



1000BASE-T GBIC Installation Notes

July 2004

These installation notes provide instructions for installing 1000BASE-T Gigabit Interface Converters (GBICs) in Catalyst 2900 XL, Catalyst 2950, Catalyst 3500 XL, Catalyst 3550, Catalyst 4000 family, and Catalyst 6000 family switches and provide troubleshooting information.

The 1000BASE-T GBICs are hot-swappable, single-port modules. They provide 1000BASE-T full-duplex connectivity in Catalyst 2900 XL switches, Catalyst 2950 switches, Catalyst 3500 XL switches, Catalyst 3550 switches, Catalyst 4000 family switches, Catalyst 6000 family switches, and other 1000BASE-T-compatible devices in the online *1000BASE-T GBIC Switch Compatibility Matrix*, which is posted with the GBIC documentation on Cisco.com.

For information about installing the 1000BASE-T GBICs in other 1000BASE-T-compatible devices, refer to the documentation for those devices.

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Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

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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. Statement 1071

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。

주의 중요 안전 지침

이 경고 기호는 위험을 나타냅니다. 작업자가 신체 부상을 일으킬 수 있는 위험한 환경에 있습니다. 장비에 작업을 수행하기 전에 전기 회로와 관련된 위험을 숙지하고 표준 작업 관례를 숙지하여 사고를 방지하십시오. 각 경고의 마지막 부분에 있는 경고문 번호를 참조하여 이 장치와 함께 제공되는 번역된 안전 경고문에서 해당 번역문을 찾으십시오.

이 지시 사항을 보관하십시오.

Aviso INSTRUÇÕES IMPORTANTES DE SEGURANÇA

Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.

GUARDE ESTAS INSTRUÇÕES

Advarsel VIGTIGE SIKKERHEDSANVISNINGER

Dette advarselssymbol betyder fare. Du befinder dig i en situation med risiko for legemeskade. Før du begynder arbejde på udstyr, skal du være opmærksom på de involverede risici, der er ved elektriske kredsløb, og du skal sætte dig ind i standardprocedurer til undgåelse af ulykker. Brug erklæringsnummeret efter hver advarsel for at finde oversættelsen i de oversatte advarsler, der fulgte med denne enhed.

GEM DISSE ANVISNINGER

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 للحيولة 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**אזהרה****הוראות בטיחות חשובות**

סימן אזהרה זה מסמל סכנה. אתה נמצא במצב העלול לגרום לפציעה. לפני שתעבוד עם ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים ולהכיר את הנהלים המקובלים למניעת תאונות. השתמש במספר ההוראה המסופק בסופה של כל אזהרה כדי לאתר את התרגום באזהרות הבטיחות המתורגמות שמצורפות להתקן.

שמור הוראות אלה**Opomena VAŽNI BEZBEDNOSNI NAPATSTVIJA**

Симболот за предупредување значи опасност. Се наоѓате во ситуација што може да предизвика телесни повреди. Пред да работите со опремата, бидете свесни за ризикот што постои кај електричните кола и треба да ги познавате стандардните постапки за спречување на несреќни случаи. Искористете го бројот на изјавата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во prevedените безбедносни предупредувања што се испорачани со уредот.

ЧУВАЈТЕ ГИ ОБИЕ НАПАТСТВИЈА

Ostrzeżenie WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA

Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do prac przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.

NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ**Upozornenie DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY**

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.

USCHOVAJTE SI TENTO NÁVOD

Description

The single-port 1000BASE-T GBIC (model WS-G5482 or WS-G5483) has these features:

- Management through the Cisco IOS command-line interface (CLI), Catalyst software CLI, or the web-based Cluster Management Suite (CMS)
- Full-duplex connectivity between two devices

The GBIC supports automatic medium-dependent interface crossover (Auto-MDIX). The GBIC automatically detects the required cable connection type (straight through or crossover) and configures the connection appropriately.



Caution

The 1000BASE-T GBIC does not support half duplex. Configuring the GBIC port for half duplex causes collisions.



Caution

In compliance with FCC Class A, you can install up to 12 WS-G5483 GBICs in a Catalyst 6000 family switch chassis.

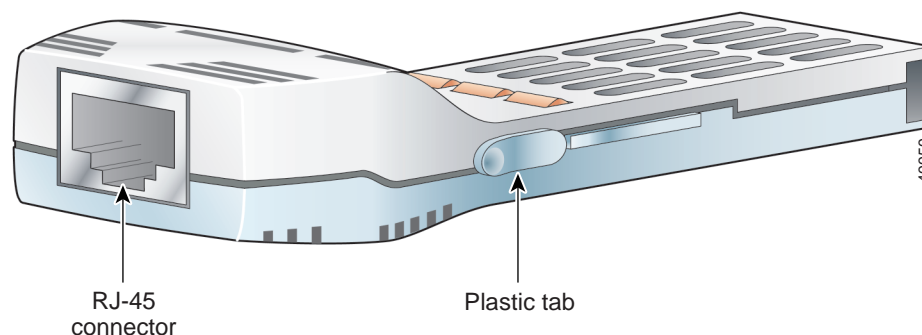


Note

The Catalyst 2950, Catalyst 4000 family, and Catalyst 6000 family switches support only the WS-G5483 GBIC.

Figure 1 shows the 1000BASE-T GBIC.

Figure 1 1000BASE-T GBIC



Supported Switches

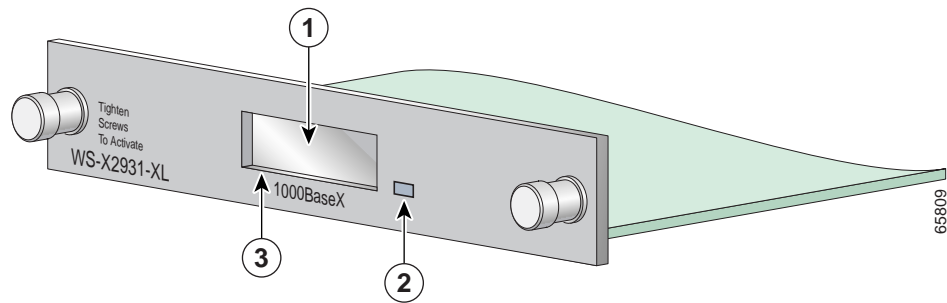
For a list of the switches and switching modules that support the GBIC, refer to the online *1000BASE-T GBIC Switch Compatibility Matrix*. The switches detect and enable the GBIC only when they are running the minimum software releases in the list.

For example, if your Catalyst 2900 XL or 3500 XL switch is running Cisco IOS Release 12.0(5)XW or later, it detects and enables the WS-G5482 GBIC. You can manage this GBIC by using the CLI or the Cluster Management Suite (CMS). If the switch is running a Cisco IOS release earlier than Cisco IOS Release 12.0(5)XW, it does not detect and enable this GBIC. You must upgrade your software to Cisco IOS Release 12.0(5)XW or later. To upgrade to Cisco IOS Release 12.0(5)XW or later, refer to the release notes for the upgrade procedures. After you upgrade the software, the switch detects and enables the GBIC.

If your Catalyst 2900 XL or 3500 XL switch is running Cisco IOS Release 12.0(5)WC3 or later, it also detects and enables the WS-G5483 GBIC. You can manage this GBIC by using the CLI or the CMS. If the switch is running a Cisco IOS release earlier than Cisco IOS Release 12.0(5)WC3, it does not detect and enable this GBIC. You must upgrade your software to Cisco IOS Release 12.0(5)WC3 or later. To upgrade to Cisco IOS Release 12.0(5)WC3 or later, refer to the release notes for the upgrade procedures. After you upgrade the software, the switch detects and enables the GBIC.

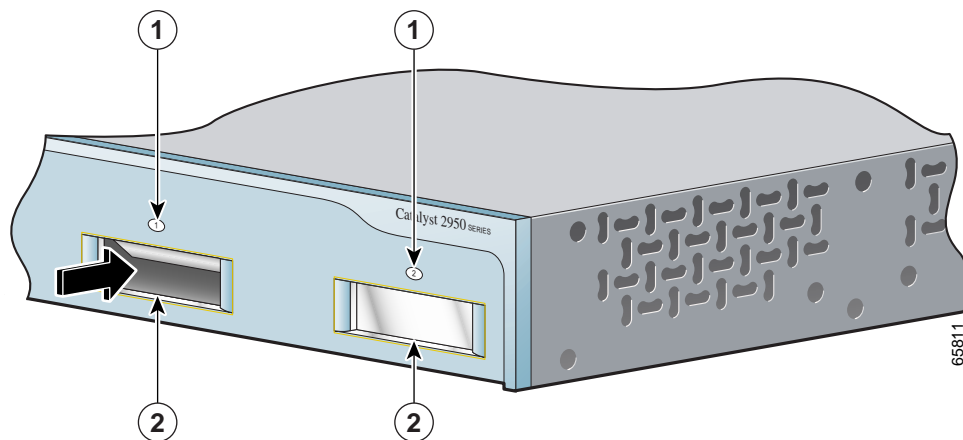
Figure 2 shows the GBIC slot in a 1000BASE-X module for a Catalyst 2900 XL switch. Figure 3 shows the GBIC slots in a Catalyst 2950 switch front panel. Figure 4 shows the GBIC slots in a Catalyst 3500 XL switch front panel. Figure 5 shows the GBIC slots in a Catalyst 3550 switch front panel. Figure 6 shows the GBIC slots in a Catalyst 4006 supervisor-engine front panel. Figure 7 shows the GBIC slots in a Catalyst 6000 family supervisor-engine front panel.

Figure 2 GBIC Slot in a 1000BASE-X Module for a Catalyst 2900 XL Switch



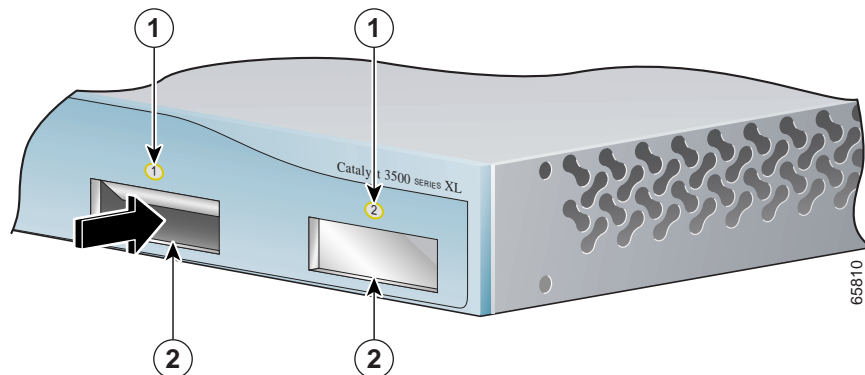
1	Metal-flap door	2	GBIC LED	3	GBIC slot
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Figure 3 GBIC Slots in a Catalyst 2950 Switch Front Panel



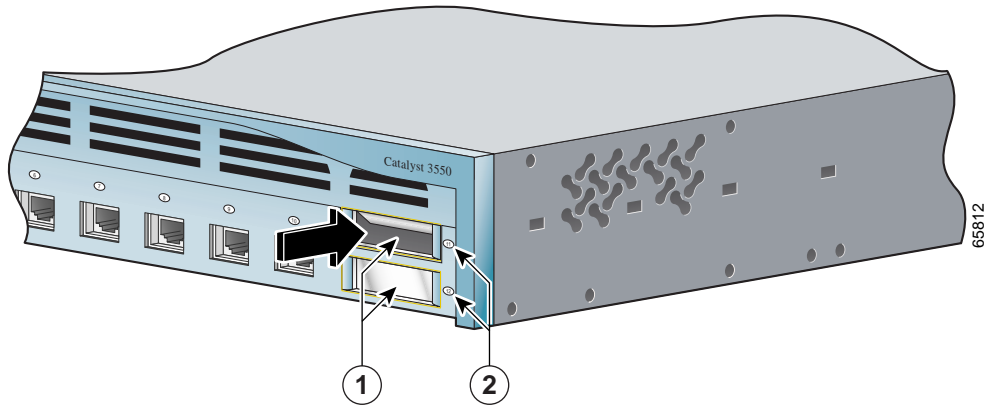
1	GBIC LED	2	GBIC slot
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Figure 4 GBIC Slots in a Catalyst 3500 XL Switch Front Panel



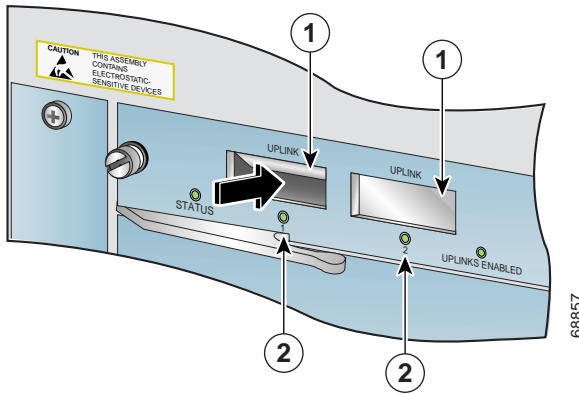
1	GBIC LED	2	GBIC slot
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Figure 5 GBIC Slots in a Catalyst 3550 Switch Front Panel



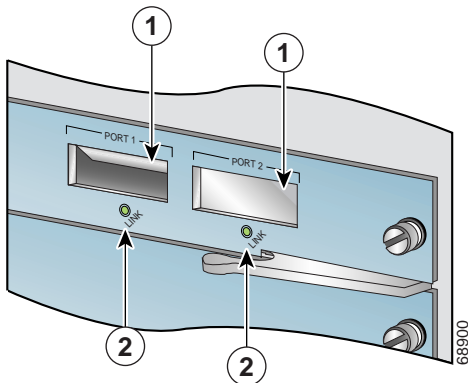
1	GBIC slot	2	GBIC LED
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Figure 6 GBIC Slots in a Catalyst 4006 Supervisor-Engine Front Panel



1	GBIC slot	2	GBIC LED
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Figure 7 GBIC Slots in a Catalyst 6000 Family Supervisor-Engine Front Panel



1	GBIC slot	2	GBIC LED
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LEDs

The 1000BASE-X GBIC module for a Catalyst 2900 XL switch has an LED that displays information about the GBIC port. [Table 1](#) explains how to interpret the LED colors. Refer to the *Catalyst 2900 Series XL Modules Installation Guide* and the *Catalyst 2900 Series XL Hardware Installation Guide* for more information about the 1000BASE-X modules.

The GBIC LEDs on the Catalyst 2950, Catalyst 3500 XL, and Catalyst 3550 switch front panels, as a group or individually, display information about the switch and the individual ports. When you change the port mode, the meanings of the LED colors change. [Table 2](#) explains how to interpret the LED colors when you change the port mode to STAT (port status). Refer to the hardware documentation that came with your switch for more information about the GBICs.

The GBIC LEDs on the Catalyst 4006 and the Catalyst 6000 family supervisor-engine or switching-module front panels, as a group or individually, display information about the switch and the individual ports. [Table 3](#) explains how to interpret the LED colors. Refer to the hardware documentation that came with your switch for more information about the GBICs.

Table 1 *Meaning of 1000BASE-X Module LED Colors on Catalyst 2900 XL Switches*

LED Color	Meaning
Off	No link.
Green	Link present.
Flashing green	Activity. GBIC port is sending or receiving data.
Alternating green-amber	Link fault. Error frames can affect connectivity, and errors such as excessive collisions, CRC ¹ errors, and alignment and jabber errors are monitored for a link-fault indication.
Amber	GBIC port is not forwarding because the port was disabled or the module failed POST ² . The port could be disabled by management, an address violation, or STP ³ . If the module failed POST, it should be replaced. Note After a port is reconfigured, the LED can remain amber for up to 30 seconds while STP checks the switch for possible loops.

1. CRC = cyclic redundancy check

2. POST = power-on self-test

3. STP = Spanning Tree Protocol

Table 2 *Meaning of Catalyst 2950, 3500 XL, and 3550 LED Colors*

LED Color	Meaning
Off	No link.
Solid green	Link present.
Flashing green	Activity. GBIC port is transmitting or receiving data.

Table 2 Meaning of Catalyst 2950, 3500 XL, and 3550 LED Colors (continued)

LED Color	Meaning
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.
Solid amber	GBIC port is not forwarding. Port was disabled by management, an address violation, or STP. Note After a port is reconfigured, the LED can remain amber for up to 30 seconds while STP checks the switch for possible loops.

Table 3 Meaning of Catalyst 4006 and Catalyst 6000 Family LED Colors

LED Color	Meaning
Off	No link. No signal detected, or link configuration failure.
Green	Link present.
Amber	GBIC port is not forwarding because the port is not enabled.
Flashing amber	Module failed POST and should be replaced.

Installation

This section describes how to install your 1000BASE-T GBIC.

EMC Regulatory Statements

This section includes specific regulatory statements about the 1000BASE-T GBIC.

U.S.A.

U.S. regulatory information for this product is at the end of this document.

Taiwan



Warning

This is a Class A Information Product, when used in residential environment, it may cause radio frequency interference, under such circumstances, the user may be requested to take appropriate countermeasures. Statement 257

警告

這是甲類資訊產品，在居住環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Japan



Warning

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions. Statement 191

警告 これは、情報処理装置等電波障害自主規制協議会（VCCI）の規定に基づくクラスA装置です。この装置を家庭環境で使用すると、電波妨害を引き起こすことがあります。この場合には、使用者が適切な対策を取るようにより要求されることがあります。

Korea



Warning

This is a Class A Device and is registered for EMC requirements for industrial use. The seller or buyer should be aware of this. If this type was sold or purchased by mistake, it should be replaced with a residential-use type. Statement 294

주의 A급 기기 이 기기는 업무용으로 전자파 적합 등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Hungary



Warning

This equipment is a class A product and should be used and installed properly according to the Hungarian EMC Class A requirements (MSZEN55022). Class A equipment is designed for typical commercial establishments for which special conditions of installation and protection distance are used. Statement 256

Figyelem

Figyelmeztetés a felhasználói kézikönyv számára: Ez a berendezés "A" osztályú termék, felhasználására és üzembe helyezésére a magyar EMC "A" osztályú követelményeknek (MSZ EN 55022) megfelelően kerülhet sor, illetve ezen "A" osztályú berendezések csak megfelelő kereskedelmi forrásból származhatnak, amelyek biztosítják a megfelelő speciális üzembe helyezési körülményeket és biztonságos üzemelési távolságok alkalmazását.

Installation Guidelines

When installing the GBIC in Catalyst 2950, Catalyst 4000 family, and Catalyst 6000 family switches, follow these guidelines:

- Catalyst 2950, Catalyst 4000 family, and Catalyst 6000 family switches support only the WS-G5483 GBIC. These switches do not support the WS-G5482 GBIC.
- You can install only one WS-G5483 GBIC in a Catalyst 2948G switch.



Caution

In compliance with FCC Class A, you can install up to 12 WS-G5483 GBICs in a Catalyst 6000 family switch chassis.

Cabling Guidelines



Caution

To comply with GR-1089 intrabuilding lightning immunity requirements, you must use grounded, shielded, twisted-pair, Category 5 cabling.

The GBIC supports Auto-MDIX. The GBIC port uses an RJ-45 connector and four twisted-pair, Category 5 cabling.

The port can be connected to a 1000BASE-T-compatible device, such as a high-speed workstation, server, hub, router, or other switch. You can use a straight-through or a crossover cable to connect to other devices, and the interface automatically corrects for any incorrect cabling. The cable length from the GBIC to an attached device cannot exceed 328 feet (100 meters).

For connector pinouts and cable specifications, see the [“Connectors and Cables” section on page 21](#).

For more information, refer to the hardware and software documentation for the connected device.

Handling the GBIC

Follow these guidelines when handling a GBIC:

- GBICs are static sensitive. To prevent electrostatic-discharge (ESD) damage, follow your normal board and component handling procedures.
- Keep the GBIC in the antistatic shielded bag until you install it.

Inserting the GBIC

Gigabit Ethernet devices are shipped without the GBIC installed.



Caution

Installing this product in or connecting this product to an unauthorized device might damage the device. Refer to the online *1000BASE-T GBIC Switch Compatibility Matrix* posted with the GBIC documentation on Cisco.com for the list of products that support the GBIC.

GBICs are hot-swappable and are designed to prevent incorrect insertion.

Follow these steps to insert the GBIC in a GBIC or module slot:

-
- Step 1** Remove the GBIC from the protective packaging.
 - Step 2** Grip the two plastic tabs with your thumb and forefinger.
 - Step 3** Insert the GBIC in the GBIC or module slot, and slide the GBIC in the slot until you hear a click. The click means the GBIC is locked in the slot.
-

If the GBIC is not inserted securely (not locked in the slot), the switch might not recognize it or might display the wrong media type after you enter the **show interface** privileged EXEC command on the Cisco IOS CLI or the **show port** command on the Catalyst software CLI. If this happens, remove and reinsert the GBIC. See the [“Troubleshooting” section on page 18](#) for more information.

To connect a 1000BASE-T-compatible device to the GBIC, see the [“Connecting to 1000BASE-T Ports” section on page 17](#).

Removing the GBIC

To remove the GBIC from the GBIC slot, disconnect the cable from the RJ-45 connector on the GBIC. Release the GBIC from the slot by simultaneously squeezing the two plastic tabs, and pull out the GBIC.



Warning

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

Waarschuwing

Het uiteindelijke wegruimen van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Varoitus

Tämä tuote on hävitettävä kansallisten lakien ja määräysten mukaisesti.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

Avvertenza

Lo smaltimento di questo prodotto deve essere eseguito secondo le leggi e regolazioni locali.

Advarsel

Endelig kassering av dette produktet skal være i henhold til alle relevante nasjonale lover og bestemmelser.

Aviso

Deitar fora este produto em conformidade com todas as leis e regulamentos nacionais.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Varning!

Vid deponering hanteras produkten enligt gällande lagar och bestämmelser.

Figyelem	A készülék végső elhelyezéséről az adott országban érvényes törvények és előírások szerint kell intézkedni.
Предупреждение	Окончательная установка данного изделия должна выполняться в соответствии со всеми региональными и местными правилами и нормами.
警告	本产品的废弃处理应根据所有国家的法律和规章进行。
警告	この製品を廃棄処分する際は、各国の法律および規制に従って取り扱ってください。
주의	해당 국가의 관련 법규 및 규정에 따라 이 장치를 폐기해야 합니다.
Aviso	O descarte definitivo deste produto deve estar de acordo com todas as leis e regulamentações nacionais.
Advarsel	Endelig bortskaffelse af dette produkt skal ske i henhold til gældende love og regler.
تحذير	عند التخلص من المنتج يجب اتباع القوانين والتشريعات المحلية.
Upozorenje	Zbrinjavanje ovoga proizvoda u otpad treba provesti u skladu s važećim zakonima i odredbama.
Upozornění	Upozornění: Likvidace tohoto výrobku musí být provedena podle platných zákonů a předpisů.
Προειδοποίηση	Η τελική απόρριψη αυτού του προϊόντος πρέπει να γίνεται σύμφωνα με όλους τους εθνικούς νόμους και κανονισμούς.
אזהרה	סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות ולחוקי המדינה.
Opomena	Крајното фрлање на овој производ треба да се изврши во согласност со сите национални закони и прописи.
Ostrzeżenie	Ostateczna likwidacja tego urządzenia po jego wycofaniu z eksploatacji powinna odbywać się zgodnie z przepisami krajowymi.
Upozornenie	Upozornenie Likvidácia tohto výrobku musí byť vykonaná podľa platných zákonov a predpisov.

Connecting to 1000BASE-T Ports



Caution To prevent electrostatic-discharge (ESD) damage, follow your normal board and component handling procedures.



Caution To comply with GR-1089 intrabuilding lightning immunity requirements, you must use grounded, shielded, twisted-pair, Category 5 cabling.

Step 1 When connecting to a 1000BASE-T-compatible server, workstation, router, switch, or repeater, use straight-through or crossover, four twisted-pair, Category 5 cabling for the GBIC port.

Step 2 Insert the other cable connector in an RJ-45 connector on a 1000BASE-T-compatible target device.

Step 3 Observe the port status LED.

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

The LED turns amber while STP discovers the network topology and searches for loops. This process takes about 30 seconds, and then the 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 a problem with the adapter installed in the target device. See the [“Troubleshooting” section on page 18](#) for solutions to cabling problems.

Step 4 Reconfigure and reboot the target device if necessary.

Where to Go Next



Caution

The 1000BASE-T GBIC does not support half duplex. Configuring the GBIC port for half duplex causes collisions.

The GBIC only supports 1000-Mbps full-duplex connections. If the port configuration settings are changed, the switch does not detect and enable the GBIC. An error message appears in the CLI, the Catalyst software CLI, or the CMS.

The Catalyst 2900 XL, Catalyst 2950, Catalyst 3500 XL, Catalyst 3550, Catalyst 4000 family, and Catalyst 6000 family switches detect and enable the GBIC only when they are running the minimum software releases listed in online *1000BASE-T GBIC Compatibility Matrix*.

Troubleshooting

These tables describe how to detect and solve problems that might arise when you are installing the GBIC. If you are installing the GBIC in a 1000BASE-X module for a Catalyst 2900 XL switch, see [Table 4](#). If you are installing the GBIC in a Catalyst 2950, Catalyst 3500 XL, or Catalyst 3550 switch, see [Table 5](#). For more information, refer to the documentation that came with your switch or module.

If you are installing the GBIC in a Catalyst 4000 family or Catalyst 6000 family switch, refer to the hardware documentation that came with your switch or module for troubleshooting information.

Table 4 *Common Problems and Solutions for the Catalyst 2900 XL Switch*

Symptom	Possible Causes	Corrective Action
GBIC LED is amber.	<p>Module thumb screws have not been tightened.</p> <p>STP is checking for loops.</p> <p>GBIC is initializing, or it was disabled by management, an address violation, or STP.</p> <p>Module failed POST.</p>	<p>Tighten thumb screws.</p> <p>Wait for STP to complete the search and for the LED to turn green.</p> <p>Use the CLI or the CMS to check the GBIC status. If the GBIC was disabled, use the CLI or the CMS to enable the GBIC.</p> <p>Ensure that the switch is running the minimum Cisco IOS release or later listed in the online <i>1000BASE-T GBIC Switch Compatibility Matrix</i>.</p> <p>If the switch is running the minimum Cisco IOS release or later, replace the module.</p> <p>If the switch is running a Cisco IOS release earlier than the minimum Cisco IOS release listed in the online <i>1000BASE-T GBIC Switch Compatibility Matrix</i>, upgrade your software to the minimum Cisco IOS release or later.</p>

Table 4 Common Problems and Solutions for the Catalyst 2900 XL Switch (continued)

Symptom	Possible Causes	Corrective Action
GBIC LED is alternating between green and amber.	GBIC port is experiencing error frames. This problem could be due to a duplex mismatch caused by autonegotiation, collisions, CRC errors, or alignment errors.	<p>Ensure that the speed and duplex settings on both devices are 1000 Mbps and full duplex.</p> <p>Note The GBIC supports only 1000-Mbps full-duplex connections.</p> <p>If one parameter is manually set, manually set all of them, or set both devices to autonegotiate speed and duplex. Refer to the <i>Catalyst 2900 Series XL and Catalyst 3500 Series XL Software Configuration Guide</i> for more information.</p>
GBIC LED is off.	<p>Module might not support the GBIC.</p> <p>Switch is running a Cisco IOS release earlier than the minimum Cisco IOS release listed in the online <i>1000BASE-T GBIC Switch Compatibility Matrix</i>.</p> <p>Switch, switching module, or 1000BASE-T-compatible target device has no power.</p> <p>GBIC might not be inserted securely.</p> <p>Bad cable.</p> <p>No cable.</p>	<p>Ensure that the module supports the GBIC. Refer to the online <i>1000BASE-T GBIC Switch Compatibility Matrix</i> posted with the GBIC documentation on Cisco.com.</p> <p>If the module does not support the GBIC, remove the GBIC from the module.</p> <p>Upgrade your software to the minimum Cisco IOS release or later.</p> <p>Ensure that the switch, switching module, and 1000BASE-T-compatible target device have power.</p> <p>Ensure that the switching module is installed correctly.</p> <p>Use the show interface privileged EXEC command in the CLI to ensure that the switch recognizes the GBIC and displays the correct media type, which is <i>T</i>. If the media type is not correct, the switch cannot establish a link with a 1000BASE-T-compatible target device.</p> <p>If the switch does not recognize the GBIC or it displays the wrong media type, remove and reinsert the GBIC.</p> <p>Replace with a known good cable.</p> <p>Connect cable to the module and the target device.</p>

Table 5 Common Problems and Solutions for the Catalyst 2950, 3500 XL, or 3550 Switch

Symptom	Possible Causes	Corrective Action
GBIC LED is amber. (Port mode is STAT.)	STP is checking for loops. GBIC is initializing, or it was disabled by management, an address violation, or STP.	Wait for STP to complete the search and for the LED to turn green. Use the CLI or the CMS to check the GBIC status. If the GBIC was disabled, use the CLI or the CMS to enable the GBIC.
GBIC LED is alternating between green and amber. (Port mode is STAT.)	GBIC port is experiencing error frames. This problem could be due to a duplex mismatch caused by autonegotiation, collisions, CRC errors, or alignment errors.	Ensure that the speed and duplex settings on both devices are 1000 Mbps and full duplex. Note The GBIC supports only 1000-Mbps full-duplex connections. If one parameter is manually set, manually set all of them, or set both devices to autonegotiate speed and duplex. Refer to the switch software configuration guide for more information.
GBIC LED is off. (Port mode is STAT.)	Switch might not support the GBIC. Switch is running a Cisco IOS release earlier than minimum Cisco IOS release listed in the online <i>1000BASE-T GBIC Switch Compatibility Matrix</i> . GBIC might not be inserted securely. Switch or 1000BASE-T-compatible target device has no power. Bad cable. No cable.	Ensure that the switch supports the GBIC. Refer to the online <i>1000BASE-T GBIC Switch Compatibility Matrix</i> posted with the GBIC documentation on Cisco.com. If the switch does not support the GBIC, remove the GBIC from the switch. Upgrade your software to the minimum Cisco IOS release or later. Use the show interface privileged EXEC command in the CLI to ensure that the switch recognizes the GBIC and displays the correct media type, which is <i>T</i> . If the media type is not correct, the switch cannot establish a link with a 1000BASE-T-compatible target device. If the switch does not recognize the GBIC or it displays the wrong media type, remove and reinsert the GBIC. Ensure that the switch and the 1000BASE-T-compatible target device have power. Replace with a known good cable. Connect cable to the switch and the target device.

Technical Specifications and Agency Approvals

Table 6 lists the technical specifications and agency approvals.

Table 6 *Technical Specifications and Agency Approvals*

Environmental Ranges	
Operating temperature	32 to 113°F (0 to 45°C)
Storage temperature	-4 to 149°F (-10 to 65°C)
Operating humidity	10 to 85% (noncondensing)
Storage humidity	5 to 95% (noncondensing)
Operating altitude	Up to 10,000 ft (3000 m)
Storage altitude	Up to 15,000 ft (4570 m)
Physical Dimensions	
Dimensions (H x W x D)	0.7 x 1.55 x 4.32 in. (1.78 x 3.94 x 10.97 cm)
Weight	0.11 lb (0.05 kg)
Power Consumption	
Model WS-G5482	2.85W
Model WS-G5483	1.5W
EMC	FCC Part 15 Class A
	EN 55022 Class A (CISPR22 Class A)
	VCCI Class I
	BSMI
	CE

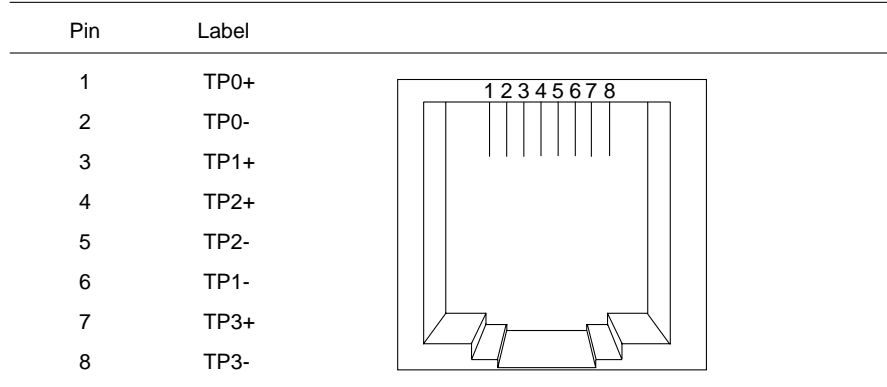
Connectors and Cables

The GBIC port uses a standard RJ-45 connector. Figure 8 shows the pinout.

Figure 9 shows the straight-through cable schematics.

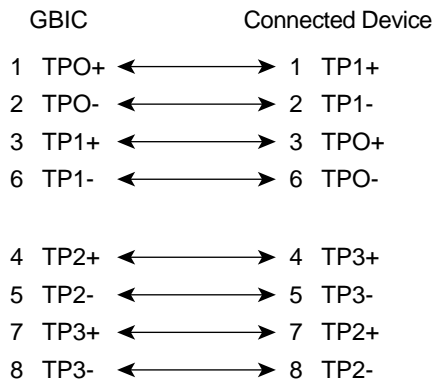
Figure 10 shows the crossover cable schematics.

Figure 8 1000BASE-T RJ-45 Connector



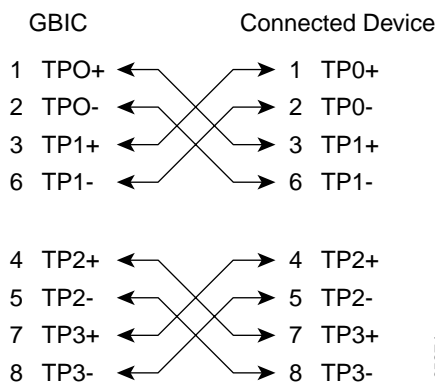
34751

Figure 9 Straight-Through Cable Schematic



122047

Figure 10 Crossover Cable Schematics



65274

Related Publications

These documents provide complete information about the GBIC and the switches and modules supporting it and are available from this URL:

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

You can order printed copies of documents with a DOC-xxxxxx= number from the Cisco.com sites and from the telephone numbers listed in the “[Obtaining Documentation](#)” section on page 23.

- *1000BASE-T GBIC Switch Compatibility Matrix* (not orderable but is available on Cisco.com)



Note

Switch requirements and procedures for initial configurations and software upgrades tend to change and therefore appear only in the release notes. Before installing, configuring, or upgrading a switch, refer to the release notes on Cisco.com for the latest information.

- *Catalyst 2900 Series XL Hardware Installation Guide* (order number DOC-786461=)
- *Catalyst 2900 Series XL Modules Installation Guide* (order number DOC-CAT2900-IG=)
- *Catalyst 2900 Series XL and Catalyst 3500 Series XL Software Configuration Guide* (order number DOC-786461=)
- *Catalyst 2900 Series XL and Catalyst 3500 Series XL Command Reference* (order number DOC-7812155=)
- *Catalyst 2950 Desktop Switch Hardware Installation Guide* (order number DOC-7811157=)
- *Catalyst 2950 Desktop Switch Software Configuration Guide* (order number DOC-7811380=)
- *Catalyst 2950 Desktop Switch Command Reference* (order number DOC-7811381=)
- *Catalyst 3500 Series XL Hardware Installation Guide* (order number DOC-786461=)
- *Catalyst 3550 Multilayer Switch Hardware Installation Guide* (order number DOC-7811358=)
- *Catalyst 3550 Multilayer Switch Software Configuration Guide* (order number DOC-7811194=)
- *Catalyst 3550 Multilayer Switch Command Reference* (order number DOC-7811195=)
- *Catalyst 4000 Family Installation Guide* (order number DOC-786120=)
- *Catalyst 4000 Family Module Installation Guide* (order number DOC-7813267=)
- *Catalyst 4000 Family Supervisor Engines and Switching Modules Installation Notes* (order number DOC-786444=)
- *Catalyst 6000 Family Installation Guide* (order number DOC-786050=)
- *Catalyst 6000 Family Module Installation Guide* (order number DOC-786025=)

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 at this URL:

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

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

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:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

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

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

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

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

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request 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 list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—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.

Severity 2 (S2)—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.

Severity 3 (S3)—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.

Severity 4 (S4)—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. Visit Cisco Marketplace, the company store, at this URL:

<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 at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

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

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. 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>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

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

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You can determine whether your equipment is causing interference by turning it off. If the interference stops, it was probably caused by the Cisco equipment or one of its peripheral devices. If the equipment causes interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the equipment to one side or the other of the television or radio.
- Move the equipment farther away from the television or radio.
- Plug the equipment into an outlet that is on a different circuit from the television or radio. (That is, make certain the equipment and the television or radio are on circuits controlled by different circuit breakers or fuses.)

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