Dell Networking N4000 Series and Dell PowerConnect 8100 Series

Switch Configuration Guide for Compellent iSCSI SANs

Dell Storage Engineering
August 2014
## Revisions

<table>
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<tr>
<th>Date</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>August 2014</td>
<td>Initial release</td>
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</table>

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1 Introduction

This document illustrates how to configure Dell™ Networking N4000 Series and Dell PowerConnect 8100 switches for use as a dedicated iSCSI SAN with Compellent™ storage and using Dell best practices.

1.1 Audience

This switch configuration guide describes an optimal configuration following Dell best practices for a Compellent 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>
<thead>
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<th>Switch specifications</th>
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<tbody>
<tr>
<td><strong>Dell Networking N4000 Series or Dell PowerConnect 8100</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Switch vendor</strong></td>
<td>Dell</td>
</tr>
<tr>
<td><strong>Switch model</strong></td>
<td>Dell Networking N4032, N4032F, N4064, N4064F Dell PowerConnect 8132, 8132F, 8164, 8164F</td>
</tr>
<tr>
<td><strong>Switch firmware</strong></td>
<td>6.0.1.3 and later</td>
</tr>
</tbody>
</table>

**Note:** For proper functionality, the switch must be at the switch 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: [support.dell.com](http://support.dell.com).
1.3 Cabling diagram

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

Figure 1  Cabling diagram
2 Dell recommended switch configuration

These steps show how to configure two Dell PowerConnect 8100 Series or Dell Networking N4000 Series switches for use as a dedicated iSCSI SAN with Compellent Storage Center.

2.1 Hardware configuration

1. Power on the two switches.
2. Connect a serial cable to the serial port of the first switch.
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. The following instructions will set the startup configuration file to its default settings. You should always backup your configuration settings prior to performing any configuration changes.

```
console>enable
console#reload

Are you sure you want to reload the stack? (y/n) y

**Note:** The switch will reboot.
```

Follow the prompts shown below when the Main Menu is displayed during the bootup process.

```
Dell Networking Boot Options

Select a menu option within 3 seconds or the Operational Code will start automatically...

1 - Start Operational Code
2 - Display Boot Menu

Select (1, 2)# 2

Boot Main Menu

1 - Start Operational Code
```
2 - Select Baud Rate
3 - Retrieve Logs
4 - Load New Operational Code
5 - Display Operational Code Details
9 - Reboot
10 - Restore Configuration to Factory Defaults
11 - Activate Backup Image
12 - Start Password Recovery

Enter choice number 10.

Are sure you want to Erase Current Configuration? (Y/N): Y

Erasing Current Configuration...done.

Boot Main Menu

=============

1 - Start Operational Code
2 - Select Baud Rate
3 - Retrieve Logs
4 - Load New Operational Code
5 - Display Operational Code Details
9 - Reboot
10 - Restore Configuration to Factory Defaults
11 - Activate Backup Image
12 - Start Password Recovery

Enter choice number 9 and the system will reboot. Wait for the following prompt:

Would you like to run the setup wizard (you must answer this question within 60 seconds)? [Y/N] N
2.3 Disable Data Center Bridging (DCB)

**Note:** DCB is enabled by default. To disable DCB, follow these steps:

```
console> enable
console# configure
console(config)# no dcb enable
console(config)# exit
```

2.4 Configure out of band (OOB) management port

```
console> enable
console# configure
console(config)# interface out-of-band
console(config-if)# ip address ipaddress mask gateway
console(config-if)# exit
```

2.5 Http and Telnet authentication

```
console> enable
console# config
console(config)# line telnet
console(config-telnet)# login authentication default
console(config-telnet)# exit
console(config)# ip http authentication local
```

2.6 Configure login credentials

```
console(config)# username admin password yourpassword privilege 15
console(config)# enable password yourpassword
console(config)# exit
```

2.7 Configure flow control

```
console# configure
```
console(config)#flowcontrol receive on
This operation may take a few minutes.
Management interfaces will not be available during this time.
Are you sure you want to continue? (y/n)y
console(config)#exit

2.8 Configure Jumbo MTU for all ports
console(config)#system jumbo mtu 9216
console(config)# exit

2.9 Configure spanning tree portfast on edge ports
Note: Only use the following command on Server and Storage connected edge ports.
console#configure
console(config)#interface range tengigabitethernet all
console(config-if)#spanning-tree portfast
console(config-if)#exit

2.10 Configure VLAN
Note: Dell recommends assigning a unique vlan_id (between 2-4093) for each switch fabric. For example, assign VLAN 100 on the first switch and VLAN 200 on the second. The following example assigns all ports to the VLAN, however, you may also assign individual ports to the VLAN. If you prefer to use the default VLAN, then you may skip this step entirely.

Note: When switch ports are configured in access mode, no additional VLAN configuration is necessary on the edge devices (for example, hosts and storage).
console(config)#vlan vlan_id
console#(config-vlan##)# interface range tengigabitethernet all
console(config-if)#switchport access vlan vlan_id
console(config-if)#exit
console(config)#exit
2.11 Save configuration
console#copy running-config startup-config
This operation may take a few minutes.
Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

2.12 Configure additional switch
Repeat the commands from Section 2 to configure the second switch.
**Additional resources**

**Support.dell.com** is focused on meeting your needs with proven services and support.

**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](http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/20438558.aspx)

- For Compellent best practices white papers, reference architectures, and sizing guidelines for enterprise applications and SANs, refer to: