BROCADE

SilkWorm 4100

QuickStart Guide

Supporting Fabric OS v4.4.0

Supporting SilkWorm 4100

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Document History

The following table lists all published versions of the *SilkWorm 4100 QuickStart Guide*.

Document Title	Publication Number	Summary of Changes	Publication Date
SilkWorm 4100 QuickStart Guide	53-0000564-01	None; this is a new document.	July 2004

This QuickStart guide is intended as an overview to help experienced installers unpack, install, and configure a SilkWorm 4100 switch quickly. For detailed installation and configuration instructions, refer to the *SilkWorm 4100 Hardware Reference Manual*.

You can install the SilkWorm 4100 in the following ways:

- As a standalone unit on a flat surface, as described in this document.
- In an EIA cabinet using the Fixed Rack Mount Kit provided with the switch. For detailed instructions, refer to the *Brocade Fixed Rack Mount Kit Installation Procedure*.
- In an EIA cabinet using the Slide Rack Mount Kit (optional). For detailed instructions, refer to the *Brocade Slide Rack Mount Kit Installation Procedure*.

Refer to the following sections of this guide for specific information:

Time and Items Required

Table 1 lists the main installation tasks for the SilkWorm 4100 switch and the estimated time required . These time estimates assume a prepared installation site and appropriate power and network connectivity.

Table 1   SilkWorm 4100 Installation Tasks, Estimated Time, and Items Required

Installation Task	Time Estimate	Items Required
Installing rack mount kit	30 minutes	Refer to the *Brocade Slide Rack Mount Kit Installation Procedure* or *Brocade Fixed Rack Mount Kit Installation Procedure*.
Mounting and securing switch in rack	30 minutes	
Installing power cables and serial cable and configuring IP addresses	20 minutes	Power cables and serial cable (provided in SilkWorm 4100 accessory kit) Workstation computer with a serial port or terminal server port and a terminal emulator application (such as HyperTerminal) IP address for switch
Installing Ethernet cables and configuring the SilkWorm 4100 name, policies, domain ID, PIDs, or additional system parameters	20 minutes	Ethernet cabling (optional) for Telnet access All other configuration parameters optional. Refer to the *Fabric OS Procedures Guide* for PID information.
Installing SFP optical transceivers	30 minutes	SFP optical transceivers
Attaching fiber-optic cables, cable ties, and cable guides	60 minutes	Fiber-optic cables, cable ties, and cable guides

Site Planning and Safety Guidelines

> **Warning**
> To ensure adequate cooling, install the chassis with the nonport side facing the air-intake aisle. Verify that a minimum of 47 cubic feet/minute (79.8 cubic meters/hour) of air flow is available to the air intake vents on the nonport side of the switch. This prevents the fans from pulling in heated exhaust air.

To install and operate the switch successfully, ensure that the following requirements are met:

- The primary AC input is 100-240 VAC (switch autosenses input voltage), 47-63 Hz.
- 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.

For power supply information, refer to the *SilkWorm 4100 Hardware Reference Manual*.

To ensure adequate cooling, install the switch with the nonport side, which contains the air intake vents, facing a cool-air aisle.

Verify that the ambient air temperature does not exceed 40° Celsius (104° Fahrenheit) and that the ambient humidity remains between 20 percent and 85 percent while the switch is operating.

If installing the switch in a cabinet:

- The cabinet must be a standard EIA cabinet.
- Plan a cabinet space that is 1 rack unit high (1.75 inches; 4.44 cm), 19 inches (48.3 cm) wide, and at least 24 inches (61 cm) deep.
- Ground all equipment in the cabinet through a reliable branch circuit connection and maintain ground at all times. Do not rely on a secondary connection to a branch circuit, such as a power strip.
- Ensure that airflow and temperature requirements are met on an ongoing basis, particularly if the switch is installed in a closed or multirack assembly.
- Verify that the additional weight of the switch does not exceed the cabinet's weight limits or unbalance the cabinet in any way.
- Secure the cabinet to ensure stability in case of unexpected movement.

For additional installation, electrical, environmental, and other considerations, refer to the *SilkWorm Switch Safety Guide*.

Items Included with the SilkWorm 4100

The following items are included with the standard shipment of the SilkWorm 4100:

- The SilkWorm 4100 switch, containing three fan assemblies and two power supplies
- The Fixed Rack Mount Kit, with installation instructions
- One accessory kit, containing the following items:
  - The *SilkWorm 4100 QuickStart Guide*
  - The Brocade Documentation CD-ROM
  - SFP (small-form-factor pluggable) transceivers (optional)
  - Rubber mounting feet (to be used when setting up the SilkWorm 4100 as a standalone unit)
  - Two grounded 6 ft. (approximately 3 meters) power cords
  - One serial cable, 10 ft. (approximately 3 meters) long, which can be converted from a DB-9 serial cable to an RJ-45-style serial cable by removing the adapter on the end of the cable

Figure 1 displays the port-side view of the SilkWorm 4100 switch.

Figure 1   SilkWorm 4100 Port Side View

Switch ID
Pull-out Tab

SilkWorm 4100

Serial
Port

Ethernet
Port

FC
Ports (0-7)

FC
Ports (8-15)

FC
Ports (16-23)

FC
Ports (24-31)
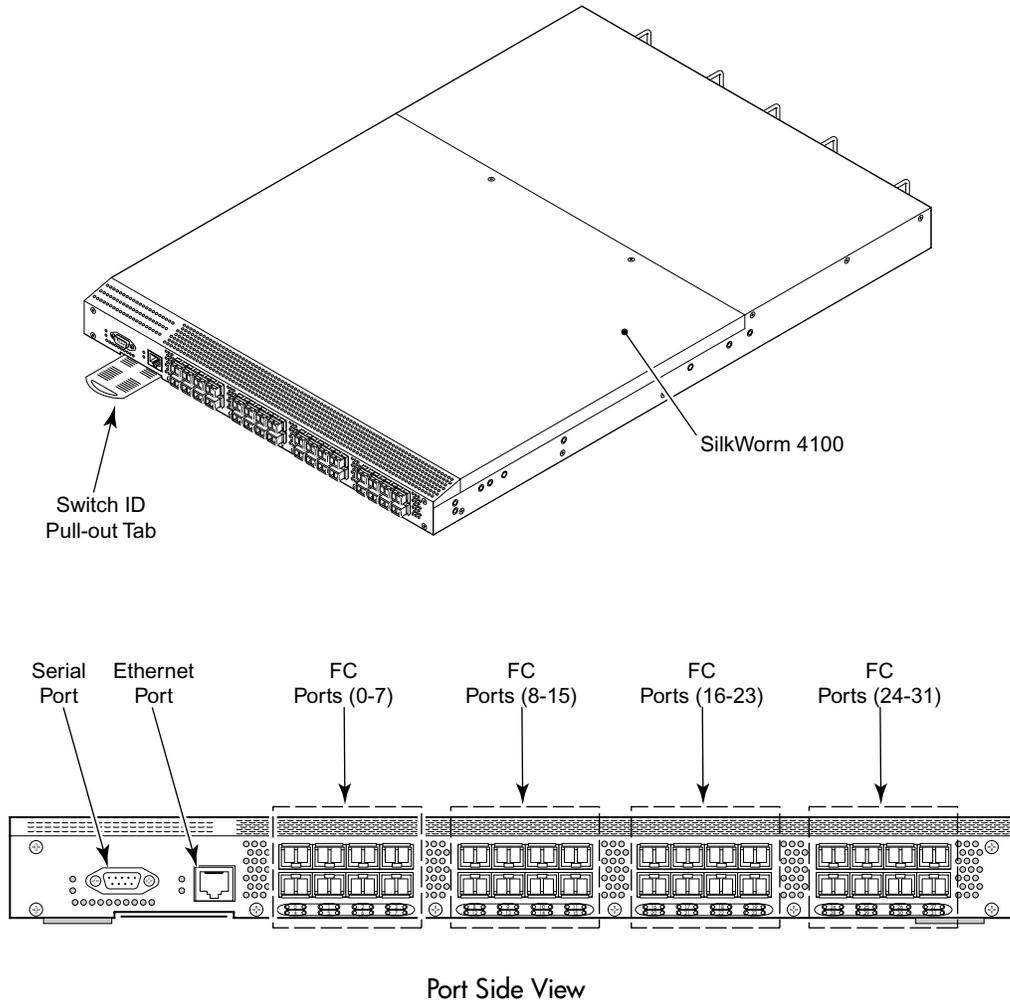
Port Side View

Figure 2 displays the nonport side view of the SilkWorm 4100 switch.

Figure 2   SilkWorm 4100 Nonport Side View

Nonport Side View
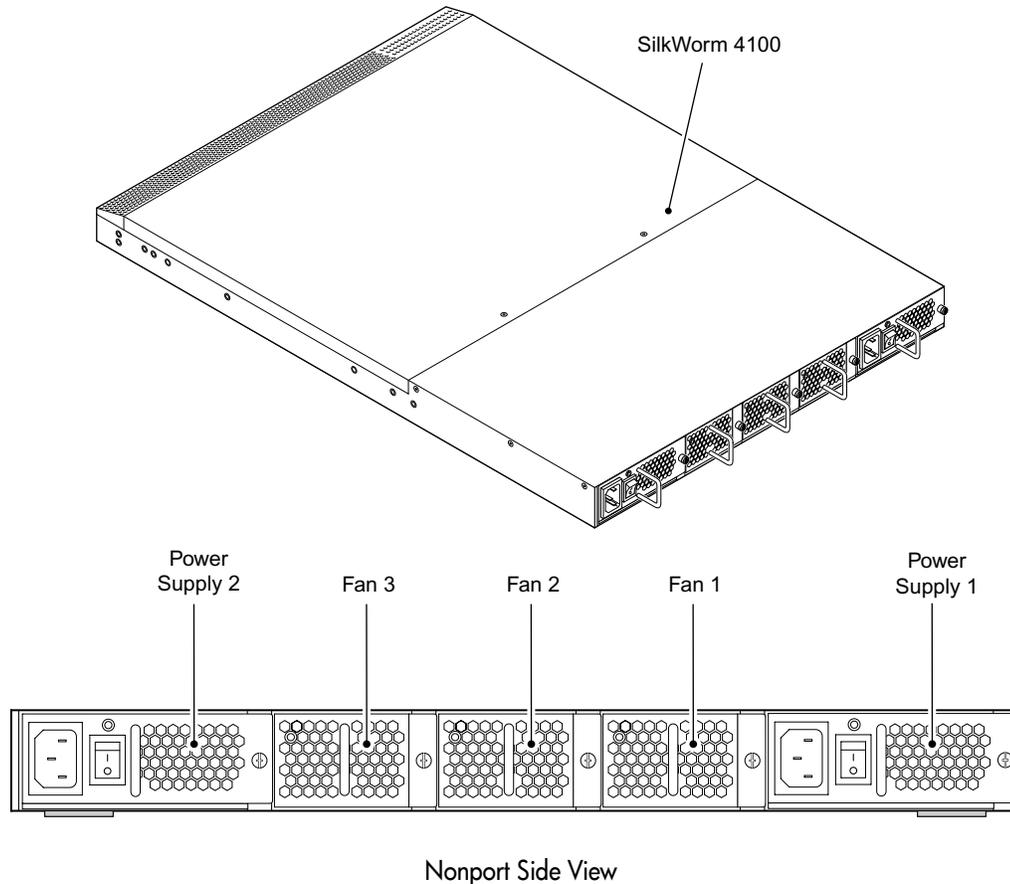
Installing the SilkWorm 4100 in an EIA Cabinet

Refer to the *Fixed Rack Mount Kit Installation Procedure* that shipped with your unit for instructions on installing the SilkWorm 4100 in a fixed rack.

Refer to the *Slide Rack Mount Kit Installation Procedure* (optional) for detailed instructions on installing the SilkWorm 4100. The switch can be installed using the slide rack mount kit in two ways:

- To allow the port side of the switch to slide out of the exhaust-air side of the cabinet. In this installation, the port side of the switch is flush with the edge of the cabinet.

- To allow the nonport side of the switch to slide out the cool-air side of the cabinet. In this installation, the port side of the switch is set three inches back from the edge of the cabinet, allowing a more gradual bend in the fiber-optic cables.

Configuring the SilkWorm 4100

The SilkWorm 4100 must be configured correctly before it can operate within a network and fabric. For instructions on configuring the switch to operate in a fabric containing switches from other vendors, refer to the *Brocade Fabric OS Procedures Guide*.

The following items are required for configuring and connecting the SilkWorm 4100 for use in a network and fabric:

- The SilkWorm 4100, installed and connected to a power source
- A workstation computer that has a terminal emulator application (such as HyperTerminal for Windows)
- An unused IP address and corresponding subnet mask and gateway address
- The serial cable provided with the switch
- An Ethernet cable
- SFP transceivers and compatible fibre cables, as required
- Access to an FTP server, for backing up the switch configuration

To configure the SilkWorm 4100, you must perform the following tasks:

1. Providing Power to the Switch on page 9

2. Creating a Serial Connection on page 9

3. Connecting to the Switch Using the Serial Connection on page 9

4. Setting the Switch IP Address on page 10

5. Creating an Ethernet Connection on page 10

6. Completing Switch Configuration on page 10

> ⚠ **Caution**
> 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 on page 10.

Providing Power to the Switch

To provide electrical power to the SilkWorm 4100:

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 inches available and are routed to avoid stress.

2. Power on the power supplies by flipping both AC switches to "1". The power supply LED lights up green, and the switch begins running POST. The switch requires a minimum of three minutes to boot and complete POST.

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

3. After POST is complete, verify that the switch power and status LEDs on the left of the port side of the switch are green.

Creating a Serial Connection

To create a serial connection to the SilkWorm 4100:

1. Remove the plug from the serial port and insert the serial cable provided with the SilkWorm 4100.

2. Connect the serial cable to the serial port on the switch and to an RS-232 serial port on the workstation. If the serial port on the workstation is RJ-45 instead of RS-232, you can remove the adapter on the end of the serial cable and insert the exposed RJ-45 connector into the RJ-45 serial port on the workstation.

3. Disable any serial communication programs running on the workstation.

4. Open a terminal emulator application (such as HyperTerminal for Windows or TERM in a UNIX environment) and configure the application as follows:

   - In a Windows 95, 98, 2000, or NT environment:

Bits per second:	9600
Databits:	8
Parity:	None
Stop bits:	1
Flow control:	None

   - In a UNIX environment, enter the following string at the prompt:

     ```
     tip /dev/ttyyb -9600
     ```

Connecting to the Switch Using the Serial Connection

To log in to the switch through the serial connection:

1. Verify that the switch has completed POST. When POST is complete, the port status and switch power and status LEDs return to a standard healthy state; for information about LED signals, refer to the *SilkWorm 4100 Hardware Reference Manual*.

2. When the terminal emulator application stops reporting information, press **Enter** to display the login prompt.

Setting the Switch IP Address

To replace the default IP address and related information:

1. Enter the **ipAddrSet** command at the terminal emulator application prompt, and enter the requested information at the prompts:

```
switch:admin> ipaddrset
Ethernet IP Address [10.77.77.77]:10.32.53.47
Ethernet Subnetmask [255.0.0.0]:255.255.240.0
Fibre Channel IP Address [0.0.0.0]:
Fibre Channel Subnetmask [0.0.0.0]:
Gateway IP Address [0.0.0.0]:10.32.48.1
Set IP address now? [y = set now, n = next reboot]:y
IP address being changed...
Committing configuration...Done.
switch:admin>
```

2. Optionally, verify that the address was correctly set by typing the **ipAddrShow** command at the prompt.

3. Record the IP address on the pull out tab (see Figure 1 on page -6) provided for this purpose on the port side of the SilkWorm 4100.

4. If the serial port is no longer required, log out of the serial console, remove the serial cable, and replace the plug in the serial port.

Creating an Ethernet Connection

To create an Ethernet connection to the SilkWorm 4100:

1. Remove the plug from the Ethernet port.

2. Connect an Ethernet cable to the switch Ethernet port and to the workstation or to an Ethernet network containing the workstation.

> **Note**
> At this point, the switch can be accessed remotely, by command line or by Brocade Advanced Web Tools. Ensure that the switch is not being modified from any other connections during the remaining tasks.

Completing Switch Configuration

To complete the switch configuration:

1. Log on to the switch by telnet, using the administrative account.

2. Modify the domain ID if required.

   The default domain ID is 1. If the switch is not powered on until after it is connected to the fabric and the default domain ID is already in use, the domain ID for the new switch is automatically reset to a unique value. If the switch is connected to the fabric after is has been powered on and the default domain ID is already in use, the fabric segments. To find the domain IDs that are currently in use, run the **fabricShow** command on another switch in the fabric.

a.   Disable the switch by typing the **switchDisable** command.

b.   Enter the **configure** command.
    The command prompts display sequentially; enter a new value or press **Enter** to accept each default value.

c.   Enter **y** after the "Fabric parameters" prompt:

```
Fabric parameters (yes, y, no, n): [no] y
```

d.   Enter a unique domain ID (such as the domain ID used by the previous switch, if still available):

```
Domain: (1..239) [1] 3
```

e.   Complete the remaining prompts or press **Ctrl-D** to accept the remaining settings without completing all the prompts.

f.   Reenable the switch by entering the **switchEnable** command.

3.   Optionally, specify any custom status policies:

a.   Enter the **switchStatusPolicySet** command at the prompt.
    This command sets the policy parameters that determine overall switch status.

b.   Customize the status policies as desired.
    To deactivate the alarm for a condition, type **0** at the prompt for that condition.

4.   Install the SFP transceivers in the Fibre Channel ports, as required. The ports selected for use in trunking groups must meet specific requirements. For a list of these requirements, refer to the *Brocade Fabric OS Features Guide*.

a.   Remove the plugs from the ports to be used.

b.   Position a transceiver so that it is oriented correctly and insert it into a port until it is firmly seated and the latching mechanism clicks.

    For instructions specific to the type of transceiver, refer to the transceiver manufacturer's documentation.

> **Note**
> The transceivers are keyed to ensure correct orientation. If a transceiver does not install easily, ensure that it is correctly oriented.

c.   Repeat Steps a and b for the remaining ports, as required.

5.   Connect the cables to the transceivers.

The cables used in trunking groups must meet specific requirements. For a list of these requirements, refer to the *Brocade Fabric OS Features Guide*.

> **Caution**
> A 50-micron cable should not be bent to a radius less than 2 inches under full tensile load and 1.2 inches with no tensile load.
>
> Tie wraps are not recommended for optical cables because they are easily overtightened.

a. Orient a cable connector so that the key (the ridge on one side of connector) aligns with the slot in the transceiver. Then, insert the cable into the transceiver until the latching mechanism clicks. For instructions specific to cable type, refer to the cable manufacturer's documentation.

> **Note**
> The cable connectors are keyed to ensure correct orientation. If a transceiver does not install easily, ensure that it is correctly oriented.

b. Repeat Step a for the remaining transceivers as required.

6. Check the LEDs to verify that all components are functional. For information about LED patterns, refer to the *SilkWorm 4100 Hardware Reference Manual*.

7. Verify the correct operation of the SilkWorm 4100 by typing the **switchShow** command from the workstation.

   This command provides information about switch and port status.

8. Verify the correct operation of the SilkWorm 4100 in the fabric by typing the **fabricShow** command from the workstation.

   This command provides general information about the fabric.

9. Back up the switch configuration to an FTP server by typing the **configUpload** command and following the prompts.

   This command uploads the switch configuration to the server, making it available for downloading to a replacement switch if necessary.

   Brocade recommends backing up the configuration on a regular basis to ensure that a complete configuration is available for downloading to a replacement switch. For specific instructions about how to back up the configuration, refer to the *Fabric OS Procedures Guide*. The **switchShow**, **fabricShow**, and **configUpload** commands are described in detail in the *Fabric OS Command Reference Manual*.