

3COM Installation Guide

OfficeConnect[®] Gigabit Switch 5 (3C1670500A) Gigabit Switch 8 (3C1670800A) Gigabit Switch 16 (3C1671600)

INTRODUCTION

About This Guide:

Thank you for purchasing the OfficeConnect Gigabit Switch. This high quality, Gigabit Ethernet Switch is an easy, efficient way of creating a network or expanding an existing network. The Switch's Gigabit ports provide support for bandwidth intensive applications, and allow high-speed connections to servers, and to the rest of the network. An example configuration is shown in Figure 1.

The Switch is compact and attractively designed for desktop use. It can be stacked with other units in the OfficeConnect family, which include Cable/DSL gateways, wireless devices, Fast Ethernet and Gigabit Ethernet switches. The OfficeConnect family is a fully integrated system, enabling you to share computer resources, and take advantage of new technologies as your network grows.

Your Package Contains:

- OfficeConnect Switch
- Power adapter for use with the Switch
- Stacking clip
- Four rubber feet
- This Installation Guide
- Support and Safety Information sheet
- Warranty flyer

About This Guide

This guide will use the term Switch when referring to the OfficeConnect Gigabit Switch.

DIMENSIONS AND STANDARDS

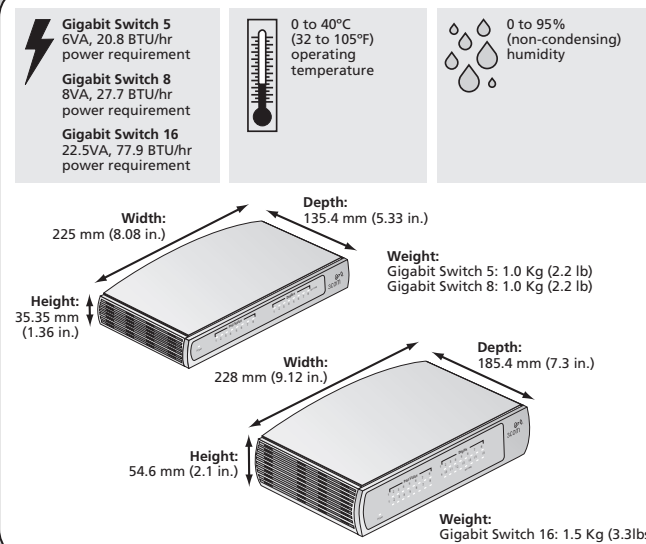
Dimensions and Operating Conditions

Standards

Functional: ISO 8802/3, IEEE 802.3, 802.3u
 Safety: UL 60950-1, EN 60950-1, CSA 22.2 #60950-1, IEC60950-1
 EMC†: EN 55022 Class B, EN 55024, FCC Part 15 Class B*
 ICES-003 Class B
 Environmental: EN 60068 (IEC 68)

* Refer to Regulatory Notices in the Support and Safety Information sheet.

† Category 5 (or better) screened cables must be used to ensure compliance with the Class B requirements of the above standards. The use of unshielded cables complies with the Class A requirements.



CONFIGURATION

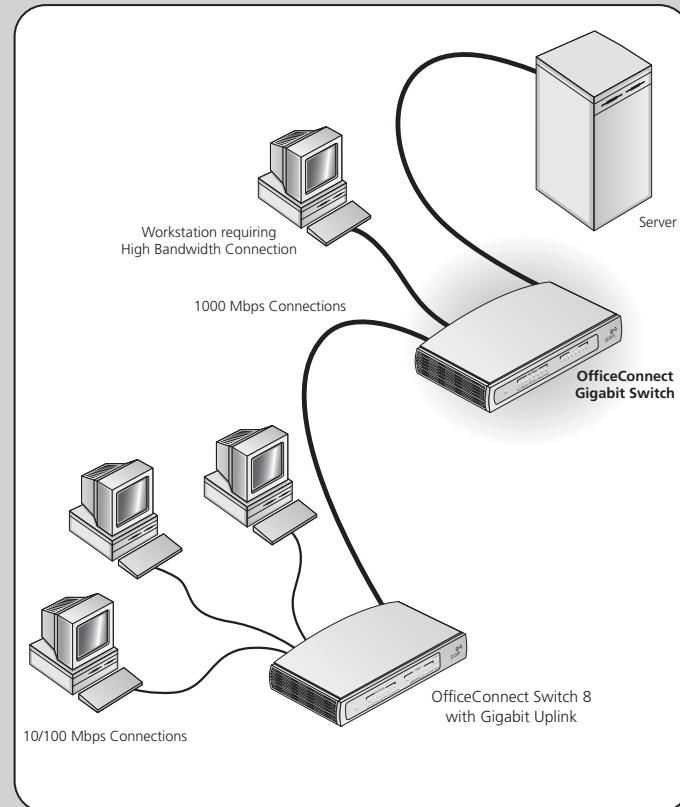
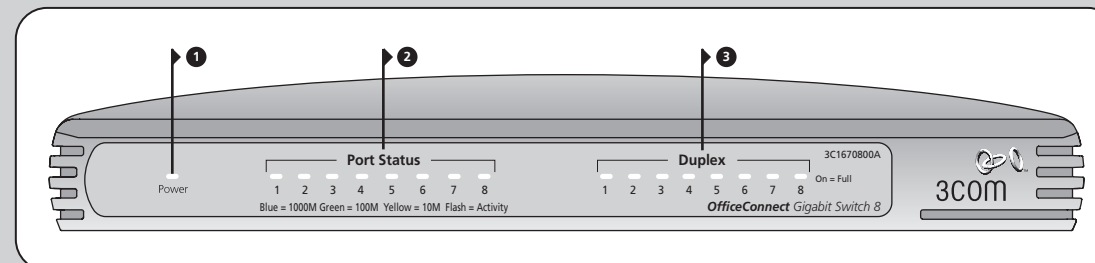


Figure 1 Network showing sample configuration with Gigabit Switch.

ABOUT YOUR SWITCH

OfficeConnect Gigabit Switch - Front



1 Power LED Green

Indicates that the Switch is powered on. If the LED is off, but the Power Adapter OK LED is lit, there may be a problem with the Switch's internal power supply. Refer to Problem Solving.

2 Five/Eight/Sixteen Port Status LEDs Blue (1000 Mbps link) / Green (100 Mbps link) / Yellow (10Mbps link)

If the LED is on, the link between the port and the next piece of equipment is OK. If the LED is flashing, the link is OK and data is being transmitted or received. If the LED is off, nothing is connected or the connected device is turned off, or there is a problem with the connection (refer to the Problem Solving section).

3 Duplex LEDs Yellow (10/100/1000 Mbps, full duplex) / Off (10/100 Mbps, half duplex)

4 Power Adapter Socket

Only use the power adapter that is supplied with the Switch.

5 Power Adapter OK LED Green

Indicates that the power adapter is supplying power to the Switch. If the LED is off, there may be a problem with the power adapter or adapter cable (refer to Problem Solving).

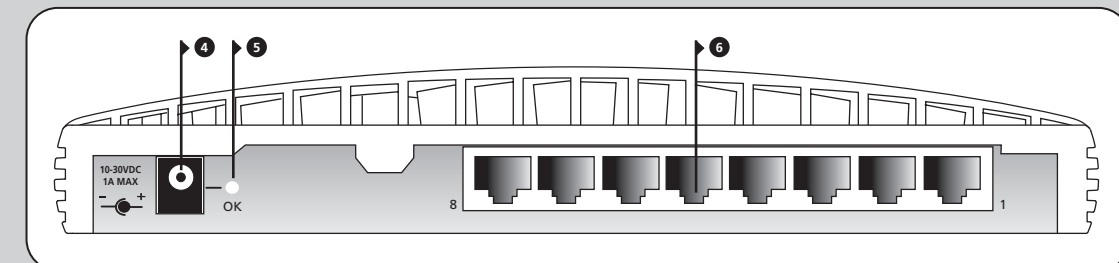
6 10BASE-T/100BASE-TX/1000BASE-T Ports

Use suitable TP cable with RJ-45 connectors. You can connect your Switch to a workstation, or any other piece of equipment that has 10BASE-T/100BASE-TX/1000BASE-T connectivity.

Each port is capable of autosensing for 10 Mbps, 100 Mbps or 1000 Mbps operation.

All ports have an automatic MDI/MDIX feature, which means either straight-through or crossover cable can be used to connect to any port.

OfficeConnect Gigabit Switch - Rear



WARNING: RJ-45 ports.
 These are shielded RJ-45 data sockets. They cannot be used as standard traditional telephone sockets, or to connect the unit to a traditional PBX or public telephone network. Only connect RJ-45 data connectors, network telephony systems, or network telephones to these sockets.

Either shielded or unshielded data cables with shielded or unshielded jacks can be connected to these data sockets.

VORSICHT: RJ-45-Portes.
 Diese Portes sind geschützte Datensteckdosen. Sie dürfen weder wie normale traditionelle Telefonsteckdosen noch für die Verbindung der Einheit mit einem traditionellen privaten oder öffentlichen Telefonnetzwerk gebraucht werden. Nur RJ-45-Datenanschlüsse, Telefonnetzsysteme oder Netztelefone an diese Steckdosen anschließen.

Entweder geschützte oder ungeschützte Buchsen dürfen an diese Datensteckdosen angeschlossen werden.

AVERTISSEMENT : Prises RJ-45 blindées.
 Ces prises ne peuvent servir comme prises téléphone standard et ne permettent pas la connexion de l'appareil à un système PBX ni à un réseau téléphonique public. N'y branchez que des prises RJ-45 mâles adaptées, ou des systèmes de réseaux téléphoniques. Il est possible d'y brancher des câbles blindés ou non comportant des prises de type Jack (blindées ou non).



1 POSITIONING YOUR SWITCH

Safety Information

- WARNING:** Please read the 'Important Safety Information' section in the Support and Safety Information sheet before you start.
- VORSICHT:** Bitte lesen Sie den Abschnitt 'Wichtige Sicherheitsinformationen' sorgfältig durch, bevor Sie das Gerät einschalten.
- AVERTISSEMENT:** Veuillez lire attentivement la section "Consignes importantes de sécurité" avant de mettre en route.

When positioning your Switch, ensure:

- It is out of direct sunlight and away from sources of heat.
- Cabling is away from power lines, fluorescent lighting fixtures, and sources of electrical noise such as radios, transmitters and broadband amplifiers.
- Water or moisture cannot enter the case of the unit.
- Air flow around the unit and through the vents in the side of the case is not restricted. 3Com recommends you provide a minimum of 25 mm (1 in.) clearance.

Using the Rubber Feet

Use the four self-adhesive rubber feet to prevent your Switch from moving around on your desk, or when stacking with flat top OfficeConnect units. Only stick the feet to the marked areas at each corner on the underside of your Switch.

Using a Stacking Clip

Use a stacking clip when stacking your Switch with other curved OfficeConnect units. The stacking clip allows you to stack units neatly and securely.

- CAUTION:** You can stack up to a maximum of four units. Smaller units must be stacked above larger units.

To fit the clip:

- Fit the clip across the top of the unit, as shown in Figure 2 (picture 1), ensuring that the longer sections of the fastening pieces are pointing downwards.
- Align the fastening pieces over the slots found on each side of the unit.
- Push the clip down gently to secure it, ensuring that the fastening pieces snap into the slots on the unit.

To fit another unit:

- Rest the second unit on the top of the clip and align it with the front of the unit below.
- Press down gently on the unit to secure it onto the clip, ensuring the fastening pieces fit into the slots on the unit below, as shown in Figure 2 (picture 2).

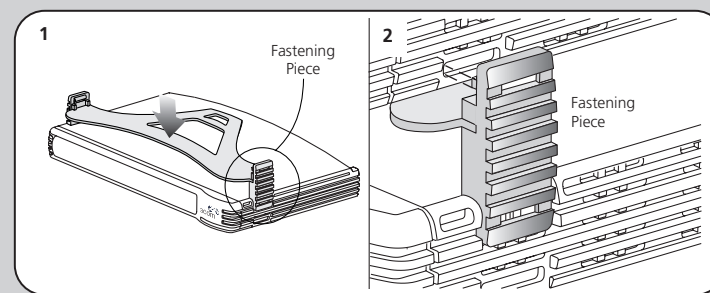


Figure 2 Stacking Your Units together

Wall Mounting

There are two slots on the underside of the Switch that can be used for wall mounting. The Switch must be mounted with the LEDs facing upwards.

- ▶** When wall mounting the unit, ensure it is within reach of the power outlet

- ▶** When wall mounting the unit, ensure that the rubber feet are not fixed

Mounting Instructions for Cement Walls

- Make two holes 150 mm (5.9 in.) apart and insert two nylon or similar screw anchors that are suitable for the wall construction.
- Fix two suitable screws into the anchors, leaving their heads 3 mm (0.12 in.) clear of the wall surface. The screws should be at least 30 mm (1.2 in.) long.
- Remove any connections in the Switch and locate it over the screw heads. When in line, gently push the Switch on to the wall and move it downwards to secure.

Mounting Instructions for Wood Walls

- Make two holes 150 mm (5.9 in.) apart.
- Fix two suitable screws directly into the wall, leaving their heads 3 mm (0.12 in.) clear of the wall surface. The screws should be at least 20 mm (0.75 in.) long.
- Remove any connections in the Switch and locate it over the screw heads. When in line, gently push the Switch on to the wall and move it downwards to secure.

- CAUTION:** When making connections, be careful not to push the Switch up and off the wall.

- CAUTION:** Only wall mount single units, do not wall mount stacked units.

2 BEFORE YOU INSTALL YOUR SWITCH

Unit Connections

To connect OfficeConnect units (such as gateways or other switches) to your Switch you need:

- One suitable Twisted Pair (TP) cable for each unit
- 3Com recommends Category 5E cable for Gigabit connections.

Workstation Connections

To connect workstations or other equipment (such as servers) directly to your Switch, you need:

- One adapter card for each workstation to be connected to a port on the Switch. The adapter card must be capable of communicating at the required connection speed. For example, if you want to use a Gigabit connection, you must install a 1000BASE-T adapter card. 3Com produce a range of easy to install 1000BASE-T Network adapter cards.
- An operating system (for example Network or Windows 95/98/Me/2000/XP) with network support configured, running on your workstations.
- One suitable Twisted Pair cable for each workstation.

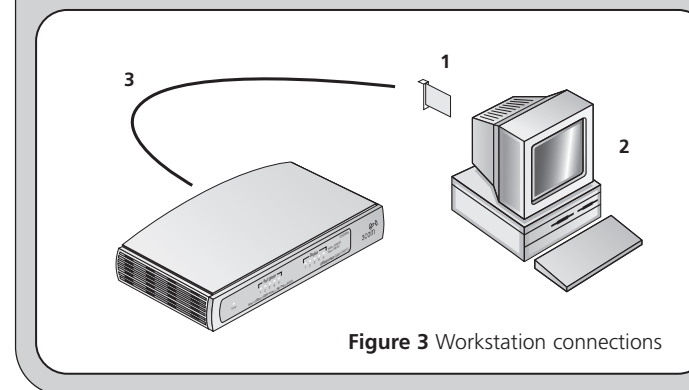


Figure 3 Workstation connections

3 CONNECTING WORKSTATIONS

Twisted Pair (TP) Cables

Cables can be shielded (screened) or unshielded. Cables must be Category 5 or above. 3Com recommends Category 5E cable for Gigabit connections. The maximum length you can use is 100 m (328 ft).

Twisted Pair (TP) cable is very easy to use. To connect a TP cable, simply slot the connector into the relevant RJ-45 Port. When a connector is fully in, its latch locks into place. To disconnect the cable, push the connector's latch in and remove it.

When one end of a TP cable is connected to the Switch and the other end is connected to the network interface card of a workstation or other device, the Switch will automatically detect whether a straight-through or crossover cable is being used and will compensate if required. The units will then autonegotiate to determine the fastest possible link speed between them. This may take a few seconds and the outcome will be reflected in the LEDs on the front of the Switch.

- ▶** If the equipment connected to the Switch does not support autonegotiation or it has been disabled, it must be configured to operate in half duplex mode.

Expanding Your Network

You can increase the number of workstations and other devices that can connect to your network by adding OfficeConnect gateways and switches. You can connect a 10BASE-T, 100BASE-TX or 1000BASE-T OfficeConnect unit to each port of the Switch.

The Switch has automatic MDI/MDIX functionality, and therefore does not require the Uplink/Normal switch associated with some OfficeConnect products. Simply plug in the cable, and the Switch will automatically detect which wiring practice has been followed, and will compensate accordingly.

Checking Unit Connections

When you have connected all your units, power on the units and the Switch. The Port Status LEDs for the ports you have used should be lit. If they are not, check your connections.

4 HOW YOUR SWITCH CAN BE USED

Switching

When a network of repeater hubs is in operation, any information that is sent by the workstation is passed around the whole network (regardless of the destination of the information). This can result in a lot of unnecessary traffic that can slow the network down. The Switch solves this problem because it "listens" to the network and automatically learns what workstations can be reached through its ports. It can then selectively pass on any information by transmitting the traffic from the relevant port only. This operation is called "switching".

The Switch effectively divides up your network, localizing the network traffic and passing on traffic as necessary. If you have any high performance workstations that require a lot of bandwidth, connect them directly to the Switch.

Traffic Prioritization

The Switch has a built in feature to aid network performance at times of excessive load. It is called Priority Queuing. When a packet is received, the Switch will examine it to see if it has been priority encoded. If it has, the Switch will then read the priority level and determine whether it should be directed through the normal or high priority channel. This feature can be useful during excessive loads, for example, when one type of traffic may require priority over another.

Connecting 10BASE-T/100BASE-TX/1000BASE-T Networks

The ports can each be connected to a 10BASE-T/100BASE-TX/1000BASE-T network. If you have various connection speeds in your network, you can join them together using the Switch allowing all your workstations to communicate. For example, by connecting one of the ports to a server, all the workstations connected to the server can communicate with devices connected to the Switch, significantly increasing the size of your network.

Alternatively, if for example you use a 10BASE-T/100BASE-TX network and want to improve network performance by introducing 1000BASE-T technology, the Switch protects the investment in your existing workstations because it maintains 10BASE-T/100BASE-TX connections to them.

5 PROBLEM SOLVING

The Switch has been designed to aid you when detecting and solving possible problems with your network. These problems are rarely serious; the cause is usually a disconnected or damaged cable, or incorrect configuration. If this section does not solve your problem, contact your supplier for information on what to do next.

Perform these actions first:

- Ensure all network equipment is powered on.
- Power each piece of network equipment off, wait about five seconds and then power each one on.

- CAUTION:** Do not power the Switch off and then immediately on. Wait about five seconds between power cycles.

Check the following symptoms and solutions:

Power Status LED or Power Adapter OK LED not lit. Refer to the following table.

Power Adapter OK LED	Power Status LED	Problem and Action
On	On	All functioning correctly
On	Off	The internal power circuit has failed. Contact 3Com Technical Support for a replacement Switch.
Off	Off	The power adapter or power adapter connection is faulty. Refer to "Replacement Power Adapters" below.

Replacement Power Adapters

If both the Power Adapter OK LED and Power Status LED are off, check your power adapter connection. If there is still no power, contact 3Com Technical Support and ask for a replacement power adapter. Please quote the power adapter part number, shown on the OfficeConnect power adapter you are currently using.

Alternatively, quote the part number for your region:

3C number		Region
3C16740A	US	United States
3C16741A	UK	United Kingdom
3C16742A	ME	Mainland Europe
3C16743A	JPN	Japan
3C16744A	AA	Australasia
3C16745A	SA	South Africa
3C16747A	KR	South Korea
3C16748A	RA	Argentina
3C16757		Gigabit Switch 16 only Worldwide Use

Only use the power adapter supplied with the Switch or a replacement OfficeConnect power adapter. Do not use any other power adapter.

Port Status LED not lit for a port that has a TP cable connected. After connection, it may take several seconds for the Port Status LEDs to illuminate. The Port Status LED should turn Blue, Green or Yellow for each port that is connected, depending on connection speed. The Duplex LED may or may not illuminate. Please refer to 'About Your Switch' for a full description of the LEDs.

If the Port Status LED is not lit after several seconds, ensure that the connected device is powered on, that the TP cable is not damaged and that it is correctly inserted at both ends.

You may find that a TP cable works when connected to the Switch, but that it does not if disconnected from the Switch and connected to another device. This may be because the other device does not have the automatic MDI/MDIX feature.

The Port Status LED is lit but the network performance of the switch is poor. The switch supports full-duplex autonegotiation. If the connected device does not support autonegotiation, ensure it is configured for half duplex operation only.