Dell PowerEdge FN410S Full-Switch and FN2210S 10GbE IOM

Switch Configuration Guide for SC Series iSCSI SANs

Dell Storage Engineering
July 2016
Revisions

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<th>Date</th>
<th>Description</th>
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<tr>
<td>July 2016</td>
<td>Initial release</td>
</tr>
<tr>
<td>July 2016</td>
<td>Added FN2210S IOM</td>
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1 Introduction
This document illustrates how to configure the Dell™ PowerEdge FN410S (full-switch mode) and FN2210S (4 x 10GbE mode) I/O Modules for use with SC Series storage controllers.

1.1 Audience
This switch configuration guide describes an optimal configuration following Dell best practices for a 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>
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<tr>
<td><strong>Dell FN410S / FN2210S</strong></td>
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<tr>
<td>Switch vendor</td>
<td>Dell Networking</td>
</tr>
<tr>
<td>Switch model</td>
<td>FN410S / FN2210S</td>
</tr>
<tr>
<td>Switch firmware</td>
<td>9.10.0.0 or later</td>
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**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: [www.force10networks.com](http://www.force10networks.com). This site requires a login.
1.3 Cabling diagram

The cabling diagram shown below represents the Dell recommend method for deploying your chassis and SC Series storage controllers.

**Note:** Host servers are connected internally to the switch ports.
2 Dell recommended switch configuration

These steps show you how to configure the DELL PowerEdge FN410S (full-switch mode) and FN2210S (4 x 10GbE mode) I/O Modules for an iSCSI SAN for use with SC Series storage controllers.

**Note**: This Switch Configuration Guide assumes that the FN410S is operating in “full-switch” mode as opposed to “IOA”. In addition, it is assumed that the FN2210S IOM is already configured for 4 x 10GbE mode. Please consult the IOM User’s Configuration Guide to configure the IOM to the proper mode.

2.1 Hardware configuration

1. Power on the Chassis.
2. Login to the Chassis CMC.
3. From the CMC CLI, connect to the FN410S/FN2210S I/O module using the following command:

   ```
   $connect switch-n
   ```

   Where `n` is the number of the switch.

2.2 Delete startup configuration

**Note**: The following commands will delete all configuration settings.

```
Dell>enable
Dell#delete startup-config
Proceed to delete startup-config [confirm yes/no]yes
Dell#reload
System configuration has been modified. Save? [yes/no]no
Proceed with reload [confirm yes/no]yes
```

**Note**: The switch will reboot.

2.3 Disable iSCSI optimization

**Note**: As a best practice, Dell recommends disabling iSCSI session monitoring for larger SAN deployments. iSCSI session monitoring is enabled by default as part of iSCSI optimization. These steps show how to disable iSCSI optimization and manually configure the switches for use with SC Series storage controllers.

```
Dell#configure
Dell(conf)#no iscsi enable
Dell(conf)#exit
```
2.4 Disabling DCB configuration

**Note:** For non-DCB environments, DCB must be manually disabled using the following steps:

```
Dell>enable
Dell#configure
Dell(conf)#no dcb enable
Dell(conf)#exit
Dell#copy running-config startup-config
Dell#reload
```

**Note:** The switch will reboot.

2.5 Configure out of band (OOB) management port

```
Dell>enable
Dell#configure
Dell(conf)#interface ManagementEthernet 0/0
Dell(conf-if-ma-0/0)#ip address ipaddress mask
Proceed with Static IP [confirm yes/no]: yes
Dell(conf-if-ma-0/0)#no shutdown
Dell(conf-if-ma-0/0)#exit
```

2.6 Configure route for OOB management port (optional)

```
Dell(conf)#management route X.Y.Z.0/24 A.B.C.1
```

**Note:** X.Y.Z.0 is the network your management system is connecting from and A.B.C.1 is the gateway for the switch. If your management system is on the same subnet as the switch, the previous step may be omitted. The example above assumes a class C subnet mask.

2.7 Configure login credentials

```
Dell(conf)#username admin privilege 15 password 0 yourpassword
Dell(conf)#enable password level 15 0 yourpassword
Dell(conf)#exit
```

2.8 Enable switch ports

Use the commands for Option 1 or Option 2 to enable the switch ports.

**Option 1:** You can enable ports individually by entering the port number.
Option 2: You can enable multiple ports at once using the ‘range’ parameter. The following example utilizes all internal and external IOM ports for iSCSI traffic. Actual configuration may vary depending on topology.

Dell#configure
Dell(config)#interface range tengigabitethernet 0/1 - 12
Dell(config-if-range-te-0/1-12)#switchport
Dell(config-if-range-te-0/1-12)#no shutdown
Dell(config-if-range-te-0/1-12)#exit

2.9 Enable Jumbo Frames
Dell(config)#interface range tengigabitethernet 0/1 - 12
Dell(config-if-range-te-0/1-12)#mtu 12000

2.10 Configure flow control
Dell(config-if-range-te-0/1-12)#flowcontrol rx on tx off

2.11 Configure Spanning tree on edge ports
Dell(config-if-range-te-0/1-12)#spanning-tree rstp edge-port
Dell(config-if-range-te-0/0-12)#exit
Dell(config)#protocol spanning-tree rstp
Dell(config-rstp)#no disable
Dell(config-rstp)#exit
Dell(config)#exit

2.12 Save configuration
Dell#copy running-config startup-config
2.13 **Reload**

```bash
Dell#reload
```

System configuration has been modified. Save? [yes/no]: **yes**

Proceed with reload [confirm yes/no]: **yes**

---

2.14 **Configure additional switch**

Repeat the commands from Section 2 to configure the second IOM switch module.
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

For Dell Storage SC Series best practices white papers, reference architectures, and sizing guidelines for enterprise applications and SANs, refer to: