Revisions

<table>
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<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>November 2015</td>
<td>Initial release</td>
</tr>
</tbody>
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1 Introduction
This document illustrates how to configure the Brocade® VDX® 6740 switch for use with Dell™ SC Series storage using Dell best practices.

1.1 Document conventions
Table 1 lists the formatting conventions used in this document.

<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
<th>Example</th>
</tr>
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<tbody>
<tr>
<td><strong>Bold</strong></td>
<td>User input</td>
<td>Dell&gt;<strong>enable</strong></td>
</tr>
<tr>
<td><em>Italic</em></td>
<td>Placeholder or variable</td>
<td><em>your password</em></td>
</tr>
<tr>
<td><strong>&lt;Italic&gt;</strong></td>
<td>Separate variables</td>
<td><strong>&lt;ip address&gt;</strong> <strong>&lt;mask&gt;</strong></td>
</tr>
</tbody>
</table>

1.2 Audience
This switch configuration guide describes a verified configuration following Dell best practices for an SC 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>
<thead>
<tr>
<th>Brocade VDX 6740</th>
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<tr>
<td><strong>Switch vendor</strong></td>
</tr>
<tr>
<td><strong>Switch model</strong></td>
</tr>
<tr>
<td><strong>Switch firmware</strong></td>
</tr>
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</table>

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

The latest firmware updates and documentation can be found at: [http://www.brocade.com](http://www.brocade.com).
1.4 Cabling diagram
The cabling diagram shown below represents the Dell recommend method for deploying your servers and SC Series arrays.

![Cabling Diagram]

Figure 1  Cabling diagram
2 Dell recommended switch configuration

Follow these steps to configure two Brocade VDX 6740 switches. An optional Port Upgrade license is required to use the 40G uplinks.

**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 any other traffic type).

### 2.1 Hardware configuration

1. Power on both switches.
2. Connect a serial cable to the management port.
3. Using any 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.
5. Connect the cables between switch 1 and switch 2 as shown in Figure 1. This will be used as your Brocade LAG link.

**Note:** The below configuration steps assumes that the switch is configured with a unique Rbridge-id and VCS id. Refer to section 4 on how to change the Rbridge-id and VCS id of the switch.

### 2.2 Delete startup configuration

**Note:** This example assumes a switch at its default configuration settings. The `copy default-config startup-config` command sets the startup configuration file to its default settings. Always back up your configuration settings prior to performing any configuration changes.

sw0# **copy default-config startup-config**

This operation will modify your startup configuration. Do you want to continue? [y/n]: y

WARN: "reload system" is required to have configuration changes take effect!

sw0# **reload system**

Warning: This operation will cause the chassis to reboot and requires all existing telnet, secure telnet and SSH sessions to be restarted.

Are you sure you want to reboot the chassis [y/n]? y

**Note:** The switch will reboot.
2.3 Configure Global LLDP settings to disable DCB
The following commands are issued to disable dcbx-tlv and iscsi-app-tlv.

```
sw0#configure
sw0(config)#protocol lldp
sw0(config-lldp)#no advertise dcbx-iscsi-app-tlv
sw0(config-lldp)#no advertise dcbx-tlv
sw0(config-lldp)#exit
```

2.4 Disable Ethernet Fabric on edge ports

```
sw0(config)#interface TenGigabitEthernet 1/0/1-48
sw0(config-if-te-1/0/1-48)# no fabric isl enable
sw0(config-if-te-1/0/1-48)# no fabric trunk enable
sw0(config-if-te-1/0/1-48)# exit
```

2.5 Enable Jumbo MTU

```
sw0(config)#interface TenGigabitEthernet 1/0/1-48
sw0(config-if-te-1/0/1-48)# mtu 9216
sw0(config-if-te-1/0/1-48)# exit
```

2.6 Enable Switchport

```
sw0(config)#interface TenGigabitEthernet 1/0/1-48
sw0(config-if-te-1/0/1-48)# switchport
sw0(config-if-te-1/0/1-48)# switchport mode access
sw0(config-if-te-1/0/1-48)# exit
```

2.7 Enable link level flow control (802.3x)

```
sw0(config)#interface TenGigabitEthernet 1/0/1-48
sw0(config-if-te-1/0/1-48)# qos flowcontrol tx off rx on
sw0(config-if-te-1/0/1-48)# exit
```
2.8 Configure Spanning tree on edge ports

sw0(config)#protocol spanning-tree rstp
sw0(config-rstp)#exit
sw0(config)#interface TenGigabitEthernet 1/0/1-48
sw0(conf-if-te-1/0/1-48)# spanning-tree edgeport
sw0(conf-if-te-1/0/1-48)# exit

2.9 Disable LLDP iSCSI priority on Switch Ports

sw0(config)#interface TenGigabitEthernet 1/0/1-48
sw0(conf-if-te-1/0/1-48)# no lldp disable
sw0(conf-if-te-1/0/1-48)# no cee
sw0(conf-if-te-1/0/1-48)# no lldp iscsi-priority
sw0(conf-if-te-1/0/1-48)# exit
sw0(config)#exit

2.10 Save configuration

switch#copy running-config startup-config

2.11 Configure additional switch

Repeat the commands from sections 2.1 through 2.10 to configure the second switch.
3 Performance tuning

In testing of the VDX 6740 switch using asymmetric flow control (TX off, RX on), the default buffer allocation of 280KB per port per queue did not yield optimum performance, and significant TCP retransmits were observed.

With NOS version 5.0.1, system performance can be optimized by increasing TX and RX buffers (per port, per queue). Optimal performance can be achieved when using a setting of 2MB for receive queue and 2MB for transmit queue per port.

The following instructions show how to configure the receive and transmit buffers.

```
sw0# configure

Entering configuration mode terminal

sw0(config)# rbridge-id 1

sw0(config-rbridge-id-1)# qos tx-queue limit 2000

sw0(config-rbridge-id-1)# qos rxv-queue limit 2000

sw0(config-rbridge-id-1)# exit

sw0(config)#
```

**Note:** Repeat the commands to configure the buffer on the second switch.
4 Configuring VCS ID and Rbridge-ID (optional)

Refer to Brocade documentation for details on VCS and Ethernet fabric. The following commands show the steps to configure the rbridge-id and VCS id to 2 on a switch. The VDX 6740 is in Fabric Cluster mode by default and configuration change is not required for the mode.

```
sw0# show vcs
Config Mode    : Local-Only
VCS Mode       : Fabric Cluster
VCS ID         : 1
Total Number of Nodes           : 1

Rbridge-Id       WWN                        Management IP       VCS Status
Fabric Status     HostName
---------------------------------------------------------------
                      --------------------------------------
2                  >10:00:50:EB:1A:2D:F2:64*    77.77.77.77   Online
Online             sw0
``` 

```
sw0# vcs vcsid 2
This operation will change the configuration to default and reboot the switch. Do you want to continue? [y/n]: y

Note: The switch will reboot.
```

```
sw0# vcs rbridge-id 2
This operation will change the configuration to default and reboot the switch. Do you want to continue? [y/n]: y

Note: The switch will reboot.
```
A Additional resources

Dell.com/support 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/techcenter/storage/w/wiki/5069.dell-storage-compatibility-matrix
- For SC Series best practices white papers, reference architectures, and sizing guidelines for enterprise applications and SANs, refer to: http://en.community.dell.com/techcenter/storage/w/wiki/5018.compellent-technical-content