



Cisco Nexus 9504

Switch Configuration Guide for Dell SC Series SANs

Dell Storage Engineering
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Revisions

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1 Introduction

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

For more information on SC Series SAN design recommendations, see the [Dell Storage Compatibility Matrix](#).

1.1 Audience

This switch configuration guide describes a verified configuration following Dell best practices for a dedicated SC Series iSCSI SAN and is intended for storage or network administrators and deployment personnel.

1.2 Switch details

The table below provides an overview of the switch configuration.

Table 1 Switch specifications

| Cisco Nexus 9504 | |
|------------------|-------------|
| Switch vendor | Cisco |
| Switch model | Nexus 9504 |
| Switch firmware | 7.0(3)I1(2) |

Note: For proper functionality, the switch must be at the firmware version shown in the table above before proceeding with this configuration. Using previous firmware versions may have unpredictable results.

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



1.3 Cabling diagram

The cabling diagram shown below represents the Dell recommend method for deploying your servers and SC Series arrays.

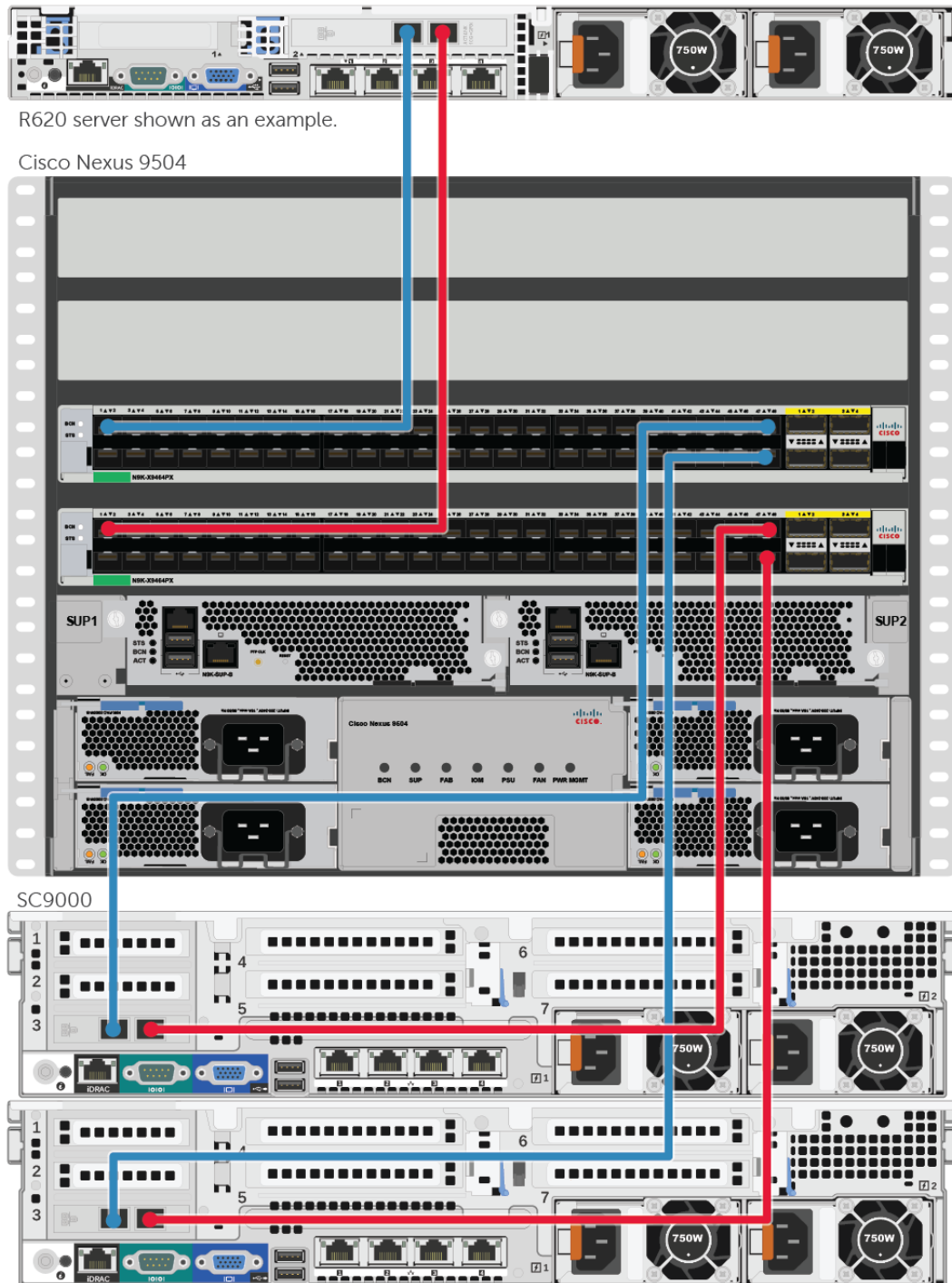


Figure 1 Cabling diagram

2 Dell recommended switch configuration

These steps show you how to configure a single Cisco Nexus 9504 chassis with two linecard 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

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 your terminal emulator and configure it to use the serial port (usually COM1 but this may vary depending on your system). Configure serial communications for 9600,N,8,1 and no flow control.

2.2 Delete startup configuration

Note: This example assumes a switch at its default configuration settings. Using the “write erase” command will set the startup configuration file to its default settings. You should always backup 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 Running the 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 will 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": my password
Confirm the password for "admin": my 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 : **my switch name**

Continue with Out-of-band (mgmt0) management configuration? (yes/no) [y]: **y**

Mgmt0 IPv4 address : **my IP address**

Mgmt0 IPv4 netmask : **my netmask**

Configure the default gateway? (yes/no) [y]: **y**

IPv4 address of the default gateway : **my 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 will be displayed>

```
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 into 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 Enabling 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 will provide steps to disable DCB. Perform all operations during a maintenance window, whereas a temporary loss of communication between host servers and storage arrays may occur.

2.5 Enabling 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 Disabling Data Center Bridging (DCB)

All steps in Section 2.6 are required in order to properly disable DCB. Also, when upgrading from previous versions to version 7.0(3)I1(2), Section 2.6 must be performed to properly disable DCB.

```
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 above steps are needed 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)

You must perform this step 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.

```
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, you may 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 Additional resources

[Support.dell.com](http://support.dell.com) is focused on meeting your needs with proven services and support.

[Support.cisco.com](http://support.cisco.com) for support and information regarding Cisco networking products.

DellTechCenter.com is an IT Community where you can connect with Dell Customers and Dell employees for the purpose of sharing knowledge, best practices, and information about Dell products and your installations.

Referenced or recommended Dell publications:

Dell Storage Compatibility Matrix:

<http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/20438558.aspx>

For Dell Storage best practices white papers, reference architectures, and sizing guidelines for enterprise applications and SANs, refer to Dell TechCenter technical publications at: Dell.com/StorageResources.

