



ATTO Technology, Inc.

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# **ATTO FibreConnect 8300**

8-Gb Fibre Channel Switch

## **Getting Started Guide**

## **ATTO Technology, Inc.**

155 CrossPoint Parkway  
Amherst, New York 14068 USA

[www.attotech.com](http://www.attotech.com)

Tel (716) 691-1999

Fax (716) 691-9353

Sales support: [sls@attotech.com](mailto:sls@attotech.com)

Technical support: Monday -- Friday, 8am-6pm EST

[techsupp@attotech.com](mailto:techsupp@attotech.com) (716)691-1999 ext. 242

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# 1.0 ATTO FibreConnect Provides SAN Connectivity

*Thank you for purchasing an ATTO FibreConnect 8300 SAN switch. This guide instructs you on the basics of installing and configuring your FibreConnect on Windows XP™, Vista™, 7™, Server 2003™, Server 2008™, Mac OSX™, Red Hat Linux™, and SUSE Linux™.*

Fibre Channel is a serial communications technology designed to transfer large amounts of data between a variety of hardware systems over long distances. It is a key technology for applications that require shared, high bandwidth access to storage.

Fibre Channel provides a logical point-to-point serial channel for the transfer of data between a buffer at a source device and a buffer at a destination device. It moves buffer contents from one port to another, without regard to the format or meaning of the data, so

different upper level protocols are able to run over Fibre Channel hardware.

A SAN is a shared storage architecture connecting computers and storage devices for online data access. Each connected system can directly access any attached storage device.

The ATTO FibreConnect 8300 can be used in a SAN (Storage Area Network) to connect a variety of Fibre Channel devices.

## ATTO FibreConnect 8300 Features and Benefits

The FibreConnect 8300 switches are easy to deploy, manage and integrate into both new and existing SANs. The FibreConnect series provides exceptional performance and functionality at an entry-level cost. These switches combine auto-sensing 2, 4, and 8Gb/s Fibre Channel throughput with features that greatly enhance workflow processes, allowing users to share media resources for applications such as HD video editing, post production, video-on-demand and complex databases. With Ports On Demand scalability from 8 to 16 or 24 ports, along with the ability to link multiple switches together, the 8300 series enables organizations to grow their storage networks when necessary, in a non-disruptive manner.

The FibreConnect 8300 switches are the perfect complement to ATTO's 8Gb/s Celerity Fibre Channel single, dual and quad-channel host bus adapters. With FibreConnect switches and Celerity host bus adapters, ATTO offers media and entertainment and general IT users a high performance, completely scalable end-to-end SAN connectivity solution.

- Complete SAN solution when combined with ATTO's 8Gb/s Celerity Fibre Channel HBAs
- Max fabric latency: 700 ns with no contention, cut-through routing at 8Gb/s
- Aggregate bandwidth: 408Gb/s: 24 ports x 8.5Gb/s (line rate) x 2 (full duplex)
- Supports trunking with up to eight 8Gb/s ports per ISL trunk
- Full line-speed switching at:
  - 2.125Gb/s line speed, full duplex
  - 4.25Gb/s line speed, full duplex
  - 8.50Gb/s line speed, full duplex
- Auto-sensing of 2, 4, and 8Gb/s port speed
- Optionally programmable to fixed port speed
- Speed matching between 2, 4, and 8Gb/s
- Single FOS fabric: 56 domains
- Switch mode (default): 8-, 16-, and 24-port configurations (8-port increments through Ports On Demand licenses); universal (E, F, M, FL) ports
- FL\_Port, F\_Port, M\_Port (Mirror Port), and E\_Port; self-discovery based on switch type (U\_Port)



## 2.0 Installation

Use the following instructions for installation of the FibreConnect Switch.

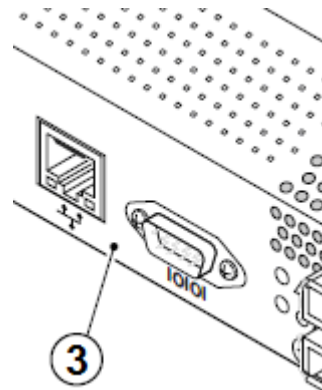
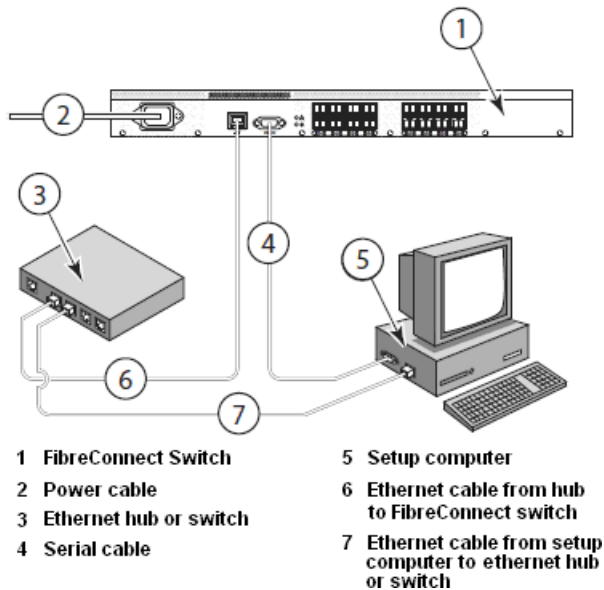
### Unpack the box; verify contents

- The FibreConnect Switch
- Power Cord
- “L” brackets for mounting in a 19” rack
- SFPs
- Serial cable
- USB to serial adapter and Driver CD
- Documentation CD\*
- DCFM Pro (Data Center Fabric Manager)™ CD\*

*\*If you are receiving an ATTO FibreConnect Switch for evaluation, the box may not contain the Documentation CD and/or the the DCFM Pro CD. To access all relevant documents of the Documentation CD, please visit: [www.attotech.com/downloads.html](http://www.attotech.com/downloads.html). To download DCFM Pro please visit: [www.brocadeconnect.com/public/DCFMEval](http://www.brocadeconnect.com/public/DCFMEval)*

### Hardware Installation

- 1 Install the FibreConnect into a standard rack (with the included “L” brackets) or place it on a desktop.
- 2 Connect the power cord to the FibreConnect 8300 switch and plug in the power source.
- 3 Connect the serial cable from the FibreConnect to your computers serial port. If your machine does not have a serial port, please use the included USB to serial adapter.



- 4 Connect an RJ45 Ethernet cable to the device then plug into a switch, within your network, on the same subnet as the computer you will use to configure the switch.

# Discovering the IP Address

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## Mac OS X

- 1 Begin by connecting the included USB to serial adapter to an available USB port on your Mac.



- 2 Connect the included serial cable from the adapter to the FC8300 serial port.
- 3 Insert the included mini cd into your optical drive.
- 4 Locate the driver it can be found on the CD at /USB TO RS232 Converter/Mac/iMac 10.1 & 10.4orlater/PL2302\_1.2.1r2.dmg. Copy to the desktop.
- 5 Double click the dmg file to install the driver.
- 6 Reboot your machine.
- 7 After installing the adapter and driver, using the Terminal program in OS X, connect to the device by completing the following:
  - a. Open Terminal (/Applications/Utilities)
  - b. Type **screen /dev/tty.usbserial 9600**
  - c. Hit **enter**
  - d. Login to the device with the default username **admin** and password **password**
- 8 You are now logged into the switch.



### Note

Should you choose to use a different terminal application, such as ZTerm, use the following COM port properties:

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

- 9 Now discover the IP address of the FibreConnect Switch by typing **ipaddrshow** in the command line of the terminal application and hitting **enter**.
- 10 You may now connect to Web Tools (GUI) which allows you to log into the switch and

begin configuring the device. Do this by completing the following:

- a. Open a web browser.
- b. Type the IP address, obtained in step 9, into the address bar

*example: http://192.168.100.43*

- c. Hit **enter**.
- d. This will load the java based web tools GUI and prompt you for the following default username and password:

*Default username: admin*

*Default password: password*

## Windows XP and Windows Server 2003

- 1 Connect the included serial cable from the FC8300 to the serial port on your PC. Use the included USB to serial adapter, if necessary.
- 2 Using a terminal emulation program on the setup computer to connect to the device using an application such as the native HyperTerminal.
- 3 Open HyperTerminal by going to **Start -> Run -> type hypertrm.exe** and hit **enter**.
- 4 Create a new connection with the following COM port properties:

*Bits per second: 9600*  
*Parity: None*  
*Stop bits: 1*  
*Flow control: None*
- 5 Login to the switch from HyperTerminal with username: **admin** and password: **password**
- 6 Now discover the IP address of the FibreConnect Switch by typing **ipaddrshow** in the command line of the terminal and hitting **enter**.
- 7 You may now connect to Web Tools (GUI) which allows you to log into the switch and begin configuring the device. Do this by completing the following:
  - a. Open a web browser.
  - b. Type the IP address, obtained in step 6, into the address bar

*example: http://192.168.100.43*

- c. Hit **enter**.
- d. This will load the java based web tools GUI and prompt you for the following default username and password:

*Default username: admin*

*Default password: password*

## Windows Vista/Server 2008/Windows 7

- 1 Connect the included serial cable from the FC8300 to the serial port on your PC. Use the included USB to serial adapter, if necessary.
- 2 Using a terminal program on the setup computer, connect to the switch using an application such as the shareware application TeraTerm.
  - Download, unzip, and install TeraTerm Pro (shareware).
  - Open TeraTerm.
  - Under setup select Serial Port.
  - Create a new serial connection to the COM serial port using the following settings:
    - Bits per second: 9600*
    - Parity: None*
    - Stop bits: 1*
    - Flow control: None*
- 3 Enter the default username: **admin** and password: **password** at the login prompt.
- 4 Now discover the IP address of the FibreConnect Switch by typing **ipaddrshow** in the command line of the terminal and hitting **enter**.
- 5 You may now connect to Web Tools (GUI) which allows you to log into the switch and begin configuring the device. Do this by completing the following:
  - a. Open a web browser.
  - b. Type the IP address, obtained in step 4, into the address bar *example:*  
*http://192.168.100.43*
  - c. Press **enter**.
  - d. This will load the java based web tools GUI and prompt you for the following default username and password:
    - Default username: admin*
    - Default password: password*

## Linux (Red Hat and SUSE)

- 1 Connect the included serial cable from the FC8300 to the serial port on your machine. Use the included USB to serial adapter, if necessary.
- 2 Using Terminal, connect to the device by completing the following:
  - a. Open Terminal.
  - b. Type **screen /dev/ttyS0 9600**
  - c. Press **enter**.
  - d. Login to the device with username: **admin** and password: **password**
- 3 You are now logged into the switch.



### Note

*Should you choose to utilize another terminal application, use the following COM port properties:*

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

- 4 Now discover the IP address of the FibreConnect Switch by typing **ipaddrshow** in the command line of the terminal and pressing **enter**.
- 5 You may now connect to Web Tools (GUI) which allows you to log into the switch and begin configuring the device. Do this by completing the following:
  - a. Open a web browser.
  - b. Type the IP address, obtained in step 4, into the address bar *example:*  
*http://192.168.100.43*
  - c. Press **enter**.
  - d. This will load the java based web tools GUI and prompt you for the following default username and password:
    - Default username: admin*
    - Default password: password*

## Connecting devices

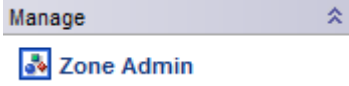
- 1 Remove any optical protector plugs from the SFP transceivers that you intend to use.
- 2 Position and insert each SFP transceiver until it is firmly seated in the opening of the switch. Close the locking latch.
- 3 Make the physical connections to your host and storage devices.
- 4 Finished - You have successfully completed initial configuration of your ATTO FibreConnect switch and can continue onto setup and zoning.





## 3.0 Zoning

Zoning is the partitioning of a Fibre Channel fabric into smaller subsets to restrict device access and simplify management. Zoning can be used to separate devices or segregate bandwidth across the fabric. The following is a basic overview of how to configure zoning. For more information please refer to Chapter 9: Administrative Advanced Zoning, in the Fabric OS Administrator's Guide, that can be found on the documentation CD.

- 1 Connect an FC initiator or target into an open port on the FibreConnect Switch.
- 2 Use the link indicator on the switch port to verify that the connection is good.
- 3 Login to the WebTools GUI interface using the Ethernet connection on the switch.  
*You will need Java enabled on your browser.*
- 4 Check the FibreConnect Switch Port.
  - a. On the visual depiction of the switch, click on the port where you plugged in the FC connector.
  - b. The **Port Administration Services** screen should pop up.  
*You will need to enable the pop-up in your browser.*
  - c. Verify that the Port Status is **Online**. Note the port number.
  - d. Close the **Port Administration Services** screen.
- 5 Find the WWN of your new device.
  - a. Navigate back to the front GUI page.
  - b. Select **Zone Admin**, an icon on the top left of the screen.  

  - c. Expand the **Ports & Attaching Devices** under the **Member Selection List**.
  - d. Expand the appropriate port number. Note the attached WWN.
- 6 Create a new alias for this device.
  - a. Click **New Alias** button.
  - b. Follow the menu instructions and name the device.
- 7 Add the appropriate WWN to the alias.
  - a. Select your new device name from the **Name** drop down menu.
  - b. Expand the WWNs under **Member Selection List**.
  - c. Highlight the appropriate WWN.
  - d. Select **Add Member**.
- 8 Add the alias to the appropriate zone.
  - a. Select the **Zone** tab.
  - b. Select the appropriate zone from the **Name** drop down menu.
  - c. Select the appropriate alias from the **Member Selection List**.
  - d. Click **Add Member**.
- 9 Ensure that the zone is in **Zone Config** in the **Zone Config** tab.
- 10 Save your changes by selecting **ZoningActions -> Enable Config**
- 11 Log back in to the server to verify. It should now see the storage devices.

## 4.0 Update Firmware

Your FibreConnect 8300 requires the use of an FTP or SCP to upgrade your firmware.

### Setting up an FTP Server

The following instructions apply for setting up an FTP Server and Upgrading Firmware on XP/Vista/Mac OSX/2003/2008/7/Linux Operating Systems.

- 1 Setup and install an FTP server either using native functionality in Windows/Mac/Linux, or utilize a freeware application such as FtpGoServer.



#### Note

Java will need to be installed for FtpGoServer to run.

FtpGoServer is a simple, fast and very small (10K) Java FTP server that can be used on your PC, Mac or Linux machine to allow remote FTP access to a selected part of a computer's file system. Download and install the application.

### Upgrading Firmware via Command Line Interface/Telnet (Recommended)

Use the following procedure to upgrade your ATTO FibreConnect 8300 to the latest firmware through a Telnet/Command Line Interface (CLI).



#### Note

ATTO recommends that before upgrading the switch firmware, a copy of the switch configuration file should be saved to the FTP server using the `configupload` command. Refer to Section 5.0 of this guide for instructions on how to do this.

- 1 Create a directory for the firmware files and download the firmware from the hp website into a UNIX or Windows machine as explained above in FTP setup.

- 2 Verify the FTP service is running on a Windows, Mac, or Linux machine.
- 3 Telnet to the switch through the terminal application you used in the above steps to initially find the IP of the switch.
- 4 At the login prompt, type **admin**
- 5 Type the password.
- 6 At the prompt type **firmwareDownload**
- 7 Follow the on-screen prompts, as shown below:
  - Server Name or IP Address: 192.168.xxx.xxx (Enter the IP address of the FTP server that contains the firmware file you received from ATTO Support.)
  - User Name: (access to the FTP root)
  - File Name: /v6.x.x/ (the location of the unzipped firmware folder)
  - Password: xxxx (password to access FTP server)
  - FirmwareDownload has started.
  - Start to install packages.....

*The firmware files begin to download.*

*This takes approximately 5 to 10 minutes.*

Upon completion of a successful download, you will see the following prompts:

- Verification SUCCEEDED
  - FirmwareDownload has completed successfully.
  - Connection to host lost.
- 8 The switch is now running firmware v6.x.x
  - 9 Re-telnet to the switch, and type **firmwreshow**

You should see the following example:

```
swd77:admin> firmwreshow
Appl  Primary/Secondary Versions
```

```
-----
FOS   v6.x.x
      v6.x.x
```

## Upgrading Firmware via Web Tools



### Note

*ATTO recommends that before upgrading the switch firmware, a copy of the switch configuration file should be saved to the FTP server using the `configupload` command. Refer to Section 5.0 of this guide for instructions on how to do this.*

- 1 Verify the FTP service is running on a local network machine with proper access privilege.
- 2 From a web browser, access the FibreConnect web tools GUI by typing in the switch IP address and logging in.
- 3 Select **Switch Admin** in the upper left corner of web tools.
- 4 Select the **Firmware Download** tab.
- 5 Enter the following information:
  - **Host Name or IP** (Enter the IP address of the FTP server that contains the firmware file you received from ATTO Support.)
  - **User Name** (access to the FTP root)
  - **Password** (no password is required if username anonymous is used)

- **Protocol Type** (FTP)
  - Specify **Firmware Path** (this is the actual folder location of the unzipped firmware directory)
- 6 Click **Download**.



### CAUTION

**The process will take roughly 15 minutes. The ATTO FibreConnect Switch has two partitions of non-volatile storage areas, a primary and a secondary, to store two firmware images. Firmware download always loads the new image into the secondary partition and swaps the secondary partition to be the primary. It then reboots the CP and activates the new image. In this way, the switch will continue to operate during a firmware download. The LEDs on the switch may turn off but the switch will continue to pass data during the firmware download. Configuration, including zoning, will not be affected by the upgrade.**

## 5.0 Saving Configurations

The FibreConnect allows you to create a backup of your switches configuration, as well as the ability to restore a previous configuration.

ConfigUpload/Download allows you to save/load:

- Zoning configurations
- SNMP attributes
- Domain IDs
- Switch names
- Network IDs

### ConfigUpload into the switch.

- 1 Type **configUpload** and then press **enter**.
- 2 Specify protocol (most likely ftp)
- 3 Enter username (to access ftp)
- 4 Specify path to file and name for file.
- 5 Specify what you are backing up.
- 6 Enter password (of ftp access)
- 7 Press **enter**. The process will be very quick.

*Commands shown here:*

```
swd77:admin> configUpload
Protocol (scp, ftp, local) [ftp]: ftp
Server Name or IP Address [host]: 192.168.xxx.xxx
User Name [user]: xxxx
Path/File name [<home dir>/config.txt]:
(folder)/filename.txt
Section (all|chassis|switch [all]): all
Password: xxxx
```

configUpload complete: All selected config parameters are uploaded

```
swd77:admin>
```

### ConfigDownload (restore)

- 1 Telnet into the switch.
- 2 Type **configDownload** and then press **enter**.
- 3 Specify protocol (most likely ftp)
- 4 Enter username (to access ftp)
- 5 Specify path to file and name of file.
- 6 Read and agree to caution statement.
- 7 Press **Y** and then **enter**.

*Commands shown here:*

```
swd77:admin> configDownload
Protocol (scp, ftp, local) [ftp]: ftp
Server Name or IP Address [host]: 192.168.xxx.xxx
Path/File name [<home dir>/config.txt]:
(folder)/filename.txt
```



### CAUTION

**This command is used to download a backed-up configuration for a specific switch. If using a file from a different switch, this file's configuration settings will override any current switch settings. Downloading a configuration file, which was uploaded from a different type of switch, may cause this switch to fail. A switch reboot might be required for some parameter changes to take effect.**

configDownload operation may take several minutes to complete for large files.

Do you want to continue [y/n]: