



EVROPSKÁ UNIE  
Evropský fond pro regionální rozvoj  
Integrovaný regionální operační program



MINISTERSTVO  
PRO MÍSTNÍ  
ROZVOJ ČR

## Kupní smlouva

„SŠDŘ Kladno – zvyšování technicko didaktické úrovně výuky – vybavení učeben,  
dílen a laboratoře, konektivita školy a připojení k internetu“

### Část D – Konektivita školy

Číslo smlouvy kupující: S-0015/16977360/2023

Číslo smlouvy prodávající: 230000314

uzavřena v souladu s § 2079 a násl. zákona č. 89/2012 Sb., občanský zákoník, ve znění pozdějších předpisů (dále jen „OZ“)

#### 1. Smluvní strany

##### ***Střední škola designu a řemesel Kladno, příspěvková organizace***

**se sídlem:** U Hvězdy 2279, 272 01 Kladno

**zastoupena:** Ing. Janou Bláhovou, ředitelkou školy

**IČO:** 16977360

**DIČ:** CZ16977360

**E**  
**Č**

(dále jen "Kupující")

a

##### ***SITEL, spol. s r.o.***

**se sídlem** Baarova 957/15, 140 00 Praha 4

**doručovací adresa:** Nad Elektrárnou 1526/45, 106 00 Praha 10

zapsaná v obchodním rejstříku vedeném Městským soudem v Praze, oddíl C, vložka 6725

**zastoupená** Ing. Janem Novákem, CSc., jednatelem

**k podpisu smlouvy oprávněn:** Ing. et Ing. Pavel Schlitter, Ph.D., výkonný ředitel, prokurista

**IČO:** 447 97 320

**DIČ:** CZ44797320

**E**  
**Č**

(dále jen "Prodávající")



(Kupující a Prodávající dále společně jen "**Smluvní strany**" nebo každý z nich samostatně jen "**Smluvní strana**")

uzavírají dnešního dne, měsíce a roku tuto kupní smlouvu (dále jen „**Smlouva**“).

## 2. Základní ustanovení

- 2.1. Prodávající prohlašuje, že si je vědom skutečnosti, že Kupující má zájem o plnění této smlouvy v souladu se zásadami sociálně odpovědného zadávání veřejných zakázek. Prodávající se proto výslovně zavazuje při realizaci smlouvy dodržovat veškeré pracovněprávní předpisy (a to zejména, nikoliv však výlučně, předpisy upravující mzdové podmínky, pracovní dobu, dobu odpočinku mezi směnami, placené přesčasy) dále právní předpisy týkající se oblasti zaměstnanosti a bezpečnosti a ochrany zdraví při práci, a to vůči všem osobám, které se na realizaci této smlouvy podílejí, tedy bez ohledu na to, zda se jedná o zaměstnance prodávajícího či jeho poddodavatele
- 2.2. Prodávající bere na vědomí, že Kupující považuje účast Prodávajícího ve veřejné zakázce při splnění kvalifikačních předpokladů za potvrzení skutečnosti, že Prodávající je ve smyslu ustanovení § 5 odst. 1 OZ schopen při plnění této Smlouvy jednat se znalostí a pečlivostí, která je s jeho povoláním nebo stavem spojená, s tím, že případné jeho jednání bez této odborné péče půjde k jeho tíži. Prodávající nesmí svou kvalitu odborníka ani své hospodářské postavení zneužít k vytváření nebo k využití závislosti slabší strany a k dosažení zřejmé a nedůvodné nerovnováhy ve vzájemných právech a povinnostech Smluvních stran.
- 2.3. Prodávající bere na vědomí, že Kupující není ve vztahu k předmětu této Smlouvy podnikatelem a ani se předmět této Smlouvy netýká podnikatelské činnosti Kupujícího.
- 2.4. Prodávající se stal vítězem zadávacího řízení na veřejnou zakázku na dodávky s názvem „**SŠDŘ Kladno – zvyšování technicko didaktické úrovně výuky – vybavení učeben, dílen a laboratoře, konektivita školy a připojení k internetu**“ vyhlášené Kupujícím (dále jen „**Zadávací řízení**“).
- 2.5. Výchozími podklady pro dodání předmětu plnění dle této Smlouvy jsou:  
Podmínky Zadávacího řízení;  
Technická specifikace plnění, která byla součástí zadávací dokumentace k Zadávacímu řízení jako **příloha č. 6 „Technická specifikace, položkový rozpočet část D“** a tvoří Přílohu č. 1 této Smlouvy (dále jen „**Technická specifikace plnění**“) a je její nedílnou součástí;  
nabídka Prodávajícího podaná v rámci Zadávacího řízení, v části, ve které předmět plnění technicky popisuje (dále jen „**Nabídka**“).  
(dále jen „**Výchozí podklady**“).
- 2.6. Prodávající prohlašuje, že disponuje veškerými odbornými předpoklady potřebnými pro dodání předmětu plnění dle Smlouvy, je k jeho plnění / dodání oprávněn a na jeho straně neexistují žádné překážky, které by mu bránily předmět plnění Kupujícím dodat.
- 2.7. Prodávající prohlašuje, že přejímá na sebe nebezpečí změny okolností ve smyslu ustanovení



§ 1765 odst. 2 OZ.

- 2.8. Smluvní strany prohlašují, že zachovají mlčenlivost o skutečnostech, které se dozvědí v souvislosti s touto Smlouvou a při jejím plnění a jejichž vyžádání by jim mohlo způsobit újmu. Tímto nejsou dotčeny povinnosti Kupujícího vyplývající z právních předpisů.
- 2.9. Prodávající bere na vědomí, že předmět plnění dle této Smlouvy je součástí IROP – ITI PMO (Integrovaná teritoriální investice Pražské metropolitní oblasti) projektu s názvem: „SŠDŘ Kladno – zvyšování technicko didaktické úrovně výuky – vybavení učeben, dílen a laboratoře, konektivita školy a připojení k internetu“, reg. č.: CZ.06.2.67/0.0/0.0/16\_066/0014720, spolufinancovaného z prostředků Evropského fondu pro regionální rozvoj (EFRR), z rozpočtu Středočeského kraje a státního rozpočtu ČR. Prodávající bere na vědomí, že jelikož je kupní cena financována z prostředků dotace, může mít nesplnění jakékoliv povinnosti Prodávajícího dopad na financování. Konstatování výdajů jako nezpůsobilých, případné udělení odvodu či správních sankcí v důsledku porušení této povinnosti bude představovat škodu, která Kupujícímu vznikla.
- 2.10 Prodávající prohlašuje, že není osobou nebo subjektem<sup>[1]</sup>, který je určeným cílem nebo který je jinak předmětem sankcí, včetně, ale nejen, v důsledku toho, že je takový subjekt vlastněn nebo jinak ovládán, přímo či nepřímo, jakoukoli fyzickou nebo právnickou osobou, která je určeným cílem sankcí nebo která je jinak předmětem sankcí (dále jen „**Sankcionovaná osoba**“).
- Prodávající dále prohlašuje, že neporušuje jakékoli zákony, předpisy, obchodní embarga nebo jiná omezující opatření týkající se hospodářských nebo finančních sankcí (zejména, ale nikoli výlučně, opatření týkající se financování terorismu) přijatá, spravovaná, prováděná a/nebo vynucená čas od času některým z následujících způsobů:
- (a) Organizací spojených národů a jakoukoli agenturu nebo osobu, která je řádně jmenována, zmocněna nebo oprávněna Organizací spojených národů k přijímání, správě, provádění a/nebo uplatňování těchto opatření;
  - (b) Evropskou unií a jakoukoli agenturu nebo osobu, která je řádně jmenována, zmocněna nebo oprávněna Evropskou unií k přijímání, správě, provádění a/nebo uplatňování těchto opatření; a
  - (c) vláda Spojených států amerických a jakékoli její ministerstvo, divize, agentura nebo kancelář, včetně Úřadu pro kontrolu zahraničních aktiv (OFAC) ministerstva financí USA, ministerstva zahraničí USA a/nebo ministerstvo obchodu USA (dále souhrnně jen „**Sankce**“).
- 2.11 Prodávající zároveň prohlašuje, že není obchodní společností, ve které veřejný funkcionář<sup>[2]</sup> uvedený v § 2 odst. 1 písm. c) zák. č. 159/2006 Sb., o střetu zájmů, ve znění pozdějších předpisů, nebo jím ovládaná osoba vlastní podíl představující alespoň 25 % účasti společníka v obchodní společnosti, a dále prohlašuje, že takovou obchodní společností není ani žádný z jeho poddodavatelů, prostřednictvím kterého Prodávající prokazuje kvalifikaci v rámci zadávacího řízení na Veřejnou zakázku (dále jen „**Střet zájmů**“).
- 2.12 Prodávající prohlašuje, že si je vědom skutečnosti, že Kupující má zájem o plnění této smlouvy v souladu se zásadami sociálně odpovědného zadávání veřejných zakázek. Dodavatel se proto výslovně zavazuje při realizaci smlouvy dodržovat veškeré pracovněprávní předpisy (a to zejména, nikoliv však výlučně, předpisy upravující mzdové podmínky, pracovní dobu, dobu odpočinku mezi

<sup>[1]</sup> Pojem subjekt zahrnuje, ale není omezen na jakoukoli vládu, skupinu nebo teroristickou organizaci.

<sup>[2]</sup> Člen vlády nebo vedoucí jiného ústředního správního úřadu, v jehož čele není člen vlády.



směnami, placené přesčasy) dále právní předpisy týkající se oblasti zaměstnanosti a bezpečnosti a ochrany zdraví při práci, a to vůči všem osobám, které se na realizaci díla podílejí, tedy bez ohledu na to, zda se jedná o zaměstnance dodavatele či jeho poddodavatele.

- 2.13 Prodávající bude v souladu s principy sociálně odpovědného veřejného zadávání provádět platby přímo konkrétnímu poddodavateli dodavatele, a to dle § 106 Zákona (viz Smlouva).
- 2.14 S ohledem na ochranu životního prostředí se prodávající zavazuje k minimální produkci všech druhů odpadů, vzniklých v souvislosti s realizací předmětu této veřejné zakázky. V případě jejich vzniku bude přednostně a v co největší míře usilovat o jejich další využití, recyklaci a další ekologicky šetrná řešení, a to i nad rámec povinností stanovených zákonem č. 541/2020 Sb., o odpadech, v platném a účinném znění.

### 3. Předmět Smlouvy

- 3.1. Předmětem této Smlouvy je závazek Prodávajícího dodat Kupujícímu a převést na Kupujícího vlastnické právo k technickému vybavení (dále jen jako „**Vybavení**“), jehož podrobný popis a technické parametry jsou specifikovány v Technické specifikaci plnění, která tvoří Přílohu č. 1 této Smlouvy.
- 3.2. Součástí plnění Prodávajícího je také:
- (i) doprava Vybavení do místa plnění, jeho vybalení, kontrola,
  - (ii) předání instrukcí a návodů Kupujícímu k obsluze a údržbě Vybavení v českém nebo anglickém jazyce, a to elektronicky nebo v tištěné podobě,
  - (iii) předání prohlášení o shodě dodaného Vybavení se schválenými standardy,
  - (iv) vypracování seznamu dodaných položek pro účely kontroly,
  - (v) záruční servis Prodávajícím s ukončeným zásahem ve stanovené lhůtě v místě plnění,
  - (vi) pozáruční servis Prodávajícím,
  - (vii) závazek poskytování telefonické a internetové technické podpory,
  - (viii) závazek zajištění náhradních dílů,
  - (ix) spolupráce s Kupujícím v průběhu realizace dodávky (zejména podmínky doručení).
- 3.3. Kupující se zavazuje řádně a včas dodané Vybavení a související služby převzít a zaplatit za ně Prodávajícímu kupní cenu uvedenou v článku 5 této Smlouvy.
- 3.4. Prodávající výslovně souhlasí a zavazuje se Kupujícímu pro případ, že pokud ke splnění požadavků Kupujícího vyplývajících z této Smlouvy včetně jejích příloh a k řádnému dodání a provozu Vybavení budou potřebné i další dodávky a práce výslovně neuvedené v této Smlouvě, tyto dodávky a práce na své náklady obstarat či provést a do svého plnění zahrnout bez dopadu na kupní cenu podle této Smlouvy.
- 3.5. Prodávající se zavazuje za podmínek stanovených touto Smlouvou řádně a včas na svůj náklad a na svoji odpovědnost doručit a dodat Kupujícímu Vybavení do místa plnění a předat mu je, a dále provést služby a práce specifikované v odst. 3.2 tohoto článku Smlouvy. Prodávající odpovídá za to, že Vybavení bude v souladu s touto Smlouvou a Výchozími podklady, platnými právními,



technickými a kvalitativními normami, a že Vybavení bude mít CE certifikát.

#### 4. Vlastnické právo

- 4.1. Vlastnické právo přechází na Kupujícího doručením Vybavení. Doručením se rozumí podpis předávacího protokolu oběma Smluvními stranami, kterým zároveň přechází na Kupujícího i nebezpečí škody na Vybavení.

#### 5. Kupní cena a platební podmínky

- 5.1. Kupní cena za předmět plnění dle této Smlouvy uvedený v článku 3 odst. 3.1.a 3.2. byla stanovena na základě Nabídky jako cena maximální a nepřekročitelná, a to ve výši **5 887 139,23** Kč bez DPH (dále jen „**Kupní cena**“), plus 21 % DPH ve výši **1 236 229,24** Kč, tj. celkem ve výši **7 123 438,47** Kč s DPH. Cena jednotlivých částí vybavení je uvedena v položkovém rozpočtu, který tvoří součást přílohy č. 1 a rovněž tyto jsou cenami maximálními a nepřekročitelnými.
- 5.2. Kupní cena zahrnuje veškeré náklady spojené s plněním předmětu této Smlouvy, včetně nákladů na pojištění Vybavení do doby jeho předání a převzetí. Kupní cena je nezávislá na vývoji cen a kurzových změnách.
- 5.3. Kupní cena je za předmět plnění cenou nejvyšší přípustnou. Kupní cena může být měněna pouze písemným dodatkem k této Smlouvě, a to pouze v případě, že po uzavření Smlouvy a před termínem předání a převzetí Vybavení dojde ke změně sazeb DPH (je možná výhradně změna výše DPH).
- 5.4. Kupující se zavazuje uhradit Prodávajícímu 100 % Kupní ceny dle článku 5.1 po doručení Vybavení, o kterém bude mezi Smluvními stranami sepsán předávací protokol, a to na základě faktury vystavené Prodávajícím.
- 5.5. Lhůta splatnosti faktury je třicet (30) dnů od data jejího doručení Kupujícímu. Zaplacením účtované částky se rozumí den jejího odeslání na účet Prodávajícího. Daňové doklady - faktury vystavené Prodávajícím podle této Smlouvy budou v souladu s příslušnými právními předpisy České republiky obsahovat zejména tyto údaje:
- (i) obchodní firmu/název a sídlo Kupujícího,
  - (ii) daňové identifikační číslo Kupujícího,
  - (iii) obchodní firmu/název a sídlo Prodávajícího,
  - (iv) daňové identifikační číslo Prodávajícího,
  - (v) evidenční číslo daňového dokladu,
  - (vi) rozsah a předmět plnění (Vybavení),
  - (vii) datum vystavení daňového dokladu,
  - (viii) datum uskutečnění plnění nebo datum přijetí úplaty, a to ten den, který nastane dříve, pokud se liší od data vystavení daňového dokladu,
  - (ix) Kupní cena Vybavení,
  - (x) prohlášení, že účtované Vybavení je poskytováno pro účely projektu „SŠDR Kladno – zvyšování



technicko didaktické úrovně výuky – vybavení učeben, dílen a laboratoře, konektivita školy a připojení k internetu", reg. č.: CZ.06.2.67/0.0/0.0/16\_066/0014720.

- 5.6. Daňové doklady - faktury musejí být v souladu s dohodami o zamezení dvojího zdanění, budou-li se na konkrétní případ vztahovat.
- 5.7. Pokud daňový doklad – faktura nebude vystaven v souladu s platebními podmínkami stanovenými Smlouvou nebo nebude splňovat požadované zákonné náležitosti, je Kupující oprávněn daňový doklad - fakturu Prodávajícímu vrátit jako neúplnou, resp. nesprávně vystavenou, k doplnění, resp. novému vystavení ve lhůtě pěti (5) pracovních dnů od data jejího doručení Kupujícímu. V takovém případě Kupující není v prodlení s úhradou Kupní ceny nebo její části a Prodávající vystaví opravenou fakturu s novou, shodnou lhůtou splatnosti, která začne plynout dnem doručení opraveného nebo nově vyhotoveného daňového dokladu - faktury Kupujícímu.

## 6. Termíny plnění předmětu Smlouvy

- 6.1. Prodávající se zavazuje řádně obstarat a doručit Kupujícímu Vybavení uvedené v článku 3 odst. 3.1 této Smlouvy, a to do **3 měsíců** od nabytí účinnosti této Smlouvy.
- 6.2. Kupující se zavazuje řádně a včas dodané Vybavení od Prodávajícího převzít, kdy o předání a převzetí bude mezi Smluvními stranami sepsán předávací protokol, jak je uvedeno v článku 9. této Smlouvy.

## 7. Místo plnění

Místem plnění je budova školy U Hvězdy 2279, 272 01 Kladno a budovy odloučeného pracoviště Tesárna, Milady Horákové 2745, 272 01 Kladno (dále jen „Místo plnění“).

## 8. Další podmínky Smlouvy

- 8.1. Prodávající je povinen dodat Kupujícímu Vybavení zcela nové, v plně funkčním stavu, v jakosti a technickém provedení odpovídajícím platným předpisům Evropské unie a odpovídajícím požadavkům stanoveným právními předpisy České republiky, harmonizovanými českými technickými normami a ostatními ČSN, které se vztahují ke Vybavení.
- 8.2. Prodávající prohlašuje, že Vybavení, které dodá na základě této Smlouvy, zcela odpovídá podmínkám stanoveným ve Výchozích podkladech.
- 8.3. Prodávající se zavazuje, že v okamžiku převodu vlastnického práva ke Vybavení nebudou na Vybavení váznout žádná práva třetích osob, a to zejména žádné předkupní právo, zástavní právo nebo právo nájmu.
- 8.4. Prodávající s ohledem na povinnosti Kupujícího vyplývající zejména ze zákona č. 134/2016 Sb., o zadávání veřejných zakázek, ve znění pozdějších předpisů a ze zákona č. 340/2015 Sb., o zvláštních podmínkách účinnosti některých smluv, uveřejňování těchto smluv a o registru smluv (zákon o registru smluv), souhlasí se zveřejněním veškerých informací týkajících se závazkového vztahu založeného mezi Prodávajícím a Kupujícím touto Smlouvou, zejména vlastního obsahu této



Smlouvy.

- 8.5. Prodávající prohlašuje, že vůči němu není vedena exekuce a ani nemá žádné dluhy po splatnosti, jejichž splnění by mohlo být vymáháno v exekuci podle zákona č. 120/2001 Sb., o soudních exekutorech a exekuční činnosti (exekuční řád) a o změně dalších zákonů, ve znění pozdějších předpisů, ani vůči němu není veden výkon rozhodnutí a ani nemá žádné dluhy po splatnosti, jejichž splnění by mohlo být vymáháno ve výkonu rozhodnutí podle zákona č. 99/1963 Sb., občanského soudního řádu, ve znění pozdějších předpisů, zákona č. 500/2004 Sb., správního řádu, ve znění pozdějších předpisů, či podle zákona č. 280/2009 Sb., daňového řádu, ve znění pozdějších předpisů.
- 8.6. Odchylně od § 2126 OZ Smluvní strany sjednávají, že Prodávající není oprávněn využít institutu svépomocného prodeje.

## 9. Doručení, předání a převzetí Vybavení

- 9.1. Prodávající doručí Vybavení dle této Smlouvy Kupujícímu nejpozději v termínu uvedeném v článku 6, odstavci 6.1. této Smlouvy do Místa plnění dle článku 7 Smlouvy. Doručením Vybavení přechází na Kupujícího nebezpečí vzniklé škody na doručeném Vybavení, přičemž tato skutečnost nezbavuje Prodávajícího odpovědnosti za škody vzniklé v důsledku vad tohoto Vybavení. Do doby doručení Vybavení nese nebezpečí škody na Vybavení Prodávající.
- 9.2. Součástí předání a převzetí Vybavení na základě této Smlouvy je ověření správné funkčnosti Vybavení za účasti zástupců Kupujícího a Prodávajícího.
- 9.3. Za účasti zástupce Kupujícího při předání a převzetí Prodávající ověří, že Vybavení dosahuje parametrů specifikovaných výrobcem a požadovaným Kupujícím v Technické specifikaci plnění a v této Smlouvě, a to demonstrací provozu Vybavení po jeho řádném uvedení do provozu a po provedení kontroly správnosti provozu Prodávajícím. Bezvadné provedení výše uvedené demonstrace je podmínkou převzetí Vybavení Kupujícím.
- 9.4. Pro účely předávacího řízení musí Prodávající předložit Kupujícímu:
- (i) seznam předávaného Vybavení,
  - (ii) prohlášení Prodávajícího, že Vybavení je v souladu s platnými právními předpisy, technickými normami a v souladu s Technickou specifikací plnění a obchodními podmínkami stanovenými v této Smlouvě,
  - (iii) návody k obsluze a údržbě, podmínky pro údržbu a ochranu Vybavení v českém nebo v anglickém jazyce, a dále veškeré nezbytné doklady či příslušenství vztahující se ke Vybavení.
- 9.5. Nepředloží-li Prodávající Kupujícímu všechny výše uvedené dokumenty, nepokládá se předmět plnění podle této Smlouvy za řádně dodaný a splňující podmínky k předání.
- 9.6. O průběhu předávacího a přijímacího řízení bude mezi Smluvními stranami sepsán předávací protokol, který bude obsahovat tyto povinné náležitosti:
- (i) údaje o Prodávajícím, Kupujícím a poddodavatelích,



- (i) popis Vybavení, které je předmětem předání a převzetí,
- (ii) termín, od kterého začíná běžet záruční lhůta,
- (iii) prohlášení Kupujícího, zda Vybavení přebírá nebo nepřebírá,
- (iv) uvedení zjištěných vad a termín pro jejich odstranění,
- (v) datum podpisu protokolu o předání a převzetí Vybavení,
- (vi) podpis Kupujícího a Prodávajícího.  
(dále jen „**Předávací protokol**“).

9.7. Kupující není povinen převzít Vybavení, které by vykazovalo vady a nedodělky, byť by samy o sobě ani ve spojení s jinými nebránily řádnému užívání Vybavení. Nevyužije-li Kupující svého práva nepřevzít Vybavení vykazující vady a nedodělky, uvedou Prodávající a Kupující v Předávacím protokolu soupis zjištěných vad a nedodělků, včetně způsobu a termínu jejich odstranění. Nedojde-li v Předávacím protokolu k dohodě mezi Smluvními stranami o termínu odstranění vad, platí, že tyto vady mají být odstraněny ve lhůtě 48 hodin ode dne předání a převzetí Vybavení.

## 10. Záruka a nároky z vad, záruční servis, pozáruční servis

10.1. Záruční doba na Vybavení je 24 měsíců.

10.2. Záruční doba začíná běžet dnem podpisu Předávacího protokolu o předání a převzetí Vybavení Kupujícím. Je-li Vybavení, byť i jen s jednou vadou nebo nedodělkem, počíná běžet záruční doba ode dne odstranění poslední vady Prodávajícím.

10.3. Požadavek na odstranění vady Vybavení uplatní Kupující u Prodávajícího bez zbytečného odkladu po jejím zjištění, nejpozději však poslední den záruční lhůty, není-li jinde v této Smlouvě stanoveno výslovně jinak, a to písemným oznámením (reklamací) zaslaným odpovědnému zástupci pro komunikaci Prodávajícího uvedenému v čl. 13 této Smlouvy. I reklamacie odeslaná Kupujícím v poslední den záruční lhůty se má za včas uplatněnou.

10.4. V písemné reklamaci Kupující uvede popis vady a způsob, jakým vadu požaduje odstranit. Kupující je oprávněn:

- (i) požadovat odstranění vad dodáním náhradního Vybavení za vadné Vybavení, nebo požadovat odstranění vad opravou, jsou-li vady opravitelné, nebo požadovat přiměřenou slevu z Kupní ceny.

10.5. Volba mezi výše uvedenými nároky z vad náleží Kupujícímu. Kupující je dále oprávněn odstoupit od Smlouvy, je-li dodáním Vybavení s vadami Smlouva porušena podstatným způsobem. Za podstatné porušení se považuje vždy situace, kdy Vybavení (nebo jeho část) nedosahuje nebo v záruční době přestane dosahovat minimálních parametrů požadovaných Kupujícím a uvedených ve Výchozích podkladech nebo této Smlouvě.

10.6. Prodávající se zavazuje reklamované vady Vybavení bezplatně odstranit.

10.7. Prodávající je povinen v průběhu záruční doby provádět bezplatně veškeré servisní úkony Vybavení, jejichž provedením podmiňuje platnost záruky. Takový servisní úkon je Prodávající





povinen dokončit nejpozději do čtyřiceti osmi (48) hod od doručení žádosti Kupujícího o provedení servisního úkonu odpovědnému zástupci Prodávajícího. Prodávající je povinen písemně upozornit Kupujícího minimálně 10 dnů předem o povinnosti provedení bezplatného servisního úkonu, jehož provedením podmiňuje platnost záruky. Prodávající je dále povinen před koncem záruční doby na písemnou žádost Kupujícího provést bezplatnou servisní prohlídku veškerého dodaného Vybavení.

- 10.8. Prodávající se zavazuje zahájit a zároveň i dokončit úkony směřující k odstranění vady nejpozději do čtyřiceti osmi (48) hodin od doručení reklamace Kupujícím Prodávajícímu. Prodávající se zavazuje v uvedené lhůtě reklamaci prověřit, diagnostikovat vadu, oznámit Kupujícímu a vadu odstranit, případně sdělit, zda reklamaci uznává. Doba sobot, nedělí a svátků se do lhůty dle věty první tohoto odstavce Smlouvy nezapočítává.
- 10.9. Je-li k odstranění vady Vybavení nutné zajistit náhradní díly, pak je Prodávající povinen vadu odstranit do dvou (2) týdnů ode dne obdržení reklamace, nedohodnou-li se Smluvní strany následně jinak.
- 10.10. Prodávající je povinen vadu odstranit v Místě plnění; není-li to možné, nese Prodávající veškeré účelně vynaložené náklady související s přepravou Vybavení za účelem odstranění vad.
- 10.11. I v případě, že Prodávající vadu neuzná, je povinen vadu odstranit, a to ve lhůtách uvedených v odst. 10.8 tohoto článku Smlouvy, případně způsobem stanoveným v odst. 10.9, nedohodnou-li se Smluvní strany následně jinak. V případě, že Prodávající vadu neuzná, bude oprávněnost reklamace ověřena znaleckým posudkem, který nechá zpracovat Kupující. V případě, že bude reklamace označena znalcem za oprávněnou, ponese Prodávající i náklady na vyhotovení znaleckého posudku. Prokáže-li se, že Kupující reklamoval vadu neoprávněně, je Kupující povinen uhradit Prodávajícímu účelně a prokazatelně vynaložené náklady na odstranění vady.
- 10.12. O odstranění reklamované vady sepíše Smluvní strany protokol, ve kterém potvrdí odstranění vady. O dobu, která uplyne ode dne uplatnění reklamace do odstranění vady, se prodlužuje záruční lhůta.
- 10.13. V případě, že Prodávající neodstraní vadu ve lhůtách uvedených v odst. 10.8 či odst. 10.9 tohoto článku Smlouvy, případně ve lhůtě sjednané Smluvními stranami, nebo pokud Prodávající odmítne vadu odstranit, je Kupující oprávněn nechat vadu odstranit na své náklady a Prodávající je povinen uhradit Kupujícímu náklady na odstranění vady, a to do 10dnů poté, co jej k tomu Kupující vyzve. Tento postup Kupujícího však nezbavuje Prodávajícího odpovědnosti za vady a jeho záruka trvá ve sjednaném rozsahu.
- 10.14. Poskytnutí záruky se nevztahuje na vady způsobené neodborným zacházením, nesprávnou nebo nevhodnou údržbou, nedodržováním předpisů výrobců pro provoz a údržbu zařízení, které Kupující od Prodávajícího převzal při předání nebo o kterých Prodávající Kupujícího písemně poučil. Záruka se rovněž nevztahuje na vady způsobené hrubou nedbalostí nebo úmyslným jednáním.
- 10.15. Prodávající se dále zavazuje po dobu 5 let ode dne uplynutí posledního dne záruční doby na Vybavení zajistit Kupujícímu na jeho výzvu pozáruční servis formou servisních prohlídek či dodání náhradních dílů za cenu v místě a čase obvyklou, a to nejpozději do pěti (5) pracovních dnů ode dne doručení písemné výzvy Kupujícího k provedení pozáručního servisu, nedohodnou-li se Smluvní strany jinak.



10.16. Smluvní strany vylučují použití ust. § 1925 OZ, věta za středníkem.

## 11. Smluvní pokuty

- 11.1. V případě, že Prodávající bude v prodlení proti termínu doručení Vybavení uvedenému v článku 6. odst. 6.1 této Smlouvy, je Kupující oprávněn účtovat Prodávajícímu smluvní pokutu ve výši 0,2 % z Kupní ceny bez DPH za každý, i započatý den prodlení.
- 11.2. V případě, že Prodávající neodstraní řádně reklamovanou vadu Vybavení ve lhůtě uvedené v článku 10. odst. 10.8, odst. 10.9 či ve sjednané době, je Kupující oprávněn účtovat Prodávajícímu smluvní pokutu ve výši 2.000,- Kč za každou reklamovanou vadu, u níž je Prodávající v prodlení s odstraněním, za každý započatý den prodlení. Pokud Prodávající neposkytne Kupujícímu záruční servis ve lhůtě uvedené v článku 10. odst. 10.7, je Kupující oprávněn účtovat Prodávajícímu smluvní pokutu ve výši 2.000,- Kč za každý započatý den prodlení s poskytnutím záručního servisu, maximálně však do výše Kupní ceny plnění dle této Smlouvy. Pokud Prodávající neposkytne Kupujícímu pozáruční servis ve lhůtě uvedené v článku 10. odst. 10.15, je Kupující oprávněn účtovat Prodávajícímu smluvní pokutu ve výši 2.000,- Kč za každý započatý den prodlení s poskytnutím záručního servisu, maximálně však do výše Kupní ceny plnění dle této Smlouvy.
- 11.3. Pokud Kupující neuhradí v termínech uvedených v této Smlouvě Kupní cenu, je povinen uhradit Prodávajícímu úrok z prodlení v zákonné výši.
- 11.4. Povinná Smluvní strana musí uhradit oprávněné Smluvní straně smluvní sankce nejpozději do 15 kalendářních dnů ode dne obdržení příslušného vyúčtování od druhé Smluvní strany.
- 11.5. Smluvní strany vylučují použití ustanovení § 2050 OZ. Nárok na náhradu škody má Kupující vždy zachován.

## 12. Ukončení Smlouvy

- 12.1. Tuto Smlouvu lze ukončit splněním, dohodou Smluvních stran nebo odstoupením od Smlouvy z důvodů stanovených v zákoně nebo ve Smlouvě.
- 12.2. Kupující je dále oprávněn od Smlouvy odstoupit bez jakýchkoliv sankcí, nastane-li i některá z níže uvedených skutečností:
- (i) Kupujícímu bude odňata či nevyplacena finanční dotace,
  - (ii) Dojde-li k podstatnému porušení povinností uložených Prodávajícímu touto Smlouvou (viz odstavec 12.3 tohoto článku Smlouvy),
  - (iii) Podstatným porušením této smlouvy, zakládajícím právo kupujícího na odstoupení od smlouvy, se rozumí rovněž případ, kdy příslušný orgán veřejné moci (Státní úřad inspekce práce či oblastní inspektorát práce, Krajská hygienická stanice atd.) zjistí svým pravomocným rozhodnutím v souvislosti s plněním této smlouvy porušení obecně závazných právních předpisů,
  - (iv) Prodávající vstoupí do likvidace,
  - (v) Vůči majetku Prodávajícího probíhá insolvenční (nebo obdobné) řízení, v němž bylo vydáno rozhodnutí o úpadku, nebo byl insolvenční návrh zamítnut proto, že majetek nepostačuje k úhradě



nákladů insolvenčního řízení, nebo byl konkurs zrušen proto, že majetek byl zcela nepostačující nebo byla zavedena nucená správa podle zvláštních právních předpisů,

- (vi) Vyjde-li najevo, že Prodávající uvedl v Nabídce informace nebo doklady, které neodpovídají skutečnosti a které měly nebo mohly mít vliv na výsledek Zadávacího řízení, které vedlo k uzavření této Smlouvy (analogicky dle § 223 odst. 2 ZVZ).

12.3. Za podstatné porušení této Smlouvy bude považováno:

- (i) Prodlení Prodávajícího proti termínu doručení Vybavení uvedenému v článku 6. odst. 6.1 této Smlouvy trvající déle než jeden (1) měsíc;

Přenechání/převod/přechod práv a povinností Prodávajícího z této Smlouvy na třetí osobu bez písemného souhlasu Kupujícího;

Prodávající při plnění této Smlouvy opakovaně (soustavně) porušuje právní předpisy, regulace, technické standardy a normy České republiky či jiných států, k jejichž dodržování se touto Smlouvou zavázal;

Pokud Vybavení či jeho část nebude či v průběhu záruční doby přestane dosahovat minimálně funkcí a parametrů požadovaných Kupujícím a uvedených v Nabídce Prodávajícího;

Porušení této Smlouvy ze strany Prodávajícího takovým způsobem, že v jeho důsledku nemůže Kupující dostat cílům, pro které Smlouvu sjednal, nebo jestliže v důsledku takového jednání Prodávajícího vznikne Kupujícímu větší škoda.

12.4. Prodávající je oprávněn od Smlouvy odstoupit v případě podstatného porušení Smlouvy Kupujícím. Za podstatné porušení Smlouvy Kupujícím se považuje nezaplacení Kupní ceny v termínu stanoveném touto Smlouvou, ač Prodávající Kupujícího na toto porušení písemně upozornil a poskytl mu dostatečně dlouhou lhůtu k dodatečnému splnění této povinnosti.

12.5. Kupující je oprávněn od Smlouvy odstoupit i pouze ve vztahu k části plnění (dodávky).

12.6. Zjistí-li Kupující, že Prodávající je Sankcionovanou osobou, porušil či porušuje Sankce, je ve Střetu zájmů či jakýmkoliv jiným způsobem prodávající porušil či porušuje prohlášení uvedená v článku 2.10, 2.11, 2.12 této Smlouvy, je Kupující oprávněn od této Smlouvy odstoupit.

### 13. Zástupci Smluvních stran, oznamování

13.1. Smluvní strany si po uzavření této Smlouvy vzájemně sdělí kontaktní údaje odpovědných zástupců pro vzájemnou komunikaci v souvislosti s předmětem plnění dle této Smlouvy.

13.2. Není-li v této Smlouvě ujednáno jinak, veškerá oznámení, která mají nebo mohou být učiněna mezi Smluvními stranami podle této Smlouvy, musí být vyhotovena písemně a doručena druhé Smluvní straně oprávněnou zasilatelskou službou, osobně (s písemným potvrzením o převzetí) nebo doporučenou zásilkou odeslanou s využitím provozovatele poštovních služeb; má se za to, že takové oznámení došlo třetí pracovní den po odeslání, bylo-li však odesláno na adresu v jiném státu, pak patnáctý pracovní den po odeslání. V případě reklamace lze písemné oznámení zaslat také prostřednictvím e-mailu.



#### **14. Doložka o rozhodném právu**

- 14.1. Tato Smlouva a veškeré právní vztahy z ní vzniklé se řídí výlučně právním řádem České republiky, přičemž Smluvní strany berou na vědomí a uznávají, že v oblastech výslovně neupravených touto Smlouvou platí ustanovení OZ.
- 14.2. Veškeré spory vzniklé z této Smlouvy či z právních vztahů s ní souvisejících budou Smluvní strany řešit jednáním.

#### **15. Závěrečná ujednání**

- 15.1. Tato Smlouva, včetně příloh, představuje úplnou a ucelenou smlouvu mezi Kupujícím a Prodávajícím. Tato Smlouva je vyhotovena jako elektronický originál.
- 15.2. Smluvní strany se dohodly, že Prodávající není oprávněn započíst svou pohledávku, ani pohledávku svého poddlužníka za Kupujícího proti pohledávce Kupujícího za Prodávajícím.
- 15.3. Prodávající není oprávněn postoupit pohledávku, která mu vznikne na základě této Smlouvy nebo v souvislosti s ní, na třetí osobu. Prodávající není oprávněn postoupit práva a povinnosti z této Smlouvy ani z její části třetí osobě.
- 15.4. Prodávající se zavazuje mít po celou dobu platnosti této Smlouvy sjednáno pojištění odpovědnosti za škodu způsobenou v souvislosti s výkonem podnikatelské činnosti, a to s limitem pojistného plnění minimálně ve výši Kupní ceny za předmět této Smlouvy.
- 15.5. Pokud se jakékoliv ustanovení této Smlouvy později ukáže nebo bude určeno jako neplatné, neúčinné, zdánlivé nebo nevynutitelné, pak taková neplatnost, neúčinnost, zdánlivost nebo nevynutitelnost nezpůsobuje neplatnost, neúčinnost, zdánlivost nebo nevynutitelnost Smlouvy jako celku. V takovém případě se Strany zavazují bez zbytečného prodlení dodatečně takové vadné ustanovení vyjasnit ve smyslu ustanovení § 553 odst. 2 OZ nebo jej nahradit po vzájemné dohodě novým ustanovením, jež nejbližší, v rozsahu povoleném právními předpisy České republiky, odpovídá úmyslu Smluvních stran v době uzavření této Smlouvy.
- 15.6. Tato Smlouva nabývá platnosti dnem podpisu oběma smluvními stranami a účinnosti dnem jejího uveřejnění v registru smluv (dle zákona č. 340/2015 Sb. o registru smluv), které provede kupující.
- 15.7. Tuto Smlouvu lze doplnit nebo měnit výlučně formou písemných očíslovaných dodatků, opatřených časovým a místním určením a podepsaných oprávněnými zástupci Smluvních stran. Smluvní strany ve smyslu ustanovení § 564 OZ výslovně vylučují provedení změn Smlouvy v jiné formě.
- 15.8. Poruší-li Smluvní strana povinnost z této Smlouvy či může-li a má-li o takovém porušení vědět, oznámí to bez zbytečného odkladu druhé Smluvní straně, které z toho může vzniknout újma, a upozorní ji na možné následky; v takovém případě nemá poškozená Smluvní strana právo na náhradu té újmy, které mohla po oznámení zabránit.
- 15.9. Prodávající se za podmínek stanovených touto Smlouvou zavazuje archivovat veškeré písemnosti zhotovené pro plnění předmětu dle této Smlouvy.



15.10. Prodávající se za podmínek stanovených touto Smlouvou zavazuje:

- (i) archivovat veškeré písemnosti zhotovené pro plnění předmětu dle této Smlouvy a umožnit osobám oprávněným k výkonu kontroly projektu, z něhož je plnění dle této Smlouvy hrazeno, provést kontrolu dokladů souvisejících s tímto plněním, a to po celou dobu archivace projektu, minimálně však do roku 2033. Kupující je oprávněn po uplynutí 10 let od ukončení plnění podle této Smlouvy od Prodávajícího výše uvedené dokumenty bezplatně převzít;
- (ii) jako osoba povinná dle ustanovení § 2 písm. e) zákona č. 320/2001 Sb., o finanční kontrole ve veřejné správě, v platném znění, spolupůsobit při výkonu finanční kontroly, mj. umožnit všem subjektům oprávněným k výkonu kontroly projektu přístup ke všem dokumentům, tedy i k těm částem nabídek, smluv a souvisejících dokumentů, které podléhají ochraně podle zvláštních právních předpisů (např. obchodní tajemství), a to za předpokladu, že budou splněny požadavky kladené právními předpisy; tuto povinnost rovněž zajistí Prodávající u případných poddodavatelů Prodávajícího;
- (iii) minimálně do konce roku 2028 poskytovat požadované informace a dokumentaci související s realizací projektu zaměstnancům nebo zmocněncům pověřených orgánů (CRR, MMR ČR, MF ČR, Evropské komise, Evropského účetního dvora, Nejvyššího kontrolního úřadu, příslušného orgánu finanční správy a dalších oprávněných orgánů státní správy) a je povinen vytvořit výše uvedeným osobám podmínky k provedení kontroly vztahující se k realizaci projektu a poskytnout jim při provádění kontroly součinnost.

15.11. Smluvní strany prohlašují, že si Smlouvu přečetly, s obsahem souhlasí a na důkaz jejich svobodné, pravé a vážné vůle připojují své podpisy. Uzavření této Smlouvy bylo schváleno Usnesením Rady Středočeského kraje č. 062-33/2023/RK ze dne 14. 9. 2023.

15.12. Nedílnou součástí Smlouvy jsou tyto přílohy:

*Příloha č. 1: Technická specifikace plnění, která tvořila Přílohu č. 6 Zadávací dokumentace pro část D – Konektivita školy,*

*Příloha č. 2: Hlavní nabídka Prodávajícího předložená v rámci zadávacího řízení v části, která předmět plnění technicky popisuje (technické či produktové listy atd).*

15.13. Smluvní strany stvrzují Smlouvu podpisem na důkaz souhlasu s celým jejím obsahem.

Ing. Jana  
Bláhová

Digitálně podepsal  
Ing. Jana Bláhová  
Datum: 2023.10.05  
13:54:45 +02'00'

Ing. Jana Bláhová,  
ředitelka PO

Ing. et Ing.  
Pavel  
Schlitter, Ph.D.

Digitálně podepsal  
Ing. et Ing. Pavel  
Schlitter, Ph.D.  
Datum: 2023.10.05  
09:59:04 +02'00'

Ing. et Ing. Pavel Schlitter, Ph.D.  
výkoný ředitel, prokurista

## Souhrn položek KONEKTIVITA

Učebny a instalace	Cena v Kč bez DPH	Cena v Kč vč. DPH
Microsoft	679 280,00 Kč	821 928,80 Kč
Cisco	3 134 142,83 Kč	3 792 312,82 Kč
Servery 3 ks	778 238,40 Kč	941 668,46 Kč
Ostatní SW	1 295 478,00 Kč	1 567 528,38 Kč
<b>Rozpočet celkem</b>	<b>5 887 139,23 Kč</b>	<b>7 123 438,47 Kč</b>

<b>MICROSOFT</b>				
Počet ks	Specifikace	Cena za jednotku v Kč bez DPH	Cena celkem v Kč bez DPH	Cena celkem v Kč vč. DPH
4	Windows Server DataCenter Core 2022 SNGL OLP 16Lic NL EDU CoreLic Qlfd	38 700,00	154 800,00	187 308,00
2	Exchange Server Standard 2019 OLP NL EDU	4 890,00	9 780,00	11 833,80
100	Exchange Standard CAL 2019 OLP NL EDU USER	117,00	11 700,00	14 157,00
100	Exchange Standard CAL 2019 OLP NL EDU DEVICE	94,00	9 400,00	11 374,00
100	ExchgEntCAL 2019 SNGL OLP NL EDU UsrCAL woSrvcs	1 504,00	150 400,00	181 984,00
2	SQLSvrEntCore 2022 SNGL OLP 2Lic NL EDU CoreLic Qlfd	24 790,00	49 580,00	59 991,80
100	Win Server CAL 2022 SNGL OLP NL EDU USER CAL	211,00	21 100,00	25 531,00
100	Win Server CAL 2022 SNGL OLP NL EDU DEVICE CAL	211,00	21 100,00	25 531,00
100	Win Remote Desktop Svcs CAL 2022 OLP NL EDU UsrCAL	728,00	72 800,00	88 088,00
1	SharePointSvr 2022 SNGL OLP NL EDU	47 020,00	47 020,00	56 894,20
100	SharePointStdCAL 2019 SNGL OLP NL EDU DvcCAL	658,00	65 800,00	79 618,00
100	SharePointStdCAL 2019 SNGL OLP NL EDU UsrCAL	658,00	65 800,00	79 618,00
<b>Celková cena</b>			<b>679 280 Kč</b>	<b>821 928,80 Kč</b>

Produkt značky Microsoft - nutné vzhledem ke stávajícím licencím, produktům a zařízením ve škole - zachování kompatibility se současnými programy ve škole.

Line Number	Part Number	Smart Account Mandatory	Description	Service Duration (Months)	Unit List Price	Pricing Term	Qty	Unit Net Price	Disc(%)	Extended Net Price	Success Track	CX Level	Jednotková cena v Kč	Celková cena v Kč
<b>Group Name: Nahrada Cat9400 - Cat9300 - "access" model</b>												<b>Subtotal=</b>	<b>41 710,24</b>	<b>926 384,43 Kč</b>
3.0	C9300-48U-A	-	Catalyst 9300 48-port UPOE, Network Advantage	---	12 517,94		2	5 382,71	57,00	10 765,42	CAMPUS NETWORK		119 549,99 Kč	239 099,98 Kč
3.0.1	CON-SNT-C93004UA	-	SNTC-8X5XNBD Catalyst 9300 48-port UPOE, Network Adva	60	5 169,25		2	3 101,55	40,00	6 203,10			68 885,43 Kč	137 770,85 Kč
3.4	PWR-C1-1100WAC-P/2	-	1100W AC 80+ platinum Config 1 Secondary Power Supply	---	2 241,67		2	963,92	57,00	1 927,84			21 408,66 Kč	42 817,33 Kč
3.5	CAB-TA-EU	-	Europe AC Type A Power Cable	---	0,00		4	0,00	0,00	0,00			- Kč	- Kč
3.6	SSD-240G	-	Cisco pluggable USB3.0 SSD storage	---	1 769,74		2	760,99	57,00	1 521,98			16 901,59 Kč	33 803,18 Kč
3.7	STACK-T1-50CM	-	50CM Type 1 Stacking Cable	---	117,98		2	50,73	57,00	101,46			1 126,71 Kč	2 253,43 Kč
3.8	CAB-SPWR-30CM	-	Catalyst Stack Power Cable 30 CM	---	112,09		2	48,20	57,00	96,40			1 070,52 Kč	2 141,04 Kč
3.10	C9300-DNA-A-48	Yes	C9300 DNA Advantage, 48-Port Term Licenses	---	0,00		2	0,00	0,00	0,00	CAMPUS NETWORK		- Kč	- Kč
3.10.1	C9300-DNA-A-48-5Y	-	C9300 DNA Advantage, 48-Port, 5 Year Term License	60	7 409,30		2	3 260,09	56,00	6 520,18			72 406,60 Kč	144 813,20 Kč
3.11.1	PI-LFAS-AP-T-5Y	-	PI Dev Lic for Lifecycle & Assurance Term 5Y	60	0,00		2	0,00	0,00	0,00			- Kč	- Kč
3.12.1	D-DNAS-EXT-S-5Y	-	Cisco DNA Spaces Extend for Catalyst Switching - 5Year	60	0,00		2	0,00	0,00	0,00			- Kč	- Kč
3.13.1	TE-EMBEDDED-T-5Y	-	ThousandEyes - Enterprise Agents	60	0,00		2	0,00	0,00	0,00			- Kč	- Kč
3.14	C9300-NM-8X	-	Catalyst 9300 8 x 10GE Network Module	---	3 008,55		2	1 293,68	57,00	2 587,36			28 732,63 Kč	57 465,27 Kč
4.0	C9300-48T-A	-	Catalyst 9300 48-port data only, Network Advantage	---	9 391,41		1	3 944,39	58,00	3 944,39	CAMPUS NETWORK		87 604,90 Kč	87 604,90 Kč
4.0.1	CON-SNT-C93004TA	-	SNTC-8X5XNBD Catalyst 9300 48-port data only, Network	60	3 881,25		1	2 328,75	40,00	2 328,75			51 721,54 Kč	51 721,54 Kč
4.4	PWR-C1-350WAC-P/2	-	350W AC 80+ platinum Config 1 Secondary Power Supply	---	766,89		1	329,76	57,00	329,76			7 323,97 Kč	7 323,97 Kč
4.5	CAB-TA-EU	-	Europe AC Type A Power Cable	---	0,00		2	0,00	0,00	0,00			- Kč	- Kč
4.6	SSD-240G	-	Cisco pluggable USB3.0 SSD storage	---	1 769,74		1	760,99	57,00	760,99			16 901,59 Kč	16 901,59 Kč
4.7	STACK-T1-50CM	-	50CM Type 1 Stacking Cable	---	117,98		1	50,73	57,00	50,73			1 126,71 Kč	1 126,71 Kč
4.8	CAB-SPWR-30CM	-	Catalyst Stack Power Cable 30 CM	---	112,09		1	48,20	57,00	48,20			1 070,52 Kč	1 070,52 Kč
4.10	C9300-DNA-A-48	Yes	C9300 DNA Advantage, 48-Port Term Licenses	---	0,00		1	0,00	0,00	0,00	CAMPUS NETWORK		- Kč	- Kč
4.10.1	C9300-DNA-A-48-5Y	-	C9300 DNA Advantage, 48-Port, 5 Year Term License	60	7 409,30		1	3 260,09	56,00	3 260,09			72 406,60 Kč	72 406,60 Kč
4.11.1	PI-LFAS-AP-T-5Y	-	PI Dev Lic for Lifecycle & Assurance Term 5Y	60	0,00		1	0,00	0,00	0,00			- Kč	- Kč
4.12.1	D-DNAS-EXT-S-5Y	-	Cisco DNA Spaces Extend for Catalyst Switching - 5Year	60	0,00		1	0,00	0,00	0,00			- Kč	- Kč
4.13.1	TE-EMBEDDED-T-5Y	-	ThousandEyes - Enterprise Agents	60	0,00		1	0,00	0,00	0,00			- Kč	- Kč
4.14	C9300-NM-8X	-	Catalyst 9300 8 x 10GE Network Module	---	3 008,55		1	1 263,59	58,00	1 263,59			28 064,33 Kč	28 064,33 Kč
<b>Group Name: WIFI AP puvodni</b>												<b>Subtotal=</b>	<b>47 237,70</b>	<b>1 049 149,32 Kč</b>
7.0	C9120AXE-E	-	C9120AX External 802.11ax 4x4:4 MIMO-IOT-BT5.mGig,USB,RHL	---	2 277,06		30	956,37	58,00	28 691,10	CAMPUS NETWORK		21 240,98 Kč	637 229,33 Kč
7.0.1	CON-SNT-C20AXE19	-	SNTC-8X5XNBD Cisco Catalyst 9120AX Series	60	523,25		30	313,95	40,00	9 418,50			6 972,83 Kč	209 184,89 Kč
7.4	AIR-ANT2524DW-R	-	2.4 GHz 2 dBi/5 GHz 4 dBi Dipole Ant., White, RP-TNC	---	63,71		120	27,40	57,00	3 288,00			608,55 Kč	73 026,48 Kč
7.5.1	DNA-E-5Y-C9120	-	C9120AX Cisco DNA On-Prem Essential,5Y Term,Trk Lic	60	0,00		30	0,00	0,00	0,00			- Kč	- Kč
7.6	AIR-DNA-E	-	Wireless Cisco DNA On-Prem Essential, Term Lic	---	0,00		30	0,00	0,00	0,00	CAMPUS NETWORK		- Kč	- Kč
7.6.1	AIR-DNA-E-5Y	-	Wireless Cisco DNA On-Prem Essential, 5Y Term Lic	60	442,44		30	194,67	56,00	5 840,10			4 323,62 Kč	129 708,62 Kč
7.7.1	PI-LFAS-AP-T-5Y	-	PI Dev Lic for Lifecycle & Assurance Term 5Y	60	0,00		30	0,00	0,00	0,00			- Kč	- Kč
7.8.1	AIR-DNA-E-T-5Y	-	Wireless Cisco DNA On-Prem Essential, 5Y Term, Tracker Lic	60	0,00		30	0,00	0,00	0,00			- Kč	- Kč
7.11	C9120AXE-SINGLE	-	SINGLE PACK OPTION	---	0,00		30	0,00	0,00	0,00			- Kč	- Kč
<b>Group Name: Ostatni puvodni prvky</b>												<b>Subtotal=</b>	<b>52 166,10</b>	<b>1 158 609,08 Kč</b>
10.0	SFP-10G-LR-S-	-	10GBASE-LR SFP Module, Enterprise-Class	---	2 359,65		1	1 014,65	57,00	1 014,65			22 535,38 Kč	22 535,38 Kč
11.0	C9200L-48T-4X-E	-	Catalyst 9200L 48-port data, 4 x 10G, Network Essentials	---	6 183,81		3	2 597,20	58,00	7 791,60	CAMPUS NETWORK		57 683,81 Kč	173 051,44 Kč
11.0.1	CON-SNT-C920L4XE	-	SNTC-8X5XNBD Catalyst 9200L 48-port	60	2 633,50		3	1 580,10	40,00	4 740,30			35 094,02 Kč	105 282,06 Kč
11.2	CAB-TA-EU	-	Europe AC Type A Power Cable	---	0,00		3	0,00	0,00	0,00			- Kč	- Kč
11.4	C9200L-DNA-E-48	Yes	C9200L Cisco DNA Essentials, 48-port Term license	---	0,00		3	0,00	0,00	0,00	CAMPUS NETWORK		- Kč	- Kč
11.4.1	C9200L-DNA-E-48-5Y	-	C9200L Cisco DNA Essentials, 48-port, 5 Year Term license	60	2 206,28		3	970,76	56,00	2 912,28			21 560,58 Kč	64 681,74 Kč
11.5	C9200L-STACK-KIT	-	Cisco Catalyst 9200L Stack Module	---	1 524,65		3	640,35	58,00	1 921,05			14 222,17 Kč	42 666,52 Kč
12.0	C9200L-24P-4G-E	-	Catalyst 9200L 24-port PoE+, 4 x 1G, Network Essentials	---	3 569,55		4	1 463,52	59,00	5 854,08	CAMPUS NETWORK		32 504,78 Kč	130 019,12 Kč



Line Number	Part Number	Smart Account Mandatory	Description	Service Duration (Months)	Unit List Price	Pricing Term	Qty	Unit Net Price	Disc(%)	Extended Net Price	Success Track	CX Level	Jednotková cena v Kč	Celková cena v Kč
12.0.1	CON-SNT-C920L24G	-	SNTC-8X5XNBD Catalyst 9200L 24-port PoE+, 4 x 1G, Net	60	1 518,00		4	910,80	40,00	3 643,20			20 228,87 Kč	80 915,47 Kč
12.2	CAB-TA-EU	-	Europe AC Type A Power Cable	---	0,00		4	0,00	0,00	0,00			- Kč	- Kč
12.4	C9200L-DNA-E-24	Yes	C9200L Cisco DNA Essentials, 24-port Term license	---	0,00		4	0,00	0,00	0,00	CAMPUS NETWORK		- Kč	- Kč
12.4.1	C9200L-DNA-E-24-5Y	-	C9200L Cisco DNA Essentials, 24-port, 5 Year Term license	60	1 203,88		4	529,71	56,00	2 118,84			11 764,86 Kč	47 059,44 Kč
12.5	C9200L-STACK-KIT	-	Cisco Catalyst 9200L Stack Module	---	1 524,65		4	640,35	58,00	2 561,40			14 222,17 Kč	56 888,69 Kč
13.0	C9200L-48T-4G-E	-	Catalyst 9200L 48-port data, 4 x 1G, Network Essentials	---	4 272,23		2	1 794,34	58,00	3 588,68	CAMPUS NETWORK		39 852,29 Kč	79 704,58 Kč
13.0.1	CON-SNT-C920L48E	-	SNTC-8X5XNBD Catalyst 9200L 48-port data, 4 x 1G, Net	60	1 817,00		2	1 090,20	40,00	2 180,40			24 213,34 Kč	48 426,68 Kč
13.2	CAB-TA-EU	-	Europe AC Type A Power Cable	---	0,00		2	0,00	0,00	0,00			- Kč	- Kč
13.4	C9200L-DNA-E-48	Yes	C9200L Cisco DNA Essentials, 48-port Term license	---	0,00		2	0,00	0,00	0,00	CAMPUS NETWORK		- Kč	- Kč
13.4.1	C9200L-DNA-E-48-5Y	-	C9200L Cisco DNA Essentials, 48-port, 5 Year Term license	60	2 206,28		2	970,76	56,00	1 941,52			21 560,58 Kč	43 121,16 Kč
13.5	C9200L-STACK-KIT	-	Cisco Catalyst 9200L Stack Module	---	1 524,65		2	640,35	58,00	1 280,70			14 222,17 Kč	28 444,35 Kč
14.0	C9800-L-F-K9	-	Cisco Catalyst 9800-L Wireless Controller, Fiber Uplink	---	11 798,25		1	5 073,25	57,00	5 073,25	CAMPUS NETWORK		112 676,88 Kč	112 676,88 Kč
14.0.1	CON-SNT-C9800LFL	-	SNTC-8X5XNBD Cisco Catalyst 9800-L Wireless Controller	60	9 240,25		1	5 544,15	40,00	5 544,15			123 135,57 Kč	123 135,57 Kč
14.1	LIC-C9800-DTLS-K9	-	Cisco Catalyst 9800 Series Wireless Controller DTLS License	---	0,00		1	0,00	0,00	0,00			- Kč	- Kč
14.3	C9800-AC-110W	-	Cisco Catalyst 9800 L Wireless Controller Power Supply	---	0,00		1	0,00	0,00	0,00			- Kč	- Kč
14.4	CAB-AC-C5-EUR	-	AC Power Cord, Type C5, Europe	---	0,00		1	0,00	0,00	0,00			- Kč	- Kč

Produkt značky CISCO - nutné vzhledem ke stávajícím licencím a zařízením ve škole - zachování kompatibility se současnými programy ve škole.

Celková cena	\$ 84 462,63	1 875 915,01 Kč			
Servis a instalace	\$ 34 058,40	756 437,06 Kč			
Předplatné, licence	\$ 22 593,01	501 790,75 Kč	DPH	Cena vč. DPH	Kurz Kč za 1 USD
Cena za vše bez DPH	\$ 141 114,04	3 134 142,83 Kč	21%	\$ 170 747,99	22,21
					3 792 312,82 Kč

658 169,99 Kč

## SERVERY

Počet	Položka	USD/za jednotku	Celkem cena v USD	Celkem cena v Kč	Celkem cena v Kč vč DPH
1	SERVER SYSTEM R2224WFTZSR/SINGLE IN	11 680,00	11 680,00	259 412,80	313 889,49
2	INTEL Xeon Silver 4215 (8-core) 2.5GHZ	0,00	0,00	0,00	0,00
8	32GB DDR4-2666MHZ ECC REG CL19/DIMM 2RX4 MICRON E IDT	0,00	0,00	0,00	0,00
1	NETWORK CONNECTION OCP X527-DA2/X527DA2OCPG1P5	0,00	0,00	0,00	0,00
1	INTEL ETHERNET I350 T2 V2 SVR/ADAPTER RJ45 PCI-E	0,00	0,00	0,00	0,00
1	ACCESSORY AXX1300TCRPS	0,00	0,00	0,00	0,00
1	RAID CONTROLLER RMSP3AD160F	0,00	0,00	0,00	0,00
1	BACKUP ACCESSORY AXSRMFBU7	0,00	0,00	0,00	0,00
1	BRACKET KIT AWTAUXBBUBKT	0,00	0,00	0,00	0,00
9	EXOS 10E2400 2.4TB 512E/4K/2.5IN 10KRPM SAS 256MB 16GB MLC	0,00	0,00	0,00	0,00
1	RAID CONTROLLER RS3DC040	0,00	0,00	0,00	0,00
2	ALLEGRO 14 600GB SAS 12GB/S/2.5IN 128MB CACHE 15K RPM	0,00	0,00	0,00	0,00
1	SPARE RISER A2UL16RISER2	0,00	0,00	0,00	0,00
1	ACCESSORY A2UREARHSDK2	0,00	0,00	0,00	0,00
1	CABLE KIT AXXCBL800HDHD	0,00	0,00	0,00	0,00
1	CABLE KIT AXXCBL950HDHD	0,00	0,00	0,00	0,00
1	SYSTEM MANAGEMENT MODULE/AXXRM4LITE2	0,00	0,00	0,00	0,00
1	ACCESSORY AXXTMENC8	0,00	0,00	0,00	0,00
1	2/4U PREMIUM RAIL AXXFULLRAIL/WITH CMA SUPPORT	0,00	0,00	0,00	0,00
1	CABLE MGMT ARM AXXCMA2	0,00	0,00	0,00	0,00
1	BRACKET KIT AWTAUXBBUBKT	0,00	0,00	0,00	0,00
<b>CENA CELKEM ZA 1 SERVER</b>			<b>11 680,00</b>	<b>259 412,80</b>	<b>313 889,49</b>
<b>Celkem za 3 ks SERVERY</b>			<b>35 040,00</b>	<b>778 238,40 Kč</b>	<b>941 668,46 Kč</b>

Kurz Kč za 1 USD

22,21

Další SW a zálohování		Cena bez DPH	DPH	Cena vč. DPH
1.	<b>SW pro zálohování</b>			
	Open-E DSS V7 unlimited Elektronická licence	61 500,00	21%	74 415,00
	SYSTEM RECOVERY VIRTUAL ED WIN 1 HOST SERVER ONPREMISE STANDARD LICENSE + ESSENTIAL MAINTENANCE BUNDLE EXPIRED MAINT UPG INITIAL 12MO EDU	10 400,00	21%	12 584,00
	<b>Celkem</b>	<b>71 900,00</b>	<b>21%</b>	<b>86 999,00</b>
2.	<b>SW Sophos</b>	<b>449 750,00</b>	<b>21%</b>	<b>544 197,50</b>
	Technická specifikace: Sophos UTM with Sandboxing, vstupní ochrana pro síť firewall, licence na 3 roky.			
3.	<b>SW pro ŠVP</b>	<b>44 200,00</b>	<b>21%</b>	<b>53 482,00</b>
	Technická specifikace: Systém Smile umožňuje tvorbu a aktualizaci ŠVP. Síťová licence pro SŠ. Moduly ŠVP a tematické plány.			
4.	<b>Antivirové řešení</b>	<b>582 940,00</b>	<b>21%</b>	<b>705 357,40</b>
	Technická specifikace: GravityZone Business Security Enterprise, licence na 3 roky pro 200 stanic, včetně ochrany emailů a smtp brány			
Záložní zdroj	<b>Záložní zdroj serverů - 2 kusy</b>	<b>146 688,00</b>	<b>21%</b>	<b>177 492,48</b>
	Technická specifikace: APC Smart-UPS 3000VA LCD RM 2U - černá, 2,7 kW, hloubka 68 cm + AP9631			
<b>Celkem za další SW a zálohování</b>		<b>1 295 478,00 Kč</b>	<b>21%</b>	<b>1 567 528,38 Kč</b>

Technická specifikace nutná vzhledem ke stávajícím licencím, produktům a zařízením ve škole - zachování kompatibility se současnými programy ve škole.

# Cisco Catalyst 9300 Series Switches

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## Built to reimagine connection, reinforce security and redefine experience

Cisco Catalyst 9300 Series switches are Cisco's lead stackable enterprise access switching platform and as part of the Catalyst 9000 family, are built to transform your network to handle a hybrid world where the workplace is anywhere, endpoints could be anything, and applications are hosted all over the place.

The Catalyst 9300 Series, including the new Catalyst 9300X models, continues to shape the future with continued innovation that helps you reimagine connections, reinforce security and redefine the experience for your hybrid workforce big and small.

The many industry's first include:

- **Up to 1TB of stacking bandwidth:** With Stackwise-1T, Catalyst 9300 switches are the industry's highest-density stacking bandwidth solution with the most flexible uplink architecture
- **Flexible and dense uplink offerings** with 100G, 40G, 25G, Multigigabit, 10G, and 1G modular uplinks
- **Mixed Stacking with Backward Compatibility** – Stack your Catalyst 9300X fiber switches with Catalyst 9300 and Catalyst 9300X Multigigabit switches, bringing stackable high-speed fiber to the access
- **Highest Multigigabit Ports:** With standalone and Stackwise-1T, Catalyst 9300X models enable 48 mGig ports in standalone and 448 mGig ports with an 8-member stack
- **Highest 90W UPOE+ Density:** Enable your OT/IT needs with up to 36 ports of 90W UPOE+ for standalone or 288 ports of 90W UPOE+ with a 8-member stack.
- **StackPower with Backward Compatibility:** Enable power resiliency with higher power budgets in mixed Catalyst 9300 and Catalyst 9300X stack.
- **100G IPsec in hardware:** With the new 2.0Sec UADP ASIC, the Catalyst 9300X comes with 100G line rate IPsec to enable various options for new edge connectivity
- **Secure Tunnel connectivity:** With the new edge, the C9300X enables secure connections to Secure Internet Gateway, Cloud Service Providers and Site to Site connectivity using IPsec tunnel with AES-256 Encryption and speeds up to 100G.
- **Enhanced Application Hosting:** With 2x capacity and additional RAM, QAT, and 2 x 10G AppGig Ports, multiple Cisco Signed performance savvy applications can be hosted on Catalyst 9300X
- **ThousandEyes Enabled:** End-to-end visualization of the path from campus/branch to clouds/DC with Cisco ThousandEyes Network and Application Synthetics (included with Cisco DNA Advantage licenses)
- **Investment Protection:** Catalyst 9300X redundant fans and power supplies, data stack and StackPower cables are backward compatible with the Catalyst 9300.

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## The Foundation of Software-Defined access

Advanced persistent security threats. The exponential growth of Internet of Things (IoT) devices. Mobility everywhere. Cloud adoption. All of these require a network fabric that integrates advanced hardware and software innovations to automate, secure, and simplify customer networks. The goal of this network fabric is to enable customer revenue growth by accelerating the rollout of business services.

The Cisco Digital Network Architecture (Cisco DNA) with Software-Defined Access (SD-Access) is the network fabric that powers business. It is an open and extensible, software-driven architecture that accelerates and simplifies your enterprise network operations. The programmable architecture frees your IT staff from time-consuming, repetitive network configuration tasks so they can focus instead on innovation that positively transforms your business. SD-Access enables policy-based automation from edge to cloud with foundational capabilities. These include:

- Simplified device deployment
- Unified management of wired and wireless networks
- Network virtualization and segmentation
- Group-based policies
- Context-based analytics

## Cisco DNA Software

Cisco DNA Software offers a valuable and flexible way to buy software for the access, WAN, and data center domains. At each stage in the product lifecycle, Cisco DNA Software helps make buying, managing, and upgrading your network and infrastructure software easier. Cisco DNA Software provides:

- Flexible licensing models to smoothly distribute customers' software spending over time
- Investment protection for software purchases through software services-enabled license portability
- Access to updates, upgrades, and new technology from Cisco through Cisco Software Support Services (SWSS)
- Lower cost of entry with the new Cisco DNA Subscription for Switching model
- Access to end-to-end network visibility with Cisco Spaces and service assurance through Cisco ThousandEyes Network and Application Synthetics (included with Cisco DNA Advantage license)

Cisco DNA lets you manage your entire switching structure as a single, converged component. With one management system and one policy for wired and wireless networks, it offers an efficient way to provide more secure access.

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## Product overview

### Product highlights

- Highest wireless scale for Wi-Fi 6 and 802.11ac Wave 2 access points supported on a single switch with select models
- Catalyst 9300 and Catalyst 9300L/LM models are based on the Cisco UADP 2.0 Application-Specific Integrated Circuit (ASIC) with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries
- Catalyst 9300X models are based on UADP 2.0sec ASIC which adds line rate support for Crypto, including 100G hardware-based IPsec
- x86 CPU complex with 8-GB memory, and 16 GB of flash and external USB 3.0 SSD pluggable storage slot (delivering up to 240GB of storage with an option SSD drive) to host containers. C9300X models support 16GB of memory
- USB 2.0 slot to load system images and set configurations
- Up to 1 TBps of local stackable switching bandwidth with Catalyst 9300X models
- Deeper buffer and higher scale model options for rich multi-media content delivery applications
- Flexible and dense uplink offerings with 100G, 40G, 25G, Multigigabit, 10G, and 1G as fixed or modular uplinks
- Easy transition from 40G to 100G and 10G to 25G with dual-rate optics
- Flexible downlink options with 25G, 10G and 1G Copper and Fiber as well as the densest Multigigabit links
- With a mix of Copper (1G up to 10G) and Fiber (1G up to 25G) supported in a single stack, multiple flexible deployment scenarios are enabled, including 2-Tier, 3-Tier and Hybrid architectures
- Leading PoE capabilities with up to 384 ports of PoE per stack, PoE+, and 288 ports high density IEEE 802.3bt - 90W UPOE+, and 60W Cisco UPOE
- Intelligent Power Management with Cisco StackPower technology, providing power stacking among members for power redundancy. StackPower pools the power supplies across the stack to be used redundancy and supplemental power purposes
- Line-rate, hardware-based Flexible NetFlow (FNF), delivering flow collection of up to 128,000 flows with select models
- IPv6 support in hardware, providing wire-rate forwarding for IPv6 networks
- Dual-stack support for IPv4/IPv6 and dynamic hardware forwarding table allocations, for ease of IPv4-to-IPv6 migration
- Support for both static and dynamic NAT and Port Address Translation (PAT)
- IEEE 802.1ba AV Bridging (AVB) built in to provide a better audio and video experience through improved time synchronization and QoS

- 
- Precision Time Protocol (PTP; IEEE 1588v2) provides accurate clock synchronization with sub-microsecond accuracy making it suitable for distribution and synchronization of time and frequency over network
  - Cisco IOS XE, a modern operating system for the enterprise with support for model-driven programmability including NETCONF, RESTCONF, YANG, on-box Python scripting, streaming telemetry, container-based application hosting, and patching for critical bug fixes. The OS also has built-in defenses to protect against runtime attacks
  - End-to-end visualization of the path from campus/branch to clouds/DC with Cisco ThousandEyes Network and Application Synthetics (included with Cisco DNA Advantage license)
  - **SD-Access:** Cisco Catalyst 9300 Series switches form the foundational building block for SD-Access, Cisco's lead enterprise architecture:
    - Policy-based automation from edge to cloud
    - Simplified segmentation and micro-segmentation, with predictable performance and scalability
    - Automation through Cisco DNA Center
    - Policy handled through the Cisco Identity Services Engine (ISE)
    - Network assurance provided through the Cisco DNA Center
    - Faster launch of new business services and significantly improved issue resolution time
  - Plug and Play (PnP) enabled: A simple, secure, unified, and integrated offering to ease new branch or campus device rollouts or updates to an existing network
  - Advanced security
    - Encrypted Traffic Analytics (ETA): You benefit from the power of machine learning to identify and take actions toward threats or anomalies in your network, including malware detection in encrypted traffic (without decryption) and distributed anomaly detection
    - Support for AES-256 with the powerful MACsec 256-bit encryption algorithm available on all models
    - Trustworthy solutions: Hardware anchored Secure Boot and Secure Unique Device Identification (SUDI) support for Plug and Play, to verify the identity of the hardware and software



## Platform details

### Switch models and configurations

**Table 1.** Product Family Configurations

Models	Modular Uplinks and Speeds	Stacking Bandwidth Support	mGig Density	Cisco StackPower	HW-Based IPSEC	App-Hosting Capacity
<b>Catalyst 9300X</b>	10G, 25G, 40G, mGig and 100G	Stackwise-1T (480G when stacking with Catalyst 9300 model)	48x 10G	✓ (Larger Power Budget)	Up to 100G IPsec*	✓ (2x hosting resources over Catalyst 9300 models)
<b>Catalyst 9300</b>	10G, 25G, 40G and mGig	Stackwise-480	48x5G and 24x10G	✓	✗	✓
<b>Catalyst 9300L</b>	✗	Stackwise-320	12x10G	✗	✗	✓
<b>Catalyst 9300LM</b>	✗	Stackwise-320	8x10G	✗	✗	✓

\*Need to order HSec Key for IPsec Feature.

The Cisco Catalyst 9300 Series is made up of nineteen modular uplink switch models and fourteen fixed uplink switch models.



**Figure 1.**  
Cisco Catalyst 9300 Series switches

Table 2 lists port scale and power details for the Cisco Catalyst 9300 Series models.

**Table 2.** Cisco Catalyst 9300 Series switch configurations

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
<b>Modular uplink models</b>			
<b>C9300X-48HX</b>	48 port Cisco UPOE+, 48x 10G Multigigabit (10G/5G/2.5G/1G/100M) with 90W UPOE+	Modular Uplinks	1100W AC
<b>C9300X-48TX</b>	48 port Data, 48x 10G Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	715W AC

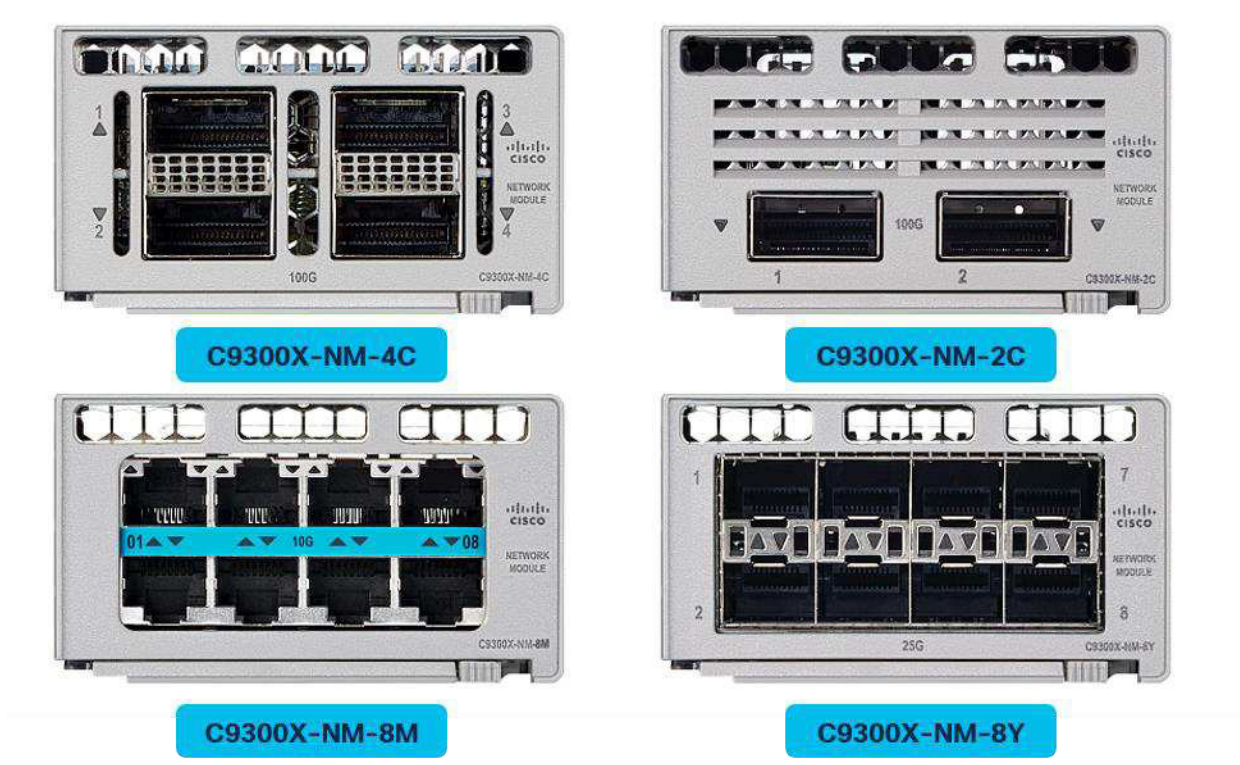
Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
<b>C9300X-48HXN</b>	48 port Cisco UPOE+, 8x 10G Multigigabit (10G/5G/2.5G/1G/100M) + 40x 5G Multigigabit (5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
<b>C9300X-24HX</b>	24 port Cisco UPOE+, 24x 10G Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
<b>C9300X-12Y</b>	12 port 25G/10G/1G SFP28	Modular Uplinks	715W AC
<b>C9300X-24Y</b>	24 port 25G/10G/1G SFP28	Modular Uplinks	715W AC
<b>C9300-24T</b>	24 port Data	Modular Uplinks	350W AC
<b>C9300-48T</b>	48 port Data	Modular Uplinks	350W AC
<b>C9300-24P</b>	24 port PoE+	Modular Uplinks	715W AC
<b>C9300-48P</b>	48 port PoE+	Modular Uplinks	715W AC
<b>C9300-24U</b>	24 port Cisco UPOE	Modular Uplinks	1100W AC
<b>C9300-48U</b>	48 port Cisco UPOE	Modular Uplinks	1100W AC
<b>C9300-24UX</b>	24 port Multigigabit Cisco UPOE (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
<b>C9300-48UXM</b>	48 port Cisco UPOE, 36 ports 100M/1G/2.5G + 12 ports Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
<b>C9300-48UN</b>	48 port 5Gbps Multigigabit UPOE ports (5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
<b>C9300-24UB</b>	24 port Cisco UPOE	Modular Uplinks	1100W AC
<b>C9300-24UXB</b>	24 port Multigigabit Cisco UPOE (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
<b>C9300-48UB</b>	48 port Cisco UPOE	Modular Uplinks	1100W AC
<b>C9300-24H</b>	24 port Cisco UPOE+	Modular Uplinks	1100W AC
<b>C9300-48H</b>	48 Cisco UPOE+	Modular Uplinks	1100W AC
<b>C9300-24S</b>	24 1G SFP	Modular Uplinks	715W AC
<b>C9300-48S</b>	48 port 1G SFP	Modular Uplinks	715W AC

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
<b>Fixed uplink models</b>			
<b>C9300L-24T-4G</b>	24 port Data	4x 1G fixed uplinks	350W AC
<b>C9300L-24T-4X</b>	24 port Data	4x 10G/1G fixed uplinks	350W AC
<b>C9300L-48T-4G</b>	48 port Data	4x 1G fixed uplinks	350W AC
<b>C9300L-48T-4X</b>	48 port Data	4x 10G/1G fixed uplinks	350W AC
<b>C9300L-24P-4G</b>	24 port PoE+	4x 1G fixed uplinks	715W AC
<b>C9300L-24P-4X</b>	24 port PoE+	4x 10G/1G fixed uplinks	715W AC
<b>C9300L-48P-4G</b>	48 port PoE+	4x 1G fixed uplinks	715W AC
<b>C9300L-48P-4X</b>	48 port PoE+	4x 10G/1G fixed uplinks	715W AC
<b>C9300L-48PF-4G</b>	48 port PoE+	4x 1G fixed uplinks	1100W AC
<b>C9300L-48PF-4X</b>	48 port PoE+	4x 10G/1G fixed uplinks	1100W AC
<b>C9300L-24UXG-4X</b>	24 port Cisco UPOE, 8 ports Multigigabit (10G/5G/2.5G/1G/100M) + 16 ports 1G (1G/100M/10M)	4x 10G/1G fixed uplinks	1100W AC
<b>C9300L-24UXG-2Q</b>	24 port Cisco UPOE, 8 ports Multigigabit (10G/5G/2.5G/1G/100M) + 16 ports 1G (1G/100M/10M)	2x 40G fixed uplinks	1100W AC
<b>C9300L-48UXG-4X</b>	48 port Cisco UPOE, 12 ports Multigigabit (10G/5G/2.5G/1G/100M) + 36 port 1G (1G/100M/10)	4x 10G/1G fixed uplinks	1100W AC
<b>C9300L-48UXG-2Q</b>	48 port Cisco UPOE, 12 port Multigigabit (10G/5G/2.5G/1G/100M) + 36 port 1G (1G/100M/10M)	2x 40G fixed uplinks	1100W AC
<b>C9300LM-48UX-4Y</b>	48 port Cisco UPOE, 8 port 10G Multigigabit (10G/5G/2.5G/1G/100M) + 40 port 1G (1G/100M/10M)	4x25G fixed uplinks	1000W AC <sup>1</sup>
<b>C9300LM-48U-4Y</b>	48 port 1G (1G/100M/10M) with Cisco UPOE	4x25G fixed uplinks	1000W AC <sup>1</sup>
<b>C9300LM-24U-4Y</b>	24 port 1G (1G/100M/10M) with Cisco UPOE	4x25G fixed uplinks	600W AC <sup>1</sup>
<b>C9300LM-48T-4Y</b>	48 port 1G (1G/100M/10M) Data	4x25G fixed uplinks	600W AC <sup>1</sup>

<sup>1</sup>C9300LM models use different power supplies compared to C9300, C9300X and C9300L models

## Network Modules

Cisco Catalyst 9300 Series switches (C9300X and C9300 SKUs) support optional network modules for uplink ports (Figure 2). These field-replaceable network modules with 25G and 40G speeds in the Cisco Catalyst 9300 Series enable greater architectural flexibility and infrastructure investment protection by allowing a nondisruptive migration from 10G to 25G and beyond. The default switch configuration does not include the network module. When you purchase the switch, you can choose from the network modules described in Table 2.



**Figure 2.**  
Cisco Catalyst 9300X Network Modules



**Figure 3.**  
Cisco Catalyst 9300 Series Network Modules

**Table 3.** Network module numbers and descriptions

Network module	Description
<b>C9300X-NM-8M</b>	Catalyst 9300X 8x 10G/1G Multigigabit Network Module
<b>C9300X-NM-8Y</b>	Catalyst 9300X 8x 25G/10G/1G Network Module
<b>C9300X-NM-2C</b>	Catalyst 9300X 2x 100G/40G Network Module
<b>C9300X-NM-4C*</b>	Catalyst 9300X 4x 100G/40G Network Module
<b>C9300-NM-4G</b>	Catalyst 9300 Series 4x 1G Network Module
<b>C9300-NM-4M</b>	Catalyst 9300 Series 4x Multigigabit Network Module
<b>C9300-NM-8X</b>	Catalyst 9300 Series 8x 10G/1G Network Module
<b>C9300-NM-2Q</b>	Catalyst 9300 Series 2x 40G Network Module
<b>C9300-NM-2Y</b>	Catalyst 9300 Series 2x 25G/10G/1G Network Module

\*C9300X-NM-4C is compatible only with C9300X-48HX, C9300X-48TX and C9300X-24Y models

**Please note:** Catalyst 3850 and Catalyst 9300 network modules are supported on the Catalyst 9300 models. Catalyst 9300X network modules are only supported on the Catalyst 9300X models.

For additional details, please read our FAQs:

<https://www.cisco.com/c/dam/en/us/products/collateral/switches/catalyst-9300-series-switches/nb-09-cat-9k-faq-cte-en.pdf>.

### Power supplies

Cisco Catalyst 9300 Series switches support dual redundant power supplies. The switches ship with one power supply by default, and the second power supply can be purchased when the switch is ordered or at a later time. If only one power supply is installed, it should always be in power supply bay #1. The switches also ship with three field-replaceable fans. Power Supplies are common across the Catalyst 9300 Series.



**Figure 4.** Cisco Catalyst 9300 Series Dual Redundant power supplies

Table 4 lists the different power supplies available in these switches and available PoE power.

**Table 4.** Power supply models

Models	Primary Power Supply	Default or Upgrade	Available PoE	With 350W Secondary PS	With 715W secondary PS	With 1100W Secondary PS	With 1900W Secondary PS
<b>C9300X-48HX</b>	PWR-C1-1900WAC-P	Upgrade	1390W	1740W	2105W	2490W	3290W
	PWR-C1-1100WAC-P	Default	590W	940W	1305W	1690W	2490W
<b>C9300X-48TX</b>	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300X-48HXN</b>	PWR-C1-1900WAC-P	Upgrade	1490W	1840W	2205W	2590W	3390W
	PWR-C1-1100WAC-P	Default	690W	1040W	1405W	1790W	2590W
<b>C9300X-24HX</b>	PWR-C1-1900WAC-P	Upgrade	1535W	1885W	2160W*	2160W*	2160W*
	PWR-C1-1100WAC-P	Default	735W	1085W	1450W	1835W	2160W*
<b>C9300X-24Y</b>	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300X-12Y</b>	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300-48H</b>	PWR-C1-1900WAC-P	Upgrade	1622W	1972W	2337W	2722W	2880W
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1922W	2722W
<b>C9300-24H</b>	PWR-C1-1900WAC-P	Upgrade	1630W	1980W	2160W*	2160W*	2160W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1545W	1930W	2160W
<b>C9300-48UN</b>	PWR-C1-1900WAC-P	Upgrade	1445W	1795W	2160W	2545W	2880W*
	PWR-C1-1100WAC-P	Default	645W	995W	1360W	1745W	2545W
<b>C9300-48UXM</b>	PWR-C1-1900WAC-P	Upgrade	1290W	1640W	2005W	2880W*	2880W*
	PWR-C1-1100WAC-P	Default	490W	840W	1205W	1590W	2390W
<b>C9300-24UX</b>	PWR-C1-1900WAC-P	Upgrade	1360W	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	560W	910W	1275W	1440W*	1440W*
<b>C9300-48U</b>	PWR-C1-1900WAC-P	Upgrade	1622W	1800W**	1800W**	1800W**	1800W**
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1800W**	1800W**
<b>C9300-24U</b>	PWR-C1-1900WAC-P	Upgrade	1440W*	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1440W*	1440W*	1440W*



Models	Primary Power Supply	Default or Upgrade	Available PoE	With 350W Secondary PS	With 715W secondary PS	With 1100W Secondary PS	With 1900W Secondary PS
<b>C9300-48P</b>	PWR-C1-1100WAC-P	Upgrade	822W	1172W	1440W*	1440W*	1440W*
	PWR-C1-715WAC-P	Default	437W	787W	1152W	1440W*	1440W*
<b>C9300-24P</b>	PWR-C1-1100WAC-P	Upgrade	720W*	720W*	720W*	720W*	720W*
	PWR-C1-715WAC-P	Default	445W	720W*	720W*	720W*	720W*
<b>C9300-48T</b>	PWR-C1-350WAC-P***	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300-24T</b>	PWR-C1-350WAC-P***	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300-48S</b>	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300-24S</b>	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
<b>C9300-48UB</b>	PWR-C1-1900WAC-P	Upgrade	1622W	1800W**	1800W**	1800W**	1800W**
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1800W**	1800W**
<b>C9300-24UB</b>	PWR-C1-1900WAC-P	Upgrade	1440W*	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1440W*	1440W*	1440W*
<b>C9300-24UXB</b>	PWR-C1-1900WAC-P	Upgrade	1360W	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	560W	910W	1275W	1440W*	1440W*

Model	Primary power supply	Default or Upgrade	Available PoE power	With 350W Secondary PS	With 715W Secondary PS	With 1100W Secondary PS
<b>C9300L-24T-4G</b>	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
<b>C9300L-24T-4X</b>	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
<b>C9300L-48T-4G</b>	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
<b>C9300L-48T-4X</b>	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
<b>C9300L-24P-4G</b>	PWR-C1-715WAC-P	Default	505W	720W*	720W*	720W*
<b>C9300L-24P-4X</b>	PWR-C1-715WAC-P	Default	505W	720W*	720W*	720W*
<b>C9300L-48P-4G</b>	PWR-C1-715WAC-P	Default	505W	855W	1220W	1440W*
<b>C9300L-48P-4X</b>	PWR-C1-715WAC-P	Default	505W	855W	1220W	1440W*
<b>C9300L-48PF-4G</b>	PWR-C1-1100WAC-P	Default	890W	1240W	1440W	1440W*
<b>C9300L-48PF-4X</b>	PWR-C1-1100WAC-P	Default	890W	1240W	1440W	1440W*

Model	Primary power supply	Default or Upgrade	Available PoE power	With 350W Secondary PS	With 715W Secondary PS	With 1100W Secondary PS
C9300L-24UXG-4X	PWR-C1-1100WAC-P	Default	880W	1230W	1440W	1440W*
C9300L-24UXG-2Q	PWR-C1-1100WAC-P	Default	722W	1072W	1440W	1440W*
C9300L-48UXG-4X	PWR-C1-1100WAC-P	Default	675W	1025W	1390W	1775W
C9300L-48UXG-2Q	PWR-C1-1100WAC-P	Default	675W	1025W	1390W	1775W

\* Limited by port number and port rating (e.g. 24 PoE+ 30W ports = 720W)

\*\* Limited by design

\*\*\* Upgrade options for 715W and 1100W PSU are available

Model	Primary power supply	Default or Upgrade	Available PoE power	With 600W AC Secondary PS	With 715W DC Secondary PS	With 1000W AC Secondary PS
C9300LM-48UX-4Y	PWR-C6-1KWAC	Default	790W	1390W	1505W	1790W
C9300LM-48U-4Y	PWR-C6-1KWAC	Default	790W	1390W	1505W	1790W*
C9300LM-24U-4Y	PWR-C6-1KWAC	Upgrade	820W	1420W	1440W*	1440W*
	PWR-C6-600WAC	Default	420W	1020W	1135W	1420W
C9300LM-48T-4Y	PWR-C6-600WAC	Default	No PoE	No PoE	No PoE	No PoE

\* Limited by port number and port rating (e.g. 24 UPOE 60W ports = 1440W)

## Stacking

Cisco Catalyst 9300 Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 448 access ports.



**Figure 5.**

Cisco Catalyst 9300 Series modular uplink models stack (C9300/C9300X SKUs) and fixed uplink models stack (C9300L SKUs)



Table 5 lists the supported stacking options.

**Table 5.** Supported stacking options

Model	Stacking support	Stacking bandwidth support	Optional Stacking hardware	Number of members	Supported stack members
<b>C9300X SKUs</b>	StackWise-1T	1 Tbps	StackWise cable	8	Stacks with other Catalyst 9300X models at StackWise-1T speeds with same license level  Stacks with C9300 SKUs at StackWise-480 speeds with same license level
<b>C9300 SKUs</b>	StackWise-480	480 Gbps	StackWise Cable	8	Other C9300 SKUs with same license level  C9300 higher scale SKUs only stack with other like higher scale models
<b>C9300L SKUs C9300LM SKUs</b>	StackWise-320	320 Gbps	C9300L-STACK-KIT Or C9300L-STACK-KIT2	8	Stacks with other Catalyst 9300L and 9300LM models with same license level

Mixed stacking between Catalyst 9300X and Catalyst 9300 models are supported at StackWise-480 speeds.

Mixed stacking between Catalyst 9300 and Catalyst 9300X and Catalyst 9300 higher scale models (C9300-24UB, C9300-24UXB, C9300-48UB) is **not supported**. You cannot stack fixed uplink models (C9300L SKUs) with modular uplink models (C9300 SKUs) or other Catalyst switches, e.g. Cisco Catalyst 3850 and 3650 Series. Any combination of Catalyst 9300 models can form a stack. Separately, any combination of Catalyst 9300L models can form a stack.

Catalyst 9300 higher scale SKUs (C9300-24UB, C9300-24UXB, C9300-48UB) need to be stacked with other higher scale models.

StackWise cables that are available to configure stacking with Catalyst 9300 Series modular uplink models (C9300X and C9300 SKUs) come in lengths of 0.5m, 1m and 3m.

The optional StackWise-320 kit for Catalyst 9300 Series fixed uplink models (C9300L and 9300LM SKUs) consists of two stack adapters and a stacking cable. The default stacking cable is 0.5 m, but options of 1m and 3m are also available. Table 6 lists the stacking accessories.

**Table 6.** Stacking accessories

Model	Description
<b>STACK-T1-50CM</b>	Data stack 50 cm (cable option with C9300 and C9300X SKUs)
<b>STACK-T1-1M</b>	Data stack 1m (cable option with C9300 and C9300X SKUs)
<b>STACK-T1-3M</b>	Data stack 3m (cable option with C9300 and C9300X SKUs)
<b>C9300L-STACK-KIT</b>	Stack kit for C9300L SKUs only: Two data stack adapters and one data stack cable

Model	Description
STACK-T3-50CM	Data stack 50cm cable (default cable with C9300L Stack Kit)
STACK-T3-1M	Data stack 1m cable (cable option with C9300L Stack Kit)
STACK T3-3M	Data stack 3m cable (cable option with C9300L Stack Kit)
C9300L-STACK-KIT2	Stack kit for C9300LM and C9300L SKUs: Two data stack adapters and one data stack cable
STACK-T3A-50CM	Data stack 50cm cable (default cable with C9300L Stack Kit2)
STACK-T3A-1M	Data stack 1m cable (cable option with C9300L Stack Kit2)
STACK T3A-3M	Data stack 3m cable (cable option with C9300L Stack Kit2)



**Figure 6.**  
Cisco Catalyst 9300 Series fixed uplink models with optional stack kit

## Fan

Cisco Catalyst 9300 Series switches also come with three field-replaceable fans and support (N+1) redundancy. Table 7 lists the fan module part number.

**Table 7.** Fan modules

Model	Description
FAN-T2=	Fan module

## Performance and scalability

Performance and scalability metrics for the Cisco Catalyst 9300 Series are provided in Table 8.

### Performance specifications

**Table 8.** Performance specifications

Description	Catalyst 9300X modular uplink models	Catalyst 9300 modular uplink models	Catalyst 9300 higher scale, models	Catalyst 9300L/LM fixed uplink models
<b>Total number of MAC addresses</b>	32,000	32,000	64,000	32,000
<b>Total number of IPv4 routes (ARP plus learned routes)</b>	39,000 (24,000 direct routes and 15,000 indirect routes)	32,000 (24,000 direct routes and 8000 indirect routes)	112,000 (48,000 direct routes and 64,000 indirect routes)	32,000 (24,000 direct routes and 8000 indirect routes)
<b>IPv6 routing entries</b>	19,500	16,000	56,000	16,000
<b>Multicast routing scale</b>	8,000	8,000	16,000	8,000
<b>QoS scale entries</b>	4,000	5,120	18,000	5,120
<b>ACL scale entries</b>	8,000	5,120	18,000	5,120
<b>Packet buffer per SKU</b>	16 MB buffer for 48-port 5G Multigigabit, 24-port 10G Multigigabit and 12-port Fiber  32 MB buffer for 48-port 10G Multigigabit and 24-port Fiber	16 MB buffer for 24- or 48-port Gigabit Ethernet models  32 MB buffer for 24 and 48-port Multigigabit	32 MB buffer for 24- and 48-port Gigabit Ethernet models  64 MB buffer for 24-port Multigigabit model (24UXB)	16 MB buffer for 24 and 48 port Gigabit Ethernet models
<b>FNF entries</b>	64,000 flows on 48-port 5G Multigigabit and 24-port 10G Multigigabit and 12-port Fiber 128,000 flows on 48-port 10G Multigigabit and 24-port Fiber	64,000 flow on 24- and 48-port Gigabit Ethernet models  128,000 flows on 24-port Multigigabit	128,000 flow on 24- and 48-port Gigabit Ethernet models  256,000 flows on 24-port Multigigabit	64,000 flow on 24- and 48-port Gigabit Ethernet models
<b>DRAM</b>	16 GB	8 GB	8 GB	8 GB
<b>Flash</b>	16 GB	16 GB	16 GB	16 GB
<b>VLAN IDs</b>	4094	4094	4094	4094
<b>Total Switched Virtual Interfaces (SVIs)</b>	1000	1000	1000	1000
<b>Jumbo frames</b>	9198 bytes	9198 bytes	9198 bytes	9198 bytes
<b>Total routed ports per Catalyst 9300 Series</b>	448	448	448	416



Description	Catalyst 9300X modular uplink models	Catalyst 9300 modular uplink models	Catalyst 9300 higher scale, models	Catalyst 9300L/LM fixed uplink models
stack				

## Bandwidth specifications

Table 9. Bandwidth specifications

SKU	Switching capacity	Switching capacity with stacking	Forwarding rate	Forwarding rate with stacking
C9300X-48TX	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300X-48HX	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300X-48HXN	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300X-24HX	880 Gbps	1,880 Gbps	327.38 Mpps	1398.80 Mpps
C9300X-12Y	1,000 Gbps	2,000 Gbps	744.04 Mpps	1488 Mpps
C9300X-24Y	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300-24T	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48T	256 Gbps	736 Gbps	190.47 Mpps	547.62 Mpps
C9300-24P	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48P	256 Gbps	736 Gbps	190.47 Mpps	547.62 Mpps
C9300-24U	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48U	256 Gbps	736 Gbps	190.48 Mpps	547.62 Mpps
C9300-24UX	640 Gbps	1120 Gbps	476.19 Mpps	833.33 Mpps
C9300-48UXM	580 Gbps	1060 Gbps	431.54 Mpps	788.69 Mpps
C9300-48UN	640 Gbps	1120 Gbps	476.19 Mpps	833.33 Mpps
C9300-24UB	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48UB	256 Gbps	736 Gbps	190.48 Mpps	547.62 Mpps
C9300-24UXB	640 Gbps	1120 Gbps	476.19 Mpps	833.33 Mpps
C9300-24H	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48H	256 Gbps	736 Gbps	190.48 Mpps	547.62 Mpps
C9300-24S	208 Gbps	688 Gbps	154.76 Mpps	511.90 Mpps
C9300-48S	256 Gbps	736 Gbps	190.47 Mpps	547.62 Mpps
C9300X-12Y	1,000 Gbps	2,000 Gbps	744.04 Mpps	1488 Mpps
C9300X-24Y	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300LM-48UX-4Y	440 Gbps	760 Gbps	327.36 Mpps	565.44 Mpps

SKU	Switching capacity	Switching capacity with stacking	Forwarding rate	Forwarding rate with stacking
C9300LM-48U-4Y	296 Gbps	616 Gbps	220.22 Mpps	458.30 Mpps
C9300LM-24U-4Y	248 Gbps	568 Gbps	184.51 Mpps	422.59 Mpps
C9300LM-48T-4Y	296 Gbps	616 Gbps	220.22 Mpps	458.30 Mpps
C9300L-24T-4G	56 Gbps	376 Gbps	41.66 Mpps	279.76 Mpps
C9300L-24T-4X	128 Gbps	448 Gbps	95.23 Mpps	333.33 Mpps
C9300L-48T-4G	104 Gbps	424 Gbps	77.38 Mpps	315.48 Mpps
C9300L-48T-4X	176 Gbps	496 Gbps	130.95 Mpps	369.05 Mpps
C9300L-24P-4G	56 Gbps	376 Gbps	41.66 Mpps	279.76 Mpps
C9300L-24P-4X	128 Gbps	448 Gbps	95.23 Mpps	333.33 Mpps
C9300L-48P-4G	104 Gbps	424 Gbps	77.38 Mpps	315.48 Mpps
C9300L-48P-4X	176 Gbps	496 Gbps	130.95 Mpps	369.05 Mpps
C9300L-48PF-4G	104 Gbps	424 Gbps	77.38 Mpps	315.48 Mpps
C9300L-48PF-4X	176 Gbps	496 Gbps	130.95 Mpps	369.05 Mpps
C9300L-24UXG-4X	272 Gbps	592 Gbps	202.38 Mpps	440.47 Mpps
C9300L-24UXG-2Q	352 Gbps	672 Gbps	261.90 Mpps	500.00 Mpps
C9300L-48UXG-4X	392 Gbps	712 Gbps	291.66 Mpps	529.76 Mpps
C9300L-48UXG-2Q	472 Gbps	792 Gbps	351.19 Mpps	589.28 Mpps

All models are at wire-speed nonblocking performance for both IPv4 and IPv6. The forwarding rates in the table above are measured with 64 byte IPv4 packet sizes.

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## SD-Access architecture

What if you could give time back to IT? Provide network access in minutes for any user or device to any application – without compromise? SD-Access is the industry’s first policy-based automation from network edge to cloud. Your foundation for your digital network, Cisco SD-Access. Built on the principles of the Cisco DNA, SD-Access provides end-to-end segmentation to keep user, device and application traffic separate without a redesign of the network. It automates user access policy so organizations can make sure the right policies are set for any user or device with any application across the network. This is accomplished with a single network fabric across LAN and WLAN which creates a consistent user experience anywhere without compromising on security.

There are many challenges today in managing the network to drive business outcomes. These limitations are due to manual configuration and fragmented tool offerings. SD-Access provides:

- A transformational management solution that reduces operational expenses and enhances business agility
- Consistent management of wired and wireless network provisioning and policy
- Automated network segmentation and group-based policy
- Contextual insights for fast issue resolution and capacity planning
- Open and programmable interfaces for integration with third-party solutions

For an overview of key use-cases SD-Access addresses, refer to [SD-Access Solution Overview](#).

## Platform benefits

**Cisco IOS XE** opens a completely new paradigm in network configuration, operation, and monitoring through network automation. Cisco’s automation solution is open, standards-based, and extensible across the entire lifecycle of a network device. The various automation mechanisms are outlined below.

- **Automated device provisioning** is the ability to automate the process of upgrading software images and installing configuration files on Cisco Catalyst switches when they are being deployed in the network for the first time. Cisco provides both turnkey solutions such as Plug and Play and off-the-shelf tools such as Zero-Touch Provisioning (ZTP) and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.
- **API-driven configuration** is available with modern network switches such as the Cisco Catalyst 9300 Series. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF and GNMI using YANG data models for external tools, both off-the-shelf and custom built, to automatically provision network resources.
- **Granular visibility** enables model-driven telemetry to stream data from a switch to a destination. The data to be streamed is identified through subscription to a data set in a YANG model. The subscribed data set is streamed to the destination at specified intervals. Additionally, Cisco IOS XE enables the push model. It provides near-real-time monitoring of the network, leading to quick detection and rectification of failures.
- **Seamless software upgrades and patching** supports OS resilience. Cisco IOS XE supports patching, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support lets you add patches without having to wait for the next maintenance release.

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## Security

- **Encrypted Traffic Analytics (ETA)** is a unique capability for identifying malware in encrypted traffic coming from the access layer. Since more and more traffic is becoming encrypted, the visibility this feature affords for threat detection is critical for keeping your network secure at different layers.
- **AES-256 MACsec encryption** is the IEEE 802.1AE standard for authenticating and encrypting packets between switches. The Cisco Catalyst 9300 Series switches support 256-bit and 128-bit Advanced Encryption Standard (AES), providing the most secure link encryption.
- **IPsec encryption** delivers secure end-to-end encrypted traffic between sites and connectivity to the Cloud. C9300X models support line rate IPsec up to 100 Gbps delivering uncompromised secure connectivity.
- **Trustworthy solutions built with Cisco Trust Anchor Technologies** provide a highly secure foundation for Cisco products. With the Catalyst 9300 Series, these technologies enable hardware and software authenticity assurance for supply chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include:
  - **Image signing:** Cryptographically signed images provide assurance that the firmware, BIOS, and other software are authentic and unmodified. As the system boots, the system's software signatures are checked for integrity.
  - **Secure Boot:** Cisco Secure Boot technology anchors the boot sequence chain of trust to immutable hardware, mitigating threats against a system's foundational state and the software that is to be loaded, regardless of a user's privilege level. It provides layered protection against the persistence of illicitly modified firmware.
  - **Cisco Trust Anchor module:** A tamper-resistant, strong cryptographic, single-chip solution provides hardware authenticity assurance to uniquely identify the product so that its origin can be confirmed to Cisco. This provides assurance that the product is genuine.

## Cloud Security

- **Umbrella DNS Integration:**

Small to midsize networks reliant on managed service providers can now host Cisco Umbrella agent directly on their Catalyst 9300 Series switches. This allows the business to easily customize their DNS filtering policies granularly at user or group level to prevent BYOD or IoT guest or corporate users from accessing malicious or inappropriate websites, without having to rely on the MSP to push the policies out. It also lets them optimize use of bandwidth by allowing direct cloud access for trusted apps. Requires Cisco DNA Advantage License and Umbrella License per device.



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## Service Assurance

- **Cisco ThousandEyes Integration:**

Deliver superior network and service experience for your users, employees and partners with groundbreaking observability from network to app. Cisco ThousandEyes network tests are now integrated into Cisco Catalyst 9300 Series switches with Cisco DNA Advantage licenses, giving you visibility beyond your campus perimeter so you solve issues faster. The Cisco ThousandEyes Network and Application Synthetics license is included by default upon the selection of a Cisco DNA Advantage option with a 3 year, 5 year or a 7 year subscription. Each Catalyst 9300 Cisco DNA Advantage subscription entitles the customer to run the equivalent of one Cisco ThousandEyes network or web test every 5 mins from a Cisco ThousandEyes enterprise agent (22 units per month), up to a maximum of 110,000 units per month of Cisco ThousandEyes test capacity per customer.

## Resiliency and high availability

- **StackWise-1T:** Cisco Catalyst 9300 Series modular uplink models (C9300X SKUs) support the industry's highest back-panel stacking bandwidth solution (1Tbps) with StackWise-1T. Up to 8 Switches can be configured in a StackWise-1T with the special connector at the back of the switch using dedicated stack cables.
- **StackWise-480:** Cisco Catalyst 9300 Series modular uplink models (C9300 SKUs) support high-speed back-panel stacking bandwidth solution (480 Gbps) with StackWise-480. Up to 8 Switches can be configured in a StackWise-480 with the special connector at the back of the switch using dedicated stack cables.
- **StackWise-320:** Cisco Catalyst 9300 Series fixed uplink models (C9300L and C9300LM SKUs) support stacking bandwidth solution (320 Gbps) with StackWise-320. Up to 8 Switches can be optionally configured in a StackWise-320 with the special Stack Kit at the back of the switch using dedicated stack cables.
- **Cisco StackPower:** Cisco StackPower is an innovative power interconnect system that allows the power supplies in a stack to be shared as a common resource among all the switches. This allows you to simply add one extra power supply in any switch of the stack and either provide power redundancy for any of the stack members or simply add more power to the shared pool. Up to 4 switches can be configured in a StackPower stack with the special connector at the back of the switch. However, with the use of XPS-2200 appliance, up to 8 switches can be configured in the StackPower stack. **Cisco StackPower is only supported on the models with modular uplink stack - C9300 and C9300X SKUs. C9300X models support StackPower+ delivering more power over StackPower cables compared to C9300 models.**



**Figure 7.**  
Cisco Catalyst 9300 Series StackPower

- **High availability:** The Catalyst 9300 Series supports high-availability features, including the following:
  - Cross-stack EtherChannel provides the ability to configure Cisco EtherChannel technology across different members of the stack for high resiliency.
  - **Flexlink+:** Flexlink+ allows the setting up of active and backup interfaces or port channels, which can provide Layer 2 failover redundancy without the use of Spanning Tree Protocol (STP).
  - **Extended Fast Software Upgrade** provides the ability to upgrade the platform software or to reload the system in under 30 seconds of traffic impact; both stand-alone and stack configurations.
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) provides rapid spanning tree convergence independent of spanning tree timers and also offers the benefit of Layer 2 load balancing and distributed processing.
  - Per-VLAN Rapid Spanning Tree (PVRST+) allows rapid spanning tree (IEEE 802.1w) reconvergence on a per-VLAN spanning tree basis, providing simpler configuration than MSTP. In both MSTP and PVRST+ modes, stacked units behave as a single spanning tree node.
  - Switch-port auto-recovery (“err-disable” recovery) automatically attempts to reactivate a link that is disabled because of a network error.
  - The Catalyst 9300 Series platform delivers the best NSF/SSO resiliency architecture in a stackable solution with sub-50-ms failover.
  - Always-On wireless network with stateful switchover when wireless functionality is enabled on stack of Catalyst 9300 Series switches.

### Deep buffer Technology

Cisco Catalyst 9300 higher scale models have a deeper buffer to address the requirements of rich multi-media lossless content delivery and large routing tables in a fixed access solution with a wide range of uplink choices for deployment flexibility.

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## Flexible Netflow

- **Flexible NetFlow (FNF):** Cisco IOS Software FNF is the next generation in flow visibility technology. It enables optimization of the network infrastructure, reduces operation costs, and improves capacity planning and security incident detection with increased flexibility and scalability. The Catalyst 9300 Series is capable of up to 64,000 flow entries on 48-port, 24-port and 12-port models and up to 128,000 flow entries on Multigigabit models.

## Application visibility and control

- **NBAR2:** Next-Generation Network-Based Application Recognition (NBAR2) enables advanced application classification techniques, accuracy with up to 1400 predefined and well-known application signatures and up to 150 encrypted applications on the Cisco Catalyst 9000 switches. The most popular applications included are Skype, Office 365, Microsoft Lync, Cisco WebEx, and Facebook, among many others that are predefined and easy to configure. NBAR2 provides the network administrator with an important tool to identify, control, and monitor end-user application usage while helping ensure a quality user experience and securing the network from malicious attacks. NBAR2 leverages FNF to report application performance and activities within the network to any supported NetFlow collector, such as Cisco Prime, Cisco Stealthwatch, or any compliant third-party tool.

## QoS

- **Superior QoS:** The Cisco Catalyst 9300 Series offers Gigabit Ethernet speeds with intelligent services that keep traffic flowing smoothly, even at 10 times the normal network speed. Industry-leading mechanisms for cross-stack marking, classification, and scheduling deliver superior performance for data, voice, and video traffic at wire speed. Superior QoS includes granular wireless bandwidth management and fair sharing, 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port.

## Service discovery

- **Multicast DNS (mDNS) gateway:** This service discovery gateway capability facilitates sharing of services advertised using the Apple mDNS (Bonjour) protocol, such as printers, Apple TVs, and file services across the network. Additionally, the administrator can create policies defining which services can be seen and accessed by the users in the network. This capability facilitates a Bring-Your-Own-Device (BYOD) rollout.

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## Smart operation

- **WebUI:** WebUI is an embedded GUI-based device-management tool that provides the ability to provision the device, to simplify device deployment and manageability, and to enhance the user experience. It comes with the default image, so there is no need to enable anything or install any license on the device. You can use WebUI to build configurations, and to monitor and troubleshoot the device without having CLI expertise.
- **Efficient switch operation\*:** Cisco Catalyst 9300 Series switches provide optimum power saving with Energy Efficient Ethernet (EEE) on the RJ-45 ports and low-power operations for industry best-in-class power management and power consumption capabilities. The ports support reduced power modes so that ports not in use can move into a lower power utilization state. Other efficient switch operation features are as follows:
  - Per-port power consumption command allows customers to specify a maximum power setting on an individual port.
  - Per-port PoE power sensing measures actual power being drawn, enabling more intelligent control of powered devices. The PoE MIB provides proactive visibility into power usage and allows you to set different power-level thresholds.
- **RFID tags:** Catalyst 9300 Series switches have an embedded RFID tag that facilitates easy asset and inventory management using commercial RFID readers.
- **Blue beacon:** Catalyst 9300 Series switches support a blue beacon LED for easy identification of the switch being accessed.

## Open standards based fabric

The Cisco Catalyst 9300 Series Switches support modern fabric technologies such as VXLAN with BGP-EVPN control plane, with open APIs. This technology provides the flexibility to build open standards-based fabrics to secure infrastructure, users and data. This fabric architecture provides rich unicast and multicast protocol support to optimally route or bridge traffic as well as support for integrated campus services all of which can be automated via open APIs to effectively configure and monitor the network.

## Programmability

Cisco IOS-XE provides open standards-based APIs such as NETCONF, RESTCONF, gNMI to simplify provisioning and configuration, that allows network administrators to save time when provisioning new network devices and to prevent the human errors that often are a byproduct of manual configuration. Integrating Zero Touch Provisioning with various DevOps toolkits allows network admins to drastically reduce the time and resources needed to onboard a device onto their network. The ability to collect real-time statistics through model driven telemetry through gRPC and gNMI allows administrator to integrate to many health monitoring tools to optimize their environments and to troubleshoot and provide alerts about any potential problems.

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## High-Performance IP routing

The Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing in Cisco Catalyst 9300 Series switches, based on:

- IP unicast routing protocols (including static, Routing Information Protocol Version 1 [RIPv1], RIPv2, RIPv3, and Open Shortest Path First [OSPF], Routed Access) are supported for small network routing applications with the Network Essentials stack. Equal-cost routing facilitates Layer 3 load balancing and redundancy across the stack.
- Advanced IP unicast routing protocols (including Full [OSPF], Enhanced Interior Gateway Routing Protocol [EIGRP], Border Gateway Protocol Version 4 [BGPv4], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. IPv6 routing (using OSPFv3 and BGPv6) is supported in hardware for maximum performance.
- Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM Sparse Mode (PIM SM), and Source-Specific Multicast (SSM).
- IPv6 addressing is supported on interfaces with appropriate show commands for monitoring and troubleshooting.

## Audio Video Bridging (AVB)

Starting with Cisco IOS XE Software Release 16.8, the Cisco Catalyst 9300 Series supports the IEEE 802.1 AVB standard. This standard provided the means for highly reliable delivery of low-latency, time-synchronized audio and video streaming services through Layer 2 Ethernet networks. The standard also makes it easier to integrate new services and for AV equipment from different vendors to interoperate.

### Benefits

- Improves quality of experience by lowering jitter and latency for time-synchronized delivery of high-quality AV.
- Provides scalability of applications across networked deployments, including expansive and complex AV infrastructure.
- Lowers Total Cost of Ownership (TCO) with reduced cabling (lowers CapEx) and no license fees (lowers OpEx).

For more details about AVB and specific models supported, check <https://www.cisco.com/go/avb>.

## Multigigabit Ethernet technology

Cisco Multigigabit Ethernet technology allows you to achieve bandwidth speeds from 1 Gbps to 10 Gbps over traditional Category 5e/6 cabling or above. This technology addresses the need for exponential increases in bandwidth with the enormous growth of 802.11ac Wave 2, to be eclipsed by the growth of Wi-Fi 6 and new wireless applications without having to replace current cabling infrastructure.

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## Multiprotocol label switching (MPLS)

The Cisco Catalyst 9300 Series Switches support Multiprotocol label switching (MPLS) which combines the performance and capabilities of Layer 2 (data link layer) switching with the proven scalability of Layer 3 (network layer) routing. MPLS enables the explosive growth in network utilization while providing the opportunity to differentiate services without sacrificing the existing network infrastructure. MPLS support includes

- **MPLS L3 VPN:** An MPLS Virtual Private Network (VPN) consists of a set of sites that are interconnected by means of a Multiprotocol Label Switching (MPLS) provider core network. At each customer site, one or more customer edge (CE) devices attach to one or more provider edge (PE) devices.
- **VPLS:** VPLS (Virtual Private LAN Service) enables enterprises to link together their Ethernet-based LANs from multiple sites via the infrastructure provided by their service provider.
- **EoMPLS:** EoMPLS is a category of Any Transport over MPLS (AToM) to transport Layer 2 packets over an MPLS backbone.
- **MPLS over GRE:** L3VPN over GRE and VPLS over GRE, are supported to tunnel MPLS/VPLS packets over non-MPLS networks utilizing GRE tunneling

## Power over ethernet leadership

**Cisco Universal Power over Ethernet (Cisco UPOE and Cisco UPOE+):** PoE removes the need for wall sockets to power each PoE-enabled device and eliminates the cost of additional electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments. Cisco UPOE extends the IEEE PoE+ standard to double the power per port to 60 watts. This facilitates delivery of network power to a broad range of devices requiring higher power, including virtual desktop terminals, IP turrets, compact switches, building management gateways, LED lights, wireless access points, and IP phones. Designed for smart building and IoT applications, Cisco Catalyst 9300 UPOE+ switches (delivering PoE power up to 90W) provide data and power over a single cable to power devices like wireless access points, digital signage, security cameras, thermal cameras with PTZ features, LED lighting fixtures and large display screens. UPOE+ offers reduced cabling and installation costs without need for permits, device daisy-chaining application that require higher power draw, real-time device information, centralized management and remote control, faster and flexible device installation where devices can be positioned in a practical location instead of proximity to the electrical outlets.

Catalyst 9300 Series modular uplink (C9300 and C9300X SKUs) models support Cisco UPOE+, Cisco UPOE, PoE+ and PoE, thereby addressing the largest range of network power needs.

Catalyst 9300 Series fixed uplink (C9300LM SKUs) models support Cisco UPOE+, Cisco UPOE or PoE+ and PoE.

Catalyst 9300 Series fixed uplink (C9300L SKUs) models support Cisco UPOE or PoE+ and PoE.

Tables 10 and 11 show the power supply combinations required for different PoE needs.

**Table 10.** Power supply requirements for Catalyst 9300 Series modular uplink PoE/PoE+ models (C9300-xxP SKUs)

	24-port PoE switch	48-port PoE switch
<b>PoE on all ports (15.4W per port)</b>	1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 2 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC
<b>PoE+ on all ports (30W per port)</b>	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 2 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 1 PWR-C1-1100WAC/PWR-C1-1100WAC-P and 1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC

**Table 11.** Power supply requirements for Catalyst 9300 Series UPOE models (C9300-xxU/UB/UXM/UN, C9300L-xxUXG-xx SKUs)

	24-port Cisco UPOE switch	48-port Cisco UPOE switch	48 and 24-port Multigigabit Cisco UPOE switch*
<b>Cisco UPOE (60W per port) &amp; IEEE 802.3bt type3 on all ports (24-port switch) or up to 30 ports (48-port switch)</b>	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P and 1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P

**Table 12.** Power supply requirements for Catalyst 9300 Series UPOE+ models (C9300-xxH SKUs)

	24-port Cisco UPOE+ switch	48-port Cisco UPOE+ switch
<b>Cisco UPOE+ (90W per port) &amp; IEEE 802.3bt type4 on 21 ports (24-port and 48-port switch)</b>	1 PWR-C1-1100WAC/PWR-C1-1100WAC-P and 1 PWR-C1-715WAC/PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC/PWR-C1-1100WAC-P or 2 PWR-C1-1900WAC-P

**Table 13.** Power supply requirements for Catalyst 9300 Series fixed uplink PoE/PoE+ models (C9300L-xxP SKUs)

	24-port PoE switch	48-port PoE switch
<b>PoE on all ports (15.4W per port)</b>	1 PWR-C1-715WAC-P/PWR-C1-715WDC	1 PWR-C1-1100WAC-P or 2 PWR-C1-715WAC-P
<b>PoE+ on all ports (30W per port)</b>	1 PWR-C1-1100WAC-P or 2 PWR-C1-715WAC-P/PWR-C1-715WDC	2 PWR-C1-1100WAC-P or 1 PWR-C1-1100WAC-P and 1 PWR-C1-715WAC-P/PWR-C1-715WDC

- **Perpetual PoE:** With Perpetual PoE, the PoE power is maintained during a switch reload. This is important for IoT endpoints such as PoE-powered lights, so that there is no disruption during switch reboot.
- **Fast PoE:** When power is restored to a switch, PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.

\*C9300-48UN, C9300-24UX, C9300-48UXM are available with PWR-C1-1100WAC-P Platinum-rated power supply. Platinum-rated power supplies are more efficient, lowering operating power costs

\*PWR-C1-1100WAC-UP and PWR-C1-715WAC-UP Platinum-rated power supply upgrade options are available to upgrade the default AC power supply to 1100W or 715W



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## Software requirements

### Cisco DNA Software for Access Switching is available for the Cisco Catalyst 9300 Series.

Cisco DNA Software for Access Switching offers comprehensive solutions for the enterprise campus and branch offices. Cisco DNA for Access Switching introduces a simpler and more economical way to deploy access, aggregation, and core switches across enterprise campus and branch locations.

The Cisco DNA Subscription for Switching offer delivers an unbound network on an open and extensible architecture to help you navigate the digital journey. This subscription offer simplifies the buying process and includes lower initiation costs and flexible terms. It includes: Cisco DNA Advantage with full Cisco DNA capabilities and SD-Access, bundled with ISE Base, ISE Plus, and StealthWatch.

For ordering information for Cisco DNA Software for the Cisco Catalyst 9300 Series, go to <https://www.cisco.com/c/en/us/products/software/one-access/switching-part-numbers.html>.

Cisco Catalyst 9300 Series switches run on Cisco IOS XE 16.5.1a release or later with the following exceptions. Catalyst 9300 Series 1G fiber models (C9300-xxS SKUs) are supported on Cisco IOS XE 16.11.1a release or later. Catalyst 9300 Series fixed uplink models (C9300L SKUs) are supported on Cisco IOS XE 16.11.1b release or later. These software releases includes all the features listed earlier in the Platform Benefits section.

### Licensing Packaging

The Cisco Catalyst 9000 family of switches introduces a new and simplified licensing package in the form of base and add-on licenses.

- **The perpetual licensing** package includes the Network Essentials and Network Advantage licensing options that are tied to the hardware. Between them, the base licensing packages cover switching fundamentals, management automation, troubleshooting, and advanced switching features. These Network licenses are perpetual.

**The subscription licensing** package includes the Cisco DNA Essentials and Cisco DNA Advantage options. In addition to on-box capabilities, the features available with this package provide Cisco innovations on the switch, as well as on Cisco DNA Center. The Cisco DNA subscription licenses are mandatory at the time of configuration. With Cisco DNA software licenses, customers receive embedded SWSS - which covers 24x7x365 Cisco Technical Assistance Center (TAC) support, software release updates, advanced support analytics, and designated service management. This is valid only for the Cisco DNA software subscription stacks (Cisco DNA Essentials or Advantage).

**Note:** For full hardware support, including the perpetual network stack, customers will require Smart Net Total Care for 24x7x365 Cisco Technical Assistance Center (TAC) support, proactive security and product alerts, and product lifecycle management. An additional option for hardware support is Solution Support for your multivendor Cisco solution environment.

**License consumption** is easily determined by the package itself. While perpetual licenses are always permanent and without an expiration date, subscription licenses have to be purchased for a 3-, 5-, or 7-year term (and hence are also known as term-based licenses). Table 14 shows the combinations of perpetual and subscription licenses that must be purchased.



**Table 14.** Licensing combinations

	Cisco DNA Essentials	Cisco DNA Advantage
Network Essentials	Yes	No
Network Advantage	Yes <sup>1</sup>	Yes

<sup>1</sup> You will be able to purchase this combination only at the time of Cisco DNA license renewal and not when you purchase Cisco DNA-Essentials the first time

### Managing licenses with Smart Accounts

Creating Smart Accounts by using the Cisco Smart Software Manager (SSM) enables you to manage your software licenses from a centralized website. You can set up Cisco SSM to receive daily email alerts and to be notified of expiring subscription licenses that you want to renew.

You must order a Cisco DNA subscription term license in order to purchase a switch. When the license term expires, you can either renew the add-on license to continue using it or deactivate the add-on license and then reload the switch to continue operating with the base license capabilities.

Both the base and add-on licenses are also available for a 90-day evaluation period. An evaluation license is activated temporarily, without purchase. An expired evaluation license cannot be reactivated after reload.

**Note:** It is not required to deploy Cisco DNA Center just to use one of the above packages.

### Introduction to Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure – you control what users can access. With Smart Licensing you get:

- **Easy Activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).
- **Unified Management:** My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- **License Flexibility:** Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco Software Central ([software.cisco.com](https://software.cisco.com)).

For a more detailed overview on Cisco Licensing, go to [cisco.com/go/licensingguide](https://cisco.com/go/licensingguide).

Table 15 shows the features included in the Cisco DNA Essentials and Advantage packages.

**Table 15.** Network Essentials and Advantage package features

Features	Network Essentials	Network Advantage
<b>Switch fundamentals</b> Layer 2, Routed Access (RIP, EIGRP Stub, OSPF - 1000 routes), PBR, PIM Stub Multicast (1000 routes)), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder, SSO	✓	✓
<b>Advanced switch capabilities and scale</b> BGP, EIGRP, HSRP, IS-IS, BSR, MSDP, PIM-BIDIR,* IP SLA, OSPF	x	✓
<b>Network segmentation</b> VRF, VXLAN, LISP, TrustSec, SGT, MPLS, mVPN	x	✓
<b>Automation</b> NETCONF, RESTCONF, gRPC, YANG, PnP Agent, ZTP/Open PnP, GuestShell (On-Box Python)	✓	✓
<b>Telemetry and visibility</b> Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	✓	✓
<b>High availability and resiliency</b> Nonstop Forwarding (NSF), Graceful Insertion and Removal (GIR), Extended Fast Software Upgrade (xFSU), Software Patching (CLI Based)	x	✓
<b>IOT integration</b> AVB, PTP, CoAP	x	✓
<b>Security</b> MACsec-256	x	✓

**Table 16.** Cisco DNA Essentials and Advantage package features (add a section for other software support and add Prime, ISE and Stealthwatch support)

Features	Cisco DNA Essentials	Cisco DNA Advantage
<b>Switch features</b>		
<b>Optimized network deployments</b> Cisco DNA Service for Bonjour	x	✓
<b>Advanced telemetry and visibility</b> Full Flexible NetFlow, EEM	✓	✓
<b>Optimized telemetry and visibility</b> ERSPAN, AVC (NBAR2), app hosting (in containers/VMs), Wireshark	x	✓

Features	Cisco DNA Essentials	Cisco DNA Advantage
<b>Advanced security</b> Encrypted Traffic Analytics (ETA), IPsec	X	✓
<b>Cisco DNA Center features</b>		
<b>Day-0 network bring-up automation</b> Cisco Network Plug-and-Play application, network settings, device credentials, LAN automation, host onboarding	✓	✓
<b>Element management</b> Discovery, inventory, topology, software image, licensing, and configuration management	✓	✓
<b>Element management</b> Patch management	X	✓
<b>Basic Assurance</b> Health dashboards - Network, Client, Application; switch and wired client health monitoring	✓	✓
<b>Cisco ThousandEyes Network and Application Synthetics</b> Network performance metrics, dashboarding, visibility into app and service experience, end-to-end visibility across cloud and DC applications	X	✓
<b>SD-Access</b> Policy-based automation and assurance for wired and wireless	X	✓
<b>Network assurance and analytics</b> Global insights, trends, compliance, custom reports; switch 360, wired client 360; fabric and non-fabric insights; app health, app 360, app performance (loss, latency, jitter)	X	✓

## Specifications

### Dimensions, Weight, Acoustic, Mean time between failures

The table below shows the dimensions, weights, acoustic and mean time between failures of all models of Cisco Catalyst 9300 Series switches.

**Table 17.** Model Dimensions, Weight, and Mean Time between failures metrics

General Specifications			
Dimensions (H x W x D) inches			
Model	Chassis only	W/ Default Power Supply	W/ 1100W Power Supply
<b>C9300X-48HX</b>	1.73 x 17.5 x 19	1.73 x 17.5 x 22.03	1.73 x 17.5 x 22.03
<b>C9300X-48TX</b>	1.73 x 17.5 x 19	1.73 x 17.5 x 20.56	1.73 x 17.5 x 22.03
<b>C9300X-48HXN</b>	1.73 x 17.5 x 17.57	1.73 x 17.5 x 20.63	1.73 x 17.5 x 20.63
<b>C9300X-24HX</b>	1.73 x 17.5 x 17.57	1.73 x 17.5 x 20.63	1.73 x 17.5 x 20.63
<b>C9300X-12Y</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.6	1.73 x 17.5 x 19.2
<b>C9300X-24Y</b>	1.73 x 17.5 x 17.6	1.73 x 17.5 x 19.2	1.73 x 17.5 x 20.7
<b>C9300-24T</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
<b>C9300-24P</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
<b>C9300-24U</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
<b>C9300-24UX</b>	1.73 x 17.5 x 17.1	1.73 x 17.5 x 20.2	1.73 x 17.5 x 20.2
<b>C9300-24UB</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
<b>C9300-24UXB</b>	1.73 x 17.5 x 17.1	1.73 x 17.5 x 20.2	1.73 x 17.5 x 20.2
<b>C9300-24H</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
<b>C9300-48T</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
<b>C9300-48P</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
<b>C9300-48U</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
<b>C9300-48UXM</b>	1.73 x 17.5 x 19.1	1.73 x 17.5 x 22.2	1.73 x 17.5 x 22.2
<b>C9300-48UN</b>	1.73 x 17.5 x 19.1	1.73 x 17.5 x 22.2	1.73 x 17.5 x 22.2
<b>C9300-48UB</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
<b>C9300-48H</b>	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2

General Specifications			
C9300-24S	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2	1.73 X 17.5 X 20.7
C9300-48S	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2	1.73 X 17.5 X 20.7
C9300LM-48UX-4Y	1.73'' x 17.50''x 13.03''	1.73 x 17.50 x 13.17	1.73 x 17.50 x 13.03 (w/ DC power supply)
C9300LM-48U-4Y	1.73'' x 17.50''x 13.03''	1.73 x 17.50 x 13.17	1.73 x 17.50 x 13.03 (w/ DC power supply)
C9300LM-24U-4Y	1.73'' x 17.50''x 13.03''	1.73 x 17.50 x 13.17	1.73 x 17.50 x 13.03 (w/ DC power supply)
C9300LM-48T-4Y	1.73'' x 17.50''x 10.84''	1.73 x 17.50 x 12.39	1.73 x 17.50 x 11.86 (w/ DC power supply)
C9300L-24T-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-24T-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48T-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48T-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-24P-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-24P-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48P-4G	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
C9300L-48P-4X	1.73 X 17.5 X 16.1	1.73 X 17.5 X 17.7	1.73 X 17.5 X 19.2
Dimensions (H x W x D) Cms			
C9300X-48HX	4.4 x 44.5 x 48.3	4.4 x 44.5 x 56.0	4.4 x 44.5 x 56.0
C9300X-48TX	4.4 x 44.5 x 48.3	4.4 x 44.5 x 52.2	4.4 x 44.5 x 56.0
C9300X-48HXN	4.4 x 44.5 x 44.6	4.4 x 44.5 x 52.4	4.4 x 44.5 x 52.4
C9300X-24HX	4.4 x 44.5 x 44.6	4.4 x 44.5 x 52.4	4.4 x 44.5 x 52.4
C9300X-12Y	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.7	4.4 x 44.5 x 48.8
C9300X-24Y	4.4 x 44.5 x 44.7	4.4 x 44.5 x 48.8	4.4 x 44.5 x 52.6
C9300-24T	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-24P	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-24U	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-24UX	4.4 x 44.5 x 43.4	4.4 x 44.5 x 51.3	4.4 x 44.5 x 51.3
C9300-24H	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8

General Specifications			
C9300-48T	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-48P	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300-48U	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-48UXM	4.4 x 44.5 x 48.5	4.4 x 44.5 x 56.4	4.4 x 44.5 x 56.4
C9300-48UN	4.4 x 44.5 x 48.5	4.4 x 44.5 x 56.4	4.4 x 44.5 x 56.4
C9300-48H	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300-24S	4.3 x 44.4 x 44.9	4.3 x 44.4 x 48.8	4.3 x 44.4 x 52.6
C9300-48S	4.3 x 44.4 x 44.9	4.3 x 44.4 x 48.8	4.3 x 44.4 x 52.6
C9300LM-48UX-4Y	4.3 x 44.4 x 33.1	4.3 x 44.4 x 33.4	4.3 x 44.4 x 32.5 (w/ DC power supply)
C9300LM-48U-4Y	4.3 x 44.4 x 33.1	4.3 x 44.4 x 33.4	4.3 x 44.4 x 32.5 (w/ DC power supply)
C9300LM-24U-4Y	4.3 x 44.4 x 33.1	4.3 x 44.4 x 33.4	4.3 x 44.4 x 32.5 (w/ DC power supply)
C9300LM-48T-4Y	4.3 x 44.4 x 27.5	4.3 x 44.4 x 27.5	4.3 x 44.4 x 29.7 (w/ DC power supply)
C9300L-24T-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-24T-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48T-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48T-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-24P-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-24P-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48P-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48P-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 44.9	4.4 x 44.5 x 48.8
C9300L-48PF-4G	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-48PF-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-24UXG-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-24UXG-2Q	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-48UXG-4X	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8
C9300L-48UXG-2Q	4.4 x 44.5 x 40.9	4.4 x 44.5 x 48.8	4.4 x 44.5 x 48.8

## General Specifications

### Weight (with default power supply)

Model	Pounds	Kilograms
C9300X-48HX	14.6	6.62
C9300X-48TX	14.6	6.62
C9300X-48HXN	14.2	6.44
C9300X-24HX	13.8	6.25
C9300X-12Y	15.0	6.80
C9300X-24Y	16.2	7.35
C9300-24T	16.03	7.27
C9300-24P	16.33	7.4
C9300-24U	16.63	7.54
C9300-24UX	18.18	8.25
C9300-24UB	16.63	7.54
C9300-24UXB	18.18	8.25
C9300-24H	16.63	7.54
C9300-48T	16.43	7.45
C9300-48P	16.73	7.59
C9300-48U	17.03	7.72
C9300-48UXM	20.50	9.34
C9300-48UN	20.05	9.09
C9300-48UB	17.03	7.72
C9300-48H	17.03	7.72
C9300-24S	16.84	7.64
C9300-48S	17.32	7.86
C9300LM-48UX-4Y	12	5.45
C9300LM-48U-4Y	12	5.45
C9300LM-24U-4Y	11.5	5.21

<b>General Specifications</b>		
<b>C9300LM-48T-4Y</b>	11	4.99
<b>C9300L-24T-4G</b>	14.93	6.78
<b>C9300L-24T-4X</b>	14.93	6.78
<b>C9300L-48T-4G</b>	15.41	7.0
<b>C9300L-48T-4X</b>	15.41	7.0
<b>C9300L-24P-4G</b>	14.99	6.81
<b>C9300L-24P-4X</b>	14.99	6.81
<b>C9300L-48P-4G</b>	15.46	7.03
<b>C9300L-48P-4X</b>	15.46	7.03
<b>C9300L-48PF-4G</b>	15.48	7.03
<b>C9300L-48PF-4X</b>	15.48	7.03
<b>C9300L-24UXG-4X</b>	15.73	7.13
<b>C9300L-24UXG-2Q</b>	16.01	7.26
<b>C9300L-48UXG-4X</b>	16.86	7.65
<b>C9300L-48UXG-2Q</b>	16.86	7.65
<b>Mean Time Between Failures - MTBF (hours)</b>		
<b>C9300X-48HX</b>	185,420	
<b>C9300X-48TX</b>	206,480	
<b>C9300X-48HXN</b>	188,200	
<b>C9300X-24HX</b>	220,250	
<b>C9300X-12Y</b>	265,650	
<b>C9300X-24Y</b>	249,350	
<b>C9300-24T</b>	314,790	
<b>C9300-24P</b>	299,000	
<b>C9300-24U</b>	238,410	
<b>C9300-24UX</b>	214,760	
<b>C9300-24UB</b>	354,300	



General Specifications	
C9300-24UXB	288,520
C9300-24H	238,410
C9300-48T	305,870
C9300-48P	277,770
C9300-48U	227,410
C9300-48UXM	202,160
C9300-48UN	198,647
C9300-48UB	337,170
C9300-48H	227,410
C9300-24S	284,130
C9300-48S	281,920
C9300L-24T-4G	395,800
C9300L-24T-4X	387,700
C9300L-48T-4G	387,860
C9300L-48T-4X	380,080
C9300L-24P-4G	346,940
C9300L-24P-4X	340,710
C9300L-48P-4G	314,140
C9300L-48P-4X	309,020
C9300L-48PF-4G	303,660
C9300L-48PF-4X	298,880
C9300L-24UXG-4X	332,640
C9300L-24UXG-2Q	291,670
C9300L-48UXG-4X	273,820
C9300L-48UXG-2Q	275,010
C9300LM-24U-4Y	357,350
C9300LM-48U-4Y	304,970

General Specifications	
C9300LM-48T-4Y	408,710
C9300LM-48UXG-4Y	292,410
PWR-C1-350WAC-P	1,335,012 (ranges from 1.3M to 3.1M depending on temperature, input voltage and vendor)
PWR-C1-715WAC-P	1,054,881 (ranges from 1.05M to 2.6M depending on temperature, input voltage and vendor)
PWR-C1-1100WAC-P	1,217,904 (ranges from 1.2M to 2.8M depending on temperature, input voltage and vendor) (investigating an anomaly in MTBF data received from 1 Power Supply vendor - Artesyn)
PWR-C1-1900WAC-P	
PWR-C1-715WDC	1,812,103 (-48V input at 40C and vendor Delta)
PWR-C6-600WAC	1,600,060
PWR-C6-1000WAC	1,600,060
PWR-C6-715WDC	1,712,103
C9300-NM-2Q	10,778,230
C9300-NM-2Y	7,568,820
C9300-NM-4G	8,953,570
C9300-NM-4M	10,549,060
C9300-NM-8X	7,151,930
C9300X-NM-8Y	
C9300X-NM-2C	
FAN-T2	4,521,330
Environmental ranges	
<b>Acoustic noise</b> <b>Measured per ISO 7779 and declared per ISO 9296</b> <b>Bystander positions operating to an ambient temperature of 25° C</b>	With AC power supply (with 24 PoE+ ports loaded for C9300 SKUs) <ul style="list-style-type: none"> <li>• LpA: 45dB typical, 48 dB max</li> <li>• LwA: 5.6B typical, 5.9B max</li> </ul> With AC power supply (with half the number of PoE+ ports loaded for C9300L SKUs) <ul style="list-style-type: none"> <li>• LpA: 44dB typical, 47 dB max</li> <li>• LwA: 5.5B typical, 5.8B max</li> </ul> Typical: Noise emission for a typical configuration Maximum: Statistical maximum to account for variation in production

## Connectors

Table 18 shows the supported connectors for the Cisco Catalyst 9300 Series.

**Table 18.** Connectors

<b>Connectors and cabling</b>	<ul style="list-style-type: none"> <li>• 1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling</li> <li>• Multigigabit-T ports: RJ-45 connectors, 4-pair Cat 5E, Cat 6, Cat 6A UTP cabling</li> <li>• 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling</li> <li>• SFP transceivers: LC fiber connectors (single-mode or multimode fiber)</li> <li>• SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber)</li> <li>• QSFP+ transceivers: MPO and LC fiber connectors (single-mode or multimode fiber)</li> <li>• QSFP+ connector</li> <li>• SFP+ connector</li> <li>• Cisco StackWise stacking ports: copper-based Cisco StackWise cabling</li> <li>• Cisco StackPower: Cisco proprietary power stacking cables</li> <li>• Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling</li> <li>• Management console port: RJ-45-to-DB9 cable for PC connections</li> </ul>
<b>Power connectors</b>	<ul style="list-style-type: none"> <li>• Customers can provide power to a switch by using the internal power at the back of the switch</li> <li>• Internal power supply connector: The internal power supply is an auto-ranging unit. It supports input voltages between 100 (115 for 1100WAC) and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet</li> </ul>

For the latest Cisco transceiver module compatibility information, refer to

<https://www.cisco.com/c/en/us/support/interfaces-modules/transceiver-modules/products-device-support-tables-list.html>.

## Management and standards support

Table 19 shows management and standards support for the Cisco Catalyst 9300 Series.

**Table 19.** Management and standards support\*

Description	Specification	
<b>Management</b>	BRIDGE-MIB CISCO-BRIDGE-EXT-MIB CISCO-BULK-FILE-MIB CISCO-CABLE-DIAG-MIB CISCO-CALLHOME-MIB CISCO-CEF-MIB CISCO-CIRCUIT-INTERFACE-MIB CISCO-CONFIG-COPY-MIB CISCO-CONFIG-MAN-MIB CISCO-DEVICE-LOCATION-MIB CISCO-DHCP-SNOOPING-MIB CISCO-EIGRP-MIB CISCO-EMBEDDED-EVENT-MGR-MIB	CISCO-PORT-STORM-CONTROL-MIB CISCO-POWER-ETHERNET-EXT-MIB CISCO-PRIVATE-VLAN-MIB CISCO-PROCESS-MIB CISCO-PRODUCTS-MIB CISCO-RF-MIB CISCO-RTP-METRICS-MIB CISCO-RTTMON-ICMP-MIB CISCO-STACKWISE-MIB CISCO-STP-EXTENSIONS-MIB CISCO-SYSLOG-MIB CISCO-TCP-MIB CISCO-UDLDP-MIB

Description	Specification	
	CISCO-ENTITY-FRU-CONTROL-MIB	CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB
	CISCO-ENTITY-SENSOR-MIB	ENTITY-MIB
	CISCO-ENTITY-VENDORTYPE-OID-MIB	HC-ALARM-MIB
	CISCO-ERR-DISABLE-MIB	HC-RMON-MIB
	CISCO-FLASH-MIB	IEEE8023-LAG-MIB
	CISCO-FLOW-MONITOR-MIB	IF-MIB
	CISCO-FTP-CLIENT-MIB	IP-FORWARD-MIB
	CISCO-HSRP-EXT-MIB	IP-MIB
	CISCO-HSRP-MIB	LLDP-EXT-MED-MIB
	CISCO-IETF-BFD-MIB	LLDP-MIB
	CISCO-IETF-PPVPN-MPLS-VPN-MIB	MAU-MIB
	CISCO-IETF-PW-MPLS-MIB	MPLS-L3VPN-STD-MIB
	CISCO-IF-EXTENSION-MIB	MPLS-LSR-STD-MIB
	CISCO-IGMP-FILTER-MIB	MPLS-VPN-MIB
	CISCO-IMAGE-LICENSE-MGMT-MIB	OLD-CISCO-CHASSIS-MIB
	CISCO-IMAGE-MIB	OLD-CISCO-CPU-MIB
	CISCO-IP-CBR-METRICS-MIB	OLD-CISCO-INTERFACES-MIB
	CISCO-IP-STAT-MIB	OLD-CISCO-IP-MIB
	CISCO-IP-TAP-MIB	OLD-CISCO-MEMORY-MIB
	CISCO-IP-URPF-MIB	OLD-CISCO-SYS-MIB
	CISCO-IPSEC-FLOW-MONITOR-MIB	OLD-CISCO-TCP-MIB
	CISCO-IPSEC-MIB	OLD-CISCO-TS-MIB
	CISCO-IPSEC-PROVISIONING-MIB	POWER-ETHERNET-MIB
	CISCO-IPSLA-AUTOMEASURE-MIB	RFC1213-MIB
	CISCO-IPSLA-ECHO-MIB	RMON-MIB
	CISCO-IPSLA-JITTER-MIB	RMON2-MIB
	CISCO-L2-CONTROL-MIB	SMON-MIB
	CISCO-L2L3-INTERFACE-CONFIG-MIB	SNMPv2-MIB
	CISCO-LAG-MIB	SONET-MIB
	CISCO-LICENSE-MGMT-MIB	TCP-MIB
	CISCO-LOCAL-AUTH-USER-MIB	UDP-MIB
	CISCO-MAC-NOTIFICATION-MIB	
	CISCO-MDI-METRICS-MIB	
	CISCO-MEDIA-METRICS-MIB	
	CISCO-MEMORY-POOL-MIB	
	CISCO-MPLS-LSR-EXT-STD-MIB	
	CISCO-NBAR-PROTOCOL-DISCOVERY-MIB	
	CISCO-NHRP-EXT-MIB	

Description	Specification	
	CISCO-NTP-MIB CISCO-PAGP-MIB CISCO-PORT-SECURITY-MIB	
<b>Standards</b>	IEEE 802.1s IEEE 802.1w IEEE 802.1x IEEE 802.1x-Rev IEEE 802.3ad IEEE 802.3ae IEEE 802.3af IEEE 802.3at IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports IEEE 802.1D Spanning Tree Protocol IEEE 802.1p CoS prioritization IEEE 802.1Q VLAN IEEE 802.3 10BASE-T specification IEEE 802.3u 100BASE-TX specification IEEE 802.3ab 1000BASE-T specification IEEE 802.3z 1000BASE-X specification IEEE 802.3bz Multirate 2.5G/5G specification IEEE 802.3an 10G BASE-T specification	RMON I and II standards SNMPv1, v2c, and v3

## Power supply specifications

Table 20 lists the power specifications for the Cisco Catalyst 9300 Series based on the kind of power supply used.

**Table 20.** Power specifications

Description	Specification			
	PWR-C1-1100WAC**	PWR-C1-715WAC**	PWR-C1-350WAC**	PWR-C1-715WDC
<b>Power supply rated maximum</b>	1100W	715W	350W	715W
<b>Total output BTU (note: 1000 BTU/hr = 293W)</b>	3793 BTU/hr, 1100W	2465 BTU/hr, 715W	1207 BTU/hr, 350W	2440 BTU/hr
<b>Input-voltage range and frequency</b>	115V to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	-36V to -72 VDC
<b>Input current</b>	12-6A	10-5A	4-2A	24-12A

Description	Specification			
<b>Output ratings</b>	-56V at 19.64A	-56V at 12.8A	-56V at 6.25A	-56V at 12.8A
<b>Output holdup time</b>	10 ms minimum at 100VAC	16.7 ms minimum at 100VAC	16.7 ms minimum at 100VAC	2 ms minimum at -48Vdc
<b>Power-supply input receptacles</b>	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C14 (IEC60320-C14)	Right angle barrier style terminal block
<b>Power cord rating</b>	15A	15A	10A	25A@100VDC
<b>Physical specifications</b>	(H x W x D): 1.58 x 3.25 x 13.7 in Weight: 3.1 lb (1.4 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.6 lb (1.2 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.3 lb (1.2 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.2 lb (1kg)

\*\*These Power Supply options will not be available as options for purchase with C9300 in CCW starting Q2 FY21

**Table 21.** Power specifications – platinum rated power supplies

Description	Specification				
	*PWR-C1-1900WAC-P		*PWR-C1-1100WAC-P	*PWR-C1-715WAC-P	PWR-C1-350WAC-P
<b>Power supply rated maximum output power</b>	1500W With 115V	1900W With 230 V	1100W	715W	350W
<b>Total output BTU (note: 1000 BTU/hr = 293W)</b>	5118 BTU/hr, with 115V	6483 BTU/hr, With 230V	3754 BTU/hr, 1100W	2440 BTU/hr, 715W	1194 BTU/hr, 350W
<b>Input-voltage range and frequency</b>	115V to 127 VAC, 50 to 60 Hz	200V to 240 VAC 55 to 60 Hz	115V to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz
<b>Input current</b>	16A maximum	12A maximum	12-6A	10-5A	4-2A
<b>Output ratings</b>	-56V at 26.78A	-56V at 33.92A	-56V at 19.64A	-56V at 12.8A	-56V at 6.25A
<b>Output holdup time</b>	20 ms minimum at 100VAC	20 ms minimum at 100VAC	20 ms minimum at 100VAC	20 ms minimum at 100VAC	20 ms minimum at 100VAC

Description	Specification				
<b>Power-supply input receptacles</b>	IEC 320-C22	IEC 320-C22	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C14 (IEC60320-C14)
<b>Power cord rating</b>	20A	16A	15A	15A	10A
<b>Physical specifications</b>	(H x W x D): 1.58 x 3.25 x 13.7 in Weight: xxx lb (x.x kg)		(H x W x D): 1.58 x 3.25 x 13.7 in Weight: 3.1 lb (1.4 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.6 lb (1.2 kg)	(H x W x D): 1.58 x 3.25 x 12.20 in Weight: 2.3 lb (1.2 kg)
<b>Operating temperature</b>	<p>Normal operating temperature* and altitudes:</p> <ul style="list-style-type: none"> <li>-5° C to +45° C, up to 5000 feet (1500m)</li> <li>-5° C to +40° C, up to 10,000 feet (3000m)</li> <li>-5° C to +35° C, up to 15,000 feet (5000m)</li> </ul> <p>* Minimum ambient temperature for cold start is 32° F (0° C)</p> <p>Short-term* exceptional conditions:</p> <ul style="list-style-type: none"> <li>-5° C to +55° C, at sea level</li> <li>-5° C to +50° C, up to 5000 feet (1500m)</li> <li>-5° C to +45° C, up to 10,000 feet (3000m)</li> <li>-5° C to +35° C, up to 15,000 feet (5000m)</li> </ul> <p>*Not more than following in one year period: 96 consecutive hours, or 360 hours total, or 15 occurrences</p>		<p>Normal operating temperature* and altitudes:</p> <ul style="list-style-type: none"> <li>-5° C to +45° C, up to 5000 feet (1500m)</li> <li>-5° C to +40° C, up to 10,000 feet (3000m)</li> </ul> <p>*Minimum ambient temperature for cold start is 32° F (0° C)</p> <p>Short-term* exceptional conditions:</p> <ul style="list-style-type: none"> <li>-5° C to +50° C, up to 5000 feet (1500m)</li> <li>-5° C to +45° C, up to 10,000 feet (3000m)</li> <li>-5° C to +45° C, at sea level with single fan failure</li> </ul> <p>*Not more than following in one-year period: 96 consecutive hours, or 360 hours total, or 15 occurrences</p>		
<b>Storage temperature</b>	40° to 158° F (-40° to 70° C)		-40° to 158° F (-40° to 70° C)		

Description	Specification	
<b>Relative humidity operating and nonoperating noncondensing</b>	5% to 90% noncondensing	5% to 90% noncondensing
<b>Altitude</b>	10,000 ft. (3000 meters), up to 45° C	10,000 ft. (3000 meters), up to 45° C
<b>EMI and EMC compliance</b>	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A (AC input models only) VCCI Class A EN 55024, EN300386, EN 61000-3-2, EN 61000-3-3 EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A (AC input models only) VCCI Class A EN 55024, EN300386, EN 61000-3-2, EN 61000-3-3 EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6
<b>Safety compliance</b>		
<b>LED indicators</b>	“AC OK”: Input power to the power supply is OK “PS OK”: Output power from the power supply is OK	“AC OK”: Input power to the power supply is OK “PS OK”: Output power from the power supply is OK

\*PWR-C1-1900WAC-UP is available as an PSU upgrade option to 1900W primary PSU

\*PWR-C1-1100WAC-UP is available as an PSU upgrade option to 1100W primary PSU

\*PWR-C1-715WAC-UP is available as an PSU upgrade option to 715W primary PSU



## Power consumption of standalone 9300 Series Switches

Table 22 shows the power consumption of standalone Cisco Catalyst 9300 Series Switches based on Alliance for Telecommunications Industry Solutions (ATIS) testing using Internet Mix (IMIX) distribution stream traffic, with input voltage of 115VAC at 60 Hz and no PoE loading. The values given are the maximum possible power consumption numbers under the respective test scenarios.

**Table 22.** Power Consumption of Standalone 9300 Series Switches (tested on IOS XE 16.5.1)

				Measured P(W)																	
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)					
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%		
C9300-24P	715W	Not Installed	115Vac	82.6	91.0	93.4	93.7	93.9	82.0	94.8	95.9	96.1	96.6	93.7	82.9	202.3	325.8	527.5	579.0		
			230Vac	81.6	89.8	92.2	92.4	92.6	81.7	93.7	94.6	94.7	95.2	92.6	82.3	199.0	318.2	510.6	559.9		
		C9300-NM-4G	115Vac	87.5	93.0	96.5	97.7	98.5	89.8	99.5	102.4	103.0	103.4	98.9	85.4	211.4	334.5	537.8	585.7		
			230Vac	86.1	91.3	94.4	95.8	96.6	88.9	98.5	101.5	101.9	102.4	97.9	84.6	207.9	328.0	520.3	568.2		
		C9300-NM-4M	115Vac	90.4	100.4	101.6	101.9	102.3	94.1	106.8	107.8	108.2	109.1	105.7	90.8	214.9	337.9	539.4	590.8		
			230Vac	89.4	99.1	100.3	100.5	100.7	92.8	106.1	106.5	106.9	107.8	104.9	89.6	211.0	329.7	522.2	571.0		
		C9300-NM-2Q	115Vac	88.1	98.6	99.5	99.6	99.9	91.1	104.4	105.2	105.6	106.5	103.3	88.4	212.2	335.2	536.2	586.5		
			230Vac	87.1	97.2	98.1	98.3	98.8	90.0	103.3	103.9	104.3	105.2	102.1	87.5	208.0	326.8	519.3	567.6		
		C9300-NM-8X	115Vac	90.0	99.4	101.0	101.2	101.6	94.2	107.1	107.9	108.3	109.2	106.0	88.7	215.3	339.6	541.4	591.3		
			230Vac	89.0	97.9	99.8	100.0	100.5	93.1	105.8	106.7	107.1	108.1	104.8	87.8	211.7	331.9	524.2	572.3		
		C9300-24S	715W	C9300-NM-4G	115Vac	99.40	100.30	101.50	102.10	102.50	116.20	117.70	119.10	119.50	119.80	117.76	91.70				
					230Vac	98.00	98.90	99.70	100.60	101.60	114.40	115.80	116.70	117.20	117.70	115.85	90.90				
C9300-NM-2Q	115Vac			101.90	104.80	105.30	105.40	106.10	117.60	120.50	121.10	121.70	123.10	120.47	85.40						
	230Vac			100.20	103.00	103.50	103.70	104.30	115.70	118.70	119.30	119.50	120.70	118.60	84.40						
C9300-NM-8X	115Vac			104.60	107.40	108.30	108.50	109.10	121.30	124.10	124.80	125.40	126.40	124.05	85.90						
	230Vac			103.40	105.70	106.40	106.70	107.00	119.40	122.50	122.90	123.20	124.30	122.37	84.60						
C9300-NM-4M	115Vac			99.15	101.80	102.50	102.70	103.30	116.60	119.70	120.30	121.00	122.20	119.64	82.10						
	230Vac			97.64	100.30	100.80	101.00	101.60	115.40	118.30	118.90	119.30	120.20	118.20	81.20						
C9300-NM-2Y	115Vac			101.24	104.48	104.75	104.81	105.42	116.40	119.01	120.31	120.58	121.31	118.98	85.02						
	230Vac			99.17	102.36	102.63	102.85	103.57	114.10	117.42	118.00	118.46	119.62	117.31	83.03						

SKU				Measured P(W)																	
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)					
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%		
FEP	Uplink	Input																			
C9300-24T	350W	Not Installed	115Vac	77.7	86.1	89.1	89.5	89.7	77.5	91.0	91.7	91.9	92.5	89.8	78.1						
			230Vac	77.4	85.4	88.5	88.7	88.8	77.0	89.8	90.7	90.9	91.3	88.7	77.7						
		C9300-NM-4G	115Vac	82.5	88.4	92.1	93.3	94.1	85.9	96.0	98.9	99.7	100.0	95.4	81.2						
			230Vac	81.8	87.6	90.4	92.0	92.9	84.9	94.2	96.9	97.9	98.3	93.7	80.5						
		C9300-NM-4M	115Vac	86.4	96.3	98.0	98.2	98.7	90.2	103.7	104.5	104.9	105.9	102.6	87.0						
			230Vac	85.4	95.1	96.6	96.8	97.3	89.1	102.1	102.9	103.3	104.2	101.0	86.0						
		C9300-NM-2Q	115Vac	84.0	94.7	95.7	95.9	96.1	87.1	101.1	101.7	102.1	103.0	99.9	83.9						
			230Vac	83.2	93.6	94.4	94.6	95.1	86.2	99.2	100.1	100.5	101.4	98.1	83.2						
		C9300-NM-8X	115Vac	86.3	95.6	97.5	97.8	98.2	90.7	103.9	104.7	105.1	106.1	102.8	85.0						
			230Vac	85.4	94.5	96.2	96.4	97.0	89.7	102.2	103.2	103.6	104.5	101.2	84.3						
		C9300-24U	1100W	Not Installed	115Vac	87.4	95.9	99.0	99.2	99.4	87.0	100.8	101.5	101.8	102.3	99.6	87.8	313.7	547.9	940.3	1041.4
					230Vac	85.9	94.7	97.3	97.6	97.8	85.5	98.0	99.6	99.8	100.3	96.9	86.4	306.2	529.1	895.6	988.7
				C9300-NM-4G	115Vac	92.2	97.8	101.2	102.7	103.6	95.4	105.2	108.3	109.0	109.4	104.6	94.4	321.0	554.0	943.5	1045.5
					230Vac	90.6	96.1	99.4	100.9	101.7	93.7	103.4	106.4	107.2	107.6	102.8	93.2	313.5	536.6	901.5	994.6
C9300-NM-4M	115Vac			96.0	106.2	107.6	107.8	108.4	99.7	113.4	114.2	114.6	115.6	112.3	96.1	325.7	559.0	950.6	1053.0		
	230Vac			94.3	104.5	105.8	106.1	106.6	97.9	112.1	112.8	113.2	114.0	110.8	94.4	318.3	541.9	906.2	997.8		
C9300-NM-2Q	115Vac			93.4	103.9	104.8	105.0	105.5	96.5	110.4	111.3	111.5	112.4	109.2	93.4	323.2	555.8	946.7	1048.6		
	230Vac			91.8	102.0	103.0	103.3	103.7	94.8	108.7	109.4	109.8	110.6	107.5	91.8	314.9	538.4	902.2	994.5		
C9300-NM-8X	115Vac			95.8	105.4	107.3	107.6	108.1	100.2	114.0	114.8	115.2	116.2	112.8	94.4	324.4	557.7	946.6	1049.0		
	230Vac			94.0	103.0	105.1	105.4	106.0	98.4	112.0	113.1	113.5	114.5	110.9	93.2	317.8	541.8	907.7	999.1		

SKU				Measured P(W)																
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)				
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%	
FEP	Uplink	Input																		
C9300-24UB	1100W	Not Installed	115Vac	87.4	95.9	99.0	99.2	99.4	87.0	100.8	101.5	101.8	102.3	99.6	87.8	313.7	547.9	940.3	1041.4	
			230Vac	85.9	94.7	97.3	97.6	97.8	85.5	98.0	99.6	99.8	100.3	96.9	86.4	306.2	529.1	895.6	988.7	
	C9300-NM-4G	115Vac	92.2	97.8	101.2	102.7	103.6	95.4	105.2	108.3	109.0	109.4	104.6	94.4	321.0	554.0	943.5	1045.5		
		230Vac	90.6	96.1	99.4	100.9	101.7	93.7	103.4	106.4	107.2	107.6	102.8	93.2	313.5	536.6	901.5	994.6		
	C9300-NM-4M	115Vac	96.0	106.2	107.6	107.8	108.4	99.7	113.4	114.2	114.6	115.6	112.3	96.1	325.7	559.0	950.6	1053.0		
		230Vac	94.3	104.5	105.8	106.1	106.6	97.9	112.1	112.8	113.2	114.0	110.8	94.4	318.3	541.9	906.2	997.8		
	C9300-NM-2Q	115Vac	93.4	103.9	104.8	105.0	105.5	96.5	110.4	111.3	111.5	112.4	109.2	93.4	323.2	555.8	946.7	1048.6		
		230Vac	91.8	102.0	103.0	103.3	103.7	94.8	108.7	109.4	109.8	110.6	107.5	91.8	314.9	538.4	902.2	994.5		
	C9300-NM-8X	115Vac	95.8	105.4	107.3	107.6	108.1	100.2	114.0	114.8	115.2	116.2	112.8	94.4	324.4	557.7	946.6	1049.0		
		230Vac	94.0	103.0	105.1	105.4	106.0	98.4	112.0	113.1	113.5	114.5	110.9	93.2	317.8	541.8	907.7	999.1		
	C9300-24UX	1100W	C9300-NM-8X	115Vac	188.0	195.7	196.8	197.4	198.9	208.8	224.6	227.0	228.6	232.0	223.8	168.6	364.2	521.6	784.3	851.4
				230Vac	184.4	192.2	192.9	193.5	195.1	204.6	220.0	222.0	223.5	226.9	219.2	165.3	354.2	505.0	749.7	810.6
	C9300-24UXB	1100W	C9300-NM-8X	115Vac	188.0	195.7	196.8	197.4	198.9	208.8	224.6	227.0	228.6	232.0	223.8	168.6	364.2	521.6	784.3	851.4
				230Vac	184.4	192.2	192.9	193.5	195.1	204.6	220.0	222.0	223.5	226.9	219.2	165.3	354.2	505.0	749.7	810.6
C9300-24H	1100W	Not Installed	115Vac	87.4	95.9	99.0	99.2	99.4	87.0	100.8	101.5	101.8	102.3	99.6	87.8	313.7	547.9	940.3	1041.4	
			230Vac	85.9	94.7	97.3	97.6	97.8	85.5	98.0	99.6	99.8	100.3	96.9	86.4	306.2	529.1	895.6	988.7	
	C9300-NM-4G	115Vac	92.2	97.8	101.2	102.7	103.6	95.4	105.2	108.3	109.0	109.4	104.6	94.4	321.0	554.0	943.5	1045.5		
		230Vac	90.6	96.1	99.4	100.9	101.7	93.7	103.4	106.4	107.2	107.6	102.8	93.2	313.5	536.6	901.5	994.6		
	C9300-NM-4M	115Vac	96.0	106.2	107.6	107.8	108.4	99.7	113.4	114.2	114.6	115.6	112.3	96.1	325.7	559.0	950.6	1053.0		
		230Vac	94.3	104.5	105.8	106.1	106.6	97.9	112.1	112.8	113.2	114.0	110.8	94.4	318.3	541.9	906.2	997.8		
	C9300-NM-2Q	115Vac	93.4	103.9	104.8	105.0	105.5	96.5	110.4	111.3	111.5	112.4	109.2	93.4	323.2	555.8	946.7	1048.6		
		230Vac	91.8	102.0	103.0	103.3	103.7	94.8	108.7	109.4	109.8	110.6	107.5	91.8	314.9	538.4	902.2	994.5		
	C9300-NM-8X	115Vac	95.8	105.4	107.3	107.6	108.1	100.2	114.0	114.8	115.2	116.2	112.8	94.4	324.4	557.7	946.6	1049.0		
		230Vac	94.0	103.0	105.1	105.4	106.0	98.4	112.0	113.1	113.5	114.5	110.9	93.2	317.8	541.8	907.7	999.1		

				Measured P(W)																	
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)					
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%		
SKU	FEP	Uplink	Input																		
C9300-48P	715W	Not Installed	115Vac	90.5	103.2	104.5	104.7	105.2	89.9	104.9	107.8	109.2	110.2	103.9	91.3	206.1	324.1	514.4	563.2		
			230Vac	89.4	102.2	103.4	103.6	104.1	88.9	103.7	106.9	108.4	109.3	102.7	89.9	202.9	316.9	500.6	547.5		
		C9300-NM-4G	115Vac	95.3	103.5	106.2	108.1	108.8	98.0	112.1	114.9	115.9	116.2	111.1	94.3	215.0	332.6	523.4	572.1		
			230Vac	94.0	102.2	105.2	106.9	107.8	96.4	111.3	114.1	115.2	115.5	110.2	93.1	211.2	324.8	509.3	555.8		
		C9300-NM-4M	115Vac	98.7	111.5	112.3	112.7	113.5	101.5	119.7	120.5	121.2	122.8	118.2	99.2	219.1	336.5	528.8	576.6		
			230Vac	97.1	110.7	111.5	111.9	112.7	100.6	119.2	120.0	120.7	122.3	117.6	97.9	215.5	329.5	514.2	560.5		
		C9300-NM-2Q	115Vac	96.9	110.1	110.7	111.0	111.9	99.3	118.2	119.0	119.7	121.5	116.7	97.6	217.4	335.4	527.4	577.8		
			230Vac	95.6	109.2	109.7	110.1	111.0	98.1	117.5	118.2	119.0	120.6	115.8	96.0	213.0	326.9	511.9	558.8		
		C9300-NM-8X	115Vac	100.5	113.4	114.2	114.6	115.5	106.4	124.5	125.4	126.1	128.0	123.0	99.5	215.1	334.7	520.8	568.8		
			230Vac	99.4	112.8	113.5	113.9	114.9	105.3	124.0	124.9	125.6	127.4	122.5	98.4	212.3	327.4	507.4	553.1		
		C9300-48S	715W	C9300-NM-4G	115Vac	116.30	117.00	118.40	119.10	119.60	149.40	151.10	152.20	152.90	153.50	151.17	93.50				
					230Vac	114.90	115.60	116.70	117.60	118.10	147.10	148.80	150.10	150.30	150.70	148.82	92.10				
				C9300-NM-2Q	115Vac	117.70	121.30	121.80	122.40	124.10	150.60	154.10	155.30	156.30	158.60	154.20	88.00				
					230Vac	116.40	119.70	120.20	120.80	122.10	147.70	151.20	152.70	153.80	156.10	151.34	87.60				
C9300-NM-8X	115Vac			120.50	123.60	124.30	125.20	126.00	152.80	156.10	157.60	158.60	160.80	156.24	87.40						
	230Vac			119.00	121.90	122.90	123.40	124.40	150.20	153.90	154.90	155.80	158.30	153.97	88.90						
C9300-NM-4M	115Vac			118.29	121.62	122.36	122.78	124.03	153.80	157.53	158.17	159.28	161.00	157.50	87.53						
	230Vac			117.15	120.62	120.89	121.30	122.35	150.20	153.61	154.60	155.58	157.86	153.69	86.48						
C9300-NM-2Y	115Vac			114.30	119.20	119.70	120.30	121.50	144.40	152.00	152.80	153.10	156.10	151.65	85.80						
	230Vac			112.00	118.00	118.60	118.90	120.10	142.20	149.20	150.20	151.00	153.40	148.92	83.90						

				Measured P(W)																	
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)					
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%					25%	50%	90%	100%
C9300-48T	350W	Not Installed	115Vac	81.5	94.9	95.7	95.9	96.4	80.8	98.6	100.2	101.3	102.3	97.2	82.2						
			230Vac	80.5	93.7	94.6	94.8	95.3	80.1	97.3	99.5	99.9	100.8	96.0	81.5						
		C9300-NM-4G	115Vac	86.4	94.9	97.8	99.4	100.4	89.3	104.6	107.6	108.6	108.9	103.5	85.7						
			230Vac	85.3	93.8	96.6	98.4	99.1	88.2	103.4	106.2	106.9	107.2	102.3	84.8						
		C9300-NM-4M	115Vac	89.6	103.4	104.2	104.6	105.4	93.0	112.7	113.5	114.1	115.7	111.0	90.6						
			230Vac	89.0	102.0	102.8	103.1	103.9	91.9	111.0	111.8	112.4	114.0	109.4	89.3						
		C9300-NM-2Q	115Vac	88.3	102.4	102.9	103.3	104.2	91.0	110.5	111.3	112.1	113.9	108.9	88.6						
			230Vac	87.3	100.9	101.4	101.8	102.7	89.9	108.8	109.6	110.3	112.1	107.2	87.6						
		C9300-NM-8X	115Vac	92.1	105.2	106.1	106.5	107.4	98.6	117.6	118.4	119.1	120.9	116.0	91.0						
			230Vac	91.1	103.9	104.7	105.1	106.0	97.3	115.8	116.6	117.3	119.0	114.3	90.0						
		C9300-48U	1100W	Not Installed	115Vac	96.0	110.2	110.9	111.2	111.7	95.6	112.5	114.3	115.9	116.9	111.3	97.0	315.1	544.0	925.9	1023.0
					230Vac	94.8	108.5	109.2	109.4	109.9	94.2	110.0	112.5	114.1	115.0	108.9	95.6	308.6	529.4	889.9	978.8
C9300-NM-4G	115Vac			97.4	105.8	109.0	110.7	111.0	99.9	115.1	117.8	118.9	119.2	114.0	96.4	319.2	547.3	928.0	1026.3		
	230Vac			95.4	103.9	107.4	108.7	110.0	98.8	113.4	116.2	117.0	117.4	112.4	94.9	314.3	535.6	896.0	984.3		
C9300-NM-4M	115Vac			104.4	118.5	119.0	119.5	120.1	107.4	126.8	127.6	128.3	130.0	125.2	104.9	326.2	556.0	938.6	1035.6		
	230Vac			102.8	116.0	117.1	117.5	118.2	106.4	124.8	125.5	126.2	127.7	123.2	103.6	320.4	541.4	903.0	991.6		
C9300-NM-2Q	115Vac			102.9	117.2	117.6	118.0	119.0	104.8	123.8	124.6	125.3	127.0	122.2	102.5	324.1	552.4	934.4	1032.6		
	230Vac			101.2	114.9	115.5	115.9	117.0	103.9	123.0	123.7	124.4	126.1	121.4	101.7	316.9	537.9	898.2	988.3		
C9300-NM-8X	115Vac			106.7	120.4	121.1	121.5	122.3	112.7	131.5	132.4	133.0	134.8	130.0	105.7	330.0	563.7	941.8	1043.4		
	230Vac			105.0	118.5	119.2	119.6	120.2	110.9	129.4	130.2	131.0	132.6	127.9	104.1	324.5	549.0	908.0	998.9		

SKU				Measured P(W)																	
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)					
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%		
FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	25%	50%	90%	100%			
C9300-48H	1100W	Not Installed	115Vac	96.0	110.2	110.9	111.2	111.7	95.6	112.5	114.3	115.9	116.9	111.3	97.0	315.1	544.0	925.9	1023.0		
			230Vac	94.8	108.5	109.2	109.4	109.9	94.2	110.0	112.5	114.1	115.0	108.9	95.6	308.6	529.4	889.9	978.8		
		C9300-NM-4G	115Vac	97.4	105.8	109.0	110.7	111.0	99.9	115.1	117.8	118.9	119.2	114.0	96.4	319.2	547.3	928.0	1026.3		
			230Vac	95.4	103.9	107.4	108.7	110.0	98.8	113.4	116.2	117.0	117.4	112.4	94.9	314.3	535.6	896.0	984.3		
		C9300-NM-4M	115Vac	104.4	118.5	119.0	119.5	120.1	107.4	126.8	127.6	128.3	130.0	125.2	104.9	326.2	556.0	938.6	1035.6		
			230Vac	102.8	116.0	117.1	117.5	118.2	106.4	124.8	125.5	126.2	127.7	123.2	103.6	320.4	541.4	903.0	991.6		
		C9300-NM-2Q	115Vac	102.9	117.2	117.6	118.0	119.0	104.8	123.8	124.6	125.3	127.0	122.2	102.5	324.1	552.4	934.4	1032.6		
			230Vac	101.2	114.9	115.5	115.9	117.0	103.9	123.0	123.7	124.4	126.1	121.4	101.7	316.9	537.9	898.2	988.3		
		C9300-NM-8X	115Vac	106.7	120.4	121.1	121.5	122.3	112.7	131.5	132.4	133.0	134.8	130.0	105.7	330.0	563.7	941.8	1043.4		
			230Vac	105.0	118.5	119.2	119.6	120.2	110.9	129.4	130.2	131.0	132.6	127.9	104.1	324.5	549.0	908.0	998.9		
		C9300-48UB	1100W	C9300-NM-8X	115Vac	106.7	120.4	121.1	121.5	122.3	112.7	131.5	132.4	133.0	134.8	130.0	105.7	330.0	563.7	941.8	1043.4
					230Vac	105.0	118.5	119.2	119.6	120.2	110.9	129.4	130.2	131.0	132.6	127.9	104.1	324.5	549.0	908.0	998.9
C9300-48UN	1100W	C9300-NM-8X	115Vac	172.9	176.7	178.7	179.8	181.8	193.8	199.8	201.5	203.1	206.9	199.9	159.1	357.3	525.0	803.9	875.1		
			230Vac	171.2	174.8	176.8	178.1	179.9	191.7	197.8	199.4	201.0	204.7	197.9	157.9	351.5	512.1	777.0	843.8		
C9300-48UXM	1100W	C9300-NM-8X	115Vac	236.2	241.4	246.6	247.8	249.6	253.2	261.5	272.4	278.5	283.0	262.8	219.2	392.3	528.7	750.8	810.1		
			230Vac	232.2	237.4	242.5	243.7	245.6	249.0	256.7	267.6	272.9	277.2	258.0	215.7	382.8	515.2	728.0	784.7		
C9300L-24P-4G	715W	Integrated	115Vac	62.33	68.39	69.42	70.19	70.99	62.74	74.98	76.05	76.93	77.70	74.02	61.92	203.54	341.71	569.96	627.59		
			230Vac	60.91	67.07	68.18	68.91	69.68	61.32	73.88	74.99	75.84	76.58	72.89	60.60	199.69	334.16	552.06	606.54		
			115Vac	62.33	68.39	69.42	70.19	70.99	62.74	74.98	76.05	76.93	77.70	74.02	61.92	203.54	341.71	569.96	627.59		
			230Vac	60.91	67.07	68.18	68.91	69.68	61.32	73.88	74.99	75.84	76.58	72.89	60.60	199.69	334.16	552.06	606.54		
C9300L-24P-4X	715W	Integrated	115Vac	64.32	70.97	72.60	73.02	73.63	69.27	76.96	79.15	79.85	81.00	76.59	64.99	207.17	343.00	569.93	626.15		
			230Vac	64.09	69.90	71.75	72.28	72.92	67.80	76.12	78.34	78.78	79.91	75.67	63.70	203.04	336.39	553.25	607.02		
			115Vac	64.32	70.97	72.60	73.02	73.63	69.27	76.96	79.15	79.85	81.00	76.59	64.99	207.17	343.00	569.93	626.15		
			230Vac	64.09	69.90	71.75	72.28	72.92	67.80	76.12	78.34	78.78	79.91	75.67	63.70	203.04	336.39	553.25	607.02		

				Measured P(W)																
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)				
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%	
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	25%	50%	90%	100%	
C9300L-24T-4G	350W	Integrated	115Vac	57.75	63.72	64.67	65.37	66.09	58.39	69.87	70.92	71.74	72.37	68.97	57.30					
			230Vac	56.63	62.65	63.60	64.28	65.02	57.16	68.55	69.59	70.38	70.99	67.65	56.20					
			115Vac	57.75	63.72	64.67	65.37	66.09	58.39	69.87	70.92	71.74	72.37	68.97	57.3					
			230Vac	56.63	62.65	63.60	64.28	65.02	57.16	68.55	69.59	70.38	70.99	67.65	56.2					
C9300L-24T-4X	350W	Integrated	115Vac	58.69	65.61	67.13	67.54	68.03	59.12	71.55	73.49	74.06	75.14	70.66	58.13					
			230Vac	57.36	64.19	65.74	65.94	66.41	57.85	70.03	71.96	72.31	73.54	69.17	56.85					
			115Vac	58.69	65.61	67.13	67.54	68.03	59.12	71.55	73.49	74.06	75.14	70.66	58.13					
			230Vac	57.36	64.19	65.74	65.94	66.41	57.85	70.03	71.96	72.31	73.54	69.17	56.85					
C9300L-48P-4G	715W	Integrated	115Vac	69.21	77.07	78.03	78.82	79.86	70.06	86.76	87.97	88.97	90.01	85.41	68.42	213.65	351.15	575.52	632.46	
			230Vac	67.90	76.03	76.95	77.76	78.78	68.72	85.61	86.74	87.62	88.63	84.22	67.16	209.87	342.56	556.81	611.08	
			115Vac	69.21	77.07	78.03	78.82	79.86	70.06	86.76	87.97	88.94	90.01	85.41	68.42	213.65	351.15	575.52	632.46	
			230Vac	67.90	76.03	76.95	77.76	78.78	68.72	85.61	86.74	87.62	88.63	84.22	67.16	209.87	342.56	556.81	611.08	
C9300L-48P-4X	715W	Integrated	115Vac	68.05	78.83	80.51	80.97	81.98	69.18	90.03	91.95	92.67	94.13	88.35	68.50	203.00	337.40	559.30	616.70	
			230Vac	66.98	77.59	79.12	79.53	80.51	67.76	88.18	90.24	90.79	92.67	86.58	67.40	200.30	331.50	545.00	598.60	
			115Vac	68.05	78.83	80.51	80.97	81.98	69.18	90.03	91.95	92.67	94.13	88.35	68.50	203.0	337.4	559.3	616.7	
			230Vac	66.98	77.59	79.12	79.53	80.51	67.76	88.18	90.24	90.79	92.67	86.58	67.40	200.3	331.5	545.0	598.6	
C9300L-48PF-4G	1100W	Integrated	115Vac	70.41	79.73	81.33	81.58	82.62	71.36	90.17	91.32	92.11	93.00	88.57	69.35	314.03	558.56	973.60	1082.14	
			230Vac	68.66	77.95	78.87	79.64	80.56	69.59	87.79	88.87	89.73	90.72	86.27	67.84	306.85	541.37	928.90	1027.83	
C9300L-48PF-4X	1100W	Integrated	115Vac	69.68	80.51	82.08	82.50	83.37	71.08	91.01	93.09	94.17	96.27	89.54	69.35	310.72	552.92	965.47	1079.44	
			230Vac	68.14	78.81	80.34	80.71	81.61	69.11	88.83	90.73	91.38	93.06	87.28	67.38	305.26	539.36	924.23	1023.56	
C9300L-48T-4G	350W	Integrated	115Vac	60.32	69.53	70.41	71.16	72.00	61.57	79.62	80.62	81.44	82.32	78.083	59.47					
			230Vac	59.75	68.45	69.31	70.05	70.81	60.58	78.05	79.06	79.80	80.67	76.564	59.00					
			115Vac	60.32	69.53	70.41	71.16	72.00	61.57	79.62	80.62	81.44	82.32	78.083	59.47					
			230Vac	59.75	68.45	69.31	70.05	70.84	60.58	78.05	79.06	79.80	80.67	76.564	59.00					

Measured P(W)				Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	25%	50%	90%	100%
C9300L-48T-4X	350W	Integrated	115Vac	63.28	73.75	75.38	75.85	76.86	64.15	83.82	85.53	86.68	88.72	82.34	62.37				
			230Vac	61.91	72.22	73.73	74.13	75.06	62.82	82.21	84.17	84.97	86.77	80.73	60.97				
			115Vac	63.28	73.75	75.38	75.85	76.86	64.15	83.82	85.53	86.68	88.72	82.34	62.37				
			230Vac	61.91	72.22	73.73	74.13	75.06	62.82	82.21	84.17	84.97	86.77	80.73	60.97				

ATIS Testing - 100%				Measured P(W)															
				Half Port Traffic					Full Port Traffic					Weighted Average Pw	No Link	PoE Test (No Traffic)			
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
SKU	Archer FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%	Weighted Average Pw	No Link	25%	50%	90%	100%
C9300L-48UXG-4X	1100W	Integrated	115Vac	107.79	133.06	135.05	136.80	137.79	108.80	156.13	159.76	160.69	163.14	152.09	107.04	332.8	520.2	835.6	918.4
			230Vac	105.60	130.55	132.50	134.12	135.07	106.04	153.51	157.24	158.19	160.17	149.43	104.56	326.0	505.7	801.0	875.3
C9300L-24UXG-4X	1100W	Integrated	115Vac	70.90	87.08	88.80	89.32	90.30	71.26	103.11	105.06	105.80	107.58	100.37	70.87	335.16	579.52	996.96	1108.51
			230Vac	69.20	85.22	87.09	87.51	88.40	69.46	100.48	102.39	103.16	104.94	97.82	68.98	326.96	562.27	951.15	1049.47
C9300L-48UXG-2Q	1100W	Integrated	115Vac	111.73	138.34	140.48	141.17	143.22	112.35	162.30	164.13	165.51	168.68	157.94	111.10	335.47	521.76	835.04	919.11
			230Vac	109.53	135.16	137.16	137.89	139.68	110.21	158.42	161.05	162.32	165.66	154.32	108.86	328.17	507.54	801.77	876.22
C9300L-24UXG-2Q	1100W	Integrated	115Vac	104.07	121.70	122.67	123.44	125.05	104.41	139.04	140.97	142.77	145.33	136.20	103.78	325.38	526.58	861.27	949.66
			230Vac	100.88	118.72	119.46	120.13	122.11	101.16	135.91	137.68	139.26	143.13	133.15	100.52	317.08	510.67	829.62	909.10
C9300LM-48UX-4Y	1000W	Integrated	115Vac	95.1	110.7	111.6	112.0	114.6	103.0	123.3	124.6	126.2	130.1	121.9	87.9	323.3	543.2	913.7	1008.3
			230Vac	93.8	108.6	109.5	110.4	112.4	101.3	120.9	122.6	124.3	128.4	119.7	86.7	317.1	530.1	879.1	965.2
C9300LM-48U-4Y	1000W	Integrated	115Vac	83.5	96.2	96.9	97.3	98.3	86.4	106.3	107.3	108.0	109.9	104.7	80.5	305.7	524.0	892.9	986.7
			230Vac	82.3	94.9	95.5	95.9	96.8	85.3	104.5	105.4	106.2	108.0	103.0	79.5	299.5	510.7	857.4	944.4
C9300LM-48T-4Y	600W	Integrated	115Vac	76.1	88.8	89.4	89.8	90.7	79.2	97.9	98.8	99.6	101.4	96.4	73.3				
			230Vac	75.2	87.4	88.0	88.3	89.3	78.1	96.4	97.3	98.1	99.9	94.9	72.4				
C9300LM-24U-4Y	600W	Integrated	115Vac	77.7	84.5	86.9	87.1	87.6	80.1	91.1	93.0	93.4	94.3	90.3	75.3	301.6	523.6	894.9	990.9
			230Vac	76.1	83.3	85.8	86.0	86.5	78.6	90.1	91.9	92.3	93.3	89.2	73.8	295.6	510.2	860.0	948.3



**Table 23.** Power consumption of standalone 9300 Series Switches with platinum rated power supply (tested on Cisco IOS XE 16.8.1)

SKU	FEP	Uplink	Input	Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01% /EEE	10%	30%	50%	100%	0.01% /EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-24P	715W-P	C9300-NM-8X	115Vacc	89.2	94.3	99	100.1	100.7	92	98.9	103.5	105.9	107.1	99	85.8	205.6	324.7	518.9	568.4
			230Vacc	86.7	91.8	96.4	97.5	98	89.4	97.1	101.4	103.6	104.5	97	84.1	201.9	318.7	507.2	554.4
C9300-24T	350W-P	C9300-NM-8X	115Vacc	83.1	88.2	92.9	94	94.5	85.8	92.9	97.2	99.6	100.4	92.9	80.5				
			230Vacc	81.9	86.8	91.3	92.4	92.9	84.4	91.6	95.9	98.2	99	91.6	79.2				
C9300-24U	1100W-P	C9300-NM-8X	115Vacc	90.5	95.9	100.5	101.6	102.1	93.3	100.6	104.9	107.2	108.1	100.6	87.9	319.9	549.5	935.3	1034.1
			230Vacc	88.1	93.1	97.7	98.8	99.4	92.8	98	102.4	104.6	105.5	98.2	85.4	313.4	535.5	899.7	990.3
C9300-24UX	1100W-P	C9300-NM-8X	115Vacc	186.8	191	194.9	197.1	198.9	209	215.4	227.2	230.1	233.1	216.6	165.3	367.5	522.1	776.1	842.3
			230Vacc	182.8	186.9	190.6	193	194.1	205	211.2	222.7	225.5	229.8	212.5	162.7	361.1	510.2	752.3	809.9
C9300-24H	1100W-P	C9300-NM-8X	115Vacc	90.5	95.9	100.5	101.6	102.1	93.3	100.6	104.9	107.2	108.1	100.6	87.9	319.9	549.5	935.3	1034.1
			230Vacc	88.1	93.1	97.7	98.8	99.4	92.8	98	102.4	104.6	105.5	98.2	85.4	313.4	535.5	899.7	990.3
C9300-48P	715W-P	C9300-NM-8X	115Vacc	99.1	105.5	110.8	111.3	112.4	99.6	112.5	118.2	120.1	122.2	112.2	94.7	214.7	336.1	521.5	569.4
			230Vacc	97.3	103.7	108.9	109.4	110.4	99	110.3	115.8	118.3	119.5	110.1	92.6	213.9	329.3	509.4	555
C9300-48T	350W-P	C9300-NM-8X	115Vacc	89.8	95.4	100.4	101.1	102	90.4	102.4	107.5	109.8	111.8	102.2	85.4				
			230Vacc	88.7	94.5	99.4	100.1	101	88.7	101.2	106	108.1	109.9	100.8	83.9				
C9300-48U	1100W-P	C9300-NM-8X	115Vacc	168.9	170.6	172.4	176.6	178.5	190.8	194	198.3	200.1	203.9	194.6	147.3	355.4	524.9	804.6	875.4
			230Vacc	165.7	167.3	169.2	169.9	171.5	186.5	189.6	193.9	195.7	199.8	190.3	145	348.8	511.7	777.7	844.9
C9300-48UN	1100W-	C9300-NM-8X	115Va	172.9	176.7	178.7	179.8	181.8	193.8	199.8	201.5	203.1	206.9	199.9	159.1	357.3	525	803.9	875.1

SKU	FEP	Uplink	Input	Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01% /EEE	10%	30%	50%	100%	0.01% /EEE	10%	30%	50%	100%			25%	50%	90%	100%
	P		c																
			230Vacc	171.2	174.8	176.8	178.1	179.9	191.7	197.8	199.4	201	204.7	197.9	157.9	351.5	512.1	777	843.8
C9300-48UXM	1100W-P	C9300-NM-8X	115Vacc	241	248.1	254.8	256.4	258.9	260.1	269.4	281.6	286.5	291.6	270.7	225.1	394.8	531.4	755	809.5
			230Vacc	237.5	243.1	249	250.3	251.1	253.9	261.8	273.9	279.2	283.6	263.2	218.5	386.8	518.1	731.3	785.5
C9300-48H	1100W-P	C9300-NM-8X	115Vacc	168.9	170.6	172.4	176.6	178.5	190.8	194	198.3	200.1	203.9	194.6	147.3	355.4	524.9	804.6	875.4
			230Vacc	165.7	167.3	169.2	169.9	171.5	186.5	189.6	193.9	195.7	199.8	190.3	145	348.8	511.7	777.7	844.9
C9300X-12Y	715WAC-P	Not Installed	115Vacc	107.6	118.1	119.7	121.4	124.9	117	126.1	128.6	131.2	137.6	126.4	99.1				
			230Vacc	105.7	112.6	113.6	114.9	118.4	114.9	123.7	126.5	129.1	135.4	124	97.1				
C9300X-12Y	715WAC-P	C9300X-NM-8M	115Vacc	121.1	127.9	129.8	131.8	135.8	136.6	145.3	148.3	151.7	160.6	146	108.1				
			230Vacc	117.3	126.9	128.6	130.4	134.8	136	144.9	147.9	150.6	157.1	145.2	106.1				
C9300X-12Y	715WAC-P	C9300X-NM-2C	115Vacc	118.6	132.1	134.2	136.2	141.1	136.9	143	146.2	148.9	156.5	143.7	107.6				
			230Vacc	116.6	129.6	131.7	133.7	138.6	134.4	141.1	144.1	147	154.1	141.8	106.4				
C9300X-12Y	715WAC-P	C9300X-NM-8Y	115Vacc	119.8	128.2	129.6	131	134.4	136.3	147.6	150.5	153.2	159.9	147.7	108.1				
			230Vacc	117.5	125.6	127	128.3	131.8	136	144.9	147.9	150.6	157.3	145.2	106.1				
C9300X-24Y	715WAC-P	Not Installed	115Vacc	158.2	173.8	177.4	180.9	187.4	179	197.7	204.5	209.4	221.2	198.2	142				
			230Vacc	163.1	164.9	167.9	170.6	177	176.5	194.5	200.5	205.6	217.9	195.1	139.6				

SKU	FEP	Uplink	Input	Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01% /EEE	10%	30%	50%	100%	0.01% /EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300X-24Y	715WA C-P	C9300X-NM-8M	115Vacc	173.4	183.3	186.6	189.3	196.7	199.7	219.2	226.4	232.6	247.7	220.1	151.8				
			230Vacc	169.4	179.8	183.3	186.8	194.1	194	215.4	222.4	228.4	243.3	216.1	149.4				
C9300X-24Y	715WA C-P	C9300X-NM-2C	115Vacc	171.7	181.8	188.2	188.8	189.6	199.6	218	226.4	232.7	247.7	219.1	151.8				
			230Vacc	170.5	179.1	184.6	185.2	186.7	196.6	214.2	222.2	228.5	243.3	215.3	149.3				
C9300X-24Y	715WA C-P	C9300X-NM-8Y	115Vacc	172.9	182	185.4	188.8	195.8	201.5	220.8	227.6	233.6	248.3	221.6	151.2				
			230Vacc	170	178.9	182.3	185.6	192.8	198.4	216.3	223.2	229.1	243.7	217.2	149.1				
C9300X-24Y	715WA C-P	C9300X-NM-4C	115Vacc	196.6	220.4	225	229.4	237.7	219.5	248.4	256.4	261.8	275	248.2	169.9				
			230Vacc	191.3	216.5	222.6	226	232.8	216.4	238.7	246.8	252.8	267.9	239.4	159.7				
C9300X-48HX	1100WA C-P	Not Installed	115Vacc	217.4	222.2	224.1	223.9	224.2	252.2	259.9	268.3	268.5	268.9	260	180.4	307.1	433.2	640.8	694.4
			230Vacc	211.4	217.8	219.5	219.8	220.1	242.8	255.5	263.5	264.2	264.9	255.2	178.9	300.2	422.5	620.5	672
C9300X-48HX	1100WA C-P	C9300X-NM-8M	115Vacc	230.7	239.2	240.8	241	241.3	269.6	284.2	291.4	291.6	292.2	283.5	191.9	327.9	454.4	662.1	716.6
			230Vacc	226.2	233.7	234.5	235.6	236.4	265.9	278.3	285.3	285.7	286.5	277.9	187.9	321.2	444.6	642.5	693.6

SKU	FEP	Uplink	Input	Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01% /EEE	10%	30%	50%	100%	0.01% /EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300X-48HX	1100WA C-P	C9300X-NM-2C	115Vacc	234.4	255.1	257.5	260.8	266.9	266.2	284.1	286.6	288.8	294.7	283.3	199.5	413.7	575.4	845.1	914.2
			230Vacc	229	250	252.6	255.1	260	261	276.4	280.3	282.5	288.3	276	195.1	400.6	554.4	806.7	873.6
C9300X-48HX	1100WA C-P	C9300X-NM-8Y	115Vacc	238.2	253.6	258.2	262.8	272.6	267.5	285.8	287.2	288.1	289.4	284.3	212.8	418.7	580.2	849.8	918.8
			230Vacc	226.9	248	252.5	257	266.4	262.2	295.4	316.5	318.6	333.2	295.9	196.4	407.6	560.8	815.3	880.2
C9300X-48HX	1100WA C-P	C9300X-NM-4C	115Vacc	254.2	270.1	272.9	275.5	282	289.3	304.9	307.6	310.2	315.2	304.4	224.1	437.2	599.9	869.6	939.8
			230Vacc	248.8	259.2	262.4	263.1	270.8	280.6	298.3	301	303.7	308.9	297.6	215.3	426.4	581.6	834.9	899.5
C9300X-48TX	715WA C-P	Not Installed	115Vacc	229.9	236.3	239.8	242.4	247.8	253.4	266.5	268.4	271.5	276.7	266.2	192.5				
			230Vacc	213.6	233.4	235.7	237.8	242.7	246.9	260.8	263.5	265	269.8	260.3	184.3				
C9300X-48TX	715WA C-P	C9300X-NM-8M	115Vacc	215.8	237	245.2	250.4	254.2	249.9	282.4	291.1	297.6	312.8	282.2	185.7				
			230Vacc	213.2	233.6	237.8	240.5	247.6	244	275.8	285	291	305.5	275.6	181.4				
C9300X-48TX	715WA C-P	C9300X-NM-2C	115Vacc	229.9	236.3	239.8	242.4	247.8	253.4	266.5	268.4	271.5	276.7	266.2	192.5				
			230Vacc	213.6	233.4	235.7	237.8	242.7	246.9	260.8	263.5	265	269.8	260.3	184.3				
C9300X-48TX	715WA C-P	C9300X-NM-8Y	115Vacc	217.6	234.6	238.4	242.1	250	254.4	284.2	292	297.9	315	284.3	187.8				
			230Vacc	212.7	230.4	234.2	237.7	245.3	247.8	278.7	287	293.5	309.9	278.7	184.1				
C9300X-48TX	715WA C-P	C9300X-NM-4C	115Vacc	232.2	246.7	249.1	251.4	256.6	270.1	286.1	288.6	290.9	295.2	285.4	195.5				
			230Vacc	215.6	242.7	244.9	247.1	251.6	248.4	280.3	282.6	284.7	288.7	278	187.3				

SKU	FEP	Uplink	Input	Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
				0.01% /EEE	10%	30%	50%	100%	0.01% /EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300X-24HX	1100WA C-P	Not Installed	115Vacc	133.8	148.9	150.1	151.3	153.9	147.6	161.7	164	166.5	171.8	161.3	130.2	333.4	532.4	870.1	956.4
			230Vacc	131.2	145.5	147	148.4	151.3	144.8	158.4	161	163.3	169.5	158.1	127.2	325	515.4	833.4	912.6
C9300X-24HX	1100WA C-P	C9300X-NM-8M	115Vacc	148.9	166	167.2	168	170.5	166.9	183	184.9	186.8	191.4	182.3	131.7	352.2	551.8	889.3	976.2
			230Vacc	141.6	162.5	163.5	164.5	166.6	154.7	178.8	180.7	182.6	187	177.2	128.6	344.5	537	852.7	933.9
C9300X-24HX	1100WA C-P	C9300X-NM-2C	115Vacc	148.7	169.2	171.2	173.1	178.3	166.9	185.7	189.8	193.9	204.3	185.7	131.6	352.3	552.1	890.4	976.3
			230Vacc	145.2	165.4	167.5	169.5	174.4	163.4	181.5	185.6	189.5	199.5	181.5	128.6	343.8	535.6	852	932.6
C9300X-24HX	1100WA C-P	C9300X-NM-8Y	115Vacc	148.8	171.9	174.4	176.6	181.6	171.3	186.5	190.6	194.7	204.8	186.8	131.2	357	557.6	895.5	982.3
			230Vacc	145.8	168.4	170.5	172.6	177.5	167.7	182.7	186.8	190.6	200.5	183	128.2	348.3	537.1	857.9	936.7
C9300X-48HXN	1100WA C-P	Not Installed	115Vacc	133.8	148.9	150.1	151.3	153.9	147.6	161.7	164	166.5	171.8	161.3	130.2	333.4	532.4	870.1	956.4
			230Vacc	131.2	145.5	147	148.4	151.3	144.8	158.4	161	163.3	169.5	158.1	127.2	325	515.4	833.4	912.6
C9300X-48HXN	1100WA C-P	C9300X-NM-8M	115Vacc	148.9	166	167.2	168	170.5	166.9	183	184.9	186.8	191.4	182.3	131.7	352.2	551.8	889.3	976.2
			230Vacc	141.6	162.5	163.5	164.5	166.6	154.7	178.8	180.7	182.6	187	177.2	128.6	344.5	537	852.7	933.9
C9300X-48HXN	1100WA C-P	C9300X-NM-2C	115Vacc	148.7	169.2	171.2	173.1	178.3	166.9	185.7	189.8	193.9	204.3	185.7	131.6	352.3	552.1	890.4	976.3
			230Vacc	145.2	165.4	167.5	169.5	174.4	163.4	181.5	185.6	189.5	199.5	181.5	128.6	343.8	535.6	852	932.6
C9300X-48HXN	1100WA C-P	C9300X-NM-8Y	115Vacc	186.8	198.2	202.9	205.6	209.4	197.1	214.2	219.9	222.9	231	214.2	150.6	375.1	561.6	871.6	952.5
			230Vacc	175.3	186.4	190.5	193.3	196.7	195.6	210	215.6	218.4	224.5	210	147.6	366.9	546.8	839.5	914.5

ATIS Testing - 100%				Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
SKU	Archer FEP	Uplink	Input	0.01% /EEE	10%	30%	50%	100%	0.01% /EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9300-48H	1900W	C9300-NM-4G	115Vac	91.15	96.80	98.07	69.60	99.12	92.85	10.40	104.67	105.25	105.74	102.58	90.17	419.9	750.2	1296.2	1440.9
			230Vac	90.84	95.57	96.73	97.22	97.75	92.19	102.55	103.94	104.25	104.60	101.72	89.35	517.0	939.1	1637.6	1816.5
C9300-48H	1900W	C9300-NM-2Q	115Vac	93.15	100.87	101.21	101.56	102.40	94.69	108.16	108.96	109.71	111.58	107.16	91.53	420.7	749.8	1299.1	1441.8
			230Vac	92.27	99.91	100.35	100.64	101.53	93.81	106.72	107.52	108.35	110.41	105.80	90.66	516.0	940.1	1635.3	1814.6
C9300-48H	1900W	C9300-NM-8X	115Vac	94.48	102.47	102.94	103.46	104.43	97.27	110.25	110.92	111.75	113.79	109.30	92.43	422.9	751.3	1299.6	1441.6
			230Vac	94.02	101.23	101.69	102.10	103.08	96.24	108.89	109.65	110.53	112.55	108.00	91.44	519.2	943.8	1643.5	1821.3
C9300-48H	1900W	C9300-NM-4M	115Vac	94.02	101.47	102.50	102.61	103.41	96.78	109.46	110.25	110.98	112.77	108.53	91.43	421.8	749.9	1297.5	1440.1
			230Vac	93.08	100.78	101.16	101.45	102.31	95.92	108.19	108.96	109.73	111.46	107.29	90.29	518.5	940.8	1635.2	1810.3
C9300-48H	1900W	C9300-NM-2Y	115Vac	93.40	101.26	101.70	102.03	103.06	94.65	108.27	108.91	109.17	111.32	107.22	91.52	421.5	748.9	1295.7	1436.4
			230Vac	92.57	100.14	100.55	100.95	101.93	94.03	106.73	107.56	108.40	110.35	105.82	90.76	517.0	939.3	1635.0	1809.6
C9300-48H	1900W	Not Installed	115Vac	85.65	92.17	93.35	93.63	94.11	84.96	97.07	98.24	98.40	99.50	96.10	85.76	411.4	739.6	1288.7	1430.7
			230Vac	84.89	91.33	92.45	92.68	93.17	84.33	96.45	97.00	97.36	98.37	95.43	85.32	506.8	928.8	1621.9	1799.9
C9300-24H	1900W	Not Installed	115Vac	80.63	84.52	85.17	85.40	85.65	80.79	86.49	87.62	87.83	88.43	86.12	80.41	407.5	741.3	1297.1	1438.1
			230Vac	79.55	83.21	84.70	84.91	85.25	79.70	86.09	87.13	87.36	87.94	85.63	79.39	503.6	931.8	1635.4	1810.3
C9300-24H	1900W	C9300-NM-4G	115Vac	86.38	88.78	89.98	90.51	91.09	87.24	94.12	95.57	96.06	96.63	93.68	85.58	415.5	741.6	1288.9	1433.7
			230Vac	85.98	88.27	89.66	90.6	90.77	86.81	93.47	74.72	95.17	95.73	93.03	84.94	511.5	938.2	1639.5	1818.1
C9300-24H	1900W	C9300-NM-2Q	115Vac	87.16	93.14	93.45	93.62	94.17	89.33	98.20	98.92	99.39	100.11	97.50	85.73	417.1	750.9	1304.4	1448.9
			230Vac	86.66	92.16	92.53	92.8	93.36	88.11	96.56	96.95	97.38	98.39	95.90	84.95	512.7	940.2	1641.6	1818.3
C9300-24H	1900W	C9300-NM-8X	115Vac	88.85	93.82	94.89	95.08	95.69	91.72	99.50	100.50	101.03	102.21	98.99	85.95	419.9	754.5	1307.5	1450.9
			230Vac	88.10	92.69	93.80	94.12	94.71	90.92	98.32	99.29	99.71	100.60	97.81	85.24	515.0	942.7	1644.3	1822.0
C9300-24H	1900W	C9300-NM-4M	115Vac	88.57	93.90	94.22	94.51	96.03	91.37	99.29	100.13	100.44	101.54	98.72	85.83	418.9	744.3	1298.3	1449.9
			230Vac	88.24	93.10	93.33	93.55	94.17	90.90	98.67	99.07	99.65	100.80	98.11	85.65	515.8	943.4	1644.0	1821.9
C9300-24H	1900W	C9300-NM-4M	115Vac	87.81	94.47	94.73	94.79	95.29	89.81	98.27	99.32	100.28	101.12	97.71	86.65	418.6	748.4	1311.1	1448.7
			230Vac	87.26	92.59	92.86	93.13	93.90	88.93	97.03	97.58	97.97	99.03	96.42	85.48	511.9	940.9	1642.0	1819.4

## Safety and compliance

Table 24 lists the safety and compliance information for the Cisco Catalyst 9300 Series.

**Table 24.** Safety and compliance information

Description	Specification
<b>Safety certifications</b>	<ul style="list-style-type: none"> <li>• UL 60950-1</li> <li>• CAN/CSA-C222.2 No. 60950-1</li> <li>• EN 60950-1</li> <li>• IEC 60950-1</li> <li>• AS/NZS 60950.1</li> <li>• IEEE 802.3</li> </ul>
<b>Electromagnetic compatibility certifications</b>	<ul style="list-style-type: none"> <li>• 47 CFR Part 15</li> <li>• EN 300 386 V1.6.1</li> <li>• EN 55032 Class A</li> <li>• CISPR 32 Class A</li> <li>• EN61000-3-2</li> <li>• EN61000-3-3</li> <li>• ICES-003 Class A</li> <li>• TCVN 7189 Class A</li> <li>• V-3 Class A</li> <li>• CISPR 35</li> <li>• EN 300 386</li> <li>• EN 55035</li> <li>• TCVN 7317</li> <li>• V-2/2015.04</li> <li>• V-3/2015.04</li> <li>• CNS13438</li> <li>• KN32</li> <li>• KN35</li> </ul> <p><b>Additional Certifications for C9300L SKUs:</b></p> <ul style="list-style-type: none"> <li>• QCVN 118:2018/BTTTT</li> <li>• VCCI-CISPR 32 Class A</li> </ul>
<b>Environmental</b>	Reduction of Hazardous Substances (ROHS) 5

## Warranty

### Cisco enhanced limited lifetime hardware warranty

The Cisco Catalyst 9300 Series Switches come with a Cisco Enhanced Limited Lifetime hardware Warranty (E-LLW) that includes Next-Business-Day (NBD) delivery of replacement hardware where available and 90 days of 8x5 Cisco Technical Assistance Center (TAC) support.

Your formal warranty statement, including the warranty applicable to Cisco software, appears in the information packet that accompanies your Cisco product. We encourage you to review the warranty statement shipped with your specific product carefully before use.

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

For further information about warranty terms, visit <https://www.cisco.com/go/warranty>. Table 23 provides information about the E-LLW.

**Table 25.** E-LLW details

	Cisco E-LLW
<b>Devices covered</b>	Applies to Cisco Catalyst 9300 Series Switches.
<b>Warranty duration</b>	As long as the original customer owns the product.
<b>End-of-life policy</b>	In the event of discontinuance of product manufacture, Cisco warranty support is limited to 5 years from the announcement of discontinuance.
<b>Hardware replacement</b>	Cisco or its service center will use commercially reasonable efforts to ship a replacement for NBD delivery, where available. Otherwise, a replacement will be shipped within 10 working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times might vary depending on customer location.
<b>Effective date</b>	Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than 90 days after original shipment by Cisco).
<b>TAC support</b>	Cisco will provide during business hours, 8 hours per day, 5 days per week, basic configuration, diagnosis, and troubleshooting of device-level problems for up to a 90-day period from the date of shipment of the originally purchased Cisco Catalyst 9300 Series product. This support does not include solution or network level support beyond the specific device under consideration.
<b>Cisco.com access</b>	Warranty allows guest access only to Cisco.com.



## Product sustainability

Information about Cisco’s environmental, Social and Governance (ESG) initiatives and performance is provided in Cisco’s CSR and sustainability [reporting](#).

Sustainability Topic		Reference
<b>General</b>	Information on product-material-content laws and regulations	<a href="#">Materials</a>
	Information on electronic waste laws and regulations, including our products, batteries and packaging	<a href="#">WEEE Compliance</a>
	Sustainability Inquiries	Contact: <a href="mailto:csr_inquiries@cisco.com">csr_inquiries@cisco.com</a>
	Information on product takeback and reuse program	<a href="#">Cisco Takeback and Reuse Program</a>
	Safety and compliance	<a href="#">Table 23. Safety and compliance information</a>
	Mean Time Between Failures - MTBF (hours)	<a href="#">Table 16 Model Dimensions, Weight, and Mean Time between failures metrics</a>
<b>Power</b>	Default AC power supply	<a href="#">Table 1. Cisco Catalyst 9300 Series switch configurations</a>
	Power supplies	<a href="#">Table 3. Power supply models</a> <a href="#">Table 19. Power specifications</a> <a href="#">Table 20. Power specifications – platinum rated power supplies</a>
	Fan	<a href="#">Table 6. Fan modules</a>
	Energy Efficient Ethernet	<a href="#">Smart operation</a>
	Power over ethernet (Cisco UPOE and UPOE+)	<a href="#">Power over ethernet leadership</a>
	Power connectors	<a href="#">Table 17. Power connectors</a>
	Power consumption (ATIS)	<a href="#">Table 21. Power Consumption of Standalone 9300 Series Switches</a> <a href="#">Table 22. Power consumption of Standalone 9300 Series Switches with platinum rated power supply</a>
<b>Material</b>	Product packaging weight and materials	Contact: <a href="mailto:environment@cisco.com">environment@cisco.com</a>
	Dimensions	<a href="#">Table 16 Model Dimensions, Weight, and Mean Time between failures metrics.</a>
	Weight	<a href="#">Table 16 Model Dimensions, Weight, and Mean Time between failures metrics.</a>
	Elimination of wet paint on plastic bezel	<a href="#">2019 Cisco Corporate Social Responsibility Report</a> , Pg. 19 Stepping up our work on circularity

## Cisco Services

### Cisco Services for next-generation Cisco Catalyst 9000 Switches

Achieve infrastructure excellence faster and with less risk. Cisco Catalyst 9000 Services provide expert guidance to help you successfully deploy, manage and support the new Cisco Catalyst 9000 switching family. With unmatched networking expertise, best practices, and innovative tools, we can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. Offering a comprehensive lifecycle of services – from implementation, optimization, technical, and managed services – Cisco experts help you reduce disruption and achieve operational excellence to extract maximum value from your Cisco DNA ready infrastructure.

[Learn more about Cisco Services for Enterprise Networks](#)

### Software policy for Cisco Catalyst 9300 Series Switches

#### Software policy for network stack components

Customers with the Network Essentials Stack and Network Advantage Stack software feature sets are provided with maintenance updates and bug fixes designed to maintain compliance of the software. This includes compliance with published specifications, release notes, and industry standards as long as the original end user continues to own or use the product or up to one year from the end-of-sale date for the product, whichever occurs earlier.

### Cisco embedded support for Cisco DNA term components

Cisco Embedded Support delivers the right support for Cisco software products and suites. It will keep your business applications performing as expected and protect your investment. Cisco Embedded Support for the Cisco DNA Essentials and Cisco DNA Advantage term components is included. Cisco Embedded Support provides access to TAC support, major software updates, maintenance and minor software releases, and the Cisco Embedded Support site, for increased productivity with anytime access.

## Ordering information

Table 26 lists ordering information for the Cisco Catalyst 9300 Series. To place an order, visit the Cisco Ordering home page at

[https://www.cisco.com/en/US/ordering/or13/or8/order\\_customer\\_help\\_how\\_to\\_order\\_listing.html](https://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html).

**Table 26.** Ordering information

Switches	
Product number	Product description
<b>C9300X-48HX-E</b>	Catalyst 9300 48-port 10G/mGig with modular uplink, UPOE+, Network Essentials
<b>C9300X-48HX-A</b>	Catalyst 9300 48-port 10G/mGig with modular uplink, UPOE+, Network Advantage
<b>C9300X-48TX-E</b>	Catalyst 9300 48-port 10G/mGig with modular uplink, data only, Network Essentials
<b>C9300X-48TX-A</b>	Catalyst 9300 48-port 10G/mGig with modular uplink, data only, Network Advantage
<b>C9300X-48HXN-E</b>	Catalyst 9300 36-port 5G/mGig, 12-port 10G with modular uplink, UPOE+, Network Essentials

## Switches

<b>C9300X-48HXN-A</b>	Catalyst 9300 36-port 5G/mGig, 12-port 10G with modular uplink, UPOE+, Network Advantage
<b>C9300X-24HX-E</b>	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE+, Network Essentials
<b>C9300X-24HX-A</b>	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE+, Network Advantage
<b>C9300X-12Y-E</b>	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Network Essentials
<b>C9300X-12Y-A</b>	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Network Advantage
<b>C9300X-24Y-E</b>	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Network Essentials
<b>C9300X-24Y-A</b>	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Network Advantage
<b>C9300-24T-E</b>	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Network Essentials
<b>C9300-24T-A</b>	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Network Advantage
<b>C9300-24P-E</b>	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Network Essentials
<b>C9300-24P-A</b>	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Network Advantage
<b>C9300-24U-E</b>	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Essentials
<b>C9300-24U-A</b>	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage
<b>C9300-24UB-E</b>	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network Essentials
<b>C9300-24UB-A</b>	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network Advantage
<b>C9300-24U-E-UL</b>	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
<b>C9300-24U-A-UL</b>	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
<b>C9300-24H-E</b>	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE+, Network Essentials
<b>C9300-24H-A</b>	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE+, Network Advantage
<b>C9300-24UX-E</b>	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE, Network Essentials
<b>C9300-24UX-A</b>	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE, Network Advantage
<b>C9300-24UXB-E</b>	Catalyst 9300 higher scale 24-port 10G/mGig with modular uplink, UPOE, Network Essentials
<b>C9300-24UXB-A</b>	Catalyst 9300 higher scale 24-port 10G/mGig with modular uplink, UPOE, Network Advantage
<b>C9300-48T-E</b>	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Essentials

Switches	
<b>C9300-48T-A</b>	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Advantage
<b>C9300-48P-E</b>	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Network Essentials
<b>C9300-48P-A</b>	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Network Advantage
<b>C9300-48U-E</b>	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Essentials
<b>C9300-48U-A</b>	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Advantage
<b>C9300-48UB-E</b>	Catalyst 9300 higher scale 48-port 1G copper with modular uplinks, UPOE, Network Essentials
<b>C9300-48UB-A</b>	Catalyst 9300 higher scale 48-port 1G copper with modular uplinks, UPOE, Network Advantage
<b>C9300-48U-E-UL</b>	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Essentials (Compatible with UL1069 Standard*)
<b>C9300-48U-A-UL</b>	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
<b>C9300-48H-E</b>	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE+, Network Essentials
<b>C9300-48H-A</b>	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE+, Network Advantage
<b>C9300-48UXM-E</b>	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Network Essentials
<b>C9300-48UXM-A</b>	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Network Advantage
<b>C9300-48UN-E</b>	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Network Essentials
<b>C9300-48UN-A</b>	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Network Advantage
<b>C9300-24S-E</b>	Catalyst 9300 24-port 1G SFP with modular uplinks, Network Essentials
<b>C9300-24S-A</b>	Catalyst 9300 24-port 1G SFP with modular uplinks, Network Advantage
<b>C9300-48S-E</b>	Catalyst 9300 48-port 1G SFP with modular uplinks, Network Essentials
<b>C9300-48S-A</b>	Catalyst 9300 48-port 1G SFP with modular uplinks, Network Advantage
<b>C9300L-24T-4G-E</b>	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, data only Network Essentials
<b>C9300L-24T-4G-A</b>	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, data only Network Advantage
<b>C9300L-24P-4G-E</b>	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, PoE+ Network Essentials
<b>C9300L-24P-4G-A</b>	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, PoE+ Network Advantage
<b>C9300L-48T-4G-E</b>	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only Network Essentials

Switches	
<b>C9300L-48T-4G-A</b>	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only Network Advantage
<b>C9300L-48P-4G-E</b>	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, PoE+ Network Essentials
<b>C9300L-48P-4G-A</b>	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+ Network Advantage
<b>C9300L-48PF-4G-E</b>	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+ Network Essentials
<b>C9300L-48PF-4G-A</b>	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+ Network Advantage
<b>C9300L-24T-4X-E</b>	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only Network Essentials
<b>C9300L-24T-4X-A</b>	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only Network Advantage
<b>C9300L-24P-4X-E</b>	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+ Network Essentials
<b>C9300L-24P-4X-A</b>	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+ Network Advantage
<b>C9300L-24UXG-4X-E</b>	Catalyst 9300 24-port 8XmGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 4x10G/1G SFP+ uplinks, UPOE, Network Essentials
<b>C9300L-24UXG-4X-A</b>	Catalyst 9300 24-port 8XmGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 4x10G/1G SFP+ uplinks, UPOE, Network Advantage
<b>C9300L-48T-4X-E</b>	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only Network Essentials
<b>C9300L-48T-4X-A</b>	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only Network Advantage
<b>C9300L-48P-4X-E</b>	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+ Network Essentials
<b>C9300L-48P-4X-A</b>	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+ Network Advantage
<b>C9300L-48PF-4X-E</b>	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+ Network Essentials
<b>C9300L-48PF-4X-A</b>	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+ Network Advantage
<b>C9300L-48UXG-4X-E</b>	Catalyst 9300 48-port fixed uplinks UPOE, 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G, 4x 10G uplinks, Network Essentials
<b>C9300L-48UXG-4X-A</b>	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 4x 10G/1G SFP+ uplinks, UPOE, Network Advantage
<b>C9300L-24UXG-2Q-E</b>	Catalyst 9300 24-port 8x mGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Essentials
<b>C9300L-24UXG-2Q-A</b>	Catalyst 9300 24-port 8x mGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with

Switches	
	fixed 2x 40G QSFP uplinks, UPOE, Network Advantage
<b>C9300L-48UXG-2Q-E</b>	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Essentials
<b>C9300L-48UXG-2Q-A</b>	Catalyst 9300 48-port 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper with fixed 2x 40G QSFP uplinks, UPOE, Network Advantage
<b>C9300LM-48UX-4Y-E</b>	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit, 40-port 1G, 4x 25G uplinks, Network Essentials
<b>C9300LM-48UX-4Y-A</b>	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit, 40-port 1G, 4x 25G uplinks, Network Advantage
<b>C9300LM-48U-4Y-E</b>	Catalyst 9300 mini 48-port 1G UPOE, 4x 25G uplinks, Network Essentials
<b>C9300LM-48U-4Y-A</b>	Catalyst 9300 mini 48-port 1G UPOE, 4x 25G uplinks, Network Advantage
<b>C9300LM-48T-4Y-E</b>	Catalyst 9300 mini 48-port 1G data, 4x 25G uplinks, Network Essentials
<b>C9300LM-48T-4Y-A</b>	Catalyst 9300 mini 48-port 1G data, 4x 25G uplinks, Network Advantage
<b>C9300LM-24U-4Y-E</b>	Catalyst 9300 mini 24-port 1G UPOE, 4x 25G uplinks, Network Essentials
<b>C9300LM-24U-4Y-A</b>	Catalyst 9300 mini 24-port 1G UPOE, 4x 25G uplinks, Network Advantage
Network modules	
Product number	Product description
<b>C9300X-NM-8M</b>	Catalyst 9300X 8 x 10G/mGig Network Module
<b>C9300X-NM-8M=</b>	Catalyst 9300X 8 x 10G/mGig Network Module, spare
<b>C9300X-NM-8Y</b>	Catalyst 9300 8 x 25G/10G/1G multi-rate SFP Network Module
<b>C9300X-NM-8Y=</b>	Catalyst 9300 8 x 25G/10G/1G multi-rate SFP Network Module, spare
<b>C9300X-NM-2C</b>	Catalyst 9300 2 x 100G/40G dual rate QSFP Network Module
<b>C9300X-NM-2C=</b>	Catalyst 9300 2 x 100G/40G dual rate QSFP Network Module, spare
<b>C9300X-NM-4C</b>	Catalyst 9300 4 x 100G/40G dual rate QSFP Network Module
<b>C9300X-NM-4C=</b>	Catalyst 9300 4 x 100G/40G dual rate QSFP Network Module, spare
<b>C9300-NM-4G</b>	Catalyst 9300 4 x 1GE SFP Network Module
<b>C9300-NM-4G=</b>	Catalyst 9300 4 x 1GE SFP Network Module, spare
<b>C9300-NM-8X</b>	Catalyst 9300 8 x 10G/1G SFP+ Network Module
<b>C9300-NM-8X=</b>	Catalyst 9300 8 x 10G/1G SFP+ Network Module, spare
<b>C9300-NM-2Q</b>	Catalyst 9300 2 x 40GE QSFP Network Module

Switches	
<b>C9300-NM-2Q=</b>	Catalyst 9300 2 x 40GE QSFP Network Module, spare
<b>C9300-NM-2Y</b>	Catalyst 9300 2 x 25G/10G/1G SFP28 Network Module
<b>C9300-NM-2Y=</b>	Catalyst 9300 2 x 25G/10G/1G SFP28 Network Module, spare
<b>C9300-NM-4M</b>	Catalyst 9300 4 x 10G/mGig Network Module
<b>C9300-NM-4M=</b>	Catalyst 9300 4 x 10G/mGig Network Module, spare
<b>NM-BLANK-T1=</b>	Cisco Catalyst Type 1 Network Module Blank, spare
Storage Module	
Product number	Product description
<b>SSD-120G</b>	Cisco pluggable USB3.0 120G SSD storage
<b>SSD-120G=</b>	Cisco pluggable USB3.0 120G SSD storage, spare
<b>SSD-240G</b>	Cisco pluggable USB3.0 240G SSD storage
<b>SSD-240G=</b>	Cisco pluggable USB3.0 240G SSD storage, spare
Software licenses for C9300 SKUs	
Product number	Product description
<b>C9300-DNA-E-24-3Y</b>	C9300 Cisco DNA Essentials, 24-port, 3 Year Term license
<b>C9300-DNA-E-24-5Y</b>	C9300 Cisco DNA Essentials, 24-port, 5 Year Term license
<b>C9300-DNA-E-24-7Y</b>	C9300 Cisco DNA Essentials, 24-port, 7 Year Term license
<b>C9300-DNA-A-24-3Y</b>	C9300 Cisco DNA Advantage, 24-port, 3 Year Term license
<b>C9300-DNA-A-24-5Y</b>	C9300 Cisco DNA Advantage, 24-port, 5 Year Term license
<b>C9300-DNA-A-24-7Y</b>	C9300 Cisco DNA Advantage, 24-port, 7 Year Term license
<b>C9300-DNA-E-48-3Y</b>	C9300 Cisco DNA Essentials, 48-port, 3 Year Term license
<b>C9300-DNA-E-48-5Y</b>	C9300 Cisco DNA Essentials, 48-port, 5 Year Term license
<b>C9300-DNA-E-48-7Y</b>	C9300 Cisco DNA Essentials, 48-port, 7 Year Term license
<b>C9300-DNA-A-48-3Y</b>	C9300 Cisco DNA Advantage, 48-port, 3 Year Term license
<b>C9300-DNA-A-48-5Y</b>	C9300 Cisco DNA Advantage, 48-port, 5 Year Term license
<b>C9300-DNA-A-48-7Y</b>	C9300 Cisco DNA Advantage, 48-port, 7 Year Term license
<b>C9300-DNA-E-24S-3Y</b>	C9300 1G Fiber Cisco DNA Essentials, 24-port, 3 Year Term license



Switches	
<b>C9300-DNA-E-24S-5Y</b>	C9300 1G Fiber Cisco DNA Essentials, 24-port, 5 Year Term license
<b>C9300-DNA-E-24S-7Y</b>	C9300 1G Fiber Cisco DNA Essentials, 24-port, 7 Year Term license
<b>C9300-DNA-A-24S-3Y</b>	C9300 1G Fiber Cisco DNA Advantage, 24-port, 3 Year Term license
<b>C9300-DNA-A-24S-5Y</b>	C9300 1G Fiber Cisco DNA Advantage, 24-port, 5 Year Term license
<b>C9300-DNA-A-24S-7Y</b>	C9300 1G Fiber Cisco DNA Advantage, 24-port, 7 Year Term license
<b>C9300-DNA-E-48S-3Y</b>	C9300 1G Fiber Cisco DNA Essentials, 48-port, 3 Year Term license
<b>C9300-DNA-E-48S-5Y</b>	C9300 1G Fiber Cisco DNA Essentials, 48-port, 5 Year Term license
<b>C9300-DNA-E-48S-7Y</b>	C9300 Cisco DNA Essentials, 48-port, 7 Year Term license
<b>C9300-DNA-A-48S-3Y</b>	C9300 1G Fiber Cisco DNA Advantage, 48-port, 3 Year Term license
<b>C9300-DNA-A-48S-5Y</b>	C9300 1G Fiber Cisco DNA Advantage, 48-port, 5 Year Term license
<b>C9300-DNA-A-48S-7Y</b>	C9300 1G Fiber Cisco DNA Advantage, 48-port, 7 Year Term license
<b>C9300-DNA-L-E-3Y</b>	C9300 Cisco DNA Essentials license (3Y) for 12Y, 24Y SKU
<b>C9300-DNA-L-E-5Y</b>	C9300 Cisco DNA Essentials license (5Y) for 12Y, 24Y SKU
<b>C9300-DNA-L-E-7Y</b>	C9300 Cisco DNA Essentials license (7Y) for 12Y, 24Y SKU
<b>C9300-DNA-L-A-3Y</b>	C9300 Cisco DNA Advantage license (3Y) for 12Y, 24Y SKU
<b>C9300-DNA-L-A-5Y</b>	C9300 Cisco DNA Advantage license (5Y) for 12Y, 24Y SKU
<b>C9300-DNA-L-A-7Y</b>	C9300 Cisco DNA Advantage license (7Y) for 12Y, 24Y SKU
<b>C9300-LIC=</b>	Electronic Cisco DNA Upgrade License for C9300 switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is also upgraded to Network Advantage
Software licenses for C9300L SKUs	
Product number	Product number
<b>C9300L-DNA-E-24-3Y</b>	C9300L Cisco DNA Essentials, 24-port, 3 Year Term license
<b>C9300L-DNA-E-24-5Y</b>	C9300L Cisco DNA Essentials, 24-port, 5 Year Term license
<b>C9300L-DNA-E-24-7Y</b>	C9300L Cisco DNA Essentials, 24-port, 7 Year Term license
<b>C9300L-DNA-A-24-3Y</b>	C9300L Cisco DNA Advantage, 24-port, 3 Year Term license
<b>C9300L-DNA-A-24-5Y</b>	C9300L Cisco DNA Advantage, 24-port, 5 Year Term license
<b>C9300L-DNA-A-24-7Y</b>	C9300L Cisco DNA Advantage, 24-port, 7 Year Term license
<b>C9300L-DNA-E-48-3Y</b>	C9300L Cisco DNA Essentials, 48-port, 3 Year Term license



<b>Switches</b>	
<b>C9300L-DNA-E-48-5Y</b>	C9300L Cisco DNA Essentials, 48-port, 5 Year Term license
<b>C9300L-DNA-E-48-7Y</b>	C9300L Cisco DNA Essentials, 48-port, 7 Year Term license
<b>C9300L-DNA-A-48-3Y</b>	C9300L Cisco DNA Advantage, 48-port, 3 Year Term license
<b>C9300L-DNA-A-48-5Y</b>	C9300L Cisco DNA Advantage, 48-port, 5 Year Term license
<b>C9300L-DNA-A-48-7Y</b>	C9300L Cisco DNA Advantage, 48-port, 7 Year Term license
<b>C9300L-LIC=</b>	Electronic Cisco DNA Upgrade License for C9300L switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is also upgraded to Network Advantage
<b>Power supplies</b>	
<b>Product number</b>	<b>Product description</b>
<b>PWR-C1-350WAC=</b>	350WAC power supply spare
<b>PWR-C1-715WAC=</b>	715WAC power supply spare
<b>PWR-C1-715WDC=</b>	715WDC power supply spare
<b>PWR-C1-1100WAC=</b>	1100WAC power supply spare
<b>PWR-C1-1900WAC=</b>	1900WAC Power supply spare
<b>PWR-C1-350WAC-P=</b>	350WAC Platinum-rated power supply spare
<b>PWR-C1-715WAC-P=</b>	715WAC Platinum-rated power supply spare
<b>PWR-C1-1100WAC-P=</b>	1100WAC Platinum-rated power supply spare
<b>PWR-C1-715WAC-UP</b>	Upgrade to 715WAC Platinum-rated power supply
<b>PWR-C1-1100WAC-UP</b>	Upgrade to 1100WAC Platinum-rated power supply
<b>PWR-C1-1900WAC-UP</b>	Upgrade to 1900WAC Platinum-rated power supply
<b>Cisco StackWise-480/1T and StackPower cables</b>	
<b>Product number</b>	<b>Product description</b>
<b>STACK-T1-50CM=</b>	Cisco StackWise-480/1T 50cm stacking cable spare
<b>STACK-T1-1M=</b>	Cisco StackWise-480/1T 1m stacking cable spare
<b>STACK-T1-3M=</b>	Cisco StackWise-480/1T 3m stacking cable spare
<b>CAB-SPWR-30CM=</b>	Cisco Catalyst 3850 StackPower cable 30cm spare
<b>CAB-SPWR-150CM=</b>	Cisco Catalyst 3850 StackPower cable 150cm spare
<b>Cisco StackWise-320 Accessories</b>	

<b>Switches</b>	
<b>Product number</b>	<b>Product description</b>
<b>C9300L-STACK-KIT</b>	Stack Kit for C9300L SKUs - includes 2 Stack Adaptors and 1 Stack Cable
<b>C9300L-STACK-KIT=</b>	Stack Kit for C9300L SKUs - includes 2 Stack Adaptors and 1 Stack Cable, spare
<b>STACK-T3-50CM</b>	50CM Type 3 Stacking Cable - default with Stack Kit for C9300L SKUs
<b>STACK-T3-50CM=</b>	50CM Type 3 Stacking Cable, spare for C9300L SKUs
<b>STACK-T3-1M</b>	1M Type 3 Stacking Cable for C9300L SKUs
<b>STACK-T3-1M=</b>	1M Type 3 Stacking Cable, spare for C9300L SKUs
<b>STACK-T3-3M</b>	3M Type 3 Stacking Cable for C9300L SKUs
<b>STACK-T3-3M=</b>	3M Type 3 Stacking Cable, spare for C9300L SKUs
<b>Spare power cords</b>	
<b>CAB-TA-NA=</b>	AC power cord for Cisco Catalyst (North America)
<b>CAB-TA-AP=</b>	AC power cord for Cisco Catalyst (Australia)
<b>CAB-TA-AR=</b>	AC power cord for Cisco Catalyst (Argentina)
<b>CAB-TA-SW=</b>	AC power cord for Cisco Catalyst (Switzerland)
<b>CAB-TA-UK=</b>	AC power cord for Cisco Catalyst (United Kingdom)
<b>CAB-TA-JP=</b>	AC power cord for Cisco Catalyst (Japan)
<b>CAB-TA-250VAC-JP=</b>	Japan 250VAC power cord for Cisco Catalyst (Japan)
<b>CAB-TA-EU=</b>	AC power cord for Cisco Catalyst (Europe)
<b>CAB-TA-IT=</b>	AC power cord for Cisco Catalyst (Italy)
<b>CAB-TA-IN=</b>	AC power cord for Cisco Catalyst (India)
<b>CAB-TA-CN=</b>	AC power cord for Cisco Catalyst (China)
<b>CAB-TA-DN=</b>	AC power cord for Cisco Catalyst (Denmark)
<b>CAB-TA-IS=</b>	AC power cord for Cisco Catalyst (Israel)
<b>CAB-ACBZ-12A=</b>	AC power cord for Cisco Catalyst (Brazil), 12A/125V BR-3-20 plug up to 12A
<b>CAB-ACBZ-10A=</b>	AC power cord for Cisco Catalyst (Brazil), 10A/250V BR-3-10 plug up to 10A
<b>CAB-C15-CBN</b>	Cabinet jumper power cord, 250VAC 13A, C14-C15 connectors

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### Optics online reference

The Cisco Catalyst 9300 Series supports a wide range of optics. Because the list of supported optics is updated on a regular basis, consult the tables available here for the latest QSFP28, QSFP+, SFP+, and SFP compatibility information:

[https://www.cisco.com/en/US/products/hw/modules/ps5455/products\\_device\\_support\\_tables\\_list.html](https://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html).

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## Document history

New or revised topic	Described In	Date
Added Information about 9300X, copper models	All relevant sections	February 3, 2022
Added Information about 9300X fiber models	All relevant sections	March 2, 2021
Added information about the 1G 90W UPOE+ SKUs	Across different sections	February 10, 2020
Added new SKUs for C9300L - Full PoE+ and mGig SKUs	Content added to all the tables	December 2, 2019
Updates for C9300 - large buffer/scale SKUs	All relevant sections	October 9, 2019
Adding Primary PSU upgrade option for 9300	<a href="#">Table 3: Power supply models</a>	June 20, 2019
Product name change: Cisco ONE to Cisco DNA	<a href="#">Introduction</a>	May 10, 2019
Wi-Fi 6 addition	<a href="#">Product Overview: Features</a>	May 10, 2019
Add: Features	<a href="#">Product Overview: Features</a>	May 10, 2019
Add: Modular uplink models table	<a href="#">Platform Details</a>	May 10, 2019
Edit: Cisco Catalyst 9300 Series modular uplink	<a href="#">Platform Details</a>	May 10, 2019
Edit: Table 1: Cisco Catalyst 9300 Series Switch configurations; uplink configuration add	<a href="#">Platform Details</a>	May 10, 2019
Edit: Table 2: Name change to "Catalyst 9300..."	<a href="#">Platform Details</a>	May 10, 2019
Add: Figure 3: picture for C9300L	<a href="#">Platform Details</a>	May 10, 2019
Edit: Table 3: Power supply models	<a href="#">Platform Details</a>	May 10, 2019

New or revised topic	Described In	Date
<b>Add: Stacking, Table 4</b>	<a href="#">Platform Details</a>	May 10, 2019
<b>Add: Stacking Accessories, Table 5</b>	<a href="#">Platform Details</a>	May 10, 2019
<b>Edit: Replaced C3850 stack picture with C9300 stack picture</b>	<a href="#">Platform Details</a>	May 10, 2019
<b>Add: Fan, Table 6</b>	<a href="#">Platform Details</a>	May 10, 2019
<b>Edit: Table 7</b>	<a href="#">Performance and Scalability</a>	May 10, 2019
<b>Add: Bandwidth Specifications</b>	<a href="#">Performance and Scalability</a>	May 10, 2019
<b>Add: StackWise-320</b>	<a href="#">Resiliency and High Availability</a>	May 10, 2019
<b>Edit: name change from Cisco One to Cisco DNA Software</b>	<a href="#">Software Requirements</a>	May 10, 2019
<b>Edit: text edits</b>	<a href="#">Licensing</a>	May 10, 2019
<b>Edit: Table 13</b>	<a href="#">Licensing</a>	May 10, 2019
<b>Edit: Table 14</b>	<a href="#">Specifications</a>	May 10, 2019
<b>Edit: Table 15</b>	<a href="#">Connectors</a>	May 10, 2019
<b>Edit: Table 17</b>	<a href="#">Power Supply Specifications</a>	May 10, 2019
<b>Edit: Table 21</b>	<a href="#">Safety and Compliance</a>	May 10, 2019
<b>Edit: Table 23</b>	<a href="#">Ordering Information</a>	May 10, 2019
<b>Added support for SD-Access Embedded Wireless</b>	Added support for SD-Access Embedded Wireless Controller functionality.	Nov 13, 2018
<b>Updated Platinum Power Supply specifications</b>	Platinum rated power supplies available on the C9300 switches.	Oct 5, 2018
<b>Updated availability of SSD card</b>	Availability of 120G storage module for the C9300.	Oct 5, 2018

New or revised topic	Described In	Date
Updated <a href="#">Product overview</a>	Added Catalyst 9500 high density platforms and updated associated speeds and densities, e.g. Up to 6.4-Tbps switching capacity with up to 2 Bpps of forwarding performance from “3.2 Tbps/1 Bpps” a. 32 port 100G, b. 32 port 40G, c. 48 port 25G. Added Catalyst 9500 mid density platform a. 24 port 25G, b. 16 port 1/10G. Added new optical interfaces - QSFP28, SFP28. Added new power supply options - 650W, 1600W. Added RESCONF support. Stackwise Virtual extended to all Catalyst 9500 platforms.	Mar 31, 2018
Updated <a href="#">Audio Video Bridging</a>	AVB support noted for certain platforms. Corrected references to Catalyst 9000 switches, rather than Catalyst 9000 Series switches. Corrected references to Cisco IOS XE, rather than IOS-XE.	Dec 15, 2017

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# Cisco Catalyst 9200 Series Switches

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## Introduction

### Extend intent-based networking everywhere

Cisco® Catalyst® 9200 Series switches extend the power of intent-based networking and Catalyst 9000 hardware and software innovation to a broader set of deployments. With its family pedigree, **Catalyst 9200 Series switches offer simplicity without compromise – it is secure, always on, and IT simplified.**

As foundational building blocks for the Cisco Digital Network Architecture, Catalyst 9200 Series switches help customers simplify complexity, optimize IT, and reduce operational costs by leveraging intelligence, automation and human expertise that no other vendor can deliver regardless of where you are in the intent-based networking journey.

Catalyst 9200 Series switches provide security features that protect the integrity of the hardware as well as the software and all data that flows through the switch. It provides resiliency that keeps your business up and running seamlessly. Combine that with open APIs of Cisco IOS XE® and programmability of the UADP ASIC technology, Catalyst 9200 Series switches give you what you need now with investment protection on future innovations.

With full PoE+ capability, power and fan redundancy, stacking bandwidth up to 160 Gbps, modular uplinks, Layer 3 feature support, and cold patching, Catalyst 9200 Series switches are the industry's unparalleled solution with differentiated resiliency and progressive architecture for cost-effective branch-office access. Catalyst 9200 Series switches also provide operational choice of Cisco DNA Center, or cloud monitoring for Catalyst on Meraki dashboard.

## Product overview

### Product highlights

- Full Power over Ethernet Plus (PoE+) capability for up to 48 ports for C9200. Power over Ethernet Plus (PoE+) capability for up to 12 ports, IEEE 802.3bt class 6 and Cisco UPOE capability for up to 8 ports for C9200CX. Available in fan less variants for C9200CX.
- Resiliency with **Field-Replaceable Units (FRU)** and redundant power supply, fans, and modular uplinks for C9200. C9200CX models are powered by internal fixed power supply or optional power adapters, when not powered by upstream IEEE 802.3bt class 6 60W PSE.
- Flexible power source options from line voltage AC, low voltage DC to High Voltage DC (HVDC) in C9200CX series provide the choices for customers to migrate to efficient DC micro grid powered by renewable energy sources for a sustainable future.
- Flexible downlink options with data, PoE+, UPOE, UPOE with mGig for Wi-Fi 6/6E
- Operational efficiency with optional **backplane stacking**, supporting stacking bandwidth up to 160 Gbps
- **UADP 2.0** Mini with integrated CPU offers customers optimized scale with better cost structure
- Enhanced security with AES-128 MACsec encryption on C9200 and AES-256 MACsec encryption for C9200CX variants, policy-based segmentation, and trustworthy solutions for the whole C9200 family
- **Layer 3** capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access
- Advanced network monitoring using **Full Flexible NetFlow**

- Cisco **Software-Defined Access** (SD-Access)
  - Simplified operations and deployment with policy-based automation from edge to cloud managed with **Cisco Identity Services Engine** (ISE)
  - Network assurance and improved resolution time through Cisco DNA Center
- **Plug and Play** (PnP) enabled: A simple, secure, unified, and integrated offering to ease new branch or campus device rollouts or updates to an existing network
- **Cisco IOS XE**: A Common Licensing based operating system for the enterprise Cisco Catalyst 9000 product family with support for model-driven programmability and streaming telemetry
- ASIC with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries
- Cloud monitoring for Catalyst on Meraki dashboard.

## Features and benefits Platform details

### Switch models and configurations

**Table 1.** Catalyst 9200 Series models and configurations

Models	FRU Power Supply	FRU Fans	Modular Uplinks	Stacking Bandwidth Support	SD-Access Support <sup>1</sup>
<b>Modular uplink models (C9200 Enhanced VN SKUs)</b>	✓	✓	✓	160 Gbps	Yes (32 Virtual Networks) <sup>2</sup>
<b>Modular uplink models (C9200 SKUs)</b>	✓	✓	✓	160 Gbps	Yes (4 Virtual Networks)
<b>Fixed uplink Models (C9200L SKUs)</b>	✓	✗	✗	80 Gbps	Limited (1 Virtual Network)
<b>Compact Models (C9200CX SKUs)</b>	Fixed internal power supply	Fanless	✗	✗	Yes (16 Virtual Networks)

<sup>1</sup> Catalyst 9200 standalone and stack can support 25 Access Tunnels for fabric enabled APs.

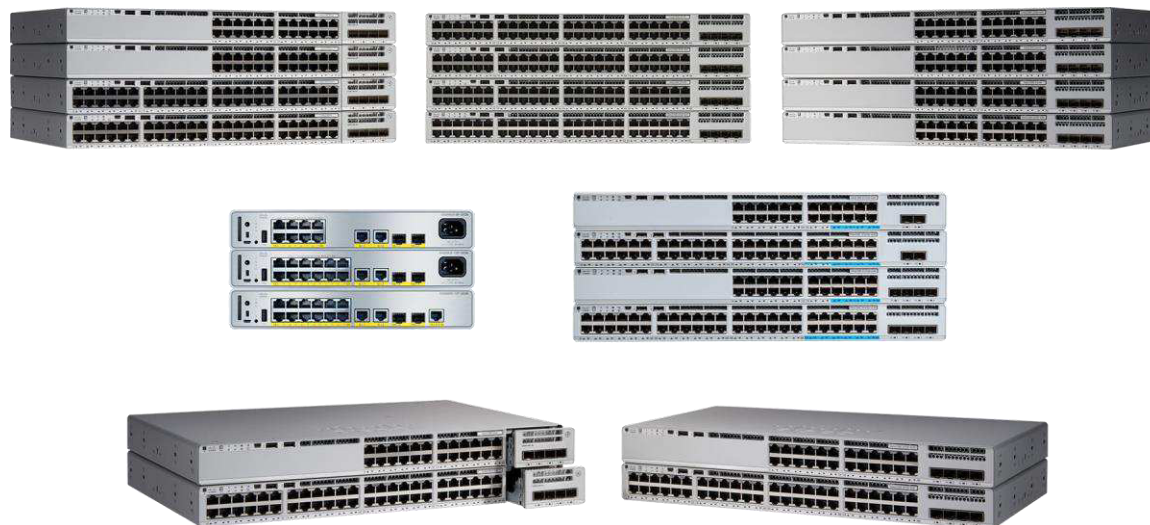
Catalyst 9200L and 9200CX are not supported as Fabric Edge for SD-Access Wireless.

Catalyst 9200, 9200L and 9200CX do not support SD-Access Embedded Wireless Controller.

**Note:** Over the top fabric deployments eventually migrating to fabric wireless architecture should consider this limit during design/deployment.

<sup>2</sup> C9200-24PB-A, C9200-48PB-A SKUs supports 32 Virtual Networks. These SKUs cannot be stacked with C9200 SKUs with 4VNs.

The Cisco Catalyst 9200 Series is made up of modular (C9200), fixed (C9200L) and compact (C9200CX) switch models.



**Figure 1.**  
Cisco Catalyst 9200 Series switches

**Table 2.** Cisco Catalyst 9200 Series Switch configurations

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary power supply	Fans
<b>Modular uplink models</b>				
<b>C9200-24T</b>	24 ports data	Modular uplink options	PWR-C6-125WAC	FRU redundant
<b>C9200-24P</b>	24 ports full PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
<b>C9200-24PB</b>	24 ports full PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
<b>C9200-24PXG</b>	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	Modular uplink options	PWR-C6-600WAC	FRU redundant
<b>C9200-48T</b>	48 ports data	Modular uplink options	PWR-C6-125WAC	FRU redundant
<b>C9200-48P</b>	48 ports full PoE+	Modular uplink options	PWR-C6-1KWAC	FRU redundant
<b>C9200-48PL</b>	48 Ports partial PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
<b>C9200-48PB</b>	48 ports full PoE+	Modular uplink options	PWR-C6-1KWAC	FRU redundant
<b>C9200-48PXG</b>	48 ports full PoE+ (8 mGig ports up to 10G, 40 ports up to 1G)	Modular uplink options	PWR-C6-1KWAC	FRU redundant

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary power supply	Fans
<b>Fixed uplink models</b>				
<b>C9200L-24T-4G</b>	24 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
<b>C9200L-24P-4G</b>	24 ports full PoE+	4x 1G fixed uplinks	PWR-C5-600WAC	Fixed redundant
<b>C9200L-48T-4G</b>	48 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
<b>C9200L-48P-4G</b>	48 ports full POE+	4x 1G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
<b>C9200L-48PL-4G</b>	48 Ports partial PoE+	4X 1G Fixed uplinks	PWR-C5-600WAC	Fixed redundant
<b>C9200L-24T-4X</b>	24 ports data	4x 1/10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
<b>C9200L-24P-4X</b>	24 ports full PoE+	4x 1/10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
<b>C9200L-48T-4X</b>	48 ports data	4x 1/10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
<b>C9200L-48P-4X</b>	48 ports full PoE+	4x 1/10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
<b>C9200L-48PL-4X</b>	48 Port partial PoE+	4X 1/10G Fixed Uplinks	PWR-C5-600WAC	Fixed redundant
<b>C9200L-24PXG-4X</b>	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	4x 1/10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
<b>C9200L-48PXG-4X</b>	48 ports full POE+ (12 mGig ports up to 10G, 36 ports up to 1G)	4x 1/10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
<b>C9200L-24PXG-2Y</b>	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	2x 1/10/25G fixed uplinks	PWR-C5-600WAC	Fixed redundant
<b>C9200L-48PXG-2Y</b>	48 ports full POE+ (8 mGig ports up to 10G, 40 ports up to 1G)	2x 1/10/25G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
<b>Compact models</b>				
<b>C9200CX-12T-2X2G</b>	12 ports data	2x 1G copper, 1x 1G CU PD 802.3bt Class 6, 2x 10G SFP+ fixed uplinks	Powered by 802.3bt class 6 PoE  Optional auxiliary 80W AC or DC power adaptor	Fanless
<b>C9200CX-12P-2X2G</b>	12 ports PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
<b>C9200CX-8P-2X2G</b>	8 ports full PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
<b>C9200CX-8UXG-2X</b>	8 ports UPOE (4 mGig ports up to 10G, 4 ports up to 1G)	2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
<b>C9200CX-12P-2XGH</b>	12 ports PoE+	2x 1G copper, 2x 10G	315W HVDC/AC	Fanless

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary power supply	Fans
		SFP+ fixed uplinks	internal	
<b>C9200CX-8P-2XGH</b>	8 ports full PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless
<b>C9200CX-8UXG-2XH</b>	8 ports UPOE (4 mGig ports up to 10G, 4 ports up to 1G)	2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless

## Network modules

Cisco Catalyst 9200 Series switches come with modular or fixed uplinks as indicated in Table 1. With modular SKUs, the field-replaceable network modules provide infrastructure investment protection by allowing a nondisruptive migration from 1G to 10G and beyond. When you purchase the switch, you can choose from the network modules described in Table 3.



**Figure 2.**  
Cisco Catalyst 9200 Series Switch network modules

**Table 3.** Network module part numbers and descriptions

Network module	Description
<b>C9200-NM-2Y<sup>1</sup></b>	2 x 25G Network Module
<b>C9200-NM-2Q<sup>1</sup></b>	2 x 40G Network Module
<b>C9200-NM-4G<sup>2</sup></b>	4x 1G network module
<b>C9200-NM-4X</b>	4x 1G/10G network module
<b>C9200-NM-BLANK</b>	No network module

<sup>1</sup> Supported only on C9200-24PXG, C9200-48PXG

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<sup>2</sup> Not supported on C9200-24PXG, C9200-48PXG

For additional details, please read our FAQ:

<https://www.cisco.com/c/dam/en/us/products/collateral/switches/catalyst-9000/nb-09-cat-9k-faq-cte-en.pdf>.

## Platform resiliency

### Power supplies

Cisco Catalyst 9200 Series switches support dual field-replaceable power supplies (Figure 3). Each switch ships with one default power supply, and a second identical power supply can be purchased with the initial order or can be added later. The second power supply can provide redundancy or additional power to PoE+ ports as needed.

Cisco Catalyst 9200CX Series HVDC models can be powered by high voltage DC as well as line voltage AC with its default power supply. These switches support high efficiency and low energy consumption when connected to DC micro grid by avoiding multiple AC-DC conversions. The compatibility with AC also provides flexibility and investment protection for moving to DC power in the future.

### Intelligent PoE+

- **IEEE 802.3at PoE+ (up to 30W per port)** is supported on Cisco Catalyst 9200 Series switches to lower the total cost of ownership for deployments that incorporate Cisco IP phones, Cisco Aironet wireless access points, or other standards-compliant PoE+ end devices. PoE+ removes the need to supply wall power to PoE-enabled devices and eliminates the cost of adding electrical cabling and circuits that would otherwise be necessary in IP phone and WLAN deployments. With Cisco Catalyst 9200 Series switches, PoE+ power allocation is dynamic, and power mapping scales up to a maximum of 1440W of PoE+ power.
- **IEEE 802.3bt Class 6 and Cisco UPOE (up to 60W per port)** is supported on Catalyst 9200CX Series mGig model. This facilitates delivery of network power to devices requiring higher power.
- **PoE Powered Device (PD)** - Catalyst 9200CX-12T-2X2G can be powered through the uplink with IEEE 802.3bt class 6 or UPOE+ power from upstream switch.
- **Perpetual PoE** is supported on Cisco Catalyst 9200 Series switches, and maintains the PoE+ power during a switch reload. This is important for critical endpoints such as medical devices and for Internet of Things (IoT) endpoints such as PoE-powered lights, so that there is no disruption during a switch reboot.
- **Fast PoE:** When power is restored to a switch, Fast PoE starts delivering power to endpoints without waiting for the operating system to fully load, thereby speeding up the time for the endpoint to start up.





**Figure 3.**  
Cisco Catalyst 9200 Series Switch dual redundant power supplies

Table 4 lists the PoE power availability for each model.

**Table 4.** PoE+ Power with primary and secondary power supplies

Model	Default primary power supply	Available PoE power with single primary power supply only*	Optional secondary power supply	Available PoE power with additional secondary power supply*
<b>C9200-24P</b>	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
<b>C9200-24PB</b>	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
<b>C9200-24PXG</b>	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
<b>C9200-48P</b>	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
<b>C9200-48PL</b>	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
<b>C9200-48PB</b>	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
<b>C9200-48PXG</b>	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
<b>C9200L-24P-4G</b>	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
<b>C9200L-24P-4X</b>	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
<b>C9200L-48P-4G</b>	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
<b>C9200L-48PL-4G</b>	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
<b>C9200L-48P-4X</b>	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
<b>C9200L-48PL-4X</b>	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W



Model	Default primary power supply	Available PoE power with single primary power supply only*	Optional secondary power supply	Available PoE power with additional secondary power supply*
C9200L-24PXG-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
C9200L-48PXG-4X	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
C9200L-24PXG-2Y	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
C9200L-48PXG-2Y	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
C9200CX-12P-2X2G	315W AC Internal	240W	N/A	N/A
C9200CX-8P-2X2G	315W AC internal	240W	N/A	N/A
C9200CX-8UXG-2X	315W AC internal	240W	N/A	N/A
C9200CX-12P-2XGH	315W HVDC/AC internal	240W	N/A	N/A
C9200CX-8P-2XGH	315W HVDC/AC internal	240W	N/A	N/A
C9200CX-8UXG-2XH	315W HVDC/AC internal	240W	N/A	N/A

\*Limited by port number and port rating (for example, 24 PoE+ 30W ports = 720W)

## Stacking

Cisco Catalyst 9200 Series switch models are designed for stacking switches as a single virtual switch, enabling customers to have a single management plane and control plane for up to 384 access ports.

Table 5 lists the supported stacking options.

**Table 5.** Supported stacking options

Model	Stacking support	Stacking bandwidth support	Stacking hardware	Number of members	Supported stack members
<b>Modular models (C9200 SKUs)</b>	StackWise-160	160 Gbps	C9200-STACK-KIT	8	Other C9200 models with same license level
<b>Fixed models (C9200L SKUs)</b>	StackWise-80	80 Gbps	C9200L-STACK-KIT	8	Other C9200L models with same license level

Mixed stacking is **not supported**. You cannot stack fixed (C9200L SKUs) with modular (C9200 SKUs) models, or other Catalyst switches, e.g. Cisco Catalyst 2960-X and 2960-XR Series. Stacking not available on C9200CX switches.

The optional StackWise-160 and StackWise-80 kits consist of two adapters and a stacking cable. The default stacking cable is 0.5 m, but options of 1 m and 3 m are also available.

Table 6 lists the stacking accessories.

**Table 6.** Stacking accessories

Model	Description
<b>C9200-STACK-KIT</b>	Stack kit for C9200 SKUs only: Two data stack adapters and one data stack cable
<b>C9200L-STACK-KIT</b>	Stack kit for C9200L SKUs only: Two data stack adapters and one data stack cable
<b>STACK-T4-50CM</b>	Data stack 50 cm cable (default cable with Stack Kit)
<b>STACK-T4-1M</b>	Data stack 1 m cable
<b>STACK T4-3M</b>	Data stack 3 m cable



**Figure 4.** Cisco Catalyst 9200 Series Switch stacked units

## Fan

Cisco Catalyst 9200 Series switches also come with dual fans and support redundancy. Cisco Catalyst 9200 Series switches support redundancy with dual fans. On the C9200 SKUs, the fan units are field-replaceable, whereas on the fixed C9200L SKUs, the fan units are fixed. C9200CX SKUs are fanless.

Table 7 lists the fan module part number.

**Table 7.** Fan modules

Model	Description
<b>FAN-T2=</b>	Fan module

## Performance and scalability

Table 8 lists performance and scalability metrics for Cisco Catalyst 9200 Series switches. Table 9 lists the bandwidth specifications.

### Performance specifications

**Table 8.** Performance specifications

Description	C9200 SKUs	C9200L SKUs	C9200CX SKUs
<b>Virtual Networks</b>	4 for C9200-24T, C9200-24P, C9200-48T, C9200-48P, C9200- 24PXG, C9200-48PXG, C9200-48PL  32 for C9200-24PB, C9200-48PB	1	16
<b>Stacking bandwidth</b>	160 Gbps	80 Gbps	N/A
<b>Total number of MAC addresses</b>	32,000	16,000	32,000
<b>Total number of IPv4 routes (ARP plus learned routes)</b>	14,000 (10,000 direct routes and 4,000 indirect routes)	11,000 (8,000 direct routes and 3,000 indirect routes)	14,000 (10,000 direct routes and 4,000 indirect routes)
<b>IPv4 routing entries</b>	4,000	3,000	4,000
<b>IPv6 routing entries</b>	2,000	1,500	2,000
<b>Multicast routing scale</b>	1,000	1,000	1,000
<b>QoS scale entries</b>	1,000	1,000	1,000
<b>ACL scale entries</b>	1,600	1,500	1,600
<b>Packet buffer per SKU</b>	6 MB buffers for 24- or 48-port Gigabit Ethernet models, 12MB buffers for 24 or 48 port multigigabit models	6 MB buffers for 24- or 48-port Gigabit Ethernet models, 12 MB buffers for 24 or 48 port multigigabit models	6 MB buffers
<b>Flexible NetFlow (FNF) entries</b>	16,000 flows on 24- and 48-port Gigabit Ethernet models	16,000 flows on 24- and 48-port Gigabit Ethernet models, 32,000 flows on 24 or 48 port multigigabit models	16,000 flows
<b>DRAM</b>	4 GB	2 GB	4 GB
<b>Flash</b>	4 GB	4 GB	8 GB
<b>VLAN IDs</b>	4096	4096	4096
<b>PVST Instances</b>	128	128	128

Description	C9200 SKUs	C9200L SKUs	C9200CX SKUs
<b>STP Virtual Ports (Port VLANs) for PVST</b>	13,000	13,000	13,000
<b>STP Virtual Ports (Port VLANs) for MST</b>	13,000	13,000	13,000
<b>Total Switched Virtual Interfaces (SVIs)</b>	1000	512	1000
<b>Jumbo frames</b>	9198 bytes	9198 bytes	9198 bytes
<b>Wireless bandwidth per switch</b>	Up to 48 Gbps on 24-port and 48-port Gigabit Ethernet model	N/A	N/A
<b>IP SGT binding scale</b>	8K	10K	8K
<b>Number of IPv4 bindings</b>	8K	10K	8K
<b>Number of SGT/DGT policies</b>	2K	2K	2K
<b>Number of SXP Sessions</b>	200	200	200

## Bandwidth specifications

**Table 9.** Bandwidth specifications

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
<b>C9200-24T</b>	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
<b>C9200-24P</b>	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
<b>C9200-24PB</b>	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
<b>C9200-24PXG</b>	352 Gbps	532 Gbps	261.90 Mpps	395 Mpps
<b>C9200-48T</b>	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
<b>C9200-48P</b>	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
<b>C9200-48PL</b>	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
<b>C9200-48PB</b>	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
<b>C9200-48PXG</b>	400 Gbps	580 Gbps	297.61 Mpps	431 Mpps
<b>C9200L-24T-4G</b>	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
<b>C9200L-24P-4G</b>	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
<b>C9200L-48T-4G</b>	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
<b>C9200L-48P-4G</b>	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
<b>C9200L-48PL-4G</b>	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
<b>C9200L-24T-4X</b>	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
<b>C9200L-24P-4X</b>	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
<b>C9200L-48T-4X</b>	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
<b>C9200L-48P-4X</b>	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
<b>C9200L-48PL-4X</b>	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
<b>C9200L-24PXG-4X</b>	272 Gbps	352 Gbps	214.28 Mpps	262 Mpps
<b>C9200L-24PXG-2Y</b>	292 Gbps	372 Gbps	229.16 Mpps	277 Mpps
<b>C9200L-48PXG-4X</b>	392 Gbps	472 Gbps	291.66 Mpps	351 Mpps
<b>C9200L-48PXG-2Y</b>	340 Gbps	420 Gbps	252.97 Mpps	313 Mpps
<b>C9200CX-12T-2X2G</b>	70 Gbps	N/A	52.08 Mpps	N/A
<b>C9200CX-12P-2X2G</b>	68 Gbps	N/A	50.59 Mpps	N/A
<b>C9200CX-8P-2X2G</b>	60 Gbps	N/A	44.64 Mpps	N/A
<b>C9200CX-8UXG-2X</b>	128 Gbps	N/A	95.23 Mbps	N/A
<b>C9200CX-12P-2XGH</b>	68 Gbps	N/A	50.59 Mpps	N/A
<b>C9200CX-8P-2XGH</b>	60 Gbps	N/A	44.64 Mpps	N/A
<b>C9200CX-8UXG-2XH</b>	128 Gbps	N/A	95.23 Mbps	N/A

\*Measured with 64 byte packets

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## Software

### Platform software benefits

#### Cisco IOS XE

Cisco IOS XE Software opens a completely new paradigm in network configuration, operation, and monitoring through network automation. Cisco's automation solution is open, standards-based, and extensible across the entire lifecycle of a network device. The various automation mechanisms are outlined below.

- **Automated device provisioning** is the ability to automate the process of upgrading software images and installing configuration files on Cisco Catalyst switches when they are being deployed in the network for the first time. Cisco provides turnkey solutions such as Plug and Play and Preboot Execution Environment (PXE) that enable an effortless and automated deployment.
- **API-driven configuration** is available with modern network switches such as Cisco Catalyst 9200 Series switches. It supports a wide range of automation features and provides robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off the shelf and custom built, to automatically provision network resources.
- **Granular visibility** enables model-driven telemetry to stream data from a switch to a destination. The data to be streamed is identified through subscription to a data set in a YANG model. The subscribed data set is streamed to the destination at specified intervals. Additionally, Cisco IOS XE enables the push model. It provides near-real-time monitoring of the network, leading to quick detection and rectification of failures. Cloud monitoring for Catalyst is also available.
- **Seamless software upgrades and patching** supports OS resilience. On Cisco Catalyst 9200 Series switches Cisco IOS XE supports cold patching with reboot, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support lets you add patches without having to wait for the next maintenance release. Cold patching requires the switch to be rebooted after patching to allow the changes to take effect.
- **Trustworthy solutions built with Cisco Trust Anchor Technologies** provide a highly secure foundation for Cisco products. With Cisco Catalyst 9200 Series switches, these technologies enable hardware and software authenticity assurance for supply chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include image signing, Secure Boot, and Cisco Trust Anchor module.
- **High availability:** Cisco Catalyst 9200 Series switches support high-availability features, including the following:
  - Cross-stack EtherChannel provides the ability to configure Cisco EtherChannel technology across different members of the stack for high resiliency.
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) provides rapid spanning tree convergence independent of spanning tree timers and also offers the benefit of Layer 2 load balancing and distributed processing.
  - Per-VLAN Rapid Spanning Tree (PVRST+) allows rapid spanning tree (IEEE 802.1w) reconvergence on a per-VLAN spanning tree basis, providing simpler configuration than MSTP. In both MSTP and PVRST+ modes, stacked units behave as a single spanning tree node.
  - Switch-port auto-recovery ("err-disable" recovery) automatically attempts to reactivate a link that is disabled because of a network error.

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- The Catalyst 9200 Series platform delivers the best SSO resiliency architecture in a stackable solution with sub-50-ms failover.

## The Foundation of Software-Defined Access

### Secure Segmentation with SD-Access

#### Software-Defined Access

The enterprise network lies at the heart of digital transformation. A network that is open, programmable, integrated, and secure maximizes business agility, allowing new business opportunities to be pursued and captured.

Cisco DNA with SD-Access is the network fabric that powers business. It is an open and extensible software-driven architecture that accelerates and simplifies your enterprise network operations. The programmable architecture frees your IT staff from time-consuming, repetitive network configuration tasks so they can focus instead on innovation that positively transforms your business. SD-Access enables policy-based automation from edge to cloud with foundational capabilities. These include:

- Simplified device deployment
- Unified management of wired and wireless networks
- Network virtualization and segmentation
- Group-based policies
- Context-based analytics
- **SD-Access:** Cisco Catalyst 9200 Series switches are the entry-level devices for SD-Access, Cisco's lead enterprise architecture, with policy-based automation from edge to cloud.
  - Simplified segmentation and micro-segmentation, with predictable performance and scalability
  - Automation through Cisco DNA Center
  - Policy handled through the Cisco Identity Services Engine (ISE)
  - Faster launch of new business services and significantly improved issue resolution time

#### Assurance

- Full network visibility and monitoring
- End-to-end Quality of Experience (QoE)
- Fast issue resolution and network remediation
- Plug and Play (PnP) enabled: A simple, secure, unified, and integrated offering to ease new branch or campus device rollouts or updates to an existing network

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## Cloud Security

### Umbrella Integration

- **Umbrella Integration:** Small to midsize networks reliant on managed service providers can now host Cisco Umbrella agent directly on their Catalyst 9200 series switches. This allows the business to easily customize their DNS filtering policies to prevent BYOD or IoT guest or corporate users from accessing malicious or inappropriate websites, without having to rely on the MSP to push the policies out. It also lets them optimize use of bandwidth by allowing direct cloud access for trusted apps. Requires Cisco DNA-Advantage License and Umbrella License per device.

### Full Flexible NetFlow

- **Full Flexible NetFlow (FNF):** Cisco IOS FNF is the next generation in flow visibility technology. It enables optimization of the network infrastructure, reduces operation costs, and improves capacity planning and security incident detection with increased flexibility and scalability. Catalyst 9200 Series switches are capable of up to 16,000 flow entries on 48-port, 24, 12 and 8 port models.

### QoS

- **Superior QoS:** Cisco Catalyst 9200 Series switches offer Gigabit Ethernet speeds with intelligent services that keep traffic flowing smoothly, even at 10 times the normal network speed. Industry-leading mechanisms for cross-stack marking, classification, and scheduling deliver superior performance for data, voice, and video traffic at wire speed. Superior QoS includes granular wireless bandwidth management and fair sharing, 802.1p Class of Service (CoS) and Differentiated Services Code Point (DSCP) field classification, Shaped Round Robin (SRR) scheduling, Committed Information Rate (CIR), and eight egress queues per port.

## Smart operation

### WebUI

WebUI is an embedded GUI-based device-management tool that provides the ability to provision the device, to simplify device deployment and manageability, and to enhance the user experience. It comes with the default image, so there is no need to enable anything or install any license on the device. You can use WebUI to build configurations, and to monitor and troubleshoot the device without having CLI expertise.

### RFID tags

Cisco Catalyst 9200 Series switches have an embedded RFID tag that facilitates easy asset and inventory management using commercial RFID readers.

### Blue beacon

Cisco Catalyst 9200 Series switches support both front and back blue beacon LEDs for easy identification of the switch being accessed.



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## Efficient switch operation

Cisco Catalyst 9200 Series switches provide optimum power saving with Energy Efficient Ethernet (EEE) on the RJ-45 ports and low-power operations for industry best-in-class power management and power consumption capabilities. The ports support reduced power modes so that ports not in use can move into a lower power utilization state. Other efficient switch operation features are as follows:

- Per-port power consumption command allows customers to specify a maximum power setting on an individual port.
- Per-port PoE power sensing measures actual power being drawn, enabling more intelligent control of powered devices. The PoE MIB provides proactive visibility into power usage and allows you to set different power-level thresholds.

## Bluetooth ready

Cisco Catalyst 9200 Series switches have hardware support to connect a Bluetooth dongle to your switch, enabling you to use this wireless interface as an IP management port interface. The port can be used for configuration and troubleshooting using WebUI or the Command-Line Interface (CLI), and to transfer images and configurations.

## Storage

Cisco Catalyst 9200CX switches have hardware support for up to 4G Micro-SD card storage.

## High-performance IP routing

The Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing in Cisco Catalyst 9200 Series switches, based on:

- IP unicast routing protocols (including static, Routing Information Protocol Version 1 [RIPv1], RIPv2, RIPv3, and Open Shortest Path First [OSPF], Routed Access) are supported for small network routing applications with the Network Essentials stack. Equal-cost routing facilitates Layer 3 load balancing and redundancy across the stack.
- Advanced IP unicast routing protocols (including Full [OSPF], Enhanced Interior Gateway Routing Protocol [EIGRP], and Intermediate System-to-Intermediate System Version 4 [IS-ISv4]) are supported for load balancing and for constructing scalable LANs. IPv6 routing (using OSPFv3 and EIGRPv6) is supported in hardware for maximum performance.
- Protocol-Independent Multicast (PIM) for IP multicast routing is supported, including PIM sparse mode (PIM SM), and Source-Specific Multicast (SSM).
- IPv6 addressing is supported on interfaces with appropriate show commands for monitoring and troubleshooting.

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## Licensing

### Introduction to Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure – you control what users can access. With Smart Licensing you get:

- **Easy Activation:** Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).
- **Unified Management:** My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- **License Flexibility:** Your software is not node-locked to your hardware, so you can easily use, and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco Software Central ([software.cisco.com](https://software.cisco.com)).

For a more detailed overview on Cisco Licensing, go to [cisco.com/go/licensingguide](https://cisco.com/go/licensingguide)

### Packaging: Network and Cisco DNA licensing

The Cisco Catalyst 9000 family of switches introduces a new and simplified licensing package in the form of base and add-on licenses.

- **The perpetual licensing** package includes the Network Essentials and Network Advantage licensing options that are tied to the hardware. Between them, the base licensing packages cover switching fundamentals, management automation, troubleshooting, and advanced switching features. These Network licenses are perpetual.
- **The subscription licensing** package includes the Cisco DNA Essentials and Cisco DNA Advantage options. In addition to on-box capabilities, the features available with this package provide Cisco innovations on the switch, as well as on Cisco DNA Center. The Cisco DNA subscription licenses are mandatory at the time of configuration. With Cisco DNA software licenses, customers receive embedded SWSS – which covers 24x7x365 Cisco Technical Assistance Center (TAC) support, software release updates, advanced support analytics, and designated service management. This is valid only for the Cisco DNA software subscription stacks (Cisco DNA Essentials and Advantage).

**Note:** For full hardware support, including the perpetual network stack customers will require Smart Net Total Care for 24x7x365 Cisco Technical Assistance Center (TAC) support, proactive security and product alerts, and product lifecycle management. An additional option for hardware support is Solution Support for your multivendor Cisco solution environment

**License consumption** is easily determined by the package itself. While perpetual licenses are always permanent and without an expiration date, subscription licenses have to be purchased for a 3-, 5-, or 7-year term (and hence are also known as term-based licenses).

Table 10 shows the combinations of perpetual and subscription licenses that must be purchased.

## Supported licensing combinations

**Table 10.** Licensing combinations

Licensing combinations	Cisco DNA Advantage	Cisco DNA Essentials
Network Essentials	No	Yes
Network Advantage	Yes	No*

\*At the time of license renewal, the Cisco DNA Essentials license can be purchased to be used with Network Advantage.

## Cisco DNA Software subscription

Cisco DNA Software subscriptions offer a flexible way to buy software for the access domain. At each stage in the product lifecycle, Cisco DNA Software subscriptions help make buying, managing, and upgrading your network and infrastructure software easier. Cisco DNA Software subscriptions provide:

- Flexible licensing models to smoothly distribute customers' software spending over time
- Investment protection for software purchases through software services-enabled license portability
- Lower cost of entry with the new Cisco DNA Software Subscription for Switching model

For ordering information for Cisco DNA Software for Cisco Catalyst 9200 Series switches, go to:

<https://www.cisco.com/c/en/us/products/collateral/software/one-subscription-switching/nb-06-dna-sw-sub-access-sw-ctp-en.html>.

Cisco Catalyst 9200 Series switches run on Cisco IOS XE Release 16.9.2 or later. This software release includes all the features listed earlier in the Platform Software Benefits section.

## Managing licenses with Smart Accounts

Creating Smart Accounts by using the Cisco Smart Software Manager (Cisco SSM) enables you to order devices and licensing packages and also manage your software licenses from a centralized website. You can set up Cisco SSM to receive daily email alerts and to be notified of expiring add-on licenses that you want to renew.

You must order an add-on license in order to purchase a switch. When the license term expires, you can either renew the add-on license to continue using it or deactivate the add-on license and then reload the switch to continue operating with the base license capabilities.

Both the base and add-on licenses are also available for a 90-day evaluation period. An evaluation license is activated temporarily, without purchase. An expired evaluation license cannot be reactivated after reload.

**Note:** It is not required to deploy Cisco DNA Center, just to use one of the above packages.

Tables 11 shows the features included in the Network Essentials and Advantage packages.

Table 12 shows the features included in the Cisco DNA Essentials and Advantage packages.

## Network licensing

**Table 11.** Network essentials and advantage package features

Features on Cisco Catalyst uplink switches	Network Essentials	Network Advantage
<b>Switch fundamentals</b> Layer 2, Routed Access (RIP, EIGRP Stub, OSPF -- 1000 routes), PBR, PIM Stub Multicast (1000 routes), PVLAN, VRRP, PBR, CDP, QoS, FHS, 802.1X, MACsec-128, CoPP, SXP, IP SLA Responder, SSO	✓	✓
<b>Advanced switch capabilities and scale</b> EIGRP, HSRP, IS-IS, BSR, MSDP, IP SLA, OSPF	X	✓
<b>Network segmentation</b> VRF, VXLAN, LISP, SGT	X	✓
<b>Automation</b> NETCONF, RESTCONF, YANG, PnP Agent, PnP	✓	✓
<b>Telemetry and visibility</b> Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	✓	✓
<b>Security</b> MACsec-128 (MACsec-256 on C9200CX SKUs)	✓	✓

## Cisco DNA licensing

**Table 12.** Cisco DNA Essentials and Advantage Package Features

Features	Cisco DNA Essentials	Cisco DNA Advantage
<b>Advanced telemetry and visibility</b> Full Flexible NetFlow, EEM	✓	✓
<b>Optimized telemetry and visibility</b> AVC (NBAR2)	X	✓
<b>Day-0 network bring-up automation</b> Cisco Network Plug-and-Play application, network settings, device credentials, LAN automation, host onboarding	✓	✓
<b>Element management</b> Discovery, inventory, topology, software image, licensing, and configuration management	✓	✓
<b>Element management</b> Patch management	X	✓
<b>Basic Assurance</b> Health dashboards – Network, Client, Application; switch and wired client	✓	✓

Features	Cisco DNA Essentials	Cisco DNA Advantage
health monitoring		
<b>SD-Access</b> Policy-based automation and assurance for wired and wireless	X	✓
<b>Network assurance and analytics</b> Global insights, trends, compliance, custom reports; switch 360, wired client 360; fabric and non-fabric insights; app health, app 360, app performance (loss, latency, jitter)	X	✓
<b>Cloud monitoring for Catalyst</b>	✓*	✓

\*Limited device visibility, not currently supported on C9200CX-8UXG-2X, C9200CX-12P-2XGH, C9200CX-8P-2XGH and C9200CX-8UXG-2XH

For a full list of features, please see the switching feature matrix:

[https://www.cisco.com/c/m/en\\_us/products/software/dna-subscription-switching/en-sw-sub-matrix-switching.html?OID=otren019471](https://www.cisco.com/c/m/en_us/products/software/dna-subscription-switching/en-sw-sub-matrix-switching.html?OID=otren019471).

## Product sustainability

Refer to the [CSR/Social Responsibility section](#) for more information on Cisco's environmental sustainability policies and initiatives.

Sustainability Topic		Reference
<b>General</b>	Information on product-material-content laws and regulations	<a href="#">Materials</a>
	Information on electronic waste laws and regulations, including our products, batteries, and packaging	<a href="#">WEEE Compliance</a>
	Sustainability Inquiries	Contact: <a href="mailto:csr_inquiries@cisco.com">csr_inquiries@cisco.com</a>
	Safety and compliance	<a href="#">Safety and compliance information</a>
	Information on product takeback and reuse program	<a href="#">Cisco Takeback and Reuse Program</a>
<b>Power</b>	IEEE 802.3at PoE+	<a href="#">Intelligent PoE+ Section</a>
	IEEE 802.3bt / Cisco UPOE	<a href="#">Intelligent PoE+ Section</a>
	IEEE 802.3bt class 6 PD	<a href="#">Intelligent PoE+ Section</a>
	PoE power availability	<a href="#">PoE Power with Primary and secondary power supplies</a>
	High efficiency with HVDC power options	<a href="#">Power supply specifications</a>
	Fan	<a href="#">Fan Section</a>

Sustainability Topic		Reference
	Power connectors	<a href="#">Connectors</a>
	Power supply specifications	<a href="#">Power supply specifications</a>
	Power consumption (ATIS)	<a href="#">Power consumption of standalone Catalyst 9200 Series switches</a>
<b>Material</b>	Product packaging weight and materials	Contact: <a href="mailto:environment@cisco.com">environment@cisco.com</a>
	Chassis Dimension, weight, MTBF	<a href="#">Model dimensions, weight, and mean time between failure metrics</a>
	Elimination of wet paint on plastic bezel	<a href="#">2019 Cisco Corporate Social Responsibility Report</a> , Pg. 19 Stepping up our work on circularity

## Specifications

### Dimensions, weight, acoustic, mean time between failures

Table 13-16 show the dimensions, weights, acoustic, and mean time between failures of all models of Cisco Catalyst 9200 Series switches.

**Table 13.** Model Dimensions

Platform Physical Specifications				
Model	Chassis Dimensions		Chassis + FEP + Fan Dimensions (HxWxD)	
	Inches	Centimeters	Inches	Centimeters
<b>C9200-24T</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-24P</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-24PB</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-24PXG</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-48T</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-48P</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-48PL</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-48PB</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200-48PXG</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200L-24T-4G</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-24P-4G</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-48T-4G</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9

Platform Physical Specifications				
	Chassis Dimensions		Chassis + FEP + Fan Dimensions (HxWxD)	
Model	Inches	Centimeters	Inches	Centimeters
<b>C9200L-48P-4G</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-48PL-4G</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-24T-4X</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-24P-4X</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-48T-4X</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-48P-4X</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-48PL-4X</b>	1.73 x 17.5 x 11.3	4.4 x 44.5 x 28.8	1.73 x 17.5 x 12.9	4.4 x 44.5 x 32.9
<b>C9200L-24PXG-4X</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200L-24PXG-2Y</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200L-48PXG-4X</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200L-48PXG-2Y</b>	1.73 x 17.5 x 13.8	4.4 x 44.5 x 35.0	1.73 x 17.5 x 15.4	4.4 x 44.5 x 39.1
<b>C9200CX-12T-2X2G</b>	1.73 x 10.6 x 6.5	4.4 x 26.9 x 16.5	1.73 x 10.6 x 6.5	4.4 x 26.9 x 16.5
<b>C9200CX-12P-2X2G</b>	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
<b>C9200CX-8P-2X2G</b>	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
<b>C9200CX-8UXG-2X</b>	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
<b>C9200CX-12P-2XGH</b>	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
<b>C9200CX-8P-2XGH</b>	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4
<b>C9200CX-8UXG-2XH</b>	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4	1.73 x 10.6 x 9.6	4.4 x 26.9 x 24.4

**Table 14.** Model Weights

Model	Pounds	Kilograms
<b>C9200-24T</b>	11.02	5.0
<b>C9200-24P</b>	12.12	5.5
<b>C9200-24PB</b>	12.12	5.0
<b>C9200-24PXG</b>	11.33	5.1
<b>C9200-48T</b>	11.02	5.0

Model	Pounds	Kilograms
C9200-48P	12.12	5.5
C9200-48PL	12.12	5.5
C9200-48PB	12.12	5.5
C9200-48PXG	11.98	5.45
C9200L-24T-4G	9.59	4.35
C9200L-24P-4G	10.38	4.71
C9200L-48T-4G	9.97	4.53
C9200L-48P-4G	10.58	4.80
C9200L-48PL-4G	10.58	4.80
C9200L-24T-4X	9.59	4.35
C9200L-24P-4X	10.38	4.71
C9200L-48T-4X	9.97	4.53
C9200L-48P-4X	10.58	4.80
C9200L-48PL-4X	10.58	4.80
C9200L-24PXG-4X	12	5.44
C9200L-24PXG-2Y	12	5.44
C9200L-48PXG-4X	12.6	5.71
C9200L-48PXG-2Y	12.6	5.71
C9200CX-12T-2X2G	4.0	1.81
C9200CX-12P-2X2G	6.6	2.99
C9200CX-8P-2X2G	6.6	2.99
C9200CX-8UXG-2X	7.0	3.18
C9200CX-12P-2XGH	6.6	2.99
C9200CX-8P-2XGH	6.6	2.99
C9200CX-8UXG-2XH	7.0	3.18



**Table 15.** Model Mean time between failures metrics

<b>Mean time between failures (hours)</b>	
<b>C9200-24T</b>	587,800
<b>C9200-24P</b>	422,310
<b>C9200-24PB</b>	434,220
<b>C9200-24PXG</b>	353,960
<b>C9200-48T</b>	571,440
<b>C9200-48P</b>	375,570
<b>C9200-48PL</b>	375,570
<b>C9200-48PB</b>	384,980
<b>C9200-48PXG</b>	320,440
<b>C9200L-24T-4G</b>	531,030
<b>C9200L-24P-4G</b>	392,210
<b>C9200L-48T-4G</b>	508,700
<b>C9200L-48P-4G</b>	347,760
<b>C9200L-48PL-4G</b>	347,760
<b>C9200L-24T-4X</b>	525,990
<b>C9200L-24P-4X</b>	390,310
<b>C9200L-48T-4X</b>	503,400
<b>C9200L-48P-4X</b>	346,270
<b>C9200L-48PL-4X</b>	346,270
<b>C9200L-24PXG-4X</b>	379,410
<b>C9200L-24PXG-2Y</b>	374,730
<b>C9200L-48PXG-4X</b>	337,360
<b>C9200L-48PXG-2Y</b>	337,260
<b>C9200CX-12T-2X2G</b>	755,270
<b>C9200CX-12P-2X2G</b>	553,140
<b>C9200CX-8P-2X2G</b>	569,530

Mean time between failures (hours)	
C9200CX-8UXG-2X	TBD
C9200CX-12P-2XGH	TBD
C9200CX-8P-2XGH	TBD
C9200CX-8UXG-2XH	TBD
PWR-C5-125WAC	3,332,120
PWR-C5-600WAC	1,600,060
PWR-C5-1KWAC	1,600,060
PWR-C6-125WAC	3,332,120
PWR-C6-600WAC	1,600,060
PWR-C6-1KWAC	1,600,060

**Table 16.** Model Environmental Ranges

Environmental ranges	
<p><b>Acoustic noise</b></p> <p>Measured per ISO 7779 and declared per ISO 9296</p> <p>Bystander positions operating to an ambient temperature of 25° C</p>	<p>9200L/9200</p> <p>With AC power supply (with 48 PoE+ ports loaded):</p> <ul style="list-style-type: none"> <li>• LpA: 42dB typical, 45 dB max</li> <li>• LwA: 5.3B typical, 5.6B max</li> </ul> <p>With AC power supply (with 24 PoE+ ports loaded):</p> <ul style="list-style-type: none"> <li>• LpA: 42dB typical, 45 dB max</li> <li>• LwA: 5.3B typical, 5.6B max</li> </ul> <p>Typical: Noise emission for a typical configuration</p> <p>Maximum: Statistical maximum to account for variation in production</p>

## Connectors

Table 17 shows the supported connectors for Cisco Catalyst 9200 Series switches.

**Table 17.** Connectors

Power	
<b>Connectors and cabling</b>	<ul style="list-style-type: none"> <li>• 1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling</li> <li>• 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling</li> <li>• 100BASE-FX, 1000BASE-SX, -LX/LH, -ZX, -BX10, Dense Wavelength-Division Multiplexing (DWDM) and Coarse Wavelength-Division Multiplexing (CWDM) SFP transceivers: LC fiber connectors (single-mode or multimode fiber)</li> <li>• 10GBASE-SR, LR, LRM (only C9200), ER, ZR, DWDM SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber)</li> <li>• SFP+ connector</li> <li>• Cisco StackWise-160/80 stacking ports: copper-based Cisco StackWise cabling</li> <li>• Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling</li> <li>• Management console port: 9200/9200L - RJ45 or mini USB connectors.-RJ-45-to-DB9 cable for PC connections, USB-C adaptor, USB adaptor; 9200CX - Micro USB connector, with option to convert to RJ45 with CAB-CON-USBRJ45</li> </ul>
<b>Power connectors</b>	<ul style="list-style-type: none"> <li>• Internal power supply connector: The internal power supply is an auto-ranging unit. It supports input voltages between 100 and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet.</li> </ul>

For the latest Cisco transceiver module compatibility information, refer to

[https://www.cisco.com/c/en/us/td/docs/interfaces\\_modules/transceiver\\_modules/compatibility/matrix/TMG\\_C\\_M\\_Tool\\_User\\_Manual.html](https://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/TMG_C_M_Tool_User_Manual.html).

## Management and standards support

Table 18 shows management and standards support for Cisco Catalyst 9200 Series switches.

**Table 18.** Management and standards support\*

Description	Specification	
<b>Management</b>	BRIDGE-MIB	CISCO-NHRP-EXT-MIB
	CISCO-BRIDGE-EXT-MIB	CISCO-NTP-MIB
	CISCO-BULK-FILE-MIB	CISCO-PAGP-MIB
	CISCO-CABLE-DIAG-MIB	CISCO-PORT-SECURITY-MIB
	CISCO-CALLHOME-MIB	CISCO-PORT-STORM-CONTROL-MIB
	CISCO-CEF-MIB	CISCO-POWER-ETHERNET-EXT-MIB
	CISCO-CIRCUIT-INTERFACE-MIB	CISCO-PRIVATE-VLAN-MIB
	CISCO-CONFIG-COPY-MIB	CISCO-PROCESS-MIB
	CISCO-CONFIG-MAN-MIB	CISCO-PRODUCTS-MIB
	CISCO-DEVICE-LOCATION-MIB	CISCO-RF-MIB

Description	Specification
CISCO-DHCP-SNOOPING-MIB	CISCO-RTP-METRICS-MIB
CISCO-EIGRP-MIB	CISCO-RTTMON-ICMP-MIB
CISCO-EMBEDDED-EVENT-MGR-MIB	CISCO-STACKWISE-MIB
CISCO-ENTITY-FRU-CONTROL-MIB	CISCO-STP-EXTENSIONS-MIB
CISCO-ENTITY-SENSOR-MIB	CISCO-SYSLOG-MIB
CISCO-ENTITY-VENDORTYPE-OID-MIB	CISCO-TCP-MIB
CISCO-ERR-DISABLE-MIB	CISCO-UDLD-MIB
CISCO-FLASH-MIB	CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB
CISCO-FLOW-MONITOR-MIB	ENTITY-MIB
CISCO-FTP-CLIENT-MIB	HC-ALARM-MIB
CISCO-HSRP-EXT-MIB	HC-RMON-MIB
CISCO-HSRP-MIB	IEEE8023-LAG-MIB
CISCO-IETF-BFD-MIB	IF-MIB
CISCO-IETF-PPVPN-MPLS-VPN-MIB	IP-FORWARD-MIB
CISCO-IETF-PW-MPLS-MIB	IP-MIB
CISCO-IF-EXTENSION-MIB	LLDP-EXT-MED-MIB
CISCO-IGMP-FILTER-MIB	LLDP-MIB
CISCO-IMAGE-LICENSE-MGMT-MIB	MAU-MIB
CISCO-IMAGE-MIB	MPLS-L3VPN-STD-MIB
CISCO-IP-CBR-METRICS-MIB	MPLS-LSR-STD-MIB
CISCO-IP-STAT-MIB	MPLS-VPN-MIB
CISCO-IP-TAP-MIB	OLD-CISCO-CHASSIS-MIB
CISCO-IP-URPF-MIB	OLD-CISCO-CPU-MIB
CISCO-IPSEC-FLOW-MONITOR-MIB	OLD-CISCO-INTERFACES-MIB
CISCO-IPSEC-MIB	OLD-CISCO-IP-MIB
CISCO-IPSEC-PROVISIONING-MIB	OLD-CISCO-MEMORY-MIB
CISCO-IPSLA-AUTOMEASURE-MIB	OLD-CISCO-SYS-MIB

Description	Specification	
	CISCO-IPSLA-ECHO-MIB	OLD-CISCO-TCP-MIB
	CISCO-IPSLA-JITTER-MIB	OLD-CISCO-TS-MIB
	CISCO-L2-CONTROL-MIB	POWER-ETHERNET-MIB
	CISCO-L2L3-INTERFACE-CONFIG-MIB	RFC1213-MIB
	CISCO-LAG-MIB	RMON-MIB
	CISCO-LICENSE-MGMT-MIB	RMON2-MIB
	CISCO-LOCAL-AUTH-USER-MIB	SMON-MIB
	CISCO-MAC-NOTIFICATION-MIB	SNMPv2-MIB
	CISCO-MDI-METRICS-MIB	SONET-MIB
	CISCO-MEDIA-METRICS-MIB	TCP-MIB
	CISCO-MEMORY-POOL-MIB	UDP-MIB
	CISCO-MPLS-LSR-EXT-STD-MIB	CISCO-NBAR-PROTOCOL-DISCOVERY-MIB
<b>Standards</b>	IEEE 802.1s	RMON I and II standards
	IEEE 802.1w	SNMPv1, v2c, and v3
	IEEE 802.1x	IEEE 802.1Q VLAN
	IEEE 802.1x-Rev	IEEE 802.3 10BASE-T specification
	IEEE 802.3ad	IEEE 802.3u 100BASE-TX specification
	IEEE 802.3af	IEEE 802.3ab 1000BASE-T specification
	IEEE 802.3at	IEEE 802.3z 1000BASE-X specification
	IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports	IEEE 802.1AE - 128-bit AES MACsec inter network device encryption with MACsec Key Agreement (MKA)
	IEEE 802.1D Spanning Tree Protocol	IEEE 802.3bz (for mGig PKG SKU's only)
	IEEE 802.1p CoS prioritization	IEEE 802.3an (10GBase-T) (for mGig PKG SKU's only)

## Power supply specifications

Table 19 lists the power specifications for Cisco Catalyst 9200 Series switches based on the kind of power supply used.

**Table 19.** Power supply specifications

Description	Specification							
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	C9200CX Internal 315W AC	C9200CX Internal 315W HVDC/AC
<b>Power supply rated maximum</b>	125W	125W	600W	600W	1000W	1000W	315W	315W
<b>Total output BTU</b> (note: 1000 BTU/hr = 293W)	426.5 BTU/hr, 125W	426.5 BTU/hr, 125W	2047.3 BTU/hr, 600W	2047.3 BTU/hr, 600W	3412 BTU/hr, 1000W	3412 BTU/hr, 1000W	1057.1 BTU/hr, 310W	1057.1 BTU/hr, 310W
<b>Input-voltage range and frequency</b>	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	120-418 VDC 100 to 277 VAC, 50 to 60 Hz
<b>Input current</b>	1.6-0.7A	1.6-0.7A	7-2.8A	7-2.8A	12-6A	12-6A	3.95-1.5A	3.95-0.92A
<b>Output ratings</b>	12V at 10.5A	12V at 10.5A	54V at 11.1A	54V at 11.1A	54V at 16.5A	54V at 16.5A	-55V at 4.5A 5V at 14A	-55V at 4.5A 5V at 14A
<b>Output holdup time</b>	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC and 380 VDC
<b>Power-supply input receptacles</b>	IEC 320-C14 (IEC60320 - C14)	IEC 320-C14 (IEC60320 - C14)	IEC 320-C16 (IEC60320 - C16)	IEC 320-C16 (IEC60320 - C16)	IEC 320-C16 (IEC60320 - C16)	IEC 320-C16 (IEC60320 - C16)	IEC 320-C14 (IEC60320 - C14)	Saf-D-Grid
<b>Power cord rating</b>	10A	10A	15A	15A	15A	15A	10A	10A
<b>Physical specifications</b>	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 1.5 lb	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 1.5 lb	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 1.7 lb (0.77 kg)	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 1.7 lb	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 2 lb (0.9 kg)	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 2 lb (0.9 kg)	N/A	N/A

Description	Specification							
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	C9200CX Internal 315W AC	C9200CX Internal 315W HVDC/AC
	(0.68 kg)	(0.68 kg)		(0.77 kg)				
<b>Supported Product Family</b>	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200CX	C9200CX
<b>Operating temperature</b>	<p>Normal operating temperature* and altitudes:</p> <ul style="list-style-type: none"> <li>-5° C to +45° C, up to 5000 feet (1500m) (-5° C to +40° C for C9200CX-8UXG-2X and C9200CX-8UXG-2XH)</li> <li>-5° C to +40° C, up to 10,000 feet (3000m)</li> </ul> <p>*Minimum ambient temperature for cold start is 32° F (0° C)</p> <p>Short-term* exceptional conditions: (9200L/9200 only)</p> <ul style="list-style-type: none"> <li>-5° C to +50° C, up to 5000 feet (1500m)</li> <li>-5° C to +45° C, up to 10,000 feet (3000m)</li> <li>-5° C to +45° C, at sea level with single fan failure</li> </ul> <p>*Not more than following in one-year period: 96 consecutive hours, or 360 hours total, or 15 occurrences</p>							
<b>Storage temperature</b>	-40° to 158° F (-40° to 70° C)							
<b>Relative humidity operating and nonoperating noncondensing</b>	5% to 90% noncondensing							
<b>Altitude</b>	10,000 ft. (3000 meters), up to 45° C							
<b>EMC compliance</b>	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55032 Class A CISPR 32 Class A AS/NZS 3548 Class A BSMI Class A VCCI Class A CISPR 35 EN 55035, EN300 386*, EN 61000-3-2, EN 61000-3-3							
<b>Safety compliance</b>	UL 60950-1/62368-1, CAN/CSA-C22.2 No. 60950-1/62368-1, EN 60950-1/62368-1, IEC 60950-1/62368-1, CCC, CE Marking							
<b>LED indicators</b>	"AC OK": Input power to the power supply is OK "PS OK": Output power from the power supply is OK							

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\*Use shielded cables for locations other than telecom centers



## Power consumption of Standalone 9200 Series switches

Table 20 shows the power consumption of standalone Cisco Catalyst 9200 Series switches based on Alliance for Telecommunications Industry Solutions (ATIS) testing using Internet Mix (IMIX) distribution stream traffic, with input voltage of 115VAC at 60 Hz and no PoE loading. The values given are the maximum possible power consumption numbers under the respective test scenarios.

**Table 20.** Power consumption of standalone Catalyst 9200 Series switches

				Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200-24T	125W (C5/C6)	C9200-NM-4X1G	115VAC	33.09	36.08	36.15	36.20	36.34	35.51	41.78	41.89	42.00	42.27	41.20	30.65	TBD	TBD	TBD	TBD
			230VAC	33.15	35.95	36.00	36.06	36.19	35.36	41.50	41.62	41.74	42.01	40.94	30.53	TBD	TBD	TBD	TBD
C9200-24T	125W	C9200-NM-4X10G	115VAC	33.62	36.99	37.29	37.58	38.26	35.41	42.00	42.55	43.11	44.49	41.588	32.20	TBD	TBD	TBD	TBD
			230VAC	33.70	36.85	37.13	37.41	38.10	35.40	41.75	42.30	42.85	44.22	41.364	31.90	TBD	TBD	TBD	TBD
C9200-24P	600W (C5/C6)	C9200-NM-4X1G	115VAC	43.57	47.37	47.42	47.47	47.68	46.82	53.79	53.91	54.02	54.30	53.14	40.75	150.71	251.67	416.85	457.98
			230VAC	43.38	46.92	46.95	47.03	47.18	46.35	53.23	53.34	53.45	53.76	52.59	40.43	148.14	247.03	406.62	446.27
C9200-24P	600W (C5/C6)	C9200-NM-4X10G	115VAC	44.62	48.49	48.79	49.11	49.88	47.02	54.18	54.77	55.34	56.77	53.72	42.55	144.60	245.42	410.22	451.45
			230VAC	44.32	48.06	48.37	48.66	49.40	46.41	53.38	53.99	54.51	55.96	52.94	42.26	142.29	241.14	400.76	440.37
C9200-24PXG	600W (C6)	C9200-NM-4X10G	115VAC	84.30	90.90	91.00	92.30	94.20	95.00	110.60	111.60	112.60	115.20	109.5	72.8	296.8	506.3	858.3	941.5
			230VAC	84.10	90.50	91.10	91.60	92.90	94.30	108.80	109.90	111.00	113.60	107.83	72.24	287.8	492.4	826.7	909.1
C9200-24PXG	600W (C6)	C9200-NM-2X25G	115VAC	83.41	87.59	88.56	89.19	90.85	93.96	101.38	103.32	104.89	107.22	101.22	72.52	187.94	290.47	452.61	494.88
			230VAC	81.90	86.97	87.68	88.38	90.03	92.21	99.79	101.14	102.45	105.65	99.62	71.74	185.45	283.86	441.83	480.86
C9200-24PXG	600W (C6)	C9200-NM-2X40G	115VAC	82.34	86.78	87.91	88.90	91.64	92.97	100.93	103.00	104.89	108.81	100.92	71.72	188.86	289.2	448.52	496.28
			230VAC	80.05	84.53	85.64	86.69	89.29	90.26	99.20	101.41	103.56	108.70	99.26	71.72	185.29	282.86	441.33	480.95
C9200-48T	125W (C5/C6)	C9200-NM-4X1G	115VAC	36.57	45.09	45.45	45.63	45.70	36.98	53.95	55.36	53.91	55.87	52.445	36.98	TBD	TBD	TBD	TBD
			230VAC	36.99	45.58	45.65	45.71	45.86	36.48	54.51	54.64	54.7	55.04	52.76	36.48	TBD	TBD	TBD	TBD

				Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200-48T	125W (C5/C6)	C9200-NM-4X10G	115VAC	38.84	47.07	48.67	48.71	50.41	39.20	56.33	58.36	58.75	61.80	55.164	38.38	TBD	TBD	TBD	TBD
			230VAC	39.1	47.11	47.91	48.37	49.65	39.46	56.32	57.25	58.19	60.72	55.074	38.67	TBD	TBD	TBD	TBD
C9200-48P	1000W (C5/C6)	C9200-NM-4X1G	115VAC	56.07	60.25	60.31	60.36	60.55	56.45	69.33	69.46	69.56	69.87	68.10	50.42	262.61	467.50	812.39	899.99
			230VAC	55.66	59.98	60.05	60.05	60.27	56.09	69.07	69.20	69.30	69.58	67.83	50.04	258.08	457.61	785.35	867.75
C9200-48P	1000W (C5/C6)	C9200-NM-4X10G	115VAC	54.27	61.71	62.20	62.68	63.88	56.114	70.93	70.95	71.92	74.39	69.79	52.26	262.38	467.41	812.23	899.40
			230VAC	53.89	61.09	61.60	62.07	63.24	55.79	69.52	70.47	71.43	73.89	68.58	51.34	257.97	457.30	785.03	867.35
C9200-48PL	600W (C6)	C9200-NM-4X1G	115VAC	43.57	47.37	47.42	47.47	47.68	46.82	53.79	53.91	54.02	54.30	53.14	40.75	150.71	251.67	416.85	457.98
			230VAC	43.38	46.92	46.95	47.03	47.18	46.35	53.23	53.34	53.45	53.76	52.59	40.43	148.14	247.03	406.62	446.27
C9200-48PL	600W (C6)	C9200-NM-4X10G	115VAC	44.62	48.49	48.79	49.11	49.88	47.02	54.18	54.77	55.34	56.77	53.72	42.55	144.60	245.42	410.22	451.45
			230VAC	44.32	48.06	48.37	48.66	49.40	46.41	53.38	53.99	54.51	55.96	52.94	42.26	142.29	241.14	400.76	440.37
C9200-48PXG	1000W (C6)	C9200-NM-4X10G	115VAC	84.26	90.86	91.02	92.26	94.18	95.01	110.55	111.62	112.62	115.2	109.46	72.3	296.81	506.33	858.27	941.49
			230VAC	84.14	90.52	91.05	91.57	92.85	94.25	108.84	109.94	111	113.6	107.86	73.2	287.79	492.42	826.74	909.07
C9200-48PXG	1000W (C6)	C9200-NM-2X25G	115VAC	87.84	95.23	95.98	96.69	98.34	99.25	113.66	115.37	116.7	120.91	112.94	77.57	300.71	513.82	872.63	957.36
			230VAC	87.12	94.14	94.79	95.42	96.99	97.59	111.99	113.52	114.86	117.82	111.13	76.53	290.61	492.91	826.5	910.08
C9200-48PXG	1000W (C6)	C9200-NM-2X40G	115VAC	88.01	94.35	95.5	96.48	99.36	98.72	113.2	115.13	117.08	121.84	112.61	76.84	296.86	503.87	861.87	957.4
			230VAC	87.02	93.09	94.15	95.16	97.79	97.28	111.43	113.57	115.66	120.67	110.94	75.84	291.54	491.67	824.85	909.78
C9200 L-24T-4G	125W (C5)	Fixed	115VAC	30.03	32.15	32.17	32.2	32.33	32.03	35.90	35.98	36.06	36.23	35.546	27.39	no PoE	no PoE	no PoE	no PoE
			230VAC	29.81	32.26	32.23	32.22	32.35	31.86	35.86	35.94	36.03	36.28	35.502	27.50	no PoE	no PoE	no PoE	no PoE
C9200 L-24P-4G	600W (C5)	Fixed	115VAC	39.28	43.98	44.04	44.08	44.22	38.95	48.47	48.6	48.74	49.00	47.571	39.59	153.06	256.56	423.44	466.34
			230VAC	38.88	43.6	43.66	43.69	43.83	38.57	48.09	48.22	48.35	48.62	47.191	39.20	150.51	252.10	413.89	455.15
C9200 L-24T-4X	125W (C5)	Fixed	115VAC	30.99	31.98	32.21	32.43	33.04	33.29	36.62	37.02	37.47	38.6	36.485	27.82	no PoE	no PoE	no PoE	no PoE
			230VAC	30.98	32.02	32.24	32.46	33.02	33.24	36.59	36.96	37.41	38.52	36.448	27.90	no PoE	no PoE	no PoE	no PoE

				Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200 L-24P-4X	600W (C5)	Fixed	115VAC	42.83	44.15	44.62	44.72	45.39	45.45	51.08	51.52	52.2	53.49	50.758	40.17	144.82	241.99	401.32	445.35
			230VAC	42.36	44.19	44.47	44.61	45.28	44.6	49.33	49.91	50.36	51.51	49.075	39.48	142.32	237.52	392.77	434.06
C9200 L-48T-4G	125W (C5)	Fixed	115VAC	33.85	40.11	40.20	40.24	40.34	32.74	46.65	46.88	46.96	47.33	45.327	33.85	no PoE	no PoE	no PoE	no PoE
			230VAC	33.62	40.5	40.57	40.63	40.74	33.06	46.8	46.91	47.05	47.49	45.495	34.16	no PoE	no PoE	no PoE	no PoE
C9200 L-48P-4G	1000W (C5)	Fixed	115VAC	45.07	52.15	52.22	52.28	52.44	44.6	58.59	58.7	58.81	59.1	57.242	45.82	270.96	484.59	842.07	933.03
			230VAC	44.55	51.5	51.55	51.6	51.77	44.08	57.82	57.91	58.04	58.29	56.493	45.17	266.35	474.24	814.85	899.58
C9200 L-48PL-4G	600W (C5)	Fixed	115VAC	39.28	43.98	44.04	44.08	44.22	38.95	48.47	48.6	48.74	49.00	47.571	39.59	153.06	256.56	423.44	466.34
			230VAC	38.88	43.6	43.66	43.69	43.83	38.57	48.09	48.22	48.35	48.62	47.191	39.20	150.51	252.10	413.89	455.15
C9200 L-48T-4X	125W (C5)	Fixed	115VAC	35.52	42.36	42.9	43.35	43.69	35.06	49.27	50.24	51.19	53.60	48.282	36.08	no PoE	no PoE	no PoE	no PoE
			230VAC	35.84	42.60	43.09	43.58	44.81	35.27	49.41	50.36	51.33	53.67	48.422	36.38	no PoE	no PoE	no PoE	no PoE
C9200 L-48P-4X	1000W (C5)	Fixed	115VAC	53.12	56.89	57.34	57.80	57.81	55.22	63.92	64.86	65.84	68.36	63.494	50.31	262.59	463.36	789.46	872.6
			230VAC	52.63	56.37	56.82	57.3	58.47	54.71	63.41	64.32	65.27	67.64	62.963	50.02	258.64	453.81	766.04	843.89
C9200 L-48PL-4X	600W (C5)	Fixed	115VAC	42.83	44.15	44.62	44.72	45.39	45.45	51.08	51.52	52.2	53.49	50.758	40.17	144.82	241.99	401.32	445.35
			230VAC	42.36	44.19	44.47	44.61	45.28	44.6	49.33	49.91	50.36	51.51	49.075	39.48	142.32	237.52	392.77	434.06
C9200 L-48PXG-4X	1000W (C5)	Fixed	115VAC	82.60	87.80	88.28	88.76	89.95	92.56	103.53	104.55	105.57	108.19	102.90	72.14	291.62	496.85	842.43	930.11
			230VAC	81.77	86.62	87.11	87.60	88.82	91.87	102.05	103.02	103.98	106.40	101.47	72.50	286.71	486.25	814.71	898.24
C9200 L-24PXG-4X	600W (C5)	Fixed	115VAC	70.94	73.88	74.37	74.84	76.02	77.37	84.12	85.06	86.00	88.32	83.86	64.54	173.05	271.04	431.68	472.39
			230VAC	70.10	73.04	73.62	74.07	75.15	76.74	82.96	83.86	84.78	87.09	82.75	64.04	170.02	265.51	420.96	459.88
C9200 L-48PXG-2Y	1000W (C5)	Fixed	115VAC	81.81	85.14	85.81	86.49	88.08	89.40	96.32	97.51	98.71	101.76	96.17	71.45	294.56	500.25	846.33	934.08
			230VAC	79.59	82.94	83.64	84.28	85.81	88.20	95.17	96.36	97.52	100.40	95.00	70.28	283.88	483.54	812.20	894.11

				Measured P(W)															
				Half port traffic					Full port traffic					Weighted average Pw	No link	PoE test (no traffic)			
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
C9200 L-24PXG-2Y	600W (C5)	Fixed	115VAC	70.54	73.04	73.78	74.46	76.10	76.25	83.50	84.78	86.09	89.26	83.35	65.58	178.82	280.13	446.82	489.62
			230VAC	68.89	72.02	72.66	73.35	74.93	75.32	82.00	83.34	84.64	87.87	81.92	65.01	175.55	274.59	434.38	475.39
C9200 CX-8P-2x2G	310WAC	Fixed	115VAC	26.4	27.6	27.7	27.7	27.9	27.4	29.4	29.5	29.6	29.9	29.3	25.3	110.6	176.3	281.1	305.9
			230VAC	26.5	27.4	27.4	27.5	27.6	27	29.1	29.3	29.3	29.7	29	25.2	107.5	171.5	273.2	302.8
C9200 CX-12P-2X2G	310WAC	Fixed	115VAC	23.3	24.7	24.9	25	25.2	24	27.7	27.8	28	28.4	27.4	22.2	88.3	152.5	256.2	282.4
			230VAC	23	24.7	24.8	24.9	25.1	23.9	27.6	27.7	27.9	28.4	27.3	21.7	87.4	150.6	251.3	276.7
C9200 CX-12T-2X2G	80W AC	Fixed	115VAC	19.5	21.1	21.1	21.2	22.2	19.9	24.1	24.3	24.4	24.9	23.7	17.4	no PoE	no PoE	no PoE	no PoE
			230VAC	18.9	21	21	21.1	21.2	19.8	23.9	24.1	24.3	24.7	23.5	17.3	no PoE	no PoE	no PoE	no PoE
C9200 CX-8UXG-2X	310W AC	Fixed	115VAC	35.5	35.5	35.5	35.6	35.8	38.5	40.0	40.1	40.1	40.2	39.9	32.3	105.5	170.5	275.7	301.9
			230VAC	35.1	35.1	35.1	35.2	35.3	37.9	39.6	39.6	39.6	39.8	39.4	32.1	103.5	166.8	268.7	293.9

## Safety and compliance

Table 21 lists the safety and compliance information for Cisco Catalyst 9200 Series switches.

**Table 21.** Safety and compliance information

Description	Specification
<b>Safety certifications</b>	<ul style="list-style-type: none"><li>• IEC 60950-1/62368-1</li><li>• UL 60950-1/62368-1</li><li>• CAN/CSA C22.2 No. 60950-1/62368-1</li><li>• EN 60950-1/62368-1</li><li>• AS/NZS 60950.1, AS/NZS 62368.1</li><li>• Class I Equipment</li></ul>
<b>Electromagnetic compatibility certifications</b>	<ul style="list-style-type: none"><li>• 47 CFR Part 15</li><li>• CISPR 32 Class A</li><li>• CNS 13438</li><li>• EN 300 386*</li><li>• EN 55032 Class A</li><li>• EN61000-3-2</li><li>• EN61000-3-3</li><li>• ICES-003 Class A</li><li>• KN 32</li><li>• TCVN 7189 Class A</li><li>• V-3 Class A</li><li>• CISPR 35</li><li>• EN 300 386*</li><li>• EN 55035</li><li>• KN 35</li><li>• TCVN 7317</li></ul>
<b>Environmental</b>	Reduction of Hazardous Substances (ROHS) 5

\*Use shielded cables for locations other than telecom centers

## Warranty

### Cisco enhanced limited lifetime hardware warranty

Cisco Catalyst 9200 Series switches come with a Cisco Enhanced Limited Lifetime Warranty (E-LLW) that includes Next-Business-Day (NBD) delivery of replacement hardware where available and 90 days of 8x5 Cisco Technical Assistance Center (TAC) support.

Your formal warranty statement, including the warranty applicable to Cisco software, appears in the information packet that accompanies your Cisco product. We encourage you to review the warranty statement shipped with your specific product carefully before use.

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

For further information about warranty terms, visit <https://www.cisco.com/go/warranty>.

Table 22 provides information about the E-LLW.

**Table 22.** Warranty information

	<b>Cisco E-LLW</b>
<b>Devices covered</b>	Applies to Cisco Catalyst 9200 Series switches.
<b>Warranty duration</b>	As long as the original customer owns the product.
<b>End-of-life policy</b>	In the event of discontinuance of product manufacture, Cisco warranty support is limited to 5 years from the announcement of discontinuance.
<b>Hardware replacement</b>	Cisco or its service center will use commercially reasonable efforts to ship a replacement for NBD delivery, where available. Otherwise, a replacement will be shipped within 10 working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times might vary depending on customer location.
<b>Effective date</b>	Hardware warranty commences from the date of shipment to customer (and in case of resale by a Cisco reseller, not more than 90 days after original shipment by Cisco).
<b>TAC support</b>	Cisco will provide during business hours, 8 hours per day, 5 days per week, basic configuration, diagnosis, and troubleshooting of device-level problems for up to a 90-day period from the date of shipment of the originally purchased Cisco Catalyst 9200 Series product. This support does not include solution or network-level support beyond the specific device under consideration.
<b>Cisco.com access</b>	Warranty allows guest access only to Cisco.com.

## Cisco services for next-generation Cisco Catalyst switches

Achieve infrastructure excellence faster and with less risk. Cisco Catalyst 9000 Switch Services provide expert guidance to help you successfully deploy, manage and support the Cisco Catalyst 9000 switches. With unmatched networking expertise, best practices and innovative tools, we can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software and protocols into the network. Offering a comprehensive lifecycle of services - from implementation, optimization, technical and managed services - Cisco experts help you minimize disruption and achieve operational excellence to extract maximum value from your Cisco DNA ready infrastructure.

[Learn more about Cisco Services for Enterprise Networks](#)

## Software Policy for Cisco Catalyst 9200 Series switches

### Software Policy for Network Stack Components

Customers with the Network Essentials Stack and Network Advantage Stack software feature sets are provided with maintenance updates and bug fixes designed to maintain compliance of the software. This includes compliance with published specifications, release notes, and industry standards as long as the original end user continues to own or use the product or up to one year from the end-of-sale date for the product, whichever occurs earlier.

### Cisco Embedded Support for Cisco DNA Term Components

Cisco Embedded Support delivers the right support for Cisco software products and suites. It will keep your business applications performing as expected and protect your investment. Cisco Embedded Support for the Cisco DNA Essentials and Cisco DNA Advantage term components is included. Cisco Embedded Support provides access to TAC support, major software updates, maintenance and minor software releases, and the Cisco Embedded Support site, for increased productivity with anytime access.

## Ordering

### Ordering information

Table 23 lists ordering information for Cisco Catalyst 9200 Series switches. To place an order, visit the Cisco Ordering home page at:

[https://www.cisco.com/en/US/ordering/or13/or8/order\\_customer\\_help\\_how\\_to\\_order\\_listing.html](https://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html).

### Switch Models

#### C9200 models

**Table 23.** C9200 Models Ordering information

Product number	Product description
<b>C9200-24T-A</b>	Catalyst 9200 24-port Data Switch, Network Advantage
<b>C9200-24T-E</b>	Catalyst 9200 24-port Data Switch, Network Essentials
<b>C9200-24P-A</b>	Catalyst 9200 24-port PoE+ Switch, Network Advantage
<b>C9200-24P-E</b>	Catalyst 9200 24-port PoE+ Switch, Network Essentials
<b>C9200-24PB-A</b>	Catalyst 9200 24-port PoE+, enhanced VRF, Network Advantage
<b>C9200-24PXG-E</b>	Catalyst 9200 24-port 8xmGig, 16x1G, PoE+, Network Essentials
<b>C9200-24PXG-A</b>	Catalyst 9200 24-port 8xmGig, 16x1G, PoE+, Network Advantage
<b>C9200-48T-A</b>	Catalyst 9200 48-port Data Switch, Network Advantage
<b>C9200-48T-E</b>	Catalyst 9200 48-port Data Switch, Network Essentials
<b>C9200-48P-A</b>	Catalyst 9200 48-port PoE+ Switch, Network Advantage
<b>C9200-48P-E</b>	Catalyst 9200 48-port PoE+ Switch, Network Essentials
<b>C9200-48PL-A</b>	Catalyst 9200 48-Port partial PoE+ Switch, Network Advantage
<b>C9200-48PL-E</b>	Catalyst 9200 48-Port partial PoE+ Switch, Network Essentials
<b>C9200-48PB-A</b>	Catalyst 9200 48-port PoE+, enhanced VRF, Network Advantage
<b>C9200-48PXG-E</b>	Catalyst 9200 48-port 8xmGig, 40x1G, PoE+, Network Essentials
<b>C9200-48PXG-A</b>	Catalyst 9200 48-port 8xmGig, 40x1G, PoE+, Network Advantage

## Network modules

**Table 24.** C9200 Models Ordering information - network modules

Modular uplink network modules for C9200 Models	
Product number	Product description
<b>C9200-NM-2Y (=)</b>	Catalyst 9200 2 x 25 GE Network Module, spare
<b>C9200-NM-2Q (=)</b>	Catalyst 9200 2 x 40GE Network Module, spare
<b>C9200-NM-4G (=)</b>	Catalyst 9200 4 x 1GE Network Module, spare
<b>C9200-NM-4X (=)</b>	Catalyst 9200 4 x 10GE Network Module, spare
<b>C9200-NM-BLANK</b>	Catalyst 9200 BLANK Network Module

## C9200L models

**Table 25.** C9200L Models Ordering information

Product number	Product description
<b>C9200L-24T-4G-A</b>	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Advantage
<b>C9200L-24T-4G-E</b>	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Essentials
<b>C9200L-24P-4G-A</b>	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Advantage
<b>C9200L-24P-4G-E</b>	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Essentials
<b>C9200L-48T-4G-A</b>	Catalyst 9200L 48-port Data 4x1G uplink Switch, Network Advantage
<b>C9200L-24T-4X-A</b>	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Advantage
<b>C9200L-24T-4X-E</b>	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Essentials
<b>C9200L-24P-4X-A</b>	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Advantage
<b>C9200L-24P-4X-E</b>	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Essentials
<b>C9200L-48T-4X-A</b>	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Advantage
<b>C9200L-48T-4X-E</b>	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Essentials
<b>C9200L-48P-4X-A</b>	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Advantage
<b>C9200L-48P-4X-E</b>	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Essentials
<b>C9200L-48PL-4X-A</b>	Catalyst 9200L 48-port partial PoE+ 4x10G uplink Switch, Network Advantage
<b>C9200L-48PL-4X-E</b>	Catalyst 9200L 48-port partial PoE+ 4x10G uplink Switch, Network Essentials
<b>C9200L-24PXG-4X-E</b>	Catalyst 9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Essentials



Product number	Product description
<b>C9200L-24PXG-4X-A</b>	Catalyst 9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Advantage
<b>C9200L-48PXG-4X-E</b>	Catalyst 9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Essentials
<b>C9200L-48PXG-4X-A</b>	Catalyst 9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Advantage
<b>C9200L-24PXG-2Y-E</b>	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Essentials
<b>C9200L-24PXG-2Y-A</b>	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Advantage
<b>C9200L-48PXG-2Y-E</b>	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Essentials
<b>C9200L-48PXG-2Y-A</b>	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Advantage

### C9200CX models

**Table 26.** C9200CX Models Ordering information

Product number	Product description
<b>C9200CX-12T-2X2G-E</b>	Catalyst 9200CX 12-port 1G, 2x10G and 3x1G, data, Network Essentials
<b>C9200CX-12T-2X2G-A</b>	Catalyst 9200CX 12-port 1G, 2x10G and 3x1G, data, Network Advantage
<b>C9200CX-12P-2X2G-E</b>	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, Network Essentials
<b>C9200CX-12P-2X2G-A</b>	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, Network Advantage
<b>C9200CX-8P-2X2G-E</b>	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, Network Essentials
<b>C9200CX-8P-2X2G-A</b>	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, Network Advantage
<b>C9200CX-8UXG-2X-E</b>	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, Network Essentials
<b>C9200CX-8UXG-2X-A</b>	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, Network Advantage
<b>C9200CX-12P-2XGH-E</b>	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Essentials
<b>C9200CX-12P-2XGH-A</b>	Catalyst 9200CX 12-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Advantage
<b>C9200CX-8P-2XGH-E</b>	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Essentials
<b>C9200CX-8P-2XGH-A</b>	Catalyst 9200CX 8-port 1G, 2x10G and 2x1G, PoE+, HVDC, Network Advantage
<b>C9200CX-8UXG-2XH-E</b>	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, HVDC, Network Essentials
<b>C9200CX-8UXG-2XH-A</b>	Catalyst 9200CX 4-port mGig and 4-port 1G, 2x10G, UPOE, HVDC, Network Advantage

## Software licenses

### C9200 software licenses

**Table 27.** C9200 Models Ordering information – software licenses

C9200 models software licenses	
Product number	Product description
<b>C9200-DNA-E-24</b>	C9200 Cisco DNA Essentials Term 24-port
<b>C9200-DNA-E-24-3Y</b>	C9200 Cisco DNA Essentials, 24-port, 3 Year Term license
<b>C9200-DNA-E-24-5Y</b>	C9200 Cisco DNA Essentials, 24-port, 5 Year Term license
<b>C9200-DNA-E-24-7Y</b>	C9200 Cisco DNA Essentials, 24-port, 7 Year Term license
<b>C9200-DNA-E-48</b>	C9200 Cisco DNA Essentials Term 48-port
<b>C9200-DNA-E-48-3Y</b>	C9200 Cisco DNA Essentials, 48-port, 3 Year Term license
<b>C9200-DNA-E-48-5Y</b>	C9200 Cisco DNA Essentials, 48-port, 5 Year Term license
<b>C9200-DNA-E-48-7Y</b>	C9200 Cisco DNA Essentials, 48-port, 7 Year Term license
<b>C9200-DNA-A-24</b>	C9200 Cisco DNA Advantage Term 24-port
<b>C9200-DNA-A-24-3Y</b>	C9200 Cisco DNA Advantage, 24-port, 3 Year Term license
<b>C9200-DNA-A-24-5Y</b>	C9200 Cisco DNA Advantage, 24-port, 5 Year Term license
<b>C9200-DNA-A-24-7Y</b>	C9200 Cisco DNA Advantage, 24-port, 7 Year Term license
<b>C9200-DNA-A-48</b>	C9200 Cisco DNA Advantage Term 48-port
<b>C9200-DNA-A-48-3Y</b>	C9200 Cisco DNA Advantage, 48-port, 3 Year Term license
<b>C9200-DNA-A-48-5Y</b>	C9200 Cisco DNA Advantage, 48-port, 5 Year Term license
<b>C9200-DNA-A-48-7Y</b>	C9200 Cisco DNA Advantage, 48-port, 7 Year Term license
<b>C9200-LIC=</b>	Electronic Cisco DNA Upgrade License for C9200 switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is upgraded to Network Advantage
<b>C9200-24-E-A</b>	C9200 24-port NW and DNA Essentials to NW and DNA Advantage Upgrade
<b>C9200-24-E-A-3</b>	24-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 3Y
<b>C9200-24-E-A-5</b>	24-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 5Y
<b>C9200-24-E-A-7</b>	24-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y
<b>C9200-48-E-A</b>	C9200 48-port NW and DNA Essentials to NW and DNA Advantage Upgrade
<b>C9200-48-E-A-3</b>	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 3Y

## C9200 models software licenses

Product number	Product description
C9200-48-E-A-5	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 5Y
C9200-48-E-A-7	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y

## C9200L software licenses

Table 28. C9200L Models Ordering information – software licenses

Product Number	Product Description
C9200L-48T-4G-E	Catalyst 9200L 48-port Data 4x1G uplink Switch, Network Essentials
C9200L-48P-4G-A	Catalyst 9200L 48-port PoE+ 4x1G uplink Switch, Network Advantage
C9200L-48P-4G-E	Catalyst 9200L 48-port PoE+ 4x1G uplink Switch, Network Essentials
C9200L-48PL-4G-A	Catalyst 9200L 48-port partial PoE+ 4x1G uplink Switch, Network Advantage
C9200L-48PL-4G-E	Catalyst 9200L 48-port partial PoE+ 4x1G uplink Switch, Network Essentials
C9200L-24T-4X-A	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Advantage
C9200L-24T-4X-E	Catalyst 9200L 24-port Data 4x10G uplink Switch, Network Essentials
C9200L-24P-4X-A	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Advantage
C9200L-24P-4X-E	Catalyst 9200L 24-port PoE+ 4x10G uplink Switch, Network Essentials
C9200L-48T-4X-A	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Advantage
C9200L-48T-4X-E	Catalyst 9200L 48-port Data 4x10G uplink Switch, Network Essentials
C9200L-48P-4X-A	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Advantage
C9200L-48P-4X-E	Catalyst 9200L 48-port PoE+ 4x10G uplink Switch, Network Essentials
C9200L-48PL-4X-A	Catalyst 9200L 48-port partial PoE+ 4x10G uplink Switch, Network Advantage
C9200L-48PL-4X-E	Catalyst 9200L 48-port partial PoE+ 4x10G uplink Switch, Network Essentials
C9200L-24PXG-4X-E	Catalyst 9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Essentials
C9200L-24PXG-4X-A	Catalyst 9200L 24-port 8xmGig, 16x1G, 4x10G, PoE+, Network Advantage
C9200L-48PXG-4X-E	Catalyst 9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Essentials
C9200L-48PXG-4X-A	Catalyst 9200L 48-port 12xmGig, 36x1G, 4x10G PoE+, Network Advantage
C9200L-24PXG-2Y-E	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Essentials

### C9200L models software licenses

Product Number	Product Description
<b>C9200L-24PXG-2Y-A</b>	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Advantage
<b>C9200L-48PXG-2Y-E</b>	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Essentials
<b>C9200L-48PXG-2Y-A</b>	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Advantage
<b>C9200L-LIC=</b>	Electronic Cisco DNA Upgrade License for C9200L switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is upgraded to Network Advantage
<b>C9200L-24-E-A-3</b>	24-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 3Y
<b>C9200L-24-E-A-5</b>	24-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 5Y
<b>C9200L-24-E-A-7</b>	24-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y
<b>C9200L-48-E-A</b>	C9200L 48-port NW and DNA Essentials to NW and DNA Advantage Upgrade
<b>C9200L-48-E-A-3</b>	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 3Y
<b>C9200L-48-E-A-5</b>	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 5Y
<b>C9200L-48-E-A-7</b>	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y

### C9200CX software licenses

**Table 29.** C9200CX Models Ordering information - software licenses

C9200CX models software licenses	
Product Number	Product Description
<b>C9200CX-DNA-E-8</b>	C9200CX Cisco DNA Essentials Term 8-port
<b>C9200CX-DNAE-8-3Y</b>	C9200CX Cisco DNA Essentials, 8-port, 3 Year Term license
<b>C9200CX-DNAE-8-5Y</b>	C9200CX Cisco DNA Essentials, 8-port, 5 Year Term license
<b>C9200CX-DNAE-8-7Y</b>	C9200CX Cisco DNA Essentials, 8-port, 7 Year Term license
<b>C9200CX-DNA-A-8</b>	C9200CX Cisco DNA Advantage Term 8-port
<b>C9200CX-DNAA-8-3Y</b>	C9200CX Cisco DNA Advantage, 8-port, 3 Year Term license
<b>C9200CX-DNAA-8-5Y</b>	C9200CX Cisco DNA Advantage, 8-port, 5 Year Term license
<b>C9200CX-DNAA-8-7Y</b>	C9200CX Cisco DNA Advantage, 8-port, 7 Year Term license
<b>C9200CX-DNA-E-12</b>	C9200CX Cisco DNA Essentials Term 12-port
<b>C9200CX-DNAE-12-3Y</b>	C9200CX Cisco DNA Essentials, 12-port, 3 Year Term license

## C9200CX models software licenses

Product Number	Product Description
<b>C9200CX-DNAE-12-5Y</b>	C9200CX Cisco DNA Essentials, 12-port, 5 Year Term license
<b>C9200CX-DNAE-12-7Y</b>	C9200CX Cisco DNA Essentials, 12-port, 7 Year Term license
<b>C9200CX-DNA-A-12</b>	C9200CX Cisco DNA Advantage Term 12-port
<b>C9200CX-DNAA-12-3Y</b>	C9200CX Cisco DNA Advantage, 12-port, 3 Year Term license
<b>C9200CX-DNAA-12-5Y</b>	C9200CX Cisco DNA Advantage, 12-port, 5 Year Term license
<b>C9200CX-DNAA-12-7Y</b>	C9200CX Cisco DNA Advantage, 12-port, 7 Year Term license
<b>C9200CX-LIC=</b>	Electronic Cisco DNA Upgrade License for C9200CX switches. Note: when upgrading from Cisco DNA Essentials to Cisco DNA Advantage, Network Essentials is upgraded to Network Advantage
<b>C9200CX-8-E-A</b>	C9200CX 8-port NW and DNA Essentials to NW and DNA Advantage Upgrade
<b>C9200CX-8-E-A-3</b>	C9200CX 8-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 3Y
<b>C9200CX-8-E-A-5</b>	C9200CX 8-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 5Y
<b>C9200CX-8-E-A-7</b>	C9200CX 8-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y
<b>C9200CX-12-E-A</b>	C9200CX 12-port NW and DNA Essentials to NW and DNA Advantage Upgrade
<b>C9200CX-12-E-A-3</b>	C9200CX 12-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 3Y
<b>C9200CX-12-E-A-5</b>	C9200CX 12-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 5Y
<b>C9200CX-12-E-A-7</b>	C9200CX 12-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y

## Stacking Cables

**Table 30.** StackWise Cable Ordering information

### StackWise-80 and StackWise-160 Kit and cables

Product number	Product description
<b>C9200-STACK-KIT=</b>	C9200 Stack Kit Spare
<b>C9200L-STACK-KIT=</b>	C9200L Stack Kit Spare
<b>STACK-T4-50CM</b>	50CM Type 3 Stacking Cable
<b>STACK-T4-50CM=</b>	50CM Type 3 Stacking Cable, spare
<b>STACK-T4-1M</b>	1M Type 3 Stacking Cable
<b>STACK-T4-1M=</b>	1M Type 3 Stacking Cable, spare

## StackWise-80 and StackWise-160 Kit and cables

Product number	Product description
STACK-T4-3M	3M Type 3 Stacking Cable
STACK-T4-3M=	3M Type 3 Stacking Cable, spare

## Power supplies

Table 31. Power Supply Ordering information

Power supplies	
Product Number	Product Description
PWR-C5-125WAC (=)	125W AC Config 5 Power Supply
PWR-C5-125WAC/2	125W AC Config 5 Power Supply - Secondary Power Supply
PWR-C5-600WAC (=)	600W AC Config 5 Power Supply
PWR-C5-600WAC/2	600W AC Config 5 Power Supply - Secondary Power Supply
PWR-C5-1KWAC (=)	1KW AC Config 5 Power Supply
PWR-C5-1KWAC/2	1KW AC Config 5 Power Supply - Secondary Power Supply
PWR-C6-125WAC (=)	125W AC Config 6 Power Supply
PWR-C6-125WAC/2	125W AC Config 6 Power Supply - Secondary Power Supply
PWR-C6-600WAC (=)	600W AC Config 6 Power Supply
PWR-C6-600WAC/2	600W AC Config 6 Power Supply - Secondary Power Supply
PWR-C6-1KWAC (=)	1KW AC Config 6 Power Supply
PWR-C6-1KWAC/2	1KW AC Config 6 Power Supply - Secondary Power Supply
PWR-C5-BLANK=	Blank Module
PWR-ADPT	AC-DC power adapter for the C9200CX-12T-2X2G compact switch (80W)
C9K-80W-ADPT	AC-DC slim power adapter for the C9200CX-12T-2X2G compact switch (80W)
C9K-ADPT-DC	DC-DC power adapter for the C9200CX-12T-2X2G compact switch (80W)
C9K-ADPT-BRKT-12T	Power adaptor bracket for C9200CX-12T-2X2G
C9K-CMPCT-PWR-CLP	Power clip for the C9200CX compact switches (not compatible with HVDC SKUs)

**Table 32.** Spare power cords Ordering information

Spare power cords	
Product Number	Product Description
CAB-TA-NA=	AC power cord for Cisco Catalyst (North America)
CAB-TA-AP=	AC power cord for Cisco Catalyst (Australia)
CAB-TA-AR=	AC power cord for Cisco Catalyst (Argentina)
CAB-TA-SW=	AC power cord for Cisco Catalyst (Switzerland)
CAB-TA-UK=	AC power cord for Cisco Catalyst (United Kingdom)
CAB-TA-JP=	AC power cord for Cisco Catalyst (Japan)
CAB-TA-250V-JP=	Japan 250VAC power cord for Cisco Catalyst (Japan)
CAB-TA-125V-JP=	Japan 125V AC Type A Power Cable (Japan – 48 port only)
CAB-TA-EU=	AC power cord for Cisco Catalyst (Europe)
CAB-TA-IT=	AC power cord for Cisco Catalyst (Italy)
CAB-TA-IN=	AC power cord for Cisco Catalyst (India)
CAB-TA-CN=	AC power cord for Cisco Catalyst (China)
CAB-TA-DN=	AC power cord for Cisco Catalyst (Denmark)
CAB-TA-IS=	AC power cord for Cisco Catalyst (Israel)
CAB-ACBZ-12A=	AC power cord for Cisco Catalyst (Brazil), 12A/125V BR-3-20 plug up to 12A
CAB-ACBZ-10A=	AC power cord for Cisco Catalyst (Brazil), 10A/250V BR-3-10 plug up to 10A
CAB-C15-CBN	Cabinet jumper power cord, 250VAC 13A, C14 –C15 connectors

## Mounting Accessories

**Table 33.** Mounting Accessories Ordering information

Product Number	Product Description
ACC-KIT-T1=	Accessory kit with 19 inch Type 1 rack mount
RACK-KIT-T1=	19, 23, 24 inch and ETSI Type 1 rack mount kit
4PT-KIT-T2=	4 Point rack mount kit New
C9K-MGNT-TRAY	Magnet and Mounting Tray for compact switches
C9K-CMPCT-DIN-MNT	DIN Rail Mount for compact switches

Product Number	Product Description
<b>RACKMNT-19-CMPACT</b>	19-Inch Rack Mounting Brackets for compact switches
<b>C9K-CMPCT-CBLE-GRD</b>	Cable guard for compact switches (for C9K-WALL-TRAY)
<b>C9K-WALL-TRAY</b>	Wall mount bracket for compact switches
<b>C9K-CMPCT-DESK-MNT</b>	Under desk mount for compact switches

## Optics online reference

Cisco Catalyst 9200 Series switches support a wide range of optics. Because the list of supported optics is updated on a regular basis, consult the tables available here for the latest SFP+ and SFP compatibility information:

[https://www.cisco.com/en/US/products/hw/modules/ps5455/products\\_device\\_support\\_tables\\_list.html](https://www.cisco.com/en/US/products/hw/modules/ps5455/products_device_support_tables_list.html).

## Cisco Services

### Accelerate your journey to intent-based networking

With Cisco Services, you can achieve infrastructure excellence faster with less risk. Our services for Cisco Catalyst 9200 Series switches provide expert guidance to help you successfully plan, deploy, manage, and support your new switches. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco DNA ready infrastructure. [Learn more](#).

## CSR/Social Responsibility

Information about Cisco's Environmental, Social and Governance (ESG) policies and initiatives can be found in Cisco's [Corporate Social Responsibility](#) (CSR) Report.

## Cisco Capital

### Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. [Learn more](#).



## Document history

New or revised topic	Described In	Date
Added new Catalyst 9200CX mGig and HVDC SKUs	Various locations	Feb 6, 2023
Added new Catalyst 9200CX models, Cloud Monitoring for Catalyst support	Various locations	June 14, 2022
Added New C9200/L partial PoE Information	Table <a href="#">1</a> , <a href="#">3</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">12</a> , <a href="#">14</a> , <a href="#">16</a> , <a href="#">19</a>	September 22, 2020
Added correct images for module uplinks	<a href="#">Network Modules</a>	February 21, 2020
Added New C9200 mGig and C9200 32 VN information	Table <a href="#">1</a> , <a href="#">3</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">12</a> , <a href="#">19</a>	January 28, 2020
Added New C9200 Network Modules	Table <a href="#">2</a> , <a href="#">19</a>	January 28, 2020
Added New Power Supply information PWR-C6-600WAC	Table <a href="#">3</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">19</a>	October 09, 2019
Forwarding rate with Stacking	<a href="#">Table 8</a>	October 09, 2019
Cloud Security Information	General Information	October 09, 2019
Adding C9200L mGig SKUs	Table <a href="#">1</a> , <a href="#">3</a> , <a href="#">8</a> , <a href="#">12</a> , <a href="#">16</a>	May 14, 2019
Revisions of Weight, addition of LIC upgrade and other minor edits	<a href="#">Software licenses table and weights table</a>	April 01, 2019
Revised Table of Contents Headings	<a href="#">Specifications (was “Dimensions, eight, acoustic, mean time between failures”). added Document History</a>	January 03, 2019

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# Cisco Catalyst 9120AX Series Access Points

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The Cisco Catalyst 9120AX Series Access Points are the next generation of enterprise access points. They are resilient, secure, and intelligent.



We are more dependent on our wireless networks than ever before. Additional devices connect to the network every year, and the Cisco Catalyst 9120AX Series Access Points will provide a seamless experience anywhere for everyone. Going beyond the Wi-Fi 6 (802.11ax) standard, the 9120AX Series provides integrated security, resiliency, and operational flexibility as well as increased network intelligence.

Extending Cisco’s intent-based network and perfect for networks of all sizes, the Cisco Catalyst 9120AX Series scales to the growing demands of IoT while fully supporting the latest innovations and new technologies. Not only that, but the 9120AX Series is a leader in performance, security, and analytics.

The Cisco Catalyst 9120AX Series Access Points, paired with Cisco DNA, are enterprise-class products that will address your current and future needs. These access points are the first step in updating your network so that you can take better advantage of all of the features and benefits that Wi-Fi 6 provides.

**Table 1.** Features and benefits

Feature	Benefits
<b>Wi-Fi 6 (802.11ax)</b>	The IEEE 802.11ax emerging standard, also known as High-Efficiency-Wireless (HEW) or Wi-Fi 6, builds on 802.11ac. It delivers a better experience in typical environments with more predictable performance for advanced applications such as 4K or 8K video, high-density, high-definition collaboration apps, all-wireless offices, and IoT. Wi-Fi 6 is designed to use both the 2.4-GHz and 5-GHz bands, unlike the 802.11ac standard.
<b>Cisco RF ASIC</b>	Cisco RF ASIC is a fully integrated Software-Defined Radio (SDR) that can perform advanced RF spectrum analysis and delivers features like Cisco CleanAir, Wireless Intrusion Prevention System (wIPS), Fast Locate*, and DFS detection.  (*Future)
<b>Uplink/downlink OFDMA</b>	Orthogonal Frequency-Division Multiple Access (OFDMA)-based scheduling splits the bandwidth into smaller chunks called Resource Units (RUs), which can be allocated to individual clients in both the downlink and uplink directions to reduce overhead and latency.
<b>MU-MIMO technology</b>	Supporting four spatial streams, Multiuser Multiple Input, Multiple Output (MU-MIMO) enables access points to split spatial streams between client devices, to maximize throughput.
<b>BSS coloring</b>	Spatial reuse (also known as Basic Service Set [BSS] coloring) allows the access points and their clients to differentiate between BSSs, thus permitting more simultaneous transmissions.

Feature	Benefits
<b>Target wake time</b>	A new power savings mode called Target Wake Time (TWT) allows the client to stay asleep and to wake up only at prescheduled (target) times to exchange data with the access point. This offers significant energy savings for battery-operated devices, up to three to four times greater compared to 802.11n and 802.11ac.
<b>Intelligent Capture</b>	Intelligent Capture probes the network and provides Cisco DNA Center with deep analysis. The software can track over 240 anomalies and instantaneously review all packets on demand, emulating the onsite network administrator. Intelligent Capture allows for more informed decisions on your wireless networks.
<b>Flexible Radio Assignment</b>	Allows the access points to intelligently determine the operating mode of serving radios based on the RF environment. The access points can operate in the following modes: <ul style="list-style-type: none"> <li>• 2.4-GHz and 5-GHz mode: One radio will serve clients in 2.4-GHz mode, while the other serves clients in 5-GHz mode.</li> <li>• Dual 5-GHz mode: Both radios inside the access point operate on the 5-GHz band, maximizing the benefits of Wi-Fi 6 and increasing client device capacity.</li> </ul>
<b>Dual 5-GHz radio support</b>	Enables both radios to operate in 5-GHz client serving mode, allowing an industry-leading 5.2 Gbps (2 x 2.6 Gbps) over-the-air speeds while increasing client capacity.
<b>Smart antenna connector</b>	An intelligent second physical antenna connector is included on 9120AX Series access points with an external antenna. This connector provides advanced network design flexibility for high-density and large open-area environments such as auditoriums, convention centers, libraries, cafeterias, and arenas/stadiums, allowing two sets of antennas to be connected and active on a single access point.
<b>Cisco Embedded Wireless Controller</b>	The 9120AX Series Wi-Fi 6 access points is available with a built-in controller. The Cisco Embedded Wireless Controller on Catalyst 9100 Access Points provides an easy-to-deploy and manage option that does not require a physical appliance. The control resides on the access point so there is no added footprint or complexity. And, because it uses Cisco Catalyst 9800 Series code, it's easy to migrate your network as your needs grow. For more details refer to the <a href="#">EWC data sheet</a> .
<b>Application Hosting on Catalyst 9100 Access</b>	Application Hosting on Catalyst 9100 Access Points helps future-proof and simplify IoT deployments by eliminating the need to install and manage overlay networks. Utilizing the USB interface, containerized applications and hardware modules can be deployed to reduce cost and complexity. Adding Cisco DNA Center provides workflows and deployment-wide application lifecycle management.
<b>Multigigabit Ethernet support</b>	Provides uplink speeds of 2.5 Gbps, in addition to 100 Mbps and 1 Gbps. All speeds are supported on Category 5e cabling for an industry first, as well as 10GBASE-T (IEEE 802.3bz) cabling.
<b>Bluetooth radio</b>	Integrated Bluetooth Low Energy 5 radio to enable IoT use cases such as location tracking and wayfinding.
<b>Container support for applications</b>	Enables edge computing capabilities for IoT applications on the host access point.

Feature	Benefits
<b>Apple features</b>	<p>Apple and Cisco have partnered to create an optimal mobile experience for iOS devices on corporate networks based on Cisco technologies. Using new features in iOS 10, in combination with the latest software and hardware from Cisco, businesses can now more effectively use their network infrastructure to deliver an enhanced user experience across all business applications.</p> <p>At the center of the collaboration is a unique handshake between the Cisco WLAN and Apple devices. This handshake enables the Cisco WLAN to provide an optimal Wi-Fi roaming experience to Apple devices. Additionally, the Cisco WLAN trusts Apple devices and gives priority treatment for business-critical applications specified by the Apple device. This feature is also known as Fast Lane.</p>

For more details about Wi-Fi 6, see [Cisco's technical white paper](#) on Wi-Fi 6.

For more details about C9120 feature support, see [Cisco's Feature Matrix](#).

## Secure infrastructure

**Trustworthy systems built with Cisco Trust Anchor Technologies** provide a highly secure foundation for Cisco products. With the Cisco Catalyst 9100 Access Points, these technologies enable hardware and software authenticity assurance for supply chain trust and strong mitigation against man-in-the-middle attacks that compromise software and firmware. Trust Anchor capabilities include:

- **Image signing**
- **Secure Boot**
- **Cisco Trust Anchor module**

## Cisco DNA Software support

Pairing the Cisco Catalyst 9120AX Series Access Points with Cisco DNA Software allows for a total network transformation. Cisco DNA Software allows you to truly understand your network with real-time analytics, quickly detect and contain security threats, and easily provide networkwide consistency through automation and virtualization. The 9120AX Series supports Software-Defined Access (SD-Access), Cisco's leading enterprise architecture.

Working together, the Cisco Catalyst 9120AX Series and Cisco DNA Software offer such features as:

- Cisco Spaces
- Cisco Identity Services Engine
- Cisco DNA Analytics and Assurance

The result? Your network stays relevant, becomes digital ready, and is the lifeblood of your organization.

**Note:** For information about Cisco DNA Software, refer to [Cisco DNA Software for Wireless](#).

## Product specifications

**Table 2.** Specifications

Item	Specification
<b>Part numbers</b>	<p><b>Cisco Catalyst 9120AXI Access Point: Indoor environments, with internal antennas</b></p> <ul style="list-style-type: none"> <li>• C9120AXI-x: Cisco Catalyst 9120AX Series</li> </ul> <p><b>Cisco Catalyst 9120AXE Access Point: Indoor, challenging environments, with external antennas</b></p> <ul style="list-style-type: none"> <li>• C9120AXE-x: Cisco Catalyst 9120AX Series</li> </ul> <p><b>Cisco Catalyst 9120AXP Access Point: Indoor, professional installations</b></p> <ul style="list-style-type: none"> <li>• C9120AXP-x: Cisco Catalyst 9120AX Series</li> </ul> <p><b>Cisco Catalyst 9120AXI Access Point: Indoor environments, with internal antennas, with embedded wireless controller</b></p> <ul style="list-style-type: none"> <li>• C9120AXI-EWC-x: Cisco Catalyst 9120AX Series</li> </ul> <p><b>Cisco Catalyst 9120AXE Access Point: Indoor, challenging environments, with external antennas, with embedded wireless controller</b></p> <ul style="list-style-type: none"> <li>• C9120AXE-EWC-x: Cisco Catalyst 9120AX Series</li> </ul> <p><b>Cisco Catalyst 9120AXP Access Point: Indoor, professional installations, with embedded wireless controller</b></p> <ul style="list-style-type: none"> <li>• C9120AXP-EWC-x: Cisco Catalyst 9120AX Series</li> </ul> <p><b>Regulatory domains: (x = regulatory domain)</b></p> <p>Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit <a href="https://www.cisco.com/go/aironet/compliance">https://www.cisco.com/go/aironet/compliance</a>.</p> <p>Not all regulatory domains have been approved. As they are approved, the part numbers will be available on the Global Price List.</p> <p><b>Cisco Wireless LAN Services</b></p> <ul style="list-style-type: none"> <li>• AS-WLAN-CNSLT: <a href="#">Cisco Wireless LAN Network Planning and Design Service</a></li> <li>• AS-WLAN-CNSLT: <a href="#">Cisco Wireless LAN 802.11n Migration Service</a></li> <li>• AS-WLAN-CNSLT: <a href="#">Cisco Wireless LAN Performance and Security Assessment Service</a></li> </ul>
<b>Software</b>	<ul style="list-style-type: none"> <li>• Cisco Unified Wireless Network Software Release 8.9.x or later</li> <li>• Cisco IOS XE Software Release 16.11 with AP Device Pack, or later</li> </ul>
<b>Supported wireless LAN controllers</b>	<ul style="list-style-type: none"> <li>• Cisco Catalyst 9800 Series Wireless Controllers</li> <li>• Cisco 3500, 5520, and 8540 Series Wireless Controllers and Cisco Virtual Wireless Controller</li> </ul>
<b>802.11n version 2.0 (and related) capabilities</b>	<ul style="list-style-type: none"> <li>• 4x4 MIMO with four spatial streams</li> <li>• Maximal Ratio Combining (MRC)</li> <li>• 802.11n and 802.11a/g beamforming</li> <li>• 20- and 40-MHz channels</li> <li>• PHY data rates up to 890 Mbps (40 MHz with 5 GHz and 20 MHz with 2.4 GHz)</li> <li>• Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive)</li> <li>• 802.11 Dynamic Frequency Selection (DFS)</li> <li>• Cyclic Shift Diversity (CSD) support</li> </ul>

Item	Specification
<b>802.11ac</b>	<ul style="list-style-type: none"> <li>• 4x4 downlink MU-MIMO with four spatial streams</li> <li>• MRC</li> <li>• 802.11ac beamforming</li> <li>• 20-, 40-, 80-, and 160-MHz channels</li> <li>• PHY data rates up to 3.47 Gbps (160 MHz with 5 GHz)</li> <li>• Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive)</li> <li>• 802.11 DFS</li> <li>• CSD support</li> </ul>
<b>802.11ax</b>	<ul style="list-style-type: none"> <li>• 4x4 downlink MU-MIMO with four spatial streams</li> <li>• Uplink/downlink OFDMA</li> <li>• TWT</li> <li>• BSS coloring</li> <li>• MRC</li> <li>• 802.11ax beamforming</li> <li>• 20-, 40-, 80-, and 160-MHz channels</li> <li>• PHY data rates up to 5.38 Gbps (160 MHz with 5 GHz and 20 MHz with 2.4 GHz)</li> <li>• Packet aggregation: A-MPDU (transmit and receive), A-MSDU (transmit and receive)</li> <li>• 802.11 DFS</li> <li>• CSD support</li> </ul>
<b>Integrated antenna</b>	<p>Flexible radio (either on 2.4 GHz or on 5 GHz)</p> <ul style="list-style-type: none"> <li>• 2.4 GHz, peak gain 4 dBi, internal antenna, omnidirectional in azimuth</li> <li>• 5 GHz, peak gain 5 dBi, internal antenna, omnidirectional in azimuth</li> </ul> <p>Dedicated 5-GHz radio</p> <ul style="list-style-type: none"> <li>• 5 GHz, peak gain 5 dBi, internal antenna, omnidirectional in azimuth</li> </ul>
<b>External antenna (sold separately)</b>	<ul style="list-style-type: none"> <li>• Cisco Catalyst 9120AXE Access Points are certified for use with antenna gains up to 6 dBi (2.4 GHz and 5 GHz)</li> <li>• Cisco Catalyst 9120AXP Access Points) are certified for use with antenna gains up to 13 dBi (2.4 GHz and 5 GHz) with the AIR-ANT2513P4M-N= antenna</li> <li>• Cisco offers the industry's broadest selection of <a href="#">antennas</a>, delivering optimal coverage for a variety of deployment scenarios</li> <li>• Supports Self-Identifiable Antennas (SIA) on one RP-TNC port</li> <li>• For more details, see the <a href="#">Catalyst 9120AX Series Deployment Guide</a>.</li> </ul>
<b>Smart antenna connector</b>	<ul style="list-style-type: none"> <li>• Available on the 9120AXE and 9120AXP only</li> <li>• Compact multi-RF connector with DART interface</li> <li>• Requires the AIR-CAB002-DART-R= 2 ft smart antenna connector when used with antennas with RP-TNC connector</li> <li>• Required when running the flexible radio as either a second 5-GHz serving radio or a Wireless Security Monitoring radio</li> </ul>
<b>Interfaces</b>	<ul style="list-style-type: none"> <li>• 1x 100, 1000, 2500 Multigigabit Ethernet (RJ-45) - IEEE 802.3bz <ul style="list-style-type: none"> <li>◦ Auto-MDIX support</li> </ul> </li> <li>• Management console port (RJ-45)</li> <li>• USB 2.0 @ 4.5W</li> </ul>
<b>Indicators</b>	<ul style="list-style-type: none"> <li>• Status LED indicates boot loader status, association status, operating status, boot loader warnings, and boot loader errors</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>• Access point (without mounting brackets): C9120AXI: 8.5 x 8.5 x 1.7" (21.6 x 21.6 x 4.3 cm), C9120AXE and</li> </ul>



Item	Specification					
(W x L x H)	C9120AXP: 8.5 x 8.05 x 2.0" (21.6 x 21.6 x 5.1 cm)					
Weight	<b>Cisco Catalyst 9120AXI</b> <ul style="list-style-type: none"> <li>• 2.87 lb (1.3 kg)</li> </ul> <b>Cisco Catalyst 9120AXE/P</b> <ul style="list-style-type: none"> <li>• 3 lb (1.36 kg)</li> </ul>					
Input power requirements	<ul style="list-style-type: none"> <li>• 802.3at Power over Ethernet Plus (PoE+), 802.3bt Cisco Universal PoE (Cisco UPOE+, Cisco UPOE)</li> <li>• 802.3af PoE</li> <li>• Cisco power injector, AIR-PWRINJ6= (Note: This injector supports only 802.3at)</li> <li>• Cisco power injector, AIR-PWRINJ5= (Note: This injector supports only 802.3af)</li> </ul>					
Power draw	<b>Catalyst 9120AXI</b>					
	<b>PoE power consumption</b>	<b>2.4-GHz radio</b>	<b>5-GHz radio</b>	<b>Link speed</b>	<b>USB</b>	<b>LLDP</b>
	802.3at (PoE+)	4x4	4x4	2.5G	Y	25.5W
	<b>Catalyst 9120AXE, 9120AXP</b>					
	<b>PoE power consumption</b>	<b>2.4-GHz radio</b>	<b>5-GHz radio</b>	<b>Link speed</b>	<b>USB</b>	<b>LLDP</b>
	802.3at (PoE+)	4x4	4x4	2.5G	Y	25.5W
	<b>Catalyst 9120AXI, 9120AXE, 9120AXP</b>					
	<b>PoE power consumption</b>	<b>2.4-GHz radio</b>	<b>5-GHz radio</b>	<b>Link speed</b>	<b>USB</b>	<b>LLDP</b>
	802.3af	PoE	1x1	1x1	1G   N	13.4W
	802.3af	PoE	2x2	N	1G   N	13.4W
802.3af	PoE	N	2x2	1G   N	13.4W	
<b>Note:</b> Power required at the Power Source Equipment (PSE) will depend on the cable length and other environmental issues						

Item	Specification	
<b>Environmental</b>	<p><b>Cisco Catalyst 9120AXI</b></p> <ul style="list-style-type: none"> <li>• Nonoperating (storage) temperature: -22° to 158°F (-30° to 70° C)</li> <li>• Nonoperating (storage) altitude test: 25°C, 15,000 ft.</li> <li>• Operating temperature: 32° to 122°F (0° to 50° C)</li> <li>• Operating humidity: 10% to 90% (noncondensing)</li> <li>• Operating altitude test: 40°C, 9843 ft.</li> </ul> <p><b>Note:</b> When the ambient operating temperature exceeds 40°C, the access point will shift from 4x4 to 2x2 on both the 2.4-GHz and 5-GHz radios, uplink Ethernet will downgrade to 1 Gigabit Ethernet; however, the USB interface will remain enabled</p> <p><b>Cisco Catalyst 9120AXE and 9120AXP</b></p> <ul style="list-style-type: none"> <li>• Nonoperating (storage) temperature: -22° to 158°F (-30° to 70° C)</li> <li>• Nonoperating (storage) altitude test: 25°C, 15,000 ft.</li> <li>• Operating temperature: -4° to 122°F (-20° to 50° C)</li> <li>• Operating humidity: 10% to 90% (noncondensing)</li> <li>• Operating altitude test: 40°C, 9843 ft.</li> </ul>	
<b>System memory</b>	<ul style="list-style-type: none"> <li>• 2048 MB DRAM</li> <li>• 1024 MB flash</li> </ul>	
<b>Warranty</b>	Limited lifetime hardware warranty	
<b>Available transmit power settings</b>	<p><b>2.4 GHz</b></p> <ul style="list-style-type: none"> <li>• 23 dBm (200 mW)</li> <li>• -4dBm(0.39mW)</li> </ul>	<p><b>5 GHz</b></p> <ul style="list-style-type: none"> <li>• 23 dBm (200 mW)</li> <li>• -4dBm (0.39mW)</li> </ul>
<b>Regulatory domains</b>	<p><b>Note:</b> Customers are responsible for verifying approval for use in their individual countries. To verify approval and to identify the regulatory domain that corresponds to a particular country, visit <a href="https://www.cisco.com/go/aironet/compliance">https://www.cisco.com/go/aironet/compliance</a></p> <p>For information about regulatory domain support, refer to the <a href="#">Cisco Regulatory Domain White Paper</a>.</p>	
<b>Compliance standards</b>	<ul style="list-style-type: none"> <li>• <b>Safety:</b> <ul style="list-style-type: none"> <li>◦ IEC 60950-1</li> <li>◦ EN 60950-1</li> <li>◦ UL 60950-1</li> <li>◦ CAN/CSA-C22.2 No. 60950-1</li> <li>◦ AS/NZS 60950-1</li> <li>◦ UL 2043</li> <li>◦ Class III equipment</li> </ul> </li> <li>• <b>Emissions:</b> <ul style="list-style-type: none"> <li>◦ CISPR 32 (rev. 2015)</li> <li>◦ EN 55032 (rev. 2012/AC:2013)</li> <li>◦ EN 55032 (rev. 2015)</li> <li>◦ EN 55035 2010</li> <li>◦ EN61000-3-2 (rev. 2014)</li> <li>◦ EN61000-3-3 (rev. 2013)</li> <li>◦ KN61000-3-2</li> <li>◦ KN61000-3-3</li> <li>◦ AS/NZS CISPR 32 Class B (rev. 2015)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Radio:</b> <ul style="list-style-type: none"> <li>◦ EN 300 328 (v2.1.1)</li> <li>◦ EN 301 893 (v2.1.1)</li> <li>◦ AS/NZS 4268 (rev. 2017)</li> <li>◦ 47 CFR FCC Part 15C, 15.247, 15.407</li> <li>◦ RSP-100</li> <li>◦ RSS-GEN</li> <li>◦ RSS-247</li> <li>◦ China regulations SRRC</li> <li>◦ LP0002 (rev 2018.1.10)</li> <li>◦ Japan Std. 33a, Std. 66, and Std. 71</li> </ul> </li> <li>• <b>RF safety:</b> <ul style="list-style-type: none"> <li>◦ EN 50385 (rev. Aug 2002)</li> <li>◦ ARPANSA</li> <li>◦ AS/NZS 2772 (rev. 2016)</li> <li>◦ EN 62209-1 (rev. 2016)</li> <li>◦ EN 62209-2 (rev. 2010)</li> <li>◦ 47 CFR Part 1.1310 and 2.1091</li> </ul> </li> </ul>

Item	Specification
	<ul style="list-style-type: none"> <li>◦ 47 CFR FCC Part 15B</li> <li>◦ ICES-003 (rev. 2016 Issue 6, Class B)</li> <li>◦ VCCI-CISPR 32:2016</li> <li>◦ VCCI (V3)</li> <li>◦ CNS (rev. 13438)</li> <li>◦ KN-32</li> <li>◦ KN-35</li> <li>◦ KN 301 489-17</li> <li>◦ TCVN 7189 (rev. 2009)</li> </ul> <ul style="list-style-type: none"> <li>• <b>Immunity:</b> <ul style="list-style-type: none"> <li>◦ CISPR 24 (rev. 2010)</li> <li>◦ EN 55024/EN 55035 (rev. 2010)</li> </ul> </li> <li>• <b>Emissions and immunity:</b> <ul style="list-style-type: none"> <li>◦ EN 301 489-1 (v2.1.1 2017-02)</li> <li>◦ EN 301 489-17 (v3.1.1 2017-02)</li> <li>◦ QCVN (18:2014)</li> <li>◦ KN 489-1</li> <li>◦ KN 489-17</li> <li>◦ EN 60601 (1-1:2015)</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>◦ RSS-102</li> </ul> <ul style="list-style-type: none"> <li>• <b>IEEE standards:</b> <ul style="list-style-type: none"> <li>◦ IEEE 802.3</li> <li>◦ IEEE 802.3ab</li> <li>◦ IEEE 802.3af/at</li> <li>◦ IEEE 802.11 a/b/g/n/ac/ax</li> <li>◦ IEEE 802.11h, 802.11d</li> </ul> </li> <li>• <b>Security:</b> <ul style="list-style-type: none"> <li>◦ 802.11i, Wi-Fi Protected Access 3 (WPA3), WPA2, WPA</li> <li>◦ 802.1X</li> <li>◦ Advanced Encryption Standard (AES)</li> </ul> </li> <li>• <b>Extensible Authentication Protocol (EAP) types:</b> <ul style="list-style-type: none"> <li>◦ EAP-Transport Layer Security (TLS)</li> <li>◦ EAP-Tunneled TLS (TTLS) or Microsoft Challenge Handshake Authentication Protocol Version 2 (MSCHAPv2)</li> <li>◦ Protected EAP (PEAP) v0 or EAP-MSCHAPv2</li> <li>◦ EAP-Flexible Authentication via Secure Tunneling (EAP-FAST)</li> <li>◦ PEAP v1 or EAP-Generic Token Card (GTC)</li> <li>◦ EAP-Subscriber Identity Module (SIM)</li> </ul> </li> </ul>

**Data rate, transmit power, receive sensitivity**

For more detailed information about data rate, transmit power, and receive sensitivity, please refer to the [Cisco RF details](#).

Transmit power and receive sensitivity							
	Spatial streams	5-GHz radio		2.4-GHz flexible radio		5-GHz flexible radio	
		Total transmit power (dBm)	Receive sensitivity (dBm)	Total transmit power (dBm)	Receive sensitivity (dBm)	Total transmit power (dBm)	Receive sensitivity (dBm)
<b>802.11/11b</b>							
<b>1 Mbps</b>	1	-	-	23	-98	-	-
<b>11 Mbps</b>	1	-	-	23	-90	-	-
<b>802.11a/g</b>							
<b>6 Mbps</b>	1	23	-100	23	-100	23	-100
<b>24 Mbps</b>	1	23	-92	23	-92	23	-92
<b>54 Mbps</b>	1	23	-83	23	-83	23	-83

Item	Specification						
<b>802.11n HT20</b>							
MCS0	1	23	-100	23	-100	23	-100
MCS4	1	23	-88	23	-88	23	-89
MCS7	1	23	-81	23	-81	23	-81
MCS8	2	23	-97	23	-97	23	-97
MCS12	2	23	-85	23	-85	23	-85
MCS15	2	23	-78	23	-78	23	-78
MCS16	3	23	-95	23	-95	23	-96
MCS20	3	23	-83	23	-83	23	-83
MCS23	3	23	-76	23	-76	23	-76
MCS24	4	23	-94	23	-94	23	-94
MCS28	4	23	-82	23	-82	23	-82
MCS31	4	23	-74	23	-74	23	-75
<b>802.11n HT40</b>							
MCS0	1	23	-97	-	-	23	-97
MCS4	1	23	-85	-	-	23	-86
MCS7	1	23	-78	-	-	23	-79
MCS8	2	23	-94	-	-	23	-94
MCS12	2	23	-82	-	-	23	-82
MCS15	2	23	-75	-	-	23	-75
MCS16	3	23	-92	-	-	23	-93
MCS20	3	23	-80	-	-	23	-81
MCS23	3	23	-73	-	-	23	-73
MCS24	4	23	-91	-	-	23	-91
MCS28	4	23	-79	-	-	23	-79
MCS31	4	23	-72	-	-	23	-72

Item	Specification						
<b>802.11ac VHT20</b>							
MCS0	1	23	-100	-	-	23	-100
MCS4	1	23	-88	-	-	23	-89
MCS7	1	23	-81	-	-	23	-81
MCS8	1	23	-77	-	-	23	-77
MCS9	1	-	-	-	-	-	-
MCS0	2	23	-97	-	-	23	-97
MCS4	2	23	-85	-	-	23	-85
MCS7	2	23	-78	-	-	23	-78
MCS8	2	23	-73	-	-	23	-74
MCS9	2	-	-	-	-	-	-
MCS0	3	23	-95	-	-	23	-95
MCS4	3	23	-83	-	-	23	-83
MCS7	3	23	-76	-	-	23	-76
MCS8	3	23	-72	-	-	23	-72
MCS9	3	-	-	-	-	-	-
MCS0	4	23	-94	-	-	23	-94
MCS4	4	23	-82	-	-	23	-82
MCS7	4	23	-75	-	-	23	-75
MCS8	4	23	-70	-	-	23	-71
MCS9	4	-	-	-	-	-	-
<b>802.11ac VHT40</b>							
MCS0	1	23	-97	-	-	23	-97
MCS4	1	23	-85	-	-	23	-86
MCS7	1	23	-78	-	-	23	-79
MCS8	1	23	-74	-	-	23	-75
MCS9	1	22	-72	-	-	22	-73

Item	Specification						
MCS0	2	23	-94	-	-	23	-94
MCS4	2	23	-82	-	-	23	-82
MCS7	2	23	-75	-	-	23	-75
MCS8	2	23	-71	-	-	23	-71
MCS9	2	22	-69	-	-	22	-69
MCS0	3	23	-92	-	-	23	-93
MCS4	3	23	-80	-	-	23	-81
MCS7	3	23	-73	-	-	23	-73
MCS8	3	23	-69	-	-	23	-69
MCS9	3	22	-67	-	-	22	-68
MCS0	4	23	-91	-	-	23	-91
MCS4	4	23	-79	-	-	23	-79
MCS7	4	23	-72	-	-	23	-72
MCS8	4	23	-67	-	-	23	-68
MCS9	4	22	-66	-	-	22	-66
<b>802.11ac VHT80</b>							
MCS0	1	23	-94	-	-	23	-94
MCS4	1	23	-82	-	-	23	-83
MCS7	1	23	-75	-	-	23	-75
MCS8	1	23	-71	-	-	23	-71
MCS9	1	22	-70	-	-	22	-70
MCS0	2	23	-91	-	-	23	-91
MCS4	2	23	-79	-	-	23	-79
MCS7	2	23	-72	-	-	23	-72
MCS8	2	23	-68	-	-	23	-68
MCS9	2	22	-66	-	-	22	-66
MCS0	3	23	-89	-	-	23	-89

Item	Specification						
MCS4	3	23	-77	-	-	23	-77
MCS7	3	23	-70	-	-	23	-70
MCS8	3	23	-66	-	-	23	-66
MCS9	3	22	-64	-	-	22	-65
MCS0	4	23	-88	-	-	23	-88
MCS4	4	23	-76	-	-	23	-76
MCS7	4	23	-69	-	-	23	-69
MCS8	4	23	-64	-	-	23	-65
MCS9	4	22	-63	-	-	22	-63
<b>802.11ac VHT160</b>							
MCS0	1	23	-87	-	-	23	-88
MCS4	1	23	-76	-	-	23	-77
MCS7	1	23	-69	-	-	23	-70
MCS8	1	23	-66	-	-	23	-66
MCS9	1	22	-64	-	-	22	-64
MCS0	2	23	-82	-	-	23	-82
MCS4	2	23	-70	-	-	23	-71
MCS7	2	23	-63	-	-	23	-64
MCS8	2	23	-60	-	-	23	-60
MCS9	2	22	-58	-	-	22	-58
MCS0	3	23	-84	-	-	23	-84
MCS4	3	23	-72	-	-	23	-72
MCS7	3	23	-65	-	-	23	-65
MCS8	3	23	-61	-	-	23	-61
MCS9	3	-	-	-	-	-	-
MCS0	4	23	-82	-	-	23	-82
MCS4	4	23	-70	-	-	23	-70

Item	Specification						
MCS7	4	23	-63	-	-	23	-63
MCS8	4	23	-59	-	-	23	-59
MCS9	4	22	-58	-	-	22	-58
<b>802.11ax HE20</b>							
MCS0	1	23	-98	23	-98	23	-98
MCS4	1	23	-87	23	-87	23	-87
MCS7	1	23	-81	21	-81	23	-81
MCS8	1	23	-77	21	-77	23	-77
MCS9	1	22	-75	21	-75	22	-76
MCS10	1	20	-72	19	-72	20	-72
MCS11	1	20	-70	19	-70	20	-70
MCS0	2	23	-95	23	-95	23	-96
MCS4	2	23	-85	23	-85	23	-85
MCS7	2	23	-78	21	-78	23	-78
MCS8	2	23	-74	21	-74	23	-75
MCS9	2	22	-73	21	-73	22	-73
MCS10	2	20	-70	19	-70	20	-70
MCS11	2	20	-66	19	-70	20	-67
MCS0	3	23	-95	23	-94	23	-95
MCS4	3	23	-83	23	-83	23	-84
MCS7	3	23	-76	21	-76	23	-76
MCS8	3	23	-73	21	-73	23	-73
MCS9	3	22	-71	21	-71	22	-72
MCS10	3	20	-67	19	-67	20	-68
MCS11	3	20	-64	19	-65	20	-65
MCS0	4	23	-93	23	-93	23	-93
MCS4	4	23	-82	23	-82	23	-82

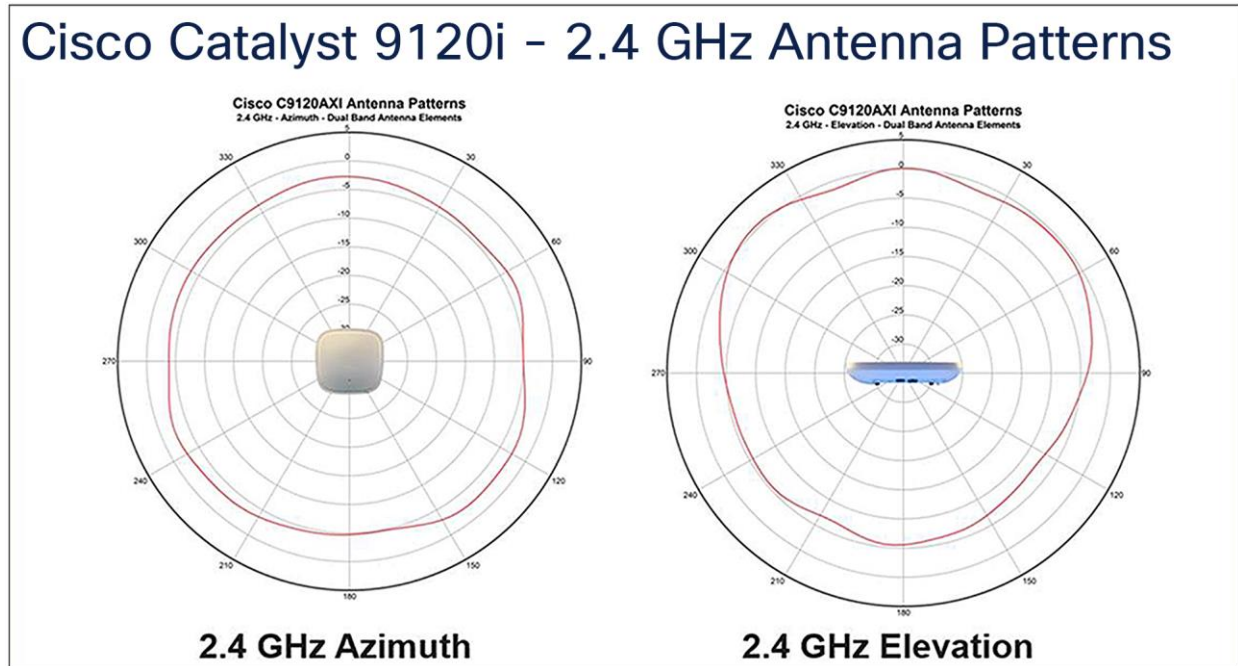


Item	Specification						
MCS7	4	23	-75	21	-75	23	-75
MCS8	4	23	-71	21	-71	23	-71
MCS9	4	22	-69	21	-69	22	-70
MCS10	4	20	-66	19	-67	20	-67
MCS11	4	20	-64	19	-64	20	-64
<b>802.11ax HE40</b>							
MCS0	1	23	-95	-	-	23	-95
MCS4	1	23	-84	-	-	23	-85
MCS7	1	23	-78	-	-	23	-78
MCS8	1	23	-74	-	-	23	-75
MCS9	1	22	-73	-	-	22	-73
MCS10	1	20	-70	-	-	20	-70
MCS11	1	20	-66	-	-	20	-67
MCS0	2	23	-93	-	-	23	-93
MCS4	2	23	-82	-	-	23	-82
MCS7	2	23	-75	-	-	23	-76
MCS8	2	23	-71	-	-	23	-72
MCS9	2	22	-69	-	-	22	-70
MCS10	2	20	-67	-	-	20	-67
MCS11	2	20	-64	-	-	20	-64
MCS0	3	23	-92	-	-	23	-92
MCS4	3	23	-80	-	-	23	-81
MCS7	3	23	-73	-	-	23	-74
MCS8	3	23	-70	-	-	23	-70
MCS9	3	22	-68	-	-	22	-68
MCS10	3	20	-64	-	-	20	-65
MCS11	3	20	-62	-	-	20	-62

Item	Specification						
MCS0	4	23	-90	-	-	23	-90
MCS4	4	23	-79	-	-	23	-79
MCS7	4	23	-72	-	-	23	-72
MCS8	4	23	-68	-	-	23	-69
MCS9	4	22	-66	-	-	22	-67
MCS10	4	20	-63	-	-	20	-63
MCS11	4	20	-60	-	-	20	-60
<b>802.11ax HE80</b>							
MCS0	1	23	-92	-	-	23	-92
MCS4	1	23	-82	-	-	23	-82
MCS7	1	23	-75	-	-	23	-75
MCS8	1	23	-72	-	-	23	-72
MCS9	1	22	-70	-	-	22	-70
MCS10	1	20	-66	-	-	20	-67
MCS11	1	20	-64	-	-	20	-64
MCS0	2	23	-89	-	-	23	-90
MCS4	2	23	-79	-	-	23	-79
MCS7	2	23	-72	-	-	23	-72
MCS8	2	23	-68	-	-	23	-68
MCS9	2	22	-66	-	-	22	-66
MCS10	2	20	-63	-	-	20	-63
MCS11	2	20	-60	-	-	20	-60
MCS0	3	23	-89	-	-	23	-89
MCS4	3	23	-78	-	-	23	-78
MCS7	3	23	-70	-	-	23	-70
MCS8	3	23	-67	-	-	23	-67
MCS9	3	22	-65	-	-	22	-65

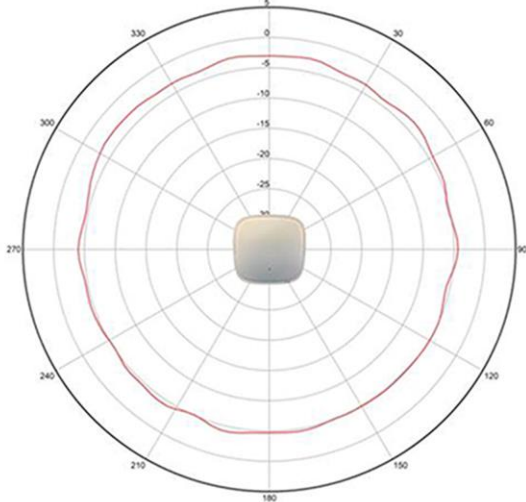
Item	Specification						
MCS10	3	20	-61	-	-	20	-61
MCS11	3	20	-59	-	-	20	-59
MCS0	4	23	-87	-	-	23	-87
MCS4	4	23	-76	-	-	23	-76
MCS7	4	23	-69	-	-	23	-69
MCS8	4	23	-65	-	-	23	-65
MCS9	4	22	-63	-	-	22	-63
MCS10	4	20	-60	-	-	20	-60
MCS11	4	20	-57	-	-	20	-57
<b>802.11ax HE160</b>							
MCS0	1	23	-89	-	-	23	-89
MCS4	1	23	-79	-	-	23	-79
MCS7	1	23	-72	-	-	23	-72
MCS8	1	23	-69	-	-	23	-69
MCS9	1	22	-67	-	-	22	-67
MCS10	1	20	-63	-	-	20	-63
MCS11	1	20	-61	-	-	20	-61
MCS0	2	23	-87	-	-	23	-87
MCS4	2	23	-76	-	-	23	-76
MCS7	2	23	-69	-	-	23	-69
MCS8	2	23	-66	-	-	23	-66
MCS9	2	22	-64	-	-	22	-64
MCS10	2	20	-60	-	-	20	-60
MCS11	2	20	-58	-	-	20	-58
MCS0	3	23	-86	-	-	23	-86
MCS4	3	23	-75	-	-	23	-75
MCS7	3	23	-68	-	-	23	-67

Item	Specification						
MCS8	3	23	-64	-	-	23	-64
MCS9	3	22	-62	-	-	22	-62
MCS10	3	20	-59	-	-	20	-58
MCS11	3	20	-56	-	-	20	-56
MCS0	4	23	-84	-	-	23	-84
MCS4	4	23	-73	-	-	23	-73
MCS7	4	23	-66	-	-	23	-66
MCS8	4	23	-63	-	-	23	-63
MCS9	4	22	-61	-	-	22	-61
MCS10	4	20	-57	-	-	20	-57
MCS11	4	20	-54	-	-	20	-54



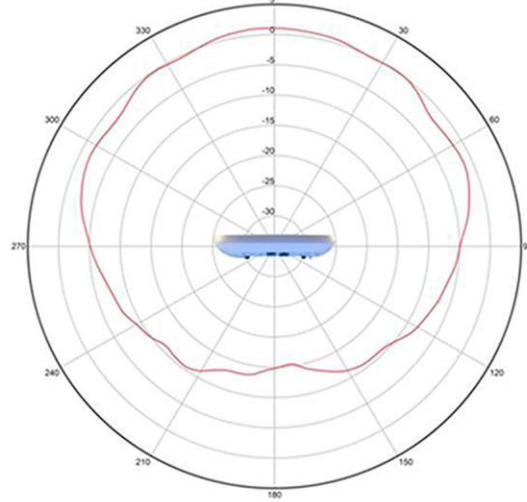
# Cisco Catalyst 9120i - 5 GHz Antenna Patterns

Cisco C9120AXI Antenna Patterns  
5 GHz - Azimuth - Dual Band Antenna Elements



5 GHz Azimuth

Cisco C9120AXI Antenna Patterns  
5 GHz - Elevation - Dual Band Antenna Elements

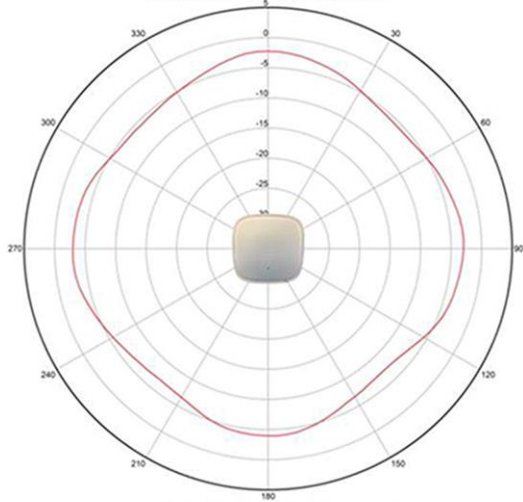


5 GHz Elevation

# Cisco Catalyst 9120i - 5 GHz Antenna Patterns

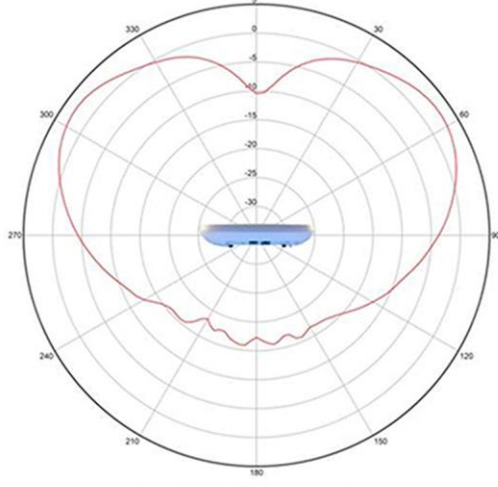
Single Band - Single Radiating Element (SRE) antennas

Cisco C9120AXI Antenna Patterns  
5 GHz - Azimuth - Single Band Antenna Elements



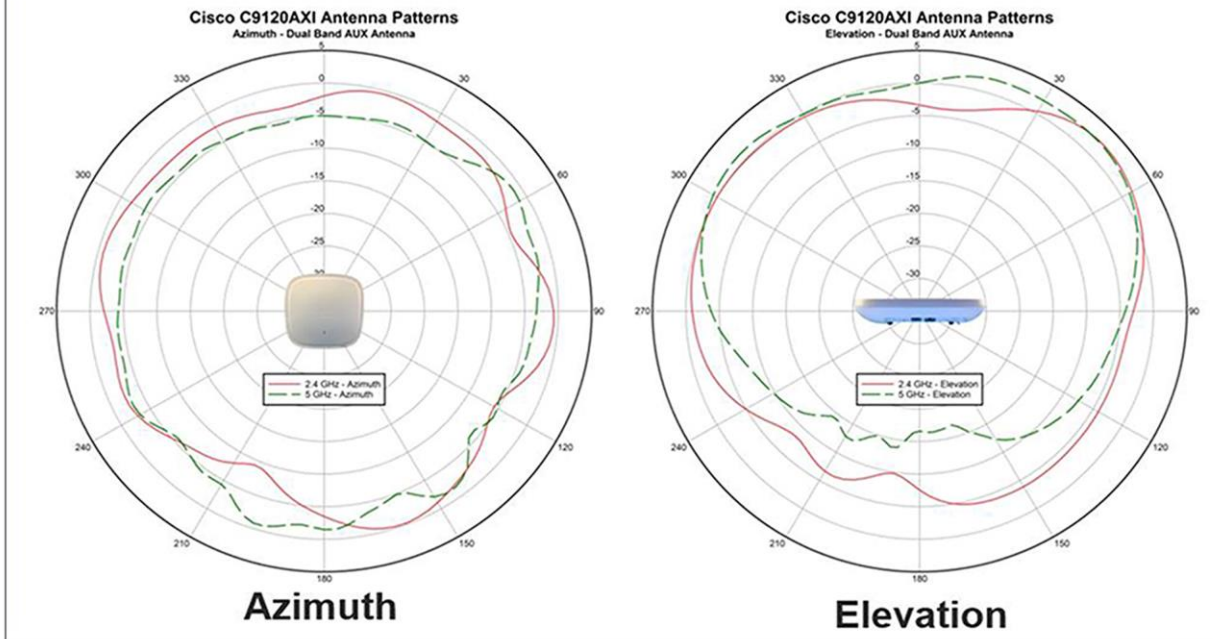
5 GHz Azimuth

Cisco C9120AXI Antenna Patterns  
5 GHz - Elevation - Single Band Antenna Elements

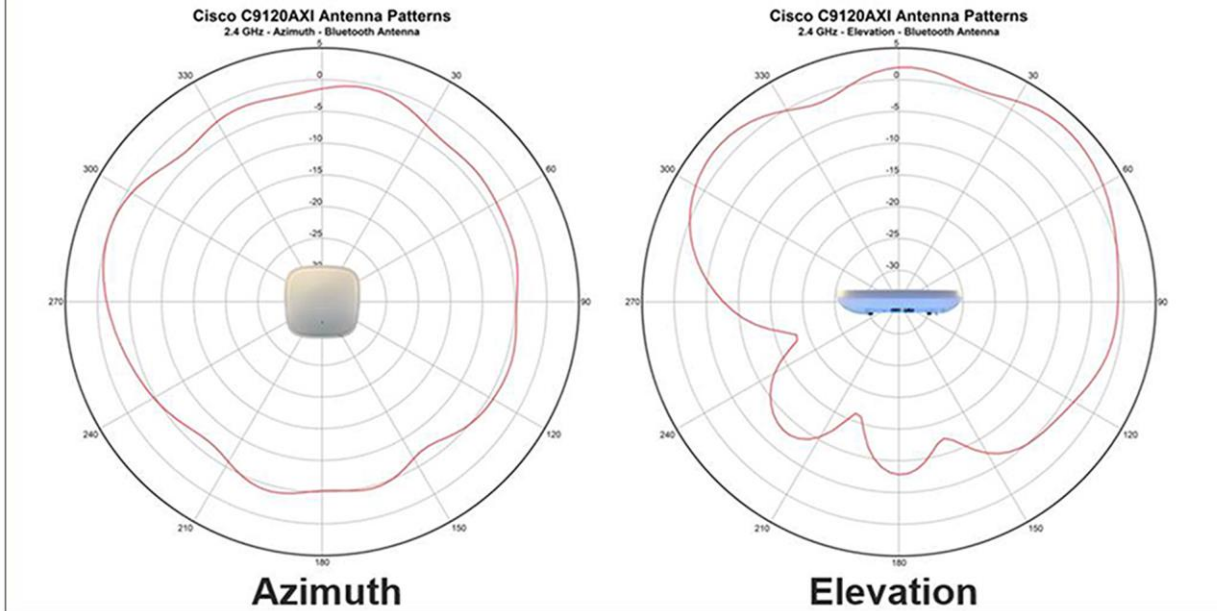


5 GHz Elevation

# Cisco Catalyst 9120i - RF ASIC Antenna



# Cisco Catalyst 9120i - Bluetooth Antenna Patterns



**Figure 1.**  
Antenna radiation patterns

**Note:** For information about feature support, refer to the Cisco Catalyst 9100 Release Notes.

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## Licensing

For information about licensing and packaging, refer to [Cisco DNA](#) Software for Wireless.

## Warranty information

The Cisco Catalyst 9120AX Series Access Points come with a limited lifetime warranty that provides full warranty coverage of the hardware for as long as the original end user continues to own or use the product. The warranty includes 10-day advance hardware replacement and ensures that software media are defect-free for 90 days. For more details, visit <https://www.cisco.com/go/warranty>.

## Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's [Corporate Social Responsibility](#) (CSR) Report.

Reference links to information are below

Information on product material content laws and regulations: [Materials](#).

Information on electronic waste laws and regulations, including products, batteries, and packaging: [WEEE compliance](#).

Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

## Cisco Services

With Cisco Services, you can achieve infrastructure excellence faster with less risk. From an initial WLAN readiness assessment to implementation, full solution support, and in-depth training, our services for the Cisco Catalyst 9120AX Series provide expert guidance to help you successfully plan, deploy, manage, and support your new access points. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco DNA-ready infrastructure.

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## Cisco Capital

### Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. [Learn more](#).

## Smart Account

Creating a Smart Account by using the Cisco Smart Software Manager (SSM) enables you to order devices and licensing packages and also manage your software licenses from a centralized website. For more information on Smart Accounts, refer to <https://www.cisco.com/go/smartaccounts>.



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## Document history

New or Revised Topic	Described In	Date
Cisco DNA Spaces name change	Updated product name to Cisco Spaces	10/18/22

**Americas Headquarters**  
Cisco Systems, Inc.  
San Jose, CA

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
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**Europe Headquarters**  
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The Netherlands

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# Cisco Catalyst 9800-L Wireless Controller

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## Built from the ground up for intent-based networking



**Figure 1.**  
Cisco Catalyst 9800-L

The Cisco Catalyst 9800-L is a fixed wireless controller with seamless software updates for small and midsize enterprises.

Built from the ground up for intent-based networking, the Cisco Catalyst 9800-L brings together Cisco IOS XE Software and Cisco RF excellence to create a best-in-class wireless experience for your evolving and growing organization.

The Cisco Catalyst 9800-L is feature rich and enterprise ready to power your business-critical operations and transform end-user experiences:

- Choose between copper and fiber uplinks. This choice gives you flexibility in your network.
- High availability and seamless software updates, enabled by hot and cold patching, keep your clients and services **always on** in planned and unplanned events.
- **Secure** the air, devices, and users with the Cisco Catalyst 9800-L. The wireless infrastructure becomes the strongest first line of defense, with Encrypted Traffic Analytics (ETA) and Software-Defined Access (SD-Access). The controller comes with built-in security: Secure Boot, runtime defenses, image signing, integrity verification, and hardware authenticity.
- Built on a modular operating system, the controller features open and programmable APIs that enable **automation** of day-0 to day-N network operations. Model-driven streaming telemetry provides deep insights into your **network and client health**.
- Cisco User Defined Network, a feature available in Cisco DNA Center, allows IT to give end users control of their very own wireless network partition on a shared network. End users can then remotely and securely deploy their devices on this network. Perfect for university dormitories or extended hospital stays, Cisco User Defined Network grants both device security and control, allowing each user to choose who can connect to their network.

- The Wi-Fi 6 readiness dashboard is a new dashboard in the Assurance menu of Cisco DNA Center. It will look through the inventory of all devices on the network and verify device, software, and client compatibility with the new Wi-Fi 6 standard. After upgrading, advanced wireless analytics will indicate performance and capacity gains as a result of the Wi-Fi 6 deployment. This is an incredible tool that will help your team define where and how the wireless network should be upgraded. It will also give you insights into the access point distribution by protocol (802.11 ac/n/abg), wireless airtime efficiency by protocol, and granular performance metrics.
- With Cisco In Service Software Upgrade (ISSU), network downtime during a software update or upgrade is a thing of the past. ISSU is a complete image upgrade and update while the network is still running. The software image—or patch—is pushed onto the wireless controller while traffic forwarding continues uninterrupted. All access point and client sessions are retained during the upgrade process. With just a click, your network automatically upgrades to the newest software.

## Product overview

**Table 1.** Key features

Feature	Description
Maximum number of access points	250, 500 (with Performance license)
Maximum number of clients	5000, 10,000 (with Performance license)
Maximum throughput	5 Gbps, 10 Gbps *(with Performance license)
Maximum WLANs	4096
Maximum VLANs	4096
Fixed uplinks	2x 10G/Multigigabit copper or 2x 10G/Multigigabit fiber
Power supply	110W, 12V DC, AC/DC adapter
Maximum power consumption	9800-L-C: 86.9W (with 4.5W USB load) 9800-L-F: 84.5W (assumes 2pc 2.5W SFP and with 4.5W USB load)
Deployment modes	Centralized, Cisco FlexConnect, and fabric
Form factor	1RU; half-width chassis allows side-by-side installation in standard 19-in. rack
License	Smart License enabled
Software	Cisco IOS XE
Management	Cisco DNA Center, Cisco Prime Infrastructure, and third party (open standards APIs)
Interoperability	AireOS-based controllers

Feature	Description
Access points	Cisco Aironet 802.11ac Wave 1 and Wave 2 access points, Cisco Catalyst 9100 802.11ax access points

\*For information on compatibility: [Compatibility Guide](#)

\*\*With 1374 Byte size of packet

### Always on

The Cisco Catalyst 9800-L provides seamless software updates for faster resolution of critical issues, the ability to introduce new access points with zero downtime, and flexible software upgrades. Stateful Switchover (SSO) with active standby and N+1 redundancy keeps your network, services, and clients always on, even in unplanned events.

### Secure

Secure the air, devices, and users with the Cisco Catalyst 9800-L. Wireless infrastructure becomes the strongest first line of defense with Encrypted Traffic Analytics and SD-Access. The controller comes with built-in security: Secure Boot, runtime defenses, image signing, integrity verification, and hardware authenticity. Cisco Advanced Wireless Intrusion Prevention System (aWIPS) is a complete wireless security solution that uses the Cisco Unified Access infrastructure to detect, locate, mitigate, and contain wired and wireless rogues and threats.

### Open and programmable

The Cisco Catalyst 9800-L controller is built on the Cisco IOS XE operating system, which offers a rich set of open standards-based programmable APIs and model-driven telemetry that provide an easy way to automate day-0 to day-N network operations.

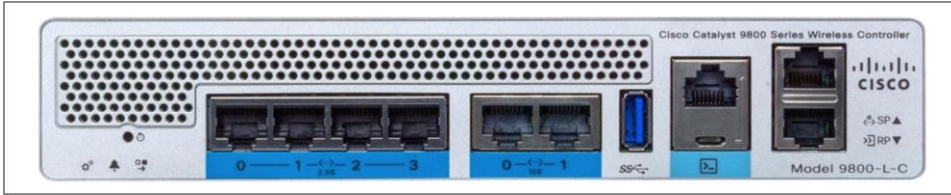
## Platform details

### Physical dimensions

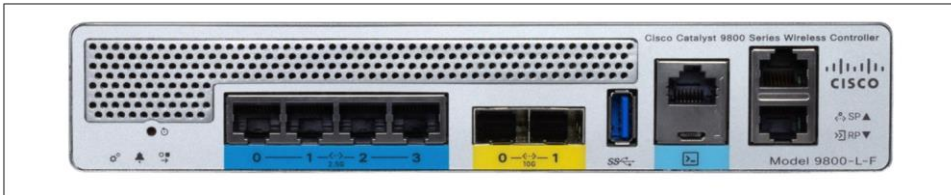
**Table 2.** Physical dimensions

Dimension	Value
Width	8.5 in. (21.59 cm)
Depth	9.06 in. (23.01 cm)
Height	1.58 in. (4.02 cm)
Weight	C9800-L-C: 3.95 lb. (1.79 kg) C9800-L-F: 4.01 lb. (1.82 kg)

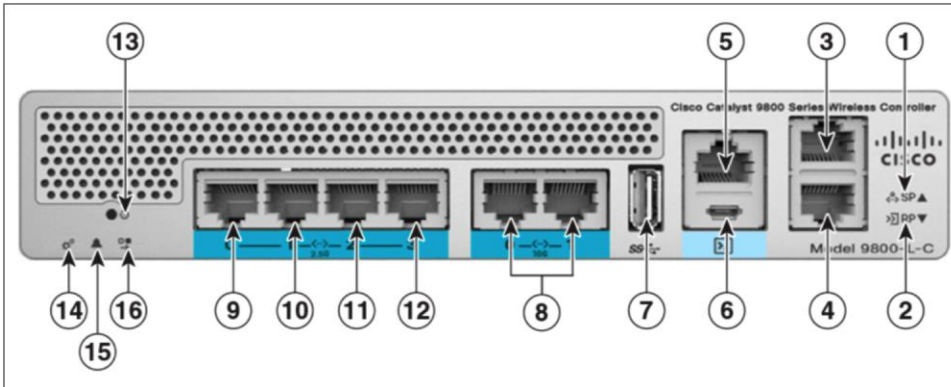
**Front panel**



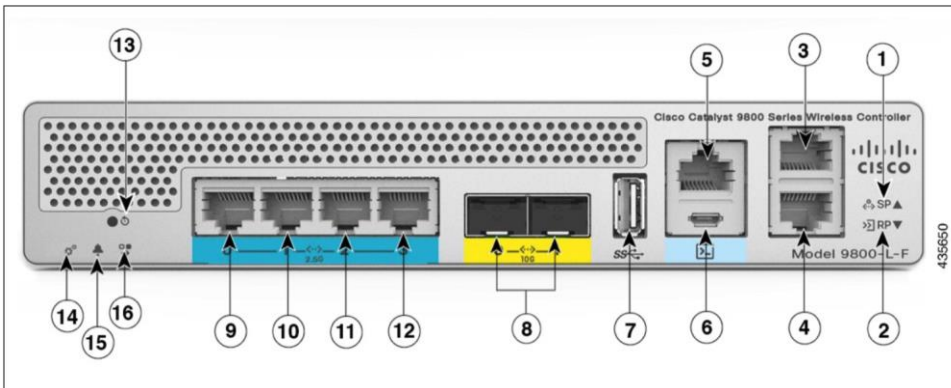
**Figure 2.**  
Cisco Catalyst 9800-L-C front panel



**Figure 3.**  
Cisco Catalyst 9800-L-F front panel



**Figure 4.**  
Cisco Catalyst 9800-L-C front panel with components labeled



**Figure 5.**  
Cisco Catalyst 9800-L-F front panel with components labeled

**Table 3.** Front panel components

Label	Description
1	Service port LED
2	Redundancy port LED
3	Service Port (SP) (RJ-45) for out-of-band management
4	Redundancy port
5	RJ-45 console port
6	Micro-B USB console
7	USB 3.0 port
8	2x 10G/Multigigabit copper (Figure 4) 2x 10G/Multigigabit fiber (Figure 5)
9-12	Quad RJ-45 2.5G/1G Multigigabit Ethernet ports
13	Reset button
14	System LED
15	Alarm LED
16	High availability LED

## Ports

**Table 4.** Ports and their purpose

Port	Description
<b>1x RJ-45 console port</b>	Console port for out-of-band management.
<b>1x Micro USB console port</b>	Console port for out-of-band management.
<b>1x USB 3.0 port</b>	USB 3.0 port for plugging in external memory.
<b>1x RJ-45 management port</b>	Management port used for out-of-band management. Also known as the service port.
<b>1x RJ-45 redundancy port</b>	Redundancy port used for SSO.
<b>4x 2.5G/1G and 2x 10G copper ports</b>	Ports used for sending and receiving traffic between access points and controller, northbound traffic, in-band management traffic, and wireless client traffic. Must be connected to the switch.
<b>4x 2.5G/1G copper and 2x 10G SFP+ fiber ports</b>	Ports used for sending and receiving traffic between access points and controller, northbound traffic, in-band management traffic, and wireless client traffic. Must be connected to the switch.

The four data ports can operate in either 2.5 Gigabit Ethernet or 1 Gigabit Ethernet mode.

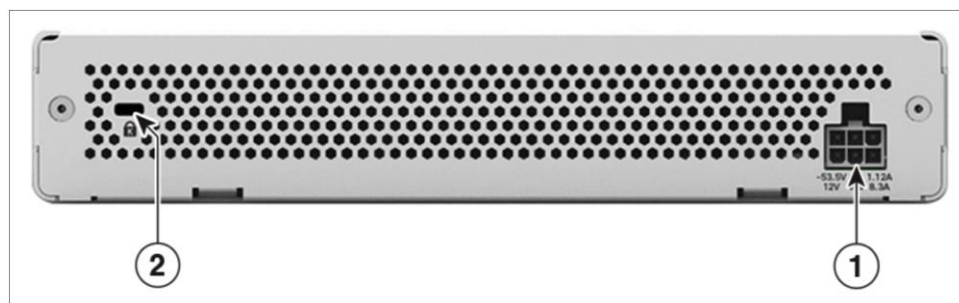
**Note:** 10-Mbps operation is not supported.



## Front LEDs

**Table 5.** Front-panel LEDs and their purpose

LED	Color	Function
<b>Power</b>	Green	Green if all power rails are within spec
<b>System status</b>	Green	On: Cisco IOS XE boot is complete Blinking: Cisco IOS boot in progress
	Red	On: System crash Blinking: Secure Boot failure Off: ROMMON boot
<b>High Availability (HA) port</b>	Green	On: HA active Slow blink: HA standby hot
	Amber	Slow blink: Booted with HA standby cold Fast blink: HA maintenance
<b>Alarm</b>	Green	On: ROMMON boot complete Blinking: System upgrade in progress
	Amber	On: ROMMON boot and SYSTEM bootup Blinking: Temperature error and Secure Boot failure
<b>Network link LED Indicator</b>	Green	Solid green: Link Flashing green: Activity LED off: Link down



**Figure 6.** Rear panel with components labeled

**Table 6.** Rear-panel components

Label	Description
1	Power adapter
2	Kensington lock

## Power

The Cisco Catalyst 9800-L Wireless Controller is powered by a single output 12V DC, 110W 120/240V AC adapter (C9800-AC-110W) that is shipped by default.

## SFPs supported

**Table 7.** SFPs supported

Type	Module supported
<b>SFP supported on the C9800-L-F-K9 Model</b>	GLC-BX-D
	GLC-BX-U
	GLC-SX-MMD
	GLC-ZX-SMD
	GLC-TE
	FINISAR-LR
	FINISAR-SR
	SFP-10G-LR
	SFP-10G-LR-S
	SFP-10G-LRM
	SFP-10G-LR-X
	SFP-10G-SR
	SFP-10G-SR-S
	SFP-10G-SR-X
	SFP-H10GB-CU1M
	SFP-H10GB-CU1.5M
	SFP-H10GB-CU2M
SFP-H10GB-CU2.5M	

Type	Module supported
	SFP-H10GB-CU3M
	SFP-H10GB-CU5M
	SFP-H10GB-ACU7M
	SFP-H10GB-ACU10M
<b>SFP supported on the C9800-L-C-K9 Model</b>	GLC-BX-D
	GLC-BX-U
	GLC-LH-SMD
	GLC-SX-MMD
	GLC-T
	GLC-TE
	GLC-ZX-SMD

## Product benefits

### Cisco IOS XE

The Cisco Catalyst 9800 Series opens a completely new paradigm in network configuration, operation, and monitoring through network automation. Cisco's automation solution is open, standards based, and extensible across the entire lifecycle of a network device. The various mechanisms that bring about network automation are outlined below, based on the device lifecycle.

- **Automated device provisioning:** This is the ability to automate the process of upgrading software images and installing configuration files on Cisco Catalyst access points when they are being deployed in the network for the first time. Cisco provides turnkey solutions with Plug and Play (PnP) capabilities that enable an effortless and automated deployment.
- **API-driven configuration:** Modern wireless controllers such the Cisco Catalyst 9800 Series support a wide range of automation features and provide robust open APIs over NETCONF and RESTCONF using YANG data models for external tools, both off-the-shelf and custom built, to automatically provision network resources.
- **Granular visibility:** Model-driven telemetry provides a mechanism to stream data from a switch to a destination. The data to be streamed is driven through subscription to a data set in a YANG model. The subscribed data set is streamed out to the destination at configured intervals. Additionally, Cisco IOS XE enables the push model, which provides near-real-time monitoring of the network, leading to quick detection and rectification of failures.
- **Seamless software upgrades and patching:** To enhance OS resilience, Cisco IOS XE supports patching, which provides fixes for critical bugs and security vulnerabilities between regular maintenance releases. This support allows customers to add patches without having to wait for the next maintenance release.

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## Security

- **Trustworthy systems:** Cisco Trust Anchor Technologies provide a highly secure foundation for Cisco products. With the Cisco Catalyst 9800 Series, these trustworthy systems enable hardware and software authenticity assurance for supply chain trust and strong mitigation against man-in-the-middle attacks on software and firmware. Trust Anchor capabilities include:
- **Image signing:** Cryptographically signed images provide assurance that the firmware, BIOS, and other software are authentic and unmodified. As the system boots, its software signatures are checked for integrity.
- **Secure Boot:** Cisco Secure Boot technology anchors the boot sequence chain of trust to immutable hardware, mitigating threats against a system's foundational state and the software that is to be loaded, regardless of a user's privilege level. It provides layered protection against the persistence of illicitly modified firmware.
- **Cisco Trust Anchor module:** A tamper-resistant, strong cryptographic, single-chip solution provides hardware authenticity assurance to uniquely identify the product so that its origin can be confirmed to Cisco, providing assurance that the product is genuine.
- **Cisco Wireless Intrusion Prevention System (WIPS):** WIPS offers advanced network security to detect, locate, mitigate, and contain any intrusion or threat on your wireless network. It can monitor and detect wireless network anomalies, unauthorized access, and RF attacks. A new, dedicated classification engine for rogues and aWIPS is built on Cisco DNA Center. A fully integrated stack for the WIPS solution includes Cisco DNA Center, Cisco Catalyst 9800 controller, Wave 2, and Cisco Catalyst 9100 Access Point. This new architecture provides improved detection and security, simplicity, ease of use, and reduced false positive alarms.

## Resiliency and high availability

- **Stateful Switchover (SSO):** Stateful Switchover with an active standby and N+1 redundancy keeps your network, services, and clients always on, even in unplanned events.
- **Software Maintenance Upgrades (SMUs) and hot and cold patching:** Patching allows for a patch to be installed as a bug fix without bringing down the entire network and avoiding the need to requalify an entire software image. The SMU is a package that can be installed on a system to provide a patch fix or security resolution to a released image. SMUs allow you to address the network issue quickly while reducing the time and scope of the testing required. The Cisco IOS XE platform internally validates the SMU compatibility and does not allow you to install incompatible SMUs. All SMUs are integrated into the subsequent Cisco IOS XE Software maintenance releases.
- **Intelligent rolling access point upgrades and seamless multisite upgrades:** The Cisco Catalyst 9800 Series comes with intelligent rolling access point upgrades to simplify network operations. Multisite upgrades can now be done in stages, and access points can be upgraded intelligently without restarting the entire network.
- Standby Monitoring of Cisco Catalyst 9800 Wireless Controllers in HA mode enables monitoring the health of the system on standby controller in an HA pair using programmatic interfaces (NETCONF/YANG, RESTCONF) and CLIs without going through the active controller. **For more details refer technical documentation.**

- 
- **In-Service Software Upgrade (ISSU):** ISSU is a complete image upgrade/update with zero downtime while the network is still on. The software image or a patch is pushed onto the wireless controller while traffic forwarding continues uninterrupted. All access point and client sessions are retained during the upgrade process. With just a click, your network automatically upgrades to the newest software. Your backup 9800 controller receives the new software that is pushed via the active 9800 controller. The backup 9800 controller becomes active and takes over your network, while your previously active 9800 turns into a backup 9800 controller and processes the software upgrade. Using an intelligent RF-based rolling access point upgrade, all access points are upgraded in a staggered fashion without impacting any wireless session. This procedure is carried out without any manual intervention natively from the controller and without the need for an external orchestrator or additional licenses.

### Flexible NetFlow

- **Flexible NetFlow (FNF):** Cisco IOS Software FNF is the next generation in flow visibility technology, allowing optimization of the network infrastructure, reducing operating costs, and improving capacity planning and security incident detection with increased flexibility and scalability.

### Application visibility and control

- **Next-Generation Network-Based Application Recognition (NBAR2):** NBAR2 enables advanced application classification techniques and accuracy, with up to 1400 predefined and well-known application signatures and up to 150 encrypted applications on the Cisco Catalyst 9800 Series. Some of the most popular applications included are Skype, Office 365, Microsoft Lync, Cisco WebEx, and Facebook. Many others are already predefined and easy to configure. NBAR2 provides the network administrator with an important tool to identify, control, and monitor end-user application usage while helping ensure a quality user experience and securing the network from malicious attacks. It uses FNF to report application performance and activities within the network to any supported NetFlow collector, such as Cisco Prime, Cisco Stealthwatch, or any compliant third-party tool.

### Quality of service (QoS)

- **Superior QoS:** QoS technologies are a set of tools and techniques for managing network resources and are considered the key enabling technologies for the transparent convergence of voice, video, and data networks. QoS on the Cisco Catalyst 9800 Series consists of classification and marking, policing and markdown, and scheduling, shaping, and queuing functions. A modular QoS command-line framework provides consistent platform-independent and flexible configuration behavior. The Cisco Catalyst 9800 Series also supports 2-level hierarchical or nested policies.

### Smart operation

- **Bluetooth ready:** The Cisco Catalyst 9800-L has hardware support to connect a Bluetooth dongle to the controller, enabling you to use this wireless interface as a management port. This port functions as an IP management interface and can be used for configuration and troubleshooting using the WebUI or Command-Line Interface (CLI), and to transfer images and configurations.
- **WebUI:** WebUI is an embedded GUI-based device-management tool that enables provisioning of the device, simplifying device deployment and manageability and enhancing the user experience. WebUI comes with the default image. There is no need to enable anything or install any license on the device. You can use WebUI to build a day-1 configuration and from then on monitor and troubleshoot the device without having to know how to use the CLI.

## Specifications

**Table 8.** Specifications

Item	Specification	
<b>Wireless</b>	IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11n, 802.11k, 802.11r, 802.11u, 802.11w, 802.11ac Wave1 and Wave2, 802.11ax	
<b>Wired, switching, and routing</b>	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX specification, 1000BASE-T, 1000BASE-SX, 1000-BASE-LH, IEEE 802.1Q VLAN tagging, IEEE 802.1AX Link Aggregation	
<b>Data Requests For Comments (RFCs)</b>	<ul style="list-style-type: none"> <li>• RFC 768 UDP</li> <li>• RFC 791 IP</li> <li>• RFC 2460 IPv6</li> <li>• RFC 792 ICMP</li> <li>• RFC 793 TCP</li> <li>• RFC 826 ARP</li> <li>• RFC 1122 Requirements for Internet Hosts</li> <li>• RFC 1519 CIDR</li> <li>• RFC 1542 BOOTP</li> <li>• RFC 2131 DHCP</li> <li>• RFC 5415 CAPWAP Protocol Specification</li> <li>• RFC 5416 CAPWAP Binding for 802.11</li> </ul>	
<b>Security standards</b>	<ul style="list-style-type: none"> <li>• Wi-Fi Protected Access (WPA)</li> <li>• IEEE 802.11i (WPA2, RSN)</li> <li>• Wi-Fi Protected Access 3 (WPA3)</li> <li>• RFC 1321 MD5 Message-Digest Algorithm</li> <li>• RFC 1851 ESP Triple DES Transform</li> <li>• RFC 2104 HMAC: Keyed-Hashing for Message Authentication</li> <li>• RFC 2246 TLS Protocol Version 1.0</li> <li>• RFC 2401 Security Architecture for the Internet Protocol</li> <li>• RFC 2403 HMAC-MD5-96 within ESP and AH</li> <li>• RFC 2404 HMAC-SHA-1-96 within ESP and AH</li> <li>• RFC 2405 ESP DES-CBC Cipher Algorithm with Explicit IV</li> <li>• RFC 2407 Interpretation for ISAKMP</li> <li>• RFC 2408 ISAKMP</li> <li>• RFC 2409 IKE</li> <li>• RFC 2451 ESP CBC-Mode Cipher Algorithms</li> <li>• RFC 3280 Internet X.509 PKI Certificate and CRL Profile</li> <li>• RFC 4347 Datagram Transport Layer Security</li> <li>• RFC 5246 TLS Protocol Version 1.2</li> </ul>	

Item	Specification	
<b>Encryption</b>	<ul style="list-style-type: none"> <li>• Wired Equivalent Privacy (WEP) RC4 40, 104 and 128 bits (both static and shared keys)</li> <li>• Advanced Encryption Standard (AES): Cipher Block Chaining (CBC), Counter with CBC-MAC (CCM), Counter with Cipher Block Chaining Message Authentication Code Protocol (CCMP)</li> <li>• Data Encryption Standard (DES): DES-CBC, 3DES</li> <li>• Secure Sockets Layer (SSL) and Transport Layer Security (TLS): RC4 128-bit and RSA 1024- and 2048-bit</li> <li>• DTLS: AES-CBC</li> <li>• IPsec: DES-CBC, 3DES, AES-CBC</li> <li>• 802.1AE MACsec encryption</li> </ul>	
<b>Authentication, Authorization, and Accounting (AAA)</b>	<ul style="list-style-type: none"> <li>• IEEE 802.1X</li> <li>• RFC 2548 Microsoft Vendor-Specific RADIUS Attributes</li> <li>• RFC 2716 PPP EAP-TLS</li> <li>• RFC 2865 RADIUS Authentication</li> <li>• RFC 2866 RADIUS Accounting</li> <li>• RFC 2867 RADIUS Tunnel Accounting</li> <li>• RFC 2869 RADIUS Extensions</li> <li>• RFC 3576 Dynamic Authorization Extensions to RADIUS</li> <li>• RFC 5176 Dynamic Authorization Extensions to RADIUS</li> <li>• RFC 3579 RADIUS Support for EAP</li> <li>• RFC 3580 IEEE 802.1X RADIUS Guidelines</li> <li>• RFC 3748 Extensible Authentication Protocol (EAP)</li> <li>• Web-based authentication</li> <li>• TACACS support for management users</li> </ul>	
<b>Management</b>	<ul style="list-style-type: none"> <li>• Simple Network Management Protocol (SNMP) v1, v2c, v3</li> <li>• RFC 854 Telnet</li> <li>• RFC 1155 Management Information for TCP/IP-Based Internets</li> <li>• RFC 1156 MIB</li> <li>• RFC 1157 SNMP</li> <li>• RFC 1213 SNMP MIB II</li> <li>• RFC 1350 TFTP</li> <li>• RFC 1643 Ethernet MIB</li> <li>• RFC 2030 SNMP</li> <li>• RFC 2616 HTTP</li> <li>• RFC 2665 Ethernet-Like Interface Types MIB</li> <li>• RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering, and Virtual Extensions</li> <li>• RFC 2819 RMON MIB</li> <li>• RFC 2863 Interfaces Group MIB</li> <li>• RFC 3164 Syslog</li> <li>• RFC 3414 User-Based Security Model (USM) for SNMPv3</li> <li>• RFC 3418 MIB for SNMP</li> <li>• RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs</li> <li>• RFC 4741 Base NETCONF protocol</li> <li>• RFC 4742 NETCONF over SSH</li> </ul>	

Item	Specification	
	<ul style="list-style-type: none"> <li>• RFC 6241 Network Configuration Protocol (NETCONF)</li> <li>• RFC 6242 NETCONF over SSH</li> <li>• RFC 5277 NETCONF event notifications</li> <li>• RFC 5717 Partial Lock Remote Procedure Call</li> <li>• RFC 6243 With-Defaults capability for NETCONF</li> <li>• RFC 6020 YANG</li> <li>• Cisco private MIBs</li> </ul>	
<b>Management interfaces</b>	<ul style="list-style-type: none"> <li>• Web-based: HTTP/HTTPS</li> <li>• Command-line interface: Telnet, Secure Shell (SSH) Protocol, serial port</li> <li>• Cisco Prime Infrastructure</li> </ul>	
<b>Environmental conditions supported</b>	<p>Operating temperature:</p> <ul style="list-style-type: none"> <li>• 32° to 104° F (0° to 40° C)</li> </ul> <p>Note: The maximum temperature is derated by 1.0° C for every 1000 ft (305 m) of altitude above sea level.</p> <p>Nonoperating temperature:</p> <ul style="list-style-type: none"> <li>• -13° to 158° F (-25° to 70° C)</li> </ul> <p>Operating humidity:</p> <ul style="list-style-type: none"> <li>• 5% to 95% noncondensing</li> </ul> <p>Nonoperating humidity:</p> <ul style="list-style-type: none"> <li>• 0% to 95% noncondensing</li> </ul> <p>Altitude:</p> <ul style="list-style-type: none"> <li>• Operating altitude: 0 to 3000 m (0 to 10,000 ft)</li> <li>• Nonoperating altitude: 0 to 12,192 m (0 to 40,000 ft.)</li> </ul> <p>Electrical input:</p> <ul style="list-style-type: none"> <li>• AC input frequency range: 47 to 63 Hz</li> <li>• AC input range: 90 to 264 VAC</li> </ul> <p>Maximum power:</p> <ul style="list-style-type: none"> <li>• 9800-L-C max measured power = 86.9W (with 4.5W USB load)</li> <li>• 9800-L-F max measured power = 84.5W (assumes 2pc 2.5W SFP and with 4.5W USB load)</li> </ul> <p>Maximum heat dissipation:</p> <ul style="list-style-type: none"> <li>• 9800-L-C: 296.4 Btu/hr (with 4.5W USB load)</li> <li>• 9800-L-F: 288.2 Btu/hr (assumes 2pc 2.5W SFP and with 4.5W USB load)</li> </ul> <p>Sound power level measure:</p> <ul style="list-style-type: none"> <li>• Normal: 40 dBA at 25C</li> <li>• Maximum: 42.9 dBA at 40C</li> </ul> <p>Power adapter:</p> <ul style="list-style-type: none"> <li>• Input power: 100 to 240 VAC; 50/60 Hz</li> </ul>	



Item	Specification	
Regulatory compliance	Safety: <ul style="list-style-type: none"> <li>• UL/CSA 60950-1</li> <li>• IEC/EN 60950-1</li> <li>• AS/NZS 60950.1</li> <li>• CAN/CSA-C22.2 No. 60950-1</li> </ul>	
	EMC - Emissions: <ul style="list-style-type: none"> <li>• FCC 47CFR15</li> <li>• AS/NZS CISPR 22</li> <li>• CISPR 22</li> <li>• EN55022/EN55032 (EMI-1)</li> <li>• ICES-003</li> <li>• VCCI</li> <li>• KN 32 (EMI-2)</li> <li>• CNS-13438</li> </ul>	Class A
	EMC - Emissions: <ul style="list-style-type: none"> <li>• EN61000-3-2 Power Line Harmonics (EMI-3)</li> <li>• EN61000-3-3 Voltage Changes, Fluctuations, and Flicker (EMI-3)</li> </ul>	

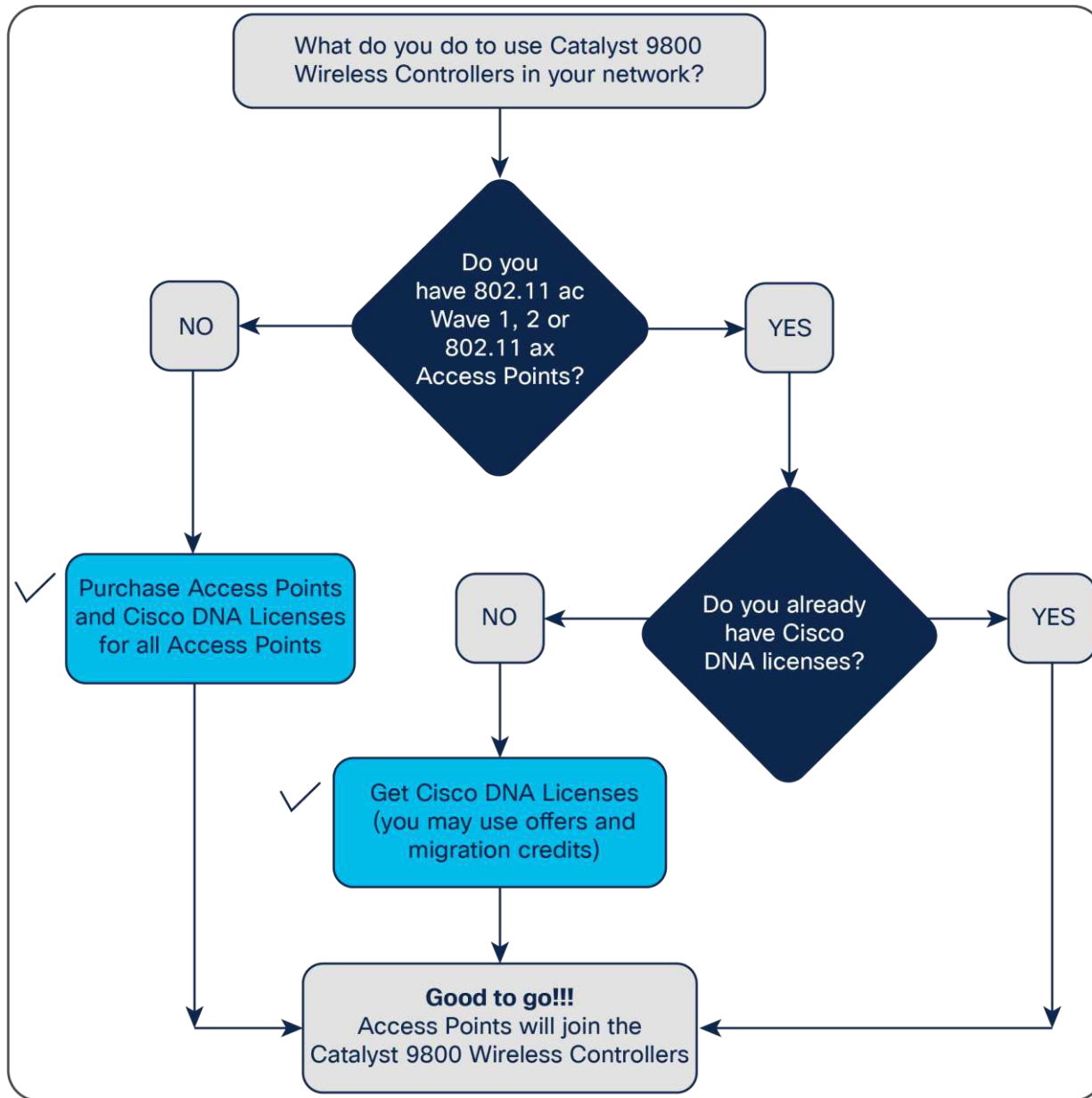
## Software requirements

The Cisco Catalyst 9800-L runs on Cisco IOS XE Software version 16.12.1 or later. This software release includes all the features listed earlier in the Product Benefits section.

Table 9 lists the minimum software requirements for the controller models.

## Licensing

No licenses are required to boot up a **Cisco Catalyst 9800 Series Wireless Controller**. However, in order to connect any access points to the **controller**, Cisco DNA software subscriptions are required. To be able to connect to a Cisco Catalyst 9800 Series controller, each access point requires a Cisco DNA subscription license.



**Figure 7.** Determining license requirements for access points connecting to Cisco Catalyst 9800 Series Wireless Controllers

Access points connecting to the Cisco Catalyst 9800 Series have new and simplified software subscription packages.

They can support both tiers of Cisco DNA software: Cisco DNA Essentials and Cisco DNA Advantage.

Cisco DNA software subscriptions provide Cisco innovations on the access point. They also include perpetual Network Essentials and Network Advantage licensing options, which cover wireless fundamentals such as 802.1X authentication, QoS, and PnP; telemetry and visibility; and single sign-on, as well as security controls.

Cisco DNA subscription software has to be purchased for a 3-, 5-, or 7-year subscription term. Upon expiration of the subscription, the Cisco DNA features will expire, whereas the Network Essentials and Network Advantage features will remain.

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For the full feature list of Cisco DNA Software, including the perpetual Network Essentials and Network advantage, please see the feature matrix: [https://www.cisco.com/c/m/en\\_us/products/software/dna-subscription-wireless/en-sw-sub-matrix-wireless.html?oid=porew018984](https://www.cisco.com/c/m/en_us/products/software/dna-subscription-wireless/en-sw-sub-matrix-wireless.html?oid=porew018984).

Two modes of licensing are available:

- Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more convenient way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure- you control what users can access. With Smart Licensing you get:
  - Easy Activation: Smart licensing establishes a pool of software licenses that can be used across the entire organization-no more PAKs (Product Activation Keys).
  - Unified Management: My Cisco Entitlements (MCE) provides a complete view into all of your Cisco Products and services in an easy-to-use portal, so you always know what you have and what you are using.
  - License Flexibility: Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco Software Central ([software.cisco.com](https://software.cisco.com)).

For more detailed overview on Cisco Licensing, go to [cisco.com/go/licensingguide](https://cisco.com/go/licensingguide).

- Specific License Reservation (SLR) is a feature used in highly secure networks. It provides a method for customers to deploy a software license on a device (product instance) without communicating usage information to Cisco. There is no communication with Cisco or a satellite. The licenses are reserved for every controller. It is node-based licensing.

Four levels of license are supported on the **Cisco Catalyst 9800 Series Wireless Controllers**. The controllers can be configured to function at any one of the four levels.

- Cisco DNA Essentials: At this level the Cisco DNA Essentials feature set will be supported.
- Cisco DNA Advantage: At this level the Cisco DNA Advantage feature set will be supported.
- NE: At this level the Network Essentials feature set will be supported. This is available with Cisco DNA Essentials.
- NA: At this level the Network Advantage feature set will be supported. This is available with Cisco DNA Advantage.

For customers who purchase Cisco DNA Essentials, Network Essentials will be supported and will continue to function even after term expiration. And for customers who purchase Cisco DNA Advantage, Network Advantage will be supported and will continue to function even after term expiration.

Initial bootup of the controller will be at the Cisco DNA Advantage level.

For questions, contact the Cisco Catalyst 9800 Series Wireless Controllers Licensing mailer group at [ask-catalyst9800licensing](mailto:ask-catalyst9800licensing)

The Cisco Catalyst 9800-L Wireless Controller has enhanced capability to increase performance through a Performance license. This Performance license allows customers to connect with 500 access points and 10,000 clients and gives a higher throughput.

**Table 9.** Comparison of the 9800-L with and without the Performance license

• Features	• 9800-L	• 9800-L with Performance License
• APs supported	• 250	• 500
• Clients supported	• 5000	• 10,000
• Throughput with IMIX	• 5 Gbps	• 5 Gbps
• Throughput without IMIX	• 5 Gbps	• 10 Gbps*

\* With 1374-byte packet size

- Customer will have an option to select this Performance license while buying the 9800-L wireless controller or can order as spare.
- The Performance license is a perpetual license that is separate from the Cisco DNA license. They are also tracked by Smart Account.
- For High Availability deployments, Performance licenses must be brought on both controllers in the HA pair.

### Managing licenses with Smart Accounts

Creating Smart Accounts by using the Cisco Smart Software Manager (SSM) enables you to order devices and licensing packages and also manage your software licenses from a centralized website. You can set up the Smart Account to receive daily email alerts and to be notified of expiring add-on licenses that you want to renew. A Smart Account is mandatory for Cisco Catalyst 9800 Series controllers. For more information on Smart Accounts, refer to <https://www.cisco.com/go/smartaccounts>.

### Warranty

Find warranty information on Cisco.com at the Product Warranties page.

#### Cisco 1-year limited hardware warranty terms

The following are terms applicable to your hardware warranty. Your embedded software is subject to the Cisco End User License Agreement (EULA) and/or any Supplemental EULA (SEULA) or specific software warranty terms for additional software products loaded on the device.

**Duration of hardware warranty:** One (1) year

**Replacement, repair, or refund procedure for hardware:** Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the RMA request. Actual delivery times may vary depending on customer location.

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

## Cisco environmental sustainability

Information about Cisco’s environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the “Environment Sustainability” section of Cisco’s [Corporate Social Responsibility](#) (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the “Environment Sustainability” section of the CSR Report) are provided in the following table:

**Table 10.** Links to sustainability information

Sustainability topic	Reference
Information on product material content laws and regulations	<a href="#">Materials</a>
Information on electronic waste laws and regulations, including products, batteries, and packaging	<a href="#">WEEE compliance</a>
Sustainability inquiries	Contact: <a href="mailto:csr_inquiries@cisco.com">csr_inquiries@cisco.com</a>

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

## Ordering information

**Table 11.** Ordering information

Type	PID	Description
<b>Controller</b>	C9800-L-F-K9	Cisco Catalyst 9800-L (Fiber Uplink) Wireless Controller
	C9800-L-C-K9	Cisco Catalyst 9800-L (Copper Uplink) Wireless Controller
	LIC-C9800-DTLS-K9	Cisco Catalyst 9800 Series Wireless Controller DTLS License
	LIC-C9800L-PERF	Cisco C9800 Series Wireless Controller upgrade license
<b>Accessories, spares</b>	C9800L-RMNT=	Cisco Catalyst 9800 Series Wireless Controller Rack Mount Bracket
	C9800-AC-110W=	Cisco Catalyst Wireless Controller 110W AC Power Supply
	LIC-C9800L-PERF=	Cisco C9800 Series Wireless Controller upgrade license-Spare

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## Document history

New or Revised Topic	Described In	Date
<b>SFPs supported - Revamped it completely with additional SFPs info for both copper and fiber versions of 9800L</b>	SFPs supported	December 12, 2022
<b>Changed the part name for rack mount bracket</b>	Ordering Information	December 12, 2022
<b>Added support for WPA3</b>	Security Standards	December 12, 2022

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APC™ award-winning Smart-UPS™ is the most popular UPS in the world for servers, storage and network power protection. Smart-UPS provides availability and manageability to your network allowing you to focus on business growth instead of business downtime. Trusted to protect critical data and equipment from power problems by supplying clean and reliable network-grade power. Smart-UPS' patented green mode provides extremely high efficiency at low, medium and high load levels making them ideal for multi-core or virtualized servers that have varying load consumption all while saving utility costs. Managed outlet groups allow segmented load control to power on or off your equipment in series as well as load shedding to preserve battery power for critical connected equipment or reboot a hung device without impacting other equipment. Available in a variety of form factors (tower, rack mount, rack/tower convertible) there is a model for every application and budget.

Intelligent and efficient network power protection from entry level to scaleable runtime. Ideal for servers, point-of-sale, routers, switches, hubs, and other network devices.

- Reliable
- Intelligent
- Efficient
- Manageable

Trusted by millions of IT professionals throughout the world Smart-UPS models have long been considered the benchmark for all network and server UPSs. Rack-mounted Smart-UPS are ideal for powering Blade or density optimized servers in a distributed power protection environment as the primary or redundant protection solution. The extended run Smart-UPS model has the capability to add external battery packs to scale runtime from minutes to hours typically needed for converged voice and data network power protection.

Smart-UPS accessories include additional manageability options through the Smart-Slot interface, which is an internal slot for the installation of optional accessory cards. A variety of backplate PDU options, external standard and switched PDU options, management devices, service products and mounting options are also available. These accessories can customize your solution to increase availability, adaptability, serviceability, manageability and performance.

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# Smart-UPS Tower and Rack-mount 750 – 3,000 VA

Application-optimized standard models, ideal for servers, storage, point-of-sale, and other network devices



[ SMT750I ]



[ SMT1500RM1U ]



[ SMT1500RM2U ]



[ SMT750I ]



[ SMT1500RM2U ]

## Standard Features

**High-efficiency Green Mode:** Optimum efficiency which saves utility and cooling costs

**Emergency Power Off (EPO):** Provides for remote UPS shut-off in the event of a fire or other emergency (2,200 VA and above)

**Alphanumeric LCD Display:** Intuitive interface provides detailed and accurate information with ability to configure locally

**Battery Disconnect:** Convenient way to disconnect battery for transport

**Network-grade Power:** Provides most stable power conditions by filtering noise, automatic voltage regulation (AVR), and surge protection

**Communication Ports:** Serial, USB, and SmartSlot™ for accessory cards

**Advanced Battery Management:** Temperature-compensated charging extends life and advanced algorithms recommend replacement date

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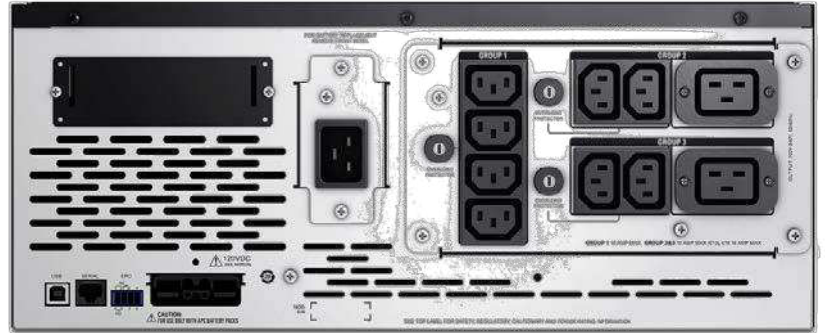
**APC**<sup>®</sup>  
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# Smart-UPS Extended Run 750 – 3,000 VA

Convertible extended run models ideal for critical servers and voice/data switches.



[ SMX1500RM12U ]



[ SMX3000HV ]



[ SMX1500RM12UNC ]

## Additional Features

**Slim 2U Rack/Tower and 4U Short Depth Convertible Forms:** Display rotates easily for use in or out of a rack.

**High-frequency Design:** Reduces size of (or eliminates) bulky transformers making installation even easier.

**Low-Voltage models (2 - 3 kVA):** Configurable output from 100 V – 127 V on low-voltage models

**High-Voltage models (2 - 3 kVA):** Configurable output from 200 V – 240 V on high-voltage models

**Models available with preinstalled network cards:** Models with “NC” suffix have pre-installed AP9631 network cards with environmental monitoring

**Smart external battery connector:** Accepts external batteries and increases runtime automatically to increase availability

**Switched outlet groups:** Reboot hung devices, shed noncritical loads to conserve runtime, and sequence start-up/turn off

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# Smart-UPS Display

Intuitive, easy-to-use LCD interface



Idioma:  
Español

Load Energy:  
10.000KWH

UPS Serial No:  
WA090100000001

Replace Battery  
by: Jan-2020

## Standard Features

**LCD display screen:** Clear, consistent, and detailed information in your choice of basic or advanced menus

**Power status:**

- Operating mode and efficiency
- Load VA/Watts/Amps
- Input/output voltage and frequency
- Battery capacity and runtime
- Energy meter and more

**Control:** UPS and outlet group settings

**Configuration:**

- Language
- Power quality settings
- Alarm, delay and threshold settings

**Test and diagnostics:** Initiate battery and runtime calibration tests

**Load Energy Meter:** Track energy usage in kilo watt hours

**Logs:** See explanation of last 10 transfers and faults

**About Menu:** Displays UPS and replacement battery part numbers, serial numbers, battery install, and proactive replacement battery dates

**Quick status indicators:** Online, on battery, fault, and replace battery LEDs for quick status identification

**Escape Button (Esc) :** Exits to the previous menu or screen

**Return Button ( ← ) :** Used to enter or confirm settings

**Navigation arrows:** Allow for quick adjustment of settings

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# Products Services and Accessories

Schneider Electric Critical Power & Cooling Services (CPCS) provides the highest quality services and solutions by trained and trusted professionals. Our world-class services offer a smart way to build, operate, and maintain your critical applications, ensuring the right people, in the right place, at the right time.

## Management Cards

**AP9630:** UPS Network Management Card

**AP9631:** UPS Network Management Card with Environmental Monitoring

**AP9620:** Legacy Communications SmartSlot Card



## Battery Packs

**SMX48RMBP2U:** APC Smart-UPS 48 V External Battery Pack Rack/Tower

**SMX120RMBP2U:** APC Smart-UPS 120 V External Battery Pack Rack/Tower

## Additional Accessories

**AP9625:** APC Smart-UPS Two-post Rail Kit

**SMX039-2:** APC Smart-UPS 48 V Battery Extension Cable

**SMX040:** APC Smart-UPS 48 V Battery Extension Cable



[AP9631]

## Service Bypass Panels

**SBP3000:** APC Service Bypass Panel 100 – 240 V: 30 A; BBM; Hard-wire Input/Output

**SBP3000RMHW:** APC Service Bypass Panel, 100 - 240 V; 30 AMP ; BBM; Hard-wire Input/Output



[SBP3000RM]

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# Smart-UPS

## Standard Tower models

	SMT750I	SMT1000I	SMT1500I	SMT2200I	SMT3000I
<b>Output</b>					
Power capacity	500 W/750 VA	700 W/1000 VA	1000 W/1500 VA	1980 W/2200 VA	2700 W/3000 VA
Nominal output voltage	230 V (configurable to 220 or 240 V nominal)				
Output frequency	47 - 53 Hz for 50 Hz nominal; 57 - 63 Hz for 60 Hz nominal				
Wave form type	Sine wave				
Output connections (NEMA)	(6) IEC320 C13	(8) IEC 320 C13		(8) IEC320 C13, (1) IEC320 C19	
Switched outlet groups	-	1			
<b>Input</b>					
Nominal input voltage	230 V				
Input voltage range for main operations (Max adjustable range)	160 - 285 V (151 - 302 V)				
Input frequency	50/60 Hz +/-3 Hz (auto sensing)				
Input connection	IEC320 C14			IEC320 C20, Schuko CEE7/EU1-16), British BS1363A	
<b>Batteries and runtime</b>					
Battery type	Maintenance-free sealed lead-acid battery with suspended electrolyte; leak proof				
Replacement battery	RBC48	RBC6	RBC7	RBC55	
<b>Runtime estimates</b>					
200 W	:22	:45	1:24	2:17	2:29
500 W	:05	:10	:23	:51	:55
700 W	-	:06	:12	:34	:37
1000 W	-	-	:07	:21	:23
1400 W	-	-	-	:13	:14
1600 W	-	-	-	:10	:12
Full Load	:05	:06	:07	:07	:06
<b>Communication and management</b>					
Interface ports	Serial ((RJ45), USB, and SmartSlot				
Control panel and audible alarms	Alpha-numeric LCD display with LED status indicators; alarm on battery, distinctive low battery alarm and configurable delays				
Emergency power off (EPO)	Optional			Yes	
<b>Physical</b>					
Maximum height - cm (in)	16.1 (6.2)	21.9 (8.5)	21.9 (8.5)	43.5 (17)	
Maximum width - cm (in)	13.8 (5.4)	17.1 (6.7)	17.1 (6.7)	19.7 (7.7)	
Maximum depth - cm (in)	36.3 (14.1)	43.9 (17.3)	43.9 (17.3)	54.4 (21.5)	
Net weight - kg (lb)	13.2 (29)	18.86 (42)	18.86 (53)	48.8 (108)	52.5 (116)
<b>Conformance</b>					
Regulatory	RCM, CE, EN62040-1, EN62040-2, EAC, VDE				
Warranty	3-year electronics, 2-years battery				

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# Smart-UPS

## Standard Rack-mount models

	SMT750RMI2U SMT750RMI2UNC	SMT1000RMI2U	SMT1500RMI1U	SMT1500RMI2U SMT1500RMI2UNC	SMT2200RMI2U SMT2200RMI2UNC	SMT3000RMI2U SMT3000RMI2UNC
<b>Output*</b>						
Power capacity	500 W/750 VA	700 W/1000 VA	1000 W/1500 VA	1000 W/1500 VA	1980 W/2200 VA	2700 W/3000 VA
Nominal output voltage	230 V (configurable to 220 or 240 V nominal)					
Output frequency	47 - 53 Hz for 50 Hz nominal; 57 - 63 Hz for 60 Hz nominal					
Wave form type	Sine wave					
Output connections (NEMA)	(4) IEC320 C13				(8) IEC320 C13, (1) IEC320 C19	
Switched outlet groups	1					
<b>Input</b>						
Nominal input voltage	230 V					
Input voltage range for main operations (Max adjustable range)	160 - 286 V (150 - 300 V)	170 - 304 V	160 - 286 V (150 - 300 V)			
Input frequency	50/60 Hz +/-3 Hz (auto sensing)					
Input connection	IEC320 C14				IEC320 C20	
<b>Batteries and runtime</b>						
Battery type	Maintenance-free sealed lead-acid battery with suspended electrolyte; leak proof					
Replacement battery	APCRBC123	APCRBC132	APCRBC88	APCRBC133	RBC43	
<b>Runtime estimates</b>						
200 W	:24	1:10	1:32	:27	1:24	1:26
500 W	:05	:17	:26	:12	:35	:38
600 W	-	:12	:19	:09	:28	:31
700 W	-	:09	:14	:07	:24	:26
1000 W	-	-	:07	:04	:15	:17
1400 W	-	-	-	-	:09	:11
1600 W	-	-	-	-	:07	:09
Full Load	:06	:09	:07	:04	:05	:03
<b>Communication and management</b>						
Interface ports	Serial ((RJ45), USB, and SmartSlot "NC" versions have a AP9631 network management card preinstalled in the SmartSlot					
Control panel and audible alarms	Alpha-numeric LCD display with LED status indicators; alarm on battery, distinctive low battery alarm and configurable delays					
Emergency power off (EPO)	Optional				Yes	
<b>Physical</b>						
Maximum height CM (inches)	8.9 (3.5)	8.9 (3.5)	4.4 (1.75)	8.9 (3.5)	8.9 (3.5)	8.9 (3.5)
Maximum width CM (inches)	43.2 (17.0)	43.2 (17.0)	43.2 (17.0)	43.2 (17.0)	48.0 (19.0)	48.0 (19.0)
Maximum depth CM (inches)	40.6 (16.0)	45.7 (18.0)	66.0 (26.0)	45.7 (18.0)	68.3 (26.0)	68.3 (26.0)
Net weight klg (pounds)	17.27 (38)	28.18 (62)	24.09 (53)	28.64 (63)	42.31 (96)	44.28 (96)
<b>Conformance</b>						
Regulatory	RCM, CE, EN62040-1, EN62040-2, EAC, VDE					
Warranty	3-year electronics, 2-years battery					

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# Smart-UPS

## Extended Run Rack/Tower Convertible 2U models

	SMX750I SMX750INC	SMX1000I	SMX1500RM2U SMX1500RM2UNC	SMX2200RMHV2U SMX2200R2HVNC	SMX3000RMHV2U SMX3000RMHV2UNC
<b>Output</b>					
Power capacity	600 W/750 VA	800 W/1000 VA	1200 W/1500 VA	1980 W/2200 VA	2700 W/3000 VA
Nominal output voltage	230 V (configurable to 220 or 240 V nominal)				
Output frequency	47 - 53 Hz for 50 Hz nominal; 57 – 63 Hz for 60 Hz nominal				
Wave form type	Sine wave				
Output connections (NEMA)	(8) IEC320 C13			(8) IEC320 C13, (1) IEC320 C19	
Switched outlet groups	1	2	3		
<b>Input</b>					
Nominal input voltage	230 V				
Input voltage range for main operations (Max adjustable range)	160 - 286 V (150 - 300 V)			140 - 280 v	
Input frequency	50/60 Hz +/-3 Hz (auto sensing)				
Input connection	IEC320 C14			IEC320 C20	
<b>Batteries and runtime</b>					
Battery type	Maintenance-free sealed lead-acid battery with suspended electrolyte; leak proof				
Replacement battery (UPS)	APCRBC116	APCRBC115	APCRBC117		
External Battery Pack (XBP)	SMX48RMBP2U			SMX120RMBP2U	
Replacement battery (XBP)	APCRBC115			APCRBC118	
Typical backup time at varying load conditions, and with external battery packs	Please refer to <a href="http://www.apc.com">www.apc.com</a> for runtime charts				
<b>Communication and management</b>					
Interface ports	Serial ((RJ45), USB, and SmartSlot "NC" versions have a AP9631 network management card preinstalled in the SmartSlot				
Control panel and audible alarms	Alpha-numeric LCD display with LED status indicators; alarm on battery, distinctive low battery alarm and configurable delays				
Emergency power off (EPO)	Yes				
<b>Physical</b>					
Maximum height - cm (inches)	8.9 (3.5)	8.9 (3.5)	8.9 (3.5)	8.9 (3.5)	8.9 (3.5)
Maximum width - cm (inches)	43.2 (17.0)	43.2 (17.0)	43.2 (17.0)	43.2 (17.0)	43.2 (17.0)
Maximum depth cm (inches)	49.3 (19.0)	49.3 (19.0)	49.3 (19.0)	66.7 (26.26)	66.7 (26.26)
Net weight kg (pounds)	23 (48.5)	22.9 (50.3)	24.8 (54.6)	37.3 (82.1)	37.3 (82.1)
<b>Conformance</b>					
Regulatory	RCM, CE, EN62040-1, EN62040-2, EAC, VDE				
Warranty	3-year electronics, 2-years battery				

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# Smart-UPS

## Extended Run Rack/Tower Convertible 4U Short Depth models

	SMX2200HV SMX2200HVNC	SMX3000HV SMX3000HVNC
<b>Output</b>		
Power capacity	1980 W/2200 VA	2700 W/3000 VA
Nominal output voltage	230 V (configurable to 220 or 240 V nominal)	
Output frequency	47 - 53 Hz for 50 Hz nominal; 57 - 63 Hz for 60 Hz nominal	
Wave form type	Sine wave	
Output connections (NEMA)	(8) IEC320 C13 and (2) IEC320 C19	
Switched outlet groups	3	
<b>Input</b>		
Nominal input voltage	230 V (configurable to 220 or 240 V nominal)	
Input voltage range for main operations (Max adjustable range)	140 - 280 V	
Input frequency	50/60 Hz +/- 3 Hz (auto sensing)	
Input connection	IEC320 C20	
<b>Batteries and runtime</b>		
Battery type	Maintenance-free sealed lead-acid battery with suspended electrolyte; leak proof	
Replacement battery (UPS)	APCRBC143	
External Battery Pack (XBP)	SMX120BP	
Replacement battery (XBP)	APCRBC143	
Typical backup time at varying load conditions, and with external battery packs	Please refer to <a href="http://www.apc.com">www.apc.com</a> for runtime charts	
<b>Communication and management</b>		
Interface ports	Serial ((RJ45), USB, and SmartSlot "NC" versions have a AP9631 network management card preinstalled in the SmartSlot	
Control panel and audible alarms	Alpha-numeric LCD display with LED status indicators; alarm on battery, distinctive low battery alarm and configurable delays	
Emergency power off (EPO)	Yes	
<b>Physical</b>		
Maximum height cm (inches)	43.2 (17.0)	
Maximum width cm (inches)	17.8 (7.0)	
Maximum depth cm (inches)	48.3 (19.0)	
Net weight kg (pounds)	38.6 (85)	
<b>Conformance</b>		
Regulatory	RCM, CE, EN62040-1, EN62040-2, EAC, VDE	
Warranty	3-years electronics, 2-years battery	

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by Schneider Electric



# Bitdefender®

Společnost **Bitdefender** je lídrem v oblasti **kybernetické bezpečnosti**, který poskytuje nejlepší řešení prevence, detekce a reakce na hrozby ve své třídě po celém světě.

Celosvětově chrání více jak 500 000 000 strojů ve 150 zemích. Pomocí mnohavrstvé ochrany s využitím strojového učení a umělé inteligence umí odhalovat a zablokovat i ty nejsložitější útoky (Ransomware, bez souborové, cílené atd.).

## GLOBALNÍ VÝROBCE INOVATIVNÍ CYBER-SECURITY

s lokalizovanými produkty do češtiny s lokální podporou v ČR/SK

ZALOŽEN 2001

1,800+ ZAMĚSTNANCŮ  
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# UZNÁVANÝ INOVATIVNÍ LÍDR

PATENTOVÉ PORTFOLIO: 111+ SCHVÁLENÝCH, 200+ PŘED SCHVÁLENÍM. PRŮKOPNÍK V OBLASTI NASAZENÍ STROJOVÉHO UČENÍ JIŽ OD 2008.



## PRAVIDELNĚ VÍTĚZÍ V TESTECH



AV-TEST, 4 ocenění v roce 2020



Lídr v prvním hodnocení Forrester® WAVE™ pro zabezpečení cloudové pracovní zátěže



Nejvíce umístění na 1. místě v letech 2018 až 2021 ve srovnávacích testech AV Comparatives.

## MITRE | ATT&CK®

Nejvyšší celkový počet detekcí a 100% detekce účinných technik pro Linux v hodnocení MITRE ATT&CK® 2021

## FORRESTER®

"Největší dodavatel EDR, o kterém jste neuvažovali, ale měli byste", The Forrester® Wave™: 2020



THE RADICATI GROUP, INC.  
A TECHNOLOGY MARKET RESEARCH FIRM

Největší hráč v oblasti Radicati Endpoint Security MQ 2020



# GravityZone ULTRA

**Dokonalé řešení pro ochranu koncových bodů: pokročilá prevence, rozšířená detekce, účinná reakce a analýza rizik.**

GravityZone Ultra kombinuje nejúčinnější ochranu na světě s funkcemi eXtended Endpoint Detection and Response (XEDR), které vám pomohou chránit vaši infrastrukturu koncových bodů (pracovních stanic, serverů nebo kontejnerů) v celém životním cyklu hrozeb, a to s vysokou účinností a efektivitou.

Nová korelace událostí napříč koncovými body posouvá detekci a sledování hrozeb na novou úroveň tím, že kombinuje granularitu a bohatý bezpečnostní kontext EDR s analýzou celé infrastruktury XDR (eXtended Detection and Response).

Díky zabudované analýze rizik (pro rizika generovaná koncovým bodem a uživateli) a inovacím v oblasti hardeningu, nativně minimalizujeme útočný povrch koncového bodu, čímž útočnickům ztěžujeme průnik.

S řešením GravityZone Ultra zkrátíte dobu potřebnou k odhalení hrozeb a reakci na ně prostřednictvím integrovaného bezpečnostního systému, a zároveň snížíte potřebu řešení od více dodavatelů.

## Jak GravityZone Ultra pomáhá?

### **Nejúčinnější ochrana koncových bodů na světě**

GravityZone sjednocuje technologie EDR, analýzy rizik a hardeningu v jednom jediném agentovi a jedné konzoli a využívá 30 vrstev pokročilých technik k úspěšnému zastavení narušení v celém životním cyklu hrozeb, od prvního kontaktu, zneužití, setrvání a škodlivé aktivity.

### **eXtended Endpoint Detection and Response (XEDR)**

Nová funkce detekce a reakce na koncové body rozšiřuje možnosti analýzy EDR a korelace událostí za hranice jednoho koncového bodu, aby vám pomohla efektivněji řešit komplexní kybernetické útoky zahrnující více koncových bodů. XEDR vám jedinečným způsobem poskytuje vizualizace hrozeb na úrovni organizace, abyste se mohli zaměřit na vyšetřování a efektivněji reagovat.

### **Zabezpečení koncového bodu a člověka na základě analýzy rizik**

Bitdefender engine pro analýzu rizik vám umožňuje průběžně vyhodnocovat, upřednostňovat a zpříšňovat chybné konfigurace a nastavení zabezpečení koncových bodů pomocí přehledného seznamu priorit. Identifikuje také akce a chování uživatelů, které představují bezpečnostní riziko pro vaši organizaci.

Zjednodušením a automatizací bezpečnostních operací, a neustálým zmenšováním plochy útoku, dosáhnete nejvyšší úrovně ochrany s nejnižšími náklady na provoz.

## **Nejúčinnější ochrana koncových bodů na světě**

Výsledkem špičkové ochrany, kterou v současné době licencuje více než 150 předních technologických společností, je více než 30 technologií ochrany vyvinutých za posledních 20 let špičkovými výzkumníky, matematiky a datovými vědci společnosti Bitdefender. Kvalitu Bitdefenderu potvrzují i výsledky nezávislých testů, kdy např. v letech 2018 až 2021 získal Bitdefender většinu 1. míst ve srovnávacích testech AV.

## **Lokální a cloudové strojové učení**

Bitdefender poprvé spustil strojové učení v roce 2009, což vedlo ke zvýšení detekce hrozeb s nízkým počtem falešně pozitivních výsledků, které mohou zastavit neznámé hrozby před jejich spuštěním a při jejich spuštění.

## **Hyperdetect - nastavitelné strojové učení**

Umožňuje týmům IT vyladit ochranu citlivých podnikových služeb s nejvyšším rizikem.

## **Obrana proti anomáliím**

Pokročilá technologie strojového učení, která sleduje systémové služby a monitoruje techniky skrytých útoků. Dokáže chránit vlastní aplikace před škodlivými útoky.

## **Cloudový Sandbox**

Zajišťuje předběžnou detekci pokročilých útoků automatickým odesláním souborů, které vyžadují další analýzu, do cloudového sandboxu, a přijímáním nápravných opatření na základě výsledku šetření.

## **Obrana proti síťovým útokům**

Detekce a blokování nových typů hrozeb v dřívějších fázích útočného řetězce, jako jsou útoky hrubou silou, krádeže hesel a postranní pohyb.

## **Exploit Defense**

Několik mechanismů pro prevenci zneužití chrání paměť a blokuje útoky před zneužitím systémů, což snižuje nároky na zpracování.

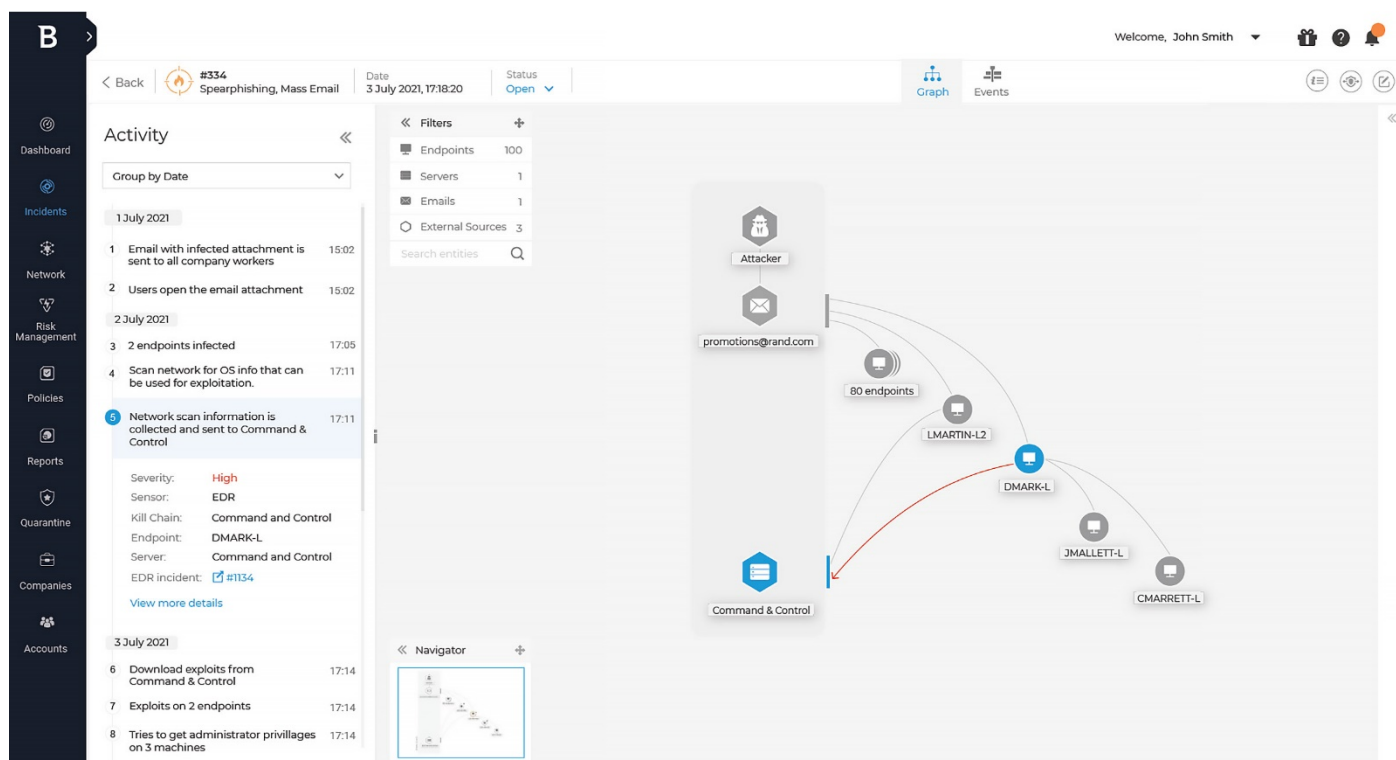
## **Obrana před bez souborovým útokem**

Detekce a blokování malwaru založeného na skriptech, bez souborů, obfuskovaného a vlastního malwaru s automatickou nápravou.

# Rozšířené vyšetřování incidentů a inteligentní reakce pro rozvinuté systémy

GravityZone Ultra umožňuje efektivní vyšetřování incidentů a rychlou reakci pro obnovení koncových bodů do stavu "lepšího než předtím". Nástroje pro vyšetřování incidentů, jako je Extended Incident View, poskytují přehled o bezpečnostních incidentech na úrovni organizace a pomáhají bezpečnostním týmům ověřovat podezřelé aktivity a adekvátně reagovat na kybernetické hrozby. Pokročilé vyhledávání aktuálních a historických dat na základě IOC, značek MITRE a dalších relevantních artefaktů, umožňuje rychlou identifikaci hrozeb, které se mohou skrývat v infrastruktuře koncových bodů.

Na základě informací získaných z koncových bodů během vyšetřování poskytuje jednotné rozhraní pro řízení nástrojů pro okamžitou úpravu zásad a/nebo záplatování zjištěných zranitelností, aby se předešlo budoucím incidentům a zlepšilo se zabezpečení prostředí.



*Rozšířený pohled na incident poskytuje přehled o incidentu na úrovni organizace. Bezpečnostní analytik může snadno získat podpůrné důkazy a účinně reagovat. Analýza rizik koncových bodů pro nepřetržitou správu útočné plochy*



## **Klíčové vlastnosti**

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### **eXtended Endpoint Detection and Response (XEDR)**

Tato technologie korelace napříč koncovými body, známá jako eXtended EDR, posouvá detekci hrozeb a jejich viditelnost na novou úroveň tím, že využívá funkce XDR pro detekci pokročilých útoků napříč více koncovými body v hybridních infrastrukturách (pracovní stanice, servery nebo kontejnery s různými OS).

### **Integrovaná analýza lidských rizik a rizik koncového bodu**

Průběžně analyzujte rizika pomocí stovek faktorů, abyste odhalili a upřednostnili konfigurační rizika pro všechny koncové body a umožnili automatické akce na jejich posílení. Identifikuje akce a chování uživatelů, které představují bezpečnostní riziko pro organizaci, jako je používání nešifrovaných webových stránek pro přihlašování na webové stránky, špatná správa hesel, používání kompromitovaných USB, opakované infekce atd.

### **Vrstvená obrana**

Technologie bez signatur, včetně pokročilého lokálního a cloudového strojového učení, technologie analýzy chování, integrovaného sandboxu a vytvrzení (hardening) zařízení, fungují jako vysoce účinná vrstvená ochrana proti sofistikovaným hrozbám.

Integrovaná analýza lidských rizik a rizik koncového bodu

### **Vyšetřování a reakce na incidenty s nízkými náklady**

Rychlé třídění upozornění a vyšetřování incidentů pomocí časové osy útoku a výstupu ze sandboxu umožňuje týmům pro reakci na incidenty rychle reagovat a zastavit probíhající útoky (reakce na jedno kliknutí).

### **Moderní prevence a detekce nové generace s automatickou nápravou**

Nejlepší prevence na světě a funkce detekce, založené na chování při spuštění, zabraňují spuštění pokročilých hrozeb v podnikové infrastruktuře a zastavují je. Díky pokročilým funkcím prevence, jako jsou PowerShell Defense, Exploit Defense a Anomaly Detection, blokuje GravityZone Ultra moderní útoky v dřívějších fázích útočného řetězce, v době před jejich provedením, čímž zajišťuje neprůstřelnost zabezpečení vaší organizace. Po zjištění aktivní hrozby se spustí automatická reakce pro zablokování dalšího poškození nebo postranních pohybů.

### **Ochrana proti síťovým útokům**

Bitdefender Network Attack Defense, nová vrstva zabezpečení koncového bodu sítě navržená tak, aby detekovala a zabránila pokusům o útok, které využívají síťové zranitelnosti, blokuje několik síťových útoků založených na datovém toku, jako je Brute Force, Password Stealers nebo Lateral Movement, ještě předtím, než se mohou spustit. Network Attack Defense také generuje incidenty EDR a je důležitým zdrojem informací pro korelace incidentů EDR.

### **Pokrytí napříč platformami a integrace API třetích stran**

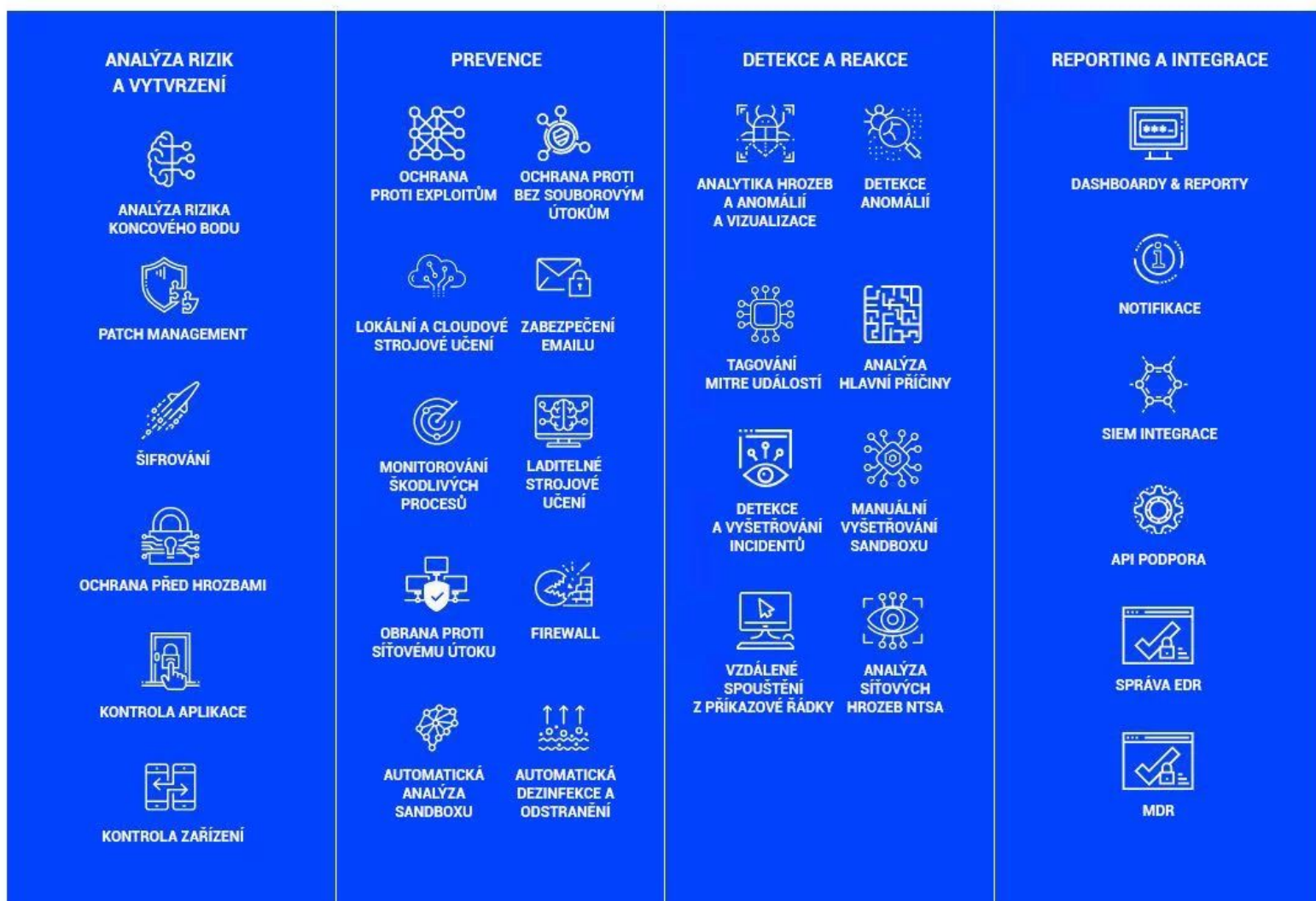
Pokrývá všechny podnikové koncové body se systémem Windows, Linux nebo Mac ve fyzické, virtualizované nebo cloudové infrastruktuře, a poskytuje konzistentní zabezpečení napříč celou infrastrukturou. Podporuje integraci s již existujícími nástroji pro bezpečnostní operace (včetně Splunku) a je optimalizován pro technologie datových center včetně všech hlavních hypervizorů.

# Technologie GravityZone Ultra

## Vytvořeno pro zvýšení kybernetické odolnosti

Bitdefender GravityZone Ultra spoléhá na architekturu jednoho agenta/jedné konzole, která poskytuje kompletní sadu bezpečnostních funkcí, přehled z jednoho okna a integrovanou správu v celém podnikovém prostředí: pracovní stanice (fyzické i virtuální), servery a cloudové pracovní zátěže.

GravityZone je cloudově orientované řešení, ale podporuje také nasazení v lokálních prostředích, pokud to vyžadují předpisy nebo obchodní požadavky.



*Bitdefender GravityZone Ultra: Jednotná prevence, rozšířená detekce, reakce a analýza rizik*



## **eXtended Endpoint Detection and Response Business Security (XEDR)**

Bitdefender v červenci 2021 dnes představil další evoluci řešení pro detekci a reakci na koncové body - eXtended EDR (XEDR) s přidáním analytiky a korelace bezpečnostních událostí napříč koncovými body do řešení Bitdefender Endpoint Detection and Response (EDR) a GravityZone Ultra, jednotné platformy pro prevenci, detekci a reakci na koncové body a analýzu rizik. Tyto nové funkce zvyšují účinnost zabezpečení pro identifikaci a zastavení šíření útoků ransomwaru, pokročilých trvalých hrozeb (APT) a dalších sofistikovaných útoků dříve, než ovlivní provoz podniku.

Díky integrované detekci a reakci napříč operačními systémy (Windows, Linux, Mac) a hybridními prostředími (veřejný a soukromý cloud, on-premises) poskytuje Bitdefender komplexní pohled na bezpečnostní operace v reálném čase, což výrazně zlepšuje schopnost organizací všech velikostí, dokonce i těch, které nemají bezpečnostní analytiky na plný úvazek, odhalovat skryté útoky, které by při izolované analýze a detekci na jednotlivých koncových bodech zůstaly nepovšimnuty.

Sofistikované útoky navržené tak, aby se vyhnuly detekci bezpečnostních technologií, často napodobují "normální" procesy nebo se provádějí ve více fázích prostřednictvím různých vektorů včetně koncových bodů, sítí, dodavatelských řetězců, hostovaných IT a cloudových služeb. Bitdefender XEDR zabraňuje komplexním útokům tím, že přijímá, zkoumá a koreluje telemetrii napříč koncovými body, aby odhalil indikátory kompromitace (IOC), techniky APT, signatury malwaru, zranitelnosti a abnormální chování. Toto pokročilé monitorování automatizuje včasnou detekci scénářů útoku a poskytuje pracovníkům zabezpečení a IT jednotný přehled o tom, kde útok začal.

Nové funkce XEDR také vylepšují řízenou detekci a reakci (MDR) Bitdefender tím, že poskytují větší přehled a kontext incidentu během vyšetřování, aby se urychlilo ověřování hrozeb, reakční akce a náprava.



Více informací o [EDR a jeho praktické použití](#) najdete ve dvoudílném videu na našem blogu

# Bitdefender Ransomware Mitigation

Ransomware je již dlouhou dobu lukrativním byznysem, který kyberzločincům vynáší miliardy na zaplacených výkupných. Nyní, když už je ziskovost ransomwaru prokázána, hledají zločinecké organizace nové a nové způsoby, jak na svých investicích ještě více vydělat, což povede k čím dál více sofistikovaným útokům na firmy a organizace.

## Jak Bitdefender GravityZone poráží ransomware?

Jako adaptivní vrstvené bezpečnostní řešení poskytuje Bitdefender GravityZone několik funkcí proti ransomwaru, přičemž všechny jeho vrstvy spolupracují při prevenci, detekci a nápravě.

<b>Více blokovacích vrstev</b>	Koncový bod a síť, před provedením a při spuštění, na bázi souborů a bez souborů
<b>Více detekčních vrstev</b>	Kontrola procesů, monitorování registrů, kontrola kódu, hyperdetekce
<b>Více vrstev obnovy</b>	Účinný rollback z místního počítače, vzdáleného systému nebo bezpečnostního incidentu
<b>Adaptivní obranné mechanismy</b>	Pokročilý Anti-Exploit, adaptivní heuristika, konfigurovatelné strojové učení
<b>Technologie pro minimalizaci rizik</b>	Automatické opravování zranitelností, chybné konfigurace systému, chování uživatelů
<b>Zálohy odolné proti neoprávněné manipulaci</b>	Nepoužívá se zranitelná stínová kopie, ransomware nemůže odstranit zálohy.
<b>Vzdálené blokování ransomwaru</b>	Blokuje vzdálené a síťové útoky ransomwaru, a zařazuje IP adresy útočníků na černou listinu.
<b>Čištění v rámci celé organizace</b>	Vzdálené ukončování procesů, snadná globální karanténa a odstraňování souborů



Příklady použití [Případ použití Bitdefender Ransomware Mitigation](#) najdete ve videu na našem blogu.



Stáhněte si příručku „[Ransomware - Prevence a zmírnění škod pomocí Bitdefender GravityZone](#)“

# Sandbox Analyzer

Bitdefender Sandbox Analyzer je bezpečnostní řešení, které posiluje bezpečnostní infrastrukturu organizace proti sofistikovaným nebo cíleným útokům. Díky pokročilým detekčním a reportovacím schopnostem chrání před těžko zachytitelnými a přetrvávajícími hrozbami, které se snaží proniknout do vaší sítě.

## **Pokročilá detekce a viditelnost**

Kombinuje vlastní toky zpravodajských informací o hrozbách s proprietárním strojovým učením a detekcí chování pro maximální přesnost v reálném čase. Zobrazuje interaktivní vizualizační grafy bezpečnostních incidentů pro hloubkovou forenzní analýzu. Detekuje velmi sofistikované, na míru vytvořené hrozby cílící na konkrétní prostředí pomocí golden image support.

## **Kompatibilní a efektivní**

Prevence a detekce jsou prováděny plně na místě, bez souborů odeslaných pro skenování mimo vaši síť. Využívá AI a inteligenci hrozeb Bitdefender vytvořenou z více než 500 milionů uživatelů na celém světě, aby byla zachována přesná detekce v reálném čase na místní úrovni. Odhaluje nejpokročilejší typy malwaru, jako jsou APT nebo C2, a to prostřednictvím technologií anti-evasion a anti-fingerprint.

## **Integrovaný, automatizovaný, škálovatelný**

Aby se prolínal s architekturou zabezpečení, integruje se nativně s technologiemi Bitdefenderu, a prostřednictvím API s dalšími prvky zabezpečení. Automatizuje proces výběru a odesílání souborů pro provedení karantény, a umožňuje autonomní reakci. Běží jako virtuální zařízení, může být snadno upraven tak, aby podporoval rostoucí toky dat.



Více informací najdete na stránce produktu na našem webu [Bitdefender.cz](https://www.bitdefender.cz)



Stáhněte si Datasheet „[GravityZone™ Sandbox Analyzer](#)“

# HyperDetect

Tato obranná vrstva ve fázi před spuštěním obsahuje lokální modely strojového učení a pokročilé heuristiky vycvičené k odhalování hackerských útoků, nástrojů, exploitů a obfuskačních technik malware, aby bylo možné zablokovat sofistikované hrozby ještě před jejich spuštěním. Detekuje také způsoby šíření a stránky, které hostí sady zneužití, a blokuje podezřelý webový provoz.

HyperDetect umožňuje správcům zabezpečení upravit obranu tak, aby co nejlépe čelila konkrétním rizikům, kterým organizace pravděpodobně čelí. Díky funkci "pouze hlášení" mohou správci zabezpečení před zavedením nové obranné politiky připravit a sledovat její průběh, čímž se eliminuje přerušení provozu. V kombinaci vysoké viditelnosti a agresivního blokování, která je pro Bitdefender jedinečná, mohou uživatelé nastavit HyperDetect tak, aby blokoval na normální nebo povolené úrovni, a zároveň pokračovat v automatickém hlášení na agresivní úrovni, čímž odhalí včasné indikátory kompromitace.

**Hyper Detect**

This feature is an additional layer of security specifically designed to detect advanced attacks and suspicious activities in the pre-execution stage. It can be customized to suit your organization's security requirements.

**Protection Level**

Permissive  Normal  Aggressive

Feature	Permissive	Normal	Aggressive
<input checked="" type="checkbox"/> Targeted Attack	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Suspicious files and network traffic	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Exploits	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Ransomware	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Grayware	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

**Actions**

Files:   Extend reporting on higher levels

Network traffic:   Extend reporting on higher levels

[Reset to default](#)

*HyperDetect umožňuje správcům zabezpečení upravit agresivitu obrany a nabídnout možnost jedinečnou kombinaci blokování a viditelnosti hrozeb. Například blokování na úrovni "Normální" a hlášení na úrovni "Agresivní".*

## SPECIALITY & ADD-ON



### GravityZone Security for Containers

**Vysoce výkonné zabezpečení kontejnerů a serverových zátěží Linuxu, které je nezávislé na platformě.**

Bitdefender GravityZone Security for Containers chrání kontejnerové a cloudové pracovní zátěže před moderními útoky na Linux a kontejnery pomocí prevence hrozeb s umělou inteligencí, technologií proti zneužití specifických pro Linux, a detekce a reakce na kontext (EDR).

Na rozdíl od jiných řešení nevyžaduje agent Bitdefender pro koncové body pro Linux komponenty linuxového jádra, což umožňuje nasazení nových distribucí, jakmile na ně chce vaše organizace přejít, aniž by vás to omezovalo v zabezpečení.

S naším platformově orientovaným, vysoce výkonným zabezpečením pracovních zátěží získáte konzistentní přehled a kontrolu nad všemi kontejnery a pracovními zátěžemi v hybridních a multicloudových prostředích.

### Vlastnosti & výhody

- EDR vytvořená pro Linux a kontejnerové pracovní zátěže
- Detekuje hrozby v reálném čase a umožňuje rychlou reakci
- Vysoce výkonný bezpečnostní agent nezávislý na platformě
- Zajišťuje minimální dopad na zdroje, zjednodušuje provoz a zvyšuje návratnost investic do cloudu
- Kontextově orientované hlášení incidentů a forenzní analýza
- EDR vytvořená pro Linux a kontejnerové pracovní zátěže
- Pokročilý nástroj Anti-Exploit pro Linux
- Blokuje jádro Linuxu, aplikace zero-day a známé exploit útoky
- TTP útočníka mapované na MITRE pro Linux
- Zaměřuje se na hrozby specifické pro systém Linux a zobrazuje kontextově bohaté informace
- Jednotná platforma GravityZone pro CWS i mimo ni
- EDR Podporuje jednotný přehled a řízení všech pracovních zátěží, kontejnerů, operačních systémů a cloudů.

## GravityZone Security for Virtualized Environments



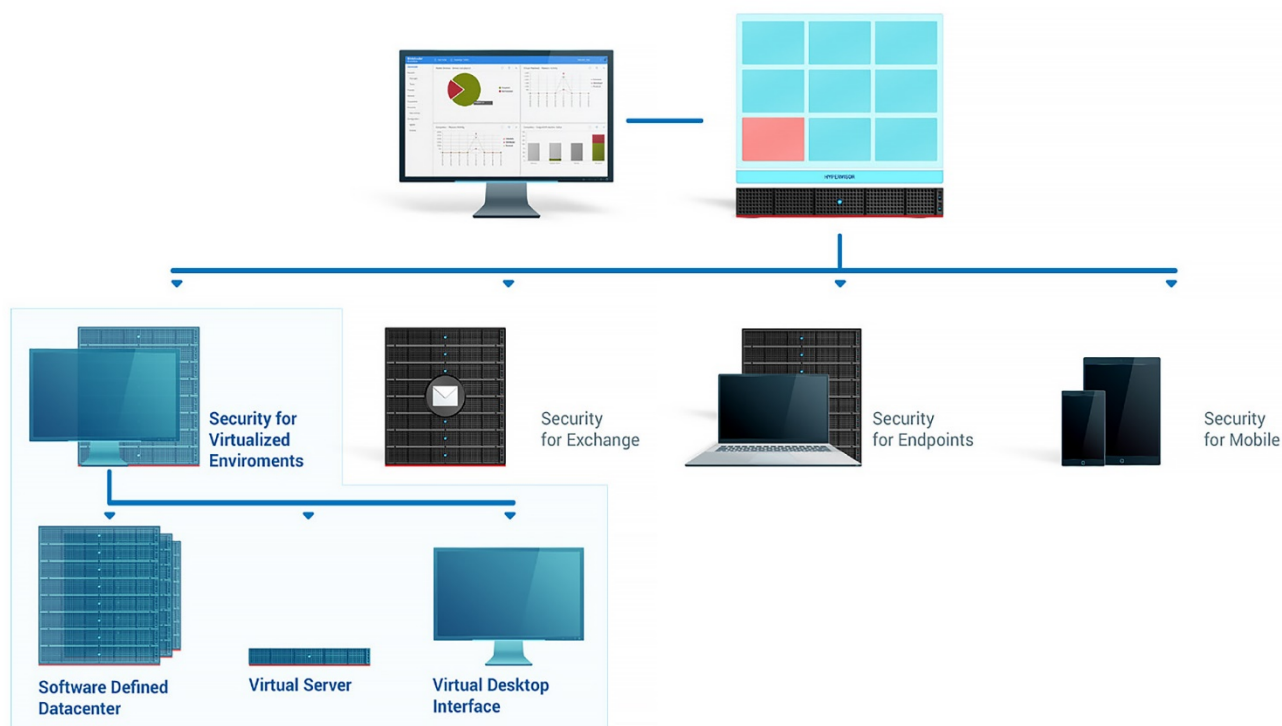
# GravityZone Security for Virtualized Environments

## Vysoce výkonné zabezpečení pro hybridní a multicloudová prostředí

Bitdefender GravityZone Security for Virtualized Environments (SVE) je platformově orientované řešení ochrany navržené pro virtualizaci a hybridní cloud. Poskytuje osvědčené, vysoce výkonné zabezpečení v privátních i veřejných cloudových prostředích a přispívá k tomu, že společnost Bitdefender byla uznána jako lídr v nejnovější zprávě Forrester Wave™: Cloud Workload Security, Q4 2019.

Podniky přijímají GravityZone SVE, aby minimalizovaly dopady na výkon zabezpečení cloudových výpočetních zdrojů a automatizovaly správu zabezpečení díky bezproblémové integraci s technologiemi VMware, Citrix, Nutanix a předními veřejnými cloudy, jako jsou Amazon a Azure.

Účelově vytvořený bezpečnostní zásobník cloudů a architektura s vysokou dostupností nabízejí robustní ochranu proti sofistikovaným útokům. GravityZone SVE konsoliduje správu zabezpečení nejen pro pracovní zátěže v hybridních a multicloudových prostředích, ale také pro fyzické desktopy, servery, mobilní zařízení a e-mail.



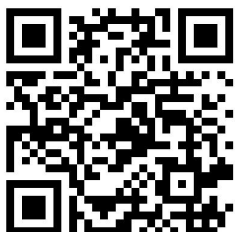
Bitdefender GravityZone (SVE) je nejpokročilejší bezpečnostní řešení pro virtualizovaná datová centra na trhu, pokud jde o antimalwarovou ochranu virtuálních počítačů, které optimalizuje nejen poměr konsolidace, ale také provozní náklady. GravityZone SVE je navrženo jako podnikové řešení schopné podporovat největší datová centra. Integrace do produkčního prostředí je však mimořádně jednoduchá a výhody technologie lze využít ve virtuálních prostředích libovolné velikosti.



# GravityZone Email Security

**Vícevrstvé cloudové zabezpečení e - mailů pro vaši organizaci a MSP.**

S řešením GravityZone Email Security mohou organizace využívat kompletní ochranu podnikové elektronické pošty, která přesahuje rámec malwaru a dalších tradičních hrozeb, jako jsou spam, viry, rozsáhlé phishingové útoky a škodlivé adresy URL. Zabraňuje podvodům a vydávání se za někoho jiného, využívá několik předních bezpečnostních motorů a behaviorálních technologií k analýze obsahu příchozích a odchozích e-mailů, adres URL a příloh.



## Vlastnosti & výhody

- **Více antivirových mechanismů založených na signaturách a chování** nabízí ochranu před všemi formami malwaru, včetně variant zero-day.
- **Ochrana při kliknutí** přepisuje adresy URL v e-mailových zprávách a chrání uživatele při kliknutí pomocí flexibilních zásad a stránek s upozorněním na blokování a varování.
- Možnost vynucení **šifrování TLS** a omezení komunikace s jinými e-mailovými servery, které nepodporují protokol TLS.
- **SecureMail** poskytuje jednoduché řešení šifrování e-mailů pro ochranu citlivých dat při přenosu.
- **Monitorování omezení odesílání** automaticky chrání před pokusy o odesílání velkého množství odchozích zpráv a pomáhá tak zabránit zařazení domény a IP na černou listinu.
- **Podpora protokolů SPF, DKIM a DMARC**, které pomáhají chránit proti útokům typu "vydávání se za někoho jiného".
- **Prevence Directory harvesting attack (DHA)** blokuje útoky directory harvesting tím, že uzavře spojení s příjemcem, jakmile je dosaženo prahové hodnoty neplatné / falešné e-mailové adresy.
- **Nearby (cousin) Domains** porovnává doménu odesílatele s legitimními názvy domén a identifikuje blízké domény (které se od skutečného názvu domény liší o jeden nebo dva znaky).
- **Blokování příloh souborů** zahrnuje kontrolu MIME příloh a schopnost detekovat archivy chráněné heslem.
- **Opakované porovnávání vzorů**, algoritmická analýza, analýza na úrovni připojení a ověřování odesílatele/serveru, v kombinaci se zpravodajstvím o hrozbách, přináší další výkonnou vrstvu zabezpečení, která chrání uživatele služby Microsoft 365.
- Funkce **Executive Tracking** využívá údaje synchronizované ze služby Active Directory k automatickému zjišťování skutečných jmen uživatelů v polích záhlaví a obálek s adresami, aby byla zajištěna ochrana proti útokům typu "vydávání se za jiné osoby" a CEO podvodům.





## GravityZone Patch Management



# GravityZone Patch Management

## Bezpečnostní a jiné než bezpečnostní záplaty.

I když je phishing hlavní příčinou narušení bezpečnosti, stejně důležitá je správa a záplatování interních systémů. Analytická společnost Gartner předpovídá, že "do konce roku 2020 bude 99 % zneužívaných zranitelností i nadále patřit mezi ty, které jsou známé odborníkům na bezpečnost a IT".

Přídavný modul Patch Management, plně integrovaný do platformy GravityZone, umožňuje organizacím udržovat operační systémy a softwarové aplikace aktuální a poskytuje komplexní přehled o stavu záplat v celé instalační základně systému Windows. Modul záplatování poskytuje aktualizace pro celou flotilu pracovních stanic, fyzických serverů nebo virtuálních serverů.

Modul GravityZone Patch Management obsahuje několik funkcí, například skenování záplat na vyžádání / plánované skenování záplat, automatické / ruční záplatování nebo hlášení chybějících záplat.

Podniky, které záplatují své koncové body, posílí svou bezpečnostní pozici a soulad s předpisy a zároveň zvýší provozní efektivitu.

## Vlastnosti & výhody

- Aktualizace operačního systému a největší množiny softwarových aplikací
- Automatické a ruční aktualizace
- Podrobné informace o aktualizacích - CVE, ID bulletinu, závažnost záplaty, kategorie záplaty
- Možnost nastavení různých plánů pro bezpečnostní a jiné než bezpečnostní aktualizace
- Rychlé nasazení chybějících aktualizací
- Možnost distribuovat aktualizace ze serveru relay, což snižuje síťový provoz.
- Specifické zprávy o aktualizacích, které pomáhají společností prokázat dodržování předpisů
- Automatické upozornění správce IT na chybějící bezpečnostní/nebezpečnostní aktualizace.



**GravityZone  
Full Disk  
Encryption**



## GravityZone Full Disk Encryption

**Původní, osvědčený šifrovací doplněk pro zabezpečení firemních dat.**

Data jsou v digitální ekonomice nejdůležitějším aktivem. Ochrana důvěrných dat, splnění požadavků na dodržování předpisů a prevence nákladných úniků dat, jsou klíčovými pilíři strategie ochrany podnikových dat.

GravityZone Full Disk Encryption je řešení, které pomáhá společnostem dodržovat předpisy týkající se dat, a předcházet ztrátě citlivých informací v případě ztráty nebo odcizení zařízení.

GravityZone Full Disk Encryption šifruje bootovací i ne bootovací svazky, na pevných discích, ve stolních počítačích a noteboocích, a poskytuje jednoduchou vzdálenou správu šifrovacích klíčů.

Toto řešení poskytuje centralizovanou správu nástrojů BitLocker (v systému Windows), FileVault a nástroje příkazového řádku diskutil (obojí v systému macOS), přičemž využívá výhod nativního šifrování zařízení a zajišťuje optimální kompatibilitu a výkon. Vyměnitelné disky nejsou šifrovány.

### Vlastnosti & výhody

- Nativní, osvědčené šifrování, které využívá šifrovací mechanismy poskytované systémy Windows a Mac
- Jedna konzola pro ochranu koncových bodů a správu šifrování
- Specifické zprávy o šifrování, které pomáhají společnostem prokázat shodu s předpisy
- Vynucení ověřování před spuštěním systému

## KONTAKTNÍ INFORMACE

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