Brocade VDX 6720

QuickStart Guide

Supporting the VDX 6720-24 and VDX 6720-60

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Brocade Communications Systems, Incorporated

Document History

The following table lists all published versions of the *Brocade VDX 6720 QuickStart Guide*.

Title	Publication number	Summary of changes	Date
Brocade VDX 6720 QuickStart Guide	53-1002085-01	New document	December 2010
Brocade VDX 6720 QuickStart Guide	53-1002085-02	Removed reference to Family Doc CD	December 2011

Overview

This Quick Start guide is intended as an overview to help experienced installers unpack, install, and configure the Brocade VDX 6720 quickly. For more detailed installation and configuration instructions, see the *Brocade Network OS Administrator's Guide* and the *Brocade Network OS Command Reference Manual*.

NOTE
Throughout this document, the Brocade VDX 6720 is referred to as the switch.

Items included with the Brocade VDX 6720

The following items are included with the standard shipment of a fully-configured Brocade VDX 6720. When you open the Brocade VDX 6720 packaging, verify that these items are included in the package and that no damage has occurred during shipping:

- The Brocade VDX 6720 switch, either the 24-port or 60-port version
- One accessory kit, containing the following items:
  - Serial cable with an RJ45 connector
  - 6 ft. power cords (2)
  - Rubber feet, required for setting up the switch as a standalone unit
  - *Brocade Documentation Online* document
  - *Brocade VDX 6720 QuickStart Guide* (this publication)

Installation and safety considerations

You can install a Brocade VDX 6720 switch in the following ways:

- As a standalone unit on a flat surface.
- In an EIA cabinet using a fixed-rail rack mount kit. The optional fixed-rail rack mount kit can be ordered from your switch retailer. Both the 24"-32" rack depth kit and the 28"-29" rack depth kit will work with the VDX 6720 switches.
- In an EIA cabinet using an optional flush-mount rack kit for switches. The optional flush-mount rack kit for switches can be ordered from your switch retailer.
- Mounting a VDX6720 in the Idataplex IBM 17" depth rack requires an Idataplex rack mount kit, Brocade part number 60-1001519-01.

Electrical considerations

To install and operate the switch successfully, ensure the following:

- The primary outlet is correctly wired, protected by a circuit breaker, and grounded in accordance with local electrical codes.
- The supply circuit, line fusing, and wire size are adequate, as specified by the electrical rating on the switch nameplate.
- The power supply standards provided in Table 1, "Power Supply Specifications" are met.

TABLE 1   Power Supply Specifications

Specification	Value
Maximum output	250 watts, 4 amps, 12 VDC - VDX 6720-24 500 watts, 7 amps, 12 VDC - VDX 6720-60
Maximum AC power consumption	146.2 W - VDX 6720-24 360 W - VDX 6720-60
System DC power consumption (excluding power supply and fan FRUs)	Idle: 182.4 W Maximum: 306 W
Input system power (including power supply and fan FRUs)	Idle: 206 W Maximum: 306 W
Input voltage	85-264 VAC
Input line frequency	47-63 Hz
BTU rating	1044.11 BTU/hr
Inrush current	Maximum of 50A
Input line protection	AC lines are fused

Environmental considerations

For successful installation and operation of the switch, ensure that the following environmental requirements are met:

- Because the Brocade VDX 6720 can be ordered with fans that either move air front to back or back to front, be sure to orient your switch with the airflow pattern of any other devices in the rack.

- All equipment in the rack should force air in the same direction to avoid intake of exhaust air.

- A maximum of 102 cubic meters/hour (60 cubic feet/minute) and a minimum of 74.8 cubic meters/hour (44 cubic feet/minute) of air flow is available to the air intake vents.

- The ambient air temperature does not exceed 40° C (104° F) while the switch is operating.

Cabinet considerations

For successful installation and operation of the switch in a cabinet, ensure the following cabinet requirements are met:

- The cabinet must be a standard EIA cabinet.

- A cabinet space that is one rack unit (1U for VDX6720-24) or two rack units (2U for VDX6720-60) high depending on the platform ordered; 4.45 cm (1.75 inches) or 8.90 cm (3.50 inches) high and 48.3 cm (19 inches) wide.

- The equipment in the cabinet is grounded through a reliable branch circuit connection and maintains ground at all times. Do not rely on a secondary connection to a branch circuit, such as a power strip.

- Airflow and temperature requirements are met on an ongoing basis, particularly if the switch is installed in a closed or multi-cabinet assembly.

- The additional weight of the switch does not exceed the cabinet's weight limits or unbalance the cabinet in any way.

- The cabinet is secured to ensure stability in case of unexpected movement, such as an earthquake.

Recommendations for cable management

The minimum bend radius for a 50 micron cable is 2 inches under full tensile load and 1.2 inches with no tensile load.

Cables can be organized and managed in a variety of ways, for example, using cable channels on the sides of the cabinet or patch panels to minimize cable management. Following is a list of recommendations:

NOTE
You should not use tie wraps with optical cables because they are easily overtightened and can damage the optic fibers. Velcro-like wraps are recommended.

- Plan for rack space required for cable management before installing the switch.
- Leave at least 1 m (3.28 ft) of slack for each port cable. This provides room to remove and replace the switch, allows for inadvertent movement of the rack, and helps prevent the cables from being bent to less than the minimum bend radius.
- For easier maintenance, label the cables and record the devices to which they are connected.
- Keep LEDs visible by routing port cables and other cables away from the LEDs.

Items required for installation

The following items are required for installing, configuring, and connecting the Brocade VDX 6720 for use in a network and fabric:

- Workstation with an installed terminal emulator, such as HyperTerminal
- Unused IP address and corresponding subnet mask and gateway address
- Serial cable (provided)
- Ethernet cable
- Brocade-branded SFP (1GbE) or SFP+s (10GbE) and compatible cables and/or direct-attach copper and optical cables
- Access to an FTP server or Brocade-branded USB device for backing up the switch configuration (optional)

Standalone installation for a Brocade VDX 6720

Perform this task to install the Brocade VDX 6720 as a standalone unit.

1. Unpack the Brocade VDX 6720 and verify the items listed on "Items included with the Brocade VDX 6720." Verify the items are present and undamaged.

2. Apply the adhesive rubber feet. Applying the rubber feet onto the switch helps prevent the switch from sliding off the supporting surface.

   a. Clean the indentations at each corner of the bottom of the switch to ensure that they are free of dust or other debris that might lessen the adhesion of the feet.

   b. With the adhesive side against the chassis, place one rubber foot in each indentation and press into place.

3. Place the switch on a flat, sturdy surface.

4. Provide power to the switch as described in "Providing power to the switch."

ATTENTION

Do not connect the switch to the network until the IP address is correctly set. For instructions on how to set the IP address, see *"Setting the switch IP address."*

Rack installation for a Brocade VDX 6720

Follow the installation instructions shipped with the appropriate rack mount kit:

- To install the switch into a fixed-rail rack, refer to the *Fixed Rack Mount Kit (24"-32") Installation Procedure* or the *Fixed Rack Mount Kit Installation Procedure*.

- To install the switch into Telco 2-post rack, refer to the *Flush Mount Rack Mount Kit Installation Procedure*.

Providing power to the switch

Perform the following steps to provide power to the Brocade VDX 6720.

1. Connect the power cords to both power supplies, and then to power sources on *separate* circuits to protect against AC failure. Ensure that the cords have a minimum service loop of 6 in. available and are routed to avoid stress.

2. Power on the power supplies by flipping both AC switches to the "❙" symbol (VDX 6720-24 only, power supplies for VDX 6720-60 power up automatically when plugged in). The power supply LEDs display amber until POST is complete, and then change to green. The switch usually requires several minutes to boot and complete POST.

   ATTENTION

   Power is supplied to the switch as soon as the first power supply is connected and turned on.

Verifying operation

After you have powered the system on and POST is complete, verify that the switch is working properly.

1. Verify that the power supply LEDs are solid green.

2. Verify that the system status LED is solid green.

3. The port LEDs should be lit during POST activities. When POST is complete, only the LEDs for ports connected to other devices should be green.

Refer to the *Brocade VDX 6720 Hardware Reference Manual* for more details on the LED patterns.

Creating a serial connection

You perform all configuration tasks in this guide using a serial connection from a workstation or terminal to the switch.

Complete the following steps to create a serial connection to the switch.

1. Connect the serial cable to the serial port on the switch and to an RS-232 serial port on the workstation or terminal device.

   If the serial port on the workstation or terminal device is RJ45 instead of RS-232, remove the adapter on the end of the serial cable and insert the exposed RJ45 connector into the RJ45 serial port on the workstation.

2. Open a terminal emulator application (such as HyperTerminal on a PC, or TERM, TIP, or Kermit in a UNIX environment), and configure the application as follows:

   - In a Windows environment, enter the following values: 9600 bits per second, 8 databits, no parity, 1 stop bit, and no flow control.
   - In a UNIX environment using TIP, enter the following string at the prompt:

     tip /dev/ttyb -9600.

     If ttyb is already in use, use `ttya` instead.

Assigning permanent passwords

When you log in for the first time, Brocade recommends that you change the passwords for the default accounts.

The factory-configured default accounts on the switch are admin, user, and root. Use the default administrative account as shown in Table 2 to log in to the switch for the first time and to perform the basic configuration tasks.

The root account is reserved for development and manufacturing. The user account is read-only and used primarily for system monitoring.

TABLE 2   Default administrative account names and passwords

Account type	Login name	Password
Administrative	admin	password
User account (read-only)	user	password

Changing the default account passwords

When you change the default account password after you log in for the first time, only the default password rule is in effect. The rule specifies a minimum password length of eight characters. For advanced user and role management, including setting password rules, refer to the Security chapter of the *Brocade Network OS Administrator's Guide*.

1. Enter the **configure terminal** command to enter the global configuration mode.

2. Enter the **username** command followed by the account name and the password parameter.

3. When prompted, enter the new password. and press Enter.

```
Switch# configure terminal
Entering configuration mode terminal
switch(config)# username admin password
(<WORD>;;User password satisfying password-attributes):********
```

Setting the switch IP address

You can configure the Brocade VDX 6720 with a static IP address, or you can use a DHCP (Dynamic Host Configuration Protocol) server to set the IP address of the switch. DHCP is enabled by default. The Brocade VDX 6720 supports both IPv4 and IPv6 format addresses. For information about setting static IP addresses and stateless IPv6 addresses, please see the *Brocade Network OS Administrator's Guide*.

Using DHCP to set the IP address

When using DHCP, the Brocade VDX 6720 obtains its IP address, subnet mask, and default gateway address from the DHCP server. The DHCP client can only connect to a DHCP server that is on the same subnet as the switch. If your DHCP server is not on the same subnet as the Brocade VDX 6720, use a static IP address.

To set an IPv4 IP address using DHCP use the following commands:

1. Log into the switch using the admin account.

2. Use the **ip address** command:

```
switch(config)# interface Management 1/0
switch(config-Management-1/0)# ip address dhcp
```

To set an IPv4 IP address using DHCP use the following commands:

Enabling and disabling Brocade VCS mode

Enable or disable a single switch for VCS™ mode as soon as passwords have been assigned and an IP address has been set. Enabling VCS mode is disruptive since a reboot is required once the mode has been enabled. Enabling or disabling VCS mode also causes the default configuration file for that mode to be applied.

The basic configuration tasks include enabling or disabling VCS mode explicitly, setting VCS parameters, and applying the default configuration. If you disable VCS mode, you do not have to set the other parameters. For more details about enabling VCS mode and setting VCS parameters, please see the *Brocade Network OS Administrator's Guide* and the *Brocade Network OS Command Reference Guide*.

Enabling VCS mode

Perform the following steps to enable VCS mode.

1. Log in to the switch using an account that has the admin role.

2. Enter the **vcs enable** command, including the RBridge parameter, as in the example below.

```
vcs rbridgeid 1 enable
```

3. The switch reboots when you confirm that you want to enable VCS mode.

   When the switch comes back up, if it is connected to other VCS-enabled switches the negotiation protocols begin, determining which switch in the fabric is the principal switch and making sure that all domain IDs, and therefore RBridge IDs, are unique. Should the insistent domain ID not be unique, you can change it. Once the domain IDs are determined to be unique, they are equated to the RBridge IDs.

   The switch with the lowest World Wide Name (WWN) becomes the principal switch, primarily for purposes of determining the uniqueness of the ID of the other switches in the fabric. The WWN is a unique identifier burned into the switch at the factory.

Another parameters that can be changed if necessary is the VCS ID. This identifies the VCS fabric of which the switch can be a part. By default, the VCS of every VDX 6720 is 1. Change the VCS ID if you need to create a new, separate VCS fabric. If you need to change the VCS ID, use the **vcs-id** x parameter, where x is the new VCS ID number.

```
vcs rbridgeid 1 vcsid 2 enable
```

4. Enter the **copy running-config startup-config** command to apply the currently running configuration, including any changes made, to the startup configuration. You must type in the entire command, there is no autocomplete for it. This is important to capture any changes that have been made to the running configuration so that they will persist the next time the switch reboots in the same mode.

5. Reboot the switch.

   When the switch comes back up it will be enabled in VCS mode.

Disabling VCS mode

Perform the following step to disable VCS mode.

1. Log in to the switch using an account that has the admin role.

2. Enter the **no vcs enable** command. The command removes the current running configuration and resets the switch to the default standalone configuration when it reboots.

   The switch reboots when you confirm that you want to disable VCS mode.

   When the switch comes back up it will be enabled in standalone mode.

Configuring switch ports

By default, the interfaces are not configured as switch ports. In order to put an interface in Layer 2 mode, use the following command in Interface Configuration mode.

```
switch(conf-if-te-1/0/3)#switchport
```

To remove an interface from Layer 2 mode, use the following command

```
switch(conf-if-te-1/0/3)#no switchport
```

Connecting network devices

Installing and connecting an SFP+ transceiver

The Brocade VDX 6720 supports only Brocade-branded SFP+ optical or copper transceivers. For its DCB connections, the Brocade VDX 6720 uses SFP+ transceivers that support either optical or Brocade-branded direct attached copper and optical (Laserwire) cables. The optical SFP+ transceivers support both SR (Short Reach) and LR (Long Reach) modules. Direct attached copper cables support distances of 1 meter, 3 meters, and 5 meters. Direct attached optical cables support distances of 10 meters and 20 meters.

To monitor the transceivers, the **show media** command output shows the transceiver information for all interfaces on the switch. Any unqualified transceiver may be disabled and a log message is generated.

Complete the following steps to install an SFP+.

1. Remove any protector plugs from the transceivers and the ports.

2. Making sure that the bail (wire handle) is in the unlocked position, place the transceiver in the correctly oriented position on the port, as shown in Figure 1.

3. Slide the SFP+ into the port until you feel it click into place; then close the bail.
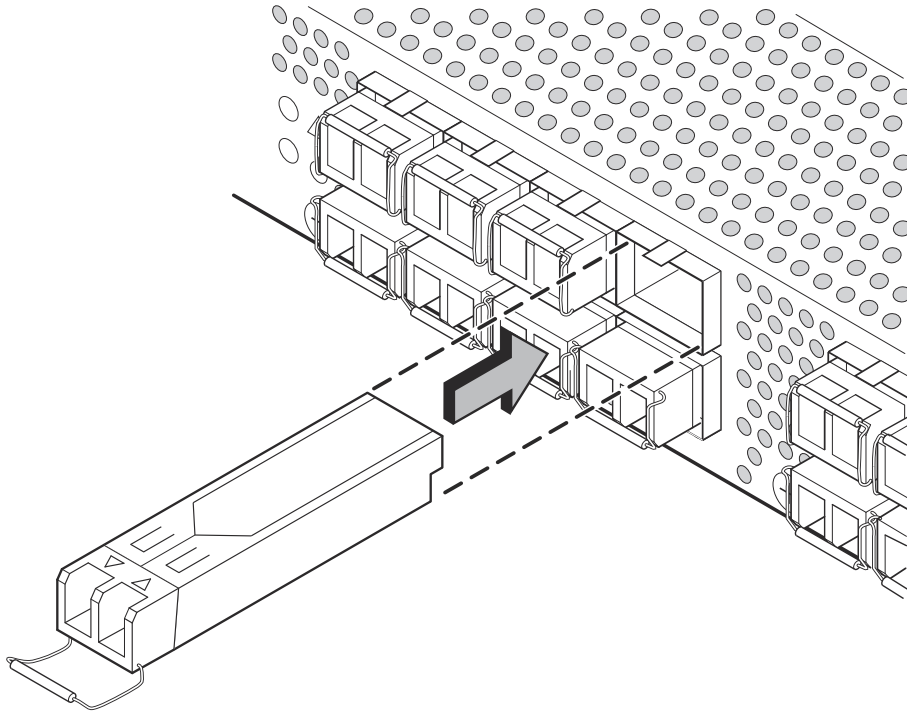
FIGURE 1   Installing an SFP+ in the upper row of port slots

4. If this is not a direct-connect unit, remove the protective caps from the cable end and position the cable so that it is correctly oriented to the transceiver.

5. Insert the cable into the transceiver until it is firmly seated and the latching mechanism clicks.
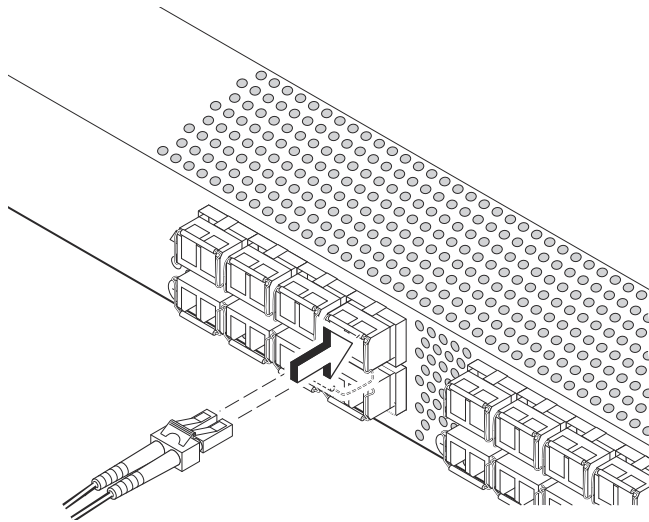
FIGURE 2 Inserting a cable into an SFP+

Connecting to Ethernet or fast Ethernet hubs

For copper connections to Ethernet hubs, a 10/100Base-TX or 1000Base-T switch, or another Brocade device, a crossover cable is required. If the hub is equipped with an uplink port, it will require a straight-through cable instead of a crossover cable.

NOTE
The 802.3ab standard (automatic MDI or MDIX detection) calls for automatic negotiation of the connection between two 1000Base-T ports. Therefore, a crossover cable may not be required; a straight-through cable may work as well.

Connecting to workstations, servers, or routers

Straight-through UTP cabling is required for direct UTP attachment to workstations, servers, or routers using network interface cards (NICs).

Fiber cabling is required for direct attachment to Gigabit NICs/CNAs or switches and routers through fiber ports.

Connecting a network device to a fiber port

For direct attachment from the Brocade device to a Gigabit NIC, switch, or router, fiber cabling with an LC connector is required. Refer to "Installing and connecting an SFP+ transceiver" above for details about installing SFPs and cables.