



# Installing and Upgrading Fans in the Cisco 3825 Series Routers

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This document describes how to install or upgrade fans inside your Cisco 3825 series router.

This document is intended for the fan installer who is familiar with electronic circuitry and wiring practices and has experience as an electronic or electromechanical technician.



## Note

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Use this document in conjunction with the following documents:

- *Cisco 3800 Series Hardware Installation* guide:  
<http://www.cisco.com/en/US/docs/routers/access/2800/hardware/notes/hw.html>
  - *Cisco 2800 Series and Cisco 3800 Series Integrated Services Routers Regulatory Compliance and Safety Information* document:  
<http://www.cisco.com/en/US/docs/routers/access/2800/hardware/rcsi/2838rcsi.html>
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If you have questions or need help, see the “[Obtaining Documentation, Obtaining Support, and Security Guidelines](#)” section on page 18.

This document contains the following sections:

- [Safety Warnings and Guidelines](#), page 2
- [Items in the Fan Replacement Kit](#), page 10
- [Required Tools and Equipment](#), page 10
- [Location of the Cisco 3825 Router Fans](#), page 11
- [Upgrading the Cisco 3825 Fan Unit](#), page 12
- [Obtaining Documentation, Obtaining Support, and Security Guidelines](#), page 18.



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# Safety Warnings and Guidelines

This section provides the safety warnings and guidelines for working with the Cisco 3825 series router. It contains the following sections:

- [Safety Warnings, page 2](#)
- [Safety Guidelines, page 9](#)
- [Safety with Electricity, page 9](#)
- [Preventing Electrostatic Discharge Damage, page 10](#)

## Safety Warnings



**Note**

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Use this section in conjunction with the *Cisco 2800 Series and Cisco 3800 Series Integrated Services Routers Regulatory Compliance and Safety Information* document:

<http://www.cisco.com/en/US/docs/routers/access/2800/hardware/rcsi/2838rcsi.html>

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## Statement 1071—Warning Definition



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**

## FONTOS BIZTONSÁGI ELOÍRÁSOK

**Ez a figyelmeztető jel veszélyre utal. Sérülésveszélyt rejtő helyzetben van. Mielott 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 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	<p><b>ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ</b></p> <p>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.</p> <p><b>ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ</b></p>
אזהרה	<p><b>הוראות בטיחות חשובות</b></p> <p>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.</p> <p><b>שמור הוראות אלה</b></p>
Opomena	<p><b>ВАЖНИ БЕЗБЕДНОСНИ НАПАТСТВИЈА</b></p> <p>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 преведените безбедносни предупредувања што се испорачани со уредот.</p> <p><b>ЧУВАЈТЕ ГИ ОБИЕ НАПАТСТВИЈА</b></p>
Ostrzeżenie	<p><b>WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA</b></p> <p>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.</p> <p><b>NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ</b></p>
Upozornenie	<p><b>DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY</b></p> <p>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.</p> <p><b>USCHOVAJTE SI TENTO NÁVOD</b></p>

**Opozorilo POMEMBNI VARNOSTNI NAPOTKI**

Ta opozorilni simbol pomeni nevarnost. Nahajate se v situaciji, kjer lahko pride do telesnih poškodb. Preden pričnete z delom na napravi, se morate zavedati nevarnosti udara električnega toka, ter tudi poznati preventivne ukrepe za preprečevanje takšnih nevarnosti. Uporabite obrazložitevno številko na koncu posameznega opozorila, da najdete opis nevarnosti v priloženem varnostnem priročniku.

**SHRANITE TE NAPOTKE!**

**警告** 重要安全性指示  
 此警告符號代表危險，表示可能造成人身傷害。使用任何設備前，請留心電路相關危險，並熟悉避免意外的標準作法。您可以使用每項警告後的聲明編號，查詢本裝置隨附之安全性警告譯文中的翻譯。請妥善保留此指示



**Warning**

**Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.** Statement 4



**Warning**

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



**Warning**

**Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages.** Statement 1041



**Warning**

**Network hazardous voltages are present in the BRI cable. If you detach the BRI cable, detach the end away from the router first to avoid possible electric shock. Network hazardous voltages also are present on the system card in the area of the BRI port (RJ-45 connector), regardless of when power is turned off.** Statement 44



**Warning**

**Before working on a chassis or working near power supplies, unplug the power cord on AC units; disconnect the power at the circuit breaker on DC units.** Statement 12



**Warning**

**When installing the unit, always make the ground connection first and disconnect it last.** Statement 42



**Warning**

**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

**Warning**

**Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.** Statement 4

**Warning**

**Before performing any of the following procedures, ensure that power is removed from the DC circuit.** Statement 1003

## Safety Guidelines

Follow these guidelines to ensure general safety:

- Keep the chassis area clear and dust-free during and after installation.
- Place the removed chassis cover in a safe place.
- Keep tools away from walk areas where you or others could fall over them.
- Do not wear loose clothing that may get caught in the chassis. Fasten your tie or scarf and roll up your sleeves.
- Wear safety glasses when working under conditions that may be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

## Safety with Electricity

**Warning**

**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

Follow these guidelines when working on equipment powered by electricity:

- Locate the room's emergency power-off switch. Then, if an electrical accident occurs, you can quickly shut the power off.
- Before working on the system, turn off the power and unplug the power cord.
- Disconnect all power.
- Do not work alone if potentially hazardous conditions exist.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, and missing safety grounds.
- Never assume that power is disconnected from a circuit. Always check.

- If an electrical accident occurs, proceed as follows:
  - Use caution, and do not become a victim yourself.
  - Turn off power to the system.
  - If possible, send another person to get medical aid. Otherwise, determine the condition of the victim and then call for help.

## Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. It occurs when electronic printed circuit cards are improperly handled and can result in complete or intermittent failures. Always follow ESD-prevention procedures when removing and replacing cards. Ensure that the router chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the clip to an unpainted surface of the chassis frame to safely channel unwanted ESD voltages to ground. To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

**Caution**

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For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

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## Items in the Fan Replacement Kit

The fan replacement kit contains the following items:

- Fan unit (three fans connected together as one unit)
- Additional replacement screws (a few extra screws are provided in case you misplace the original screws)
- *Installing and Upgrading Fans in the Cisco 2821 Series Routers* document (this document)

## Required Tools and Equipment

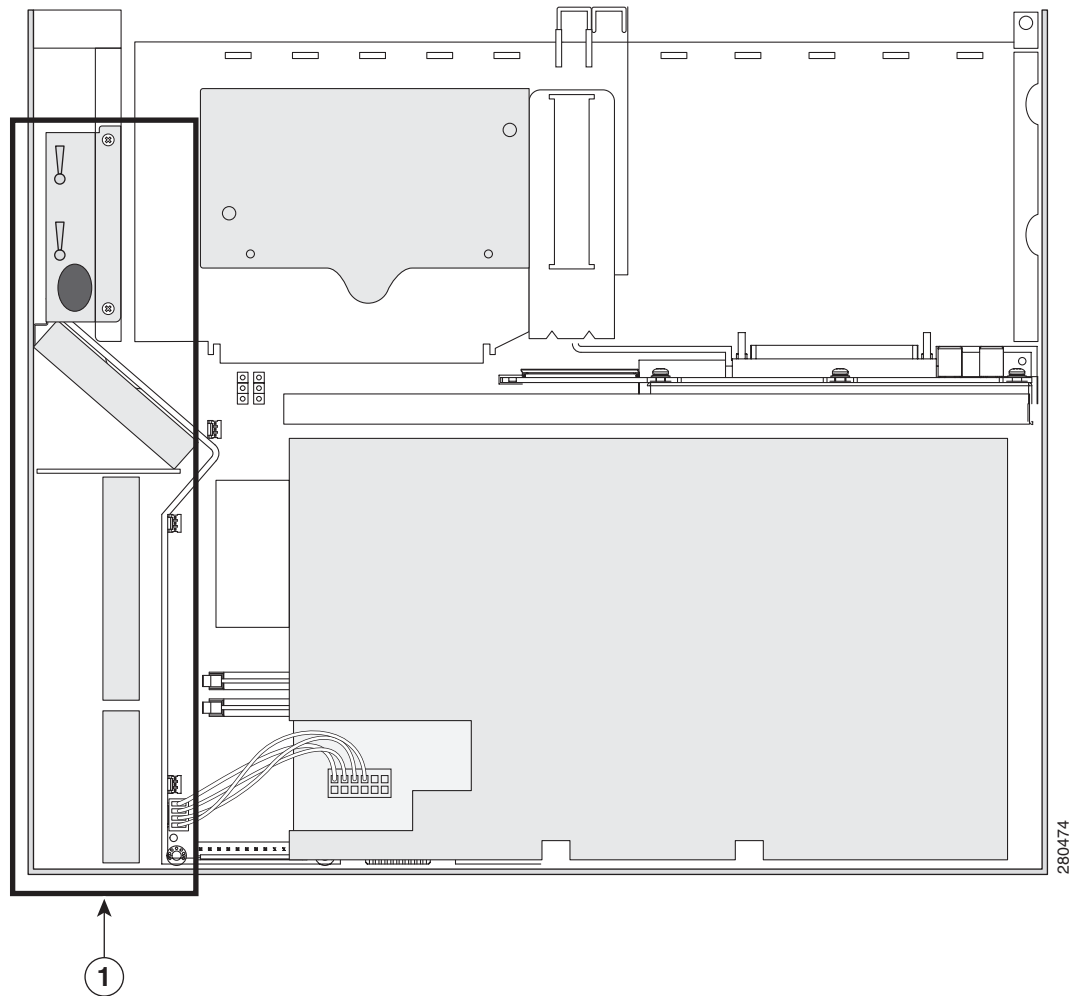
Installation might require some tools and equipment that are not provided as standard equipment with the router. The following tools and parts are required for a typical router installation:

- Number 2 Phillips screwdriver
- ESD-preventive wrist strap
- Antistatic mat

# Location of the Cisco 3825 Router Fans

Figure 1 shows the location of the fan unit in the Cisco 3825 router. The Cisco 3825 routers contain three fans, which are connected together as one unit.

**Figure 1** Fan Unit Location in the Cisco 3825 Router



<b>1</b>	Location of the fan unit	
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# Upgrading the Cisco 3825 Fan Unit

The fan unit and cabling for the Cisco 3825 router are contained inside the chassis.



**Note**

The fan unit upgrade procedure will take approximately one hour.

To upgrade the fan unit, complete these procedures:

- [Removing the Router Cover, page 12](#)
- [Removing the Fan Unit, page 14](#)
- [Installing the Fan Unit, page 16](#)
- [Replacing the Router Cover, page 17](#)

## Removing the Router Cover

To access the Cisco 3825 fan unit, you must first remove the router cover. To remove the router cover, complete the steps that follow. You will need a number 2 Phillips screwdriver.

If your router uses AC or DC power, observe the following warning:



**Warning**

**Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.** Statement 4

If your router uses DC power, observe the following warning:



**Warning**

**Before performing any of the following procedures, ensure that power is removed from the DC circuit.** Statement 1003



**Caution**

Before removing the cover, make sure that the flash memory card ejector button is flush with the front panel. If the button projects from the panel, removing the cover can damage it.

**Step 1**

Power down the router and disconnect the power cord from the front of the router.



**Warning**

**Before opening the unit, disconnect the telephone-network cables to avoid contact with telephone-network voltages.** Statement 1041

**Step 2**

Disconnect all network interface cables from the back panel of the router.

**Step 3**

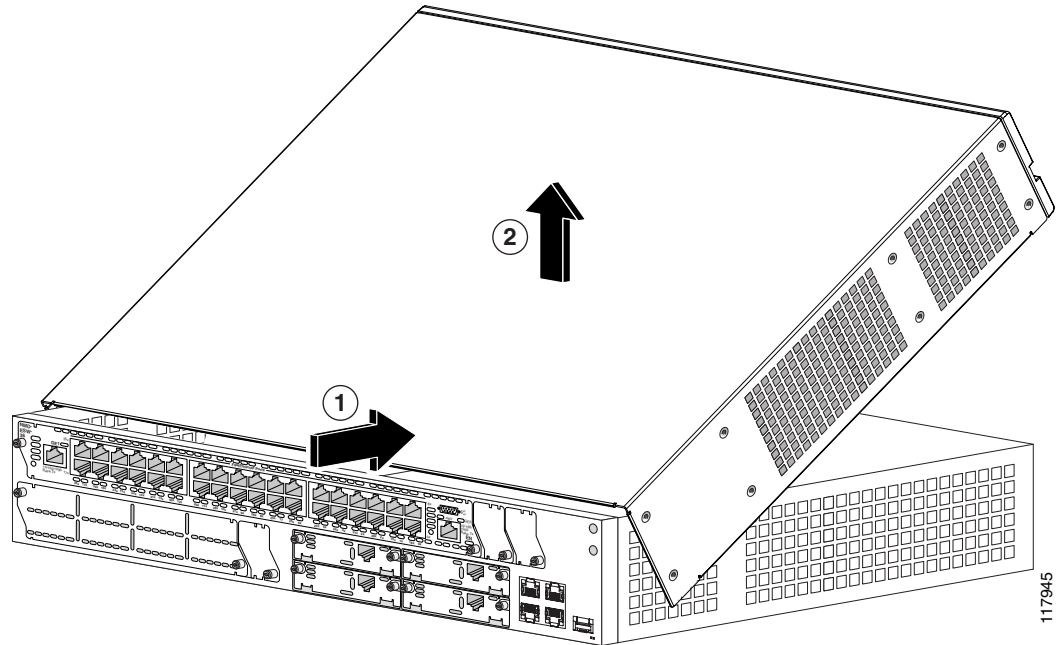
Remove the router from the rack. Remove the rack-mounting brackets from the router, using the number 2 Phillips screwdriver.

**Step 4**

Place the router on a flat surface. Remove the two screws from the top of the router and set them aside in a safe place.

- Step 5** Remove the three screws on each side panel and set them aside in a safe place.
- Step 6** Slide the cover toward the front of the chassis (about 1 inch [25 mm]), as shown in [Figure 2](#).

**Figure 2** Removing the Cover from a Cisco 3825 Router



<b>1</b> Slide cover toward front	<b>2</b> Remove cover from router chassis
-----------------------------------	---

- Step 7** Lift the cover away from the router chassis, as shown in [Figure 2](#).
- Step 8** Set the cover aside.

## Removing the Fan Unit

After you remove the router cover, follow these steps to remove the fan unit.



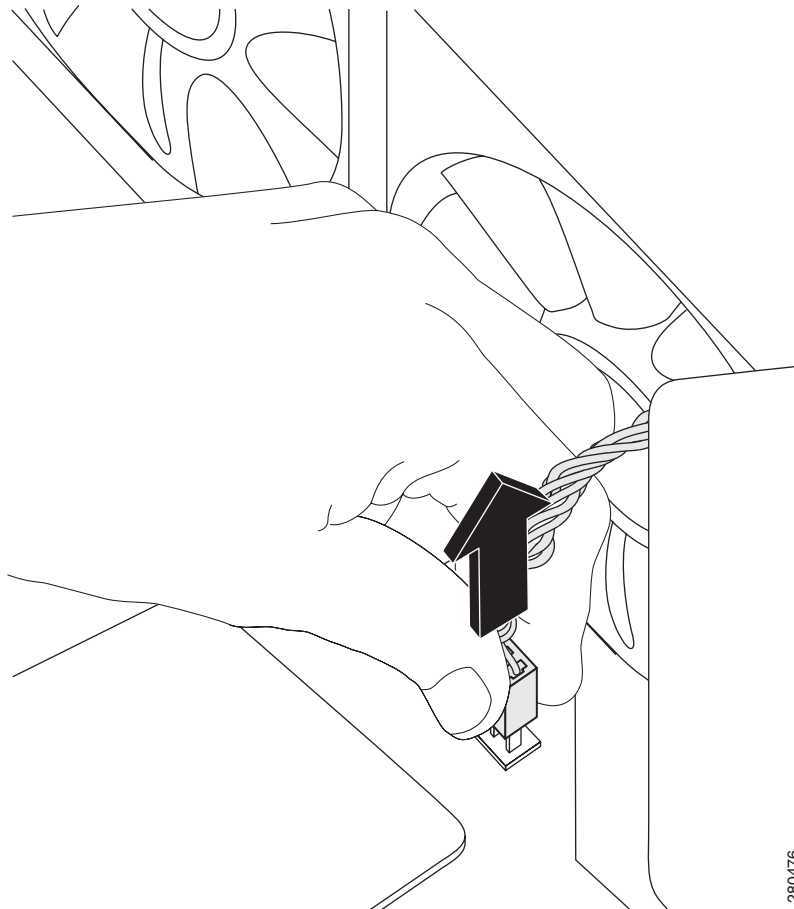
**Note**

Before you begin, read the safety warnings as described in the [“Safety Warnings and Guidelines” section on page 2](#).

**Step 1**

Locate the three fan connectors on the motherboard and remove them by lifting the connector away from the receptacle, as shown in [Figure 3](#).

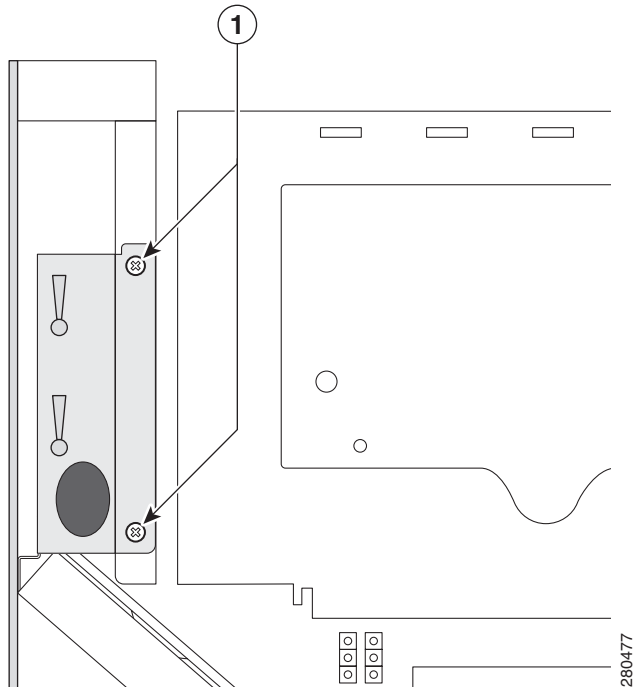
**Figure 3** *Lifting the Connector from the Receptacle*



280476

**Step 2** Remove the two screws that hold the top of the fan unit to the router. (See [Figure 4](#).)

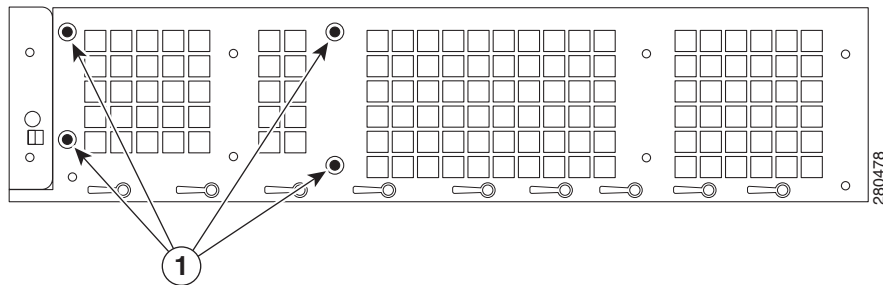
**Figure 4** *Removing Screws Holding the Top of the Fan Unit*



<b>1</b>	Screws holding the top of the fan unit to the router	
----------	--	--

**Step 3** Remove the four screws that hold the fan unit to the side of the chassis. (See [Figure 5](#).)

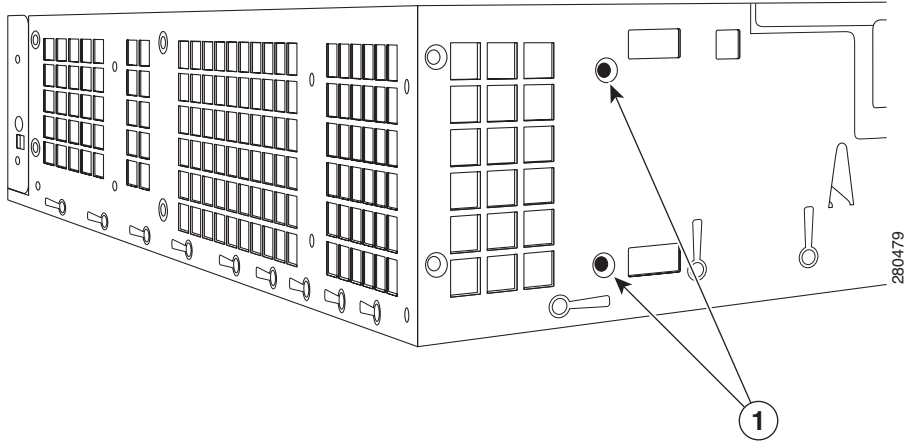
**Figure 5** *Removing Fan Mounting Screws from the Side of the Chassis*



<b>1</b>	Fan mounting screws on the side of the chassis	
----------	--	--

**Step 4** Remove the two screws that hold the fan unit to the front of the chassis. (See [Figure 6](#).)

**Figure 6** Removing Fan Mounting Screws from the Front of the Chassis



<b>1</b>	Fan mounting screws on the front of the chassis
----------	---

**Step 5** Lift the fan unit out of the chassis.

## Installing the Fan Unit

Follow these steps to install the fan unit.



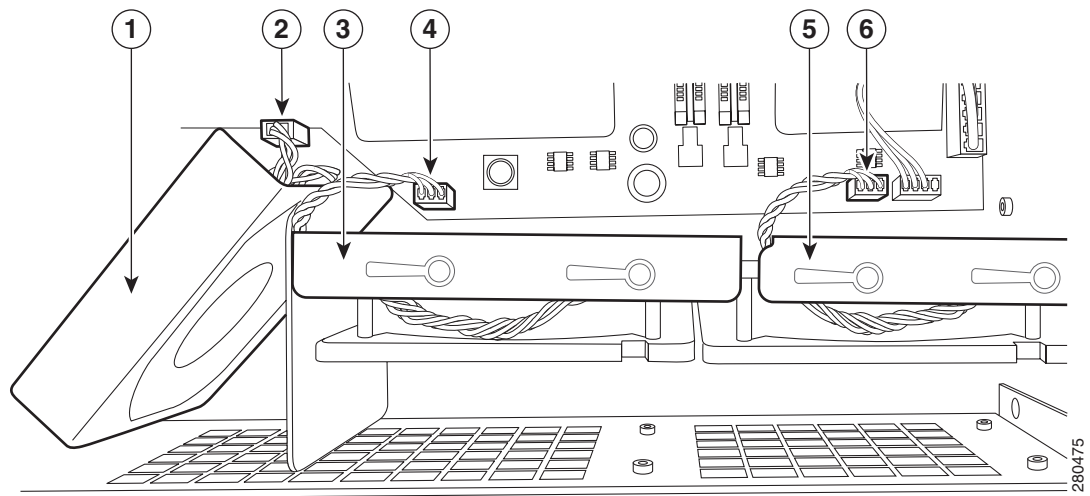
**Note**

Before you begin, read the safety warnings as described in the [“Safety Warnings and Guidelines”](#) section on page 2.



- Step 1** Lower the fan unit down and onto the chassis floor.
- Step 2** Attach fan 1 to the J4 connector on the motherboard. (See number 1 and 2 in [Figure 7](#).)

**Figure 7 Attaching Fan Cable to the J Connectors**



<b>1</b>	Fan 1	<b>2</b>	Fan 1 to J4 connector
<b>3</b>	Fan 2	<b>4</b>	Fan 2 to J18 connector
<b>5</b>	Fan 3	<b>6</b>	Fan 3 to J25 connector

- Step 3** Attach fan 2 to the J18 connector on the motherboard. (See number 3 and 4 in [Figure 7](#).)
- Step 4** Attach fan 3 to the J25 connector on the motherboard. (See number 5 and 6 in [Figure 7](#).)



**Caution**

The connectors are polarized/keyed to allow easy insertion in one orientation only. Orient the fan connectors correctly before you insert them. Incorrect orientation can damage the connector pins.

- Step 5** Reinstall the two screws on the front of the chassis. (See [Figure 6 on page 16](#).)
- Step 6** Reinstall the four screws on the side of the chassis. (See [Figure 5 on page 15](#).)
- Step 7** Reinstall the two screws on the top of the fan unit. (See [Figure 4 on page 15](#).)

## Replacing the Router Cover

Follow these steps to replace the cover.



**Note**

Before you begin, read the safety warnings as described in the “[Safety Warnings and Guidelines](#)” section on [page 2](#).

- 
- Step 1** Place the router on a flat surface, with the front panel facing you.
  - Step 2** Place the cover on the base, with about 1 inch (25 mm) of clearance between the cover and the back panel.
  - Step 3** Slide the cover back onto the base, making sure that the hook at the back edge of the cover, near the left side, fits underneath the card cage on the back panel of the router.



**Caution** When replacing the cover, do not pinch the wires.

---

- Step 4** Reinstall the rack-mounting brackets, and then reinstall the router in the rack.
  - Step 5** Reconnect power and network interface cables.
  - Step 6** Power up the router, and verify that the alarms and warnings disappear.
- 

## Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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