use this configuration and save it? (yes/no) [y]: y
[#####] 100%
Copy complete.
```


Log in to the switch using the credentials you created.

Note: You must perform port configurations for each individual port that is connected to a storage controller or a host server interface port, or you can specify a range of ports to configure. This example assumes all 48 ports on linecard modules 1 and 2.

2.4 Enable Jumbo frames

```
switch#configure
switch(config)#system jumbomtu 9216
switch(config)#interface ethernet 1/1-48 , ethernet 2/1-48
switch(config-if-range)#mtu 9216
switch(config-if-range)#exit
```

Note: By default, Data Center Bridging (DCB) is enabled. This document provides steps to disable DCB in section 2.6. Perform all operations during a maintenance window due to the temporary loss of communication between host servers and storage arrays that may occur.

2.5 Enable LLDP

```
switch(config)#feature lldp
switch(config)#interface ethernet 1/1-48 , ethernet 2/1-48
switch(config-if-range)#lldp receive
switch(config-if-range)#lldp transmit
switch(config-if-range)#exit
switch(config)#exit
```

2.6 Disable Data Center Bridging

All steps in this section are required to properly disable Data Center Bridging (DCB). When upgrading from previous firmware versions to version 7.0(3)I1(2), DCB must be disabled.

```
switch# configure
switch(config)#lldp tlv-select dcbxp
switch(config)#copy running-config startup-config
switch(config)#no lldp tlv-select dcbxp
switch(config)#exit
switch#copy running-config startup-config
```

Note: The prior steps are required due to Cisco bug number, “CSCuo63486 LLDP - link err-disabled upon reload when dcbx tlv is disabled”.

2.7 Enable link-level flow control (802.3x)

Perform this step for each individual port that is connected to a storage controller or a host server interface port, or specify a range of ports to configure.

```
switch#configure
switch(config)#interface ethernet 1/1-48 , ethernet 2/1-48
switch(config-if-range)#priority-flow-control mode off
switch(config-if-range)#flowcontrol send off
switch(config-if-range)#flowcontrol receive on
switch(config-if-range)#exit
```

2.8 Configure portfast on edge ports

```
switch(config)#interface ethernet 1/1-48 , ethernet 2/1-48
switch(config-if-range)#spanning-tree port type edge
```

Warning: edge port type (portfast) should only be enabled on ports connected to a single host. Connecting hubs, concentrators, switches, bridges, etc... to this interface when edge port type (portfast) is enabled, can cause temporary bridging loops. Use with CAUTION.

Edge Port Type (Portfast) will be configured in 96 interfaces due to the range command but will only have effect when the interfaces are in a non-trunking mode.

```
switch(config-if-range)#exit
```

2.9 Enable switch ports

The following example enables a range of ports. If preferred, enable individual ports as needed.

```
switch(config)# interface ethernet 1/1-48 , ethernet 2/1-48
switch(config-if-range)# shutdown
switch(config-if-range)# no shutdown
switch (config-if-range)# exit
```

2.10 Save configuration

```
switch#copy running-config startup-config

switch#reload
```

A Technical support and resources

[Dell.com/support](https://dell.com/support) is focused on meeting customer needs with proven services and support.

[Storage Solutions Technical Documents](#) provides expertise that helps to ensure customer success on Dell EMC storage platforms.

A.1 Related resources

See the following referenced or recommended Dell publications:

- [Dell PS Series Configuration Guide](#)
- [Dell EMC Storage Compatibility Matrix](#)