



Cisco Nexus 7000 Series Site Preparation Guide

For the Cisco Nexus 7004, 7009, 7010, and 7018 Switches

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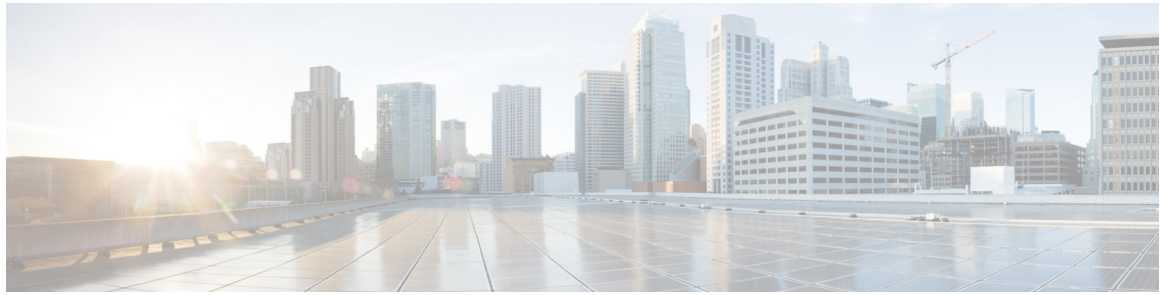
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New and Changed Information

This chapter provides release-specific information for each new and changed feature in the *Cisco Nexus 7000 Series Site Preparation Guide*. The latest version of this document is available at the following Cisco website:

http://www.cisco.com/en/US/docs/switches/datacenter/hw/nexus7000/site_prep/guide/nexus7k_siteprep_book.html

Table 1 summarizes the new and changed features for the *Cisco Nexus 7000 Series Site Preparation Guide*, and tells you where they are documented.

Table 1 ***New and Changed Features for Release 6.2(10)***

Feature	Description	Changed in Release	Where Documented
6-port 100-Gigabit Ethernet CPAK I/O module	New I/O module (N7K-F306CK-25)	6.2(10)	Chapter 1, “Overview” Appendix B, “Technical Specifications”



Preface

This preface describes the audience, organization, and conventions of the *Cisco Nexus 7000 Series Site Preparation Guide*. It also provides information on how to obtain related documentation.

Audience

This guide is intended for anyone who plans the facilities, including space, floor weighting, power, cooling, cabling, delivery, and storage for the installation of the Cisco Nexus 7000 Series switches.

Document Organization

This document is organized into the following chapters:

Chapter	Description
Chapter 1, “Overview”	Provides an overview of the Cisco Nexus 7000 Series switches.
Chapter 2, “Preparing the Site”	Describes the basic site requirements for installing the Cisco Nexus 7000 Series switches.
Chapter A, “Cabinet and Rack Requirements”	Describes the cabinet and rack requirements for the Cisco Nexus 7000 Series switches.
Chapter B, “Technical Specifications”	Describes the technical specifications for the Cisco Nexus 7000 Series switches.
Chapter C, “Site Preparation and Maintenance Records”	Provides a site planning list to prepare your site for the Cisco Nexus 7000 Series switches.

Document Conventions

This document uses the following conventions for notes, cautions, and safety warnings.

Notes and Cautions contain important information that you should be aware of.

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material that are not covered in the publication.

**Caution**

Means *reader be careful*. You are capable of doing something that might result in equipment damage or loss of data.

Safety warnings appear throughout this publication in procedures that, if performed incorrectly, can cause physical injuries. A warning symbol precedes each warning statement.

**Warning****IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS**Waarschuwing****BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

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

BEWAAR DEZE INSTRUCTIES**Varoitus****TÄRKEITÄ TURVALLISUUSOHJEITA**

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

SÄILYTÄ NÄMÄ OHJEET

Attention IMPORTANTES INFORMATIONS DE SÉCURITÉ

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

CONSERVEZ CES INFORMATIONS

Warnung WICHTIGE SICHERHEITSHINWEISE

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

BEWAHREN SIE DIESE HINWEISE GUT AUF.

Avvertenza IMPORTANTI ISTRUZIONI SULLA SICUREZZA

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

CONSERVARE QUESTE ISTRUZIONI

Advarsel VIKTIGE SIKKERHETSINSTRUKSJONER

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

TA VARE PÅ DISSE INSTRUKSJONENE

Aviso INSTRUÇÕES IMPORTANTES DE SEGURANÇA

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

GUARDE ESTAS INSTRUÇÕES

¡Advertencia! INSTRUCCIONES IMPORTANTES DE SEGURIDAD

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

GUARDE ESTAS INSTRUCCIONES

Varning! VIKTIGA SÄKERHETSANVISNINGAR

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

SPARA DESSA ANVISNINGAR

Figyelem FONTOS BIZTONSÁGI ELOÍRÁSOK

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

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!

Предупреждение ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ

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

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ

警告 重要的安全性说明

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

请保存这些安全性说明

警告 安全上の重要な注意事項

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

これらの注意事項を保管しておいてください。

주의 중요 안전 지침

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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 للإصابات. 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

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 συνήθεις 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

ⓘ

Орoмeнa 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 prevedените безбедносни предупредувања што се испорачани со уредот.

ЧУВАЈТЕ ГИ ОВИЕ 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 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

Related Documentation

[Cisco Nexus 7000 Series](#) documentation includes the following documents:

Hardware Documents

Cisco Nexus 7000 Series Site Preparation Guide

Cisco Nexus 7000 Series Hardware Installation and Reference Guide

Cisco Nexus 7000 Series Regulatory Compliance and Safety Information

Cisco Nexus 7000 Series Connectivity Management Processor Configuration Guide

Software Documents

The Cisco Nexus 7000 Series switches ship with the Cisco NX-OS software. You can find software documentation for the Cisco NX-OS software at the following URL:

http://www.cisco.com/en/US/products/ps9402/tsd_products_support_series_home.html

The Cisco Data Center Network Manager (DCNM) supports the Cisco Nexus 7000 Series. You can find documentation for DCNM at the following URL:

http://www.cisco.com/en/US/products/ps9369/tsd_products_support_series_home.html

Documentation Feedback

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Overview

This chapter provides an overview of the Cisco Nexus 7000 Series switches, which support end-to-end data center connectivity, consolidating IP, storage, and interprocess communication (IPC) networks onto a single Ethernet fabric.

The Cisco Nexus 7000 Series includes the following switches:

- Cisco Nexus 7004 switch—Provides four slots that include two supervisor modules and up to two I/O modules with 1.92 Terrabytes per second (Tbps) of forwarding capacity. You can access all supervisor and I/O modules, power supplies, and fan trays from the front. This switch does not include fabric modules. This switch uses side-to-back airflow.
- Cisco Nexus 7009 switch—Provides nine slots that include two supervisor modules and up to seven I/O modules with 8.8 Terrabytes per second (Tbps) of forwarding capacity. You can access the supervisor, I/O module, and fabric modules from the front, and you can access the power supply and fan modules from the rear. This switch uses side-to-side airflow.
- Cisco Nexus 7010 switch—Provides 10 slots that include two supervisor modules and up to eight I/O modules with 4.1 Tbps of forwarding capacity. You can access the supervisor and I/O modules from the front, and you can access the fabric modules, power supply, and fan modules from the rear. This switch uses front-to-back airflow.
- Cisco Nexus 7018 switch—Provides 18 slots that include two supervisor modules and up to 16 I/O modules with 7.8 Tbps of forwarding capacity. You can access the supervisor and I/O modules from the front, and you can access the fabric modules, power supplies, and fan modules from the rear. This switch uses side-to-side airflow.

Each type of switch uses the same supervisor modules, I/O modules, and power supply units (AC and DC models). The fan trays and fabric modules are unique to each type of chassis. To compare the features of these two switches, see [Table 1-1](#).

Table 1-1 Cisco Nexus 7000 Series Switch Features

Feature	Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010 ¹	Cisco Nexus 7018 ¹
Chassis	4-slot chassis	9-slot chassis	10-slot chassis	18-slot chassis
Supervisor Modules	1 to 2 modules shipped in the chassis.			
	Supervisor 2 (N7K-SUP2) or Supervisor 2E (N7K-SUP2E)	Supervisor 1 (N7K-SUP1), or Supervisor 2 (N7K-SUP2), or Supervisor 2E (N7K-SUP2E)		

Table 1-1 Cisco Nexus 7000 Series Switch Features (continued)

Feature	Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010 ¹	Cisco Nexus 7018 ¹
I/O Modules	1 or 2 modules shipped in the chassis	1 to 7 modules shipped in the chassis	1 to 8 modules shipped in the chassis	1 to 16 modules shipped in the chassis
	<p>F2 Series modules</p> <ul style="list-style-type: none"> 48-port 1- and 10-Gigabit Ethernet (N7K-F248XP-25 and N7K-F248XP-25E) 48-port 1- and 10-GBASE-T Ethernet (N7K-F248XT-25E) <p>F3 Series module</p> <ul style="list-style-type: none"> 12-port 40-Gigabit Ethernet (N7K-F312FQ-25) 6-port 100-Gigabit Ethernet (N7K-F306CK-25) <p>M1 Series modules</p> <ul style="list-style-type: none"> 48-port 10/100/1000 Ethernet (N7K-M148GT-11L) 48-port 1-Gigabit Ethernet XL (N7K-M148GS-11L) 32-port 10-Gigabit Ethernet XL (N7K-M132XP-12L) 8-port 10-Gigabit Ethernet XL (N7K-M108X2-12L) <p>M2 Series modules</p> <ul style="list-style-type: none"> 24-port 10-Gigabit Ethernet SFP+ (N7K-M224XP-23L) 6-port 40-Gigabit Ethernet (N7K-M206FQ-23L) 2-port 100-Gigabit Ethernet (N7K-M202CF-22L) 	<p>F1 Series modules</p> <ul style="list-style-type: none"> 32-port 1- and 10-Gigabit Ethernet (N7K-F132XP-15) <p>F2 Series modules</p> <ul style="list-style-type: none"> 48-port 1- and 10-Gigabit Ethernet (N7K-F248XP-25 and N7K-F248XP-25E) 48-port 1- and 10-GBASE-T Ethernet (N7K-F248XT-25E) <p>F3 Series module</p> <ul style="list-style-type: none"> 12-port 40-Gigabit Ethernet (N7K-F312FQ-25) 6-port 100-Gigabit Ethernet (N7K-F306CK-25) <p>M1 Series modules</p> <ul style="list-style-type: none"> 48-port 10/100/1000 Ethernet (N7K-M148GT-11) 48-port 10/100/1000 Ethernet (N7K-M148GT-11L) 48-port 1-Gigabit Ethernet (N7K-M148GS-11) 48-port 1-Gigabit Ethernet XL (N7K-M148GS-11L) 32-port 10-Gigabit Ethernet (N7K-M132XP-12) 32-port 10-Gigabit Ethernet XL (N7K-M132XP-12L) 8-port 10-Gigabit Ethernet XL (N7K-M108X2-12L) <p>M2 Series modules</p> <ul style="list-style-type: none"> 24-port 10-Gigabit Ethernet SFP+ (N7K-M224XP-23L) 6-port 40-Gigabit Ethernet (N7K-M206FQ-23L) 2-port 100-Gigabit Ethernet (N7K-M202CF-22L) 		
Service Modules	Network Analysis Modules (NAMs) (N7K-SM-NAM-K9)			

Table 1-1 Cisco Nexus 7000 Series Switch Features (continued)

Feature	Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010 ¹	Cisco Nexus 7018 ¹
Fan Tray	1 fan tray (N7K-C7004-FAN) shipped in the chassis	1 fan tray (N7K-C7009-FAN) shipped in the chassis	2 system fan trays (N7K-C7010-FAN-S) shipped in the chassis	2 fan trays (N7K-C7018-FAN) shipped in the chassis
Fabric Fan Tray	—	—	2 fabric fan trays (N7K-C7010-FAN-F) shipped in the chassis	—
Fabric-1 Modules	— (Fabric modules are not used)	—	3 to 5 modules (N7K-C7010-FAB-1) ship with the chassis. These modules deliver 230 Gbps per slot for up to 4.1 Tbps of forwarding capacity.	3 to 5 modules (N7K-C7018-FAB-1) shipped in the chassis. These modules deliver 230 Gbps per slot for up to 7.8 Tbps of forwarding capacity.
Fabric-2 Modules	— (Fabric modules are not used)	3 to 5 modules (N7K-C7009-FAB-2) shipped in the chassis. These modules deliver 550 Gbps per slot for up to 8.8 Tbps of forwarding capacity.	3 to 5 modules (N7K-C7010-FAB-2). These modules deliver 550 Gbps per slot for up to 8.8 Tbps of forwarding capacity.	3 to 5 modules (N7K-C7018-FAB-2). These modules deliver 550 Gbps per slot for up to 8.8 Tbps of forwarding capacity.
Power Supplies	Up to 4 power supply units shipped in the chassis	1 or 2 power supply units shipped with the chassis but boxed separately	2 to 3 power supply units shipped with the chassis but boxed separately	2 to 4 power supply units shipped with the chassis but boxed separately
	3-kW AC power supply units (N7K-AC-3KW) 6-kW DC power supply units (N7K-DC-3KW)	<ul style="list-style-type: none"> 6-kW AC power supply unit (N7K-AC-6.0KW) 7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US) 6-kW DC power supply unit (N7K-DC-6.0KW) 		
DC Power Interface Unit	1 or 2 used when the DC power source is more than 15 feet (4.6 m) away from the DC power supply units			

1. The quantity of supervisors, I/O modules, fabric modules, and power supply units shipped with the chassis will vary depending on your order.

For information about preparing your site for the Nexus 7000 Series switches, see [Chapter 2, “Preparing the Site.”](#)

For information about installing the Cisco Nexus 7000 Series switches, see the *Cisco Nexus 7000 Series Hardware Installation and Reference Guide*. For translations of the warnings in that guide, see the *Cisco Nexus 7000 Series Regulatory Compliance and Safety Information* document.



Preparing the Site

This chapter describes the basic site requirements that you should be aware of as you prepare to install your Cisco Nexus 7000 Series switches.

This chapter includes the following sections:

- [Information About the Site Requirements, page 2-1](#)
- [Temperature, page 2-2](#)
- [Humidity, page 2-3](#)
- [Altitude, page 2-3](#)
- [Dust and Particles, page 2-3](#)
- [Corrosion, page 2-3](#)
- [Electromagnetic and Radio Frequency Interference, page 2-4](#)
- [Shock and Vibration, page 2-4](#)
- [Grounding, page 2-4](#)
- [Power Source, page 2-5](#)

Information About the Site Requirements

Environmental factors can adversely affect the performance and life span of your switch. The Cisco Nexus 7000 Series switches require a dry, clean, well-ventilated, and air-conditioned environment. To ensure normal operation, you must maintain ambient airflow. If the airflow is blocked or restricted, or if the intake air is too warm, an overtemperature condition can occur and the environmental monitor on the switch will shut down to protect the switch components.

In a 42-rack unit (RU) rack, you can maximize the number of Cisco Nexus 7000 Series switch models as follows:

- Six Cisco Nexus 7004 chassis
- Three Cisco Nexus 7009 chassis
- Two Cisco Nexus 7010 chassis
- One Cisco Nexus 7018 chassis

You must also allow enough room in front for loading the chassis using a mechanical lift and enough room in the rear for removing the switch components (this requirement in the rear applies only to the Cisco Nexus 7009, 7010, and 7018 chassis). When mounting the Cisco Nexus 7000 Series chassis in a

rack with other equipment, ensure that the exhaust from the other equipment does not blow into the air intake vent of the Cisco Nexus 7000 Series chassis. If your site has hot and cold aisles, align the rack or cabinet air intake to a cold aisle and exhaust to a hot aisle.

Temperature

Temperature extremes can cause the Cisco Nexus 7000 Series switches to operate at reduced efficiency and cause a variety of problems, including premature aging, failure of chips, and failure of switches. In addition, extreme temperature fluctuations can cause chips to become loose in their sockets. The Cisco Nexus 7000 Series switches should operate in an environment that is not colder than 32°F (0°C) or hotter than 104°F (40°C).

To control the switch temperature, you must make sure that the switch has adequate airflow, as follows:

- The Cisco Nexus 7004 switch requires side-to-back airflow, which requires that you leave at least 11 inches (27.9 cm) free on the right side of the chassis (as seen from the front side of the chassis, which shows all of the chassis modules). You must be sure that the cables do not block the airflow into the chassis on the right side (for more information, see the [“Chassis Clearances” section on page B-22](#)).
- The Cisco Nexus 7009 switch requires side-to-side airflow, which requires that you leave at least 11 inches (27.9 cm) free on both sides of the chassis (or 22 inches [55.8 cm] between two Cisco Nexus 7009 or 7018 switches), and you must be sure that cables do not block the airflow from the lower right front of the chassis (for more information, see the [“Chassis Clearances” section on page B-22](#)).
- The Cisco Nexus 7010 switch requires front-to-back airflow, which requires that you do not block the front air intake or the rear exhaust areas (for more information, see the [“Chassis Clearances” section on page B-22](#)).
- The Cisco Nexus 7018 switch requires side-to-side airflow, which requires that you leave at least 11 inches (27.9 cm) free on both sides of the chassis (or 22 inches [55.8 cm] between two Cisco Nexus 7009 or 7018 switches), and you must be sure that cables do not block the airflow from the lower right front of the chassis (for more information, see the [“Chassis Clearances” section on page B-22](#)).

To prevent overheating and to minimize the energy spent to cool the Cisco Nexus 7000 Series switch, do not place the chassis next to a heat source of any kind, including heating vents during cold weather.

Adequate ventilation is particularly important if you are operating a Cisco Nexus 7000 Series switch at high altitudes. Make sure that all slots and openings on the chassis remain unobstructed, especially the fan vents. Clean the installation site at regular intervals to avoid buildup of dust and debris, which can cause a switch to overheat.

If the Cisco Nexus 7000 Series switch is exposed to abnormally cold temperatures, allow a 2-hour warm-up period to bring it up to a normal operating temperature before you turn the switch on.



Caution

If you do not allow a 2-hour warm-up period when temperatures are abnormally cold, you can damage the internal components.



Note

The Cisco Nexus 7000 Series switches are equipped with internal air temperature sensors that trigger a minor alarm at 104°F (40°C) and a major alarm at 131°F (55°C).

Humidity

High humidity can cause moisture to seep into the Cisco Nexus 7000 Series switches. Moisture can cause corrosion of internal components and degradation of properties such as electrical resistance, thermal conductivity, physical strength, and size. The Cisco Nexus 7000 Series is rated to operate at 8 to 80 percent relative humidity, with a humidity gradation of 10 percent per hour.

The Cisco Nexus 7000 Series switches can withstand from 5 to 90 percent relative humidity. Buildings in which the climate is controlled by air-conditioning in the warmer months and by heat during the colder months usually maintain an acceptable level of humidity for the switch equipment. However, if a Cisco Nexus 7000 Series switch is located in an unusually humid location, you should use a dehumidifier to maintain the humidity within an acceptable range.

Altitude

If you operate a Cisco Nexus 7000 Series switch at a high altitude (low pressure), the efficiency of forced and convection cooling is reduced and can result in electrical problems that are related to arcing and corona effects. This condition can also cause sealed components with internal pressure, such as electrolytic capacitors, to fail or to perform at a reduced efficiency. The Cisco Nexus 7000 Series is rated to operate at altitudes from -500 to 13,123 feet (-152 to 4,000 meters). You can store the switch at altitudes of -1,000 to 30,000 feet (-305 to 9,144 meters).

Dust and Particles

Exhaust fans cool power supplies and system fan trays cool switches by drawing in air and exhausting air out through various openings in the chassis. However, fans also ingest dust and other particles, causing contaminant buildup in the switch and increased internal chassis temperature. A clean operating environment can greatly reduce the negative effects of dust and other particles, which act as insulators and interfere with the mechanical components in the switch.

**Note**

In the Cisco Nexus 7004 and 7010 switches, you can install an optional air filter in a nonclean environment.

In addition to regular cleaning, follow these precautions to avoid contamination of your equipment:

- Do not permit smoking near the Cisco Nexus 7000 Series switch.
- Do not permit food or drink near the Cisco Nexus 7000 Series switch.

Corrosion

The corrosion of switch connectors is a gradual process that can eventually lead to intermittent failures of electrical circuits. The oil from your fingers or prolonged exposure to high temperature or humidity can corrode the gold-plated edge connectors and pin connectors on various components in the Cisco Nexus 7000 Series switches. To prevent corrosion, avoid touching contacts on modules and protect the switch from extreme temperatures and moist, salty environments.

Electromagnetic and Radio Frequency Interference

Electromagnetic interference (EMI) and radio frequency interference (RFI) from the Cisco Nexus 7000 Series switch can adversely affect switches such as radio and television (TV) receivers operating near the switch. Radio frequencies that emanate from the Cisco Nexus 7000 Series switch can also interfere with cordless and low-power telephones. Conversely, RFI from high-power telephones can cause spurious characters to appear on the switch monitor.

RFI is defined as any EMI with a frequency above 10 kHz. This type of interference can travel from the switch to other devices through the power cable and power source or through the air like transmitted radio waves. The Federal Communications Commission (FCC) publishes specific regulations to limit the amount of EMI and RFI that can be emitted by computing equipment. Each Cisco Nexus 7000 Series switch meets these FCC regulations.

To reduce the possibility of EMI and RFI, follow these guidelines:

- Cover all open expansion slots with a metal filler.
- Always use shielded cables with metal connector shells for attaching peripherals to the switch.

When wires are run for any significant distance in an electromagnetic field, interference can occur between the field and the signals on the wires and cause the following implications:

- Bad wiring can result in radio interference emanating from the plant wiring.
- Strong EMI, especially when it is caused by lightning or radio transmitters, can destroy the signal drivers and receivers in the chassis and even create an electrical hazard by conducting power surges through lines into equipment.

**Note**

To predict and prevent strong EMI, you might need to consult experts in radio frequency interference (RFI).

The wiring is unlikely to emit radio interference if you use twisted-pair cable with a good distribution of grounding conductors. If you exceed the recommended distances, use a high-quality twisted-pair cable with one ground conductor for each data signal when applicable.

If the wires exceed the recommended distances, or if wires pass between buildings, give special consideration to the effect of a lightning strike in your vicinity. The electromagnetic pulse caused by lightning or other high-energy phenomena can easily couple enough energy into unshielded conductors to destroy electronic switches. You may want to consult experts in electrical surge suppression and shielding if you had similar problems in the past.

Shock and Vibration

The Cisco Nexus 7000 Series switch has been shock- and vibration-tested for operating ranges, handling, and earthquake standards to Network Equipment Building Standards (NEBS) Zone 4 per GR-63-Core.

Grounding

The Cisco Nexus 7000 Series switch is sensitive to variations in voltage supplied by the power sources. Overvoltage, undervoltage, and transients (or spikes) can erase data from the memory or cause components to fail. To protect against these types of problems, you must properly ground the chassis and power supplies.

**Note**

You can ground the AC power supplies and the 6-kW DC power supply, but you do not connect the 3-kW DC power supply directly to the data center earth ground. All chassis must be connected to the earth ground.

Power Source

You should use dedicated power circuits (rather than sharing circuits with other heavy electrical equipment). For power supply redundancy, we recommend that you use one redundant power supply that provides at least as much power as any of the other power supplies that provide the available power for operations. For input-source redundancy, we recommend that you use two dedicated power sources, each of which provides power to either half of each power supply unit (for the 6-kW and 7.5 kW power supplies) or half of the power supplies (for the 3-kW power supplies).

For the required circuit ratings for each power supply, see [Table 2-1](#).

Table 2-1 *Circuit Requirements for Power Supplies*

Power Supply		Number of Circuits	Requirement for Each Circuit
AC Power Supplies			
7.5-kW power supply	(N7K-AC-7.5KW-INT)	1 or 2	30 A at 220 VAC
	(N7K-AC-7.5KW-US)	1 or 2	30 A at 220 VAC
6-kW power supply	(N7K-AC-6.0KW)	1 or 2	20 A at 110 VAC or 220 VAC
3-kW power supply	(N7K-AC-3.0KW)	1	20 A at 110 VAC or 220 VAC
DC Power Supplies			
6-kW power supply	(N7K-DC-6.0KW)	1 or 2	40 A at 48 V or -48 V
3-kW power supply	(N7K-DC-3.0KW)	1	20 A

The receptacles for AC circuits must be within 12 feet (3.6 m) of each power supply when the power supply is installed in the switch chassis. The 6-kW DC power supply connection must be within 15 feet (4.6 m) or you must install a DC power interface unit (PIU) within that distance to connect to a distant power supply connection. The 3-kW DC power supply connection must be within the distance covered by the power cord that you supply. If you are installing a DC PIU, you should install it in the same rack that holds the DC power supplies.

Before you connect the power supplies to the AC or DC power, you must install the power supplies in the Cisco Nexus 7000 Series chassis.



Cabinet and Rack Requirements

This appendix describes the cabinet and rack requirements for the Cisco Nexus 7000 Series switches and includes these sections:

- [General Requirements for Cabinets and Racks, page A-1](#)
- [Cabinet and Rack Vendors, page A-4](#)

General Requirements for Cabinets and Racks

This section provides the Cisco Nexus 7000 Series switch requirements for the following types of racks and cabinets, assuming an external ambient air temperature range of 32 to 104°F (0 to 40°C):

- Standard perforated cabinets
- Solid-walled cabinets with a roof fan tray (bottom to top cooling)
- Standard open racks
- Four-post Telco racks (required by the Cisco Nexus 7010 and 7018 switches and can be used for the Cisco Nexus 7004 and 7009 switches)
- Two-post Telco racks (used with only the Cisco Nexus 7004 and 7009 switches)



Note

If you select an enclosed cabinet, we recommend that you use one of the following thermally validated types: standard perforated or solid-walled with a fan tray.

To correctly install the Cisco Nexus 7000 Series switch in a cabinet that is located in a hot-aisle/cold-aisle environment, you should fit a cabinet with baffles to prevent exhaust air from recirculating into the chassis air intake.

The rack or cabinet used to hold a Cisco Nexus 7000 Series chassis should meet the following physical requirements:

- Use a standard 19-inch, four-post Electronic Industries Alliance (EIA) cabinet or rack with mounting rails that conform to English universal hole spacing per section 1 of the ANSI/EIA-310-D-1992 standard.
- The height of the rack or cabinet must accommodate the Cisco Nexus 7000 Series switches as follows:
 - For the Cisco Nexus 7004 switch, the rack height must be at least 7 RU for one chassis and up to 42 RU for up to six chassis.

- For the Cisco Nexus 7009 switch, the rack height must be at least 15 RU for one chassis and at least 30 RU for two chassis. This requirement includes 14 RU for each chassis and 1 RU for the bottom support bracket used with each chassis.

**Note**

Alternatively, if you need to install three 14 RU Cisco Nexus 7009 chassis in a 42 RU rack, you can perform a front-mount installation for all three chassis without using the bottom-support rails. For front-mount installations, you must use a mechanical lift to first position the lowest chassis at the lowest RU in the rack before attaching it. After that, you raise a second chassis to the top of the lowest chassis and slide the second chassis on top before attaching it to the rack. Finally, you raise a third chassis to the top of the second installed chassis, and slide the third one on top of the second installed chassis before attaching it to the rack.

**Caution**

If you are doing center-mount installations, you must use a bottom-support rail for each chassis, which requires 15 RU for each installed chassis.

- For the Cisco Nexus 7010 switch, the rack height must be at least 21 RU for one chassis and 42 RU for two chassis (45 RU is recommended).
- For the Cisco Nexus 7018 switch, the rack height must be at least 25 RU for one chassis.
- The depth of a four-post rack must be 24 to 32 inches (61.0 to 81.3 cm) between the front and rear mounting brackets.
- Required clearances between the Cisco Nexus 7004 chassis and the edge of its rack or interior of its cabinet are as follows:
 - If you are using a cabinet, you must have 7 inches (17.8 cm) between the chassis and the front of the cabinet walls (required for cabling). This requirement does not apply to a two-post rack.

**Note**

If the chassis is installed with the alternative center-mount brackets, the chassis will protrude 5.7 inches (14.4 cm) beyond the mounting rails, so you must plan for 12.7 inches (32.3 cm) clearance in front of the mounting rails to get the required 7 inches (17.8 cm) clearance in front of the chassis.

- 11 inches (27.9 cm) between the right side of the chassis and the interior of the cabinet or the clearance area for the next rack or cabinet (required for side-to-back airflow with all types of racks or cabinets). No clearance is required on the left side.
- Required clearances between the Cisco Nexus 7009 chassis and the edge of its rack or interior of its cabinet are as follows:
 - If you are using a four-post rack or cabinet, you must have 7 inches (17.8 cm) between the chassis and the front and back of a four-post rack or interior of the cabinet (required for cabling). This requirement does not apply to a two-post rack.

**Note**

If the chassis is installed with the alternative center-mount bottom-support brackets, the chassis will protrude 6 inches (15.25 cm) beyond the mounting rails, so you must plan for 13 inches (33.0 cm) clearance in front of the mounting rails to get the required 7 inches (17.8 cm) clearance in front of the chassis.

- 11 inches (27.9 cm) between the side of the chassis and the interior of the cabinet or the clearance area for the next rack or cabinet (required for side-to-side airflow with all types of racks or cabinets).
- Required clearances between the Cisco Nexus 7010 chassis and the edges of its rack or the interior of its cabinet are as follows:
 - 7 inches (17.8 cm) between the chassis and the front and back of the rack or interior of the cabinet (required for cabling).
 - No clearance is required between the sides of the rack or cabinet with front-to-back airflow.
- Required clearances between the Cisco Nexus 7018 chassis and the edges of its rack or the interior of its cabinet are as follows:
 - 7 inches (17.8 cm) between the chassis and the front and back of the rack or interior of the cabinet (required for cabling)
 - 11 inches (27.9 cm) between the side of the chassis and the interior of the cabinet or the clearance area for the next rack or cabinet (required for side-to-side airflow)

Additionally, you must consider the following site requirements for the rack:

- AC power receptacles must be located within 12 feet (3.6 m) of each power supply unit in each chassis.
- Cable management for one or two switches in the same rack are as follows:
 - For the Cisco Nexus 7004 switch, provide cable management for up to 96 ports for each chassis.
 - For the Cisco Nexus 7009 switch, provide cable management for up to 336 ports for each chassis.
 - For the Cisco Nexus 7010 switch, provide cable management for up to 384 ports for each chassis.
 - For the Cisco Nexus 7018 switch, provide cable management for up to 768 ports for each chassis.
- Cable routing within the cabinet or beside the rack must not block access to any of the removable modules installed in a chassis or block any airflow on the inlet and exhaust vents of the chassis. With cabinets, route the cables out the top or bottom as follows:
 - For the Cisco Nexus 7004 switch, you can route the cables along the left or right side of the chassis as long as nothing else obstructs airflow on the right side.
 - For the Cisco Nexus 7009 switch, route the cables along the left side of the front of the chassis so that cooling air can flow to the chassis from the right front side and heated exhaust air is vented to the left and directed to the hot aisle in the rear. If necessary, you can also route cables to the upper half of the right side of the chassis if the lower right side of the front is open for airflow from the cold-aisle and floor to the air intake.
 - For the Cisco Nexus 7010 switch, route the cables through the cable management area on the top front of the switch.
 - For the Cisco Nexus 7018 switch, route the cables along the left side of the front of the chassis so that cooling air can flow to the chassis from the right front side and heated exhaust air is vented to the left and directed to the hot aisle in the rear. If necessary, you can also route cables to the upper half of the right side of the chassis if the lower right side of the front is open for airflow from the cold-aisle and floor to the air intake.
- Where necessary, have a seismic rating of Network Equipment Building Standards (NEBS) Zone 3 or Zone 4, per GR-63-CORE if required.
- Minimum gross load rating of 2000 lb (907.2 kg) (static load rating) if supporting two switches.

Cabinet and Rack Vendors

You can install a Cisco Nexus 7000 Series switch in any cabinet or rack that meets the specifications listed in the [“General Requirements for Cabinets and Racks”](#) section on page A-1. Work with your cabinet vendors to determine which of their cabinets meet these requirements or see the Cisco Technical Assistance Center (TAC) for recommendations.



Technical Specifications

This chapter describes the technical specifications for the Cisco Nexus 7000 Series switches and includes these sections:

- [Environmental Specifications for Cisco Nexus 7000 Series Switches, page B-1](#)
- [Physical Specifications for the Cisco Nexus 7000 Series Chassis, page B-2](#)
- [Power Specifications for Cisco Nexus 7000 Series Switches, page B-8](#)
- [Power Supply Cable Specifications, page B-16](#)
- [Chassis Clearances, page B-22](#)
- [Facility Cooling Requirements, page B-37](#)
- [Chassis Airflow, page B-38](#)

Environmental Specifications for Cisco Nexus 7000 Series Switches

[Table B-1](#) lists the environmental specifications for the Cisco Nexus 7000 Series switches.

Table B-1 *Environmental Specifications for the Cisco Nexus 7000 Series Switches*

Description		Cisco Nexus 7004	Cisco Nexus 7009	Cisco Nexus 7010	Cisco Nexus 7018
Temperature	Ambient operating	32 to 104°F (0 to 40°C)			
	Ambient nonoperating	−40 to 158°F (−40 to 70°C)			
Relative humidity	Ambient (noncondensing) operating	5 to 90% (45 to 50% recommended)			
	Ambient (noncondensing) nonoperating and storage	5 to 95%			
Altitude	Operating	−500 to 13,000 feet (152 to 4,000 meters)			
	Storage	−1,000 to 30,000 feet (−305 to 9,144 meters)			

Physical Specifications for the Cisco Nexus 7000 Series Chassis

The physical specifications differ for the Cisco Nexus 7000 Series chassis depending on the model that you are installing and the type of installation you are doing (you can front mount all models but you can optionally do a center mount of the Cisco Nexus 7004 and 7009 chassis). [Table B-2](#) lists the physical specifications for each model and installation type.

Table B-2 Physical Specifications for Cisco Nexus 7000 Series Chassis

Chassis	Width ¹	Front Depth ²	Rear Depth ³	Height ⁴
Cisco Nexus 7004 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	24.0 inches (61.0 cm)	12.2 inches (30.9 cm) (7 RU)
Cisco Nexus 7009 (front mount)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	24.0 inches (61.0 cm)	24.5 inches (62.2 cm) (14 RU)
Cisco Nexus 7009 (center mount)	17.3 inches (43.9 cm)	13 inches (33.0 cm)	18.0 inches (45.8 cm)	24.5 inches (62.2 cm) (14 RU)
Cisco Nexus 7010 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	32.0 inches (81.3 cm)	36.75 inches (93.3 cm) (21.0 RU)
Cisco Nexus 7018 (all mounts)	17.3 inches (43.9 cm)	7 inches (17.8 cm)	32.0 inches (81.3 cm)	43.75 inches (111.1 cm) (25.0 RU)

1. Width is the minimal clearance required between the two vertical mounting rails inside the rack or cabinet.
2. Front depth is the minimal clearance required between the front-mounting rails and the inside of the front of the rack or cabinet. For all switches, this includes 7 inches (17.8 cm) of space for cabling. For the Cisco Nexus 7009 center-mounted chassis, this distance also includes 6 inches of the chassis, which is offset to the front by the center-mount bracket.
3. Rear depth is the clearance required between the front-mounting rails and the inside of the rear of the rack or cabinet. For front mounted switches, this is the same as the depth of the chassis. For a center-mounted Cisco Nexus 7009 switch, this is 6 inches (15.2 cm) less than the depth of the chassis, which is offset to the front.
4. Height is the clearance required between the top of the bottom support bracket and the top of the chassis that you are installing. If you are installing another chassis above this chassis, its bottom-support brackets must be positioned above this clearance area.

The weights and quantities of the Cisco Nexus 7000 Series chassis are listed in the following tables:

- Cisco Nexus 7004 switch—see [Table B-3 on page B-3](#)
- Cisco Nexus 7009 switch —see [Table B-4 on page B-3](#)
- Cisco Nexus 7010 switch —see [Table B-5 on page B-5](#)
- Cisco Nexus 7018 switch —see [Table B-6 on page B-6](#)

The weights in these tables do not include the rack or cabinet that holds the chassis or the interface and power cables. For those weights, see the documentation provided by the manufacturers of those components.

Table B-3 Weights and Quantities for the Cisco Nexus 7004 Switch Components

Component	Weight per Unit	Quantity
Chassis	45.0 lb (20.0 kg)	
Supervisor modules	—	1 or 2
Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	(must be same model)
Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	
F2 I/O Modules	—	1 or 2
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	(can mix I/O module types)
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	
Fan tray (N7K-C7004-FAN)	25.0 lb (11.3 kg)	1
Power Supplies	—	1 to 4
3-kW AC power supply (N7K-AC-3KW)	11.0 lb (5.0 kg)	(can mix power supply types)
3-kW DC power supply (N7K-DC-3KW)	11.0 lb (5.0 kg)	
Optional Components	—	—
Front door kit (N7K-C7004-FD-MB)	—	0 or 1
Air filter (N7K-C7004-AFLT)	—	0 or 1

Table B-4 Weights and Quantities for the Cisco Nexus 7009 Switch Components

Component	Weight per Unit	Quantity
Chassis	100 lb (45.0 kg)	1

Table B-4 Weights and Quantities for the Cisco Nexus 7009 Switch Components (continued)

Component	Weight per Unit	Quantity
Supervisor modules	—	1 or 2
Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	(same type if using two modules)
Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	
F1 I/O Modules	—	1 to 7
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	(can mix I/O module types)
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14.0 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	
Fabric Modules	—	For F2 I/O, use 5. For F1, M1, and M2 I/O, use 3 to 5.
Fabric-2 module (N7K-C7009-FAB-2)	5.0 lb (2.27 kg)	
Fan tray (N7K-C7009-FAN)	25.0 lb (11.3 kg)	1
Power Supplies	—	1 or 2
6-kW AC power supply unit (N7K-AC-6.0KW)	18.0 lb (8.2 kg)	(can mix power supply types)
7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26.0 lb (11.8 kg)	
6-kW DC power supply unit (N7K-DC-6.0KW)	21.0 lb (9.5 kg)	

Table B-4 Weights and Quantities for the Cisco Nexus 7009 Switch Components (continued)

Component	Weight per Unit	Quantity
DC Power Interface Unit	5.0 lb (2.3 kg)	0 to 2
Optional Components	—	—
Door and air frame (optional)	—	0 or 1

Table B-5 Weights and Quantities for the Cisco Nexus 7010 Switch Components

Component	Weight per Unit	Quantity
Chassis	200 lb (90.9 kg)	1
Supervisor Modules	—	1 or 2
Supervisor1 (N7K-SUP1)	9.9 lb (4.5 kg)	(same type if using 2)
Supervisor2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	
F1 I/O Modules	—	1 to 8
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	(can mix I/O module types)
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14.0 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	

Table B-5 Weights and Quantities for the Cisco Nexus 7010 Switch Components (continued)

Component	Weight per Unit	Quantity
Fabric Modules	—	For F2
Fabric-1 module (N7K-C7010-FAB-1)	4.0 lb (1.8 kg)	I/O, use 5.
Fabric-2 module (N7K-C7010-FAB-2)	4.0 lb (1.8 kg)	For F1, M1, and M2 I/O, use 3 to 5.
Fan Trays	—	—
System fan tray (N7K-C7010-FAN-S)	20.0 lb (9.1 kg)	2
Fabric fan tray (N7K-C7010-FAN-F)	5.0 lb (2.3 kg)	2
Power Supplies	—	2 to 3
6-kW AC power supply unit (N7K-AC-6.0KW)	18.0 lb (8.2 kg)	(can mix power supply types)
7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26.0 lb (11.8 kg)	
6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components	—	—
Mid-frame doors and frame	—	0 or 1

Table B-6 Weights and Quantities for the Cisco Nexus 7018 Switch Components

Component	Weight per Unit	Quantity
Chassis	187 lb (85.0 kg)	1
Supervisor Modules	—	1 or 2
Supervisor 1 (N7K-SUP1)	9.9 lb (4.5 kg)	(same type if using 2)
Supervisor 2 (N7K-SUP2)	10.4 lb (4.7 kg)	
Supervisor 2 Enhanced (N7K-SUP2E)	11.7 lb (5.3 kg)	

Table B-6 Weights and Quantities for the Cisco Nexus 7018 Switch Components (continued)

Component	Weight per Unit	Quantity
F1 I/O Modules	—	1 to 8
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	14.0 lb (6.4 kg)	(can mix I/O module types)
F2 I/O Modules	—	
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)	14.0 lb (6.4 kg)	
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)	14.0 lb (6.4 kg)	
F3 I/O module	—	
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)	15.0 lb (6.8 kg)	
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)	16.0 lb (7.3 kg)	
M1 I/O Modules	—	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)	14.0 lb (6.4 kg)	
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11L)	14.0 lb (6.4 kg)	
48-port 1-Gigabit Ethernet I/O module (N7K-M148GS-11)	15.5 lb (7.0 kg)	
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)	15.5 lb (7.0 kg)	
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)	17.0 lb (7.7 kg)	
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)	17.0 lb (7.7 kg)	
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)	14.0 lb (6.4 kg)	
M2 I/O Modules	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	16.5 lb (7.5 kg)	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	16.5 lb (7.5 kg)	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	17.0 lb (7.7 kg)	
Service Modules	—	0 or 1+
NAM (N7K-SM-NAM-K9)	17.9-lbs. (8.1-kg)	
Fabric Modules	—	For F2 I/O, use 5.
Fabric-1 module (N7K-C7018-FAB-1)	7.5 lb (3.4 kg)	For F1, M1, and M2 I/O, use 3 to 5.
Fabric-2 module (N7K-C7018-FAB-2)	7.5 lb (3.4 kg)	
Fan trays (N7K-C7018-FAN)	25.8 lb (11.7 kg)	2
Power Supplies	—	2 to 4
6-kW AC power supply unit (N7K-AC-6.0KW)	18 lb (8.2 kg)	(can mix power supply types)
7.5-kW AC power supply unit (N7K-AC-7.5KW-INT and N7K-AC-7.5KW-US)	26 lb (11.8 kg)	
6-kW DC power supply unit (N7K-DC-6.0KW)	21 lb (9.5 kg)	
DC Power Interface Unit	5 lb (2.3 kg)	0 to 2
Optional Components	—	—
Front door (optional)	25 lb (11.3 kg)	0 or 1

Power Specifications for Cisco Nexus 7000 Series Switches

The number of power supplies that a Cisco Nexus 7000 Series switch requires depends on the quantities and types of modules that you include in the switch chassis, the type of power supply units that you are using, and the power redundancy mode that you are using.

The following topics explain how to calculate the switch power requirements and the amount of power available for each type of power supply configuration mode:

- [Power Requirements for Switch Components, page B-8](#)
- [Power Supply Configuration Modes, page B-12](#)

Power Requirements for Switch Components

To determine the power requirements of the Cisco Nexus 7000 Series switches, add the power requirements of each of its components. For each component, multiply the number of its modules by its maximum or typical power requirement. To find the quantities and power requirements for each Cisco Nexus 7000 Series switch, see the following tables:

- Cisco Nexus 7004—see [Table B-7](#)
- Cisco Nexus 7009—see [Table B-8 on page B-9](#)
- Cisco Nexus 7010—see [Table B-9 on page B-10](#)
- Cisco Nexus 7018—see [Table B-10 on page B-11](#)

Table B-7 Power Requirements for the Cisco Nexus 7004 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2	—	—
Supervisor 2 (N7K-SUP2)	(same type if using 2)	300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-7 Power Requirements for the Cisco Nexus 7004 Switch (continued)

Component	Quantity	Maximum	Typical
F2 I/O Modules	1 or 2	—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fan Tray	1	650 W	185 W

Table B-8 Power Requirements for the Cisco Nexus 7009 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type if using 2)	—	—
Supervisor 1 (N7K-SUP1)		210 W	190 W
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-8 Power Requirements for the Cisco Nexus 7009 Switch (continued)

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 7	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules	1 to 7	—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module	1 to 7	—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340 W
M1 I/O Modules	1 to 7	—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules	1 to 7	—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fabric Modules	3 to 5	—	—
Fabric-2 module (N7K-C7009-FAB-2)		70 W	55 W
Fan Trays	—	—	—
All fan trays (total) (N7K-C7009-FAN)		650 W	190 W

Table B-9 Power Requirements for the Cisco Nexus 7010 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2 (same type if using 2)	—	—
Supervisor 1 (N7K-SUP1)		210 W	190 W
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-9 Power Requirements for the Cisco Nexus 7010 Switch (continued)

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 8	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)	(can mix types)	385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules		—	—
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)		795 W	720 W
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)		795 W	720 W
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)		795 W	690 W
Fabric Modules	3 to 5	—	—
Fabric-1 module (N7K-C7010-FAB-1)	(same type)	60 W	55 W
Fabric-2 module (N7K-C7010-FAB-2)		80 W	60W
Fan Trays (N7K-C7010-FAN-F and N7K-C7010-FAN-S)		—	—
All fan trays (total)	—	2184 W	300 W

Table B-10 Power Requirements for the Cisco Nexus 7018 Switch

Component	Quantity	Maximum	Typical
Supervisor Modules	1 or 2	—	—
Supervisor 1 (N7K-SUP1)	(same type if using 2)	210 W	190 W
Supervisor 2 (N7K-SUP2)		300 W	109 W
Supervisor 2 Enhanced (N7K-SUP2E)		300 W	147 W

Table B-10 Power Requirements for the Cisco Nexus 7018 Switch (continued)

Component	Quantity	Maximum	Typical
F1 I/O Modules	1 to 16 (can mix types)	—	—
32-port 1- and 10-Gigabit Ethernet I/O module (N7K-F132XP-15)		385 W	283 W
F2 I/O Modules		—	—
48-port 1- and 10-Gigabit Ethernet I/O module (N7K-F248XP-25 and N7K-F248XP-25E)		450 W	350 W
48-port 1- and 10-GBASE-T Ethernet I/O module (N7K-F248XT-25E)		550 W	420 W
F3 I/O Module		—	—
12-port 40-Gigabit Ethernet I/O module (N7K-F312FQ-25)		340 W	310 W
6-port 100-Gigabit Ethernet I/O module (N7K-F306CK-25)		360 W	340 W
M1 I/O Modules		—	—
48-port 10/100/1000 Ethernet I/O module (N7K-M148GT-11)		400 W	358 W
48-port 10/100/1000 Ethernet I/O module with XL option (N7K-M148GT-11L)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module (N7K-M1148GS-11)		400 W	358 W
48-port 1-Gigabit Ethernet I/O module with XL option (N7K-M148GS-11L)		400 W	358 W
32-port 10-Gigabit Ethernet I/O module (N7K-M132XP-12)		750 W	611 W
32-port 10-Gigabit Ethernet I/O module with XL option (N7K-M132XP-12L)		750 W	611 W
8-port 10-Gigabit Ethernet I/O module with XL option (N7K-M108X2-12L)		650 W	520 W
M2 I/O Modules	—	—	
24-port 10-Gigabit Ethernet I/O module with XL option (N7K-M224XP-23L)	795 W	720 W	
6-port 40-Gigabit Ethernet I/O module with XL option (N7K-M206FQ-23L)	795 W	720 W	
2-port 100-Gigabit Ethernet I/O module with XL option (N7K-M202CF-22L)	795 W	690 W	
Fabric Modules	3 to 5 (same type)	—	—
Fabric-1 module (N7K-C7018-FAB-1)		100 W	90 W
Fabric-2 module (N7K-C7018-FAB-2)		150 W	110 W
Fan Trays (N7K-C7018-FAN)	2	—	—
All fan trays (total)		1433 W	569 W

Power Supply Configuration Modes

You can configure one of the following power modes to either use the combined power provided by the installed power supplies or to provide power redundancy when there is a power loss:

- Combined mode—Provides the maximum amount of available power by utilizing the combined power output from all installed power supplies for switch operations. This mode does not provide redundancy.
- Power-supply redundancy mode—Allows you to replace a power supply during switch operations. All power supplies are active. The available power is calculated as the least amount of power available from all but one of the power supply units (N+1). The reserve power is the amount of

power output by the power supply unit that can output the most power. For example, if three power supplies output 3 kW, 6 kW, and 6 kW, the available power is 9 kW (3 kW + 6 kW) and the reserve power is 6 kW.

- **Input source redundancy mode**—Takes power from two electrical grids so that if one grid goes down, the other grid can provide the power needed by the switch. For the Cisco Nexus 7004 chassis, each grid powers half of the power supplies. For the Cisco Nexus 7009, 7010, and 7018 chassis, each grid powers half of each power supply (grid A is connected to the Input 1 receptacle on each power supply and grid B is connected to the Input 2 receptacle on each power supply). The available power is the amount of power output by the portions of the power supplies that are connected to the same grid. For example, if three power supplies are connected to a 110-V grid and a 220-V grid, each power supply outputs 1.2 kW for the 110-V grid and 3.0 kW for the 220-V grid. The available power would be 3.6 kW (1.2 kW + 1.2 kW + 1.2 kW) and the reserve power would be 9.0 kW (3.0 kW + 3.0 kW + 3.0 kW).
- **Full redundancy mode**—Provides both power-supply redundancy and input-source redundancy. This mode allows you to replace a power supply without interrupting switch operations or continue powering the switch if one of two grids goes down. The available power is the lesser amount of output power for power supply redundancy or input source redundancy.

The amount of power available for use with your Cisco Nexus 7000 Series switch depends on the number of power supplies, input voltage used, and the power mode used. To determine the amount of available power for the power supplies, see the following tables:

- For the 3-kW AC power supplies, see [Table B-11](#)
- For the 6-kW AC power supplies, see [Table B-12 on page B-14](#)
- For the 7.5-kW AC power supplies, see [Table B-13 on page B-15](#)
- For the 3-kW DC power supplies, see [Table B-14 on page B-15](#)
- For the 6-kW DC power supplies, see [Table B-15 on page B-16](#)

Table B-11 Power Availability for 3-kW AC Power Supplies

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply				
220-V input				
1 power supply	3000 W	—	—	—
2 power supplies	6000 W	3000 W	3000 W	3000 W
3 power supplies	9000 W	6000 W	3000 W	3000 W
4 power supplies	12,000 W	9000 W	6000 W	6000 W
110-V input				
1 power supply	1450 W	—	—	—
2 power supplies	2900 W	1450 W	1450 W	1450 W
3 power supplies	4350 W	2900 W	1450 W	1450 W
4 power supplies	5800 W	4350 W	2900 W	2900 W

Table B-12 Power Availability for 6-kW AC Power Supply Units

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
220-V and 220-V inputs				
1 power supply	6000 W	—	3000 W	—
2 power supplies	12,000 W	6000 W	6000 W	6000 W
3 power supplies	18,000 W	12,000 W	9000 W	9000 W
4 power supplies	24,000 W	18,000 W	12,000 W	12,000 W
220-V and 110-V inputs				
1 power supply	4200 W	—	1200 W	—
2 power supplies ¹	8400 W	4200 W	2400 W	2400 W
3 power supplies ¹	12,600 W	8400 W	3600 W	3600 W
4 power supplies ¹	16,800 W	12,600 W	4800 S	4800 W
110-V and 110-V inputs				
1 power supply	2400 W	—	1200 W	—
2 power supplies ¹	4800 W	2400 W	2400 W	2400 W
3 power supplies ¹	7200 W	4800 W	3600 W	3600 W
4 power supplies ¹	9600 W	7200 W	4800 W	4800 W
Single input per power supply				
220-V input				
1 power supply	3000 W	—	—	—
2 power supplies ¹	6000 W	3000 W	—	—
3 power supplies ¹	9000 W	6000 W	—	—
4 power supplies ¹	12,000 W	9000 W	—	—
110-V input				
1 power supply	1200 W	—	—	—
2 power supplies ¹	2400 W	1200 W	—	—
3 power supplies ¹	3600 W	2400 W	—	—
4 power supplies ¹	4800 W	3600 W	—	—

1. The Cisco Nexus 7018 switch uses up to four 6-kW power supplies, the Cisco Nexus 7010 switch uses up to three 6-kW power supplies, and the Cisco Nexus 7009 uses up to two 6-kW power supplies.

Table B-13 Power Availability for 7.5-kW AC Power Supplies

	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
220-V and 220-V inputs				
1 power supply	7500 W	—	3750 W	—
2 power supplies ¹	15,000 W	7500 W	7500 W	7500 W
3 power supplies ¹	22,500 W	15,000 W	11,250 W	11,250 W
4 power supplies ¹	30,000 W	22,500 W	15,000 W	15,000 W
Single input per power supply				
220-V input				
1 power supply	3750 W	—	—	—
2 power supplies ¹	7500 W	3750 W	—	—
3 power supplies ¹	11,250 W	7500 W	—	—
4 power supplies ¹	15,000 W	11,250 W	—	—

1. The Cisco Nexus 7018 switch uses up to four 7.5kW power supplies, the Cisco Nexus 7010 switch uses up to three 7.5-kW power supplies, and the Cisco Nexus 7009 uses up to two 7.5-kW power supplies.

Table B-14 Power Availability for the 3-kW DC Power Supplies

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Single input per power supply ¹				
1 power supply	3,000 W	—	—	—
2 power supplies	6,000 W	3,000 W	3,000 W	3,000 W
3 power supplies	9,000 W	6,000 W	3,000 W	3,000 W
4 power supplies	12,000 W	9,000 W	6,000 W	6,000 W

1. The Cisco Nexus 7004 uses up to four 3.0 kW DC power supplies.

Table B-15 Power Availability for 6.0-kW DC Power Supplies

Power Inputs	Combined Mode	Power Supply Redundancy Mode	Input Source Redundancy Mode	Full Redundancy Mode
Dual inputs per power supply				
1 power supply	6,000 W	—	3,000 W	—
2 power supplies ¹	12,000 W	6,000 W	6,000 W	6,000 W
3 power supplies ¹	18,000 W	12,000 W	9,000 W	9,000 W
4 power supplies ¹	24,000 W	18,000 W	12,000 W	12,000 W
Single input per power supply				
1 power supply	3,000 W	—	—	—
2 power supplies ¹	6,000 W	3,000 W	—	—
3 power supplies ¹	9,000 W	6,000 W	—	—
4 power supplies ¹	12,000 W	9,000 W	—	—

1. The Cisco Nexus 7018 switch uses up to four 6-kW power supplies, the Cisco Nexus 7010 switch uses up to three 6-kW power supplies, and the Cisco Nexus 7009 uses up to two 6-kW power supplies.

Power Supply Cable Specifications

For power supply cable specifications, see the following tables:

- [Table B-16](#) for the 3-kW or 6-kW AC power supplies
- [Table B-17 on page B-20](#) for the 7.5-kW AC power supplies
- [Table B-18 on page B-21](#) for the 3-kW DC power supplies
- [Table B-19 on page B-21](#) for the 6-kW DC power supplies

Table B-16 6-kW AC Power Supply Power Cords

Locale	Power Cord Part Number	Cord Set Rating	Power Cord Reference Illustration
Australia and New Zealand	CAB-AC-16A-AUS	16 A, 250 VAC	Figure B-1
Peoples Republic of China	CAB-AC-16A-CH	16 A, 250 VAC	Figure B-2
Continental Europe	CAB-AC-2500W-EU	16 A, 250 VAC	Figure B-3
International	CAB-AC-2500W-INT	16 A, 250 VAC	Figure B-4
Israel	CAB-AC-2500W-ISRL	16 A, 250 VAC	Figure B-5
Japan and North America (nonlocking) 200 to 240 VAC operation	CAB-AC-2500W-US1	16 A, 250 VAC	Figure B-6
Japan and North America (locking) 200 to 240 VAC operation	CAB-AC-C6K-TWLK	16 A, 250 VAC	Figure B-7

Table B-16 6-kW AC Power Supply Power Cords (continued)

Locale	Power Cord Part Number	Cord Set Rating	Power Cord Reference Illustration
Japan and North America 100 to 120 VAC operation	CAB-7513AC	16 A, 250 VAC	Figure B-8
Power distribution unit (PDU)	CAB-C19-CBN	16 A, 250 VAC	Figure B-9
Switzerland	CAB-ACS-16	16 A, 250 VAC	Figure B-10

Figure B-1 CAB-AC-16A-AUS Power Cord and Connectors for the 6-kW Power Supply

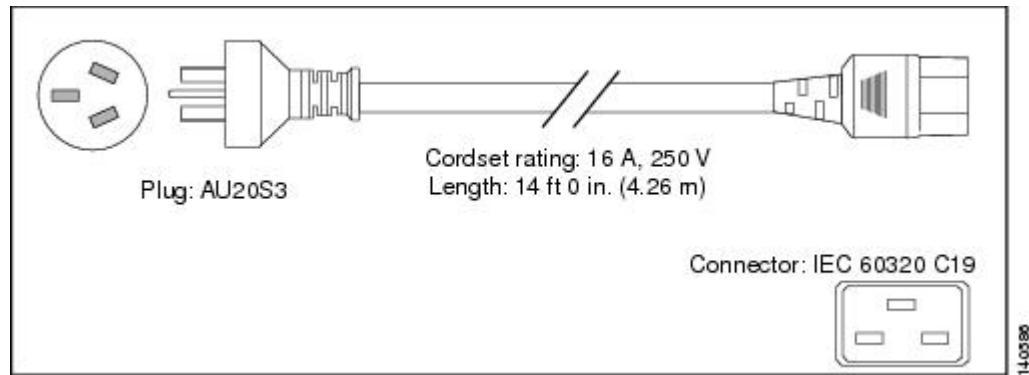


Figure B-2 CAB-AC-16A-CH Power Cord and Connectors for the 6-kW Power Supply

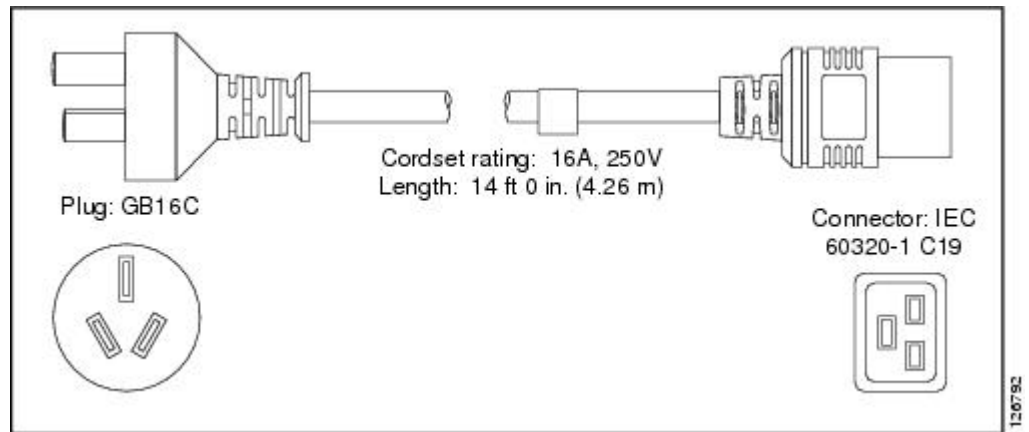


Figure B-3 CAB-AC-2500W-EU Power Cord and Connectors for the 6-kW Power Supply

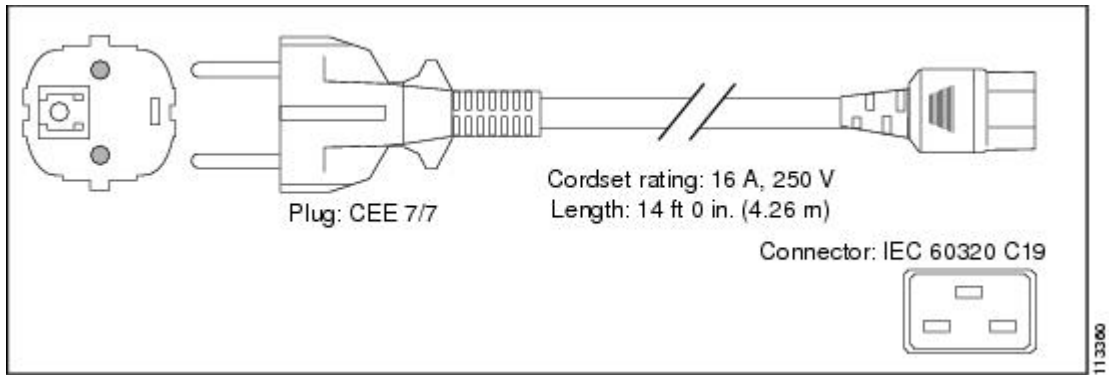


Figure B-4 CAB-AC-2500W-INT Power Cord and Connectors for the 6-kW Power Supply

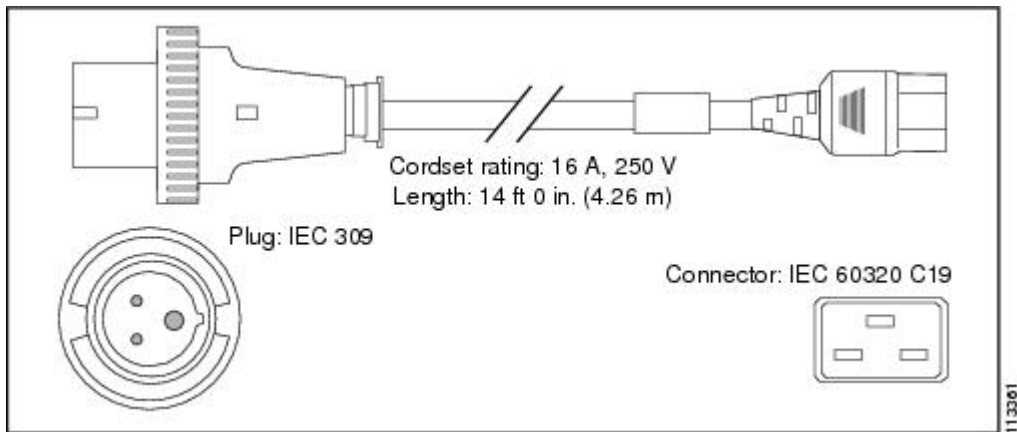


Figure B-5 CAB-AC-2500W-ISRL Power Cord and Connectors for the 6-kW Power Supply

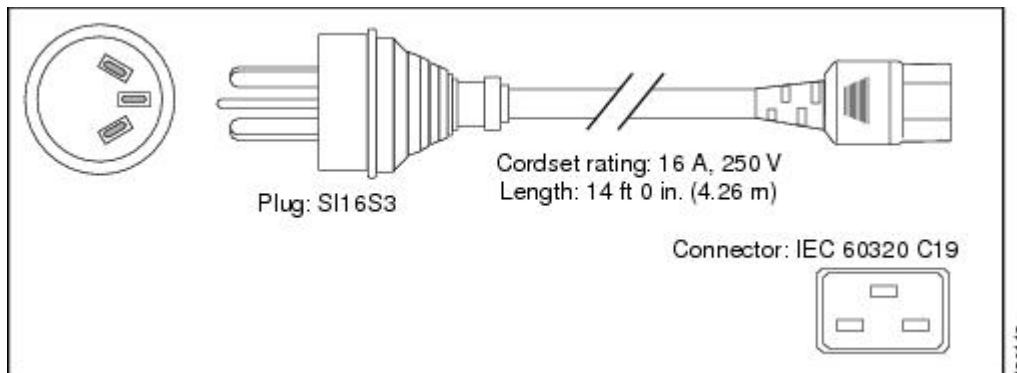


Figure B-6 CAB-AC-2500W-US1 Power Cord and Connectors for the 6-kW Power Supply

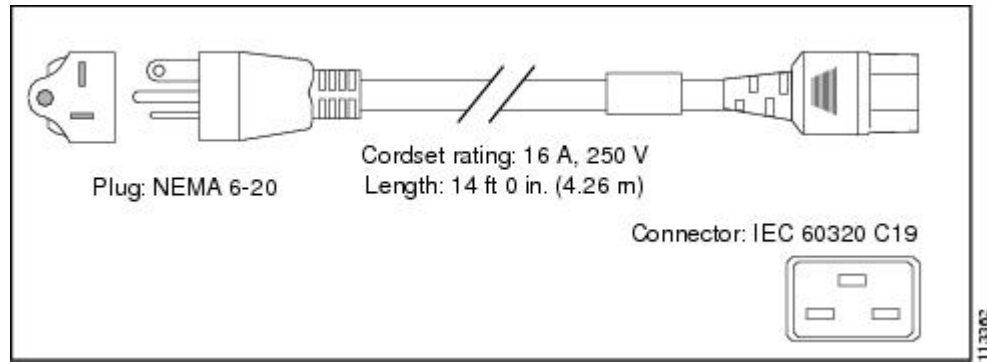


Figure B-7 CAB-AC-C6K-TWLK Power Cord and Connectors for the 6-kW Power Supply

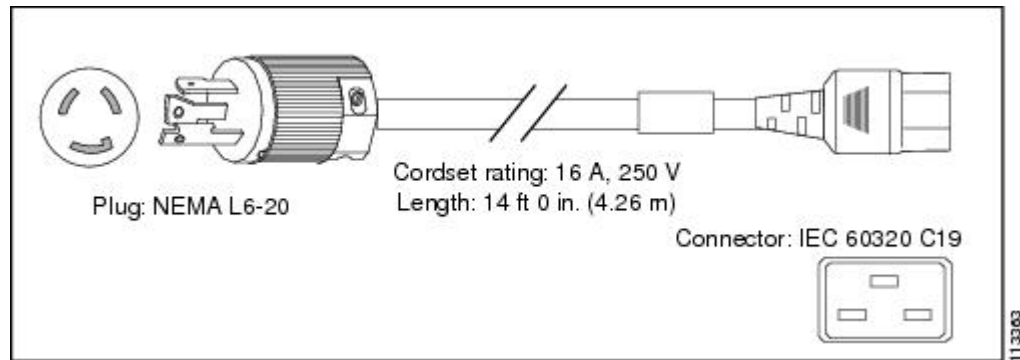


Figure B-8 CAB-7513AC Power Cord and Connectors for the 6-kW Power Supply

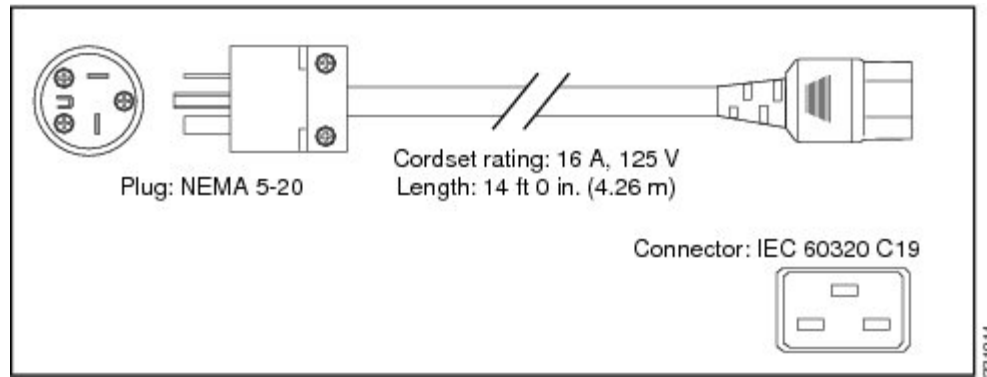


Figure B-9 CAB-C19-CBN Power Cord and Connectors for the 6-kW Power Supply

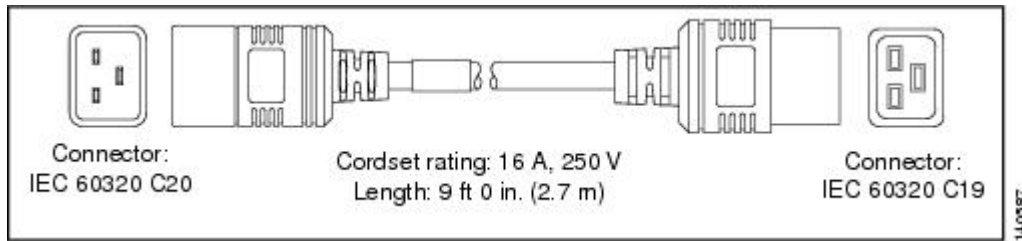


Figure B-10 CAB-ACS-16 Power Cord and Connectors for the 6-kW Power Supply

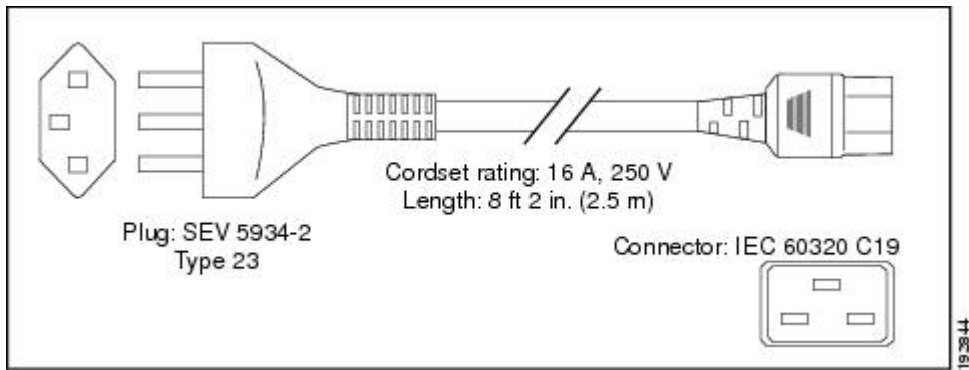


Table B-17 7.5-kW AC Power Supply Power Cords

Locale	Cord rating	Power cord reference illustration
Japan and North America	30 A, 250 VAC	Figure B-11
International	32 A, 250 VAC	Figure B-12

Figure B-11 NEMA L6-30 Power Connector for the 7.5-kW Power Supply

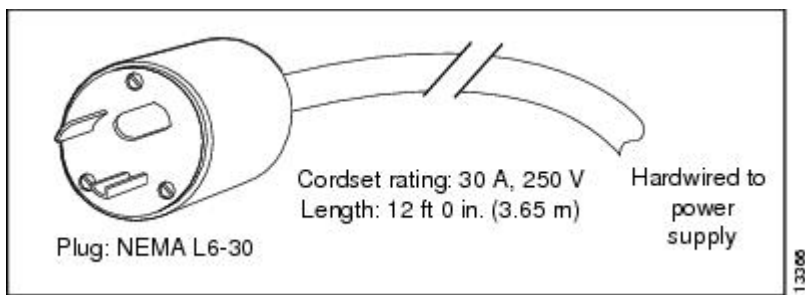


Figure B-12 IEC 603090 Power Connector for the 7.5-kW Power Supply

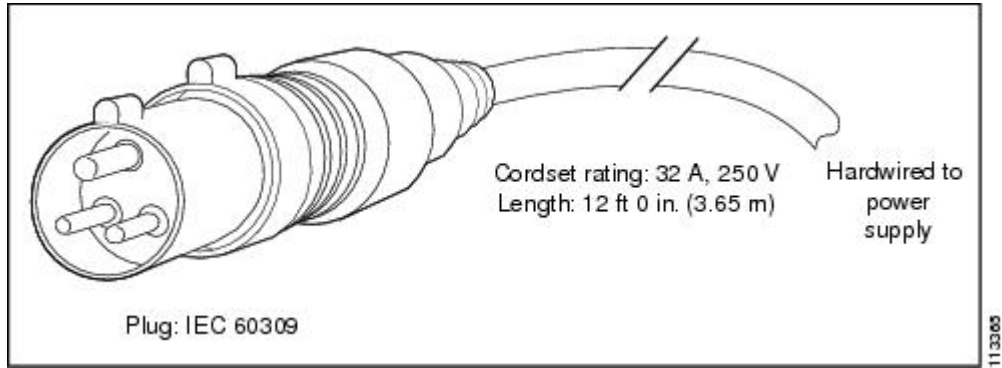


Table B-18 3-kW DC Power Supply Power Cord

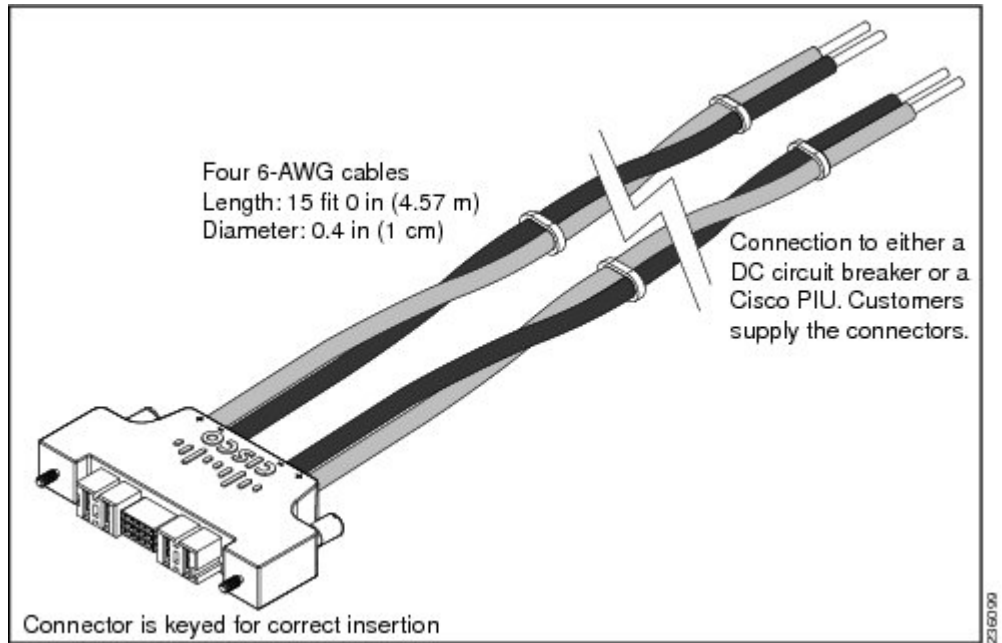
Locale	Part Number	Cord Rating	Power Cord Comments
All	— ¹	45A	6 AWG

1. Power cords used for the 3-kW DC power supply are supplied by the customer.

Table B-19 6-kW DC Power Supply Power Cord

Locale	Part Number	Cord Rating	Power Cord Reference Illustration
All	N7K-DC-CAB	40 A, 48V-48V	Figure B-13

Figure B-13 Power Connector for the 6.0-kW DC Power Supply Unit



Chassis Clearances

You must provide each Cisco Nexus 7000 Series switch with adequate clearance for installation, maintenance, cabling, and airflow. Installation clearance includes the cold aisle spacing required in front of the rack or cabinet to allow you to move the switch with a mechanical lift to its rack or cabinet. Maintenance clearance is the hot or cold aisle spacing required to replace supervisor, I/O, fabric, fan, and power supply modules. Cabling clearance provides the required space in front of the chassis (often within a cabinet) for cables to bend and connect to the chassis. Airflow clearance is typically the spacing on the left or right of the chassis for side-to-side airflow into and out of the chassis. If a chassis has front-to-back airflow, it uses the maintenance clearance for airflow instead of airflow clearance on the sides of the chassis.

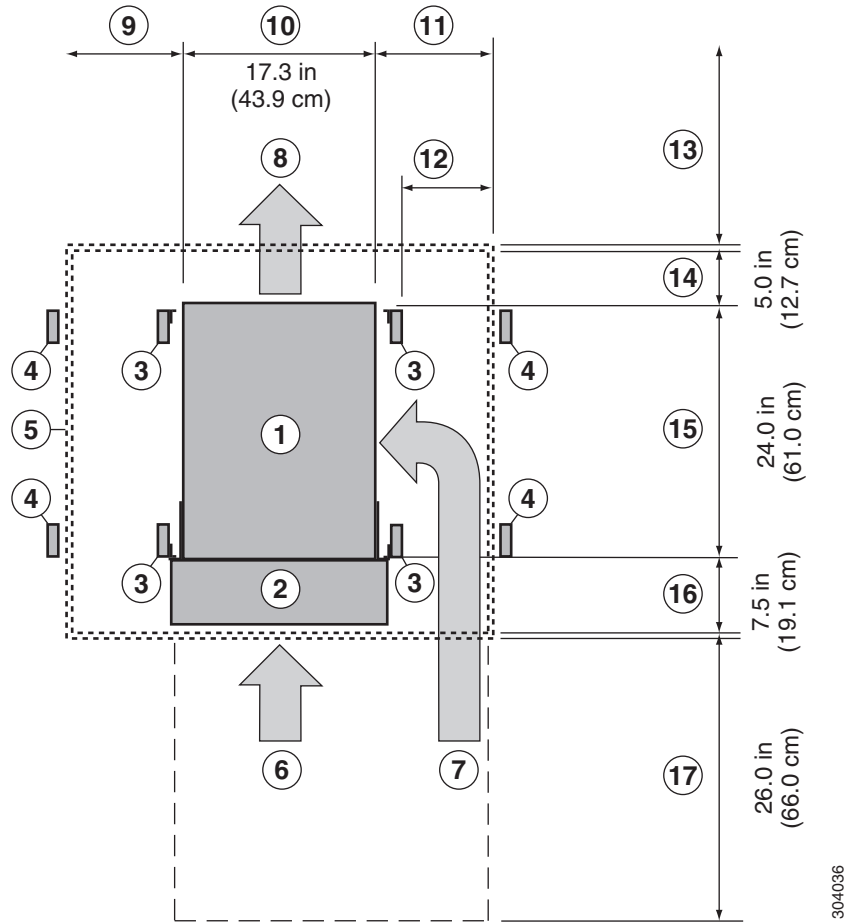
This section includes the following topics:

- [Cisco Nexus 7004 Chassis Clearances, page B-22](#)
- [Cisco Nexus 7009 Chassis Clearances, page B-27](#)
- [Cisco Nexus 7010 Chassis Clearances, page B-33](#)
- [Cisco Nexus 7018 Chassis Clearances, page B-35](#)

Cisco Nexus 7004 Chassis Clearances

The Cisco Nexus 7004 chassis requires front clearance for cable management and maintenance, right side clearance for cooling air intake, and an unobstructed rear for exhausting air to the hot aisle behind the chassis. For the front, the cable management frames require 7.5 inches (19.1 cm) of clearance in front of the mounting rails and an additional 26 inches (66.0 cm) in front of the cable management frames or the cabinet door for maintenance. If you install the chassis with the optional center-mount bracket in place of the standard front-mount bracket, you must add 5.7 inches (14.4 cm) to the front clearance in front of the mounting rails on the rack. For cabinet installations, we recommend a right-side clearance of 11 inches (27.9 cm) between the switch and the inside of the cabinet. For rack installations, we recommend a right-side clearance of either 6 inches (15.2 cm) between racks or 11 inches (27.9 cm) between the chassis and a wall. The rear of the chassis must be unobstructed and open to the hot aisle in back of the switch for airflow exhaust. [Figure B-14](#) shows the required clearances for chassis in a four-post rack with a front-mount installation. [Figure B-15 on page B-24](#) shows the required clearances for a chassis in a two-post rack with a front-mount installation. [Figure B-16 on page B-26](#) shows the required clearances for chassis with a center-mount installation.

Figure B-14 Clearances Required for the Cisco Nexus 7004 in a Four-Post Rack with Front-Mount Brackets

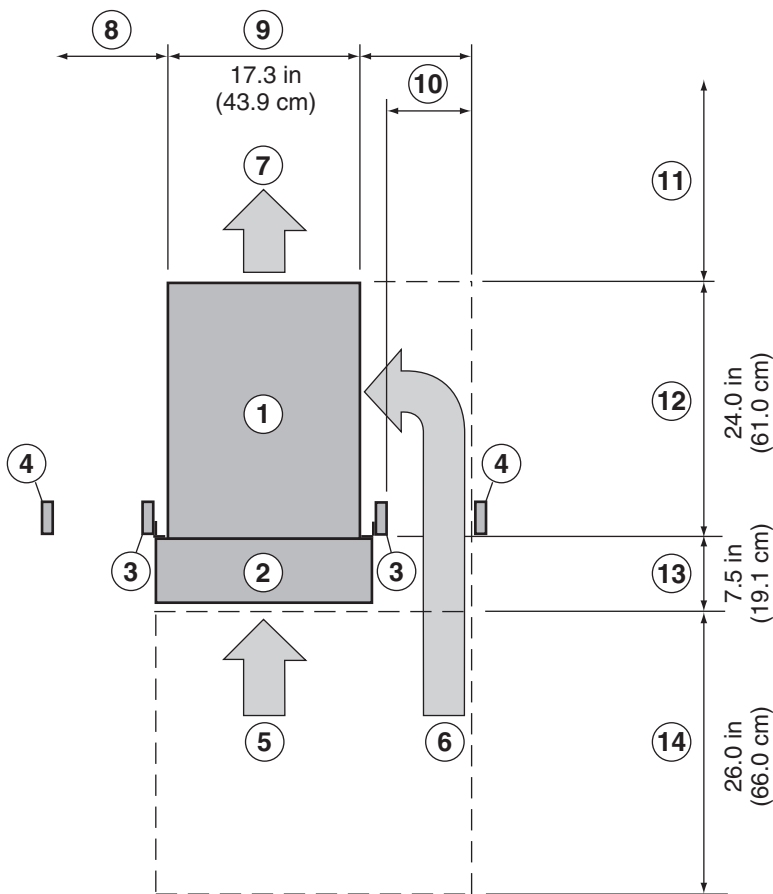


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1	Chassis	10	Chassis width
2	Cable management frames	11	Right side clearance recommended for cabinet installations: <ul style="list-style-type: none"> • Use 11 inches (27.9 cm).
3	Vertical rack-mount posts	12	Right side clearance recommended for open rack installations: <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm) between racks. • If next to a wall, use 11 inches (27.9 cm) between the chassis and the wall.
4	Vertical rack-mount posts for neighboring rack	13	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Inside of cabinet (no left side clearance required)	14	Airflow clearance required between the chassis and inside of cabinet (if a cabinet is used)
6	Air intake from cold aisle for power supplies	15	Chassis depth

7	Air intake from cold aisle for the supervisor and I/O modules	16	Clearance required between the front of the chassis and the inside of the cabinet (if used) or the edge of the cold aisle (if no cabinet) for the cable management frames and the optional front doors
8	Air exhaust to hot aisle for all modules and power supplies	17	Front service clearance required for installing the chassis and replacing the modules
9	No left side clearance required (no airflow on left side)		

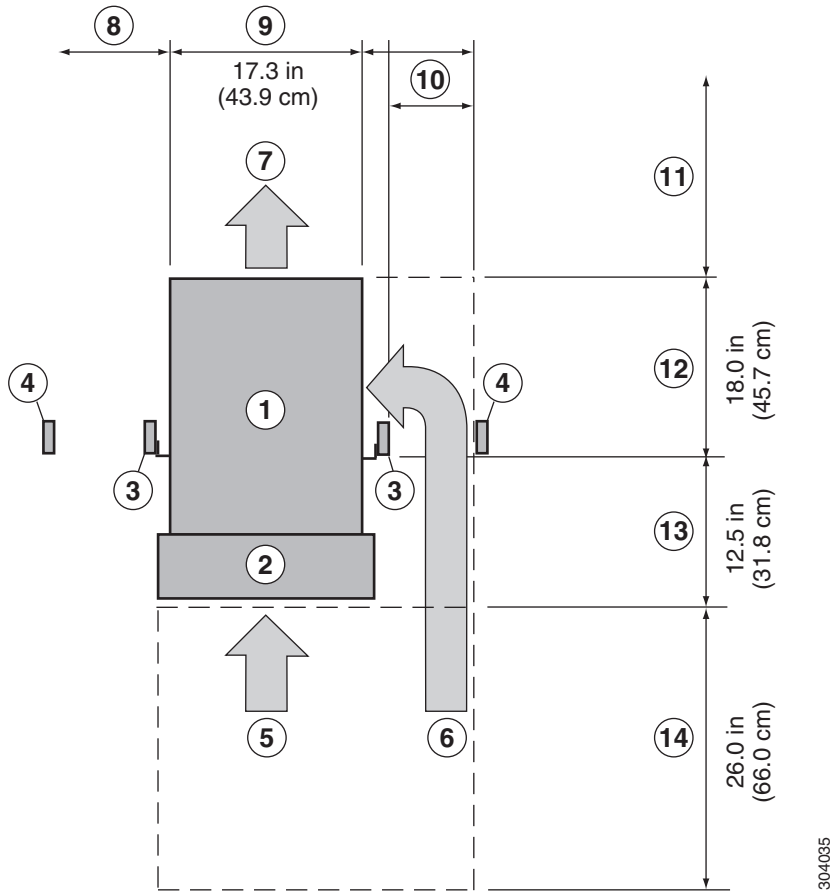
Figure B-15 Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Front-Mount Brackets



304180

1	Cisco Nexus 7004 chassis	8	No left side clearance required (no airflow on left side)
2	Cable management frames	9	<ul style="list-style-type: none"> Chassis width.
3	Vertical rack-mount posts	10	<p>Right side clearance recommended for open rack installations:</p> <ul style="list-style-type: none"> If next to another open rack, use 6 inches (15.2 cm) between racks. If next to a wall, use 11 inches (27.9 cm) between the chassis and the wall.
4	Vertical rack-mount posts for neighboring racks	11	No rear clearance required but the rear must be open to the hot aisle to exhaust air
5	Air intake from cold aisle for power supplies	12	Chassis depth
6	Air intake from cold aisle for the supervisor and I/O modules	13	Clearance required between the front of the chassis and the inside of the cabinet for the cable management frames and the optional front door
7	Air exhaust to hot aisle for all modules and power supplies	14	Front clearance required for installing the chassis and replacing the modules

Figure B-16 Clearances Required for the Cisco Nexus 7004 in a Two-Post Rack with Center-Mount Brackets



304035

<p>1 Cisco Nexus 7004 chassis</p>	<p>8 No left side clearance required (no airflow on left side)</p>
<p>2 Cable management frames</p>	<p>9 Chassis width</p>
<p>3 Vertical rack-mount posts</p>	<p>10 Right side clearance recommended for open rack installations:</p> <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm) between racks. • If next to a wall, use 11 inches (27.9 cm) between chassis and wall.
<p>4 Vertical rack-mount posts for neighboring rack</p>	<p>11 No rear clearance required but the rear must be open to the hot aisle to exhaust air</p>

5	Air intake from cold aisle for power supplies	12	Distance from front of vertical rack-mount posts to rear of chassis
6	Air intake from cold aisle for the supervisor and I/O modules	13	Clearance required between the front of the chassis and the inside of the chassis for the cable management frames and the optional front doors
7	Air exhaust to hot aisle for all modules and power supplies	14	Front service clearance required for installing the chassis and replacing the modules

Cisco Nexus 7009 Chassis Clearances

The Cisco Nexus 7009 chassis has different clearance requirements for installations with four-post racks or cabinets, two-post racks with front-mount brackets, and two-post racks with center-mount brackets.

For four-post rack or cabinet installations, the chassis requires the following clearances (see [Figure B-17](#)):

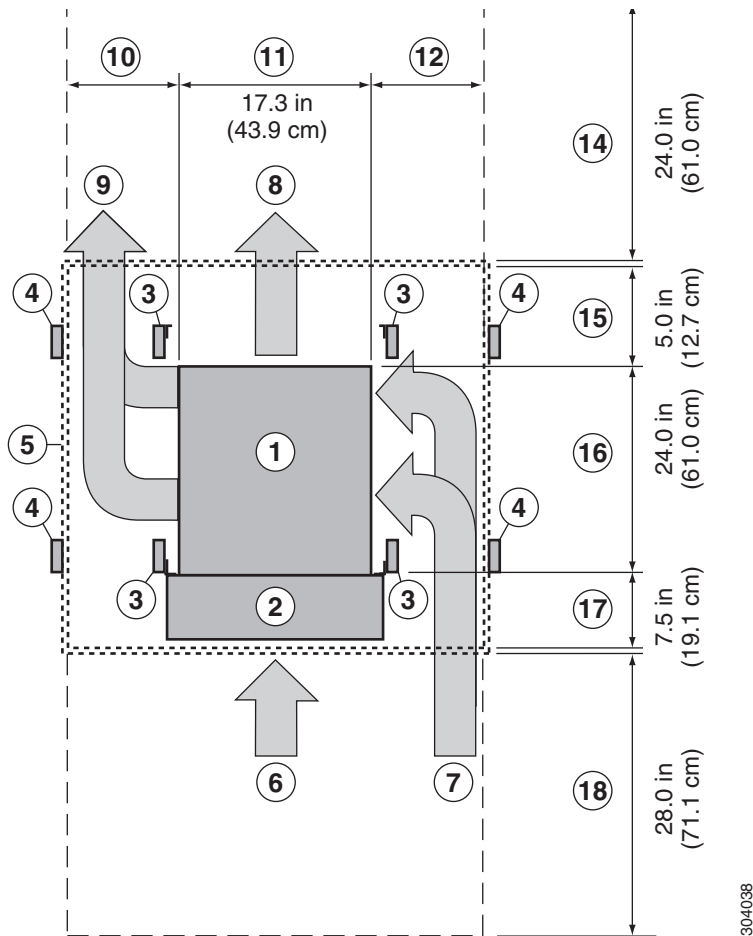
- Front clearance requires both of the following:
 - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside surface of the cabinet or rack (this area can include the optional cable management frames)
 - Maintenance area of 24 inches (61.1 cm) between the front of the rack or cabinet and the next object in the cold aisle.



Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance includes both of the following:
 - Cabling area of 7 inches (17.8 cm) between the rear of the chassis and the inside surface of the cabinet or rack
 - Maintenance area of 24 inches (61.1 cm) between the rear of the rack or cabinet and the next object in the hot aisle
- Side clearance of 11 inches (27.9 cm) for air flow on each side of the chassis.

Figure B-17 Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Four-Post Rack



304038

1	Cisco Nexus 7009 chassis	10	Left side clearance required with an unobstructed opening to the hot aisle to exhaust air
2	Cable management frames	11	Chassis width
3	Vertical rack-mount post	12	Side clearance recommended for cabinet installations: <ul style="list-style-type: none"> • use 11 inches (27.9 cm)
4	Vertical rack-mount post for neighboring rack	13	Side clearance recommended for open rack installations: <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
5	Nearest object or inside of cabinet	14	Rear service clearance required to replace fan trays and fabric modules
6	Air intake from cold aisle for the power supplies	15	Airflow clearance required between the chassis rear and inside of cabinet (if used)

7	Air intake from cold aisle for the supervisor, fabric, and I/O modules	16	Chassis depth
8	Air exhaust to hot aisle for power supplies	17	Clearance required between the front of the chassis and the inside of the cabinet (if used) or edge of cold aisle (if no cabinet) for the cable management frames and the optional front doors
9	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	18	Front clearance required for installing the chassis and replacing the modules

For two-post rack installations with front-mount brackets, the chassis requires the following clearances (see [Figure B-18](#)):

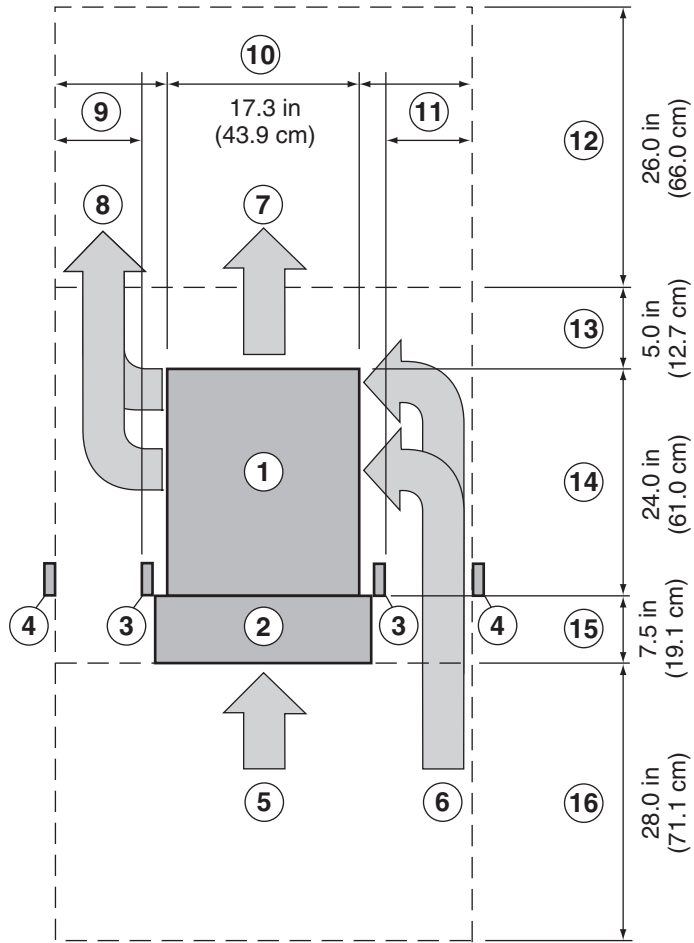
- Front clearance requires both of the following:
 - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the cold aisle (this area can include the optional cable management frames)
 - Maintenance area of 28 inches (71.1 cm) in front of the cabling area for installing the chassis and replacing modules



Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance requires 26 inches (66.0 cm) behind the chassis for cable management and for replacing modules and power supplies
- Side clearance recommendation depends on whether you use a rack or cabinet for the installation as follows:
 - For cabinet installations, we recommend that you use 11 inches (27.9 cm) for airflow on each side of the chassis.
 - For rack installations, we recommend 11 inches (27.9 cm) between the chassis and a wall or 6 inches (15.2 cm) between racks.

Figure B-18 Clearances Required for a Front-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack



304233

1	Cisco Nexus 7009 chassis	9	Side clearance required for open rack installations: <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
2	Cable management frames	10	Chassis width
3	Vertical rack-mount post	11	Side clearance required for open rack installations: <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
4	Vertical rack-mount post for neighboring rack	12	Rear service clearance required to replace fan trays and fabric modules
5	Air intake from cold aisle for the power supplies	13	Airflow clearance required between the chassis and inside of cabinet (if used)

6	Air intake from cold aisle for the supervisor, fabric, and I/O modules	14	Chassis depth
7	Air exhaust to hot aisle for power supplies	15	Clearance required between the front of the chassis and edge of cold aisle for the cable management frames and the optional front doors
8	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	16	Front clearance required for installing the chassis and replacing the modules

For two-post rack installations with center-mount brackets, the chassis requires the following clearances (see [Figure B-19](#)):

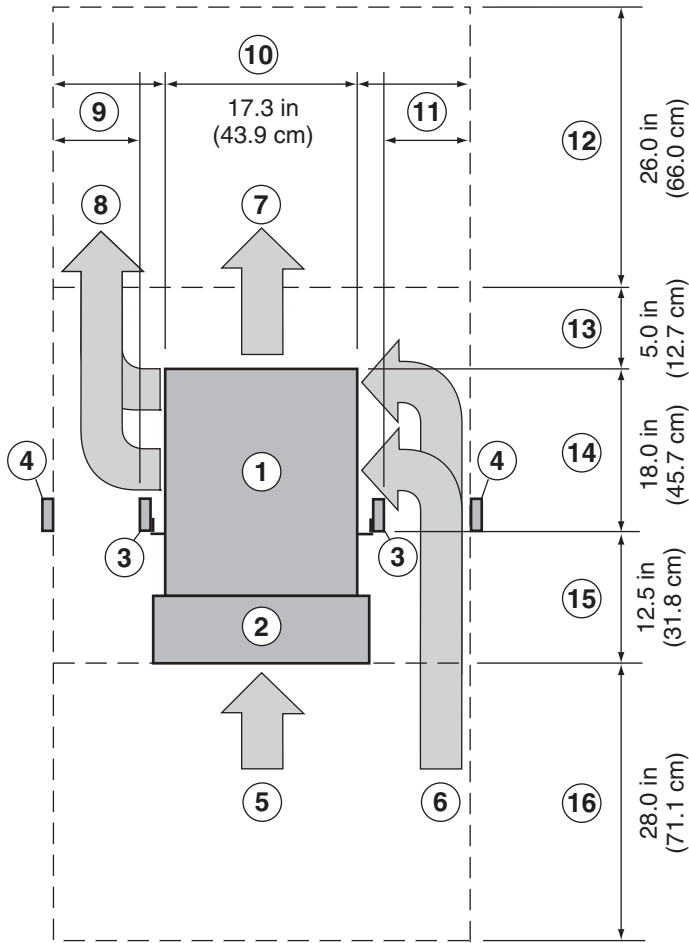
- Front clearance of 37 inches (94.0 cm) for both of the following:
 - Cabling area of 13.5 inches (34.3 cm) between the front of the posts (posts are 6 inches (15.2 cm) behind the front of the chassis)
 - Maintenance area of 26 inches (66.0 cm) in front of the cabling area for installing the chassis and replacing modules.



Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance of 26 inches (66.0 cm) behind the chassis for cable management and for replacing the fan modules and power supplies.
- Side clearance of 11 inches (27.9 cm) for airflow on each side of the chassis.

Figure B-19 Clearances Required for a Center-Mounted Cisco Nexus 7009 Chassis in a Two-Post Rack



304037

1	Cisco Nexus 7009 chassis	9	Right side clearance (for rack installations) recommended to input air from the cold aisle: <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm). • If next to a wall, use 11 inches (27.9 cm).
2	Cable management frames	10	Chassis width
3	Vertical rack-mount posts	11	Right side clearance (for rack installations) recommended to input air from the cold aisle: <ul style="list-style-type: none"> • If next to another open rack, use 6 inches (15.2 cm). If next to a wall, use 11 inches (27.9 cm).
4	Vertical rack-mount post for neighboring rack	12	Rear service clearance required to replace fan trays and fabric modules
5	Air intake from cold aisle for power supplies	13	Airflow clearance required between the chassis and inside of cabinet (if used)

6	Air intake from cold aisle for the supervisor, fabric, and I/O modules	14	Chassis depth
7	Air exhaust to hot aisle for the power supplies	15	Clearance required between the front of the chassis and the front of the cable management frames and the optional front doors
8	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	16	Front service clearance required for installing the chassis and replacing the modules

Cisco Nexus 7010 Chassis Clearances

The Cisco Nexus 7010 chassis requires the following clearances (see [Figure B-20](#)):

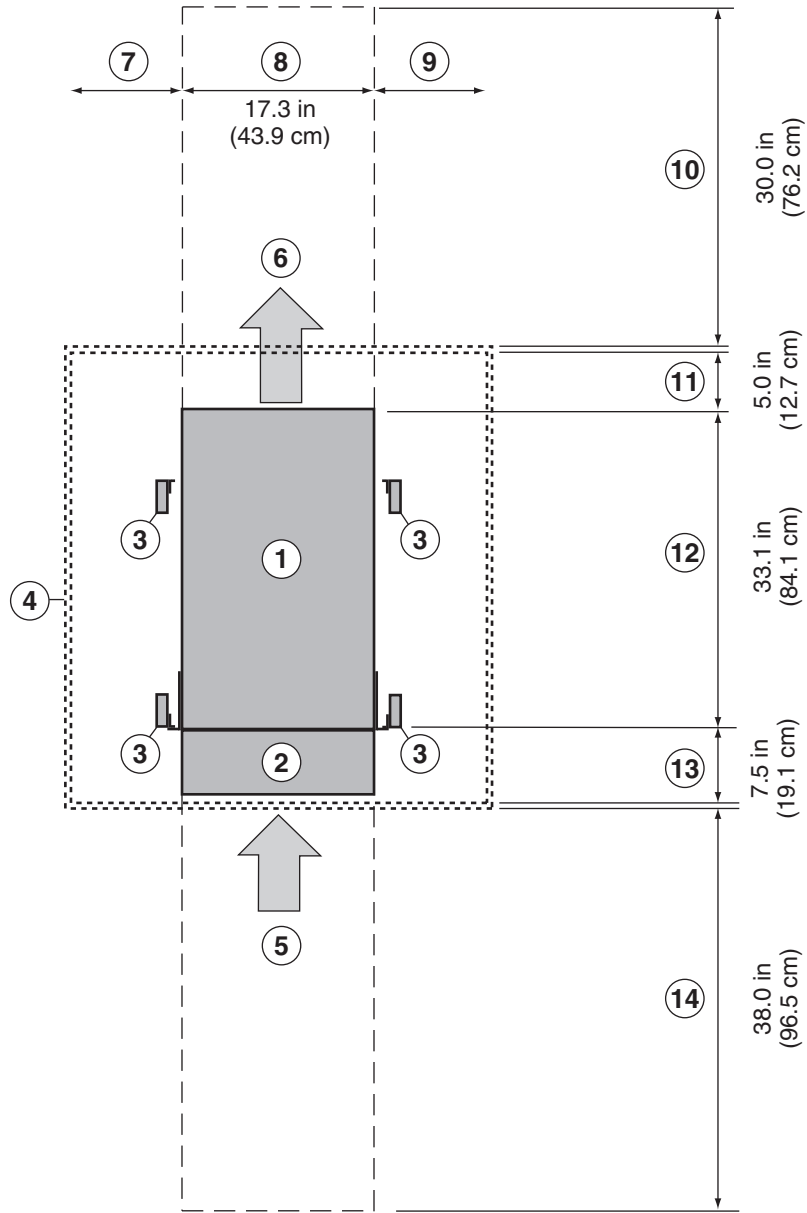
- Front clearance of 45.5 inches (115.6 cm) for both of the following:
 - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside of the cabinet or front of the rack
 - Maintenance area of 38 inches (96.5 cm) of cold-aisle passageway in front of the rack or cabinet



Note You might need to increase the maintenance area to accommodate a wide mechanical lift used to move the chassis to or from the rack.

- Rear clearance of 35 inches (88.9 cm) for both of the following:
 - Airflow area of 5 inches (12.7 cm) inside of the cabinet or rack
 - Maintenance area of 30 inches (76.2 cm) of hot-aisle passageway behind the rack or cabinet

Figure B-20 Clearances Required for the Cisco Nexus 7010 Switch



304039

1	Cisco Nexus 7010 chassis	8	Chassis width
2	Cable management system	9	No right side clearance required (no airflow on right side)
3	Vertical rack-mount posts	10	Rear service clearance required to replace fan trays and fabric modules

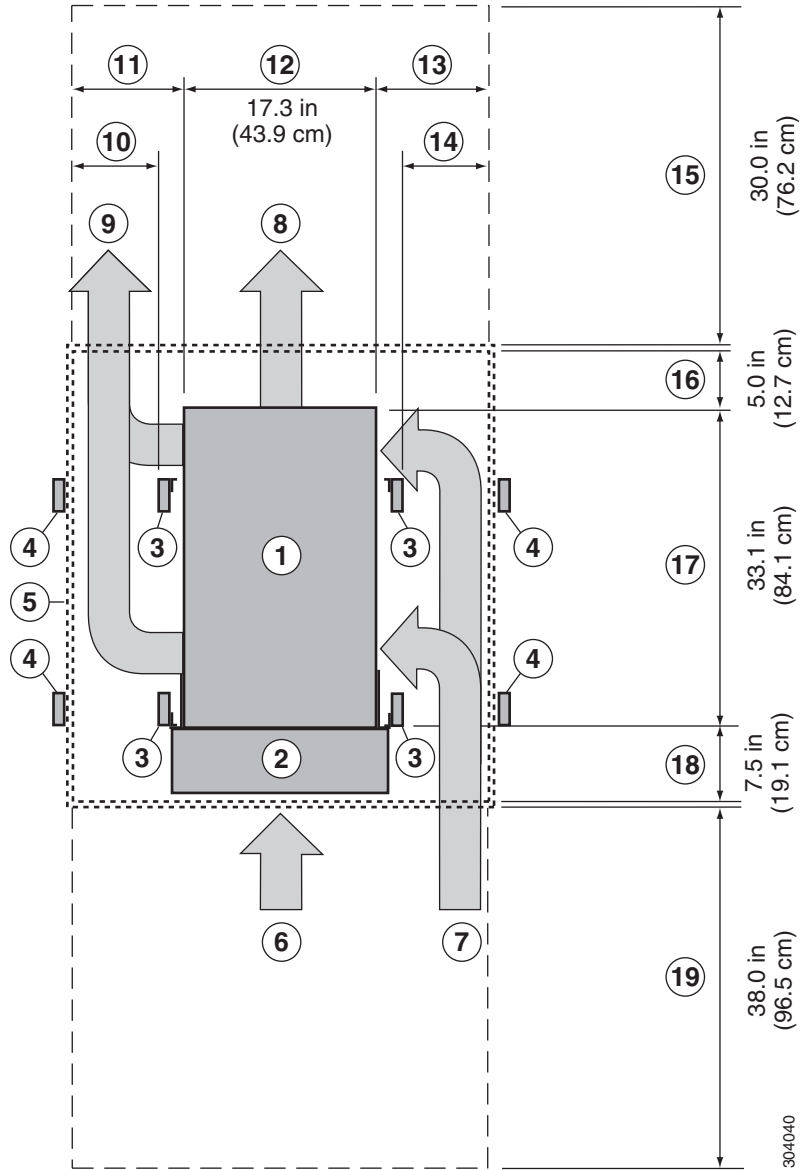
4	Inside of cabinet (no side clearance required)	11	Airflow clearance required between the chassis and inside of cabinet (if used)
5	Air intake from cold aisle for all modules and power supplies	12	Chassis depth, which includes the fan tray handles at the rear of the chassis
6	Air exhaust to hot aisle for all modules and power supplies	13	Clearance required between the front of the chassis and the inside of the cabinet (if used) or edge of the cold aisle (if no cabinet) for the cable management frames and the optional front doors
7	No left side clearance required (no airflow on left side)	14	Front service clearance required for installing the chassis and replacing the modules

Cisco Nexus 7018 Chassis Clearances

The Cisco Nexus 7018 chassis requires the following clearances (see [Figure B-21](#)):

- Front clearance of 45 inches (114.3 cm) for both of the following:
 - Cabling area of 7.5 inches (19.1 cm) between the front of the chassis and the inside of the cabinet or front of the rack
 - Maintenance area of 38 inches (96.5 cm) between the front of the rack or cabinet and the next rack, cabinet, or wall in the cold aisle (additional area might be needed for a larger mechanical lift used to move the chassis)
- Rear clearance of 35 inches (88.9 cm) for both of the following:
 - Airflow area of 5 inches (12.7 cm) inside a cabinet (if used)
 - Maintenance area of 30 inches (76.2 cm) of hot-aisle passageway behind the rack or cabinet
- Side clearance recommendation depends on whether a cabinet or rack is used:
 - For cabinet installations, use 11 inches (27.9 cm) between the chassis and inside of the cabinet.
 - For rack installations, use either 11" (27.9 cm) between the chassis and a wall or 6" (15.2 cm) between racks.

Figure B-21 Clearances Required for the Cisco Nexus 7018 Switch



1	Cisco Nexus 7018 chassis	11	Side clearance recommended for cabinet installations:: <ul style="list-style-type: none"> Use 11 inches (27.9 cm)
2	Cable management frames	12	Chassis width
3	Vertical rack-mount post	13	Side clearance recommended for cabinet installations:: <ul style="list-style-type: none"> Use 11 inches (27.9 cm)
4	Vertical rack-mount post for neighboring rack	14	Side clearance recommended for open rack installations: <ul style="list-style-type: none"> If next to another open rack, use 6 inches (15.2 cm). If next to a wall, use 11 inches (27.9 cm)
5	Nearest object or inside of cabinet (side clearance required for airflow)	15	Rear service clearance required to replace fan trays and fabric modules
6	Air intake from cold aisle for the power supplies	16	Airflow clearance required between the chassis and inside of cabinet (cabinet installations only)
7	Air intake from cold aisle for the supervisor, fabric, and I/O modules	17	Chassis depth
8	Air exhaust to hot aisle for the power supplies	18	Clearance required between the front of the chassis and the inside of the cabinet (cabinet installations) or edge of the cold aisle (rack installations) for the cable management frames and the optional front door
9	Air exhaust to hot aisle for the supervisor, fabric, and I/O modules	19	Front service clearance required for installing the chassis and replacing the modules
10	Side clearance recommended for open rack installations: <ul style="list-style-type: none"> If next to another open rack, use 6 inches (15.2 cm). If next to a wall, use 11 inches (27.9 cm). 		

Facility Cooling Requirements

The Cisco Nexus 7000 Series switches dissipate considerable power that generates much heat. The following is the heat dissipation requirement for these switches:

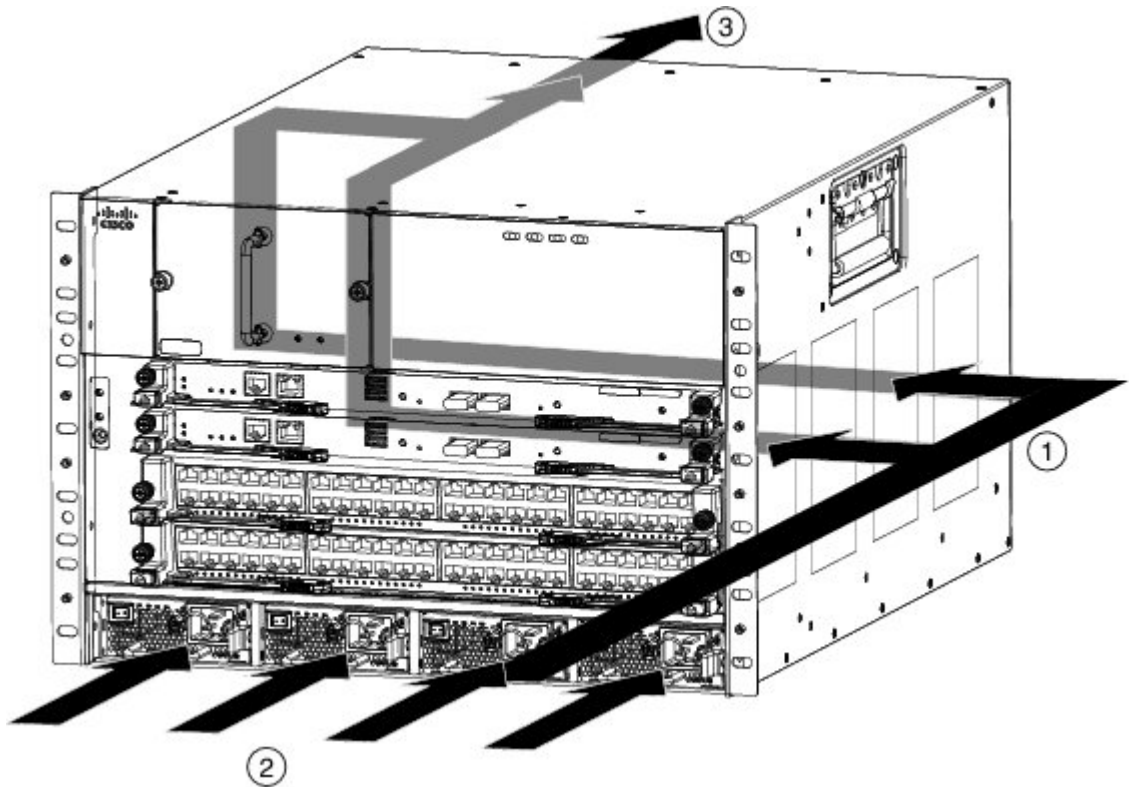
- Cisco Nexus 7004 dissipates up to 9737 BTUs per hour
- Cisco Nexus 7009 dissipates up to 28,101 BTUs per hour
- Cisco Nexus 7010 dissipates up to 35,162 BTUs per hour
- Cisco Nexus 7018 dissipates up to 51,195 BTUs per hour

Chassis Airflow

The Cisco Nexus 7000 Series switches are designed to work in a hot-aisle/cold-aisle environment using front-to-back, side-to-side, or side-to-back airflow. Each of these switches uses one of the following airflow directions:

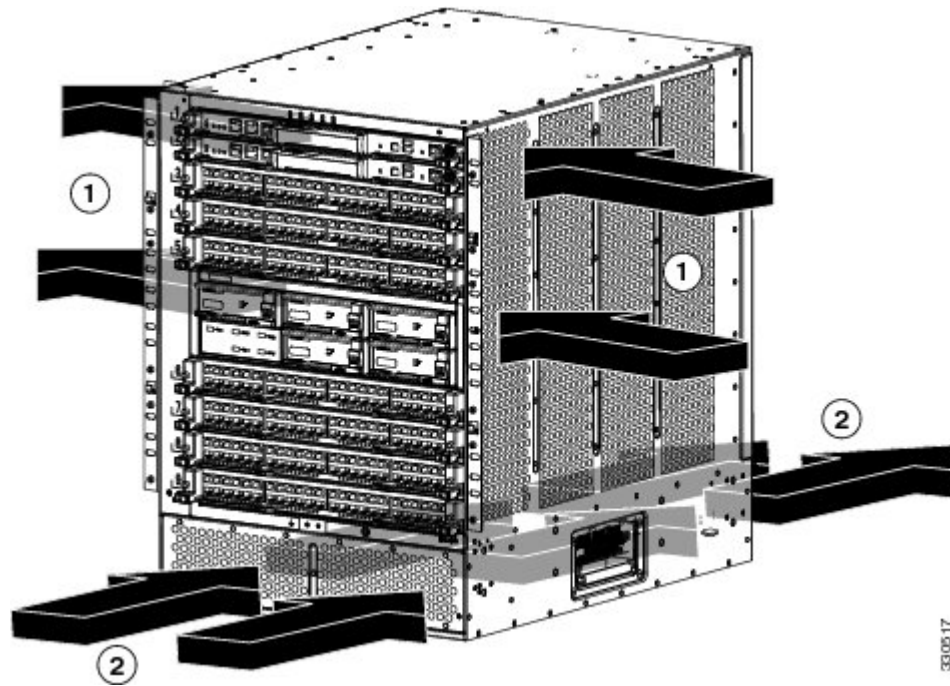
- The Cisco Nexus 7004 switch uses side-to-back airflow to cool its modules and front-to-back airflow to cool its power supplies as shown in [Figure B-22](#). This switch requires right-side clearance for airflow into the chassis.
- The Cisco Nexus 7009 switch uses side-to-side airflow to cool its modules and front-to-back airflow to cool its power supplies as shown in [Figure B-23](#). This switch requires right- and left-side clearance for airflow into and out of the chassis.
- The Cisco Nexus 7010 switch uses front-to-back airflow as shown in [Figure B-24](#).
- The Cisco Nexus 7018 switch uses side-to-side airflow to cool its modules and front-to-back airflow to cool its power supply units as shown in [Figure B-25](#). This switch requires right- and left-side clearance for airflow into and out of the chassis.

Figure B-22 Airflow for the Cisco Nexus 7004 Chassis



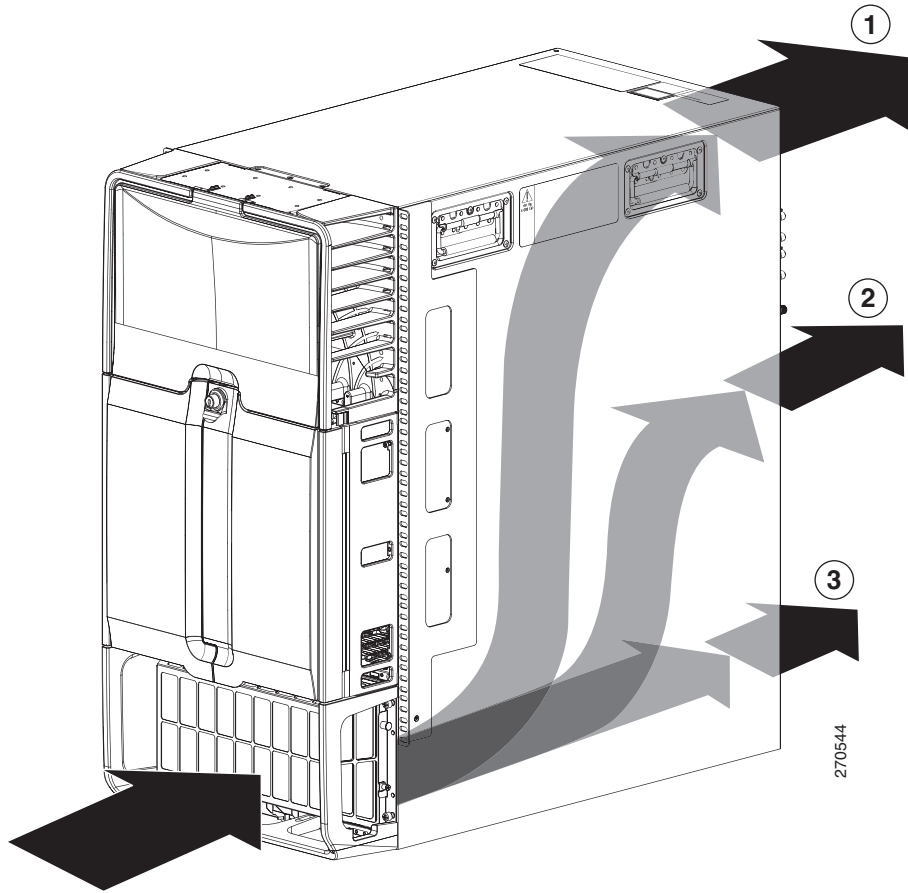
1	Right side-to-rear airflow for cooling supervisor and I/O modules	3	Exhaust out the rear to the hot aisle
2	Front-to-rear airflow for cooling power supplies		

Figure B-23 Airflow for the Cisco Nexus 7009 Chassis



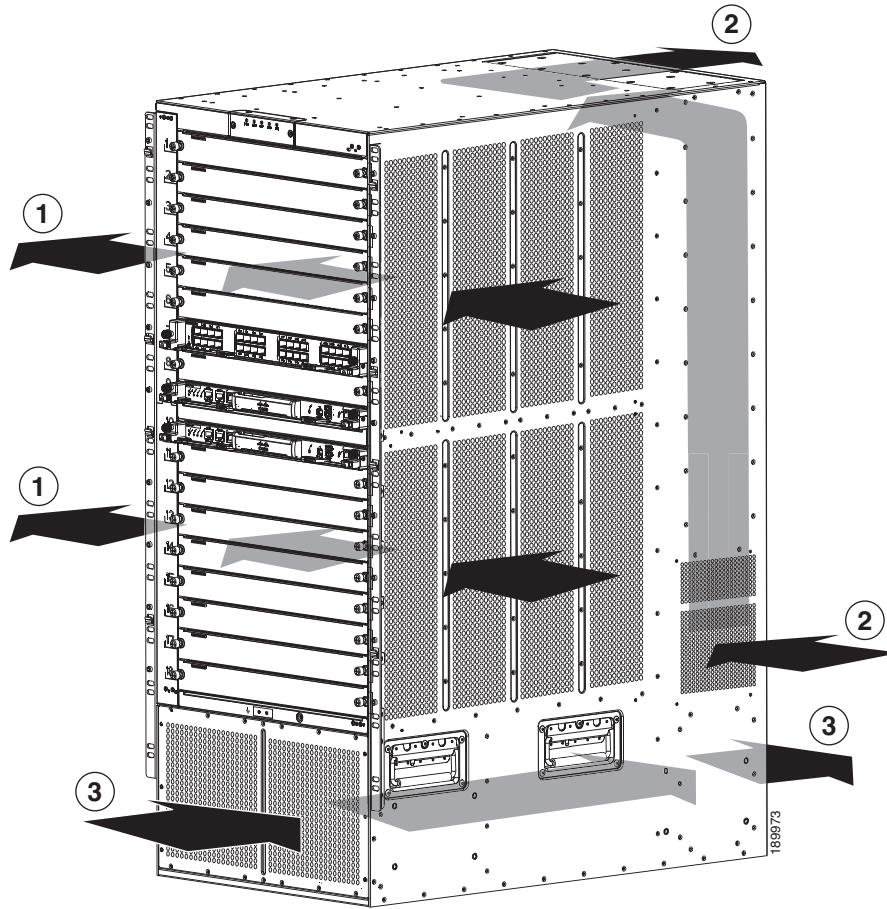
<p>1 Airflow for cooling the supervisor, I/O modules, and fabric modules</p>	<p>2 Airflow for cooling the power supply units</p>
---	--

Figure B-24 Airflow for the Cisco Nexus 7010 Chassis



1	Airflow for cooling the supervisor and I/O modules	3	Airflow for cooling the power supply units
2	Airflow for cooling the fabric modules		

Figure B-25 Airflow for the Cisco Nexus 7018 Chassis



1	Airflow for cooling the supervisor and I/O modules	3	Airflow for cooling the power supply units
2	Airflow for cooling the fabric modules		

For the Cisco Nexus 7004 switch, you can route cables on the left or right side without interfering with coolant airflow, which goes in on the right side. Be sure to otherwise leave the right side unblocked so that cool air can flow from the cold aisle in the front to the chassis.

To allow for the Cisco Nexus 7009 and 7018 switches to take in air from the cold aisle and floor on the right side, you should route cables on the left front side of the switch. If necessary, you can route cables on the upper right front side of the chassis, which leaves the lower right side open to cooling air from the cold aisle in front of the chassis. By having the cables on the left side and leaving the left rear side unobstructed, the exhaust is directed to the hot aisle in back.

For the clearances required on each side of the switch, see the [“Chassis Clearances”](#) section on page B-22.



Site Preparation and Maintenance Records

This appendix provides a site planning list that you can use when preparing your site for the Cisco Nexus 7000 Series switches and includes these sections:

- [Site Preparation Checklist, page C-1](#)
- [Contact and Site Information, page C-3](#)
- [Chassis and Module Information, page C-3](#)

Site Preparation Checklist

Planning the location and layout of your equipment rack or cabinet is essential for successful switch operation, ventilation, and accessibility.

[Table C-1](#) lists the site planning tasks that we recommend that you complete before you install the Cisco Nexus 7000 Series switches. Your completion of each task ensures a successful switch installation.

Table C-1 **Site Preparation Checklist**

Planning Activity	Verification Time and Date
<p>Space evaluation:</p> <ul style="list-style-type: none"> • Space and layout • Floor covering • Impact and vibration • Lighting • Physical access • Maintenance access 	
<p>Environmental evaluation:</p> <ul style="list-style-type: none"> • Ambient temperature • Humidity • Altitude • Atmospheric contamination • Airflow 	

Table C-1 Site Preparation Checklist (continued)

Planning Activity	Verification Time and Date
Power evaluation: <ul style="list-style-type: none"> • Input power type • Power receptacles • Receptacle proximity to the equipment • Dedicated (separate) circuits for power redundancy • UPS for power failures • Grounding: proper gauge wire and lugs • Circuit breaker size 	
Grounding evaluation: <ul style="list-style-type: none"> • Data center ground 	
Cable and interface equipment evaluation: <ul style="list-style-type: none"> • Cable type • Connector type • Cable distance limitations • Interface equipment (transceivers) 	
EMI evaluation: <ul style="list-style-type: none"> • Distance limitations for signaling • Site wiring • RFI levels 	

Contact and Site Information

Use the following worksheet ([Table C-2](#)) to record contact and site information.

Table C-2 **Contact and Site Information**

Contact person	
Contact phone	
Contact e-mail	
Building/site name	
Data center location	
Floor location	
Address (line 1)	
Address (line 2)	
City	
State	
ZIP code	
Country	

Chassis and Module Information

Use the following worksheets ([Table C-3](#), [Table C-5](#), [Table C-6](#), and [Table C-7](#)) to record information about the chassis and modules.

Contract Number

Chassis serial number

Product number

Table C-3 **Network-Related Information**

Switch IP address	
Switch IP netmask	
Hostname	
Domain name	
IP broadcast address	
Gateway/router address	
DNS address	

Table C-4 Cisco Nexus 7004 Module Information

Slot	Module Type	Module Serial Number	Notes
1	Supervisor		
2	Supervisor		
3			
4			

Table C-5 Cisco Nexus 7009 Module Information

Slot	Module Type	Module Serial Number	Notes
1	Supervisor		
2	Supervisor		
3			
4			
5			
6			
7			
8			
9			

Table C-6 Cisco Nexus 7010 Module Information

Slot	Module Type	Module Serial Number	Notes
1			
2			
3			
4			
5	Supervisor		
6	Supervisor		
7			
8			
9			
10			

Table C-7 Cisco Nexus 7018 Module Information

Slot	Module Type	Module Serial Number	Notes
1			
2			
3			
4			
5			
6			
7			
8			
9	Supervisor		
10	Supervisor		
11			
12			
13			
14			
15			
16			
17			
18			

