



# Catalyst 3750 Switch Hardware Installation Guide

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- Move the equipment farther away from the television or radio.
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*Catalyst 3750 Switch Hardware Installation Guide*

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# Cisco Limited Lifetime Hardware Warranty Terms

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There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranty applicable to Cisco software, is included on the Cisco Documentation CD and on Cisco.com. Follow these steps to access and download the *Cisco Information Packet* and your warranty document from the CD or Cisco.com.

1. Launch your browser, and go to this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/cetrans.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/cetrans.htm)

The Warranties and License Agreements page appears.

2. To read the *Cisco Information Packet*, follow these steps:

- a. Click the **Information Packet Number** field, and make sure that the part number 78-5235-02F0 is highlighted.
- b. Select the language in which you would like to read the document.
- c. Click **Go**.

The Cisco Limited Warranty and Software License page from the Information Packet appears.

- d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).



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**Note** You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from Adobe's website: <http://www.adobe.com>

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3. To read translated and localized warranty information about your product, follow these steps:
  - a. Enter this part number in the Warranty Document Number field:  
78-6310-02C0
  - b. Select the language in which you would like to view the document.
  - c. Click **Go**.  
The Cisco warranty page appears.
  - d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

You can also contact the Cisco service and support website for assistance:

[http://www.cisco.com/public/Support\\_root.shtml](http://www.cisco.com/public/Support_root.shtml).

### **Duration of Hardware Warranty**

A Cisco product hardware warranty is supported for as long as the original end user continues to own or use the product, provided that the fan and power supply warranty is limited to five (5) years. In the event of a discontinuance of product manufacture, the Cisco warranty support is limited to five (5) years from the announcement of the discontinuance.

### **Replacement, Repair, or Refund Policy for Hardware**

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times can vary, depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

### **To Receive a Return Materials Authorization (RMA) Number**

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference.

Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	





## Preface

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### Audience

This guide is for the networking or computer technician responsible for installing the Catalyst 3750 switches. We assume that you are familiar with the concepts and terminology of Ethernet and local area networking.

### Purpose

This guide documents the hardware features of the Catalyst 3750 family of switches. It describes the physical and performance characteristics of each switch, explains how to install a switch, and provides troubleshooting information.

This guide does not describe system messages that you might receive or how to configure your switch. For more information, see the switch software configuration guide, the switch command reference, and the switch system message guide on the Cisco.com Product Documentation home page. For information about the standard Cisco IOS Release 12.1 or 12.2 commands, see the Cisco IOS documentation set from the Cisco.com home page at **Service and Support > Technical Documents**. On the Cisco Product Documentation home page, select Release **12.1** or **12.2** from the Cisco IOS Software drop-down list.

# Conventions

This document uses these conventions and symbols for notes, cautions, and warnings:



**Note**

Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.



**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



**Warning**

## IMPORTANT SAFETY INSTRUCTIONS

**This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device.**

## SAVE THESE INSTRUCTIONS

**Waarschuwing**

## BELANGRIJKE VEILIGHEIDSINSTRUCTIES

**Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.**

## BEWAAR DEZE INSTRUCTIES



**Varoitus TÄRKEITÄ TURVALLISUUSOHJEITA**

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelemiseen liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

**SÄILYTÄ NÄMÄ OHJEET****Attention IMPORTANTES INFORMATIONS DE SÉCURITÉ**

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

**CONSERVEZ CES INFORMATIONS****Warnung WICHTIGE SICHERHEITSHINWEISE**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

**BEWAHREN SIE DIESE HINWEISE GUT AUF.**

**Avvertenza      IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

**Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.**

**CONSERVARE QUESTE ISTRUZIONI****Advarsel      VIKTIGE SIKKERHETSINSTRUKSJONER**

**Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.**

**TA VARE PÅ DISSE INSTRUKSJONENE****Aviso      INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

**Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.**

**GUARDE ESTAS INSTRUÇÕES**

**¡Advertencia! INSTRUCCIONES IMPORTANTES DE SEGURIDAD**

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

**GUARDE ESTAS INSTRUCCIONES****Varning! VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

**SPARA DESSA ANVISNINGAR****Figyelem FONTOS BIZTONSÁGI ELOÍRÁSOK**

Ez a figyelmeztető jel veszélyre utal. Sérülésveszélyt rejtő helyzetben van. Mielőtt bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplő figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján kereshető meg.

**ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!**

## Предупреждение

**ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ**

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

**СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ**

## 警告

重要的安全性说明

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

## 警告

安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

## تحذير

## إرشادات الأمان الهامة

يوضح رمز التحذير هذا وجود خطر. وهذا يعني أنك متواجد في مكان قد ينتج عنه التعرض لإصابات. قبل بدء العمل، احذر مخاطر التعرض للصدمات الكهربائية وكن على علم بالإجراءات القياسية للحيلولة دون وقوع أي حوادث. استخدم رقم البيان الموجود في آخر كل تحذير لتحديد مكان ترجمته داخل تحذيرات الأمان المترجمة التي تأتي مع الجهاز. قم بحفظ هذه الإرشادات

## Upozorenje

## VAŽNE SIGURNOSNE NAPOMENE

Ovaj simbol upozorenja predstavlja opasnost. Nalazite se u situaciji koja može prouzročiti tjelesne ozljede. Prije rada s bilo kojim uređajem, morate razumjeti opasnosti vezane uz električne sklopove, te biti upoznati sa standardnim načinima izbjegavanja nesreća. U prevedenim sigurnosnim upozorenjima, priloženima uz uređaj, možete prema broju koji se nalazi uz pojedino upozorenje pronaći i njegov prijevod.

## SAČUVAJTE OVE UPUTE

## Upozornění

## DŮLEŽITÉ BEZPEČNOSTNÍ POKYNY

Tento upozorňující symbol označuje nebezpečí. Jste v situaci, která by mohla způsobit nebezpečí úrazu. Před prací na jakémkoliv vybavení si uvědomte nebezpečí související s elektrickými obvody a seznamte se se standardními opatřeními pro předcházení úrazům. Podle čísla na konci každého upozornění vyhledejte jeho překlad v přeložených bezpečnostních upozorněních, která jsou přiložena k zařízení.

## USCHOVEJTE TYTO POKYNY

Προειδοποίηση ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκεστε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κινδύνους που σχετίζονται με τα ηλεκτρικά κυκλώματα και να έχετε εξοικειωθεί με τις συνήθειες πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφρασή της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ

Figyelem FONTOS BIZTONSÁGI ELOÍRÁSOK

**Ez a figyelmeztető jel veszélyre utal. Sérülésveszélyt rejtő helyzetben van. Mielőtt bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplő figyelmeztetések fordítása a készülékhez mellékelte biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján kereshető meg.**

**ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!**

Предупреждение ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ

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此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

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# Related Publications

You can order printed copies of documents with a DOC-xxxxxx= number. For more information, see the “[Obtaining Documentation](#)” section on page xxv.

These documents provide complete information about the switch and are available from this Cisco.com site:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat3750/index.htm>

- *Catalyst 3750 Switch Getting Started Guide* (order number DOC-7816663=)
- *Regulatory Compliance and Safety Information for the Catalyst 3750 Switch* (order number DOC-7816664=)
- *Release Notes for the Catalyst 3750 Switch* (not orderable but available on Cisco.com)



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**Note**

Before installing, configuring, or upgrading the switch, see the release notes on Cisco.com for the latest information.

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- *Catalyst 3750 Switch Software Configuration Guide* (order number DOC-7815164=)
- *Catalyst 3750 Switch Command Reference* (order number DOC-7815165=)
- *Catalyst 3750 Switch System Message Guide* (order number DOC-7815166=)
- Device manager online help (available on the switch)
- *Getting Started with Cisco Network Assistant* (not orderable but available on Cisco.com)
- *Catalyst 3750 Switch Hardware Installation Guide* (order number DOC-7815136=)
- *Cisco Small Form-Factor Pluggable Modules Installation Notes* (order number DOC-7815160=)
- *Cisco Small Form-Factor Pluggable Modules Compatibility Matrix* (not orderable but available on Cisco.com)
- *Compatibility Matrix for 1000BASE-T Small Form-Factor Pluggable Modules* (not orderable but available on Cisco.com)



# Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

## Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

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You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

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170 West Tasman Drive  
San Jose, CA 95134-9883

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For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

## Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

<http://www.cisco.com/tac>

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

## Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

<http://www.cisco.com/tac/caseopen>

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

## TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

**Priority 1 (P1)**—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

**Priority 2 (P2)**—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

**Priority 3 (P3)**—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Go to this URL to visit the company store:

<http://www.cisco.com/go/marketplace/>

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

<http://cisco.com/univercd/cc/td/doc/pcat/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/packet>

- *iQ Magazine* is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

<http://www.cisco.com/ipj>

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

<http://www.cisco.com/en/US/learning/index.html>





# Product Overview

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The Catalyst 3750 family of switches—also referred to as the *switches*—are stackable Ethernet switches to which you can connect devices like Cisco IP Phones, Cisco Wireless Access Points workstations, and other network devices such as servers, routers, and other switches. This chapter provides a functional overview of the Catalyst 3750 switch models. These topics are included:

- [Features, page 1-1](#)
- [Front Panel Description, page 1-4](#)
- [Rear Panel Description, page 1-25](#)
- [Management Options, page 1-29](#)

## Features

The switches can be deployed as backbone switches, aggregating 10BASE-T, 100BASE-TX, and 1000BASE-T Ethernet traffic from other network devices. See the switch software configuration guide for examples showing how you might deploy the switches in your network.

Figure 1-1 through Figure 1-12 show the Catalyst 3750 switches.

These are the switch features:

- Fast Ethernet Configurations
  - Catalyst 3750-24TS switch—24 10/100 Ethernet ports and 2 small form-factor pluggable (SFP) module slots
  - Catalyst 3750-48TS switch—48 10/100 Ethernet ports and 4 SFP module slots
  - Catalyst 3750-24PS switch—24 10/100 Power over Ethernet (PoE) ports and 2 SFP module slots
  - Catalyst 3750-48PS switch—48 10/100 PoE ports and 4 SFP module slots
- Gigabit Ethernet Configurations
  - Catalyst 3750G-24T switch—24 10/100/1000 Ethernet ports
  - Catalyst 3750G-24TS switch—1.5 rack units (RU)—24 10/100/1000 Ethernet ports and 4 SFP module slots
  - Catalyst 3750G-24TS-1U switch—1 RU—24 10/100/1000 Ethernet ports and 4 SFP module slots
  - Catalyst 3750G-48TS switch—48 10/100/1000 Ethernet ports and 4 SFP module slots
  - Catalyst 3750G-12S switch—12 SFP module slots
  - Catalyst 3750G-24PS switch—24 10/100/1000 PoE ports and 4 SFP module slots
  - Catalyst 3750G-48PS switch—48 10/100/1000 PoE ports and 4 SFP module slots
- 10-Gigabit Ethernet Configuration
  - Catalyst 3750G-16TD switch—16 10/100/1000 Ethernet ports and 1 10-Gigabit Ethernet XENPAK module slot

**Note**

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The 10-Gigabit Ethernet XENPAK modules are referred to as 10-Gigabit Ethernet module ports in the software documentation.

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- The switches support these SFP modules:
  - 1000BASE-SX
  - 1000BASE-LX
  - 1000BASE-ZX
  - 100BASE-FX
  - 1000BASE-T
  - CWDM



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**Note** When installed in Catalyst 3750 switches, 1000BASE-T SFP modules can either operate at 10, 100, or 1000 Mbps in full-duplex mode or in half-duplex mode at 10 or 100 Mbps.

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- For a list of the XENPAK modules that the Catalyst 3750G-16TD switch supports, see the Catalyst 3750 release notes.
- Configuration
  - For 10/100 ports, autonegotiates the speed and duplex settings
  - For 10/100/1000 ports, autonegotiates the speed and supports only full-duplex mode



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**Note** You can configure duplex mode to half, full, or autonegotiate on Gigabit Ethernet interfaces if the speed is set to 10 or 100 Mbps. You cannot configure half-duplex mode on Gigabit Ethernet interfaces if the interface speed is 1000 Mbps.

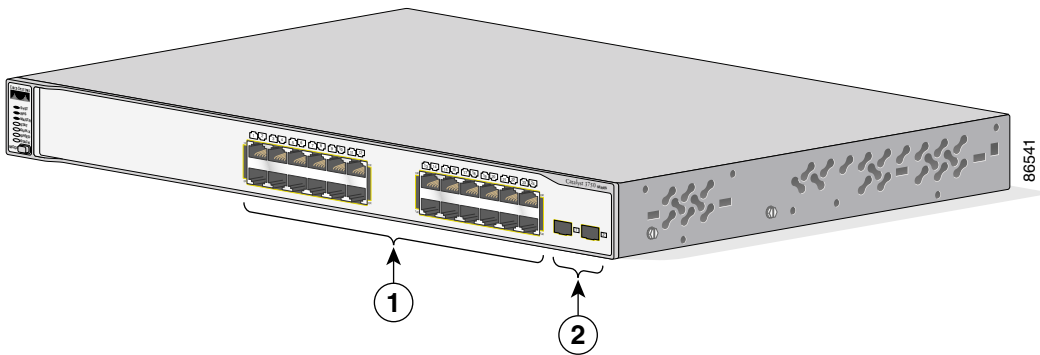
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- The Catalyst 3750 switches support stacking. You can stack up to nine switches in a stack by cabling the StackWise ports. StackWise ports are not user-configurable.
- Switches are hot-swappable
- Power redundancy
  - Connection for optional Cisco RPS 675 redundant power system that operates on AC input and supplies backup DC power output to the family of Catalyst 3750 switches.

# Front Panel Description

The Catalyst 3750-24TS 10/100 ports are numbered 1 through 24. The ports are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-1](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 1 (left) and 2 (right).

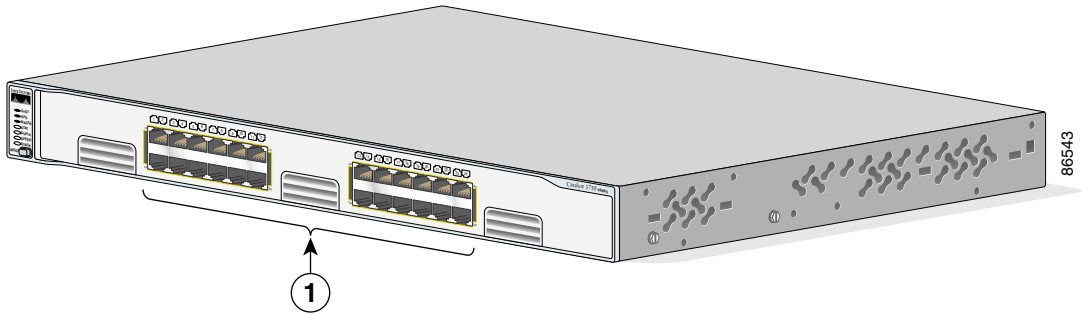
**Figure 1-1** Catalyst 3750-24TS Front Panel



<b>1</b>	10/100 ports	<b>2</b>	SFP module slots
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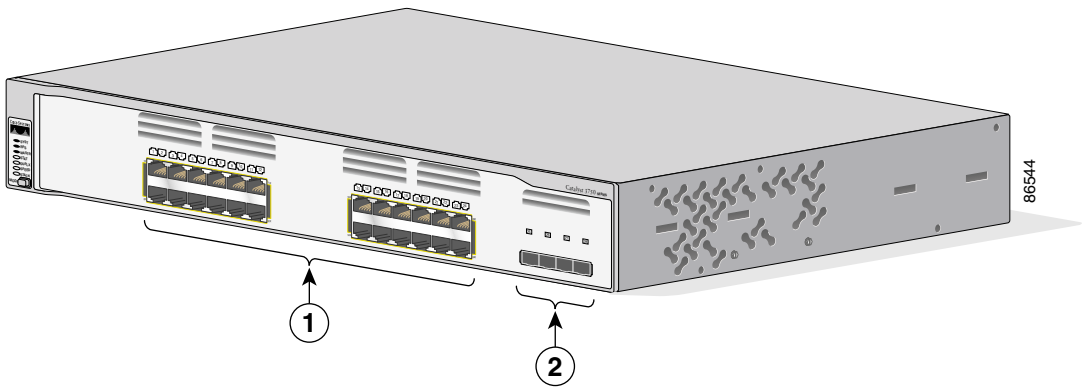
The 10/100/1000 ports on the Catalyst 3750G-24T, 3750G-24TS, and 3750G-24TS-1U switches are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-2](#), [Figure 1-3](#), and [Figure 1-4](#). Port 3 is above port 4, and so on. In [Figure 1-3](#) and [Figure 1-4](#), the SFP module slots are numbered 25 to 28.

Figure 1-2 Catalyst 3750G-24T Front Panel

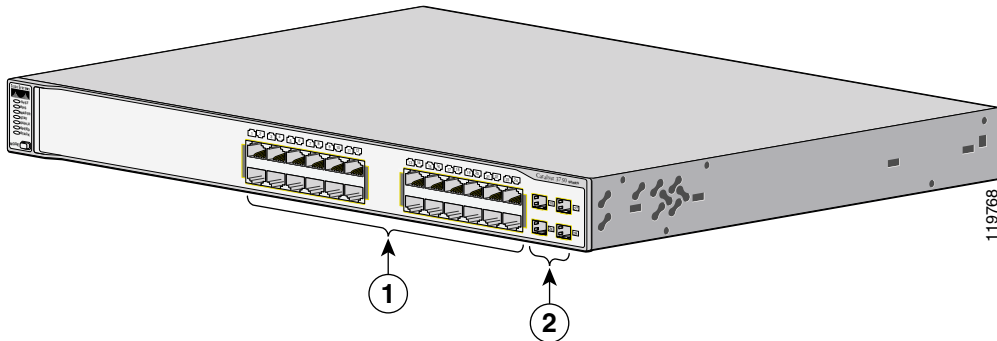


<b>1</b>	10/100/1000 ports
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Figure 1-3 Catalyst 3750G-24TS Front Panel

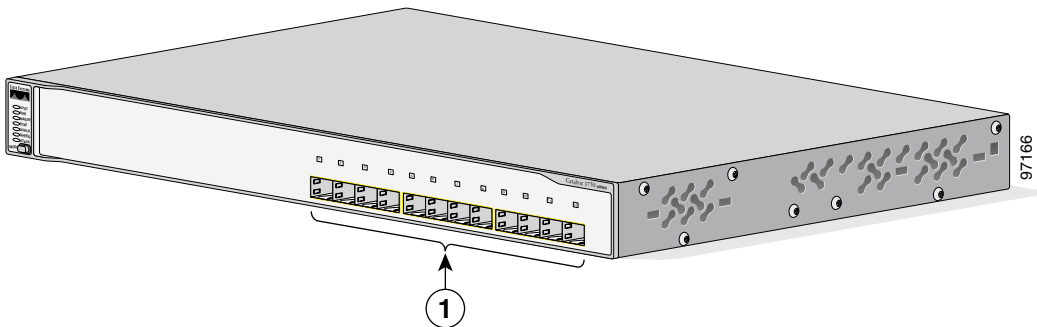


<b>1</b>	10/100/1000 ports	<b>2</b>	SFP module slots
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**Figure 1-4 Catalyst 3750G-24TS-1U Front Panel**

<b>1</b>	10/100/1000 ports	<b>2</b>	SFP module slots
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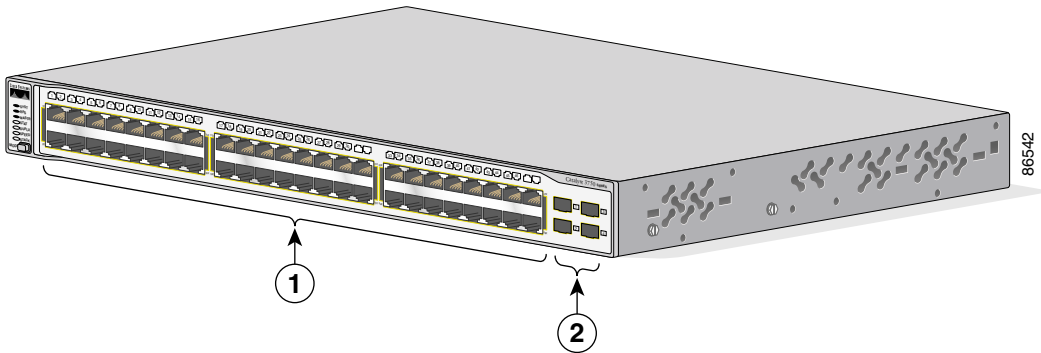
The Catalyst 3750G-12S SFP module slots are numbered 1 through 12. The slots are grouped in three sets of four, as shown in [Figure 1-5](#).

**Figure 1-5 Catalyst 3750G-12S Front Panel**

<b>1</b>	SFP module slots
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The Catalyst 3750-48TS 10/100 ports are numbered 1 through 48. The ports are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-6](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 1 to 4.

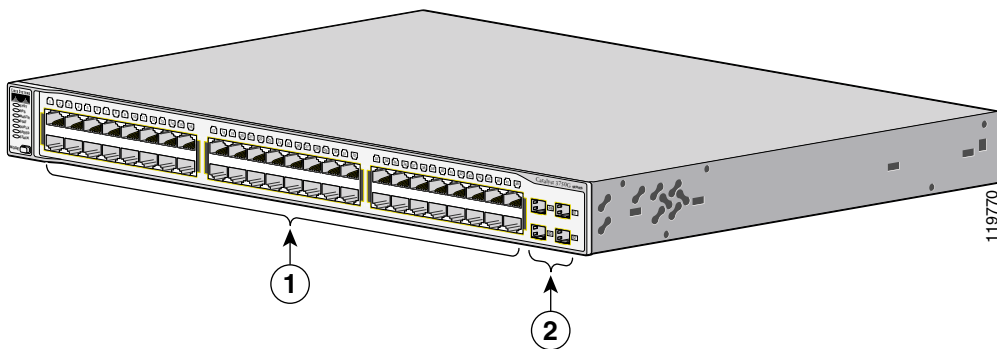
Figure 1-6 Catalyst 3750-48TS Front Panel



<b>1</b>	10/100 ports	<b>2</b>	SFP module slots
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The Catalyst 3750G-48TS 10/100/1000 ports are numbered 1 through 48. The ports are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-7](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 49 to 52.

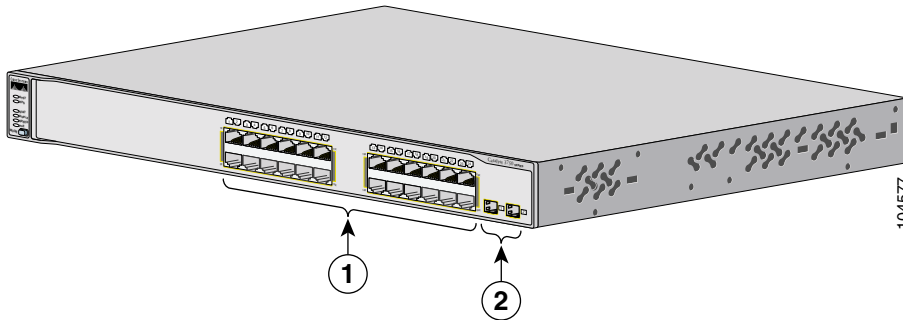
Figure 1-7 Catalyst 3750G-48TS Front Panel



<b>1</b>	10/100/1000 ports	<b>2</b>	SFP module slots
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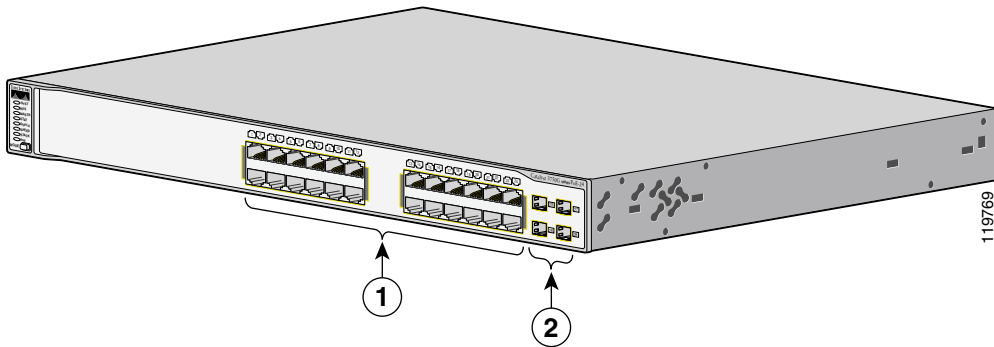
The 10/100 PoE ports on the Catalyst 3750-24PS switch are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-8](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 1 and 2.

**Figure 1-8** Catalyst 3750-24PS Switch Front Panel



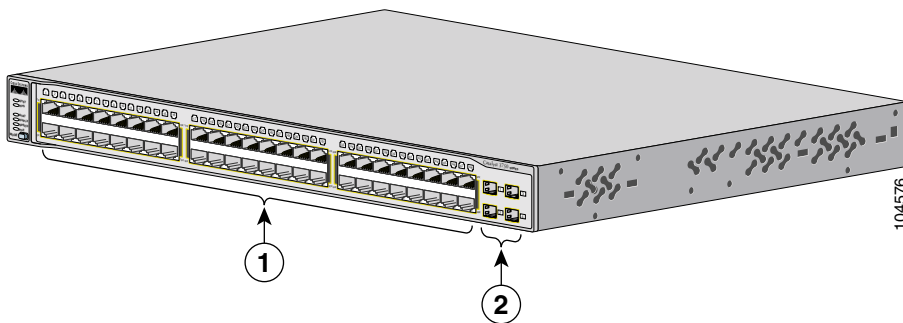
<b>1</b>	10/100 PoE ports	<b>2</b>	SFP module slots
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The 10/100/1000 PoE ports on the Catalyst 3750G-24PS switch are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-9](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 25 to 28.

**Figure 1-9 Catalyst 3750G-24PS Switch Front Panel**

<b>1</b>	10/100/1000 PoE ports	<b>2</b>	SFP module slots
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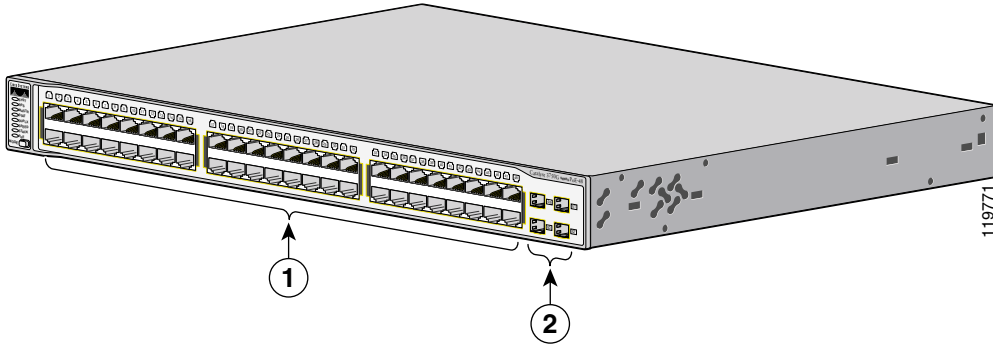
The 10/100 PoE ports on the Catalyst 3750-48PS switch are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-10](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 1 to 4.

**Figure 1-10 Catalyst 3750-48PS Switch Front Panel**

<b>1</b>	10/100 PoE ports	<b>2</b>	SFP module slots
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The 10/100/1000 PoE ports on the Catalyst 3750G-48PS switch are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-11](#). Port 3 is above port 4, and so on. The SFP module slots are numbered 49 to 52.

**Figure 1-11 Catalyst 3750G-48PS Switch Front Panel**



<b>1</b>	10/100/1000 PoE ports	<b>2</b>	SFP module slots
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The 10/100/1000 ports on the Catalyst 3750G-16TD switch are grouped in pairs. The first member of the pair (port 1) is above the second member (port 2), as shown in [Figure 1-12](#). Port 3 is above port 4, and so on. The XENPAK module slot is numbered 1.

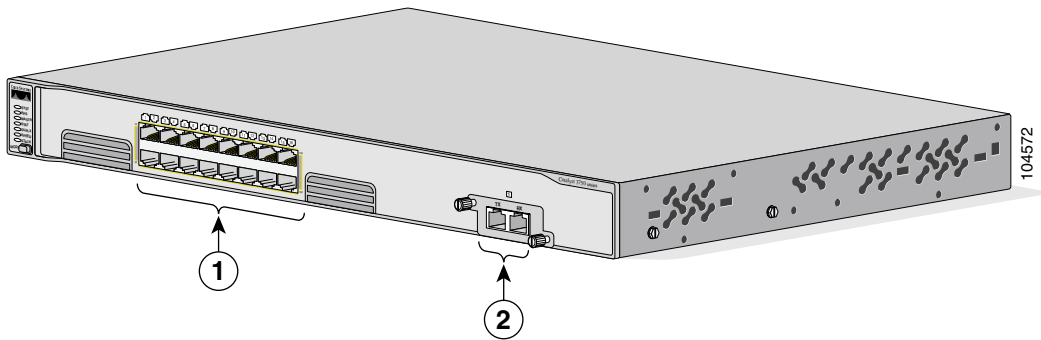


**Note**

The 10-Gigabit Ethernet XENPAK modules are referred to as 10-Gigabit Ethernet module ports in the software documentation.



Figure 1-12 Catalyst 3750G-16TD Switch Front Panel



1	10/100/1000 ports	2	XENPAK module slot
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## 10/100 and 10/100/1000 Ports

You can set the 10/100 ports on the Catalyst 3750 switches to operate in any combination of half duplex, full duplex, 10 Mbps, or 100 Mbps. You can set the 10/100/1000 ports to operate in 10 or 100 Mbps in half or full duplex, or in 1000 Mbps in full duplex.

You can set both the 10/100 and the 10/100/1000 ports for speed and duplex autonegotiation, in compliance with IEEE 802.3AB. (The default setting is autonegotiate.)



### Note

You can configure duplex mode to half, full, or autonegotiate on Gigabit Ethernet interfaces if the speed is set to 10 or 100 Mbps. You cannot configure half-duplex mode on Gigabit Ethernet interfaces if the interface speed is 1000 Mbps.

When set for autonegotiation, the port senses the speed and duplex settings of the attached device and advertises its own capabilities. If the connected device also supports autonegotiation, the switch port negotiates the best connection (the fastest line speed that both devices support and full-duplex transmission if the attached device supports it) and configures itself accordingly. In all cases, the attached device must be within 328 feet (100 meters).

**Warning**

**Voltagages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security.** Statement 1072

The 10/100 ports on the Catalyst 3750-24PS and 3750-48PS switches and the 10/100/1000 ports on the Catalyst 3750G-24PS and 3750G-48PS switches provide PoE support for devices compliant with IEEE 802.3af and also provide Cisco pre-standard PoE support for Cisco IP Phones and Cisco Aironet Access Points.

Each of the Catalyst 3750G-24PS switch 10/100 ports or the Catalyst 3750G-24PS switch 10/100/1000 ports can deliver up to 15.4 W of PoE. On the Catalyst 3750-48PS or 3750G-48PS switches, any 24 of the 48 10/100 or 10/100/1000 ports can deliver 15.4 W of PoE, or any combination of the ports can deliver an average of 7.7 W of PoE at the same time, up to a maximum switch power output of 370 W.

On a per-port basis, you can control whether or not a Catalyst 3750 PoE port automatically provides power when an IP phone or an access point is connected. The device manager and the CLI provide two PoE settings for each 10/100 or 10/100/1000 PoE port: Auto and Never.

When you select the Auto setting, the port provides power only if a valid powered device, such as an IEEE 802.3af-compliant powered device, a Cisco pre-standard IP phone, or a Cisco pre-standard Cisco access point, is connected to it. The Auto setting is the default. However, when you select the Never setting, the port does not provide power even if a Cisco IP phone or an access point is connected to it. For information about configuring and monitoring PoE ports, see the device manager online help and the switch software configuration guide.

Cisco enhanced power negotiation allows some powered devices, such as the Cisco 7970G IP Phone, to operate in high-power mode on Catalyst 3750 PoE switches. The powered device and the switch negotiate through power-negotiation Cisco Discovery Protocol (CDP) messages for an agreed-upon power-consumption level. The negotiation allows a high-power Cisco powered device that consumes more than 7 W to operate at its highest power mode. The

powered device first boots up in low-power mode, consumes less than 7 W, and negotiates to obtain enough power to operate in high-power mode. The device changes to high-power mode only when it receives confirmation from the switch. High-power devices can operate in low-power mode on switches that do not support power-negotiation CDP.

For information about configuring and monitoring PoE ports, see the device manager online help and the switch software configuration guide.

**Note**

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You also can connect a Cisco IP Phone or Cisco Aironet Access Point to a Catalyst 3750 PoE switch 10/100 or 10/100/1000 port and to an AC power source for redundant power. The powered device might switch to the AC power source as its primary power source upon being connected to it. In that case, the PoE port becomes the backup power source for the powered device.

If the primary source fails, the second power source becomes the primary power source to the powered device. During the power transfer, an IP Phone might reboot or reestablish link with the switch.

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For information about Cisco IP Phones and Cisco Aironet Access Points, see the documentation that came with your IP phone or access point.

**Note**

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100BASE-TX and 1000BASE-T traffic requires Category 5 cable. 10BASE-T traffic can use Category 3 or Category 4 cables.

When connecting the switch to workstations, servers, routers, and Cisco IP Phones, be sure that the cable is a straight-through cable. When connecting the switch to switches or hubs, use a crossover cable. When using a straight-through or crossover cable for 1000BASE-T connections, be sure to use a twisted four-pair, Category 5 cable for proper operation. Pinouts for the cables are described in [Appendix B, “Connector and Cable Specifications.”](#)

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**Note**

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You can use the **mdix auto** interface configuration command in the CLI to enable the automatic medium-dependent interface crossover (Auto-MDIX) feature. When the Auto-MDIX feature is enabled, the switch detects the required cable type for copper Ethernet connections and configures the interfaces accordingly. Therefore, you can use either a crossover or a straight-through cable for connections to a copper 10/100, 10/100/1000, or 1000BASE-T SFP module port on the switch, regardless of the type of device on the other end of the connection.

The Auto-MDIX feature is enabled by default on switches running Cisco IOS Release 12.2(18)SE or later. For releases between Cisco IOS Release 12.1(14)EA1 and 12.2(18)SE, the Auto-MDIX feature is disabled by default. For configuration information for this feature, see the switch software configuration guide or the switch command reference.

---

**Note**

---

Many legacy powered devices, including older Cisco IP phones and access points that do not fully support IEEE 802.3af, might not support PoE when connected to the switches by a crossover cable.

---

## SFP Module Slots

Catalyst 3750 switches with SFP module slots support these SFP modules:

- 1000BASE-SX
- 1000BASE-LX
- 1000BASE-ZX
- 100BASE-FX
- 1000BASE-T
- CWDM

For a list of the SFP modules that the switches support, see the Catalyst 3750 release notes.

## SFP Modules

The Catalyst 3750 switch uses Gigabit Ethernet SFP modules to establish connections to other devices. These transceiver modules are field-replaceable, providing the uplink interfaces when inserted in an SFP module slot. You can use the SFP modules for Gigabit uplink connections to other switches. You use fiber-optic cables with LC or MT-RJ connectors to connect to a fiber-optic SFP module. You use Category 5 cable with RJ-45 connectors to connect to a copper SFP module.

For more information about these SFP modules, see your SFP module documentation.

## XENPAK Module Slot

The Catalyst 3750G-16TD switch uses 10-Gigabit Ethernet XENPAK modules to establish connections to networks. The modules are installed in the module slot in the switch front panel.

For a list of the XENPAK modules that the Catalyst 3750G-16TD switch supports, see the Catalyst 3750 release notes. For more information about XENPAK modules, see your XENPAK module documentation.

**Note**

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The 10-Gigabit Ethernet XENPAK modules are referred to as 10-Gigabit Ethernet module ports in the software documentation.

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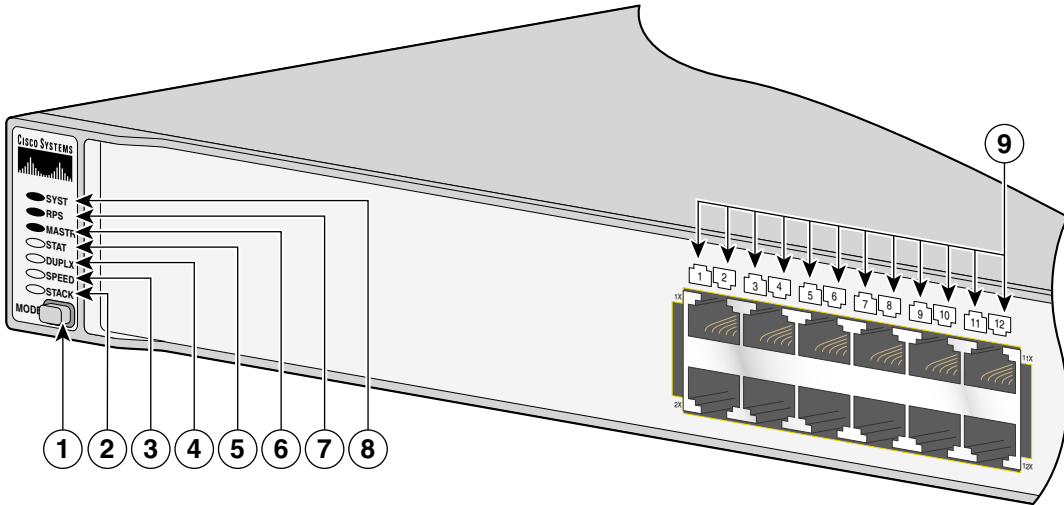
## LEDs

You can use the switch LEDs to monitor switch activity and its performance. [Figure 1-13](#) shows the Catalyst 3750 switch LEDs and the Mode button that you use to select one of the port modes.

All LEDs are visible through the GUI management applications—the Network Assistant application for multiple switches and the device manager GUI for a single switch. The switch software configuration guide describes how to use the command-line interface (CLI) to configure and monitor individual switches and switch clusters.

## Front Panel Description

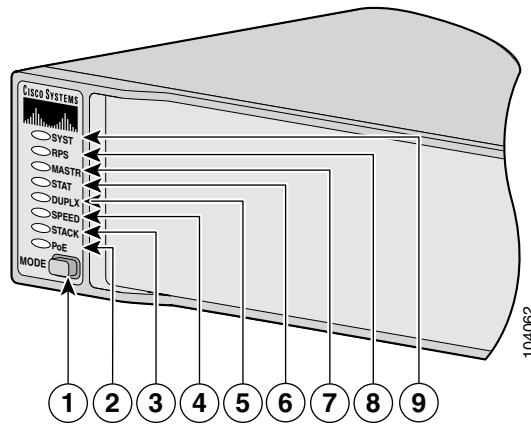
**Figure 1-13** Catalyst 3750-24TS, 3750G-24T, 3750G-12S, 3750G-16TD, 3750-48TS, 3750G-48TS, 3750G-24TS, and 3750G-24TS-1U Switch LEDs



866545

<b>1</b>	Mode button	<b>6</b>	Master LED
<b>2</b>	Stack LED	<b>7</b>	RPS LED
<b>3</b>	Speed LED	<b>8</b>	System LED
<b>4</b>	Duplex LED	<b>9</b>	Port LED
<b>5</b>	Status LED		

**Figure 1-14** Catalyst 3750-24PS, 3750G-24PS, 3750-48PS, and 3750G-48PS Switch LEDs



<b>1</b>	Mode button	<b>6</b>	Status LED
<b>2</b>	PoE LED	<b>7</b>	Master LED
<b>3</b>	Stack LED	<b>8</b>	RPS LED
<b>4</b>	Speed LED	<b>9</b>	System LED
<b>5</b>	Duplex LED		

## System LED

The System LED shows whether the system is receiving power and is functioning properly. [Table 1-1](#) lists the LED colors and their meanings.

**Table 1-1**      **System LED**

Color	System Status
Off	System is not powered on.
Green	System is operating normally.
Amber	System is receiving power but is not functioning properly.

For information on the System LED colors during power-on self-test (POST), see the [“Powering On the Switch and Running POST”](#) section on page 2-9.

## RPS LED

The RPS LED shows the RPS status. [Table 1-2](#) lists the LED colors and their meanings.

**Table 1-2**      **RPS LED**

Color	RPS Status
Off	RPS is off or not properly connected.
Green	RPS is connected and ready to provide back-up power, if required.
Flashing green	RPS is connected but is unavailable because it is providing power to another device (redundancy has been allocated to a neighboring device).
Amber	The RPS is in standby mode or in a fault condition. Press the Standby/Active button on the RPS, and the LED should turn green. If it does not, the RPS fan could have failed. Contact Cisco Systems.
Flashing amber	The internal power supply in a switch has failed, and the RPS is providing power to the switch (redundancy has been allocated to this device).

For more information about the Cisco RPS 675, see the *Cisco RPS 675 Redundant Power System Hardware Installation Guide*.



## Master LED

The Master LED shows the stack master status. [Table 1-2](#) lists the LED colors and their meanings.

**Table 1-3**      **Master LED**

Port Mode	Description
Off	Switch is not the stack master.
Green	Switch is the stack master or a standalone switch.
Amber	An error occurred when the switch was selecting the stack master switch or a stack error.

## Port LEDs and Modes

Each RJ-45 port, SFP module slot, and XENPAK module slot has a port LED. These port LEDs, as a group or individually, display information about the switch and about the individual ports. The port modes determine the type of information displayed through the port LEDs. [Table 1-4](#) lists the mode LEDs and their associated port mode and meaning.

To select or change a mode, press the Mode button until the desired mode is highlighted. When you change port modes, the meanings of the port LED colors also change. [Table 1-6](#) explains how to interpret the port LED colors in different port modes.

If your switches are stacked and you press the Mode button on any one of the switches in the stack, all the switches in the stack change to display the same selected mode. For example, if you press the mode button on the stack master to display SPEED, all the other switches in the stack also display SPEED.

**Table 1-4**      **Port Mode LEDs**

Mode LED	Port Mode	Description
STAT	Port status	The port status. This is the default mode.
DUPLX	Port duplex mode	The port duplex mode: full duplex or half duplex. <b>Note</b> The 10/100/1000 ports operate only in full-duplex mode.

**Table 1-4 Port Mode LEDs**

Mode LED	Port Mode	Description
SPEED	Port speed	The port operating speed: 10, 100, or 1000 Mbps.
STACK	Stack member status	The stack member status.
	StackWise port status	The StackWise port status. See the <a href="#">“Stack LED” section on page 1-23</a> for more information.
PoE <sup>1</sup>	10/100 and 10/100/1000 PoE port power	The PoE status.

1. The PoE LED is on the Catalyst 3750-24PS, 3750G-24PS, 3750-48PS, and 3750G-48PS switches.


Even if PoE mode is not selected on a Catalyst 3750-24PS, 3750G-24PS, 3750-48PS, or 3750G-48PS switch, the PoE LED still shows PoE problems when they are detected.

[Table 1-5](#) lists the PoE mode LED colors and their meanings.

**Table 1-5 PoE Mode LED**

Color	PoE Status
Off	PoE mode is not selected. None of the 10/100 or 10/100/1000 ports have been denied power or are in a fault condition.
Green	PoE mode is selected, and the PoE status is shown on the port LEDs.
Blinking amber	PoE mode is not selected. At least one of the 10/100 or 10/100/1000 ports has been denied power, or at least one of the 10/100 or 10/100/1000 ports has a PoE fault.

**Table 1-6** *Meaning of LED Colors in Different Modes on the Switch*

Port Mode	Port LED Color	Meaning
PoE <sup>1</sup>	Off	PoE is off.  If the powered device is receiving power from an AC power source, the port LED is off even if the powered device is connected to the switch port.
	Green	PoE is on. The port LED is green only when the switch port is providing power.
	Alternating green and amber	PoE is denied because providing power to the powered device will exceed the 370 W switch power capacity.
	Blinking amber	PoE is off due to a fault.   <b>Caution</b> PoE faults are caused when noncompliant cabling or powered devices are connected to a PoE port. Only standard-compliant cabling can be used to connect Cisco pre-standard IP Phones and wireless access points or IEEE 802.3af-compliant devices to PoE ports. A cable or device that causes a PoE fault must be removed from the network.
	Amber	PoE for the port has been disabled.  <b>Note</b> PoE is enabled by default.

**Table 1-6** *Meaning of LED Colors in Different Modes on the Switch (continued)*

Port Mode	Port LED Color	Meaning
STAT (port status)	Off	No link, or port was administratively shut down.
	Green	Link present.
	Flashing green	Activity. Port is transmitting or receiving data.
	Alternating green-amber	Link fault. Error frames can affect connectivity, and errors such as excessive collisions, CRC errors, and alignment and jabber errors are monitored for a link-fault indication.
	Amber	Port is blocked by Spanning Tree Protocol (STP) and is not forwarding data.  <b>Note</b> After a port is reconfigured, the port LED can remain amber for up to 30 seconds as STP checks the switch for possible loops.
	Flashing amber	Port is blocked by STP and is transmitting or receiving packets.
DUPLX (duplex)	Off	Port is operating in half duplex.
	Green	Port is operating in full duplex.
SPEED	<b>10/100 and 10/100/1000 ports</b>	
	Off	Port is operating at 10 Mbps.
	Green	Port is operating at 100 Mbps.
	Flashing green	Port is operating at 1000 Mbps.
	<b>SFP ports</b>	
	Off	Port is operating at 10 Mbps.
	Green	Port is operating at 100 Mbps.
	Flashing green	Port is operating at 1000 Mbps.  <b>Note</b> When installed in Catalyst 3750 switches, 1000BASE-T SFP modules can operate at 10, 100, or 1000 Mbps in full-duplex mode or in half-duplex mode at 10 or 100 Mbps.
	<b>XENPAK port</b>	
	Off	Port is not operating.
	Flashing green	Port is operating at up to 10 Gbps.

**Table 1-6**      **Meaning of LED Colors in Different Modes on the Switch (continued)**

Port Mode	Port LED Color	Meaning
STACK (stack member)	Off	No stack member corresponding to that member number.
	Flashing green	Selected switch's member number.
	Green	Member number of other stack member switches.

1. The PoE LED is only on the Catalyst 3750-24PS and 3750-48PS switches.

## Stack LED

The stack LED shows the sequence of member switches in a stack. Up to nine switches can be members of a stack. The first nine port LEDs show the position of a switch in a stack. [Figure 1-15](#) shows a magnified view of the LEDs on the first switch, which is member number 8 of the stack. For example, if you press the Mode button to select the stack member on this switch, the port LED 8 flashes green because this represents the member number of this switch. The port LEDs 3 and 4 are solid green, as these represent the member numbers of other switches in the stack. The other port LEDs are off because there are no more members in the stack.

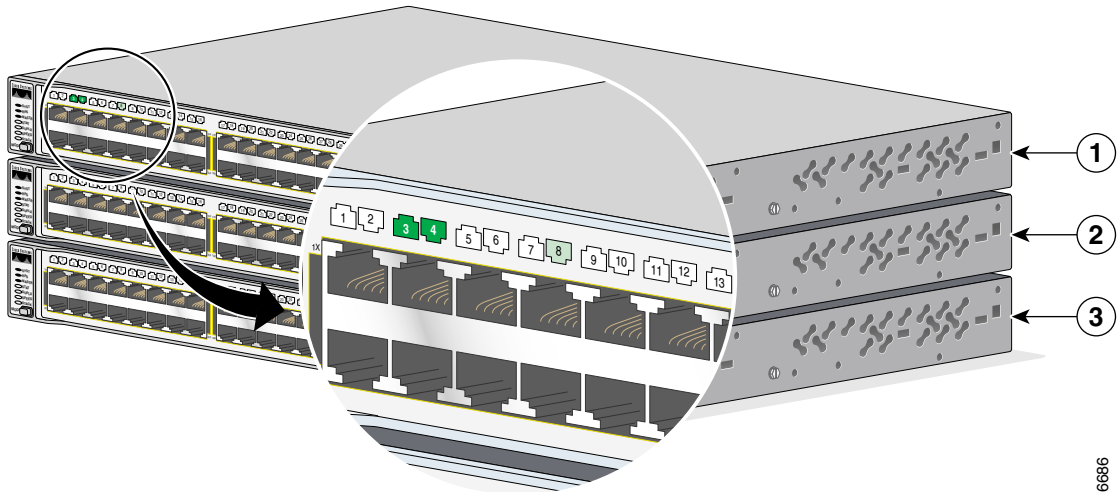
When the stack LED is selected, the representative stack LEDs are green when the StackWise ports (on the switch rear panel) are up, and the representative stack LEDs are amber when the ports are down:

- SFP port LEDs 1 and 2 on the Catalyst 3750-24TS switch show the status for StackWise ports 1 and 2, respectively.
- SFP port LEDs 3 and 4 on the Catalyst 3750-48TS switch show the status for StackWise ports 1 and 2, respectively.
- SFP port LEDs 51 and 52 on the Catalyst 3750G-48TS and 3750G-48PS switches show the status for StackWise ports 1 and 2, respectively.
- SFP port LEDs 27 and 28 on the Catalyst 3750G-24TS, 3750G-24TS-1U, and 3750G-24PS switches show the status for StackWise ports 1 and 2, respectively.
- The 10/100/1000 port LEDs 23 and 24 on the Catalyst 3750G-24T switch show the status for StackWise ports 1 and 2, respectively.
- SFP port LEDs 11 and 12 on the Catalyst 3750G-12S switch show the status for StackWise ports 1 and 2, respectively.

**Note**

If the port LEDs are green on all the switches in the stack, the stack is operating at full bandwidth (32 Gbps). If any of the port LEDs are not green, the stack is not operating at full bandwidth.

**Figure 1-15** Stack LED



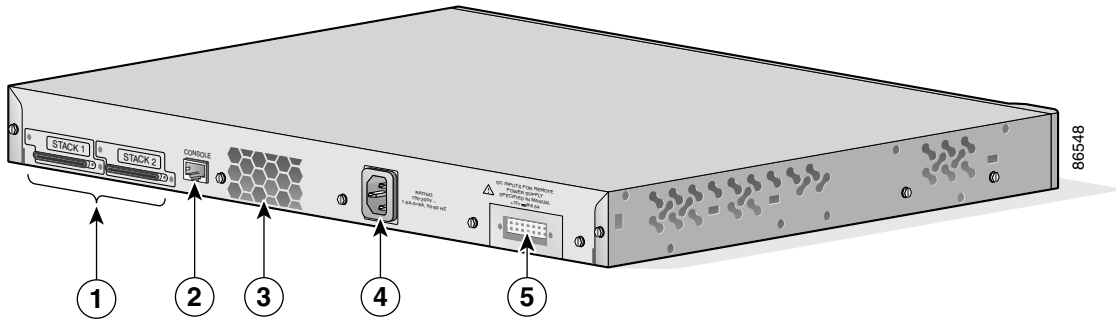
98998

<b>1</b>	Stack member 8	<b>3</b>	Stack member 4
<b>2</b>	Stack member 3		

# Rear Panel Description

The switch rear panels have an AC power connector, an RPS connector, an RJ-45 console port, and two StackWise ports. (See [Figure 1-16](#) through [Figure 1-19](#).)

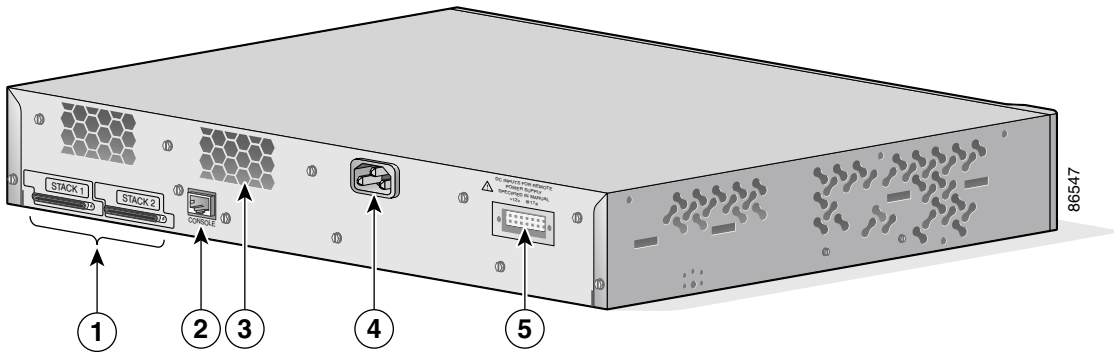
**Figure 1-16** Catalyst 3750-24TS, 3750G-24T, 3750G-12S, 3750G-16TD, and 3750-48TS Rear Panel



1	StackWise ports	4	AC power connector
2	RJ-45 console port	5	RPS connector
3	Fan exhaust		

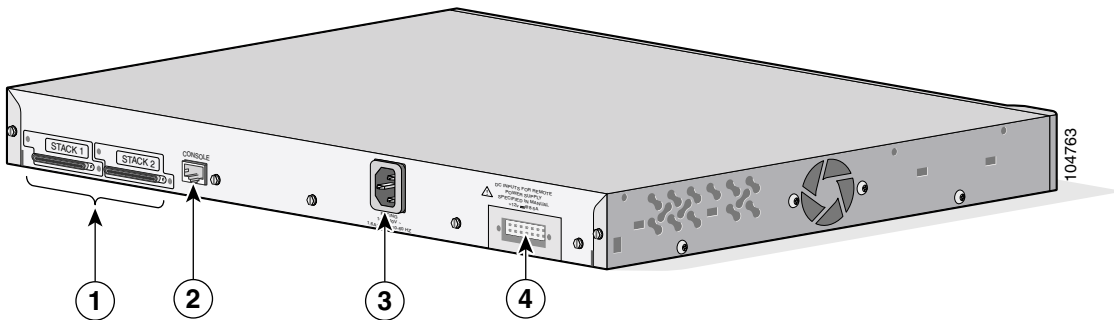
## Rear Panel Description

Figure 1-17 Catalyst 3750G-24TS Rear Panel



1	StackWise ports	4	AC power connector
2	RJ-45 console port	5	RPS connector
3	Fan exhaust		

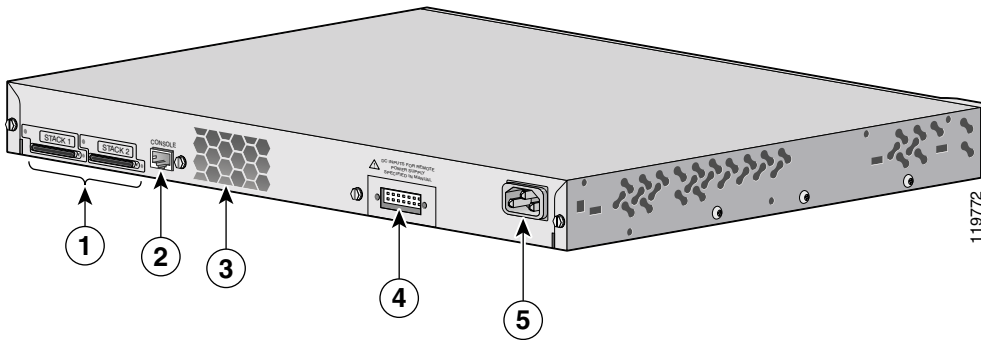
Figure 1-18 Catalyst 3750-24PS and 3750-48PS Rear Panel



1	StackWise ports	4	AC power connector
2	RJ-45 console port	5	RPS connector
3	Fan exhaust		



**Figure 1-19** Catalyst 3750G-24PS, 3750G-24TS-1U, 3750G-48PS, and 3750G-48TS Rear Panel



<b>1</b>	StackWise ports	<b>4</b>	RPS connector
<b>2</b>	RJ-45 console port	<b>5</b>	AC power connector
<b>3</b>	Fan exhaust		

## StackWise Ports

The Catalyst 3750 switch ships with a 0.5-meter StackWise cable (72-2632-XX CABASY) that you can use to connect the StackWise ports.



### Caution

Use only approved cables (CAB-STACK-50CM, CAB-STACK-1M, or CAB-STACK-3M), and connect only to similar Cisco equipment. Equipment might be damaged if connected to other nonapproved Cisco cables or equipment.

You can order these StackWise cables from your Cisco sales representative:

- CAB-STACK-50CM= (0.5-meter cable)
- CAB-STACK-1M= (1-meter cable)
- CAB-STACK-3M= (3-meter cable)

## Power Connectors

The switch is powered through the internal power supply. You can also connect the Cisco RPS 675 to provide backup power if the switch internal power supply should fail.

**Note**

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The Catalyst 3750 switch and the Cisco RPS 675 should be connected to the same AC power source.

---

## Internal Power Supply Connector

The internal power supply is an autoranging unit that supports input voltages between 100 and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet.

## Cisco RPS Connector

The Cisco RPS 675 (model PWR675-AC-RPS-N1=) supports the Catalyst 3750 family of switches.

### Cisco RPS 675

The Cisco RPS 675 has two output levels: -48 V and 12 V with a total maximum output power of 675 W. Use the supplied RPS connector cable to connect the RPS to the switch.

**Warning**

---

**Attach only the Cisco RPS (model PWR675-AC-RPS-N1=) to the RPS receptacle.**

---

The RPS is a redundant power system that can support six external network devices and provides power to one failed device at a time. It automatically senses when the internal power supply of a connected device fails and provides power to the failed device, preventing loss of network traffic. For more information on the Cisco RPS 675, see the *Cisco RPS 675 Redundant Power System Hardware Installation Guide*.

## Console Port

You can connect the switch to a PC by means of the console port and the supplied RJ-45-to-DB-9 female cable. If you want to connect the switch console port to a terminal, you need to provide an RJ-45-to-DB-25 female DTE adapter. You can order a kit (part number ACS-DSBUASYN=) containing that adapter from Cisco. For console port and adapter pinout information, see the “[Connector and Cable Specifications](#)” section on page B-1.

## Management Options

The Catalyst 3750 switches offer several management options:

- Network Assistant

Cisco Network Assistant is a PC-based network management GUI application optimized for LANs of small and medium-sized businesses. Cisco Network Assistant offers centralized management of Cisco switches ranging from Cisco Catalyst 2950 through Cisco Catalyst 4506. Through a user-friendly GUI, users can configure and manage switch clusters or standalone switches. Cisco Network Assistant is available at no cost and can be downloaded from this URL:

<http://www.cisco.com/go/networkassistant>

For information on starting the Network Assistant application, see the *Getting Started with Cisco Network Assistant* guide on Cisco.com.

- Device manager

You can use the device manager, which is in the switch memory, to manage individual and standalone switches. This is an easy-to-use web interface that offers quick configuration and monitoring. You can access the device manager from anywhere in your network through a web browser. For more information, see the device manager online help.

- Cisco IOS command-line interface (CLI)

The switch CLI is based on Cisco IOS software and is enhanced to support desktop-switching features. You can fully configure and monitor the switch and switch cluster members from the CLI. You can access the CLI either by

connecting your management station directly to the switch console port or by using Telnet from a remote management station. See the *Catalyst 3750 Switch Command Reference* on Cisco.com for more information.

- CiscoView application

The CiscoView device-management application displays the switch image that you can use to set configuration parameters and to view switch status and performance information. The CiscoView application, which you purchase separately, can be a standalone application or part of a Simple Network Management Protocol (SNMP) platform. See the CiscoView documentation for more information.

- SNMP network management

You can manage switches from a SNMP-compatible management station that is running platforms such as HP OpenView or SunNet Manager. The switch supports a comprehensive set of Management Information Base (MIB) extensions and four Remote Monitoring (RMON) groups. See the switch software configuration guide on Cisco.com and the documentation that came with your SNMP application for more information.

## Network Configurations

See the switch software configuration guide on Cisco.com for network configuration concepts and examples of using the switch to create dedicated network segments and interconnecting the segments through Gigabit Ethernet connections.



## Switch Installation

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This chapter describes how to start your switch and how to interpret the power-on self-test (POST) that ensures proper operation. It describes the planning and cabling considerations to keep in mind while planning your stack. It describes how to install the switch and make connections to the switch. Read the topics and perform the procedures in this order:

- [Preparing for Installation, page 2-2](#)
- [Verifying Switch Operation, page 2-9](#)
- [Planning the Stack, page 2-11](#)
- [Installing the Switch, page 2-16](#)
- [Connecting StackWise Cable to StackWise Ports, page 2-35](#)
- [Installing and Removing SFP Modules, page 2-38](#)
- [Installing and Removing XENPAK Modules, page 2-42](#)
- [Connecting to the 10/100 and 10/100/1000 Ports, page 2-48](#)
- [Connecting to an SFP Module, page 2-52](#)
- [Connecting to a XENPAK Module, page 2-56](#)
- [Where to Go Next, page 2-59](#)

# Preparing for Installation

This section covers these topics:

- [Warnings, page 2-2](#)
- [Installation Guidelines, page 2-6](#)
- [Verifying Package Contents, page 2-8](#)
- [Verifying Switch Operation, page 2-9](#)

## Warnings

These warnings are translated into several languages in the *Regulatory Compliance and Safety Information for the Catalyst 3750 Switch* document that shipped with the switch.



Warning

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**Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security.** Statement 1072

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Warning

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**Installation of the equipment must comply with local and national electrical codes.** Statement 1074

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Warning

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**This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.** Statement 1017

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Warning

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**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

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Warning

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**Read the installation instructions before connecting the system to the power source.** Statement 1004

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Warning

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**Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.** Statement 43

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Warning

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**Do not stack the chassis on any other equipment. If the chassis falls, it can cause severe bodily injury and equipment damage.** Statement 48

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Warning

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**The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device.** Statement 1019

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Warning

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**To prevent the switch from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 113°F (45°C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.** Statement 17B

---



Warning

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**When installing or replacing the unit, the ground connection must always be made first and disconnected last.** Statement 1046

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**Warning**

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**This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.** Statement 39

---

**Warning**

---

**Do not work on the system or connect or disconnect cables during periods of lightning activity.** Statement 1001

---

**Warning**

---

**Ultimate disposal of this product should be handled according to all national laws and regulations.** Statement 1040

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**Warning**

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**Attach only the Cisco RPS (model PWR675-AC-RPS-N1) to the RPS receptacle.** Statement 100C

---

**Warning**

---

**Class 1 laser product.** Statement 1008

---

**Warning**

---

**Avoid direct exposure to the laser beam.** Statement 1012

---

**Warning**

---

**If a redundant power system (RPS) is not connected to the switch, install an RPS connector cover on the back of the switch.** Statement 265

---

**Warning**

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**To comply with safety regulations, mount switches on a wall with the front panel facing up.** Statement 266

---

**Warning**

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**Ethernet cables must be shielded when used in a central office environment.** Statement 171

---



**Warning**

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**For connections outside the building where the equipment is installed, the following ports must be connected through an approved network termination unit with integral circuit protection: 10/100/1000 Ethernet.** Statement 1044

---

**Warning**

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**To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- **This unit should be mounted at the bottom of the rack if it is the only unit in the rack.**
  - **When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.**
  - **If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.** Statement 1006
- 

**Warning**

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**Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.** Statement 1051

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## Installation Guidelines

When deciding where to place the switch, be sure to observe these requirements:

- For copper Ethernet ports, including 10/100 ports, 10/100/1000 ports, and 1000BASE-T SFP module ports, cable lengths from the switch to connected devices can be up to 328 feet (100 meters).
- [Table 2-1](#) lists the cable specifications for 1000BASE-SX, 1000BASE-LX, 1000BASE-ZX, and CWDM fiber-optic SFP module connections. Each port must match the wave-length specifications on the other end of the cable, and for reliable communications, the cable must not exceed the stipulated cable length.

**Table 2-1** *Fiber-Optic SFP Module Port Cabling Specifications*

SFP Module	Wavelength (nanometers)	Fiber Type	Core Size (micron)	Modal Bandwidth (MHz/km)	Cable Distance
1000BASE-SX	850	MMF	62.5	160	722 feet (220 m)
			62.5	200	902 feet (275 m)
			50	400	1640 feet (500 m)
			50	500	1804 feet (550 m)
1000BASE-LX/LH	1300	MMF <sup>1</sup>	62.5	500	1804 feet (550 m)
			50	400	1804 feet (550 m)
		SMF	50	500	1804 feet (550 m)
			9/10	—	32,810 feet (10 km)
1000BASE-ZX	1550	SMF	9/10	—	43.4 to 62 miles (70 to 100 km)
100BASE-FX	Min.: 1270 Typical: 1300 Max.: 1380	MMF	50/125 62.5/125	500	6,562 feet (2 km)

**Table 2-1** *Fiber-Optic SFP Module Port Cabling Specifications (continued)*

SFP Module	Wavelength (nanometers)	Fiber Type	Core Size (micron)	Modal Bandwidth (MHz/km)	Cable Distance
CWDM	1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610	SMF	9/125	—	62 miles (100 km)

1. A mode-conditioning patch cord is required. Using an ordinary patch cord with MMF, 1000BASE-LX/LH SFP modules, and a short link distance can cause transceiver saturation, resulting in an elevated bit error rate (BER). When using the LX/LH SFP module with 62.5-micron diameter MMF, you must also install a mode-conditioning patch cord between the SFP module and the MMF cable on both the sending and receiving ends of the link. The mode-conditioning patch cord is required for link distances greater than 984 feet (300 m).

**Note**

When using shorter distances of single-mode fiber cable, you might need to insert an inline optical attenuator in the link to avoid overloading the receiver.

When the fiber-optic cable span is less than 15.43 miles (25 km), at each end of the link, insert a 5-decibel (dB) or 10-dB inline optical attenuator between the fiber-optic cable plant and the receiving port on the 1000BASE-ZX SFP module.

- See the Catalyst 3750 release notes for cable requirements for XENPAK module connections. Each port must match the wave-length specifications on the other end of the cable, and for reliable communications, the cable must not exceed the required cable length.
- Operating environment is within the ranges listed in [Appendix A, “Technical Specifications.”](#)
- Clearance to front and rear panels is such that
  - Front-panel indicators can be easily read.
  - Access to ports is sufficient for unrestricted cabling.

Make sure that there is access to the rear of the rack if you are planning to stack the switches. If you do not have access to the rear panel, make sure you cable the switches before you rack-mount them.

- AC power cord can reach from the AC power outlet to the connector on the switch rear panel.

- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures. Make sure the cabling is safely away from other devices that might damage the cables.
- Airflow around the switch and through the vents is unrestricted.
- Temperature around the unit does not exceed 113°F (45°C).



---

**Note** If the switch is installed in a closed or multirack assembly, the temperature around it might be greater than normal room temperature.

---

## Verifying Package Contents



---

**Note** Carefully remove the contents from the shipping container, and check each item for damage. If any item is missing or damaged, contact your Cisco representative or reseller for support. Return all packing material to the shipping container, and save it.

---

The switch is shipped with these items:

- This *Catalyst 3750 Switch Hardware Installation Guide*
- *About the Catalyst 3750 Documentation* flyer
- AC power cord (AC-powered switches)
- One RJ-45-to-DB-9 adapter cable
- Mounting kit containing:
  - Four rubber feet for mounting the switch on a table
  - Two 19-inch rack-mounting brackets
  - Four Phillips flat-head screws for attaching the brackets to the switch (Catalyst 3750G-24TS switch)
  - Six Phillips flat-head screws for attaching the brackets to the switch (Catalyst 3750-24TS, 3750G-24TS-1U, 3750G-24T, 3750-48TS, 3750G-48TS, 3750-24PS, 3750G-24PS, 3750-48PS, 3750G-48PS, and 3750G-16TD switches)
  - Four Phillips machine screws for attaching the brackets to a rack

- One cable guide and one black Phillips machine screw for attaching the cable guide to one of the mounting brackets
- One RPS connector cover (for wall mounting)
- Two Phillips pan-head screws (for attaching the RPS cover)
- Four Phillips truss-head screws (for wall-mounting brackets)
- StackWise cable: 0.5-meter, 1-meter, or 3-meter cable.



---

**Note** If you do not specify the length of the StackWise cable, the 0.5-meter cable is supplied.

---

## Verifying Switch Operation

Before installing the switch in a rack, on a wall, or on a table or shelf, you should power the switch and verify that the switch passes POST. See Section 3, “Running Express Setup,” in the getting started guide for the steps required to connect a PC to the switch and to run Express Setup.

## Powering On the Switch and Running POST

If your configuration has an RPS, connect the switch and the RPS to the same AC power source. See the [“Power Connectors” section on page 1-28](#), and see the Cisco RPS documentation for more information.



---

**Note** Always put the RPS in standby mode when you are connecting devices to it and in active mode during normal operation.

---

To power on the switch, connect one end of the AC power cord to the AC power connector on the switch, and connect the other end of the power cord to an AC power outlet.

**Warning**

---

**Attach only the Cisco RPS 675 (model PWR675-AC-RPS-N1=) to the RPS receptacle**

---

As the switch powers on, it begins the power-on self-test (POST), a series of tests that runs automatically to ensure that the switch functions properly. POST lasts approximately 1 minute.

When the switch begins POST, the System, the RPS, the Master, the Status, the Duplex, the Speed, and the Stack LEDs turn green. (On the PoE switches, the PoE LED also turns green as POST begins.) The System LED flashes green, and the other LEDs remain continuous green.

When POST completes successfully, the System LED remains green. The RPS LED remains green for some time and then returns to its operating status. The other LEDs turn off and return to their operating status. When POST fails, the System LED turns amber.

**Note**

---

POST failures are usually fatal. Call Cisco Systems if your switch does not pass POST.

---

## Powering Off the Switch

After a successful POST, disconnect the power cord from the switch. Install the switch in a rack, on a wall, on a table, or on a shelf as described in the [“Installing the Switch”](#) section on page 2-16.

# Planning the Stack

If you plan to stack your switches, read these sections:

- [Planning Considerations, page 2-11](#)
- [Powering Considerations, page 2-12](#)
- [Cabling Considerations, page 2-12](#)
- [Recommended Cabling Configurations, page 2-14](#)

## Planning Considerations

Before connecting the Catalyst 3750 switches in a stack, observe these planning considerations:

- Size of the switch. For switch dimensions, see [Appendix A, “Technical Specifications.”](#) Some switches are deeper than the other switches. Stacking together switches of the same size will make it easier to cable the switches.
- Length of cable. Depending on the configurations you have, you might need different sized cables. If you don't specify the length of the StackWise cable, the 0.5-meter cable is supplied. If you require the 1-meter cable or 3-meter cable, you can order it from your Cisco supplier. For cable numbers, see the [“StackWise Ports” section on page 1-27](#). The [“Recommended Cabling Configurations” section on page 2-14](#) provides examples of recommended configurations.

- Access to the rear ports for unrestricted cabling.

Make sure that there is access to the rear of the rack if you are planning to stack the switches. If you do not have access to the rear panel, make sure you cable the switches before you rack-mount them.

- For concepts and procedures to manage switch stacks, see the switch software configuration guide.

## Powering Considerations

Consider the following guidelines before you power the switches in a stack:

- The sequence in which the switches are initially powered on might affect the switch that becomes the stack master.
- If you want a particular switch to become the stack master, power on that switch first. This switch becomes the stack master and remains the stack master until a master re-election is required. After approximately 10 seconds power on the remaining switches in the stack.
- If you have no preference as to which switch becomes the stack master, power on all the switches in the stack within a 10-second timeframe. These switches participate in the stack master election. Switches powered on after the 10-second timeframe do not participate in the election.
- Power off a switch before you add it to or remove it from an existing switch stack.



### Note

For conditions that can cause a stack master re-election or to manually elect the stack master, see the “Managing Switch Stacks” chapter in the switch software configuration guide.

## Cabling Considerations

The illustrations in this section display cabling configuration examples that show the stack bandwidth and possible stack partitioning.

[Figure 2-1](#) shows an example of a stack of Catalyst 3750 switches that provides full bandwidth and redundant StackWise cable connections.

**Figure 2-1** Example of a Stack with Full Bandwidth Connections

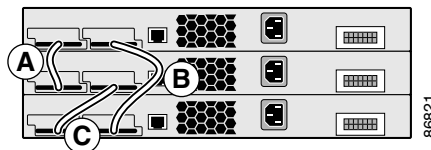




Figure 2-2 shows an example of a stack of Catalyst 3750 switches with incomplete StackWise cabling connections. This stack provides only half bandwidth and does not have redundant connections.

**Figure 2-2** Example of a Stack with Half Bandwidth Connections

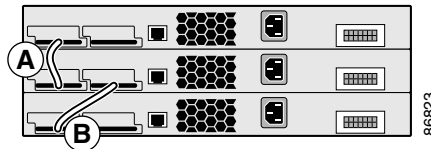
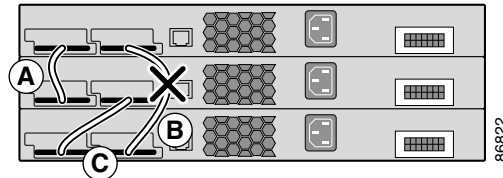
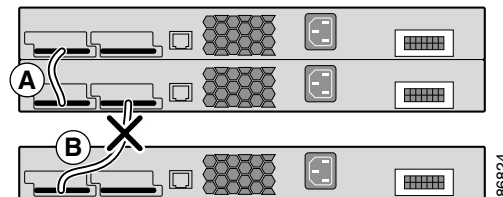


Figure 2-3 and Figure 2-4 show examples of stacks of Catalyst 3750 switches with failover conditions. In Figure 2-3, the StackWise cable is bad in link B; therefore, this stack provides only half bandwidth and does not have redundant connections. In Figure 2-4, link B is bad; therefore, this stack partitions into two stacks, and switch 1 and switch 3 are stack masters.

**Figure 2-3** Example of a Stack with a Failover Condition



**Figure 2-4** Example of a Partitioned Stack with a Failover Condition



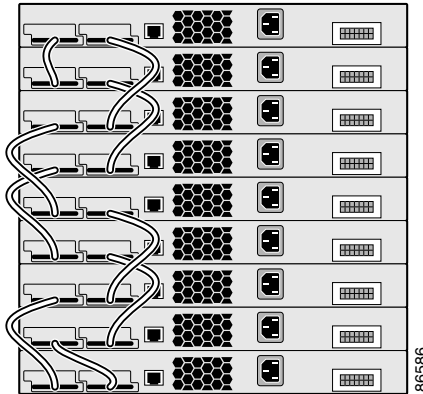
## Recommended Cabling Configurations

This section describes the recommended cabling configurations for stacking the switches.

### Stacking Switches in Vertical Racks or on a Table

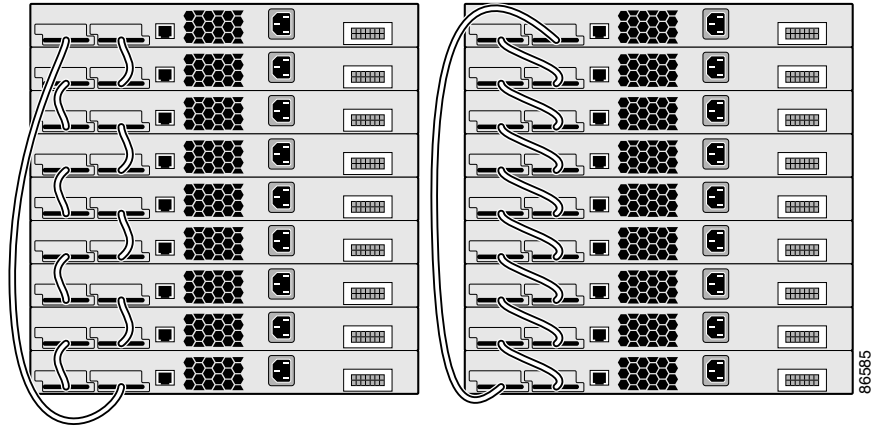
[Figure 2-5](#) is an example of a recommended configuration using the supplied 0.5-meter StackWise cable. In this example, the switches are stacked in a vertical rack or on a table. This configuration provides redundant connections.

**Figure 2-5** *Stacking the Switches in a Vertical Rack or on a Table Using the 0.5-meter StackWise Cable*



The configuration examples in [Figure 2-6](#) use the 3-meter StackWise cable in addition to the supplied 0.5-meter StackWise cable. This configuration also provides redundant connections.

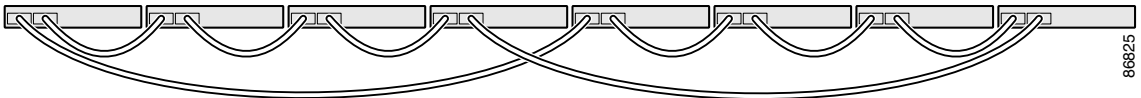
**Figure 2-6** *Stacking the Catalyst 3750 Switches in a Vertical Rack or on a Table Using 0.5-meter and 3-meter StackWise Cables*



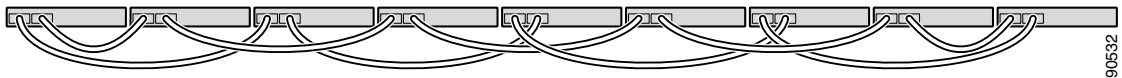
### Side-by-Side Mounting in a Rack or on a Wall

Figure 2-7 and Figure 2-8 are examples of recommended configurations where the switches are rack- or wall-mounted side-by-side. Use the 1-meter and 3-meter StackWise cables to connect the switches. These configuration provide redundant connections.

**Figure 2-7** *Stacking up to Eight Switches in a Side-by-Side Mounting Configuration*



**Figure 2-8** *Stacking Nine Switches in a Side-by-Side Mounting Configuration*



# Installing the Switch

This section describes these installation procedures:

- [Rack-Mounting, page 2-16](#)
- [Wall-Mounting, page 2-31](#)
- [Table- or Shelf-Mounting, page 2-34](#)

## Rack-Mounting



### Warning

---

**To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- **This unit should be mounted at the bottom of the rack if it is the only unit in the rack.**
  - **When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.**
  - **If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.** Statement 1006
- 

To install the switch in a 19-inch or 24-inch rack (24-inch racks require optional mounting hardware), follow the instructions described in these procedures:

- [Removing Screws from the Switch, page 2-17](#)
- [Attaching Brackets to the Catalyst 3750G-24TS Switch, page 2-19](#)
- [Attaching Brackets to the Catalyst 3750-24TS, 3750G-24TS-1U, 3750G-24T, 3750G-12S, 3750-24PS, 3750G-24PS, 3750-48PS, 3750G-48PS, 3750G-16TD, 3750-48TS, and 3750G-48TS Switches, page 2-24](#)
- [Mounting the Switch in a Rack, page 2-27](#)
- [Attaching the Cable Guide, page 2-29](#)

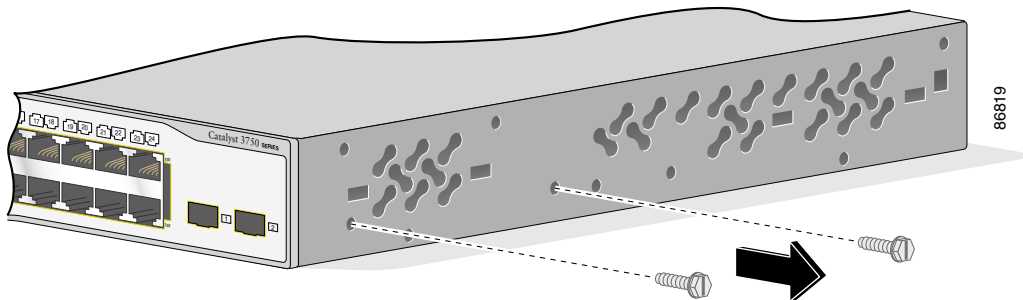
**Note**

Installing the switch in a 24-inch rack requires an optional bracket kit not included with the switch. You can order a kit containing the 24-inch rack-mounting brackets and hardware from Cisco. For the Catalyst 3750G-24TS switches, order part number RCKMNT-3550-1.5RU=. For the other Catalyst 3750 switches, order part number RCKMNT-1RU=.

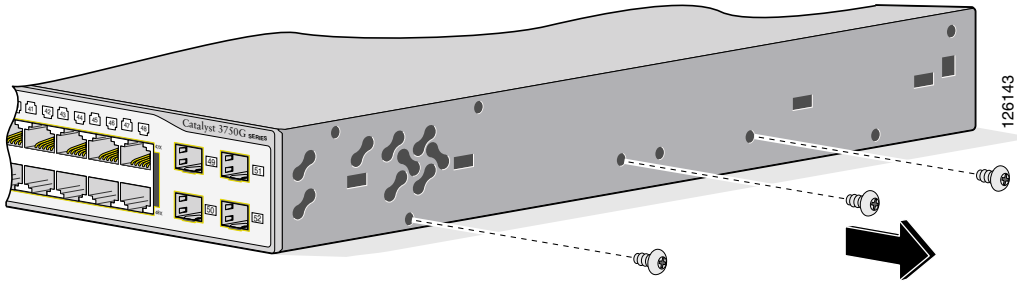
## Removing Screws from the Switch

If you plan to install the switch in a rack, you must first remove screws in the switch chassis so that mounting brackets can be attached. [Figure 2-9](#), [Figure 2-10](#), and [Figure 2-11](#) show how to remove the chassis screws in a one-rack-unit (RU) switch.

**Figure 2-9** Removing Screws from the Catalyst 3750-24TS, 3750G-24T, 3750-24PS, 3750-48PS, 3750G-16TD, and 3750-48TS Switches



**Figure 2-10** Removing Screws from the Catalyst ,3750G-24TS-1U, 3750G-24PS, 3750G-48PS, and 3750G-48TS Switches



**Figure 2-11** Removing Screws from the Catalyst 3750G-12S Switch

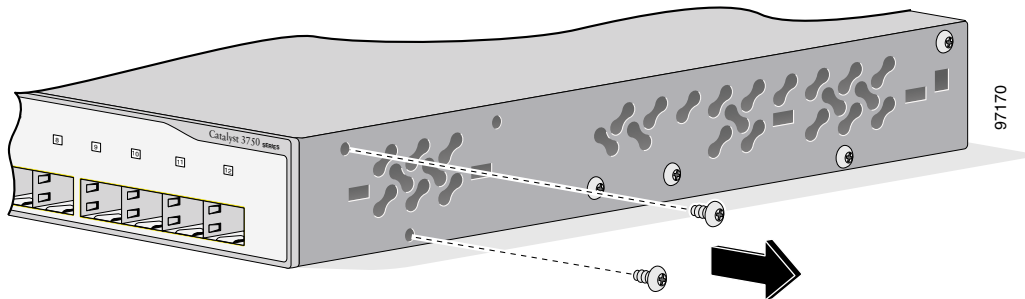
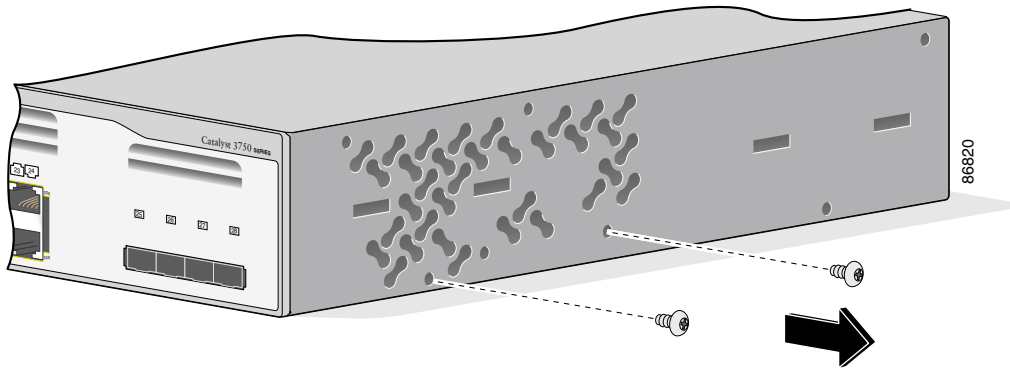


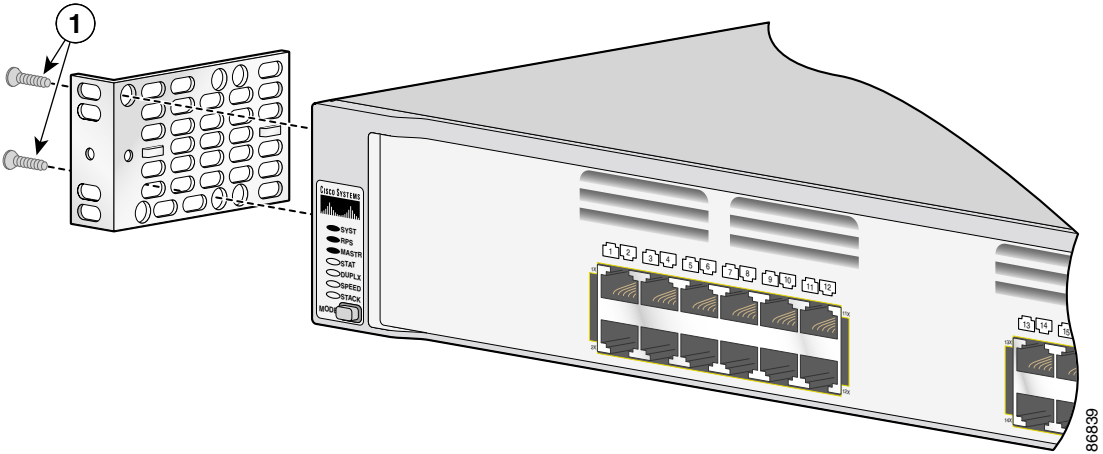
Figure 2-12 shows how to remove the chassis screws in a 1.5-RU switch.

**Figure 2-12** Removing Screws from the 3750G-24TS Switch



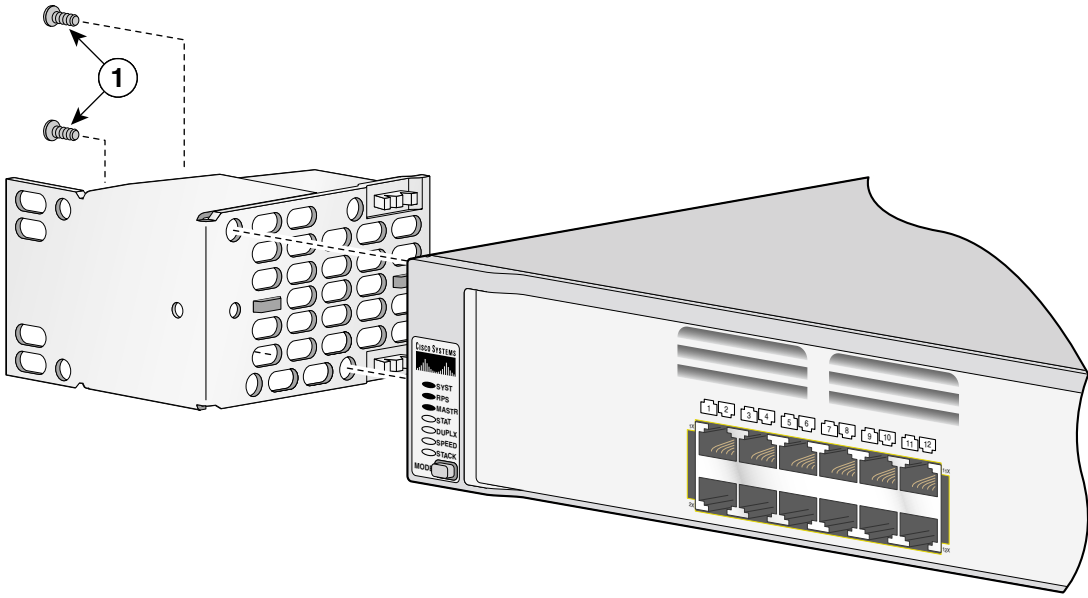
## Attaching Brackets to the Catalyst 3750G-24TS Switch

The bracket orientation and the brackets that you use depend on whether you are attaching the brackets for a 19-inch or a 24-inch rack. For 19-inch racks, use part number 700-11523-XX; for 24-inch racks, use part number 700-12398-XX. [Figure 2-13](#) through [Figure 2-18](#) show how to attach each type bracket to one side of the switch. Follow the same steps to attach the second bracket to the opposite side.

**Figure 2-13** Attaching Brackets for 19-inch Racks, Front Panel Forward

1	Phillips flat-head screws
---	---------------------------



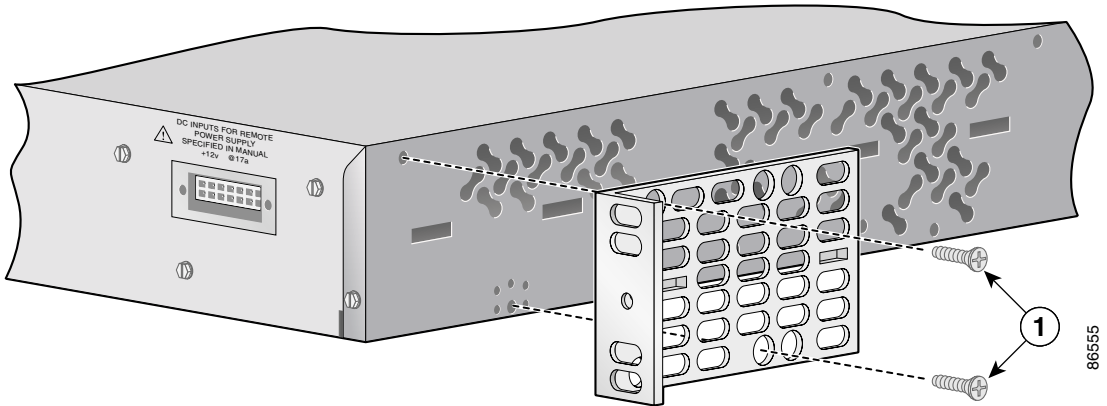
**Figure 2-14** Attaching Brackets for 24-Inch Racks, Front Panel Forward

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<b>1</b>	Phillips flat-head screws
----------	---------------------------

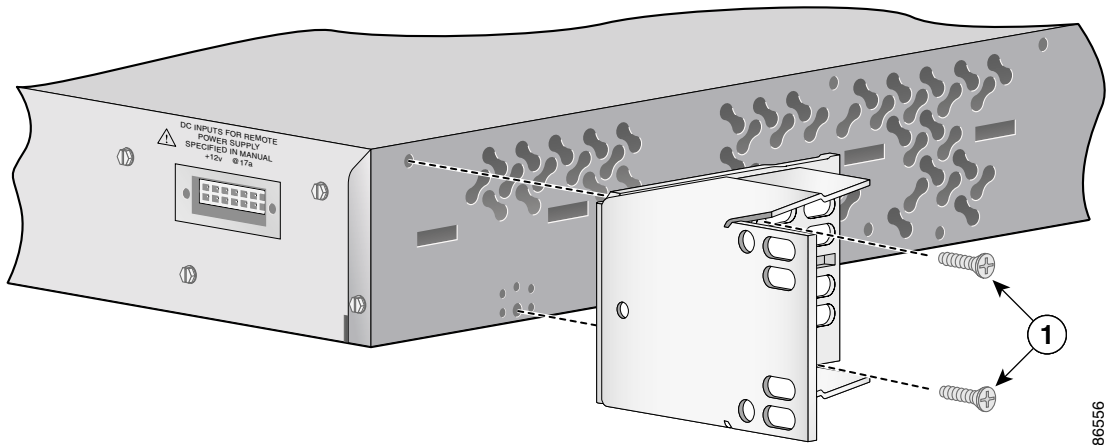
## Installing the Switch

**Figure 2-15** Attaching Brackets for 19-Inch Racks, Rear Panel Forward

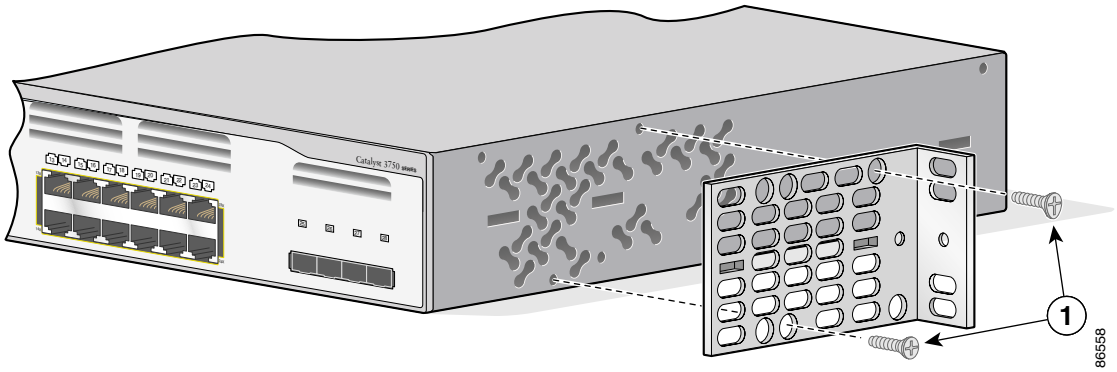


**1** Phillips flat-head screws

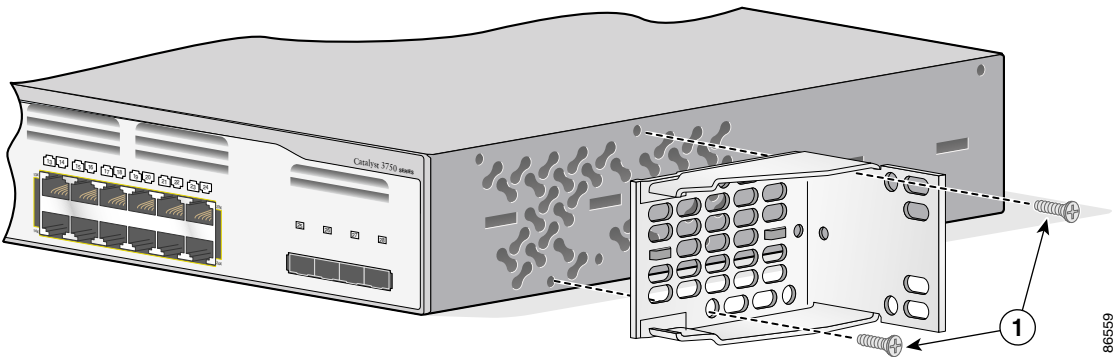
**Figure 2-16** Attaching Brackets for 24-Inch Racks, Rear Panel Forward



**1** Phillips flat-head screws

**Figure 2-17 Attaching Brackets for 19-Inch Telco Racks**

**1** Phillips flat-head screws

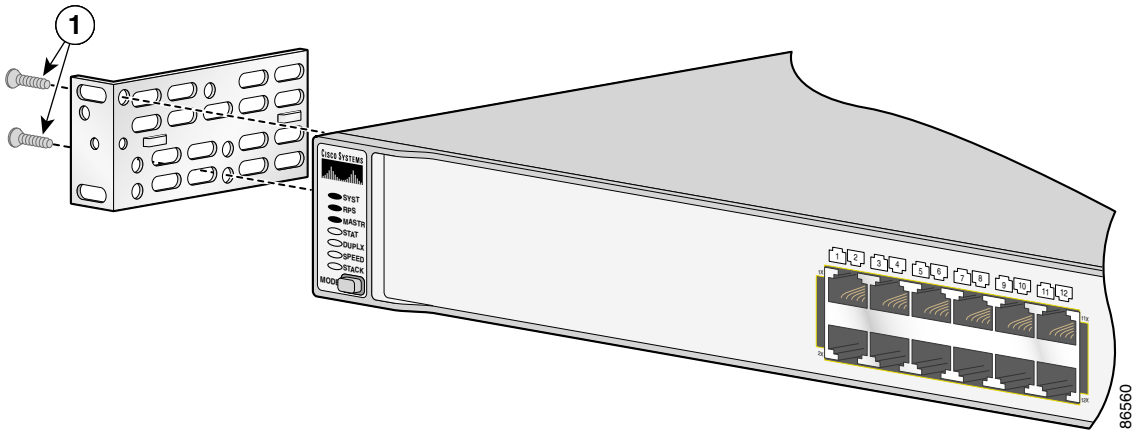
**Figure 2-18 Attaching Brackets for 24-Inch Telco Racks**

**1** Phillips flat-head screws

## Attaching Brackets to the Catalyst 3750-24TS, 3750G-24TS-1U, 3750G-24T, 3750G-12S, 3750-24PS, 3750G-24PS, 3750-48PS, 3750G-48PS, 3750G-16TD, 3750-48TS, and 3750G-48TS Switches

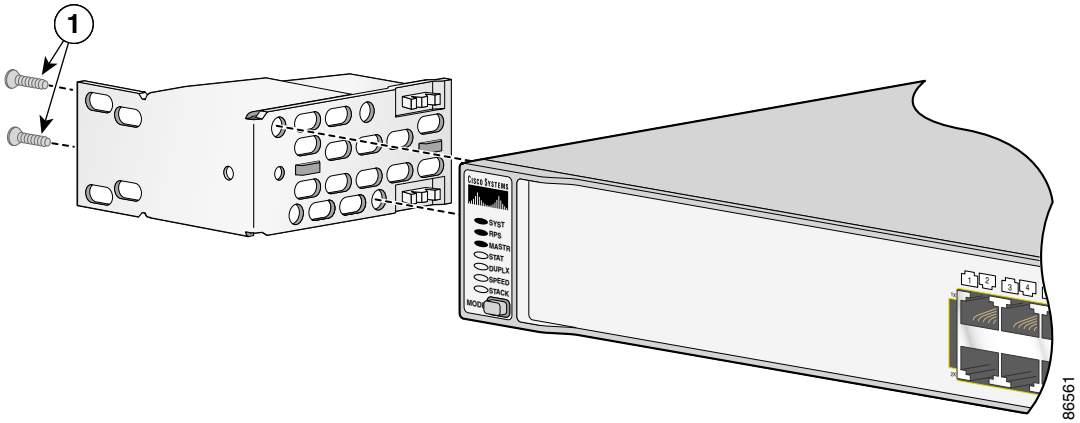
The bracket orientation and the brackets you use depend on whether you are attaching the brackets for a 19-inch or a 24-inch rack. For 19-inch racks, use bracket part number 700-8209-XX; for 24-inch racks, use bracket part number 700-13248-XX. [Figure 2-19](#) through [Figure 2-25](#) show how to attach each type of bracket to one side of the switch. Follow the same steps to attach the second bracket to the opposite side.

**Figure 2-19** Attaching Brackets for 19-Inch Racks, Front Panel Forward



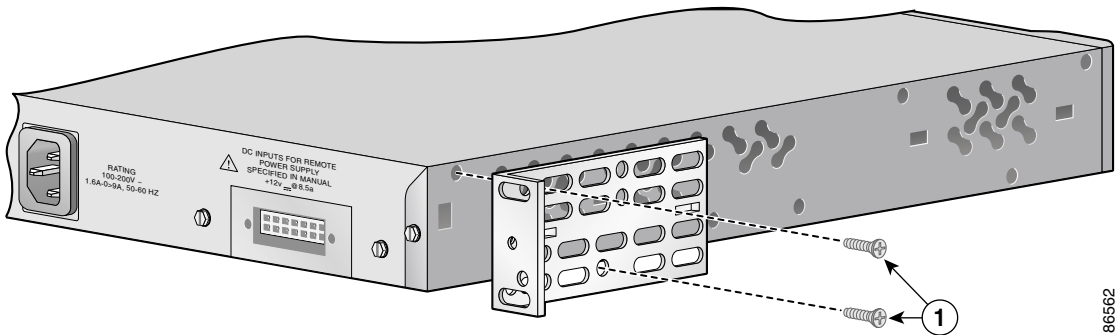
**1** Phillips flat-head screws

**Figure 2-20** Attaching Brackets for 24-Inch Racks, Front Panel Forward



**1** Phillips flat-head screws

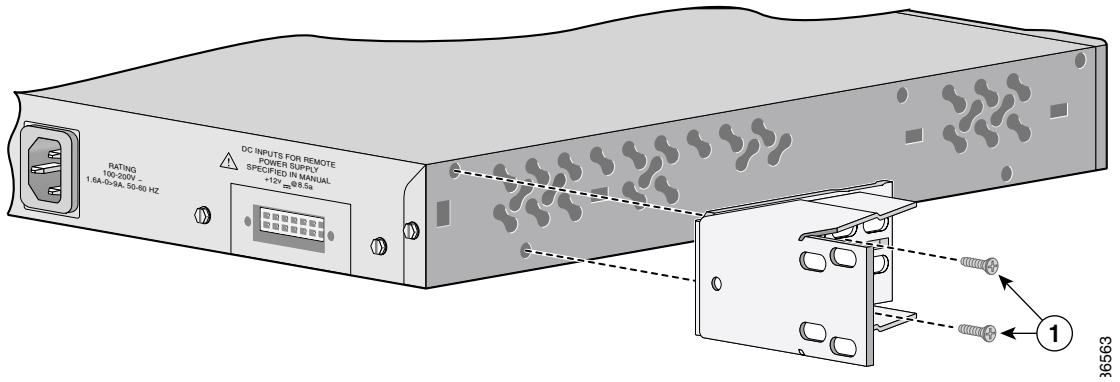
**Figure 2-21** Attaching Brackets for 19-Inch Racks, Rear Panel Forward



**1** Phillips flat-head screws

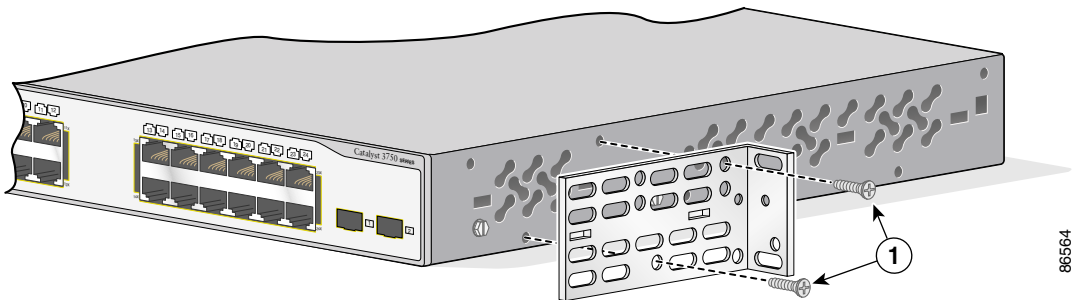
## Installing the Switch

**Figure 2-22** Attaching Brackets for 24-Inch Racks, Rear Panel Forward



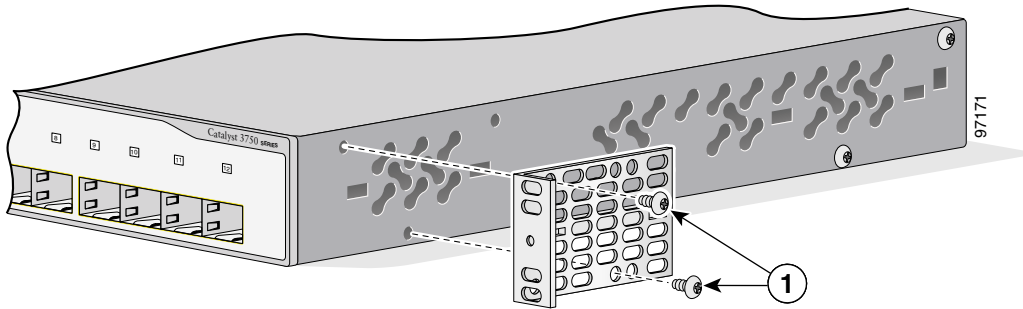
- |          |                           |
|----------|---------------------------|
| <b>1</b> | Phillips flat-head screws |
|----------|---------------------------|

**Figure 2-23** Attaching Brackets for 19-Inch Telco Racks



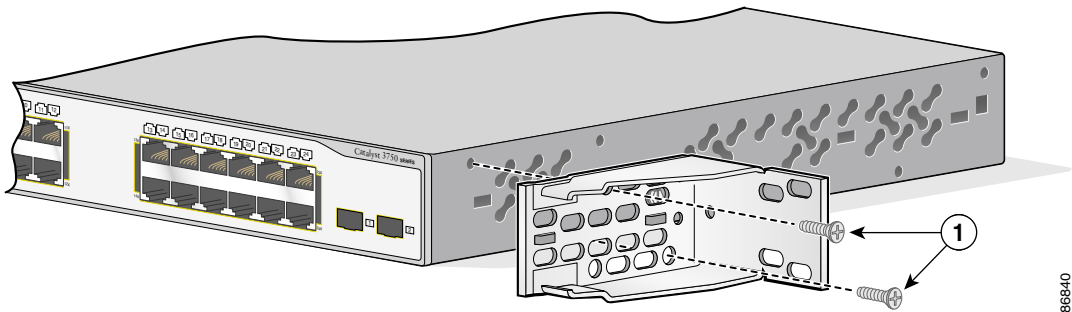
- |          |                           |
|----------|---------------------------|
| <b>1</b> | Phillips flat-head screws |
|----------|---------------------------|

**Figure 2-24** Attaching Brackets for 19-Inch Racks



**1** Phillips truss-head screws

**Figure 2-25** Attaching Brackets for 24-Inch Telco Racks



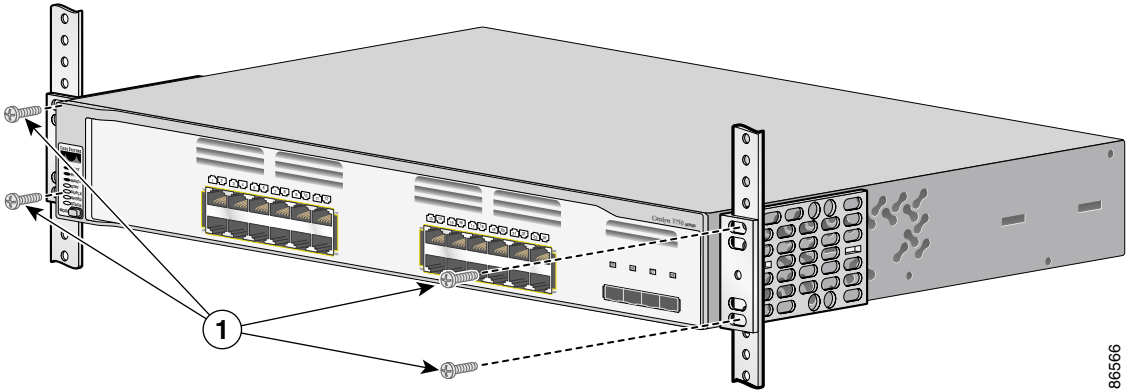
**1** Phillips flat-head screws

## Mounting the Switch in a Rack

After the brackets are attached to the switch, use the four supplied number-12 Phillips machine screws to securely attach the brackets to the rack, as shown in [Figure 2-26](#) and [Figure 2-27](#).

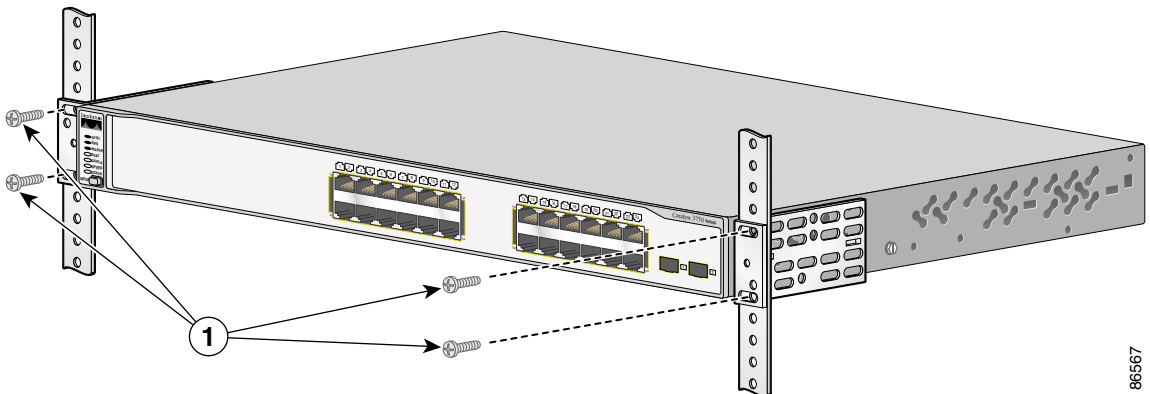
## Installing the Switch

**Figure 2-26** Mounting the Catalyst 3750G-24TS Switch in a Rack



**1** Phillips machine screws

**Figure 2-27** Mounting the Other Catalyst 3750 Switches in a Rack



**1** Phillips machine screws



After the switch is mounted in the rack, you might need to perform these tasks to complete the installation, run the setup program, and access the switch:

- (Optional) Connect the switches in the stacks. See the [“Connecting StackWise Cable to StackWise Ports”](#) section on page 2-35.
- Power on the switch. See the [“Verifying Switch Operation”](#) section on page 2-9.
- Connect to a 10/100 or 10/100/1000 port and run Express Setup. See the *Catalyst 3750 Switch Getting Started Guide* for instructions.
- Connect to the front-panel ports. See the [“Connecting to the 10/100 and 10/100/1000 Ports”](#) section on page 2-48 and the [“Connecting to an SFP Module”](#) section on page 2-52 to complete the installation.

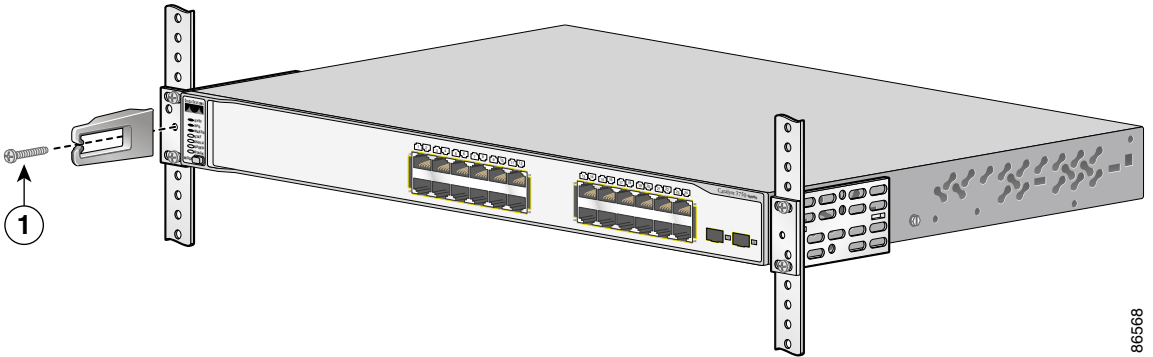
For configuration instructions about using the CLI setup program, go to [Appendix C, “Configuring the Switch with the CLI-Based Setup Program.”](#)

To use the CLI, enter commands at the *Switch>* prompt through the console port by using a terminal program or through the network by using Telnet. For configuration information, see the switch software configuration guide or the switch command reference.

## Attaching the Cable Guide

We recommend attaching the cable guide to prevent the cables from obscuring the front panel of the switch and the other devices installed in the rack. Use the supplied black screw, as shown in [Figure 2-28](#) and [Figure 2-29](#) to attach the cable guide to the left or right bracket.

**Figure 2-28** Attaching the Cable Guide on the 24-Port Catalyst 3750 Switches



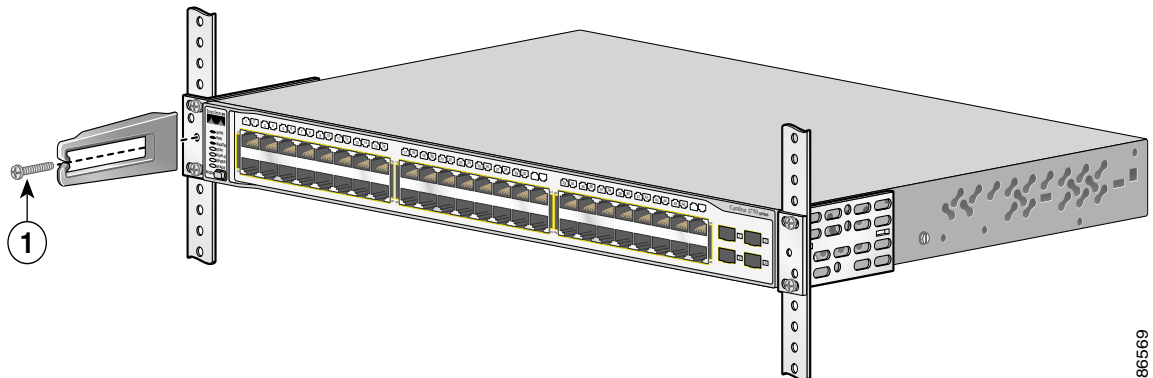
86568

<b>1</b>	Cable guide screws
----------	--------------------

**Note**

The 48-port Catalyst 3750 switches ship with the cable guide shown in [Figure 2-29](#). This cable guide secures up to 48 cables. Use the supplied black screw to mount it on the left bracket.

**Figure 2-29** Attaching the Cable Guide on the 48-Port Catalyst 3750 Switches



86566

<b>1</b>	Cable guide screws
----------	--------------------

## Wall-Mounting

To install the switch on a wall, follow the instructions in these procedures:

- [Attaching the Brackets to the Switch for Wall-Mounting, page 2-31](#)
- [Attaching the RPS Connector Cover, page 2-32](#)
- [Mounting the Switch on a Wall, page 2-32](#)

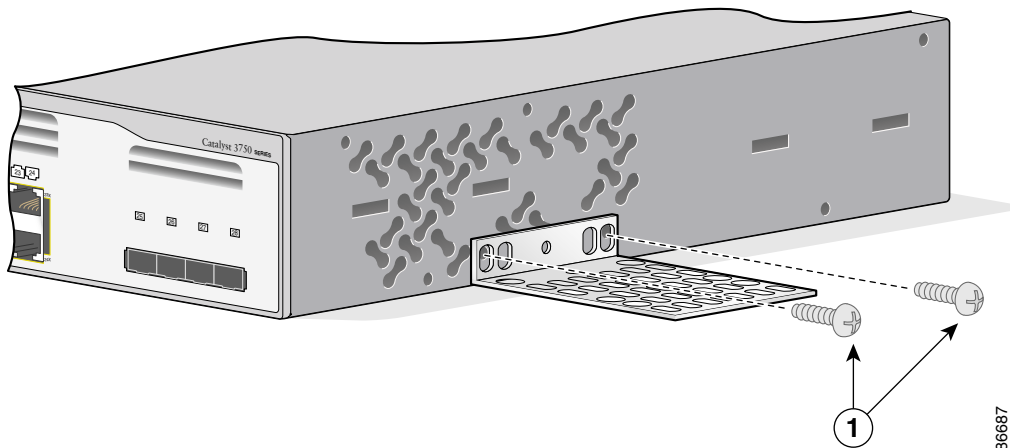
**Note**

The illustrations in this section show the Catalyst 3750G-24TS switch as an example. All the Catalyst 3750 switches are wall-mounted following the same procedures.

### Attaching the Brackets to the Switch for Wall-Mounting

[Figure 2-30](#) shows how to attach a 19-inch bracket to one side of the switch. Follow the same steps to attach the second bracket to the opposite side.

**Figure 2-30** *Attaching the 19-inch Brackets for Wall-Mounting*



**1** Phillips truss-head screws

## Attaching the RPS Connector Cover

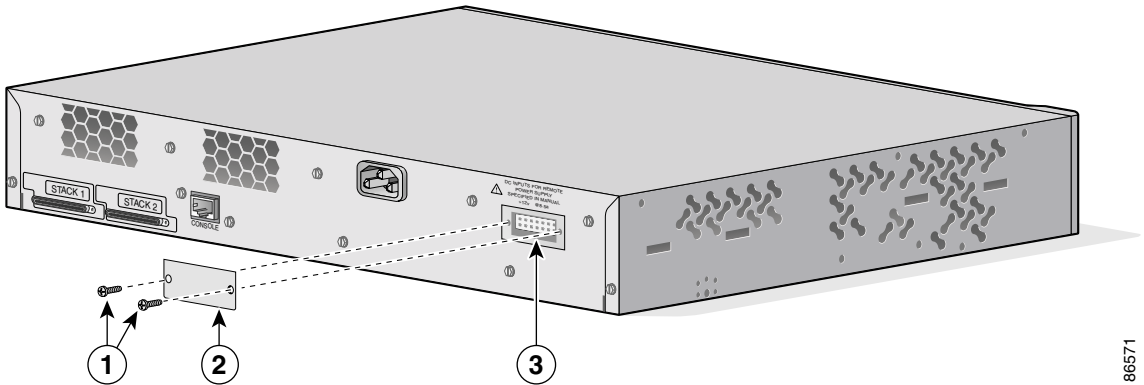
If you are not using an RPS with your switch, use the two Phillips pan-head screws to attach the RPS connector cover to the back of the switch, as shown in [Figure 2-31](#).



### Warning

**If an RPS is not connected to the switch, install an RPS connector cover on the back of the switch.**

**Figure 2-31** Attaching the RPS Connector Cover on the Catalyst 3750 Switch



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<b>1</b>	Phillips pan-head screws	<b>3</b>	RPS connector
<b>2</b>	RPS connector cover		

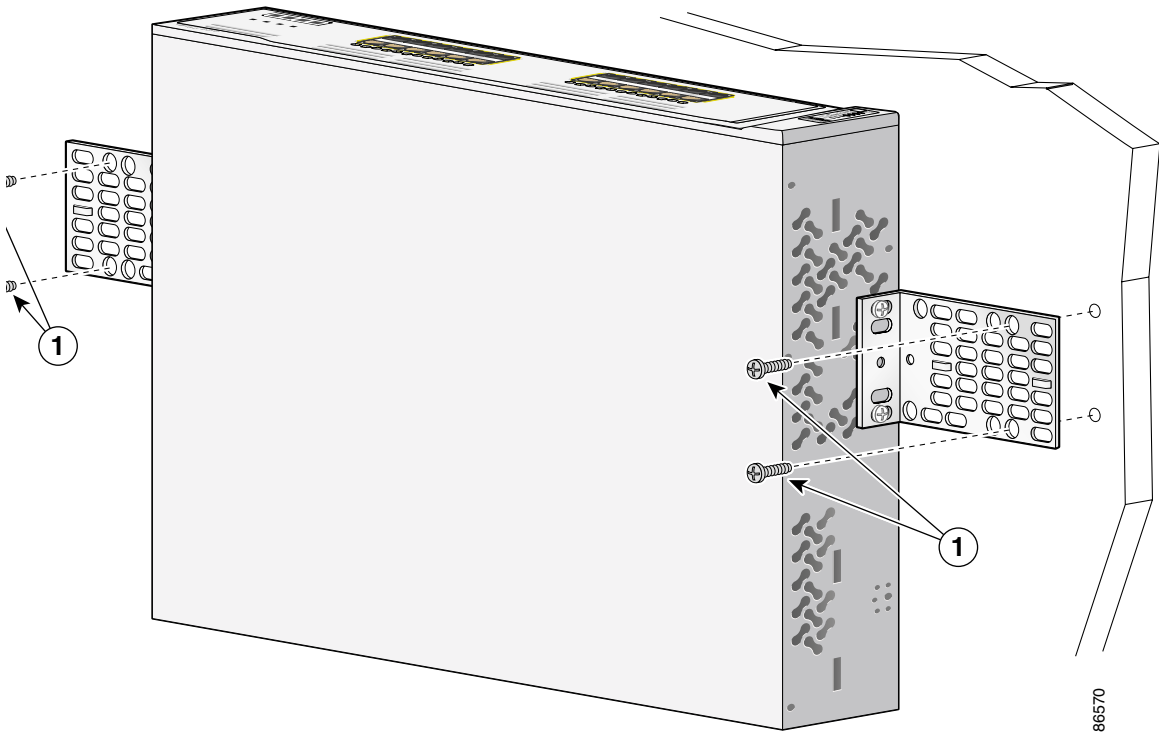
## Mounting the Switch on a Wall

For the best support of the switch and cables, make sure the switch is attached securely to wall studs or to a firmly attached plywood mounting backboard. Mount the switch with the front panel facing up, as shown in [Figure 2-32](#).



### Warning

**To comply with safety regulations, mount the switches on a wall with the front panel facing up.**

**Figure 2-32** *Mounting the Switch on a Wall*

<b>1</b>	User-supplied screws
----------	----------------------

After the switch is mounted on the wall, you might need to perform these tasks to complete the installation, run the setup program, and access the switch:

- (Optional) Connect the switches in the stacks. See the [“Connecting StackWise Cable to StackWise Ports”](#) section on page 2-35.
- Power on the switch. See the [“Verifying Switch Operation”](#) section on page 2-9.

- Connect to a 10/100 or 10/100/1000 port and run Express Setup. See the *Catalyst 3750 Switch Getting Started Guide* for instructions.
- Connect to the front-panel ports. See the “[Connecting to the 10/100 and 10/100/1000 Ports](#)” section on page 2-48 and the “[Connecting to an SFP Module](#)” section on page 2-52 to complete the installation.

For configuration instructions about using the CLI setup program, go to [Appendix C, “Configuring the Switch with the CLI-Based Setup Program.”](#)

To use the CLI, enter commands at the *Switch>* prompt through the console port by using a terminal program or through the network by using Telnet. For configuration information, see the switch software configuration guide or the switch command reference.

## Table- or Shelf-Mounting

Follow these steps to install the switch on a table or shelf:

- 
- Step 1** Locate the adhesive strip with the rubber feet in the mounting-kit envelope. Attach the four rubber feet to the recessed areas on the bottom of the unit.
- Step 2** Place the switch on the table or shelf near an AC power source.

After the switch is mounted on the table, you might need to perform these tasks to complete the installation, run the setup program, and access the switch:

- (Optional) Connect the switches in the stacks. See the “[Connecting StackWise Cable to StackWise Ports](#)” section on page 2-35.
- Power on the switch. See the “[Verifying Switch Operation](#)” section on page 2-9.
- Connect to a 10/100 or 10/100/1000 port and run Express Setup. See the *Catalyst 3750 Switch Getting Started Guide* for instructions.
- Connect to the front-panel ports. See the “[Connecting to the 10/100 and 10/100/1000 Ports](#)” section on page 2-48 and the “[Connecting to an SFP Module](#)” section on page 2-52 to complete the installation.

For configuration instructions about using the CLI setup program, go to [Appendix C, “Configuring the Switch with the CLI-Based Setup Program.”](#)

To use the CLI, enter commands at the *Switch>* prompt through the console port by using a terminal program or through the network by using Telnet. For configuration information, see the switch software configuration guide or the switch command reference.

---

## Connecting StackWise Cable to StackWise Ports

Follow these steps to connect the StackWise cable to the StackWise ports:

---

**Step 1** Remove the dust covers from the StackWise cables and StackWise ports, and store them for future use.

**Step 2** Insert one end of the StackWise cable into the StackWise port on the back of the switch.



---

**Note** Always use a Cisco-approved StackWise cable to connect the switches.

---

**Step 3** Use the window in the StackWise cable to align the connector correctly. Secure the screws tightly.

**Step 4** Insert the other end of the cable into the connector of the other switch, and secure the screws tightly.



---

**Caution** Removing and installing the StackWise cable can shorten its useful life. Do not remove and insert the cable more often than is absolutely necessary.

---

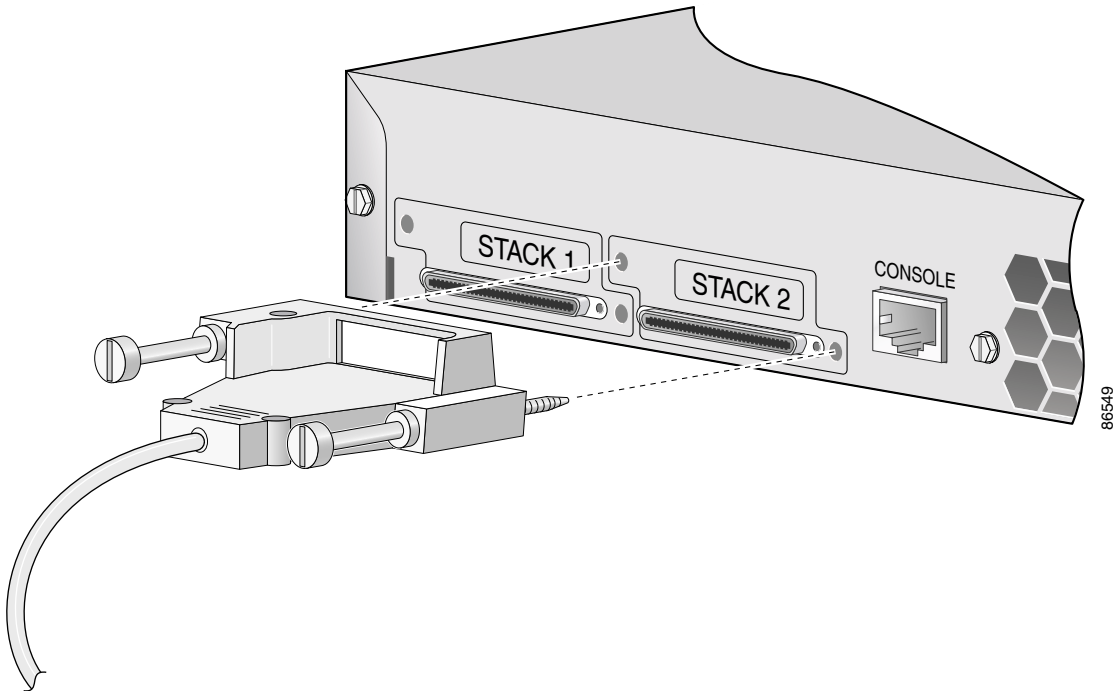


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**Note** When the connectors are not being used, replace the dust covers on them to protect them from dust.

---

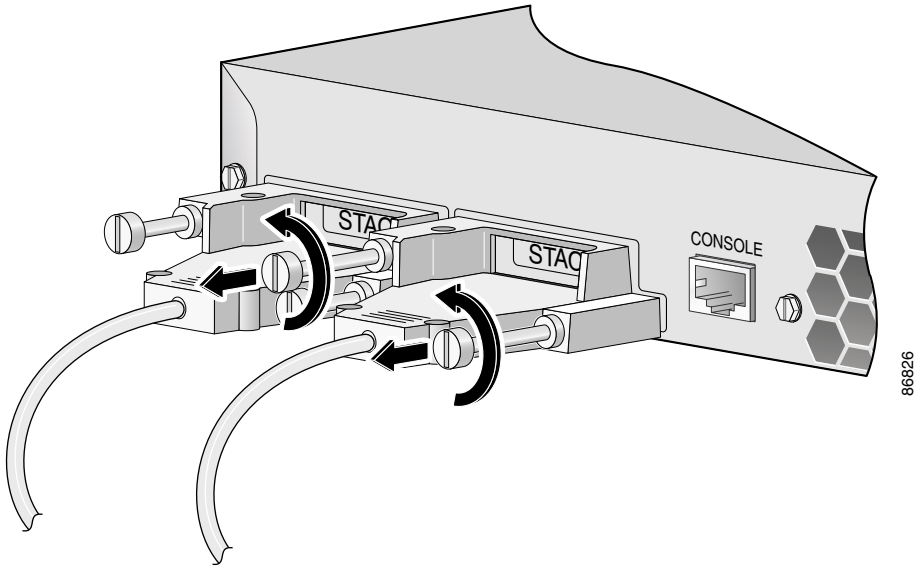
**Figure 2-33** Inserting the StackWise Cable in a StackWise Port



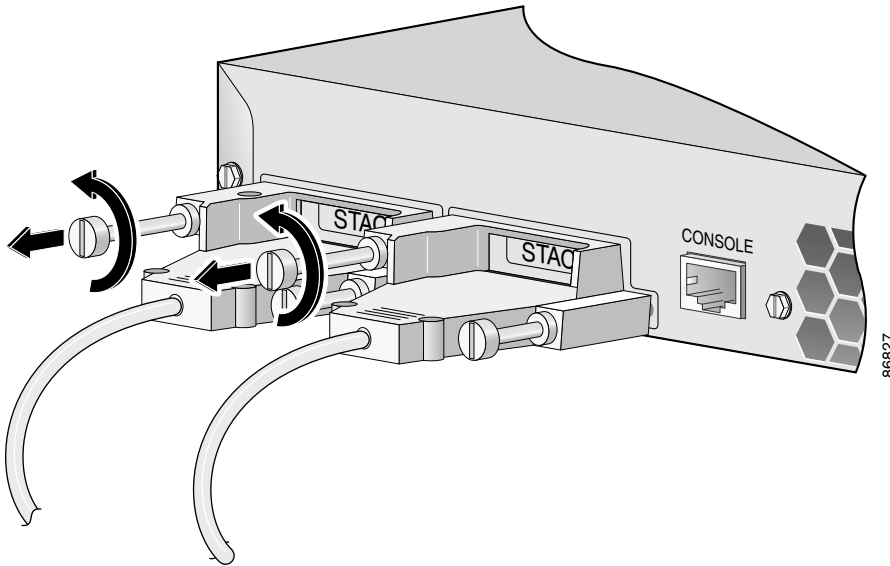
When you need to remove the StackWise cable from the connector, make sure to fully unscrew the screws before removing the connector. Also make sure that you remove the correct screws from the StackWise port. See [Figure 2-34](#) for correct removal procedures and [Figure 2-35](#) for incorrect removal procedures.



Figure 2-34 Correct Removal of the StackWise Cable from a StackWise Port



**Figure 2-35** *Incorrect Removal of a StackWise Cable from a StackWise Port*



## Installing and Removing SFP Modules

These sections describe how to install and remove SFP modules. SFP modules are inserted into SFP module slots on the front of the Catalyst 3750 switches. These field-replaceable modules provide uplink interfaces.

You can use any combination of SFP modules. See the Catalyst 3750 release notes for the list of SFP modules that the Catalyst 3750 switch supports. Each port must match the wave-length specifications on the other end of the cable, and the cable must not exceed the stipulated cable length for reliable communications. See the [“Installation Guidelines” section on page 2-6](#) for cable stipulations for SFP connections.

Use only Cisco SFP modules on the Catalyst 3750 switch. Each SFP module has an internal serial EEPROM that is encoded with security information. This encoding provides a way for Cisco to identify and validate that the SFP module meets the requirements for the switch.

For detailed instructions on installing, removing, and cabling the SFP module, see your SFP module documentation.

## Installing SFP Modules into SFP Module Slots

Figure 2-36 shows an SFP module that has a bale-clasp latch.

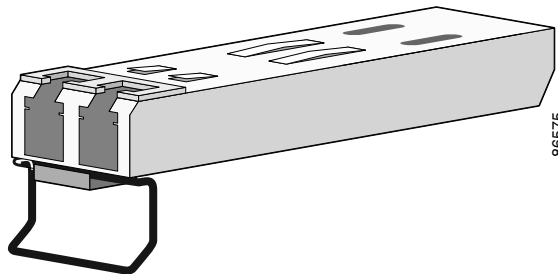


### Caution

We strongly recommend that you do not install or remove fiber-optic SFP modules with cables attached because of the potential damage to the cables, the cable connector, or the optical interfaces in the SFP module. Disconnect all cables before removing or installing an SFP module.

Removing and installing an SFP module can shorten its useful life. Do not remove and insert SFP modules more often than is absolutely necessary.

**Figure 2-36** SFP Module with a Bale-Clasp Latch



To insert an SFP module into the SFP module slot, follow these steps:

- Step 1** Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface on the chassis.
- Step 2** Find the send (TX) and receive (RX) markings that identify the top side of the SFP module.

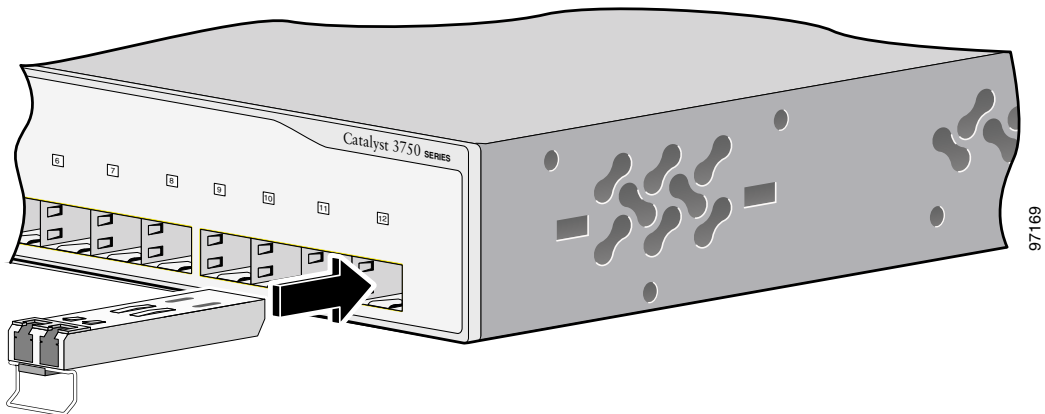


**Note** On some SFP modules, the send and receive (TX and RX) markings might be replaced by arrows that show the direction of the connection, either send or receive (TX or RX).

**Step 3** Align the SFP module in front of the slot opening.

**Step 4** Insert the SFP module into the slot until you feel the connector on the module snap into place in the rear of the slot.

**Figure 2-37** Installing an SFP Module into an SFP Module Slot



**Step 5** For fiber-optic SFP modules, remove the dust plugs from the optical ports, and store them for later use.



**Caution** Do not remove the dust plugs from the fiber-optic SFP module port or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the SFP module ports and cables from contamination and ambient light.

- Step 6** Insert the cable connector into the SFP module:
- For fiber-optic SFP modules, insert the LC or MT-RJ cable connector into the SFP module.
  - For copper SFP modules, insert the RJ-45 cable connector into the SFP module.



---

**Note** When connecting to 1000BASE-T SFP modules, be sure to use a twisted four-pair, Category 5 cable.

---

## Removing SFP Modules from SFP Module Slots

To remove an SFP module from a module slot, follow these steps:

---

**Step 1** Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface on the chassis.

**Step 2** Disconnect the cable from the SFP module.



---

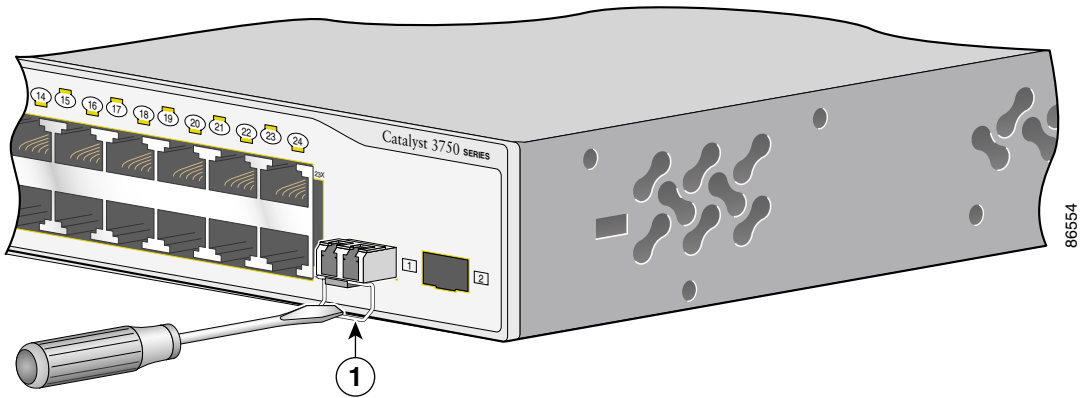
**Tip** For reattachment, note which cable connector plug is send (TX) and which is receive (RX).

---

**Step 3** Unlock and remove the SFP module, as shown in [Figure 2-38](#).

If the module has a bale-clasp latch, pull the bale out and down to eject the module. If the bale-clasp latch is obstructed and you cannot use your index finger to open it, use a small, flat-blade screwdriver or other long, narrow instrument to open the bale-clasp latch.

**Figure 2-38** Removing a Bale-Clasp Latch SFP Module by Using a Flat-Blade Screwdriver



<b>1</b>	Bale clasp
----------	------------

- Step 4** Grasp the SFP module between your thumb and index finger, and carefully remove it from the module slot.
- Step 5** For fiber-optic SFP modules, insert a dust plug into the optical ports of the SFP module to keep the optical interfaces clean.
- Step 6** Place the removed SFP module in an antistatic bag or other protective environment.

## Installing and Removing XENPAK Modules

These sections describe how to install and remove XENPAK modules. XENPAK modules are inserted into the XENPAK module slot on the front panel of the Catalyst 3750G-16TD switch. These field-replaceable transceiver modules provide 10-Gigabit interfaces.



### Note

The 10-Gigabit Ethernet XENPAK modules are referred to as 10-Gigabit Ethernet module ports in the switch software documentation.

See the Catalyst 3750 release notes for the list of XENPAK modules that the Catalyst 3750G-16TD switch supports. Use only Cisco XENPAK modules on the Catalyst 3750G-16TD switch. Each XENPAK module has an internal serial EEPROM that is encoded with security information. This encoding provides a way for Cisco to identify and validate that the XENPAK module meets the requirements for the switch.

See the Catalyst 3750 release notes for cable requirements for XENPAK module connections. For detailed instructions on installing, removing, cabling, and troubleshooting the XENPAK module, see your XENPAK module documentation.

## Installing a XENPAK Module

Figure 2-39 shows a XENPAK module.



---

**Caution**

We strongly recommend that you do not install or remove fiber-optic XENPAK modules with cables attached because of the potential damage to the cables, the cable connector, or the optical interfaces in the XENPAK module. Disconnect all cables before removing or installing the XENPAK module.

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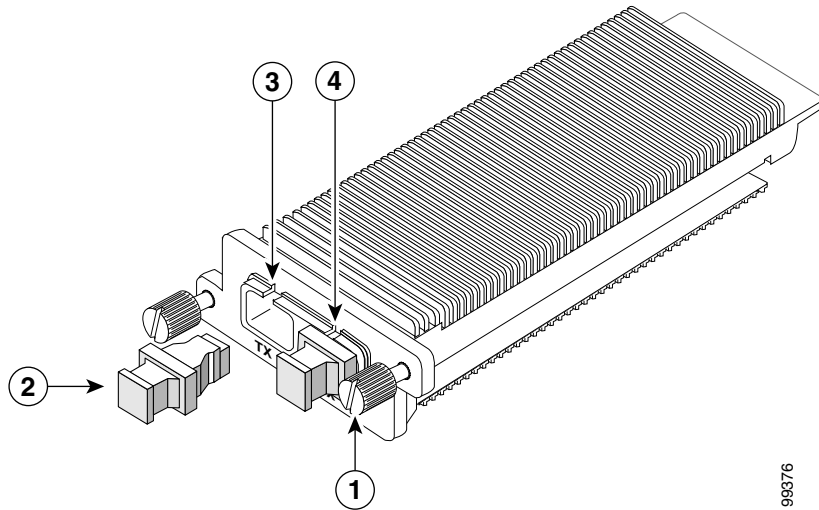
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**Caution**

Do not remove the dust plugs from the fiber-optic XENPAK module or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the XENPAK module ports and cables from contamination and ambient light.

---

Figure 2-39 XENPAK Module



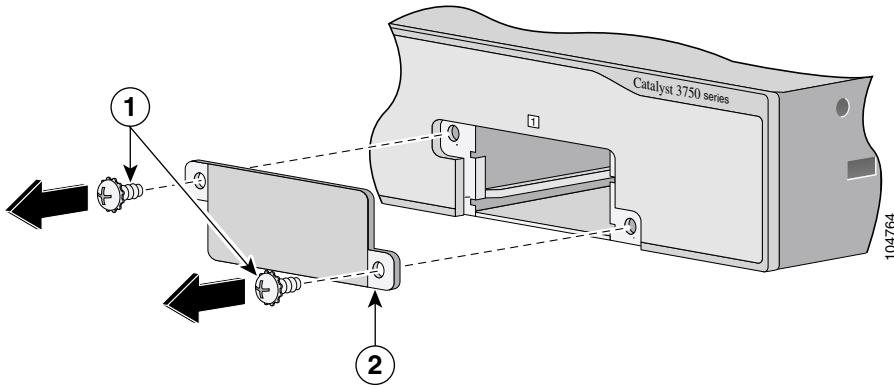
99376

<b>1</b>	Captive installation screw	<b>3</b>	Transmit optical bore
<b>2</b>	Optical bore dust plug	<b>4</b>	Receive optical bore

To insert a XENPAK module, follow these steps:

- 
- Step 1** Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface on the chassis.
- Step 2** Remove the two Phillips-head retaining screws from the XENPAK module slot cover, and store them for later use.
- Step 3** Remove the cover, as shown in [Figure 2-40](#).

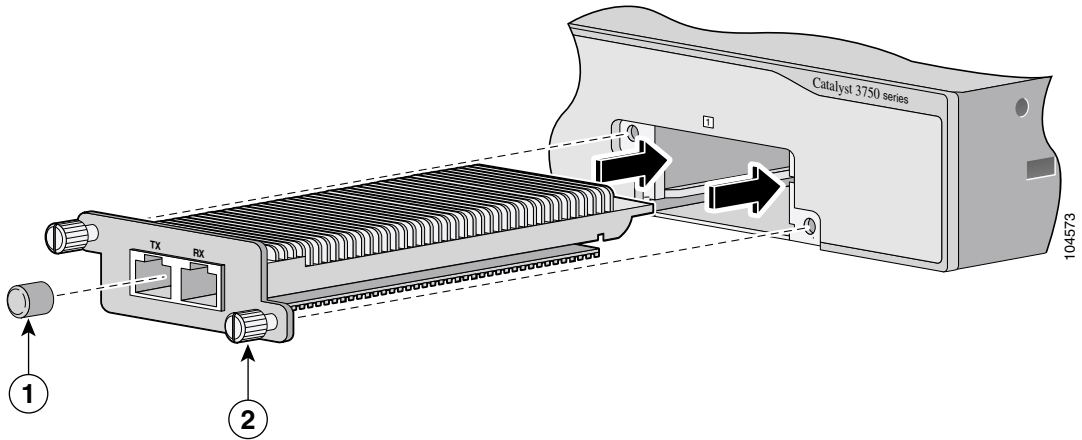


**Figure 2-40** Removing the XENPAK Module Slot Cover

1	Phillips-head screw	2	Module slot cover
---	---------------------	---	-------------------

- Step 4** Remove the XENPAK module from the protective packaging.
- Step 5** Align the XENPAK module with the guide rails inside the module slot, and slide the module into the opening until the back of the XENPAK faceplate is flush with the switch faceplate. (See [Figure 2-41](#).)

**Figure 2-41** Installing a XENPAK Module in the Catalyst 3750G-16TD Switch



<b>1</b>	Optical bore dust plug	<b>2</b>	Captive installation screw
----------	------------------------	----------	----------------------------

- Step 6** Secure the XENPAK module in place by tightening the two captive installation screws. Do not overtighten the captive screws.

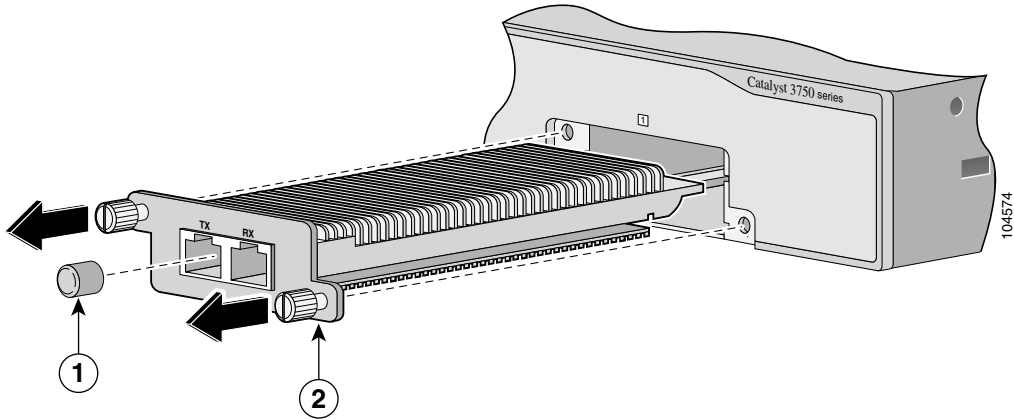
## Removing a XENPAK Module

To remove a XENPAK module, follow these steps:

- Step 1** Attach an ESD-preventive wrist strap to your wrist and to a bare metal surface on the chassis.
- Step 2** Disconnect the cable from the XENPAK module. For fiber-optic modules, install the optical bore dust plugs.
- Step 3** Loosen the two captive installation screws that secure the XENPAK module in the slot.
- Step 4** Carefully pull on the two captive installation screws to disconnect the XENPAK module from the slot.

- Step 5** Grasp the edges of the XENPAK module, and carefully slide it out of the slot, as shown in [Figure 2-42](#).

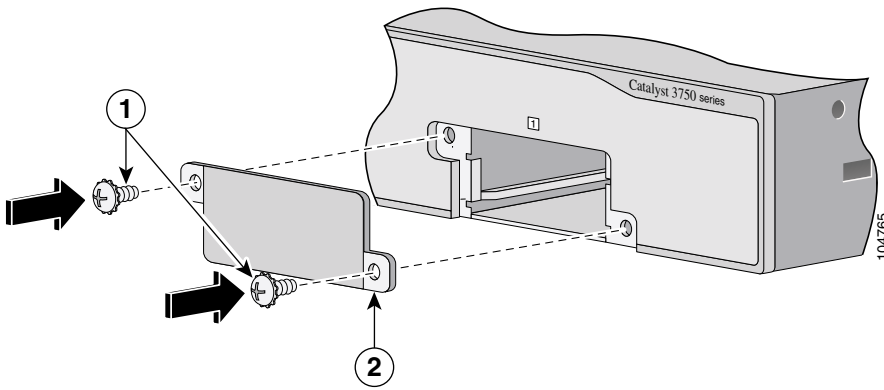
**Figure 2-42** Removing a XENPAK Module



<b>1</b>	Optical bore dust plug	<b>2</b>	Captive installation screw
----------	------------------------	----------	----------------------------

- Step 6** Use two Phillips-head screws to attach the XENPAK module slot cover to the switch front panel, as shown in [Figure 2-43](#).

Figure 2-43 Replacing the XENPAK Module Slot Cover



1	Phillips-head screw	2	Module slot cover
---	---------------------	---	-------------------

## Connecting to the 10/100 and 10/100/1000 Ports

The switch 10/100 and 10/100/1000 ports configure themselves to operate at the speed of attached devices. If the attached ports do not support autonegotiation, you can explicitly set the speed and duplex parameters. Connecting devices that do not autonegotiate or that have their speed and duplex parameters manually set can reduce performance or result in no linkage.

To maximize performance, choose one of these methods for configuring the Ethernet ports:

- Let the ports autonegotiate both speed and duplex.
- Set the port speed and duplex parameters on both ends of the connection.

**Warning**

**Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security.** Statement 1072

You can configure the 10/100 and 10/100/1000 ports on the Catalyst 3750-24PS, 3750G-24PS, 3750-48PS, and 3750G-48PS switches either to automatically provide PoE when a Cisco IP Phone, Cisco Aironet Access Point, or end device compliant with IEEE 802.3af is connected or never to provide PoE, even if an IP phone or an access point is connected. The default setting is Auto. To prevent ESD damage, follow your normal board and component handling procedures.

Use the guidelines in [Table 2-2](#) to select the correct cable for connecting the switch 10/100 and 10/100/1000 ports to other devices. See the [“Cable and Adapter Specifications”](#) section on page B-5 for cable-pinout descriptions.

**Table 2-2 Recommended Ethernet Cables**

Device	Crossover Cable <sup>1</sup>	Straight-Through Cable <sup>1</sup>
Switch to switch	Yes	No
Switch to hub	Yes	No
Switch to computer or server	No	Yes
Switch to router	No	Yes
Switch to IP phone	No	Yes

- 100BASE-TX and 1000BASE-T traffic requires twisted four-pair, Category 5 cable. 10BASE-T traffic can use Category 3 or Category 4 cable.

**Note**

You can use the **mdix auto** interface configuration command in the CLI to enable the automatic medium-dependent interface crossover (Auto-MDIX) feature. When the Auto-MDIX feature is enabled, the switch detects the required cable type for copper Ethernet connections and configures the interfaces accordingly. Therefore, you can use either a crossover or a straight-through cable for connections to a copper 10/100, 10/100/1000, or 1000BASE-T SFP module port on the switch, regardless of the type of device on the other end of the connection.

The Auto-MDIX feature is enabled by default on switches running Cisco IOS Release 12.2(18)SE or later. For releases between Cisco IOS Release 12.1(14)EA1 and 12.2(18)SE, the Auto-MDIX feature is disabled by default. For configuration information for this feature, see the switch software configuration guide or the switch command reference.

Follow these steps to connect to 10BASE-T, 100BASE-TX or 1000BASE-T devices:

**Caution**

PoE faults are caused when noncompliant cabling or powered devices are connected to a PoE port. Only standard-compliant cabling can be used to connect Cisco pre-standard IP Phones and wireless access points or IEEE 802.3af-compliant devices to PoE ports. A cable or device that causes a PoE fault must be removed from the network.

**Step 1**

When connecting to workstations, servers, routers, and Cisco IP Phones, connect a straight-through cable to an RJ-45 connector on the front panel. (See [Figure 2-44](#).) When connecting to switches or repeaters, use a crossover cable. (See the “[Cable and Adapter Specifications](#)” section on page B-5 for cable-pinout descriptions.)

**Note**

When connecting to 1000BASE-T-compatible devices, be sure to use a twisted four-pair, Category 5 cable.



---

**Note** The Catalyst 3750 switch can connect to a Cisco IP Phone through a straight-through, twisted four-pair Category 5 cable. The rear panel of the Cisco IP Phone might have more than one RJ-45 connector. Use the LAN-to-phone connector to connect the IP phone to the switch. See the Cisco IP Phone documentation for more information about connecting devices to it.

---



---

**Note** Many legacy powered devices, including older Cisco IP phones and access points that do not fully support IEEE 802.3af, might not support PoE when connected to the switches by a crossover cable.

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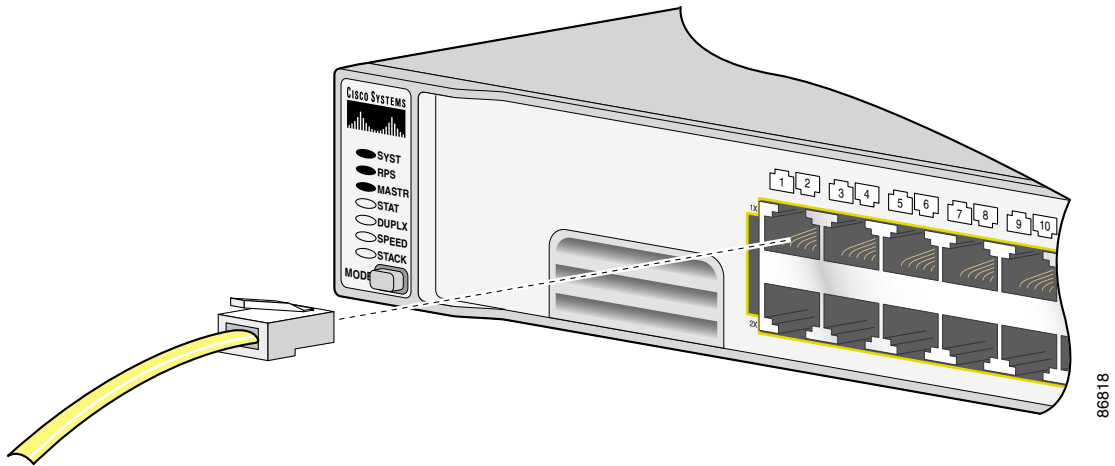
**Step 2** Connect the other end of the cable to an RJ-45 connector on the other device. The port LED turns on when both the switch and the connected device have established link.

The port LED is amber while Spanning Tree Protocol (STP) discovers the topology and searches for loops. This takes about 30 seconds, and then the port LED turns green. If the port LED does not turn on, the device at the other end might not be turned on, or there might be a cable problem or a problem with the adapter installed in the attached device. See [Chapter 3, “Troubleshooting,”](#) for solutions to cabling problems.

**Step 3** Reconfigure and reboot the connected device if necessary.

**Step 4** Repeat Steps 1 through 3 to connect each device.

---

**Figure 2-44** Connecting to an Ethernet Port

## Connecting to an SFP Module

This section describes how to connect to SFP modules. For instructions on how to connect to fiber-optic SFP modules, see the [“Connecting to 1000BASE-T SFP Modules”](#) section. For instructions on how to connect to 1000BASE-T SFP modules, see the [“Connecting to 1000BASE-T SFP Modules”](#) section.

For instructions about how to install or remove an SFP module, see the [“Installing and Removing SFP Modules”](#) section on page 2-38.



## Connecting to a Fiber-Optic SFP Module

Follow these steps to connect a fiber-optic cable to an SFP module:

**Warning**

---

**Class 1 laser product.** Statement 1008

---

**Caution**

---

Do not remove the rubber plugs from the SFP module port or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the SFP module ports and cables from contamination and ambient light.

Before connecting to the SFP module, be sure that you understand the port and cabling stipulations in [“Installation Guidelines”](#) section on page 2-6 and in the [“SFP Module Slots”](#) section on page 1-14. See [Appendix B, “Connector and Cable Specifications”](#) for information about the LC on the SFP module.

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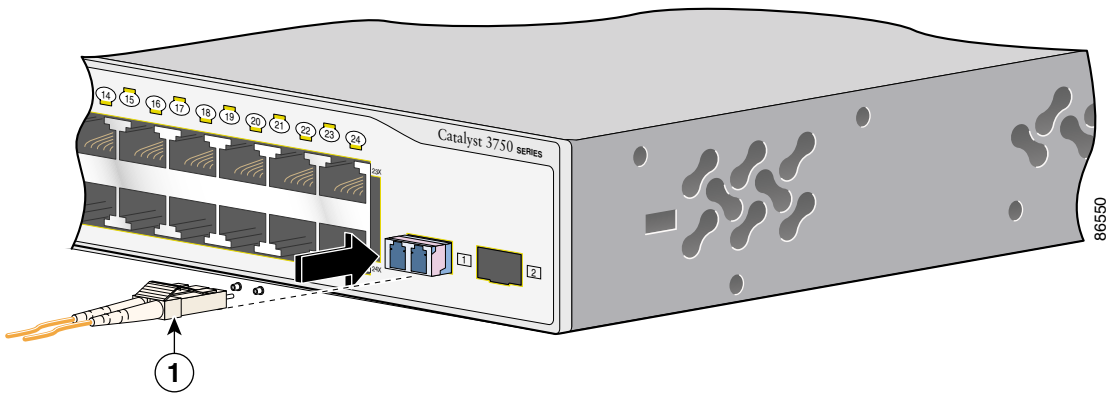
- 
- Step 1** Remove the rubber plugs from the module port and fiber-optic cable, and store them for future use.
  - Step 2** Insert one end of the fiber-optic cable into the SFP module port (see [Figure 2-45](#)).
  - Step 3** Insert the other cable end into a fiber-optic receptacle on a target device.
  - Step 4** Observe the port status LED.

The LED turns green when the switch and the target device have an established link.

The LED turns amber while the STP discovers the network topology and searches for loops. This process takes about 30 seconds, and then the port LED turns green.

If the LED is off, the target device might not be turned on, there might be a cable problem, or there might be problem with the adapter installed in the target device. See [Chapter 3, “Troubleshooting,”](#) for solutions to cabling problems.

Figure 2-45 Connecting to an SFP Module Port



<b>1</b>	LC connector
----------	--------------

**Step 5** If necessary, reconfigure and restart the switch or target device.



**Caution**

For detailed instructions on removing the SFP modules, see your SFP documentation.

## Connecting to 1000BASE-T SFP Modules

Follow these steps to connect a Category 5 cable to a 1000BASE-T SFP module:



### Caution

To prevent ESD damage, follow your normal board and component handling procedures.

### Step 1

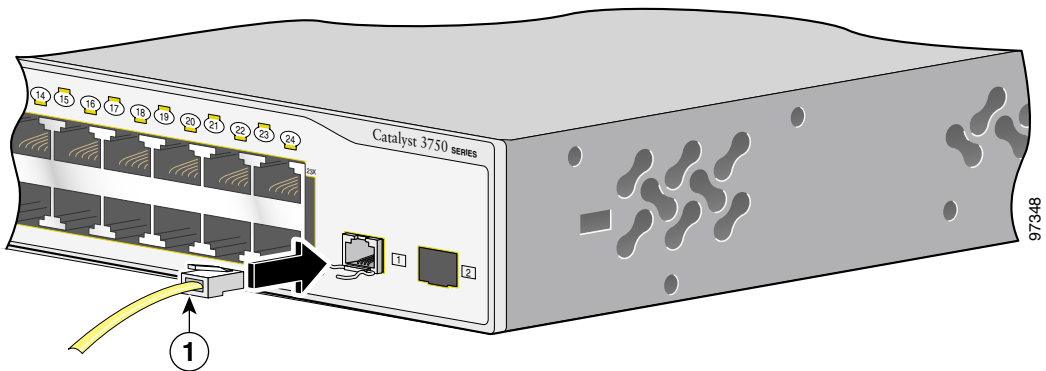
When connecting to servers, workstations, and routers, insert a four twisted-pair, straight-through cable in the RJ-45 connector. When connecting to switches or repeaters, insert a four twisted-pair, crossover cable.



### Note

When connecting to a 1000BASE-T device, be sure to use a four twisted-pair, Category 5 cable.

**Figure 2-46** Connecting to an SFP Module Port



<b>1</b>	RJ-45 connector
----------	-----------------

**Step 2** Insert the other cable end in an RJ-45 connector on a target device.

**Step 3** Observe the port status LED.

The LED turns green when the switch and the target device have an established link.

The LED turns amber while the STP discovers the network topology and searches for loops. This process takes about 30 seconds, and then the port LED turns green.

If the LED is off, the target device might not be turned on, there might be a cable problem, or there might be problem with the adapter installed in the target device. See [Chapter 3, “Troubleshooting,”](#) for solutions to cabling problems.

**Step 4** If necessary, reconfigure and restart the switch or target device.

---

## Connecting to a XENPAK Module

Follow these steps to connect a fiber-optic cable to a XENPAK module:



---

**Warning**

**Class 1 laser product.** Statement 1008

---



---

**Caution**

Do not remove the rubber plugs from the XENPAK module ports or the rubber caps from the fiber-optic cable until you are ready to connect the cable. The plugs and caps protect the XENPAK module ports and cables from contamination and ambient light.

---



---

**Note**

The 10-Gigabit Ethernet XENPAK modules are referred to as 10-Gigabit Ethernet module ports in the switch software documentation.

---



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**Note**

Make sure that the XENPAK module is fully inserted into the module slot and that the captive installation screws are fully tightened before attaching the fiber-optic interface cable connector to the XENPAK module connector.

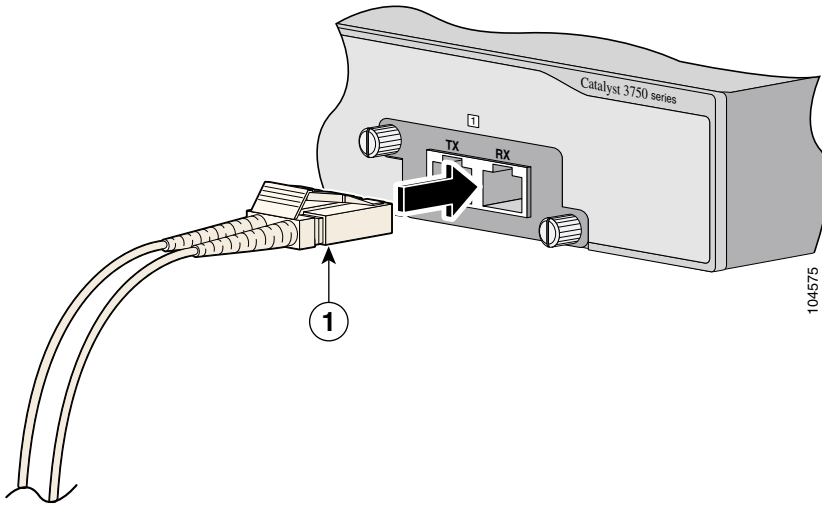
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- 
- Step 1** Remove the rubber plugs from the XENPAK module ports and fiber-optic cable, and store them for future use.
- Step 2** Align the fiber-optic cable SC connector with the XENPAK module connector, so that transmit (TX) on the cable meets receive (RX) on the XENPAK module connector, and RX on the cable meets TX on the XENPAK module.
- Step 3** Insert the fiber-optic cable connector into the XENPAK module ports (see [Figure 2-47](#)).
- Step 4** Insert the other cable end into a fiber-optic receptacle on a target device.
- Step 5** Observe the XENPAK module port status LED.

The LED turns green when the switch and the target device have an established link.

The LED turns amber while the STP discovers the network topology and searches for loops. This process takes about 30 seconds, and then the port LED turns green.

If the LED is off, the target device might not be turned on, there might be a cable problem, or there might be problem with the adapter installed in the target device. See [Chapter 3, “Troubleshooting,”](#) for solutions to cabling problems.

**Figure 2-47** Connecting to a XENPAK Module Port

<b>1</b>	SC connector
----------	--------------

**Step 6** If necessary, reconfigure and restart the switch or target device.

---

## Where to Go Next

If the default configuration is satisfactory, the switch does not need further configuration. You can use any of these management options to change the default configuration:

- Start the device manager, which is in the switch memory, to manage individual and standalone switches. This is an easy-to-use web interface that offers quick configuration and monitoring. You can access the device manager from anywhere in your network through a web browser. For more information, see the device manager online help.
- Start the Network Assistant application, which is described in the *Getting Started with Cisco Network Assistant* guide. Through this GUI, you can configure and monitor a switch cluster or an individual switch.
- Use the CLI to configure the switch as a member of a cluster or as an individual switch from the console. See the *Catalyst 3750 Switch Command Reference* on Cisco.com for information on using the CLI with a Catalyst 3750 switch.
- Start an SNMP application such as the CiscoView application.

Where to Go Next





## Troubleshooting

---

The LEDs on the front panel provide troubleshooting information about the switch. They show failures in the power-on self-test (POST), port-connectivity problems, and overall switch performance. For a full description of the switch LEDs, see the [“LEDs” section on page 1-15](#).

You can also get statistics from the browser interface, from the command-line interface (CLI), or from a Simple Network Management Protocol (SNMP) workstation. See the software configuration guide, the switch command reference guide on Cisco.com, or the documentation that came with your SNMP application for details.

This chapter describes these topics for troubleshooting problems:

- [Understanding POST Results, page 3-1](#)
- [Replacing a Failed Stack Member, page 3-8](#)

## Understanding POST Results

As the switch powers on, it begins the power-on self-test (POST), a series of tests that runs automatically to ensure that the switch functions properly. POST lasts approximately 1 minute.

When the switch begins POST, the System, the RPS, the Master, the Status, the Duplex, the Speed, and the Stack LEDs turn green. (On the Power over Ethernet [PoE] Catalyst 3750 switches, the PoE LED also turns green as POST begins.) The System LED flashes green, and the other LEDs remain continuous green.

When POST completes successfully, the System LED remains green. The RPS LED remains green for some time and then returns to its operating status. The other LEDs turn off and return to their operating status.

**Note**

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For information on operating status for the LEDs, go to the [“LEDs” section on page 1-15](#).

---

**Note**

---

POST failures are usually fatal. Call Cisco Systems if your switch does not pass POST.

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# Diagnosing Problems

The LEDs on the front panel provide troubleshooting information about the switch. They show POST failures, port-connectivity problems, and overall switch performance. For a full description of the switch LEDs, see the “LEDs” section on page 1-15.

You can also get statistics from the browser interface, from the CLI, or from an SNMP workstation. See the software configuration guide, the switch command reference guide on Cisco.com, or the documentation that came with your SNMP application for details.

You can access the Technical Support Website (<http://www.cisco.com/techsupport>) for a list of known hardware problems and extensive troubleshooting documentation including:

- Field notices
- Security advisories
- Troubleshooting resources
- Factory defaults
- Password recovery
- Recovery from corrupted or missing software
- Switch port problems
- Network interface cards
- Troubleshooting tools

Common switch problems fall into these categories:

- Poor performance
- No connectivity
- Corrupted software

[Table 3-1](#) describes how to detect and resolve these problems.

Table 3-1 Common Problems and Solutions

Symptom	Possible Cause	Resolution
Poor performance or excessive errors	Duplex autonegotiation mismatch.	See the switch software configuration guide for information on identifying autonegotiation mismatches.  Verify that the autonegotiation settings are the same at both ends.
	<p><b>Cabling distance exceeded</b></p> <ul style="list-style-type: none"> <li>• Port statistics show excessive frame check sequence (FCS), late-collision, or alignment errors.</li> <li>• For 10/100 and 10/100/1000BASE-T connections: <ul style="list-style-type: none"> <li>– The distance between the port and the attached device exceeds 328 feet (100 meters).</li> <li>– If the switch is attached to a repeater, the total distance between the two end stations exceeds the cabling guidelines.</li> </ul> </li> <li>• XENPAK or SFP module cabling guidelines exceeded.</li> </ul>	<ul style="list-style-type: none"> <li>• See the switch software configuration guide for information on displaying port statistics.</li> <li>• Reduce the cable length to within the recommended distances.</li> <li>• See your repeater documentation for cabling guidelines.</li> <li>• See your XENPAK or SFP module documentation for cabling guidelines.</li> </ul>
	<p><b>Bad adapter in attached device</b></p> <ul style="list-style-type: none"> <li>• Excessive errors found in port statistics.</li> <li>• STP checking for possible loops.</li> </ul>	<ul style="list-style-type: none"> <li>• Run adapter card diagnostic utility.</li> <li>• Wait 30 seconds for the port LED to turn green.</li> </ul>

Table 3-1 Common Problems and Solutions (continued)

Symptom	Possible Cause	Resolution
<p><b>No connectivity</b></p>	<p><b>Incorrect or bad cable</b></p> <p>These are results of no link at both ends:</p> <ul style="list-style-type: none"> <li>• A crossover cable was used when a straight-through was required, or the reverse.</li> </ul> <ul style="list-style-type: none"> <li>• The cable is wired incorrectly.</li> <li>• A crossover or straight-through cable is wired incorrectly.</li> <li>• STP checking for possible loops.</li> </ul>	<ul style="list-style-type: none"> <li>• For the correct pinouts and the proper application of crossover instead of straight-through cables, see the <a href="#">“Two Twisted-Pair Cable Pinouts”</a> section on page B-5.</li> <li>• Enable the automatic medium-dependent-interface crossover (Auto-MDIX) feature.</li> </ul> <p><b>Note</b> Many legacy powered devices, including older Cisco IP phones and access points that do not fully support IEEE 802.3af, might not support PoE when connected to the switches by a crossover cable.</p> <ul style="list-style-type: none"> <li>• Replace with a tested good cable.</li> <li>• For 1000BASE-T connections, be sure to use a twisted four-pair, Category 5 cable.</li> <li>• Wait 30 seconds for the port LED to turn green.</li> </ul>

Table 3-1 Common Problems and Solutions (continued)

Symptom	Possible Cause	Resolution
Unreadable characters on the management console	Incorrect baud rate.	Reset the emulation software to 9600 baud.
Amber system LED	Fatal POST error detected.	Contact Cisco Systems.
Switch port in error-disabled state after SFP module or XENPAK module inserted	Bad or non-Cisco-approved SFP module or XENPAK module.	Remove the SFP module or XENPAK module from the switch, and replace it with a Cisco-approved module. Use the <b>errdisable recovery cause gbic-invalid</b> global configuration command to verify the port status, and enter a time interval to recover from the error-disable state.  See the switch command reference guide for information on the <b>errdisable recovery</b> command.
Powered device connected to PoE port, but no power given	Switch might not have enough power capacity to deliver PoE to a new powered device.	Use the Mode button to show the PoE status for all ports. <ul style="list-style-type: none"> <li>If the port status LED is alternating green and amber, connect the powered device to an external AC power source.</li> </ul>
	PoE might be disabled on switch port.	<ul style="list-style-type: none"> <li>If the port status LED is amber, configure the switch port PoE setting to Auto.</li> </ul> <p><b>Note</b> PoE is enabled by default.</p>

Table 3-1 Common Problems and Solutions (continued)


Symptom	Possible Cause	Resolution
<p><b>PoE mode LED blinks amber</b></p> <p><b>Note</b> When the PoE mode is selected, a green PoE LED means that the port status LEDs show the PoE status.</p>	<p>At least one PoE port has a fault, or power has been denied to at least one of the PoE ports.</p> <p> <b>Caution</b> PoE faults are caused when noncompliant cabling or powered devices are connected to a PoE port. Only standard-compliant cabling can be used to connect Cisco pre-standard IP Phones and wireless access points or IEEE 802.3af-compliant devices to PoE ports. A cable or device that causes a PoE fault must be removed from the network.</p>	<p>Use the Mode button to show the PoE status for all ports. The affected port LEDs blink amber or alternate green and amber.</p> <p>If a port LED blinks amber, there is a PoE fault. A cable or device that causes a PoE fault must be removed from the network.</p> <p>If a port status LED is alternating green and amber, connect the powered device to an external AC power source.</p> <p><b>Note</b> You can also use the device manager or CLI to search for PoE faults.</p>

Table 3-1 Common Problems and Solutions (continued)

Symptom	Possible Cause	Resolution
<b>SFP module or XENPAK module not recognized</b>	<p>The SFP module or XENPAK module might be installed upside down.</p> <p>The SFP module or XENPAK module does not snap into the slot.</p>	<p>Verify that the SFP module or XENPAK module is not installed upside down.</p> <p>Remove the SFP module or XENPAK module. Inspect for physical damage to the connector, the module, and the module slot.</p> <p>Replace the SFP module or XENPAK module with a known good module.</p>
<b>No stack link between switches or high error rate between switches in the stack</b>	<p>Poor cable connection.</p> <p>Bad StackWise cable or damaged StackWise port.</p>	<p>Secure the thumb screws on the StackWise cables. See <a href="#">Figure 2-34</a>.</p> <p>Remove the StackWise cable, and inspect the cable and StackWise port for bent pins or damaged connectors.</p> <p>If the StackWise cable is bad, replace it with a known good cable.</p>

## Replacing a Failed Stack Member

If you need to replace a failed stack member, you can hot swap or replace the switch by following this procedure:

- 
- Step 1** Get a replacement switch that has the same model number as the failed switch.
  - Step 2** Power down the failed switch.



**Step 3** Make sure the replacement switch is powered off, and then connect the replacement switch to the stack.



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**Note** If you had manually set the member numbers for any members in the stack, you need to manually assign the replacement switch the same member number as the failed switch. To assign the member number manually, see the switch software configuration guide.

---

**Step 4** Make the same Ethernet and Gigabit Ethernet connections on the replacement switch (as were on the failed switch).

**Step 5** Power on the replacement switch.

---

The replacement switch will have the same configuration for all the interfaces as the failed switch and will function the same as the failed switch.





# Technical Specifications

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This appendix lists the switch technical specifications in [Table A-1](#) through [Table A-12](#).

**Table A-1 Specifications for the Catalyst 3750G-12S Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 1.2 A to 0.6 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V --- @ 13 A
Power consumption	120 W, 409 BTUs per hour
Power rating	0.120 kVA
<b>Physical Dimensions</b>	
Weight	10 lb (4.6 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 12.8 in. (4.4 x 44.5 x 32.6 cm)

**Table A-2 Specifications for the Catalyst 3750-24TS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 1.2 A to 0.6 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V --- @8.5 A
Power consumption	50 W, 171 BTUs per hour
Power rating	0.083 kVA
<b>Physical Dimensions</b>	
Weight	8 lb (3.6 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 11.8 in. (4.4 x 44.5 x 30.1 cm)

**Table A-3**      **Specifications for the Catalyst 3750G-24T Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 1.6 A to 0.9 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V --- @ 13 A
Power consumption	165 W, 563 BTUs per hour
Power rating	0.165 kVA
<b>Physical Dimensions</b>	
Weight	10 lb (4.6 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 12.8 in. (4.4 x 44.5 x 32.6 cm)

**Table A-4 Specifications for the Catalyst 3750-24PS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 5.5 A to 2.8 A, 50 to 60 Hz
DC input voltage for RPS 675	+12 V <sup>DC</sup> @7.5 A and - 48 V <sup>DC</sup> @7.8 A
Power consumption	495 W
Power dissipation	125 W, 426 BTUs per hour
Power rating	0.495 kVA
<b>Power over Ethernet</b>	
15.4 W per port maximum, 370 W switch maximum	
<b>Physical Dimensions</b>	
Weight	11.3 lb (5.1 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 11.8 in. (4.4 x 44.5 x 30.1 cm)

**Table A-5 Specifications for the Catalyst 3750G-24PS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 8 A to 4 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sup>---</sup> @14 A and - 48 V <sup>---</sup> @7.8 A
Power consumption	520 W
Power dissipation	170 W, 534 BTUs per hour
Power rating	0.52 kVA
<b>Power over Ethernet</b>	
Range from 4.0 to 15.4 W per port, up to 370 W switch maximum	
<b>Physical Dimensions</b>	
Weight	13.5 lb (6.1 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 14.9 in. (4.4 x 44.5 x 37.8 cm)



**Table A-6 Specifications for the Catalyst 3750-48PS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 5.5 A to 2.8 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sub>DC</sub> @7.5 A and - 48 V <sub>DC</sub> @7.8 A
Power consumption	540 W
Power dissipation	170 W, 580 BTUs per hour
Power rating	0.54 kVA
<b>Power over Ethernet</b>	
Range from 4.0 to 15.4 W per port, up to 370 W switch maximum	
<b>Physical Dimensions</b>	
Weight	13.2 lb (6 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 14.8 in. (4.4 x 44.5 x 37.8 cm)

**Table A-7 Specifications for the Catalyst 3750G-48PS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 8 A to 4 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sup>DC</sup> @ 14 A and - 48 V <sup>DC</sup> @ 7.8 A
Power consumption	560 W
Power dissipation	220 W, 690 BTUs per hour
Power rating	0.56 kVA
<b>Power over Ethernet</b>	
Range from 4.0 to 15.4 W per port, up to 370 W switch maximum	
<b>Physical Dimensions</b>	
Weight	15.5 lb (7 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 16.1 in. (4.4 x 44.5 x 40.9 cm)

**Table A-8 Specifications for the Catalyst 3750G-16TD Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 1.6 A to 0.9 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sub>DC</sub> @ 17 A
Power consumption	180 W, 615 BTUs per hour
Power rating	0.180 kVA
<b>Physical Dimensions</b>	
Weight	12.5 lb (5.7 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 16.1 in. (4.4 x 44.5 x 40.9 cm)

**Table A-9 Specifications for the Catalyst 3750G-24TS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 2.3 A to 1.5 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sup>---</sup> @ 17 A
Power consumption	190 W, 650 BTUs per hour
Power rating	0.190 kVA
<b>Physical Dimensions</b>	
Weight	12.5 lb (5.7 kg)
Dimensions (H x D x W)	2.59 x 17.5 x 11.6 in. (6.6 x 44.5 x 29.5 cm)

**Table A-10** Specifications for the Catalyst 3750G-24TS-1U Switch

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 3 A to 1.5 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sup>DC</sup> @ 10.5 A
Power consumption	100 W
Power dissipation	100 W, 314 BTUs per hour
Power rating	0.10 kVA
<b>Physical Dimensions</b>	
Weight	12 lb (5.5 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 14.9 in. (4.4 x 44.5 x 37.8 cm)

**Table A-11** Specifications for the Catalyst 3750-48TS Switch

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 1.2 A to 0.6 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V --- @8.5 A
Power consumption	75 W, 256 BTUs per hour
Power rating	0.075 kVA
<b>Physical Dimensions</b>	
Weight	9.1 lb (4.1 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 11.8 in. (4.4 x 44.5 x 30.1 cm)

**Table A-12 Specifications for the Catalyst 3750G-48TS Switch**

<b>Environmental Ranges</b>	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-13 to 158°F (-25 to 70°C)
Relative humidity	10 to 85% (noncondensing)
Operating altitude	Up to 10,000 ft (3049 m)
Storage altitude	Up to 15,000 ft (4573 m)
<b>Power Requirements</b>	
AC input voltage	100 to 240 VAC (autoranging) 3 A to 1.5 A, 50 to 60 Hz
DC input voltages for RPS 675	+12 V <sup>DC</sup> @ 17.5 A
Power consumption	160 W
Power dissipation	160 W, 500 BTUs per hour
Power rating	0.16 kVA
<b>Physical Dimensions</b>	
Weight	14 lb (6.4 kg)
Dimensions (H x D x W)	1.73 x 17.5 x 16.1 in. (4.4 x 44.5 x 40.9 cm)







# Connector and Cable Specifications

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This appendix describes the Catalyst 3750 switch ports and the cables and adapters that you use to connect the switch to other devices.

## Connector Specifications

These sections describe the connectors used with the Catalyst 3750 switches.

## 10/100 and 10/100 /1000 Ports

The 10/100 and 10/100/1000 Ethernet ports on Catalyst 3750 switches use standard RJ-45 connectors and Ethernet pinouts with internal crossovers.

Figure B-2 and Figure B-1 show the pinouts.

**Figure B-1** 10/100 Port Pinouts

Pin	Label	1 2 3 4 5 6 7 8
1	RD+	
2	RD-	
3	TD+	
4	NC	
5	NC	
6	TD-	
7	NC	
8	NC	

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**Figure B-2** 10/100/1000 Port Pinouts

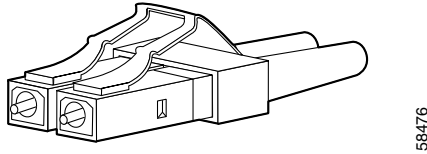
Pin	Label	1 2 3 4 5 6 7 8
1	TP0+	
2	TP0-	
3	TP1+	
4	TP2+	
5	TP2-	
6	TP1-	
7	TP3+	
8	TP3-	

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## SFP Module Ports

The Catalyst 3750 switch uses SFP modules for fiber-optic and copper uplink ports. See the Catalyst 3750 release notes for a list of supported SFP modules.

**Figure B-3** *Fiber-Optic SFP Module LC Connector*



**Warning**

**Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**

**Figure B-4** *Copper SFP Module RJ-45 Connector*

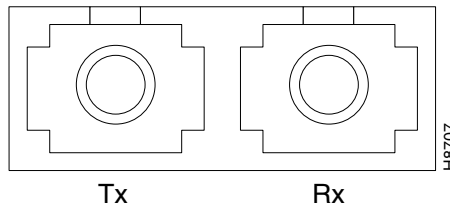
Pin	Label	1	2	3	4	5	6	7	8
1	TP0+								
2	TP0-								
3	TP1+								
4	TP2+								
5	TP2-								
6	TP1-								
7	TP3+								
8	TP3-								

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## XENPAK Module Ports

The Catalyst 3750G-16TD switch uses XENPAK modules for 10-Gigabit fiber-optic connections to networks. See the Catalyst 3750 release notes for a list of supported XENPAK modules. Fiber-optic XENPAK modules use SC connectors, as shown in [Figure B-5](#).

**Figure B-5** Fiber-Optic XENPAK Module SC Connector



**Warning**

**Invisible laser radiation may be emitted from disconnected fibers or connectors. Do not stare into beams or view directly with optical instruments.**

## Console Port

The console port uses an 8-pin RJ-45 connector, which is described in [Table B-1](#) and [Table B-2](#). The supplied RJ-45-to-DB-9 adapter cable is used to connect the console port of the switch to a console PC. You need to provide a RJ-45-to-DB-25 female DTE adapter if you want to connect the switch console port to a terminal. You can order a kit (part number ACS-DSBUASYN=) containing that adapter from Cisco. For console port and adapter pinout information, see [Table B-1](#) and [Table B-2](#).

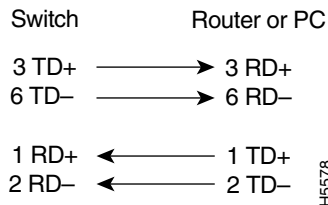
# Cable and Adapter Specifications

These sections describe the cables and adapters used with Catalyst 3750 switches.

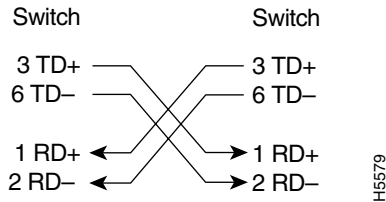
## Two Twisted-Pair Cable Pinouts

Figure B-6 and Figure B-7 show the schematics of two twisted-pair cables for 10/100 ports.

**Figure B-6** *Two Twisted-Pair Straight-Through Cable Schematic*



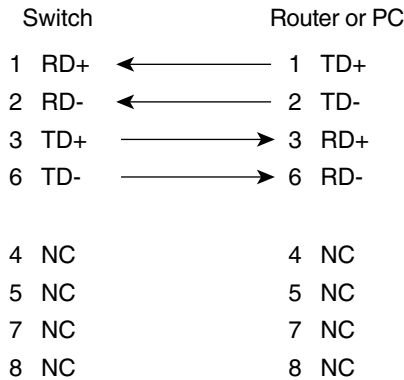
**Figure B-7** *Two Twisted-Pair Crossover Cable Schematic*



## Four Twisted-Pair Cable Pinouts for 10/100 Ports

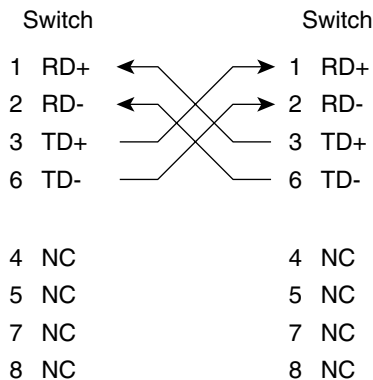
Figure B-8 and Figure B-9 show the schematics of four twisted-pair cables for 10/100 ports.

**Figure B-8** *Four Twisted-Pair Straight-Through Cable Schematic for 10/100 Ports*



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**Figure B-9** *Four Twisted-Pair Crossover Cable Schematic for 10/100 Ports*

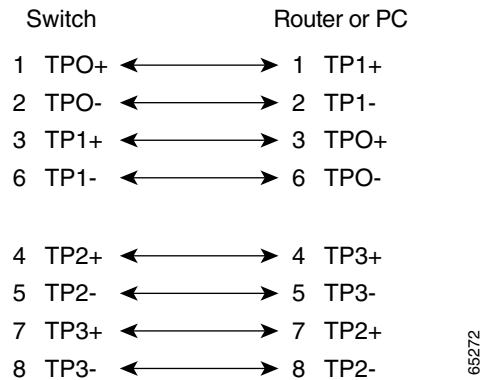


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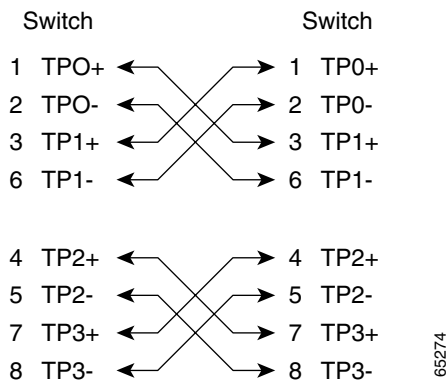
## Four Twisted-Pair Cable Pinouts for 1000BASE-T Ports

Figure B-10 and Figure B-11 show the schematics of four twisted-pair cables for 10/100/1000 ports on Catalyst 3750 switches.

**Figure B-10** *Four Twisted-Pair Straight-Through Cable Schematic for 10/100/1000 Ports*



**Figure B-11** *Four Twisted-Pair Crossover Cable Schematics for 10/100/1000 and 1000BASE-T SFP Module Ports*



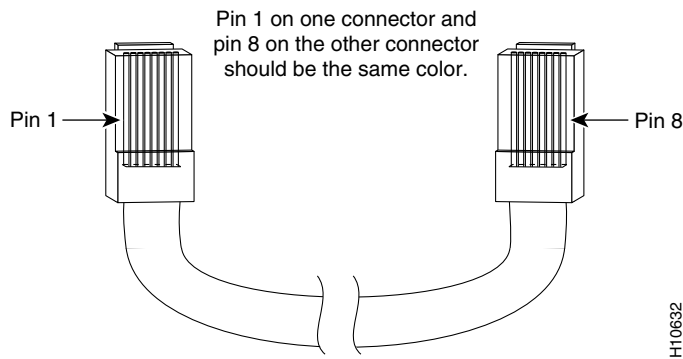
## Crossover Cable and Adapter Pinouts

This section describes how to identify a crossover cable and also describes the adapter pinouts.

### Identifying a Crossover Cable

To identify a crossover cable, compare the two modular ends of the cable. Hold the cable ends side-by-side, with the tab at the back. The wire connected to the pin on the outside of the left plug should be the same color as the wire connected to the pin on the outside of the right plug. (See [Figure B-12](#).)

**Figure B-12** *Identifying a Crossover Cable*





**Note**

You can use the **mdix auto** interface configuration command in the CLI to enable the automatic medium-dependent interface crossover (Auto-MDIX) feature. When the Auto-MDIX feature is enabled, the switch detects the required cable type for copper Ethernet connections and configures the interfaces accordingly. Therefore, you can use either a crossover or a straight-through cable for connections to a copper 10/100, 10/100/1000, or 1000BASE-T SFP module port on the switch, regardless of the type of device on the other end of the connection.

The Auto-MDIX feature is enabled by default on switches running Cisco IOS Release 12.2(18)SE or later. For releases between Cisco IOS Release 12.1(14)EA1 and 12.2(18)SE, the Auto-MDIX feature is disabled by default. For configuration information for this feature, see the switch software configuration guide or the switch command reference.

## Adapter Pinouts

[Table B-1](#) lists the pinouts for the console port, the RJ-45-to-DB-9 adapter cable, and the console device.

**Table B-1** Console Port Signaling Using a DB-9 Adapter

Switch Console Port (DTE)	RJ-45-to-DB-9 Terminal Adapter	Console Device
Signal	DB-9 Pin	Signal
RTS	8	CTS
DTR	6	DSR
TxD	2	RxD
GND	5	GND
GND	5	GND
RxD	3	TxD
DSR	4	DTR
CTS	7	RTS

Table B-2 lists the pinouts for the console port, RJ-45-to-DB-25 female DTE adapter, and the console device.

**Note**

The RJ-45-to-DB-25 female DTE adapter is not supplied with the switch. You can order a kit (part number ACS-DSBUASYN=) containing this adapter from Cisco.

**Table B-2** Console Port Signaling Using a DB-25 Adapter

Switch Console Port (DTE)	RJ-45-to-DB-25 Terminal Adapter	Console Device
Signal	DB-25 Pin	Signal
RTS	5	CTS
DTR	6	DSR
TxD	3	RxD
GND	7	GND
GND	7	GND
RxD	2	TxD
DSR	20	DTR
CTS	4	RTS



## Configuring the Switch with the CLI-Based Setup Program

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This appendix provides a CLI-based setup procedure for a standalone switch or a switch stack. Before connecting the switch to a power source, review the safety warnings in [Chapter 2, “Switch Installation.”](#)



### Note

For detailed installation procedures on rack-mounting your switch, stacking your switches, or connecting to small form-factor pluggable (SFP) or XENPAK modules, see [Chapter 2, “Switch Installation.”](#) For product overview information, see [Chapter 1, “Product Overview.”](#)

---

These steps describe how to do a simple installation:

1. [Accessing the CLI, page C-2](#)
2. [Taking Out What You Need, page C-4](#)
3. [Stacking the Switches \(Optional\), page C-5](#)
4. [Connecting to the Console Port, page C-7](#)
5. [Starting the Terminal Emulation Software, page C-9](#)
6. [Connecting to a Power Source, page C-9](#)
7. [Entering the Initial Configuration Information, page C-11](#)

# Accessing the CLI

For an unconfigured switch, you can access the CLI through Express Setup or through the console port.

## Accessing the CLI Through Express Setup

**Note**

---

Express Setup is supported on switches running Cisco IOS Release 12.1(14)EA1 or later. If you are installing a new switch, see the Cisco IOS release label on the rear panel of the switch to determine the release.

For switches running releases earlier than Cisco IOS Release 12.1(14)EA1, go to the [“Taking Out What You Need” section on page C-4](#).

---

You can access the CLI on an unconfigured switch by placing the switch in Express Setup mode and then connecting an Ethernet port of the switch to the Ethernet port of your PC or workstation. To put the switch into Express Setup mode, follow the steps described in the *Catalyst 3750 Switch Getting Started Guide* for powering on the switch and using Express Setup.

After the switch is in Express Setup mode, use Telnet to connect to the switch by using the IP address *10.0.0.1*, and enter the **setup** user EXEC command. See these sections in this chapter to then configure the switch by using the CLI:

- [Entering the Initial Configuration Information, page C-11](#)
- [Completing the Setup Program, page C-11](#)

After you have entered the configuration information for the switch, save it to flash memory by using the **write memory** privileged EXEC command.

**Note**

---

While in Express Setup mode, the IP address 10.0.0.1 remains active on the switch until you enter the **write memory** command. You lose the Telnet connection after entering the **write memory** command.

---

For more information about using the CLI, see the command reference for this release.

## Accessing the CLI Through the Console Port

You can access the CLI on a configured or unconfigured switch by connecting the console port of the switch to the serial port on your PC or workstation and accessing the switch through a Telnet session.

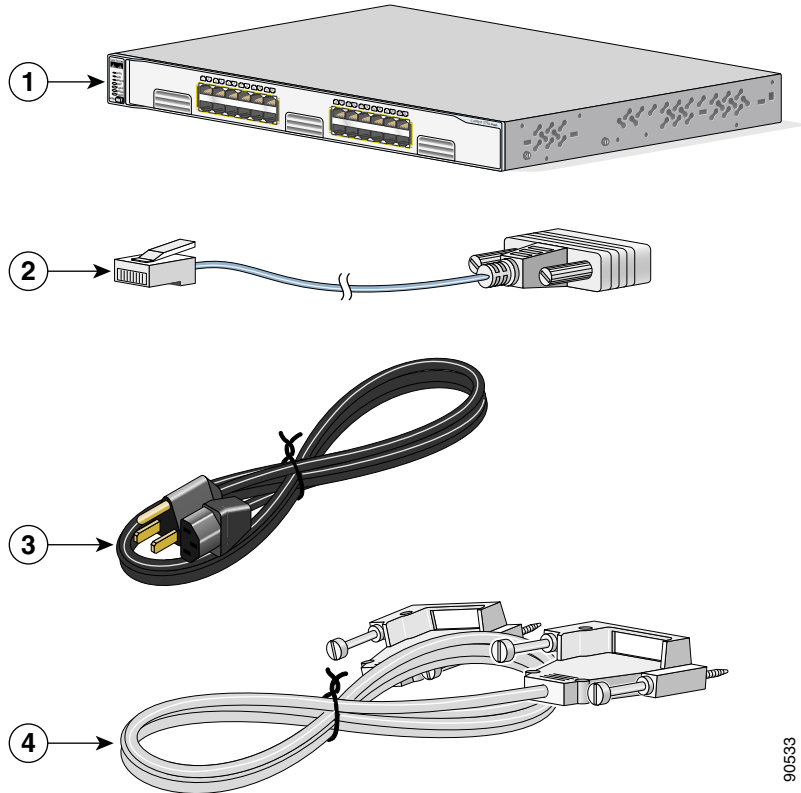
To access the switch through the console port, follow these steps:

- [“Taking Out What You Need” section on page C-4.](#)
- [“Connecting to the Console Port” section on page C-7](#)
- [“Starting the Terminal Emulation Software” section on page C-9](#)
- [“Connecting to a Power Source” section on page C-9](#)
- [“Entering the Initial Configuration Information” section on page C-11](#)

# Taking Out What You Need

Remove the items shown in Figure C-1 from the shipping container:

**Figure C-1** *The Catalyst 3750 Switch, Adapter Cable, AC Power Cord, and the StackWise Cable*



90533

1	Catalyst 3750 switch	3	AC power cord
2	RJ-45-to-DB-9 adapter cable	4	StackWise cable (optional)



**Note** You need to provide the Category 5 straight-through cables to connect the switch ports to other Ethernet devices.



**Note** You can use the **mdix auto** interface configuration command in the CLI to enable the automatic medium-dependent interface crossover (Auto-MDIX) feature. When the Auto-MDIX feature is enabled, the switch detects the required cable type for copper Ethernet connections and configures the interfaces accordingly. Therefore, you can use either a crossover or a straight-through cable for connections to a copper 10/100, 10/100/1000, or 1000BASE-T SFP module port on the switch, regardless of the type of device on the other end of the connection.

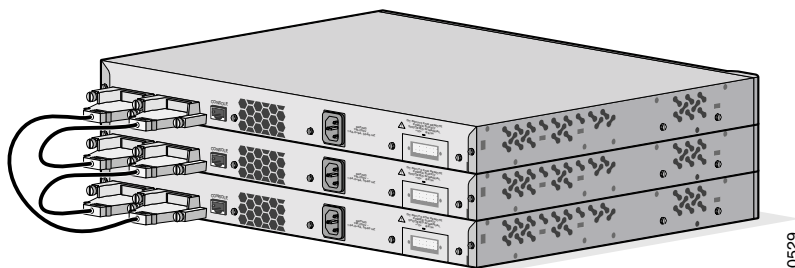
The Auto-MDIX feature is enabled by default on switches running Cisco IOS Release 12.2(18)SE or later. For releases between Cisco IOS Release 12.1(14)EA1 and 12.2(18)SE, the Auto-MDIX feature is disabled by default. For configuration information for this feature, see the switch software configuration guide or the switch command reference.

## Stacking the Switches (Optional)

You can stack up to nine switches by using the StackWise cables and ports to connect the switches.

Read the “[Planning the Stack](#)” section on page 2-11 before you stack your switches.

**Figure C-2** Stacking the Switches



90529

---

**Step 1** Insert one end of the StackWise cable into the StackWise port at the back of a switch. See Figure C-3.



**Note** Always use a Cisco-approved StackWise cable to connect the switches.

---

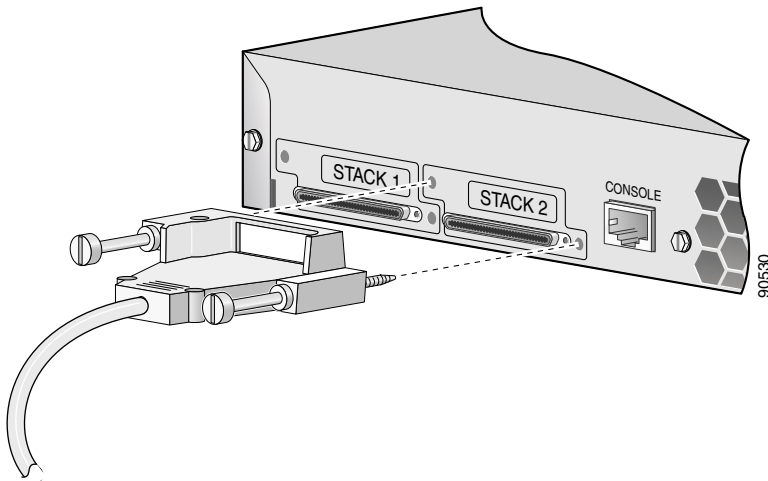
**Step 2** Use the window in the StackWise cable to align the connector correctly. Secure the screws tightly.

**Step 3** Insert the other end of the cable into the connector of the other switch, and secure the screws tightly.

---

See the [“Connecting StackWise Cable to StackWise Ports”](#) section on page 2-35 for detailed installation procedures on how to connect the switches in a stack.

**Figure C-3** Connecting the StackWise Cable to a StackWise Port





# Connecting to the Console Port

You can use the console port to perform the initial configuration. To connect the switch console port to a PC, use the supplied RJ-45-to-DB-9 adapter cable.

**Note**

---

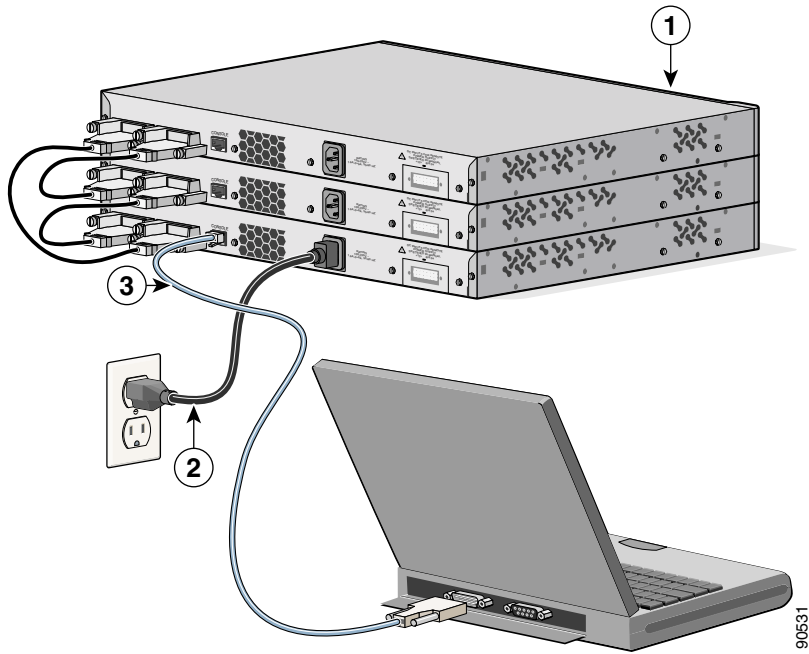
If you have stacked your switches, connect to the console port of one of the switches in the stack. The initial configuration for the entire stack can be performed on any switch in the stack.

---

Follow these steps to connect the PC or terminal to the switch:

- 
- Step 1** Using the supplied RJ-45-to-DB-9 adapter cable, insert the RJ-45 connector into the console port on the rear of a switch, as shown in [Figure C-4](#).
- Step 2** Attach the DB-9 female DTE of the adapter cable to a PC's serial port, or attach an appropriate adapter to the terminal.
-

Figure C-4 Connecting a Switch to a PC



1	Catalyst 3750 switches	3	RJ-45-to-DB-9 adapter cable
2	Power cord		

90531

# Starting the Terminal Emulation Software

Before you power on the switch, start the terminal emulation session so that you can see the output display from the power-on self-test (POST).

The terminal-emulation software—frequently a PC application such as Hyperterminal or ProcommPlus—makes communication between the switch and your PC or terminal possible.

- 
- Step 1** Start the terminal-emulation program if you are using a PC or terminal.
- Step 2** Start a terminal-emulation session.
- Step 3** Configure the baud rate and character format of the PC or terminal to match these console port default characteristics:
- 9600 baud
  - 8 data bits
  - 1 stop bit
  - No parity
  - None (flow control)
- 

# Connecting to a Power Source

Follow these steps to connect to a power source:

- 
- Step 1** Connect one end of the supplied AC power cord to the power connector on a switch rear panel. See [Figure C-4](#).
- Step 2** Connect the other end of the power cable to a grounded AC outlet.
- Step 3** (Optional) If you have a stack, power on all the switches in the stack.



---

**Note** If you have stacked your switches, see the [“Powering Considerations” section on page 2-12](#) for more information.

---



---

**Note** If you are connecting the switch to a Cisco redundant power system (RPS), see the documentation that shipped with your RPS.

---

As the switch powers on, it begins the power-on self-test (POST), a series of tests that runs automatically to ensure that the switch functions properly. POST lasts approximately 1 minute.

When the switch begins POST, the System, the RPS, the Master, the Status, the Duplex, the Speed, and the Stack LEDs turn green. (On the Power over Ethernet [PoE] switches, the PoE LED also turns green as POST begins.) The System LED flashes green, and the other LEDs remain continuous green.

When POST completes successfully, the System LED remains green. The RPS LED remains green for some time and then returns to its operating status. The other LEDs turn off and return to their operating status.



---

**Note** POST failures are usually fatal. Call Cisco Systems if your switch does not pass POST.

---

After you have powered all the switches in the stack, a switch is elected as the stack master. The master LED is green on the stack master switch.

If you started the terminal emulation program before you powered on your switch, the PC or terminal displays the bootloader sequence. You need to press **Enter** to display the setup program prompt.

# Entering the Initial Configuration Information

To set up the switch, you need to complete the setup program, which runs automatically after the switch is powered up. You must assign an IP address and other configuration information necessary for the switch to communicate with the local routers and the Internet. This information is also required if you plan to use the Network Assistant to configure and manage the switch.

## IP Settings

You will need this information from your network administrator before you complete the setup program:

- Switch IP address
- Subnet mask (IP netmask)
- Default gateway (router)
- Enable secret password
- Enable password
- Telnet password

## Completing the Setup Program

**Note**

---

If your switches are stacked and there are multiple console connections to individual switches in the stack, the initial setup dialog appears in the first console where the user presses **Enter**.

---

Follow these steps to complete the setup program and to create an initial configuration for the switch:

---

**Step 1** Enter **Yes** at the following two prompts.

Would you like to enter the initial configuration dialog? [yes/no]:  
**yes**

At any point you may enter a question mark '?' for help.  
Use ctrl-c to abort configuration dialog at any prompt.  
Default settings are in square brackets '[]'.

Basic management setup configures only enough connectivity  
for management of the system, extended setup will ask you  
to configure each interface on the system.

Would you like to enter basic management setup? [yes/no]: **yes**

**Step 2** Enter a host name for the switch, and press **Return**.

On a command switch, the host name is limited to 28 characters; on a member switch to 31 characters. Do not use *-n*, where *n* is a number, as the last character in a host name for any switch.

Enter host name [Switch]: *host\_name*

**Step 3** Enter an enable secret password, and press **Return**.

The password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, allows spaces, but ignores leading spaces. The secret password is encrypted and the enable password is in plain text.

Enter enable secret: *secret\_password*

**Step 4** Enter an enable password, and press **Return**.

Enter enable password: *enable\_password*

**Step 5** Enter a virtual terminal (Telnet) password, and press **Return**.

The password can be from 1 to 25 alphanumeric characters, is case sensitive, allows spaces, but ignores leading spaces.

Enter virtual terminal password: *terminal-password*

- Step 6** (Optional) Configure Simple Network Management Protocol (SNMP) by responding to the prompts. You can also configure SNMP later through the CLI, the device manager, or the Network Assistant application. To configure SNMP later type **no**.

```
Configure SNMP Network Management? [no]: no
```

- Step 7** Enter the interface name (physical interface or VLAN name) of the interface that connects to the management network, and press **Return**. For this release, always use **vlan1** as that interface.

```
Enter interface name used to connect to the
management network from the above interface summary: vlan1
```

- Step 8** Configure the interface by entering the switch IP address and subnet mask and pressing **Return**. The IP address and subnet masks shown below are examples.

```
Configuring interface vlan1:
Configure IP on this interface? [yes]: yes
IP address for this interface: 10.4.120.106
Subnet mask for this interface [255.0.0.0]: 255.0.0.0
```

- Step 9** Enter **Y** to configure the switch as the cluster command switch. Enter **N** to configure it as a member switch or as a standalone switch.

If you enter **N**, the switch appears as a candidate switch in the Network Assistant GUI. You can configure the switch as a command switch later through the CLI, the device manager, or the Network Assistant application. To configure it later, enter **no**.

```
Would you like to enable as a cluster command switch? [yes/no]: no
```

You have now completed the initial configuration of the switch and the switch displays its initial configuration. This is an example of output that appears:

```
The following configuration command script was created:
hostname switch1
enable secret 5 $1$U1q8$D1A/OiaEbl90WcBPd9cOn1
enable password enable_password
line vty 0 15
password terminal-password
no snmp-server
!
no ip routing

!
interface Vlan1
no shutdown
```

```

ip address 10.4.120.106 255.0.0.0
!
interface FastEthernet1/0/1
!
interface FastEthernet1/0/2

interface FastEthernet1/0/3
!
...<output abbreviated>
!
interface GigabitEthernet2/0/28
!
end

```

**Step 10** These choices are displayed:

```

[0] Go to the IOS command prompt without saving this config.

[1] Return back to the setup without saving this config.

[2] Save this configuration to nvram and exit.

```

If you want to save the configuration and use it the next time the switch reboots, save it in nonvolatile RAM (NVRAM) by selecting option 2.

```
Enter your selection [2]:2
```

Make your selection, and press **Return**.

---

After you complete the setup program, the switch can run the default configuration that you created. If you want to change this configuration or want to perform other management tasks, use one of these tools:

- Command-line interface (CLI)
- Network Assistant (for one or more switches)

To use the CLI, enter commands at the *Switch>* prompt through the console port by using a terminal program or through the network by using telnet. For configuration information, see the switch software configuration guide or the switch command reference.

To use the Network Assistant, see the *Getting Started with Cisco Network Assistant* guide on Cisco.com.





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