



## Cisco 800M Series Integrated Services Router Hardware Installation Guide

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<b>Preface</b>	<b>vii</b>
Objective	vii
Audience	vii
Organization	vii
Conventions	viii
Related Documentation	xvi
Searching Cisco Documents	xvi
Obtaining Documentation and Submitting a Service Request	xvi
<b>Product Overview</b>	<b>1-1</b>
General Description	1-1
Hardware Features	1-3
Platform Features	1-4
3G Wireless WAN Module	1-4
Antenna	1-5
Serial WAN Module	1-5
LEDs	1-5
Memory	1-7
Power Supply	1-7
Reset Button	1-7
Kensington Lock	1-7
SKU Information	1-8
<b>Installing the Router</b>	<b>2-1</b>
Installing the Router	2-3
Mounting the DC Power Supply	2-15
<b>Connecting the Router</b>	<b>3-1</b>
Preparing to Connect the Router	3-1
Connecting a PC, Server, or Workstation	3-2
Connecting an External Ethernet Switch	3-3
Connecting a Terminal or PC to the Console Port	3-4
Verifying Connections	3-5

- Initial Configuration** 4-1
  - Cisco IOS CLI 4-1
  - Setup Command Facility 4-1
  - Verifying the Initial Configuration 4-4

- Technical Specifications** A-1
  - Router Specifications A-1
  - Mean Time Between Failure Ground Benign Environment A-4



## Preface

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This preface describes the objectives, audience, organization, and conventions of this guide and describes related documents that have additional information. It contains the following sections:

- [Objective, page vii](#)
- [Audience, page vii](#)
- [Organization, page vii](#)
- [Conventions, page viii](#)
- [Related Documentation, page xvi](#)
- [Searching Cisco Documents, page xvi](#)
- [Obtaining Documentation and Submitting a Service Request, page xvi](#)

## Objective

This guide provides an overview and explains how to install, connect, and perform initial configuration for the Cisco 800M Series Integrated Services Routers (ISRs). Cisco 800M Series ISR is a modular router.

## Audience

This guide is intended for Cisco equipment providers who are technically knowledgeable and familiar with Cisco routers and Cisco IOS software and features.

## Organization

This guide is organized into the following chapters and appendix.

Chapter	Name	Description
Chapter 1	<a href="#">Chapter 1, “Product Overview”</a>	Describes the router models and the hardware features available.

Chapter 2	<a href="#">Chapter 2, “Installing the Router”</a>	Lists the items shipped with the router, the equipment and tools necessary for installing the router, the safety warnings and guidelines, and the procedures for installing the router.
Chapter 3	<a href="#">Chapter 3, “Connecting the Router”</a>	Describes typical connections for the router, procedures for connecting the router to various devices, and how to verify the connections.
Chapter 4	<a href="#">Chapter 4, “Initial Configuration”</a>	Provides the procedures for initially configuring the router settings.
Appendix A	<a href="#">Appendix A, “Technical Specifications”</a>	Provides the router, port, and cabling specifications.

## Conventions

This section describes the conventions used in this guide.



### Note

Means *reader take note*. Notes contain helpful suggestions or references to additional information and material.



### Caution

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



### Tip

Means *the following information will help you solve a problem*. The tip information might not be troubleshooting or even an action, but could be useful information.



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. 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!

## 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

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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

#### 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

הרהזא

#### ВАЖНИ БЕЗБЕДНОСНИ НАПАТСТВИЈА

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.

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

## Opozorilo

### 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

When installing the product, please use the provided or designated connection cables/power cables/AC adaptors. Using any other cables/adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL-certified cables (that have the "UL" shown on the code) for any other electrical devices than products designated by CISCO. The use of cables that are certified by Electrical Appliance and Material Safety Law (that have "PSE" shown on the code) is not limited to CISCO-designated products. Statement 371



### Warning

Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system. Statement 378



### Warning

There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Statement 1015



### Warning

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables. Statement 1021



### Warning

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024

  
Warning

If the symbol of suitability with an overlaid cross appears above a port, you must not connect the port to a public network that follows the European Union standards. Connecting the port to this type of public network can cause severe personal injury or can damage the unit. Statement 1031

  
Warning

Connect the unit only to DC power source that complies with the safety extra-low voltage (SELV) requirements in IEC 60950 based safety standards. Statement 1033

  
Warning

Do not use this product near water; for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Statement 1035

  
Warning

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations. Statement 1036

  
Warning

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface. Statement 1037

  
Warning

Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning. Statement 1038

  
Warning

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

  
Warning

Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, because they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (for example, U.S.:NFPA 70, National Electrical Code, Article 810, Canada: Canadian Electrical Code, Section 54). Statement 1052

  
Warning

No user-serviceable parts inside. Do not open. Statement 1073

  
Warning

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

  
Warning

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



Warning

---

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

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Warning

---

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

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Warning

---

**The covers are an integral part of the safety design of the product. Do not operate the unit without the covers installed.** Statement 1077

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Warning

---

**Hot surface.** Statement 1079

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## Related Documentation

- [Regulatory Compliance and Safety Information for Cisco 800 Series Routers](#)
- [Cisco 800M Series ISR Software Configuration Guide](#)

## Searching Cisco Documents

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# Product Overview

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This chapter provides an overview of the features available for the Cisco 800M Series Integrated Services Router (ISR). Cisco 800M Series ISR Routers have the following two variants:

- Cisco C841M-4X/K9 ISR
- Cisco C841M-8X/K9 ISR

Cisco C841M-4X/K9 ISR has four GE LAN ports and Cisco C841M-8X/K9 ISR has eight GE LAN ports.



**Note**

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For compliance and safety information, see [Regulatory Compliance and Safety Information for Cisco 800 Series Routers](#).

---

This chapter contains the following sections:

- [General Description, page 1-1](#)
- [Hardware Features, page 1-3](#)
- [SKU Information, page 1-8](#)

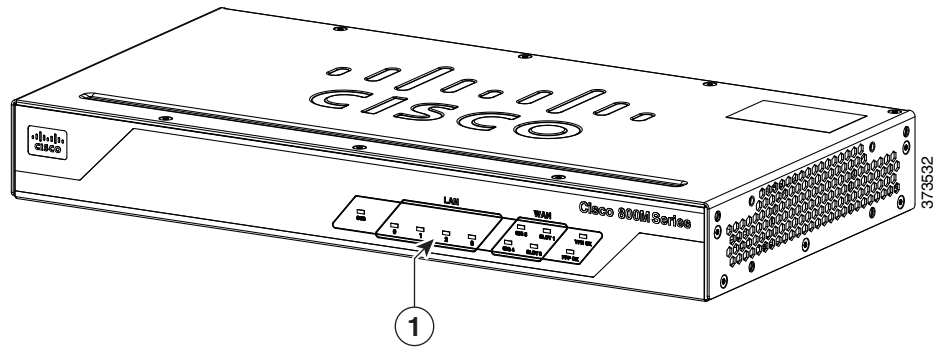
## General Description

The Cisco 800M Series ISR is a modular router that provides 3G, Gigabit Ethernet, and Serial WAN connectivity options. The Cisco 800M Series ISR has four or eight Gigabit Ethernet LAN ports and two Gigabit Ethernet WAN ports.

The Cisco 800M Series ISR has two modular WAN slots for flexibility to connect branch to data center through field replaceable and non-hot-swappable WAN connectivity modules. The Cisco 800M Series ISR supports 3G GSM/CDMA WWAN module and serial WAN module.

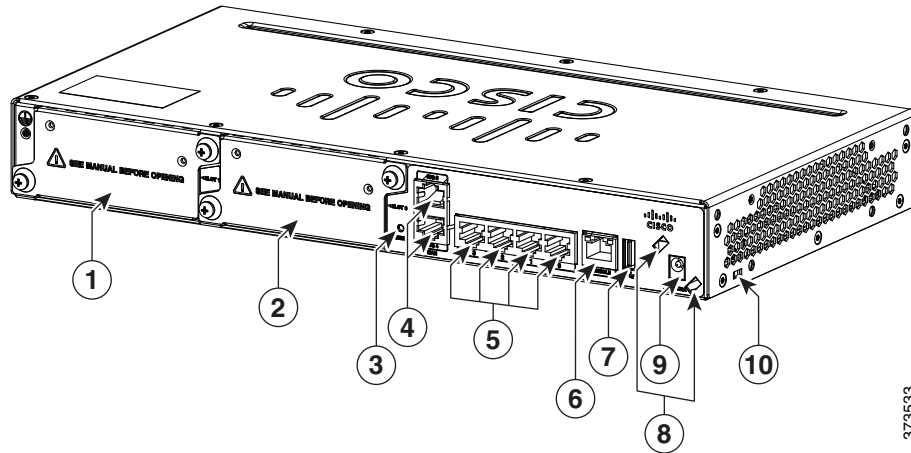
The Cisco 800M Series ISR can be powered by an (included) external AC adapter.

Figure 1-1 Cisco C841M-4X/K9 ISR Router Front View



1	LEDs
---	------

Figure 1-2 Cisco C841M-4X/K9 ISR Rear View



1	Module Slot 1	6	Console
2	Module Slot 0	7	USB
3	Reset Button	8	Power Cord Lock
4	WAN Ports	9	Power Port
5	LAN Ports	10	Kensington security slot



Figure 1-3 Cisco C841M-8X/K9 ISR Front View

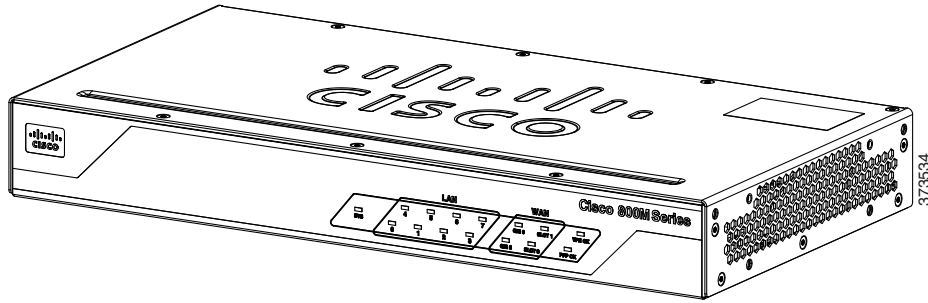
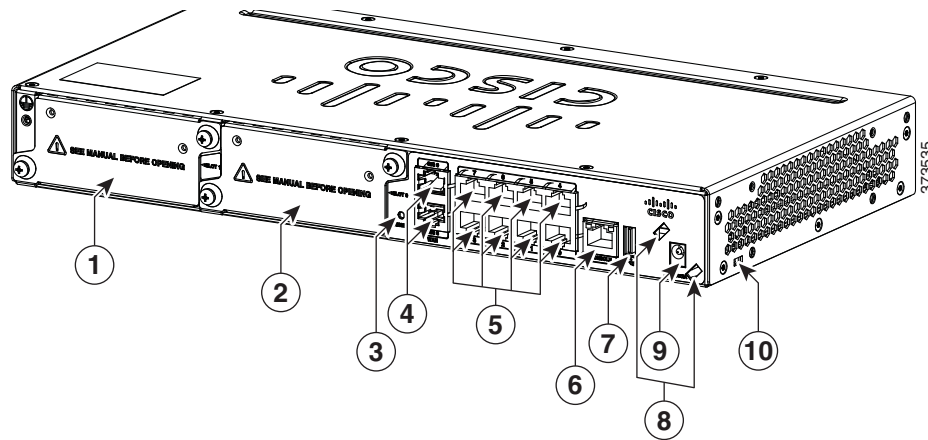


Figure 1-4 Cisco C841M-8X/K9 ISR Rear View



1	Module Slot 1	6	Console
2	Module Slot 0	7	USB
3	Reset Button	8	Power Cord Lock
4	WAN Ports	9	Power Port
5	LAN Ports	10	Kensington security slot

## Hardware Features

The Cisco 800M Series ISR supports the following hardware features:

- [Platform Features, page 1-4](#)
- [3G Wireless WAN Module, page 1-4](#)
- [Serial WAN Module, page 1-5](#)
- [Memory, page 1-7](#)
- [Power Supply, page 1-7](#)
- [Reset Button, page 1-7](#)

- [Kensington Lock, page 1-8](#)

**Note**

The WAAS Express feature is not supported. This feature will be supported for 3G and 4G interfaces with later IOS releases.

## Platform Features

The Cisco 800M Series ISR have the following platform features:

- 2x GE Enabled WAN (1000/100/10 Base T)
- Cisco C841M-4X/K9 ISR has 512 MB DRAM
- Cisco C841M-8X/K9 ISR has 1 GB DRAM
- 8 MB of boot flash
- 2 GB NAND Flash
- AC Power Brick (Adapter (100 -240 AC and 12V 2.5 A DC)
- Built-in Grounding
- Rack Mount, Wall Mount, or Desktop Mount
- LED indicators for the platform
- Modular WAN slots for 3G and serial modules.

## 3G Wireless WAN Module

Cisco 800M Series ISRs support GSM and CDMA 3G Wireless WAN networks through the pluggable 3G Wireless WAN module. 3G WWAN module is based on Sierra Wireless 9090 modem and technology mode is auto selected based on the current active firmware.

The following table lists the GSM/CDMA modes and frequency bands supported by the 3G WWAN module.

**Table 1-1**      *Supported Cellular Modes and Frequencies*

Mode	Frequency
GPRS/EDGE	850/900/1800/1900 MHz
WCDMA	800/850/1900/2100 MHz
CDMA (1xRTT/EVDO Rev A)	800/1900 MHz

Some of the features supported by 3G WWAN module is given as follows:

- Dual SIM
- SIM lock and unlock capabilities
- Auto-switch failover between primary and backup link

## Antenna

The Cisco 800M Series ISR supports 3G external antenna. The Cisco 800M Series ISR provides two standard panel-mount TNC connectors on the 3G WWAN module to support 3G. The main antenna is used as the primary 3G antenna. The second can be used as a diversity receive only 3G antenna. For information about the location of the antenna, see [Figure 2-11](#).

## Serial WAN Module

The Cisco 800M Series Integrated Services Router (ISR) provides serial WAN connectivity to remote sites through the pluggable, serial WAN interface module.

The following are some of the features supported by Serial WAN module:

- Supports the following serial protocols:
  - EIA-232
  - EIA-449
  - EIA-530
  - EIA-530A
  - V.35
  - X.21
- Supports synchronous speed of up to 8 Mbps
- Supports asynchronous speed of up to 115.2 kbps
- Supports network clock synchronization

## LEDs

The Cisco 800M Series ISR has LEDs located in the front of the router. The Cisco C841M-4X/K9 ISR has four LAN ports which has four LEDs (0-3) corresponding to each LAN port. The Cisco C841M-8X/K9 ISR has eight LAN ports which has eight LEDs (0-7) corresponding to eight LAN ports.

Both Cisco C841M-4X/K9 ISR and Cisco C841M-8X/K9 ISR has two LEDs for modules (SLOT 0 and SLOT 1), and two WAN LEDs. There are two LEDs to represent PPP and VPN as well.

[Table 1-2](#) describes the LEDs for the Cisco 800M series ISR.

**Table 1-2 Cisco 800M Series ISR Router LED Descriptions**

LED	LED Color or Status	Description
SYS	Flashing	System is running ROMMON mode or booting IOS.
	Solid Green	IOS is functioning normally.
	Off	System is powered off.

**Table 1-2 Cisco 800M Series ISR Router LED Descriptions (continued)**

LED	LED Color or Status	Description
LAN	Solid Green	Network is linked on LAN port.
	Blinking Green	Network traffic is active on LAN port.
	Off	No network connectivity.
WAN	Solid Green	Network is linked to WAN port.
	Blinking Green	Network traffic is active on WAN port.
	Off	No network connectivity.
SLOT 0	Solid Green	Module is inserted and is active.
SLOT 1	Solid Green	Module is inserted and is active.
VPN OK	Green	A minimum of one VPN session is active.
	Off	VPN is off.
PPP OK	Green	A minimum of one PPP session is active.
	Off	PPP is off.

Table 1-3 describes the LEDs on the 3G WWAN module.

**Table 1-3 3G Module LED Descriptions**

LED	LED Color or Status	Description
RSSI	Solid green	High RSSI (–60 dBm or higher)
	3 Blinks and long pause	Medium RSSI (–74 to –60 dBm)
	2 Blinks and long pause	–89 to –75 dBm
	1 Blink and long pause	–109 to –90dBm
	Off	Low RSSI (less than –100 dBm)
SIM 0	Solid Green	SIM 0 is active and connected to 3G (UMTS or CDMA 1xEVDO).
	Green (1 blink)	SIM 0 is active and connected to 2G (GSM or CDMA 1xRTT).
	Off	SIM is not present
SIM 1	Solid Green	SIM 1 is active and connected to 3G (UMTS or CDMA 1xEVDO).
	Green (1 blink)	SIM 1 is active and connected to 2G (GSM or CDMA 1xRTT).
	Off	SIM is not present.
WWAN	Green (fast blinking)	Traffic is flowing through the WAN link.
	Green (slow blinking)	Indicates that the cellular interface is up but there is no traffic.
	OFF	Cellular interface is down.

Table 1-4 describes the LEDs on the serial module.

**Table 1-4** LEDs on the Serial Module

LED Name	Color/ Status	Description
CONN	Green	Indicates the interface status and shows that line protocol is up
	OFF	Shows that the line protocol is down.
LOOP BACK	Green	Indicates that loop back is configured on the serial interface.
	OFF	Indicates that loop back is not configured.

## Memory

The Cisco 800M Series ISR support 8 MB of boot flash and 2 GB of NAND Flash. The Cisco C841M-4X/K9 ISR supports 512 MB of DRAM and Cisco C841M-8X/K9 ISR supports 1 GB of DRAM.

## Power Supply

The power supply configuration is AC adapter that supports 100 -240 AC input and 12V 2.5 A DC output.



### Note

The power-supply connector pin on the Cisco 800M series may have color variations, but it doesn't impact product performance or reliability.

## Reset Button

The Reset button is used to restore the router to the factory default configuration or to load a custom configuration file. There are two different ways to do this:

- By pressing the Reset button within 5 seconds of powering up the router.
- By pressing the Reset button for 5 seconds while running IOS software.

## Kensington Lock

A Kensington security slot is located on the router back panel. To secure the router to a desktop or other surface, use the Kensington lockdown equipment.

A Kensington lock feature is placed on the unit in a location acceptable to Cisco product marketing.

## SKU Information

[Table 1-5](#) lists the different SKUs for Cisco 800M Series ISR. 4 port SKU and 8 port SKU use the same PCB.

**Table 1-5 Cisco 800M Series ISR SKUs**

SKU ID	Description
CISCO841M-4X/K9R-K9	Cisco C841M-4X/K9 ISR with 4 port GE LAN and 2 port GE WAN, and 2 modular WAN slots.
CISCO841M-4X/K9R-NPE-K9	Cisco C841M-4X/K9 ISR with 4 port GE LAN and 2 port GE WAN, 2 modular WAN slots, and No Payload Encryption (NPE) IOS image as default.
CISCO841M-8X/K9R-K9	Cisco C841M-4X/K9 ISR with 8 port GE LAN and 2 port GE WAN, and 2 modular WAN slots.
CISCO841M-8X/K9R-NPE-K9	Cisco C841M-4X/K9 ISR with 8 port GE LAN and 2 port GE WAN, 2 modular WAN slots, and NPE IOS image as default.

[Table 1-6](#) lists the supported modules for Cisco 800M Series ISR.

**Table 1-6 Modules Supported on Cisco 800M Series ISR**

Module	Description
WIM-1T	1 port serial WAN module for Cisco 800M series ISR.
WIM-3G	3G Wireless WAN module for Cisco 800M series ISR



# Installing the Router

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This chapter describes the equipment and the procedures for successfully installing the Cisco 800M Series ISR, and contains the following sections:

- [Equipment, Tools, and Connections, page 2-2](#)
- [Installing the Router, page 2-3](#)
- [Mounting the DC Power Supply, page 2-14](#)



Note

For compliance and safety information, see [Regulatory Compliance and Safety Information for Cisco 800 Series Routers](#).

---



Warning

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

---



Warning

**This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

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Warning

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

---



Warning

**No user-serviceable parts inside. Do not open.** Statement 1073

---



Warning

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

---



Warning

**Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 378

---

**Warning**


---

The covers are an integral part of the safety design of the product. Do not operate the unit without the covers installed. Statement 1077

---

**Warning**


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Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can come into contact with such circuits. When installing the antenna, take extreme care not to come into contact with such circuits, because they may cause serious injury or death. For proper installation and grounding of the antenna, please refer to national and local codes (for example, U.S.:NFPA 70, National Electrical Code, Article 810, Canada: Canadian Electrical Code, Section 54). Statement 1052

---

**Warning**


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This product is not intended to be directly connected to the Cable Distribution System. Additional regulatory compliance and legal requirements may apply for direct connection to the Cable Distribution System. This product may connect to the Cable Distribution System ONLY through a device that is approved for direct connection. Statement 1078

---

## Equipment, Tools, and Connections

This section describes the equipment, tools, and connections necessary for installing the Cisco 800M Series ISR. It contains the following topics:

- [Items Shipped with your Router, page 2-2](#)
- [Connections, page 2-2](#)
- [Ethernet Devices, page 2-2](#)

## Items Shipped with your Router

Unpack the box and verify that all items listed on the invoice are shipped with the Cisco 800M Series ISR. The following items are shipped with your router:

- PWR CABLE - Country specific Power Cable, Max 1
- PWR-30W-AC - Power Adapter

**Note**


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The default power supply is AC. You can convert your AC power supply to DC power supply.

---

**Note**


---

No items are shipped with 3G Module and Console Port Module.

---

## Connections

Obtain a broadband or Ethernet connection from your service provider.

## Ethernet Devices

Identify the Ethernet devices that you connect to the router: hub, servers, and workstations or PCs. Ensure that each device has a network interface card (NIC) for connecting to the Ethernet ports.



If you plan to configure the software using Cisco IOS commands through the console port, provide an ASCII terminal or a PC that is running terminal emulation software to connect to the console port.

If you plan to connect a modem, provide the modem and modem cable.

## Installing the Router

This section describes how to install the Cisco 800M Series ISR. The Cisco 800M Series ISR can be installed on a table top or mounted on a wall. You can choose the type of mounting while ordering the Cisco 800M Series ISR. The recommended clearance when horizontally mounted is 1.5 inches on both sides for floor mount bracket clearance and 2 inches on top. Top clearance is not required but stacking heat-dissipating objects on top of the router is not allowed. Input/Output (I/O) side clearance is needed as it is required to access the cable connections. This section also describes how to attach external antennas to the routers and contains the following topics:

- [Warnings, page 2-3](#)
- [Installing on a Table, page 2-4](#)
- [Mounting on a Wall, page 2-4](#)
- [Installing Antennas, page 2-10](#)
- [Installing the modules, page 2-8](#)
- [Installing the modules, page 2-8](#)
- [Accessing the SIM Card, page 2-9](#)
- [Installing Antennas, page 2-10](#)
- [Installing the Router Ground Connection, page 2-11](#)
- [Installing the Power Cord Retention Latch, page 2-12](#)
- [Mounting the DC Power Supply, page 2-14](#)

### Warnings



Warning

This equipment needs to be grounded. Use a green and yellow 12 to 14 AWG ground wire to connect the host to earth ground during normal use. Statement 242



Warning

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024



Warning

Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system. Statement 378



Warning

Do not cover or obstruct the router vents located on both sides of the router; otherwise, overheating could occur and cause damage to the router.

**Warning**

Do not place anything on top of the router that weighs more than 10 pounds (4.5 kilograms), and do not stack routers on a desktop. Excessive weight on top of the router could damage the chassis.

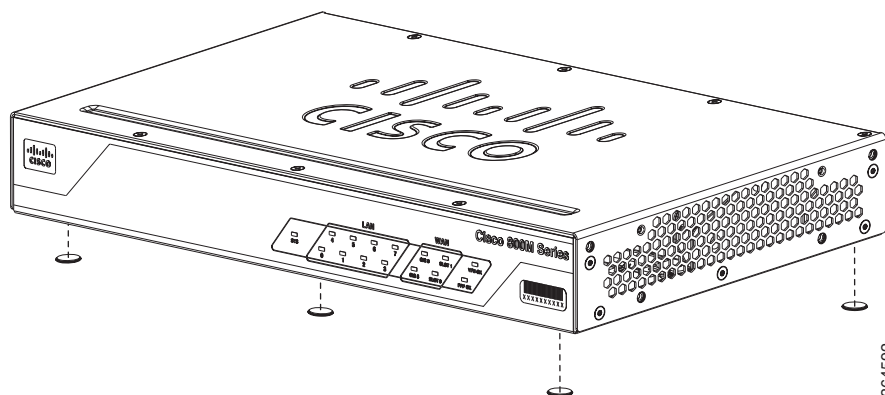
**Warning**

Do not install the router or power supplies next to a heat source of any kind, including heating vents.

## Installing on a Table

A four rubber feet is provided as part of the router hardware (shown in [Figure 2-1](#)) if you have opted for table mount while ordering. Insert the rubber feet at the bottom of the router. Connect the chassis to a reliable earth ground. Keep at least 200 mm of clear space on both left and right side for heat dissipation.

**Figure 2-1** Four Rubber Feet



## Mounting on a Wall

Two brackets and six counter-sunk screws are provided as part of the router hardware. These brackets and screws can be used for both rack mount and wall mount and the brackets can be oriented in different angles based on the need for wall mount and rack mount.

For wall mount, the supported configurations for the router are:

- I/O side facing upwards, as shown in [Figure 2-2](#)
- I/O side facing downwards, as shown in [Figure 2-3](#)

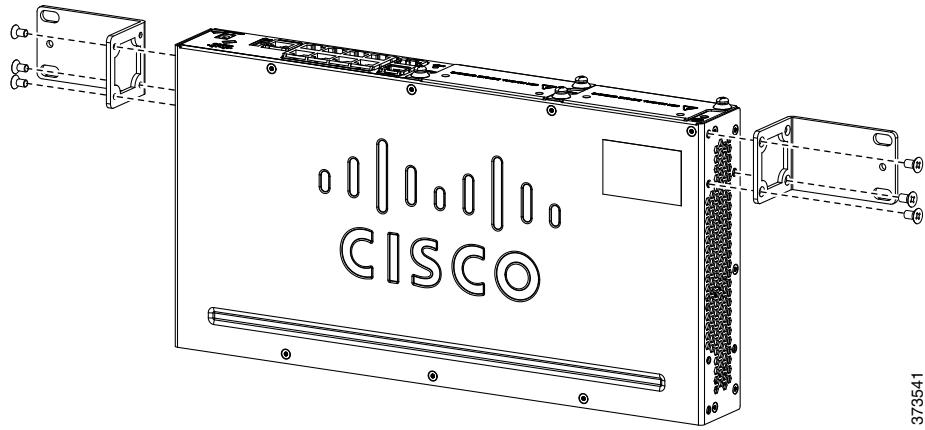
**Tip**

When choosing a location for wall-mounting the router, consider cable limitations and wall structure.

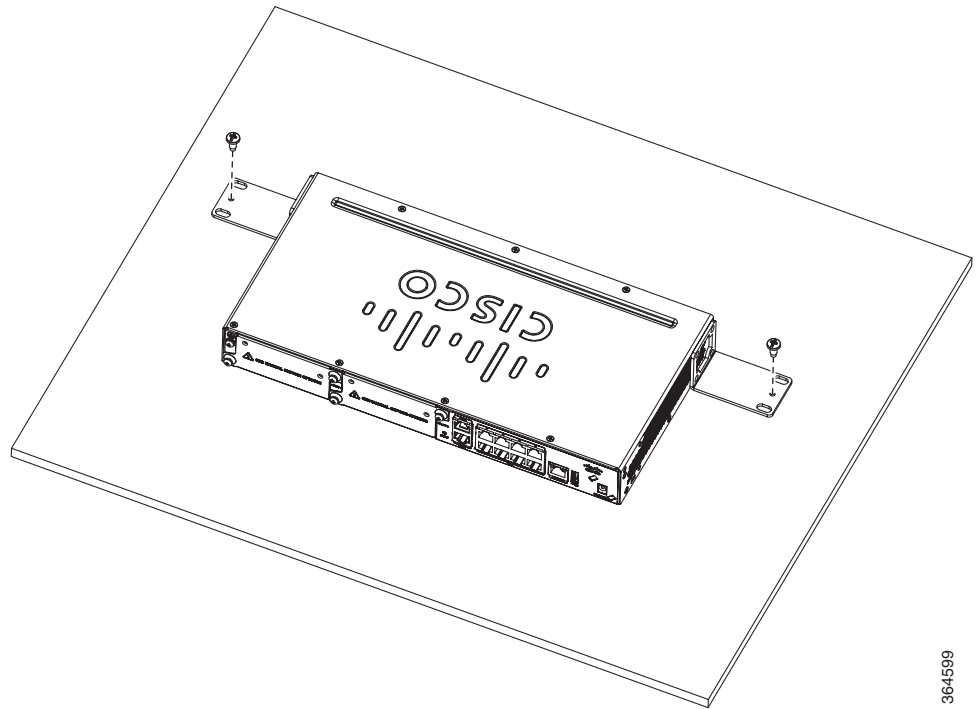
To mount the router on a wall, follow these steps:

- Step 1** Attach the two brackets to the chassis using the three screws provided for each bracket such that the brackets are facing the bottom of the router, as shown in [Figure 2-2](#).
- Step 2** Orient the Cisco 800M Series router, facing the I/O side facing upwards as shown in [Figure 2-2](#), or in the opposite direction such that the I/O side is facing downwards as shown in [Figure 2-3](#).

**Figure 2-2** Attaching the Brackets (I/O Side facing upwards)

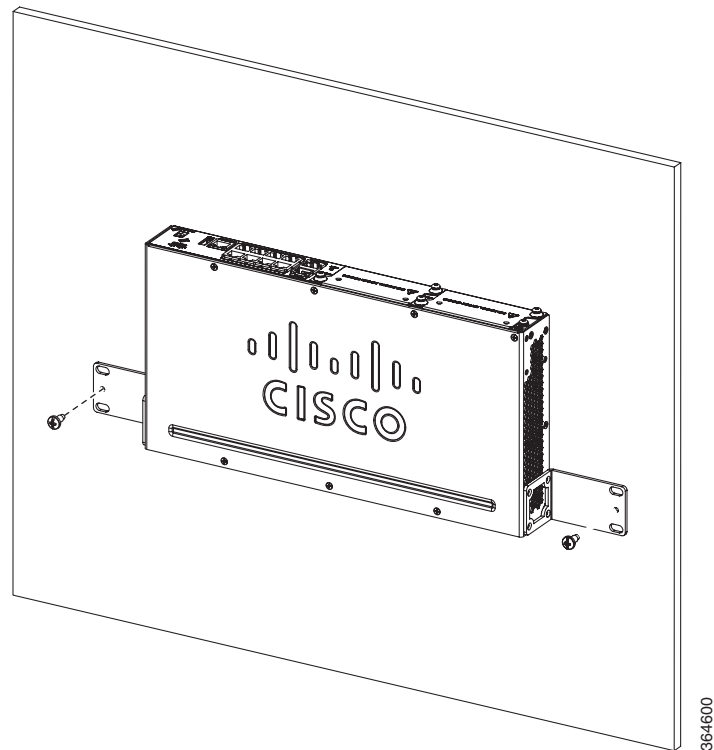


**Figure 2-3** I/O Side facing downwards



- Step 3** Install the router to a wall stud using two number-10 wood screws, and round- or pan-head. The screws must be long enough to penetrate at least 1.0 inch (25.4 mm) into the supporting wood or metal wall stud as shown in [Figure 2-4](#).

**Figure 2-4** *Installing the Router to the Wall*



**Note** For hollow-wall mounting, each bracket requires two wall anchors with washers. Wall anchors and washers must be size number 10.

**Step 4** Route the cables so that they do not put a strain on the connectors or mounting hardware. To comply with IP 41, cables should be routed down relative to the router to prevent water from traveling on the cables.

### Mounting on a Rack

The two brackets provided along with the router which can be used for wall mount or rack mount. These brackets support mounted the router on a standard 19 inch rack. The brackets must be rotated 90 degrees and used for mounting it on the rack.



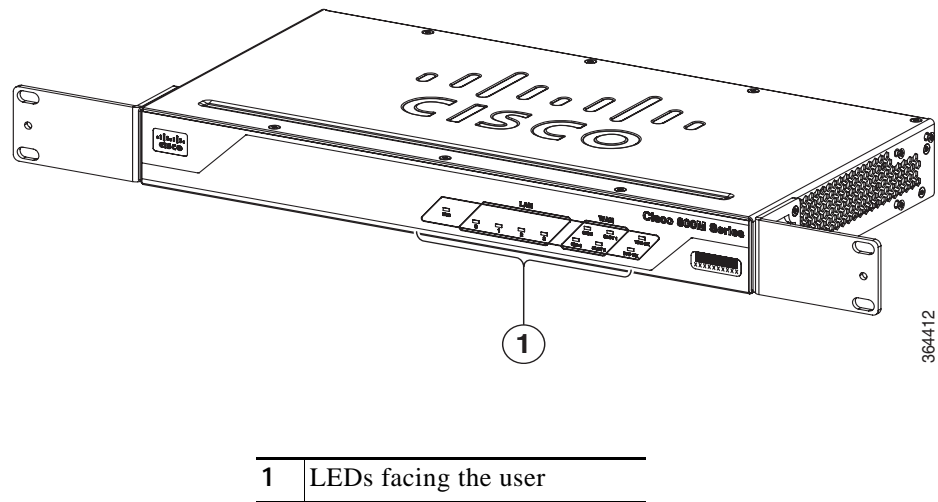
**Note** Maintain 1RU gap (both above and below) while stacking the units.

To mount the router on a rack, follow these steps:

**Step 1** Attach the two brackets to the chassis using the three screws provided for each bracket. The brackets can be attached to the router in the following three ways based on the needs of the user:

- Router LEDs facing the user as shown in [Figure 2-5](#).
- I/O side facing the user as shown in [Figure 2-6](#).
- Router I/O facing the user - Reverse the rack mount brackets to have offset rack mount option as shown in [Figure 2-7](#).

**Figure 2-5** Attaching the Brackets (LEDs facing the user)



**Figure 2-6** Attaching the Brackets (I/O side facing the user)

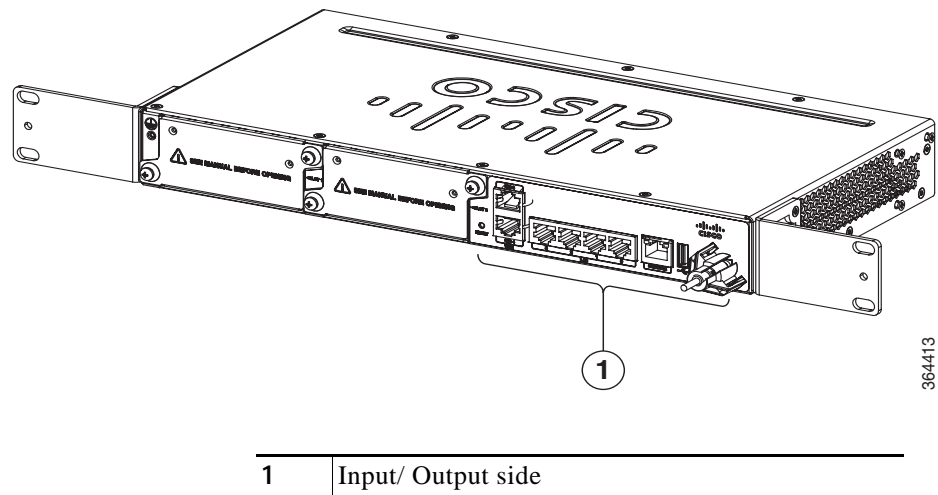
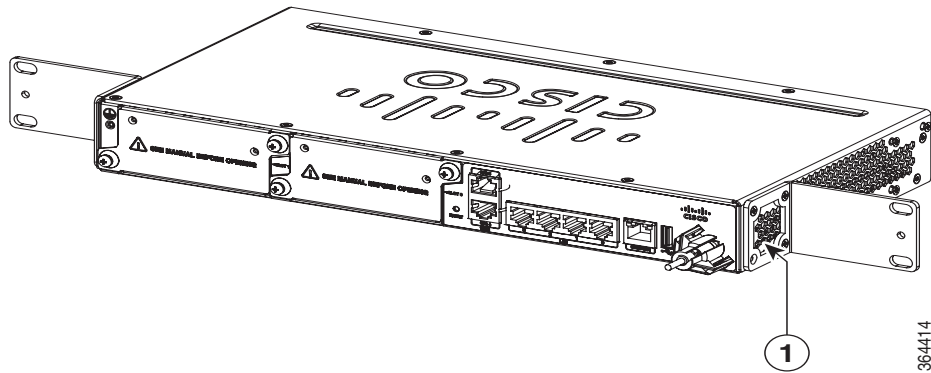


Figure 2-7 Attaching the Brackets (I/O side facing the user - Offset rack mount)



1	Offset rack mount
---	-------------------

Step 2 Mount the router into the rack using the screws provided in the rack.

## Installing the modules

You can choose either slot 0 or slot 1 for inserting modules.

Combination of modules supported by Cisco 800M Series ISR is as follows:

- One 3G module and one serial port module.
- Two serial port modules.



### Note

Two 3G modules are not supported at a time.



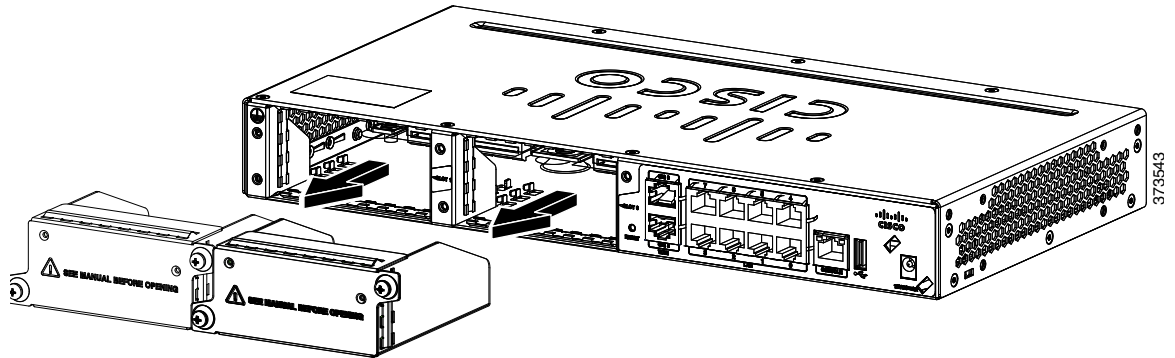
### Warning

**Make sure that the router is powered off before inserting the modules.**

Step 1 To remove the blank module, use screw drivers to loosen the screws. The screws are designed in way that after it disengages, user can hold the screws and pull the blank cover out.

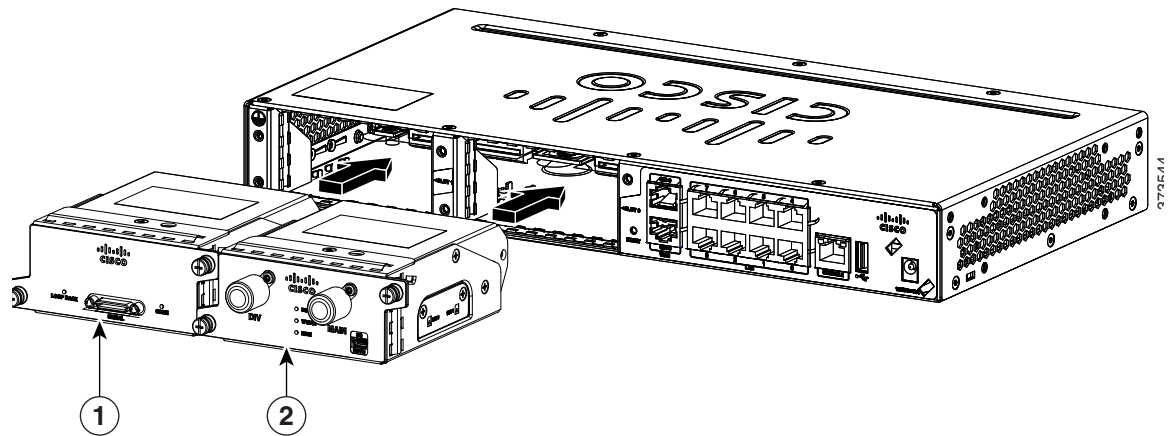
Step 2 Remove the blank covers for the slots where you want to insert the module as shown in [Figure 2-8](#).

Figure 2-8 Removing the blank covers



**Step 3** Insert the 3G module or serial port module using the captive screws such that the Cisco logo of the module is facing the user as shown in Figure 2-9.

Figure 2-9 Inserting the Modules



1	Module Slot 1	2	Module Slot 0
---	---------------	---	---------------

### Accessing the SIM Card

This section describes how to install and replace the SIM card.

  
Caution

Do not touch any part of the exposed PCB circuit area when the SIM cover is removed.

  
Warning

**Hot surface.** Statement 1079

  
Warning

**Make sure that the router is powered off before inserting or removing SIM card from 3G Module.**

To access the SIM card in the Cisco 800M Series ISR, follow these steps:

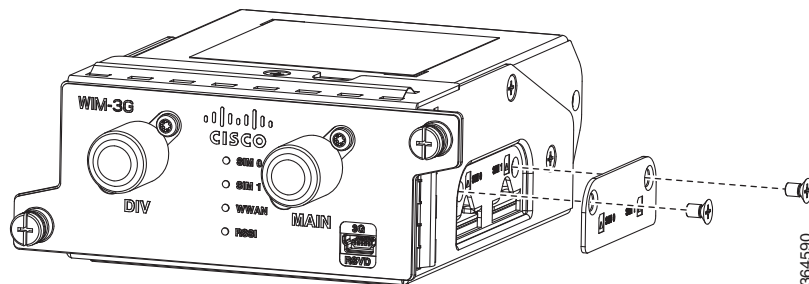
- Step 1** Power off the router and disconnect the power cable from the power source.
- Step 2** Place the router on its bottom side and remove the 3G Module by loosening the screws which are attached to the module.



**Note** The screws in 3G module are inbuilt to the module. For removing the module, you can loosen the screws. The 3G module comes out, but the screws will remain attached to the module.

- Step 3** Remove the SIM cover plate by removing the two counter-sunk screws towards the right side of the 3G module as shown in [Figure 2-10](#).

**Figure 2-10** Removing the SIM cover plate



- Step 4** Insert the SIM card by pushing it into the slot SIM0 or SIM1. You can also insert SIM cards in both the slots.



**Note** SIM 0 and SIM 1 are Push-Push slots. If the SIM card is pushed once, it gets inserted into the SIM slot. If the SIM card is pushed for the second time, it is ejected from the SIM slot. The 3G module can have SIM cards in both the slots. However, at a given point of a time, only one SIM card can be active.

- Step 5** After inserting the SIM card, replace the cover plate and tighten the 2 counter-sunk screws which were removed in [Step 3](#).

- Step 6** Replace the 3G module into the Router and tighten the screws.



**Note** Please note down the MEID number before installing the module into the router. It is required to activate the SIM on certain carriers.

## Installing Antennas



**Note** Before you install the Cisco 800M Series ISR on a table, wall or rack, install the antennas on the front panel. It is difficult to install the antennas after the router is installed.

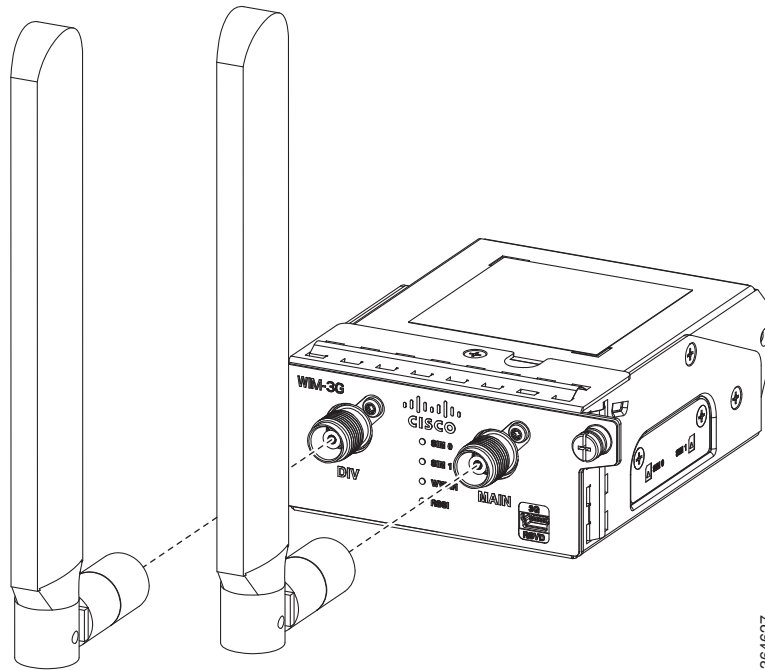
To attach the antennas to your router, follow these steps:

- Step 1** Remove the two rubber caps from the 3G Module.



**Step 2** Manually screw the antenna tight to the TNC connectors in front side of the 3G Module. See [Figure 2-11](#).

**Figure 2-11** Installing Antennas



**Step 3** Orient the antennas as required. For optimum wireless performance, antennas should be perpendicular to each other. If the router is being mounted on a desk, orient the antennas straight up.

### Installing the Router Ground Connection

The router must be connected to a reliable earth ground. Install the ground wire in accordance with local electrical safety standards.

- For NEC-compliant grounding, use size 14 AWG (2 mm<sup>2</sup>) or larger copper wire and a ring terminal with an inner diameter of 1/4 in. (5 to 7 mm).
- For EN/IEC 60950-compliant grounding, use size 18 AWG (1 mm<sup>2</sup>) or larger copper wire.



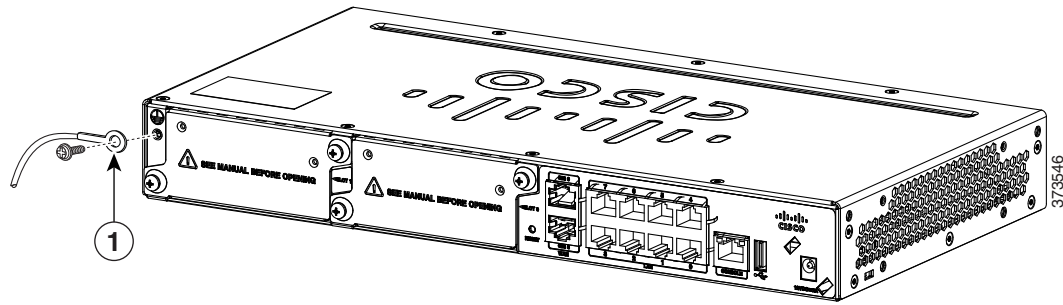
#### Warning

**This equipment needs to be grounded. Use a green and yellow 12 to 14 AWG ground wire to connect the host to earth ground during normal use.** Statement 242

To install the ground connection, follow these steps:

- 
- Step 1** Strip one end of the ground wire to the length required for the terminal.
- Step 2** Crimp the ground wire to the ring terminal using the wire crimper.
- Step 3** If you choose to install the power switch lock, perform [Step 5](#) to [Step 7](#). Otherwise, perform [Step 4](#), [Step 6](#) and [Step 7](#).
- Step 4** Attach the ring terminal to the chassis. Use the single screw provided. Tighten the screws to a torque of 8 to 10 inch-pound (0.9 to 1.1 newton meter) as shown in [Figure 2-12](#).

**Figure 2-12** Chassis Ground Connection Using Ring Terminal



1	Ring terminal
---	---------------

- Step 5** Install the power switch lock, see the [“Mounting the DC Power Supply”](#) section on page 2-14. Tighten the screws to a torque of 8 to 10 in-lb (0.9 to 1.1 N-m). Torque the hex standoff to the same torque.
- Step 6** Connect the other end of the ground wire to a known reliable earth ground point at your site.
- Step 7** If you are using this router in a vehicle, attach the ring terminal to the chassis using one of the screws provided and the green or green and yellow striped wire. Connect the other end of the wire to the vehicle ground.

After you install and properly ground the router, you can connect the power wiring, the LAN cables, and the cables for administrative access as required for your installation.

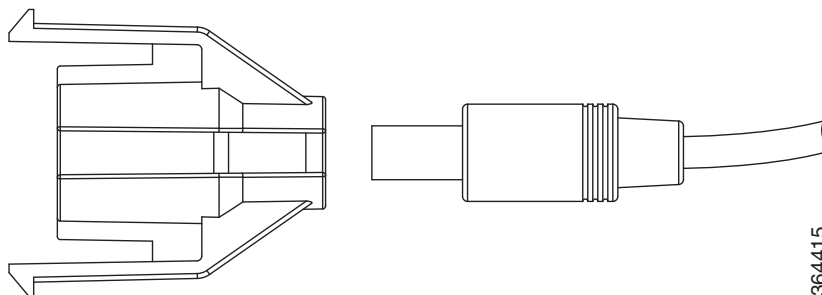
### Installing the Power Cord Retention Latch

The Cisco 800M Series ISR has a power cord retention mechanism as a accessory. It locks the power cord to the router. When a user accidentally pulls on the power cord, the power cord will not come out from the router.

This section describes how to install the power cord retention lock.

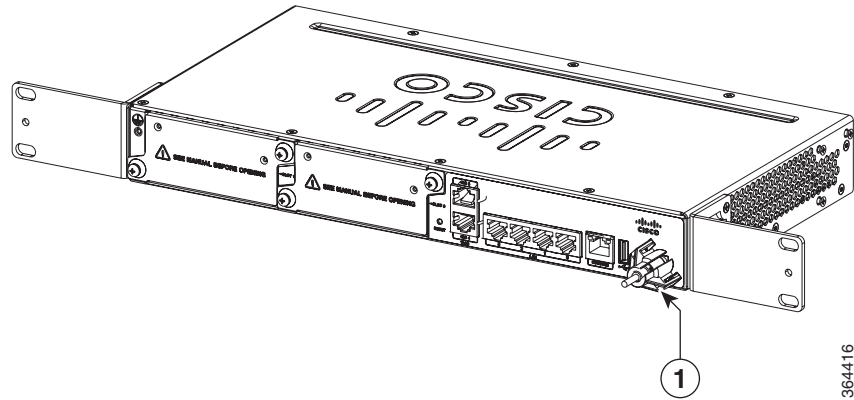
- Step 1** Place the power cord lock onto the power cord, as shown in [Figure 2-13](#). The cable slides into the slot and then pull the plug back to seat in the lock.

**Figure 2-13** Place the Power Cord Lock onto the Power Cord



- Step 2** Install the power cord with power cord lock and the pre-installed o-ring to mate with the power jack on the router. Make sure that the two arms of the power cord lock slide into the corresponding slots on the router and are fully seated with both arms locking into the slots as shown in [Figure 2-14](#).

**Figure 2-14** Installing Power Cord Lock onto the Router

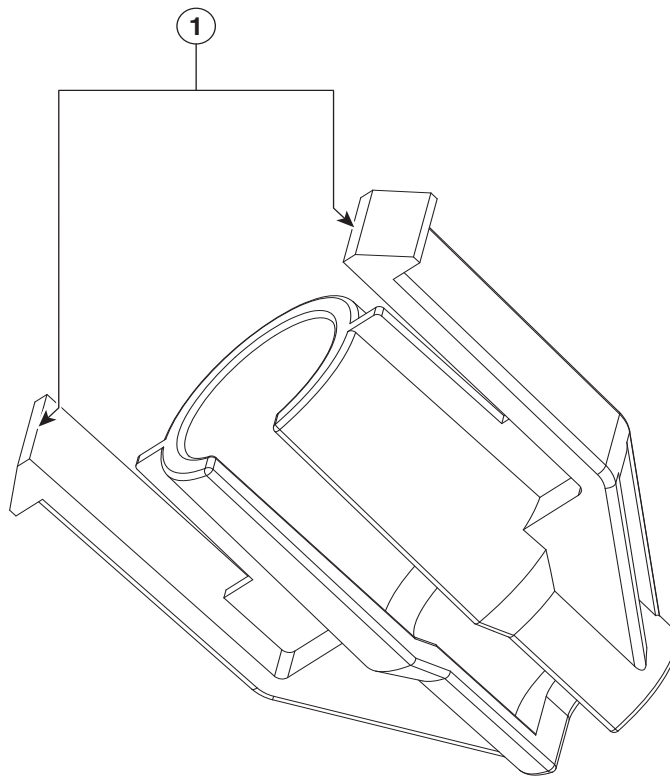


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1	Power Cord Lock
---	-----------------

- Step 3** To remove the power cord lock, use your thumb and index fingers to squeeze ends of tabs while pulling away from the router as shown in [Figure 2-15](#).

**Figure 2-15** End of Tabs



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1	End of tabs
---	-------------

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## Mounting the DC Power Supply



### Warning

Read the wall-mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system. Statement 378

The Cisco 800M ISR DC power supply may be mounted to a wall using four #6 pan- or round-head wood screws for the mounting holes on the supply.



### Caution

Each mounting screw must go into a wall stud (wood) or a wall anchor of the appropriate type for the wall. Screws into drywall is not sufficient to support the DC power supply.

- For attaching to a wall stud, the power supply requires #6 wood screws (round- or pan-head). The screws must be long enough to penetrate and tap at least 0.75 inches (19.1 mm) into the supporting wood or metal wall stud.
- For hollow-wall mounting, the power supply requires the use of appropriate-sized wall anchors that work with the drywall thickness the unit is to be installed in. Use hollow-wall anchors that support using #6 screws and use #6 pan- or round-head screws to secure the power supply to the wall. Each wall anchor should be rated for at least 30 lbs.

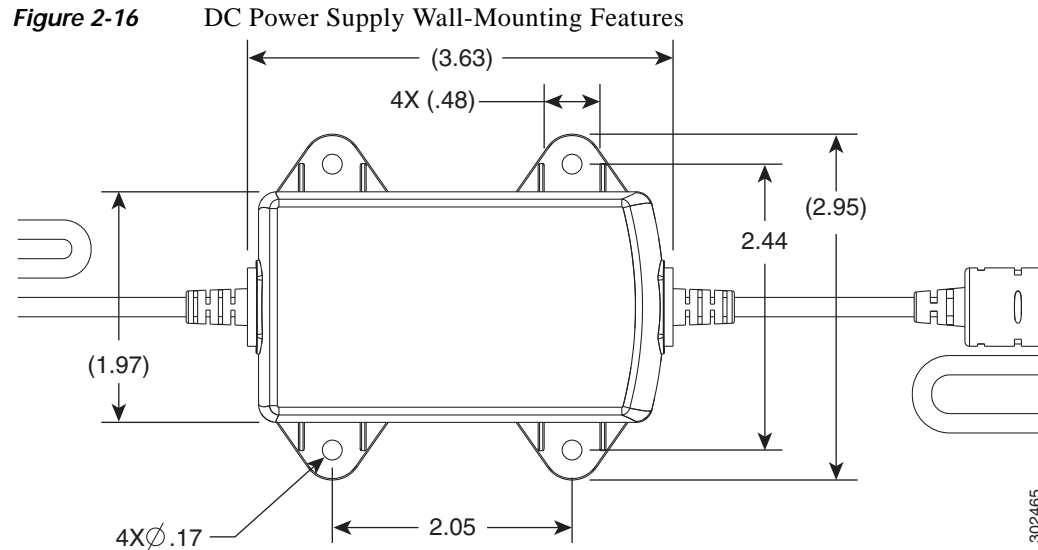


### Caution

If the screws are not properly anchored, the strain of the DC supply cables could pull the router from the wall.

To mount the DC power supply to the wall, follow these instructions:

- Step 1** Install the four screws into the mounting holes on the DC power supply as shown in [Figure 2-16](#), before being secured to the wall studs or wall anchors.



**Step 2** Hang the DC power supply by securing the screws to the wall stud or into the wall anchors.



**Note** The DC supply is IP 41 compliant in all six orthogonal directions. The mounting orientation will not affect IP 41 compliance.

**Step 3** Connect the chassis to a reliable earth ground.





## Connecting the Router

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This chapter describes how to connect the Cisco C841M-4X/K9 and Cisco C841M-8X/K9 ISR to Ethernet devices and a network. The section contains the following topics:

- [Preparing to Connect the Router, page 3-1](#)
- [Connecting a PC, Server, or Workstation, page 3-2](#)
- [Connecting an External Ethernet Switch, page 3-3](#)
- [Connecting a Terminal or PC to the Console Port, page 3-4](#)
- [Verifying Connections, page 3-5](#)



Note

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For compliance and safety information, see [Regulatory Compliance and Safety Information for Cisco 800 Series Routers](#).

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### Preparing to Connect the Router

Before you connect the router to the devices, install the router according to the instructions in the [“Installing the Router” section on page 2-3](#).

### Preventing Damage to the Router

To prevent damage to your router, follow these guidelines when connecting devices to your router:

- Turn off power to the devices and to the router until all connections are completed.



Caution

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Do not turn on the devices until after you have completed all connections to the router.

---

- If you must supply your own cable, see the [“Router Specifications” section on page A-1](#) for cabling specifications. If this appendix does not provide specifications for a particular cable, we strongly recommend ordering the cable from Cisco.

## Connecting a PC, Server, or Workstation

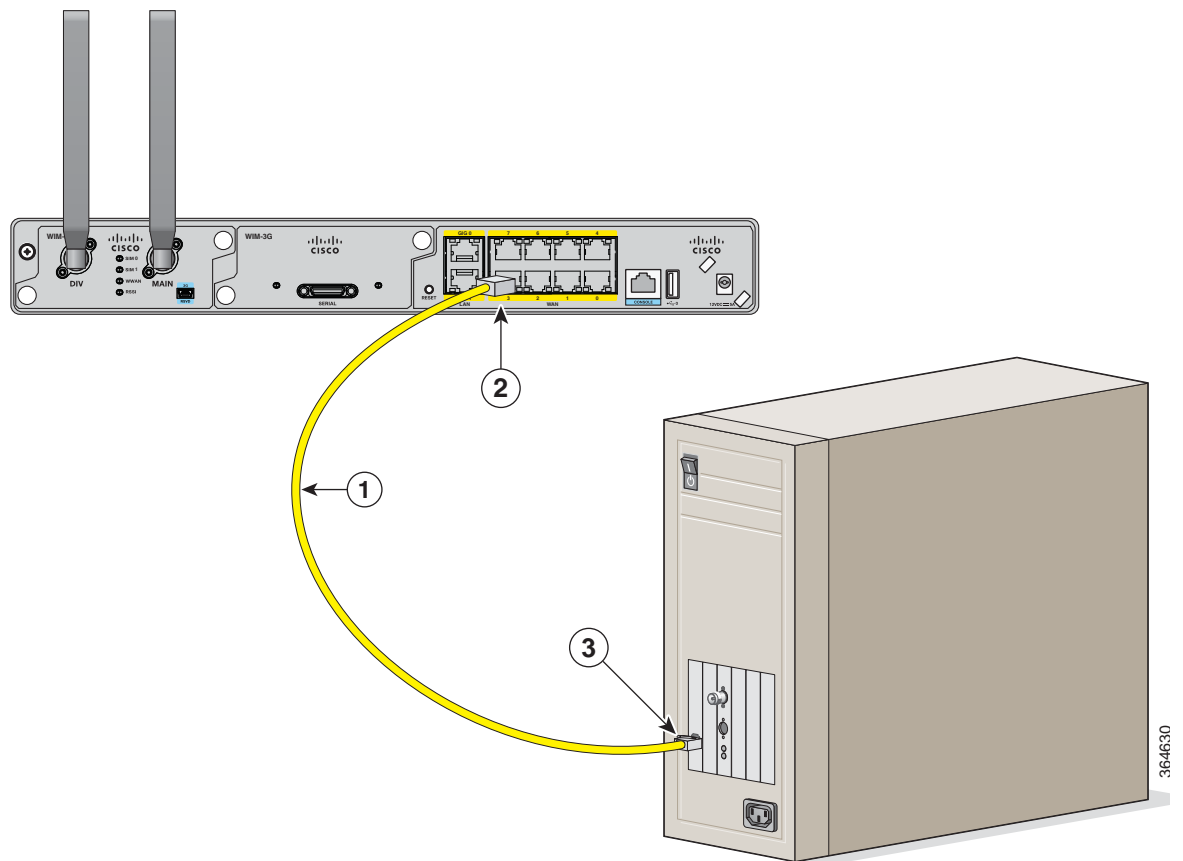
To connect a PC (or other Ethernet devices) to an Ethernet switch port, follow these steps:

**Step 1** Connect one end of the Ethernet cable to an Ethernet switch port on the router, as shown in [Figure 3-1](#).



**Note** The connections remain the same for a 4 port module.

**Figure 3-1** Connecting a Server, PC, or Workstation



1	Ethernet cable	3	RJ-45 port on the network interface card
2	Ethernet switch port on the router		

**Step 2** Connect the other end of the cable to the RJ-45 port on the network interface card (NIC) that is installed in the PC, server, or workstation.

**Step 3** (Optional) Connect additional servers, PCs, or workstations to the other Ethernet switch ports.





**Note** Use the Cisco Configuration Express to configure the Internet connection settings. See *Cisco Configuration Professional Quick Start Guide* for more information.

## Connecting an External Ethernet Switch

Cisco C841M-4X/K9 ISR has four LAN ports and Cisco C841M-8X/K9 ISR has eight LAN ports. If you are using Cisco C841M-4X/K9 ISR, you can connect four PCs to the router. If you need to connect more than four PCs, you can add Ethernet connections to the router by connecting an external Ethernet switch to the Ethernet switch on the router. Similarly, if you are using Cisco C841M-8X/K9 ISR, use an external Ethernet switch to connect more than eight PCs.

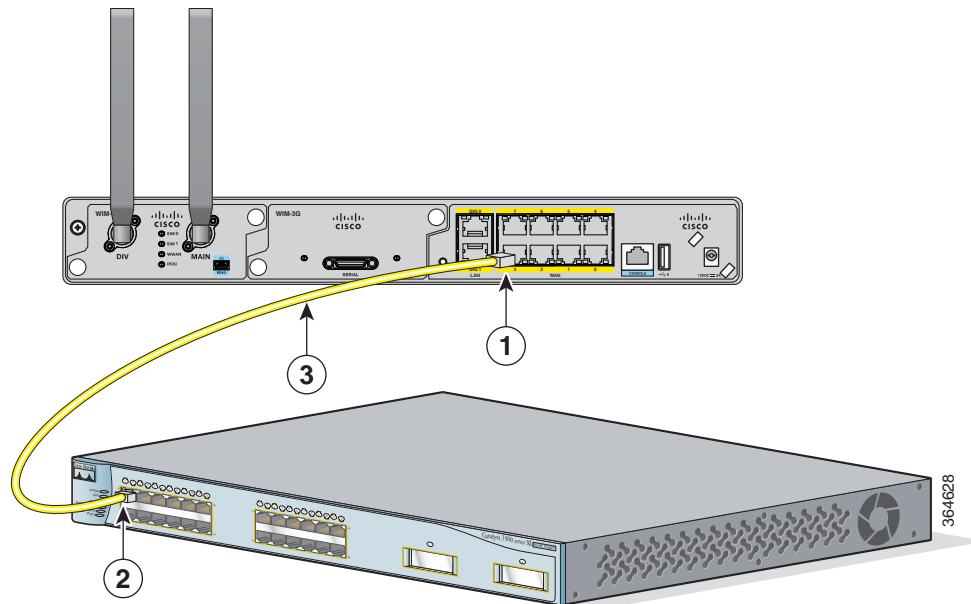
To connect an external Ethernet switch to an Ethernet switch port on the router, perform these steps:

**Step 1** Connect one end of the Ethernet cable to an Ethernet switch port on the router, as shown in [Figure 3-2](#).



**Note** The connections remain the same for a 4 port module.

**Figure 3-2** Connecting to an Ethernet Switch



1	Ethernet switch port on the router	3	CAT5 Ethernet cable, RJ-45-to-RJ-45, connecting to an external Ethernet switch port
2	Available port on the external Ethernet switch		

**Step 2** Connect the other end of the cable to the available port on the Ethernet switch to add additional Ethernet connections.

**Step 3** Turn on the Ethernet switch.

## Connecting a Terminal or PC to the Console Port

Connect a terminal or PC to the Console port either to configure the software by using the CLI or to troubleshoot problems with the router.

To connect a terminal or PC to the console port on the router and access the CLI, follow these steps:

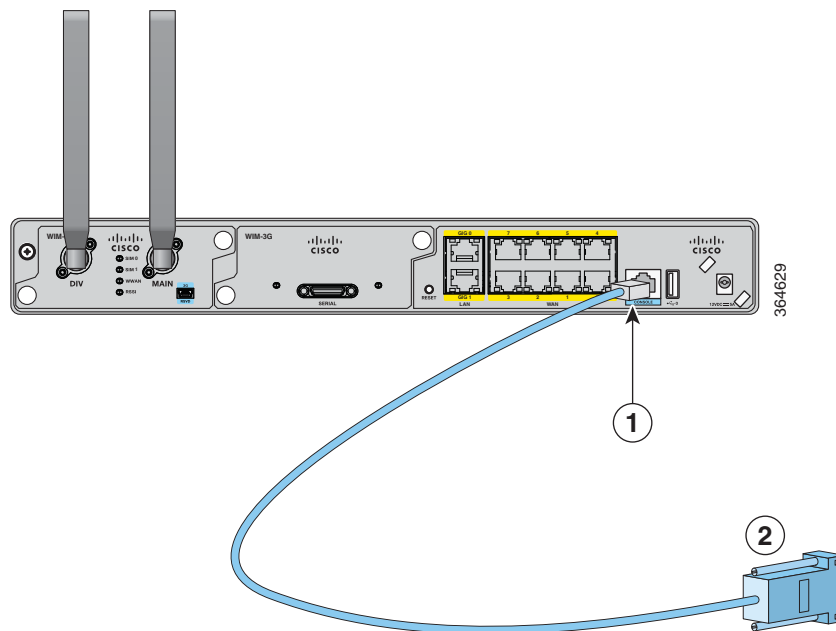
**Step 1** Connect the RJ-45 end of a DB-9-to-RJ-45 serial cable to the RJ-45 Console port on the router.



**Note** The connections remain the same for a 4 port module.

Figure 3-3 shows the RJ-45 end of the serial cable connected to the Console port on the router.

**Figure 3-3** Connecting a Terminal or PC to the Console Port



<b>1</b>	RJ-45 connector to the Console port on the router	<b>2</b>	DB-9 connector
----------	---	----------	----------------

**Step 2** Connect the DB-9 end of the DB-9-to-RJ-45 serial cable to the COM port on your laptop or PC.



**Note** Some laptops and PCs do not come with DB-9 serial port connectors and may require a USB-to-serial port adapter.

**Step 3** To communicate with the router, start a terminal emulator application.

## Verifying Connections

To verify that all devices are properly connected to the router, first turn on all the connected devices, and then check the LEDs. For more information on LEDs on the Cisco 800M Series ISR, see [LEDs, page 1-5](#).





# Initial Configuration

---

This section provides instructions for initial configuration of the Cisco 800M Series ISRs. For the initial configuration, we recommend using Cisco Configuration Professional Express. For instructions on how to use Cisco Configuration Professional Express to configure the router, see [Cisco Configuration Professional Express User's Guide](#).

You may also initially configure your router by using the Cisco IOS command-line interface (CLI) or by using the setup command facility. To create the initial configuration, the setup command facility prompts you for basic information about your router and network.

This section contains the following topics:

- [Cisco IOS CLI, page 4-1](#)
- [Setup Command Facility, page 4-1](#)
- [Verifying the Initial Configuration, page 4-4](#)

## Cisco IOS CLI

To configure the initial router settings by using the Cisco IOS CLI, you must set up a console connection.

For instructions on how to set up a console connection, see the [“Connecting a Terminal or PC to the Console Port” section on page 3-4](#).

## Setup Command Facility

The setup command facility guides you through the configuration process by prompting you for the specific information that is needed to configure your system. Use the setup command facility to configure a hostname for the router, to set passwords, and to configure an interface for communication with the management network.

To use the setup command facility, you must set up a console connection with the router and enter the privileged EXEC mode.



**Note** For instructions on how to set up a console connection, see the [“Connecting a Terminal or PC to the Console Port” section on page 3-4](#).

To configure the initial router settings by using the setup command facility, follow these steps:

**Step 1** Set up a console connection to your router, and enter privileged EXEC mode.

**Step 2** In privileged EXEC mode, at the prompt, enter **setup**.

```
yourname# setup
```

The following message is displayed:

```
--- System Configuration Dialog ---
```

```
Continue with configuration dialog? [yes/no]:
```

You are now in the setup command facility.

The prompts in the setup command facility vary, depending on your router model, on the installed interface modules, and on the software image. The following steps and the user entries (in **bold**) are shown as examples only.



**Note** If you make a mistake while using the setup command facility, you can exit and run the setup command facility again. Press **Ctrl-C**, and enter the **setup** command at the privileged EXEC mode prompt (Router#). For more information on using the setup command facility, see “[The Setup Command](#)” chapter in *Cisco IOS Configuration Fundamentals Command Reference, Release 12.2T*.

**Step 3** To proceed using the setup command facility, enter **yes**.

```
Continue with configuration dialog? [yes/no]: yes
```

**Step 4** When the following messages appear, enter **yes** to enter basic management setup.

```
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 5** Enter a hostname for the router (this example uses Router).

```
Configuring global parameters:  
Enter host name [Router]: Router
```

**Step 6** Enter an enable secret password. This password is encrypted (more secure) and cannot be seen when viewing the configuration.

```
The enable secret is a password used to protect access to  
privileged EXEC and configuration modes. This password, after  
entered, becomes encrypted in the configuration.
```

```
Enter enable secret: XXXXXXXX
```

**Step 7** Enter an enable password that is different from the enable secret password. This password is *not* encrypted (less secure) and can be seen when viewing the configuration.

```
The enable password is used when you do not specify an  
enable secret password, with some older software versions, and  
some boot images.
```

```
Enter enable password: XXXXXXXX
```

- Step 8** Enter the virtual terminal password, which prevents unauthenticated access to the router through ports other than the console port.

The virtual terminal password is used to protect access to the router over a network interface.

Enter virtual terminal password: **xxxxxxxx**

- Step 9** Respond to the following prompts as appropriate for your network.

Configure SNMP Network Management? [yes]:  
Community string [public]:

A summary of the available interfaces is displayed.

- Step 10** Choose one of the available interfaces for connecting the router to the management network.

Enter interface name used to connect to the management network from the above interface summary: **fastethernet4**

- Step 11** Respond to the following prompts as appropriate for your network.

Configuring interface FastEthernet4:  
Use the 100 Base-TX (RJ-45) connector? [yes]: **yes**  
Operate in full-duplex mode? [no]: **yes**  
Configure IP on this interface? [yes]: **yes**  
IP address for this interface: **172.1.2.3**  
Subnet mask for this interface [255.255.0.0] : **255.255.0.0**  
Class B network is 172.1.0.0, 26 subnet bits; mask is /16

The configuration is displayed:

The following configuration command script was created:

```
hostname Router
enable secret 5 $1$D5P6$PYx41/lQIASK.HcSbf05q1
enable password xxxxxx
line vty 0 4
password xxxxxx
snmp-server community public
!
no ip routing
!
interface FastEthernet4
no shutdown
speed 100
duplex auto
ip address 172.1.1.2.3 255.255.0.0
!
```

**Step 12** Respond to the following prompts. Enter **2** to save the initial configuration.

```
[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.
```

```
Enter your selection [2]: 2
Building configuration...
Use the enabled mode 'configure' command to modify this configuration.
```

```
Press RETURN to get started! RETURN
```

```
The user prompt is displayed.
Router>
```

**Step 13** Verify the initial configuration. See the [“Verifying the Initial Configuration”](#) section on page 4-4 for verification procedures.

---

After the initial configuration file is created, you can use the Cisco IOS CLI to perform additional configuration.

## Verifying the Initial Configuration

To verify that the new interfaces are operating correctly, perform the following tests:

- To verify that the interfaces and line protocol are in the correct state—up or down—enter the **show interfaces** command.
- To display a summary status of the interfaces configured for IP, enter the **show ip interface brief** command.
- To verify that you configured the correct hostname and password, enter the **show configuration** command.

After you complete and verify the initial configuration, you can configure your Cisco router for specific functions.





# Technical Specifications

This appendix section provides specifications for the Cisco 800M Series ISRs such as router, port, cabling specifications, and power adapters and contains the following topics:

- [Router Specifications, page A-1](#)



**Warning**

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



**Note**

For compliance and safety information, see [Regulatory Compliance and Safety Information for Cisco 800 Series Routers](#).

## Router Specifications

[Table A-1](#) lists the operational limits of the Cisco 800M Series ISR. Operating the router outside of the limits specified is not supported. For the complete list of SKUs available for Cisco 800M Series ISRs, see the [“SKU Information” section on page 1-8](#).

**Table A-1 Cisco 800M Series ISR Specifications**

	Cisco C841M-4X/K9 ISR	Cisco C841M-8X/K9 ISR
<b>Services and Slot Density</b>		
Embedded hardware-based cryptography acceleration (IPsec + SSL)	Yes	Yes
RJ-45 onboard LAN/WAN 10/100/1000 ports	4 (LAN) + 2 (WAN)	8 (LAN) + 2 (WAN)
WIM slots	2	2
Memory (DDR3 DRAM): Default/maximum	512 MB/512 MB	1GB/1GB
Flash memory (internal): Default/maximum	2GB/2GB	2GB/2GB

Table A-1 Cisco 800M Series ISR Specifications (continued)

	Cisco C841M-4X/K9 ISR	Cisco C841M-8X/K9 ISR
External USB flash-memory slots (Type A)	1	1
Power supply	External AC to DC power-supply	External AC to DC power-supply
Redundant-power-supply support	No	No
<b>Power Specifications</b>		
AC input voltage	100-240V ~	100-240V ~
AC input frequency	50-60 Hz	50-60 Hz
AC input current range AC power supply (maximum) (amps)	0.16	0.16
AC input surge current	60A	60A
Typical power (no modules)	15W	15W
Maximum power capacity with AC power supply	30W	30W
Safety ground-wire size	AWG 14 (2.0 mm <sup>2</sup> ), minimum	AWG 14 (2.0 mm <sup>2</sup> ), minimum
Wire terminal (lug)	Amp/Tyco No.32957	Amp/Tyco No.32957
DC Voltage	12V	12V
DC maximum current	2.5A	2.5A
Over-current protection	3.7A DC	3.7A DC
<b>Physical Specifications</b>		
Dimensions (H x W x D)	1.72" x 13.5" x 6.9"	1.72" x 13.5" x 6.9"
Rack height	1RU	1RU
Rack-mount 19 in. (48.3 cm) EIA	Optional	Optional
Wall-mount (refer to installation guide for approved orientation)	Optional	Optional
Weight (maximum)	2.5 Kg with modules and 1.7 Kg without modules.	2.5 Kg with modules and 1.7 Kg without modules.
Airflow	Natural convection	Natural convection
<b>Environmental Specifications</b>		

**Table A-1** Cisco 800M Series ISR Specifications (continued)

	Cisco C841M-4X/K9 ISR	Cisco C841M-8X/K9 ISR
Operating Conditions (at sea level)	0-40 C	0-40 C
Temperature: 5906 ft (1800m) maximum altitude	0-34 C	0-34 C
Temperature: 9843 ft (3000m) maximum altitude	0-30C	0-30C
Altitude	10000 ft	10000 ft
Humidity	10-85%	10-85%
<b>Transportation and Storage Conditions</b>		
Temperature	-40C to +70C	-40C to +70C
Humidity	5-95%	5-95%
Altitude	15000 ft	15000 ft
<b>Regulatory Compliance</b>		
Safety	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 EN60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013 ITE equipment UL 60950-1+ AMD 1 AMD 2 ITE equipment EN62311	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013 EN60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013 ITE equipment UL 60950-1+ AMD 1 AMD 2 ITE equipment EN62311

**Table A-1** Cisco 800M Series ISR Specifications (continued)

	Cisco C841M-4X/K9 ISR	Cisco C841M-8X/K9 ISR
EMC	EN55022 Class B	EN55022 Class B
	EN301 489-1	EN301 489-1
	EN301 489-7	EN301 489-7
	EN301 489-24	EN301 489-24
	EN61000-3-2	EN61000-3-2
	EN61000-3-3	EN61000-3-3
	EN55024	EN55024
	EN61000-4-2	EN61000-4-2
	EN61000-4-3	EN61000-4-3
	EN61000-4-4	EN61000-4-4
	EN61000-4-5	EN61000-4-5
	EN61000-4-6	EN61000-4-6
	EN61000-4-8	EN61000-4-8
	EN61000-4-11	EN61000-4-11
	VCCI Class B	VCCI Class B
	47 CFR Part 15	47 CFR Part 15
	EN 300 386 v1.6.1	EN 300 386 v1.6.1
Radio	EN 301 511	EN 301 511
	EN 301 908-1	EN 301 908-1
	EN 301 908-2	EN 301 908-2
	47 CFR PART 22	47 CFR PART 22
	47 CFR PART 24	47 CFR PART 24

## Mean Time Between Failure Ground Benign Environment

[Table A-2](#) lists the Mean Time Between Failure (MTBF) values for Cisco 800M Series ISRs. The MTBF is calculated based on the Ground Benign condition. The values may be adjusted based on the different router usage.

**Table A-2** MTBF Values

SKUs	MTBF (hours)
Chassis, Router, Modular, 1-4RU	440000