



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

Header 1

List View

General Information | [Contact](#) | [Default Values](#) | [Discount](#) | [Document Information](#) | [Clarification Request](#)

Procurement Folder: 1398250

Procurement Type: Central Purchase Order

Vendor ID: VS0000002427 

Legal Name: Technology International Inc

Alias/DBA:

Total Bid: \$85,182.00

Response Date: 04/09/2024 

Response Time: 16:02

Responded By User ID: tii123 

First Name: Shaji

Last Name: Habib

Email: tii@tii-usa.com

Phone: 4073592373

SO Doc Code: CRFQ

SO Dept: 0705

SO Doc ID: LOT2400000010

Published Date: 4/5/24

Close Date: 4/11/24

Close Time: 13:30

Status: Closed

Solicitation Description: Lottery Networking Equipment

Total of Header Attachments: 1

Total of All Attachments: 1

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Network Routers	6.00000	EA	5570.000000	33420.00

Comm Code	Manufacturer	Specification	Model #
43222609			

Commodity Line Comments: ***Please see our Equipment Proposal TII/WV/0424/36111 attached.

Extended Description:

See Specifications, Exhibit A - Pricing Page and Exhibit B - Product List for more detail

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Network Switches - 48 Ports	1.00000	EA	6440.000000	6440.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments: ***Please see our Equipment Proposal TII/WV/0424/36111 attached.

Extended Description:

Network Switches - 48 Ports

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Network Switches - 24 Ports	3.00000	EA	2890.000000	8670.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments: ***Please see our Equipment Proposal TII/WV/0424/36111 attached.

Extended Description:

Network Switches - 24 Ports

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Network Switches - 8 Ports	14.00000	EA	2450.000000	34300.00

Comm Code	Manufacturer	Specification	Model #
43222612			

Commodity Line Comments: ***Please see our Equipment Proposal TII/WV/0424/36111 attached.

Extended Description:

Network Switches - 8 Ports

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Transceiver Modules	24.00000	EA	98.000000	2352.00

Comm Code	Manufacturer	Specification	Model #
43222600			

Commodity Line Comments: ***Please see our Equipment Proposal TII/WV/0424/36111 attached.

Extended Description:

Transceiver Modules



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Equipment

Proc Folder: 1398250		Reason for Modification:	
Doc Description: Lottery Networking Equipment		Addendum No, 1 to provide answers to vendor questions	
Proc Type: Central Purchase Order			
Date Issued	Solicitation Closes	Solicitation No	Version
2024-04-05	2024-04-11 13:30	CRFQ 0705 LOT2400000010	2

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name : Technology International, Inc.

Address : 1331 South International Parkway,
Street : Suite 2251,
City : Lake Mary
State : Florida **Country :** USA **Zip :** 32746

Principal Contact : Rifat Habib

Vendor Contact Phone: 407-359-2373 **Extension:**

FOR INFORMATION CONTACT THE BUYER

Brandon L Barr
 304-558-2652
 brandon.l.barr@wv.gov

Vendor Signature X *Rifat Habib* **FEIN#** 650342335 **DATE** 04/09/2024

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Lottery to establish a contract for Lottery Networking Equipment per the terms and conditions, Exhibit A and B, and specifications as attached.

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Network Routers	6.00000	EA	\$5,570.00	\$33,420.00

Comm Code	Manufacturer	Specification	Model #
43222609	Cisco Catalyst		C8200-1N-4T

Extended Description:
See Specifications, Exhibit A - Pricing Page
and Exhibit B - Product List for more detail

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Network Switches - 48 Ports	1.00000	EA	\$6,440.00	\$6,440.00

Comm Code	Manufacturer	Specification	Model #
43222612	Cisco Catalyst		C9300-48P-A

Extended Description:
Network Switches - 48 Ports

***Please see our Equipment Proposal TII/WV/0424/36111 attached.

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Network Switches - 24 Ports	3.00000	EA	\$2,890.00	\$8,670.00

Comm Code	Manufacturer	Specification	Model #
43222612	Cisco Catalyst		C9200L-24P-4G-E

Extended Description:
Network Switches - 24 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Network Switches - 8 Ports	14.00000	EA	\$2,450.00	\$34,300.00

Comm Code	Manufacturer	Specification	Model #
43222612	Cisco Catalyst		C9200CX-8P-2X2G-A

Extended Description:
Network Switches - 8 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Transceiver Modules	24.00000	EA	\$98.00	\$2,352.00

Comm Code	Manufacturer	Specification	Model #
43222600	Cisco		GLC-SX-MMD

Extended Description:
Transceiver Modules

***Please see our Equipment Proposal TII/WV/0424/36111 attached.

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Questions due by April 4th, 2024 at 10:00am ET	2024-04-04

SOLICITATION NUMBER: CRFQ LOT2400000010
Addendum Number: 1

The purpose of this addendum is to modify the solicitation identified as (“Solicitation”) to reflect the change(s) identified and described below.

Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

Description of Modification to Solicitation:

Addendum No. 1 is issued for the following:

- 1) To attach vendor questions and Agency responses.

--No other changes--

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

CRFQ LOT2400000010

Addendum No. – 1

Vendor Questions & Agency Response

1. Some of the C9300 and C9200 switches are unique use case switches. Verify if they needed them setup or configured in any other way. For example, if they needed power supplies, dual power supplies, network modules, storage modules, stacking cables, etc. etc.; there are hundreds of configurations for the units combined just need to know what they need.

A1) Bids should be based on the part numbers in Exhibit B.

2. End user requires a Cisco Smartnet account as well prior to purchase.

A2) Cisco ID is dstroup@wvlottery.com.

3. Is this BOM worth a total of 6 locations, or is it 3 locations with redundancy at each site?

A3) Lottery locations are not relevant nor in scope for this RFQ, see section 6. Delivery and Return.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: LOT240000010

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Technology International, Inc.

Company

Riyad Habib

Authorized Signature

04/09/2024

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

Revised 6/8/2012



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Equipment

Proc Folder: 1398250			Reason for Modification: Addendum No, 1 to provide answers to vendor questions
Doc Description: Lottery Networking Equipment			
Proc Type: Central Purchase Order			
Date Issued	Solicitation Closes	Solicitation No	Version
2024-04-05	2024-04-11 13:30	CRFQ 0705 LOT2400000010	2

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name : Technology International, Inc.

Address : 1331 South International Parkway,
Street : Suite 2251,
City : Lake Mary
State : Florida **Country :** USA **Zip :** 32746

Principal Contact : Rifat Habib

Vendor Contact Phone: 407-359-2373 **Extension:**

FOR INFORMATION CONTACT THE BUYER

Brandon L Barr
 304-558-2652
 brandon.l.barr@wv.gov

Vendor Signature X *Rifat Habib* **FEIN#** 650342335 **DATE** 04/09/2024

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION

The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Lottery to establish a contract for Lottery Networking Equipment per the terms and conditions, Exhibit A and B, and specifications as attached.

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Network Routers	6.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222609			

Extended Description:

See Specifications, Exhibit A - Pricing Page and Exhibit B - Product List for more detail

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Network Switches - 48 Ports	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

Network Switches - 48 Ports

***Please see our Equipment Proposal TII/WV/0424/36111 attached.

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Network Switches - 24 Ports	3.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 24 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Network Switches - 8 Ports	14.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 8 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Transceiver Modules	24.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600			

Extended Description:
Transceiver Modules

***Please see our Equipment Proposal TII/WV/0424/36111 attached.

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Questions due by April 4th, 2024 at 10:00am ET	2024-04-04

	Document Phase	Document Description	Page
LOT240000010	Final	Lottery Networking Equipment	5

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
 Equipment

Proc Folder: 1398250
Doc Description: Lottery Networking Equipment
Proc Type: Central Purchase Order

Reason for Modification:

Date Issued	Solicitation Closes	Solicitation No	Version
2024-03-26	2024-04-11 13:30	CRFQ 0705 LOT2400000010	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Customer Code:

Vendor Name : [Technology International, Inc.](#)

Address : [1331 South International Parkway,](#)

Street : [Suite 2251,](#)

City : [Lake Mary](#)

State : [Florida](#)

Country : [USA](#)

Zip : [32746](#)

Principal Contact : [Rifat Habib](#)

Vendor Contact Phone: [407-359-2373](#)

Extension:

FOR INFORMATION CONTACT THE BUYER

Brandon L Barr
 304-558-2652
 brandon.l.barr@wv.gov

Vendor
 Signature X *Rifat Habib*

FEIN# [650342335](#)

DATE [04/09/2024](#)

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INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Network Routers	6.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222609			

Extended Description:

See Specifications, Exhibit A - Pricing Page and Exhibit B - Product List for more detail

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Network Switches - 48 Ports	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:

Network Switches - 48 Ports

***Please see our Equipment Proposal TII/WV/0424/36111 attached.

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Network Switches - 24 Ports	3.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 24 Ports

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Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Network Switches - 8 Ports	14.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 8 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Transceiver Modules	24.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600			

Extended Description: [***Please see our Equipment Proposal TII/WV/0424/36111 attached.](#)
Transceiver Modules

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Questions due by April 4th, 2024 at 10:00am ET	2024-04-04

	Document Phase	Document Description	Page
LOT240000010	Final	Lottery Networking Equipment	5

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Request for Quote
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Proc Folder: 1398250
Doc Description: Lottery Networking Equipment
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Reason for Modification:

Date Issued	Solicitation Closes	Solicitation No	Version
2024-03-26	2024-04-11 13:30	CRFQ 0705 LOT2400000010	1

BID RECEIVING LOCATION

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 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
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 CHARLESTON WV 25305
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VENDOR

Vendor Customer Code:

Vendor Name : [Technology International, Inc.](#)

Address : [1331 South International Parkway,](#)

Street : [Suite 2251,](#)

City : [Lake Mary](#)

State : [Florida](#)

Country : [USA](#)

Zip : [32746](#)

Principal Contact : [Rifat Habib](#)

Vendor Contact Phone: [407-359-2373](#)

Extension:

FOR INFORMATION CONTACT THE BUYER

Brandon L Barr
 304-558-2652
brandon.l.barr@wv.gov

Vendor Signature X *Rifat Habib*

FEIN# [650342335](#)

DATE [04/09/2024](#)

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LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Network Routers	6.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222609			

Extended Description:
See Specifications, Exhibit A - Pricing Page and Exhibit B - Product List for more detail

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Network Switches - 48 Ports	1.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 48 Ports [***Please see our Equipment Proposal TII/WV/0424/36111 attached.](#)

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Network Switches - 24 Ports	3.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 24 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Network Switches - 8 Ports	14.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222612			

Extended Description:
Network Switches - 8 Ports

INVOICE TO		SHIP TO	
LOTTERY PO BOX 2067		LOTTERY 900 PENNSYLVANIA AVE	
CHARLESTON US	WV	CHARLESTON US	WV

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Transceiver Modules	24.00000	EA		

Comm Code	Manufacturer	Specification	Model #
43222600			

Extended Description:
Transceiver Modules ***Please see our Equipment Proposal TII/WV/0424/36111 attached.

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
1	Questions due by April 4th, 2024 at 10:00am ET	2024-04-04

INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

A pre-bid meeting will not be held prior to bid opening

A **MANDATORY PRE-BID** meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted emails should have the solicitation number in the subject line.

Question Submission Deadline: Thursday, April 4th, 2024 by 10:00am ET

Submit Questions to: West Virginia Purchasing Division c/o Brandon Barr, Buyer
2019 Washington Street, East
Charleston, WV 25305
Fax: (304) 558-3970
Email: Brandon.L.Barr@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.

6. BID SUBMISSION: All bids must be submitted on or before the date and time of the bid opening listed in section 7 below. Vendors can submit bids electronically through wvOASIS, in paper form delivered to the Purchasing Division at the address listed below either in person or by courier, or in facsimile form by faxing to the Purchasing Division at the number listed below. Notwithstanding the foregoing, the Purchasing Division may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor’s inability to submit bids through wvOASIS. The Purchasing Division will not accept bids, modification of bids, or addendum acknowledgment forms via email. Bids submitted in paper or facsimile form must contain a signature. Bids submitted in wvOASIS are deemed to be electronically signed.

Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason.

For Request for Proposal (“RFP”) Responses Only: Submission of a response to a Request for Proposal is not permitted in wvOASIS. In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal prior to the bid opening date and time identified in Section 7 below, plus _____ N/A _____ convenience copies of each to the Purchasing Division at the address shown below. Additionally, the Vendor should clearly identify and segregate the cost proposal from the technical proposal in a separately sealed envelope.

Bid Delivery Address and Fax Number:

Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130
Fax: 304-558-3970

A bid submitted in paper or facsimile form should contain the information listed below on the face of the submission envelope or fax cover sheet. Otherwise, the bid may be rejected by the Purchasing Division.

VENDOR NAME:

BUYER: Brandon L. Barr

SOLICITATION NO.: CRFQ LOT2400000010

BID OPENING DATE: April 11th, 2024

BID OPENING TIME: 1:30pm ET

FAX NUMBER: (304) 558-3970

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Purchasing Division time clock (in the case of hand delivery).

Bid Opening Date and Time: April 11th, 2024 @ 1:30pm ET

Bid Opening Location: Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

This Solicitation is based upon a standardized commodity established under W. Va. Code § 5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code § 5A-3-37, and must include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at: www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with W. Va. Code § 5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states, will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. Any request for reciprocal preference must include with the bid any information necessary to evaluate and confirm the applicability of the preference. A request form to help facilitate the request can be found at: www.state.wv.us/admin/purchase/vrc/Venpref.pdf.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with West Virginia Code §5A-3-37 and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women- owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Purchasing Division staff immediately upon bid opening. The Purchasing Division will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Purchasing Division to print or electronically save documents provided that those documents are viewable by the Purchasing Division prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Purchasing Division Director reserves the right to reject the bid of any vendor as Non-Responsible in accordance with W. Va. Code of State Rules § 148-1-5.3, when the Director determines that the vendor submitting the bid does not have the capability to fully perform or lacks the integrity and reliability to assure good-faith performance.”

20. ACCEPTANCE/REJECTION: The State may accept or reject any bid in whole, or in part in accordance with W. Va. Code of State Rules § 148-1-4.5. and § 148-1-6.4.b.”

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

23. EMAIL NOTIFICATION OF AWARD: The Purchasing Division will attempt to provide bidders with e-mail notification of contract award when a solicitation that the bidder participated in has been awarded. For notification purposes, bidders must provide the Purchasing Division with a valid email address in the bid response. Bidders may also monitor *wvOASIS* or the Purchasing Division's website to determine when a contract has been awarded.

24. ISRAEL BOYCOTT CERTIFICATION: Vendor's act of submitting a bid in response to this solicitation shall be deemed a certification from bidder to the State that bidder is not currently engaged in, and will not for the duration of the contract, engage in a boycott of Israel. This certification is required by W. Va. Code § 5A-3-63.

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

Term Contract

Initial Contract Term: The Initial Contract Term will be for a period of _____. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General’s office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General’s office (Attorney General approval is as to form only)

Alternate Renewal Term – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General’s office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

Fixed Period Contract: This Contract becomes effective upon Vendor’s receipt of the notice to proceed and must be completed within _____ days.

Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:

the contract will continue for _____ years;

the contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

One-Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

Construction/Project Oversight: This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and continues until the project for which the vendor is providing oversight is complete.

Other: Contract Term specified in _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

Open End Contract: Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.

Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

One-Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General’s office.

Construction: This Contract is for construction activity more fully defined in the specifications.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State’s sole discretion.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

Commercial General Liability Insurance in at least an amount of: \$1,000,000.00 per occurrence.

Automobile Liability Insurance in at least an amount of: _____ per occurrence.

Professional/Malpractice/Errors and Omission Insurance in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

Commercial Crime and Third Party Fidelity Insurance in an amount of: _____ per occurrence.

Cyber Liability Insurance in an amount of: _____ per occurrence.

Builders Risk Insurance in an amount equal to 100% of the amount of the Contract.

Pollution Insurance in an amount of: _____ per occurrence.

Aircraft Liability in an amount of: _____ per occurrence.

9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. VENUE: All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

_____ for _____.

Liquidated Damages Contained in the Specifications.

Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in www.state.wv.us/admin/purchase/privacy.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor’s entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled “confidential,” “proprietary,” “trade secret,” “private,” or labeled with any other claim against public disclosure of the documents, to include any “trade secrets” as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State’s Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR NON-CONFLICT: Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. NO DEBT CERTIFICATION: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.
- c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
 1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
 2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES: This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

46. ISRAEL BOYCOTT: Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Rifat Habib, Business Development Exec.

(Address) 1331 South International Parkway, Suite 2251, Lake Mary, Florida 32746

(Phone Number) / (Fax Number) 407-359-2373 / 407-359-2372

(email address) tii@tii-usa.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Technology International, Inc. _____

(Company)



(Signature of Authorized Representative)

Rifat Habib, Business Development Exec.

(Printed Name and Title of Authorized Representative) (Date)

407-359-2373 / 407-359-2372

(Phone Number) (Fax Number)

tii@tii-usa.com

(Email Address)

REQUEST FOR QUOTATION
[Networking Equipment]

SPECIFICATIONS

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of West Virginia Lottery to establish a contract for the one time purchase of networking equipment.

2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
 - 2.1 **“Contract Item”** means each item as listed in the Commodity Code section of the agency’s request for quotation (RFQ) as more fully described in these specifications.
 - 2.2 **“Pricing Page”** means the pages, contained in wvOASIS or attached as Exhibit A, upon which Vendor should list its proposed price for the Contract Items.
 - 2.3 **“Solicitation”** means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
 - 2.4 **“Product List”** means the Lottery list of products currently in use with product codes and descriptions attached as Exhibit B.

3. **GENERAL REQUIREMENTS:**
 - 3.1 **Mandatory Contract Item Requirements:** Contract Items must meet or exceed the mandatory requirements listed below and all associated components listed in Exhibit B – Product List.
 - 3.1.1 **Six (6) – Network Routers**
 - 3.1.1.1 Cisco, Part/SKU# C8200-1N-4T, Router with SMARTnet 3 years, or equal.

 - 3.1.2 **One (1) – Network Switch 48 ports**
 - 3.1.2.1 Cisco, Part/SKU# Catalyst 9300-48P-A Switch 48 port PoE+, Network Adva SMARTnet 3 years, or equal.

REQUEST FOR QUOTATION
[Networking Equipment]

3.1.3 Three (3) – Network Switches 24 ports

3.1.3.1 Cisco, Part/SKU# Catalyst C9200L-24P-4G-E Switch 24-port PoE+ 4 X 1G, Net SMARTnet 3 years, or equal.

3.1.4 Fourteen (14) – Network Switches 8 ports

3.1.4.1 Cisco, Part/SKU# Catalyst C9200CX-8P-2X2G-A Switch Compact Switch 8 port PoE+ SMARTnet 3 years, or equal.

3.1.5 Twenty-four (24) – SFP transceiver modules, MMF

3.1.5.1 Cisco GLC-SX-MMD= 1000Base-SX SFP transceiver module, MMF, or equal.

3.1.6 Alternate “or equal” Product Submission

3.1.6.1 Vendors submitting alternate brand information that proposes an "or equal" product instead of the specified products must provide documentation with their bid response demonstrating that the substitute product and part number meets or exceeds the standards set forth by these specifications and all items listed in Exhibit B. This information will be required before award, failure to submit documentation for an “or equal” product may result in vendor’s bid being disqualified.

4. CONTRACT AWARD:

4.1 Contract Award: The Contract is intended to provide Agencies with a purchase price for the Contract Items. The Contract shall be awarded to the Vendor that provides the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

4.2 Pricing Page: Vendor should complete the Pricing Page (Exhibit A) by inserting the cost for each item listed. **If the cost will be ‘zero’ dollars, this is to only affirm your ability to offer the product at no cost to the agency.** Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor’s bid being disqualified.

Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address: thymes@wvlottery.com

REQUEST FOR QUOTATION
[Networking Equipment]

5. PAYMENT:

5.1 Payment: Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

6. DELIVERY AND RETURN:

6.1 Shipment and Delivery: Vendor shall ship the Contract Items immediately after being awarded this Contract and receiving a purchase order or notice to proceed. Vendor shall deliver the Contract Items within forty-five (45) business days after receiving a purchase order or notice to proceed. Contract Items must be delivered to the Agency at:

**WV Lottery Headquarters
900 Pennsylvania Ave
Charleston, WV 25302**

6.2 Late Delivery: The Agency placing the order under this Contract must be notified in writing if the shipment of the Contract Items will be delayed for any reason. Any delay in delivery that could cause harm to an Agency will be grounds for cancellation of the Contract, and/or obtaining the Contract Items from a third party.

Any Agency seeking to obtain the Contract Items from a third party under this provision must first obtain approval of the Purchasing Division.

6.3 Delivery Payment/Risk of Loss: Vendor shall deliver the Contract Items F.O.B. destination to the Agency's location.

6.4 Return of Unacceptable Items: If the Agency deems the Contract Items to be unacceptable, the Contract Items shall be returned to Vendor at Vendor's expense and with no restocking charge. Vendor shall either make arrangements for the return within five (5) days of being notified that items are unacceptable, or permit the Agency to arrange for the return and reimburse Agency for delivery expenses. If the original packaging cannot be utilized for the return, Vendor will supply the Agency with appropriate return packaging upon request. All returns of unacceptable items shall be F.O.B. the Agency's location. The returned product shall either be replaced, or the Agency shall receive a full credit or refund for the purchase price, at the Agency's discretion.

REQUEST FOR QUOTATION
[Networking Equipment]

6.5 Return Due to Agency Error: Items ordered in error by the Agency will be returned for credit within 30 days of receipt, F.O.B. Vendor's location. Vendor shall not charge a restocking fee if returned products are in a resalable condition. Items shall be deemed to be in a resalable condition if they are unused and in the original packaging. Any restocking fee for items not in a resalable condition shall be the lower of the Vendor's customary restocking fee or 5% of the total invoiced value of the returned items.

7. VENDOR DEFAULT:

7.1 The following shall be considered a vendor default under this Contract.

7.1.2 Failure to provide Contract Items in accordance with the requirements contained herein.

7.1.3 Failure to comply with other specifications and requirements contained herein.

7.1.4 Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.

7.1.5 Failure to remedy deficient performance upon request.

7.2 The following remedies shall be available to Agency upon default.

7.2.2 Immediate cancellation of the Contract.

7.2.3 Immediate cancellation of one or more release orders issued under this Contract.

7.2.4 Any other remedies available in law or equity.

EXHIBIT A – Pricing Page

Section	Description	Manufacturer and Model Number if Bidding "or Equal" products	Unit of Measure	Quantity	Unit Cost	Extended Cost
3.1.1	Network Routers	Cisco Catalyst C8200-1N-4T	EA	6	\$5,570.00 -	\$33,420.00 -
3.1.2	Network Switch 48 ports	C9300-48P-A Cisco Catalyst	EA	1	\$ 6,440.00 -	\$ 6,440.00 -
3.1.3	Network Switches 24 ports	C9200L-24P-4G-E Cisco Catalyst	EA	3	\$ 2,890.00 -	\$ 8,670.00 -
3.1.4	Network Switches 8 ports	C9200CX-8P-2X2G-A Cisco Catalyst	EA	14	\$ 2,450.00 -	\$34,300.00 -
3.1.5	SFP transceiver modules, MMF	GLC-SX-MMD= Cisco	EA	24	\$98.00 -	\$ 2,352.00 -
Overall Total Cost					\$	-

Please note: This information is being captured for auditing and evaluation purposes.

Any product or service not on the Agency provided Pricing Page will not be allowable. The state cannot accept alternate pricing pages, failure to use Exhibit-A Price Page could lead to disqualification of vendors bid. No future use of the Contract or any individual item is guaranteed or implied.

Vendor should type or electronically enter the information into the Pricing Page to prevent errors in the evaluation.

BIDDER /VENDOR INFORMATION:

Vendor Name:	Technology International, Inc.
Address:	1331 South International Parkway, Suite 2251,
City, St. Zip:	Lake Mary, Florida 32746
Phone No.:	407-359-2373
Email Address:	tii@tii-usa.com

Riyal Habib

04/09/2024

Vendor Signature:

Date:

Config Line #	Product Code	Vendor	Service Duration (Months)	Product Description	Type	QTY
1.0	C8200-1N-4T	Cisco		Cisco Catalyst C8200-1N-4T Router	HW/SW	6
1.0.1	CON-L1NCD-C82001N4	Cisco	36	CX LEVEL 1 8X7NCD Cisco Catalyst C8200	Subscription	6
1.1	MEM-C8200-8GB	Cisco		Cisco Catalyst 8200 Edge 8GB memory	HW/SW	6
1.2	M2USB-16G	Cisco		Cisco Catalyst 8000 Edge M.2 USB 16GB	HW/SW	6
1.3	C-RFID-1R	Cisco		Cisco Catalyst 8000 Edge RFID - 1RU	HW/SW	6
1.4	C8000-HSEC	Cisco		U.S. Export Restriction Compliance lic	HW/SW	6
1.5	C8200-RM-19-1R	Cisco		Cisco Catalyst 8200 Rack mount kit - 19" 1R	HW/SW	6
1.6	NETWORK-PNP-LIC	Cisco		Network Plug-n-Play License for zero-touch device deployment	HW/SW	6
1.7	C8200-NIM-BLANK	Cisco		Cisco Catalyst 8200 Edge NIM Blank	HW/SW	6
1.8	C8200-PIM-BLANK	Cisco		Cisco Catalyst 8200 Edge PIM Blank	HW/SW	6
1.9	TE-R-SW	Cisco		TE agent for IOSXE on Enterprise Routing	HW/SW	6
1.10	IOSXE-AUTO-MODE	Cisco		IOS XE Autonomous boot up mode for Unified image	HW/SW	6
1.11	SC8KBEUK9-176	Cisco		UNIVERSAL	HW/SW	6
1.12	PWR-CC1-150WAC	Cisco		Cisco C8200 1RU AC 150W PoE Power supply	HW/SW	6
1.13	CAB-AC	Cisco		AC Power Cord (North America) C13 NEMA 5-15P 2.1m	HW/SW	6
1.14	DNA-P-T1-A-3Y	Cisco		Cisco DNA Advantage On-Prem Lic 3Y - up	HW/SW	6
1.15	SVS-PSTL1-T1-A3Y	Cisco		Success Track L1 - DNA Advantage OnPrem	HW/SW	6
1.16	DSTACK-T1-A	Cisco		Cisco DNA Advantage Stack - upto 100M (Aggr 200M)	HW/SW	6
1.17	NWSTACK-T1-A	Cisco		Cisco Network Advantage Stack - upto 100M (Aggr 200M)	HW/SW	6
1.18	TE-EMBED-WANI	Cisco		Cisco ThousandEyes WAN Insights Embedded	HW/SW	6
1.19	SDWAN-UMB-ADV	Cisco		Cisco Umbrella for DNA Advantage	HW/SW	6
1.20	DNAC-ONPREM-PF	Cisco		Cisco DNA Center On Prem Deployment Option for WAN	HW/SW	6
1.21	C82-1N-4T-PF	Cisco		C8200-1N-4T Platform Selection for DNA Subscription	HW/SW	6
1.22	IOSXE-AUTO-MODE-PF	Cisco		IOS XE Autonomous boot up mode for Unified image	HW/SW	6
2.0	C9300-48P-A	Cisco		Catalyst 9300 48-port PoE+, Network Adva	HW/SW	1
2.0.1	CON-L1NCD-C93004PA	Cisco	36	CX LEVEL 1 8X7NCD Catalyst 9300 48port Po	Subscription	1
2.1	C9300-NW-A-48	Cisco		C9300 Network Advantage 48-port license	HW/SW	1
2.2	SC9300UK9-176	Cisco		Cisco Catalyst 9300 XE 17.6 UNIVERSAL UNIVERSAL	HW/SW	1
2.3	PWR-C1-715WAC-P	Cisco		715W AC 80+ platinum Config 1 Power Supply	HW/SW	1

2.4	C9300-SPS-NONE	Cisco		No Secondary Power Supply Selected	HW/SW	1
2.5	CAB-TA-NA	Cisco		North America AC Type A Power Cable	HW/SW	1
2.6	C9300-SSD-NONE	Cisco		No SSD Card Selected	HW/SW	1
2.7	STACK-T1-50CM	Cisco		50CM Type 1 Stacking Cable	HW/SW	1
2.8	CAB-SPWR-30CM	Cisco		Catalyst Stack Power Cable 30 CM	HW/SW	1
2.9	PWR-C1-BLANK	Cisco		Config 1 Power Supply Blank	HW/SW	1
2.10	TE-C9K-SW	Cisco		TE agent for IOSXE on C9K	HW/SW	1
2.11	C9K-ACC-RBFT	Cisco		RUBBER FEET FOR TABLE TOP SETUP 9200 and 9300	HW/SW	1
2.12	C9K-ACC-SCR-4	Cisco		12-24 and 10-32 SCREWS FOR RACK INSTALLATION QTY 4	HW/SW	1
2.13	CAB-GUIDE-1RU	Cisco		1RU CABLE MANAGEMENT GUIDES 9200 and 9300	HW/SW	1
2.14	C9300-DNA-A-48	Cisco		C9300 DNA Advantage 48-Port Term Licenses	HW/SW	1
14.0.1	CON-L1SWT-C93A48	Cisco		CX LEVEL 1 SW SUB C9300 DNA Advantage	Subscription	1
2.14.1	C9300-DNA-A-48-3Y	Cisco		C9300 DNA Advantage, 48-Port 3 Year Ter	HW/SW	1
2.15	D-DNAS-EXT-S-T	Cisco		Cisco DNA Spaces Extend Term License for Catalyst Switches	HW/SW	1
2.15.1	D-DNAS-EXT-S-3Y	Cisco		Cisco DNA Spaces Extend for Catalyst Switching - 3Year	Subscription	1
2.16	TE-EMBEDDED-T	Cisco		Cisco ThousandEyes Enterprise Agent IBN Embedded	HW/SW	1
2.16.1	TE-EMBEDDED-T-3Y	Cisco		ThousandEyes - Enterprise Agents	Subscription	1
2.17	C9300-NM-8X	Cisco		Catalyst 9300 8 x 10GE Network Module	HW/SW	1
2.18	NETWORK-PNP-LIC	Cisco		Network Plug-n-Play License for zero-touch device deployment	HW/SW	1
3.0	C9200L-24P-4G-E	Cisco		Catalyst 9200L 24-port PoE+, 4 x 1G, Net	HW/SW	3
3.0.1	CON-L1NCD-C920L24G	Cisco	36	CX LEVEL 1 8X7NCD Catalyst 9200L 24port P	Subscription	3
3.1	C9200L-NW-E-24	Cisco		C9200L Network Essentials 24-port license	HW/SW	3
3.2	CAB-TA-NA	Cisco		North America AC Type A Power Cable	HW/SW	3
3.3	PWR-C5-BLANK	Cisco		Config 5 Power Supply Blank	HW/SW	3
3.4	C9200-STACK-BLANK	Cisco		Catalyst 9200 Blank Stack Module	HW/SW	6
3.5	C9K-ACC-RBFT	Cisco		RUBBER FEET FOR TABLE TOP SETUP 9200 and 9300	HW/SW	3
3.6	C9K-ACC-SCR-4	Cisco		12-24 and 10-32 SCREWS FOR RACK INSTALLATION QTY 4	HW/SW	3
3.7	CAB-GUIDE-1RU	Cisco		1RU CABLE MANAGEMENT GUIDES 9200 and 9300	HW/SW	3
3.8	C9200L-DNA-E-24	Cisco		C9200L Cisco DNA Essentials 24-port Term license	HW/SW	3
3.8.0.1	CON-L1SWT-C92LE24	Cisco		CX LEVEL 1 SW SUB C9200L Cisco DNA Ess	Subscription	3
3.8.1	C9200L-DNA-E-24-3Y	Cisco		C9200L Cisco DNA Essentials, 24-port 3Y	HW/SW	3
3.9	NETWORK-PNP-LIC	Cisco		Network Plug-n-Play License for zero-touch device deployment	HW/SW	3

4.0	C9200CX-8P-2X2G-A	Cisco		Catalyst 9000 Compact Switch 8 port PoE+	HW/SW	14
4.0.1	CON-L1NCD-C920CXYZ	Cisco	36	CX LEVEL 1 8X7NCD Catalyst 9000 Compact	Subscription	14
4.1	C9200CX-NW-A-8	Cisco		C9200CX Network Advantage 8-port license	HW/SW	14
4.2	CAB-TA-NA	Cisco		North America AC Type A Power Cable	HW/SW	14
4.3	SCAT9200CXUK9-179	Cisco		Cisco Catalyst 9200CX XE 17.9 UNIVERSAL	HW/SW	14
4.4	C9200CX-DNA-A-8	Cisco		C9200CX Cisco DNA Advantage 8-Port Term Licenses	HW/SW	14
4.0.1	CON-L1SWT-C9201CCD	Cisco		CX LEVEL 1 SW SUB C9200CX Cisco DNA Adva	Subscription	14
4.4.1	C9200CX-DNAA8-3Y	Cisco		C9200CX Cisco DNA Advantage, 3Y Term Lic	HW/SW	14
4.5	NETWORK-PNP-LIC	Cisco		Network Plug-n-Play License for zero-touch device deployment	HW/SW	14
4.6	RACKMNT-19-CMPACT	Cisco		19 in Rackmount for 9200CX switches	HW/SW	14
5.0	GLC-SX-MMD=	Cisco		1000BASE-SX SFP transceiver module, MMF,	HW/SW	24



Technology International, Inc.
 1331 South International Pkwy, Suite 2251
 Lake Mary, FL 32746
 Tel: (407) 359-2373
 Fax: (407) 359-2372
 E-mail: tii@tii-usa.com
 Website: www.tii-usa.com

Equipment Proposal

Description: Lottery Networking Equipment

Solicitation #: CRFQ 0705 LOT2400000010

Agency: State of West Virginia

TII Ref: TII/WV/0424/36111

Date: 04/09/2024

In response to your quote request for Lottery Networking Equipment, Technology International, Inc. is pleased to submit the following for consideration:

ITEM NO.	QTY	DESCRIPTION/ MODEL NO.	UNIT PRICE	EXTD. PRICE
1	6	C8200-1N-4T Cisco Catalyst C8200-1N-4T Router CON-3SNTPC82001N4 Cisco Smart Net Total Care - extended service agreement - 3 years	\$5,570.00	\$33,420.00
2	1	C9300-48P-A Cisco Catalyst 9300 – Network Advantage – switch - 48 ports CON-3SNTC93004PA 3YR SNTC 8X5XNBD CATALYST 9300 48-PORT P	\$6,440.00	\$6,440.00
3	3	C9200L-24P-4G-E Cisco Catalyst 9200L - Network Essentials – switch - 24 ports CON-3SNTPC920L24G CCW 3YR 3YR SNTC 24X7 4HR CATALYST 9200L 24PORT POE	\$2,890.00	\$8,670.00
4	14	C9200CX-8P-2X2G-A Cisco Catalyst 9200CX - Network Advantage - switch - compact - 8 ports	\$2,450.00	\$34,300.00

		CON-3SNTC9200CXM Switch 8 port PoE+ SMARTnet 3 years, or equal.		
5	24	GLC-SX-MMD= Cisco GLC-SX-MMD= 1000Base-SX SFP transceiver module	\$98.00	\$2,352.00
See attached data sheets				
<u>Total.....\$85,182.00</u>				

Warranty: Manufacturer's standard warranty applies.

Delivery:

- Estimated delivery is **16 Weeks** after receipt of order and approved submittal.
- Please note, due to COVID-19 there may be unanticipated disruptions and delays in the supply chains globally, for parts, components, equipment and internal manufacturing services such as engineering, production allocation, and logistics. This may result in manufacturing & delivery delays out of our control. We will do our best to communicate all such impacts and reduce the effects of any such delays.
- All delivery dates quoted are subject to manufacturer's confirmation at time of order.
- Submittal data will be provided for approval after receipt of order (if applicable)
- Customer to provide equipment and personnel to unload
- TII will provide MSO at time of payment confirmation. Customer is responsible for all titling and registration of trailer (If Applicable)

Freight: Included to Charleston, WV 25302.

Payment Terms: NET 30

Prompt Payment discount: 1/4 % 10 days

Quote Validity: 30 days.

***** Notes:**

- Quoted price is not available on a line item basis. This is an offer for a lump sum contract.

Technology International, Inc. Corporate data:

We are a small business and our Tax Payer Identification Number (TIN): 650342335. The price quoted does not include any sales, excise or similar taxes.

We trust that this proposal will meet your requirements and we look forward to hearing from you.

If you have any questions or need more information, please contact us by phone at 407-359-2373, fax at 407-359-2372 or email us at tii@tii-usa.com

Respectfully submitted,



Rifat Habib
Business Development Exec.
Technology International, Inc.

Cisco Catalyst 8200 Series Edge Platforms

Contents

Product overview	4
Platform details	5
Platform performance	5
Overall platform benefits	6
Supported modules	8
Memory, storage, and accessory options	10
Optics and transceivers modules	11
Power supplies	11
Software requirements	12
Licensing	14
Product sustainability	14
Specifications	15
Services	17
Cisco Capital	18
Ordering information	18
For more information	18
Document history	18

The Cisco Catalyst 8200 Series Edge Platforms are 5G-ready cloud edge platforms designed for Secure Access Service Edge (SASE), multilayer security, and cloud-native agility to accelerate your journey to cloud.



The Cisco® Catalyst® 8200 Series Edge Platforms with Cisco IOS® XE SD-WAN software deliver Cisco's secure, cloud-scale SD-WAN solution for the small branch. The platforms are purpose-built for performance and integrated SD-WAN services along with flexibility to deliver security and networking services together from the cloud or on premises. They have a wide variety of interface options to choose from, with backward compatibility to existing WAN, LAN, and voice modules. Powered by Cisco IOS XE, a fully programmable software architecture, and API support, the Catalyst 8200 Series can facilitate automation at scale to achieve zero-touch IT capability while migrating workloads to the cloud. The platforms also come with a trustworthy solutions 2.0 infrastructure that secures them against threats and vulnerabilities through advanced integrity verification and remediation of threats.

The 8200 Series is well suited for small and medium-sized enterprise branch offices at optimal price/performance with integrated SD-WAN services.

The Catalyst 8200 Series Edge Platforms are offered in two models: C8200L-1N-4T for the small branch with SASE-compliant, cloud-based security requirements, and C8200-1N-4T for the small to medium-sized branch with requirements for higher throughput, scale, and service flexibility. In addition to supporting SASE-compliant cloud-based security services, the C8200-1N-4T also delivers a flexible system of best-in-class, on-premises security services through container-based apps, using Cisco's third-party ecosystem.

Product overview

Product highlights

Table 1. Product highlights

Product feature	Benefits and description
Multicore processors	<ul style="list-style-type: none">• C8200-1N-4T uses an Intel® x86 CPU with 8 GB DRAM memory default• C8200L-1N-4T uses an Intel x86 CPU with 4 GB DRAM memory default• High-performance multicore processors support high-speed WAN connections• Dynamic core allocation architecture will repurpose unused cores into forwarding entities as per the user's configuration
Embedded IPsec VPN hardware acceleration	<ul style="list-style-type: none">• C8200-1N-4T enables up to 1 Gbps IPsec traffic• C8200L-1N-4T enables up to 500 Mbps IPsec traffic• Increases scalability for IPsec throughput requirements• SSL and crypto hardware acceleration
Integrated Gigabit Ethernet ports	<ul style="list-style-type: none">• Provides four built-in Ethernet WAN ports• Two Ethernet ports are Small Form-Factor Pluggable (SFP) and two are RJ45 ports, enabling fiber as well as copper connectivity
DRAM	<ul style="list-style-type: none">• C8200-1N-4T ships with 8 GB DRAM• C8200L-1N-4T ships with 4 GB DRAM• C8200-1N-4T can be upgraded to 16 GB and 32 GB DRAM for higher scale and performance• C8200L-1N-4T can be upgraded to 8GB, 16 GB and 32 GB DRAM for higher scale and performance
Flash memory support	<ul style="list-style-type: none">• Both models have an integrated onboard 8-GB flash which is not upgradable. M.2 storage provides flash upgrade options
M.2 storage	<ul style="list-style-type: none">• The C8200-1N-4T is shipped with default 16G M.2 storage and can be upgraded to 32G M.2 USB and 600G M.2 Non-Volatile Memory Express (NVMe) Storage• The C8200L-1N-4T does not ship with a default M.2 storage but can be upgraded to 16G, 32G USB and 600G M.2 Non-Volatile Memory Express (NVMe) Storage
Power supply	<ul style="list-style-type: none">• Both models use an internal, fixed AC power supply• Power over Ethernet (PoE) is available as an option• PoE ports added in the Network Interface Module (NIM) slot will require an additional external PoE power supply
Modularity and form factor	<ul style="list-style-type: none">• 1-Rack Unit (1RU) form factor• Supports NIM and Pluggable Interface Module (PIM) slots
Integrated security	<ul style="list-style-type: none">• 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

Models and configurations



Figure 1.
Catalyst 8200 Series with 1 NIM slot and 4x 1 Gigabit Ethernet WAN ports

Tables 2 and 3 detail platform specifications and performance, respectively.

Table 2. Platform specifications

Model	Description	1G port density	Slots	Memory (DRAM) default	Storage (M.2 SSD) default
C8200-1N-4T	C8200 1RU w/ 1 NIM slot and 4x 1 Gigabit Ethernet WAN ports	4	1 NIM 1 PIM	8 GB	16 GB
C8200L-1N-4T	C8200L 1RU w/ 1 NIM slot and 4x 1 Gigabit Ethernet WAN ports	4	1 NIM 1 PIM	4 GB	No

*16GB eUSB M.2 can only be ordered as a spare.

Platform performance

Table 3a Cisco controller mode (SD-WAN) performance specifications

Feature	C8200-1N-4T	C8200L-1N-4T
SD-WAN IPsec throughput (1400 bytes)	Up to 1 Gbps	Up to 500 Mbps
SD-WAN IPsec throughput (IMIX*)	900 Mbps	400 Mbps
SD-WAN overlay tunnels scale	2500	1500

*IMIX is average packet size of 352 bytes.

Table 3b Cisco autonomous mode (non SD-WAN) performance specifications

Feature	C8200-1N-4T	C8200L-1N-4T
IPv4 forwarding throughput (1400 bytes)	Up to 3.8 Gbps	Up to 3.8 Gbps
IPsec throughput (1400 bytes)	Up to 1 Gbps	Up to 500 Mbps
Number of IPsec Static Virtual Tunnel Interface (SVTI) tunnels	2500	1500

Table 3c Cisco autonomous mode (non SD-WAN) system scalability

Feature	C8200-1N-4T	C8200L-1N-4T
Number of Access Control Lists (ACLs) per system	4000	4000
Number of IPv4 Access Control Entries (ACEs) per system	72,000	72,000
Number of IPv4 routes	1.6M with default 8 GB, up to 4M with 32 GB	800,000 with default 4 GB, up to 4M with 32 GB
Number of IPv6 routes	1.5M with default 8 GB, up to 4M with 32 GB	800,000 with default 4 GB, up to 4M with 32 GB
Number of queues	16,000	16,000
Number of Network Address Translation (NAT) sessions	1.2M with default 8 GB, up to 2M with 32 GB	600,000 with default 4 GB, up to 2M with 32 GB
Number of firewall sessions	512,000	512,000
Number of Virtual Route Forwarding (VRF) instances	4000	2000

Overall platform benefits

Accelerated services with Cisco Software-Defined WAN

Cisco Catalyst SD-WAN is a set of intelligent software services that allow you to connect users, devices, and branch office locations reliably and securely across a diverse set of WAN transport links. The Cisco Catalyst 8000 Edge Platforms Family can dynamically route traffic across the “best” link based on up-to-the-minute application and network conditions for great application experiences. With Catalyst SD-WAN you get tight control over application performance, bandwidth usage, data privacy, and availability of your WAN links. This control is critical as branches conduct greater volumes of mission-critical business using both on-premises and cloud controllers.

Application performance optimization

Ensure that SD-WAN networks meet Service-Level Agreements (SLAs) and maintain strong performance, even if network problems occur. With branch multicloud access, you can accelerate your Software-as-a-Service (SaaS) applications with a simple template push from the SD-WAN controller. Features such as TCP optimization, Forward Error Correction (FEC), and packet duplication enhance application performance for a better user experience.

Multilayer security

You can now move your traditional and complex WAN networks into an agile, software-defined WAN with integrated security. The Catalyst 8200 Series Edge Platforms connect branch offices to the internet and cloud with industry-leading protection against major web attacks. Secure Direct Internet Access (DIA) from the branches helps optimize branch workloads for improved performance, specifically for cloud-hosted applications. At the same time, secure DIA helps ensure that your branch is protected from external threats.

Application visibility

Applications and users are more distributed than ever, and the internet has effectively become the new enterprise WAN. As organizations continue to embrace internet, cloud, and SaaS, network and IT teams are challenged to deliver consistent and reliable connectivity and application performance over networks and services they don't own or directly control.

The Catalyst 8200 Series Edge Platforms are integrated with Cisco ThousandEyes internet and cloud intelligence. IT managers now have expanded visibility, including hop-by-hop analytics, into network underlay, proactive monitoring of SD-WAN overlay, and performance measurement of SaaS applications. This granular visibility ultimately lowers the Mean Time to Identification of Issues (MTTI) and accelerates resolution time.

Unified communications

The Catalyst 8200 Series Edge Platforms offer rich voice services in both SD-WAN and traditional Cisco IOS XE software feature stacks. Cisco is the only SD-WAN vendor to natively integrate analog and digital IP directly into single Customer Premises Equipment (CPE), reducing CapEx and OpEx. In SD-WAN mode, the Catalyst 8200 Series also helps prevent internal and external outages with Survivable Remote Site Telephony (SRST), enabling branch routers to assume the role of call control PBX for telephony survivability. They also continue to support a long list of traditional Cisco IOS XE voice use cases such as Cisco Unified Border Element (CUBE) Session Border Controller (SBC), Cisco Unified Communications Manager Express (CUCME), Survivable Remote Site Telephony (SRST), ISDN, and voice over IP.

Cloud-native agility with a programmable software architecture

Cisco continues to offer a feature-rich traditional Cisco IOS XE routing stack on the Catalyst 8200 Series. IP routing, IPsec, QoS, firewall, NAT, Network-Based Application Recognition (NBAR), Flexible NetFlow (FNF), and many other features are part of Cisco IOS XE, a fully programmable software architecture with API support and a wide variety of protocols and configurations. With an integrated software image and a single binary file, you can now choose between Cisco IOS XE SD-WAN and Cisco IOS XE. And you can easily move from one to the other when you choose to do so.

5G-ready

The Catalyst 8200 Series Edge Platforms are built for high-speed Cat18 LTE and 5G networks. With the higher throughputs from Cat18 LTE and 5G, wireless WAN solutions are becoming feasible options for primary transport use cases. These platforms supports both integrated pluggable modules as well as external Cellular Gateways with Cat18 LTE and 5G capability for improved throughput that addresses those use cases. An integrated PIM module or external Cellular Gateway can be chosen based on a specific branch's cellular coverage, or work in tandem forming a high-availability Active-Active cellular WAN solution

Interface flexibility

Layer 2 (Switched) and Layer 3 (Routed) ports

The Catalyst 8200 Series continues Cisco's support for a flexible single-box solution with both switching and routing for a small branch. Layer 2 NIM modules provides 4- and 8-port switching with PoE capability and NIM based Layer 3 port modules provides extended Layer 3 port density in addition to the four embedded Layer 3 ports

Voice modules

The Catalyst 8200 Series continues Cisco's support for a variety of voice modules for the different voice needs at the branch. Voice module examples include Foreign Exchange Station (FXS), Foreign Exchange Office (FXO), Digital Signal Processor (DSP), etc.

Supported modules

Table 4. Modules supported

Product number	Description
Ethernet Layer 3 Interface	
C-NIM-1M	1-port 2.5/1Gbps RJ-45 WAN, 90W Poe 802.3 af/at/bt NIM
C-NIM-2T	2-port 100Mbps/1Gbps dual-mode RJ45/SFP NIM with WAN MACSec
LAN modules	
NIM-ES2-4	Cisco 4-port Gigabit Ethernet switch NIM
NIM-ES2-8	Cisco 8-port Gigabit Ethernet switch NIM
NIM-ES2-8-P	Cisco 8-port Gigabit Ethernet switch NIM with PoE 802.3 af/at support
Voice modules	
NIM-2FXO	2-port FXO NIM
NIM-4FXO	4-port FXO NIM
NIM-2FXSP	2-port FXS NIM
NIM-4FXSP	4-port FXS NIM
NIM-2FXSP/4FXOP	2-port FXS and 4-port FXO NIM
NIM-4E/M	4-port E/M NIM
NIM-2BRI-NT/TE	2-port BRI (NT and TE) NIM
NIM-4BRI-NT/TE	4-port BRI (NT and TE) NIM
NIM-PVDM-32	32-channel voice DSP NIM

Product number	Description
NIM-PVDM-64	64-channel voice DSP NIM
NIM-PVDM-128	128-channel voice DSP NIM
NIM-PVDM-256	256-channel voice DSP NIM
NIM-1MFT-T1/E1	1-port multiflex trunk voice/clear-channel data T1/E1 module
NIM-2MFT-T1/E1	2-port multiflex trunk voice/clear-channel data T1/E1 module
NIM-4MFT-T1/E1	4-port multiflex trunk voice/clear-channel data T1/E1 module
NIM-8MFT-T1/E1	8-port multiflex trunk voice/clear-channel data T1/E1 module
DSL/broadband	
NIM-VAB-A	Multi-mode VDSL2/ADSL/2/2+ NIM Annex A
NIM-VA-B	Multi-mode VDSL2/ADSL/2/2+ NIM Annex B
NIM-VAB-M	Multi-mode VDSL2/ADSL/2/2+ NIM Annex M
NIM-4SHDSL-EA	Multi-mode G.SHDSL NIM
Channelized T1/E1 and ISDN PRI	
NIM-1CE1T1-PRI	1-port Multiflex trunk voice/channelized data T1/E1 module
NIM-2CE1T1-PRI	2-port Multiflex trunk voice/channelized data T1/E1 module
NIM-8CE1T1-PRI	8-port Multiflex trunk voice/channelized data T1/E1 module
ISDN BRI WAN interface	
NIM-2BRI-S/T	2-port ISDN BRI WAN interface card for data
NIM-4BRI-S/T	4-port ISDN BRI WAN interface card for data
Serial WAN interface	
NIM-1T	1-port serial high-speed WAN interface card
NIM-2T	2-port serial high-speed WAN interface card
NIM-4T	4-port serial high-speed WAN interface card
Async WAN interface	
NIM-16A	16-port Asynchronous Module
NIM-24A	24-port Asynchronous Module
Wireless WAN (LTE)	

Product number	Description
P-5GS6-GL	5G Sub-6 GHz Pluggable - Global
P-LTEAP18-GL	4G/CAT18 LTE Advanced Pro Pluggable - Global
P-LTEA-EA	4G/CAT6 LTE Advanced Pluggable for North American and Europe
P-LTEA-LA	4G/ CAT6 LTE Advanced Pluggable for APAC, ANZ, and LATAM
NIM-LTEA-EA	LTE Advanced for Europe and North America
NIM-LTEA-LA	LTE Advanced for Asia Pacific, Australia and LATAM

Memory, storage, and accessory options

Table 5. Memory, storage, and accessory options

Product number	Description
MEM-C8200-8GB	Cisco C8200 Edge Platform - 8 GB DRAM Memory
MEM-C8200-16GB	Cisco C8200 Edge Platform - 16 GB DRAM Memory
MEM-C8200-32GB	Cisco C8200 Edge Platform - 32 GB DRAM Memory
M2USB-16G	Cisco C8000 Edge Platform - 16 GB M.2 USB SSD Storage
M2USB-32G	Cisco C8000 Edge Platform - 32 GB M.2 USB SSD Storage
SSD-M2NVME-600G	Cisco C8000 Edge Platform - 600 GB M.2 NVMe SSD Storage
C8200-RM-19	Cisco C8200 1RU Edge Platform - Rack Mount kit - 19"
C8200-RM-23	Cisco C8200 1RU Edge Platform - Rack Mount kit - 23"
C8200-WM-1R	Cisco C8200 1RU Edge Platform - Wall Mount Kit
C8200-RFID-1R	Cisco C8200 1RU Edge Platform - RFID
C8200-NIM-BLANK	Cisco C8200 NIM Blank
C8200-PIM-BLANK	Cisco C8200 PIM Blank

Optics and transceivers modules

Find a full list of optics and transceivers [here](#).

Power supplies

Table 6. Power supply specifications

Power supply feature	Default	PWR-CC1-150WAC optional external PSU for PoE
Power maximum rating	100W	150W For PoE only PoE budget: 150W
Input-voltage range and frequency	90 to 264 VAC 47 to 63 Hz	90 to 264 VAC 47 to 63 Hz
Power supply efficiency	85%	Avg 89%
Input current	1.5A max	2A max
Output ratings	12V 8.4A	54V 2.78A
Output holdup time	20 ms	10 ms
Power supply input receptacles	IEC 320 C14	IEC 320 C14
Power cord rating	10A	10A

Asset management: The Catalyst 8200 Series Edge Platforms have an embedded RFID tag that holds the serial number and product ID for easy asset and inventory management using commercial RFID readers. The RFID tag is external and can be easily removed if needed or can be unselected at the time of ordering. It also features an extendable label tag providing the same information. A QR code on this tag makes asset management easy by simply scanning the label using a smartphone QR reader.

Software requirements

Cisco DNA Software for the Catalyst 8200 Series offers comprehensive solutions for enterprise branch networks.

Table 7. Minimum software requirements

Platform product ID (PID)	Description	Minimum software requirement
C8200-1N-4T	Cisco Catalyst 8200 Series Edge Platform	Cisco IOS XE Software Release 17.4.1
C8200L-1N-4T	Cisco Catalyst 8200 Series Edge Platform	Cisco IOS XE Software Release 17.5.1

Table 8. ThousandEyes requirements

Feature	Requirements
Cisco ThousandEyes	ThousandEyes is supported with a minimum 8 GB DRAM and 8 GB bootflash/storage. Additional memory and storage will be necessary for concurrently running the ThousandEyes agent with containerized SD-WAN security services.

Table 9a. Software features and protocols for autonomous mode

Feature	Description
Protocols	IPv4, IPv6, static routes, Routing Information Protocol Versions 1 and 2 (RIP and RIPv2), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP), BGP Route Reflector, Intermediate System-to-Intermediate System (IS-IS), Multicast Internet Group Management Protocol Version 3 (IGMPv3), Protocol Independent Multicast Sparse Mode (PIM SM), PIM Source-Specific Multicast (SSM), Resource Reservation Protocol (RSVP), Cisco Discovery Protocol, Encapsulated Remote Switched Port Analyzer (ERSPAN), Cisco IOS IP Service-Level Agreements (IPSLA), Call Home, Cisco IOS Embedded Event Manager (EEM), Internet Key Exchange (IKE), ACLs, Ethernet Virtual Connections (EVC), Dynamic Host Configuration Protocol (DHCP), Frame Relay, DNS, Locator ID Separation Protocol (LISP), Hot Standby Router Protocol (HSRP), RADIUS, Authentication, Authorization, and Accounting (AAA), Application Visibility and Control (AVC), Distance Vector Multicast Routing Protocol (DVMRP), IPv4-to-IPv6 Multicast, Multiprotocol Label Switching (MPLS), Layer 2 and Layer 3 VPN, IPsec, Layer 2 Tunneling Protocol Version 3 (L2TPv3), Bidirectional Forwarding Detection (BFD), IEEE 802.1ag, and IEEE 802.3ah
Encapsulations	Generic Routing Encapsulation (GRE), Ethernet, 802.1q VLAN, Point-to-Point Protocol (PPP), Multilink Point-to-Point Protocol (MLPPP), Frame Relay, Multilink Frame Relay (MLFR) (FR.15 and FR.16), High-Level Data Link Control (HDLC), serial (RS-232, RS-449, X.21, V.35, and EIA-530), and PPP over Ethernet (PPPoE)
Traffic management	QoS, Class-Based Weighted Fair Queuing (CBWFQ), Weighted Random Early Detection (WRED), Hierarchical QoS, Policy-Based Routing (PBR), Performance Routing (PFR), and NBAR
Cryptographic algorithms	Encryption: Data Encryption Standard (DES), 3DES, Advanced Encryption Standard (AES)-128 or AES-256 (in Cipher Block Chaining [CBC] and Galois/Counter Mode [GCM]) Authentication: RSA (768/1024/2048 bit), ECDSA (256/384 bit) Integrity: MD5, SHA, SHA-256, SHA-384, SHA-512
Unified communications	Call Admission Control (CAC), Cisco Unified Border Element (CUBE) Session Border Controller (SBC), Cisco Unified Communications Manager Express (CUCME), (ISDN), RADIUS , RFC 4040-based clear channel codec signaling with Session Initiation Protocol

Feature	Description
	(SIP), Resource Reservation Protocol (RSVP), RTP Control Protocol (RTCP), SIP for voice over IP (VoIP), Survivable Remote Site Telephony (SRST), Secure Real-Time Transport Protocol (SRTP), and voice modules

Table 9b. Software features and protocols for controller mode

Feature	Description
Core features	IPv4, IPv6, static routes, OSPF, EIGRP, BGP, Overlay Management Protocol (OMP), Application Aware Routing (AAR), Traffic Engineering, service insertion, zero trust, whitelisting, tamper-proof module, DTLS/TLS, IPsec, classification, prioritization, low latency queuing, remarking, shaping, scheduling, policing, mirroring, Multicast IPv4 support, service advertisement and insertion policy, Simple Network Management Protocol (SNMP), Network Time Protocol (NTP), DNS client, DHCP, DHCP client, DHCP server, DHCP relay archival, syslog, Secure Shell (SSH), Secure Copy (SCP), Cflowd v10 IPFIX export, IPv6 for transport side, Virtual Router Redundancy Protocol (VRRP), MPLS, NAT (DIA, service-side, overload/PAT, NAT64, etc.), NAT pools, split DNS, ACLs, BFD, NETCONF over SSH, CLI, NTP server support, BFD with service-side BGP, BGP community propagation to OMP, 6 SLA for AAR, Cisco TrustSec®/SD-Access (inline scalable group tag [SGT] propagation), custom app with Software-Defined AVC (SD-AVC), multicast AAR, dynamic on-demand tunnels, OSM, OSPFv3, route policies, multi-VRF support
Encapsulations	Generic Routing Encapsulation (GRE), Ethernet, 802.1q VLAN
Application experience	QoS, FEC, Class of Service (CoS) marking, Weighted Random Early Detection (WRED), Hierarchical QoS, PBR, NBAR, SD-AVC, per-tunnel QoS, Cloud OnRamp for SaaS, Enhanced Office 365 traffic steering, direct access, FNF
Cryptographic algorithms	Encryption: AES-256 (in CBC and GCM modes), Internet Key Exchange (IKE), Cisco Public Key Infrastructure (PKI) Authentication: AAA, RSA (2048 bit), ESP-256-CBC, HMAC-SHA1, ECDSA (256/384 bit) Integrity: SHA-1, SHA-2
Security: C8200-1N-4T	Built-in end-to-end segmentation (VPNs), zone-based firewall (ZBFW), PKI, Cisco DNA Layer Security, Snort® IPS/IDS, URL filtering, Secure Malware Defense, Secure Malware Analytics, Application-Level Gateway (ALG) for ZBFW, Secure Internet Gateway (SIG)
Security: C8200L-1N-4T	Built-in end-to-end segmentation (VPNs), ZBFW, PKI, Cisco DNA Layer Security, SIG
Unified communications	Cisco Unified Border Element (CUBE), Survivable Remote Site Telephony (SRST), Cisco Unified Communications Manager Express (CUCME) &, voice modules

Licensing

The Catalyst 8200 Series Edge Platforms are offered only with a Cisco DNA Software subscription, Enterprise Agreement, and Managed Service Licensing Agreement (MSLA). For more details, refer to this [licensing guide](#).

Cisco DNA stack:

- Cisco DNA Essentials
- Cisco DNA Advantage
- Cisco DNA Premier

Network stack:

- Network Essentials
- Network Advantage

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide

Cisco ThousandEyes

A valid ThousandEyes agent license is required to activate the ThousandEyes agent. Existing ThousandEyes subscriptions can be leveraged on eligible Catalyst 8200 Series platforms. Additional ThousandEyes subscription information can be found [here](#).

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
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Operating and nonoperating conditions	Table 10. Mechanical specifications
	Mean Time Between Failures (MTBF)	Table 10. Mechanical specifications
	Safety and EMC (emissions, immunity and ETSI/EN)	Table 10. Mechanical specifications
Power	Power Supply	Table 1. Product highlights Table 6. Power supply specifications
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Dimensions and weight	Table 10. Mechanical specifications

Specifications

Table 10. Mechanical specifications

Description	Specification
Part number	C8200-1N-4T & C8200L-1N-4T
Dimensions (H x W x D)	1.73 x 17.25 x 11.8 in. (4.39 x 43.81 x 29.97 cm)
Rack Units (RU)	1RU
Chassis weight	10 lb (4.54 kg)
Input voltage	AC: 90 to 264 VAC
Operating temperature	32° to 104°F (0° to 40°C)
Storage temperature	-40° to 150°F (-40° to 70°C)
Acoustics, both models: Sound pressure (Typical/maximum)	54 dBA/69 dBA
Acoustics, both models: Sound power (Typical/maximum)	68 dBA/80 dBA
Relative humidity operating and nonoperating noncondensing	Ambient (noncondensing) operating: 5% to 85% Ambient (noncondensing) nonoperating and storage: 5% to 95%
Altitude	0 to 10,000 feet (0 to 3050 meters)
Mean Time Between Failures (MTBF)	692,577 hours

Table 11. Safety and compliance

Description	Specification
Safety certifications	UL 60950-1 CAN/CSA-C22.2 No. 60950-1 EN 60950-1 IEC 60950-1 AS/NZS 60950-1 IEC/EN 60825 Laser Safety FDA: Code of Federal Regulations Laser Safety
EMC (emissions)	47 CFR Part 15 Class A ICES 003 Class A AS/NZS CISPR 32 Class A CISPR 32 Class A EN55032 Class A VCCI-CISPR 32 Class A CNS-13438 Class A KN32 Class A IEC/EN 61000-3-2: Power Line Harmonics IEC/EN 61000-3-3: Voltage Fluctuations and Flicker
EMC (immunity)	IEC/EN-61000-4-2: Electrostatic Discharge Immunity IEC/EN-61000-4-3: Radiated Immunity IEC/EN-61000-4-4: Electrical Fast Transient Immunity IEC/EN-61000-4-5: Surge AC, DC, and Signal Ports IEC/EN-61000-4-6: Immunity to Conducted Disturbances IEC/EN-61000-4-8: Power Frequency Magnetic Field Immunity IEC/EN-61000-4-11: Voltage DIPS, Short Interruptions, and Voltage Variations KN35
EMC (ETSI/EN)	EN300 386: Telecommunications Network Equipment (EMC) EN55032: Multimedia Equipment (Emissions) EN55024: Information Technology Equipment (Immunity) EN55035: Multimedia Equipment (Immunity) EN61000-6-1: Generic Immunity Standard

Services

Cisco Customer Experience support services for Catalyst 8000 platforms and Cisco DNA Software for SD-WAN and Routing

This section discusses the Cisco support services available for the Catalyst 8000 platforms and associated Cisco DNA Software for SD-WAN and Routing, as well as optional support service offers.

- **Catalyst 8000 platforms:** Cisco Solution Support is the default and recommended Cisco support service. However, Cisco Solution Support is not mandatory; it can be removed or replaced with another Cisco support service or partner service per the customer's preference.
- **Cisco DNA Software for SD-WAN and Routing:** Cisco Solution Support is the default Cisco support service. However, Cisco Solution Support is not mandatory; the customer may choose to use the Cisco Subscription Embedded Software Support included with the purchase of this software.

Note:

- When Solution Support is selected, it must be ordered on both the Catalyst 8000 platform and Cisco DNA Software for SD-WAN and Routing for complete customer entitlement to this premium support service.
- SD-WAN and Routing customers with Solution Support or Cisco Subscription Embedded Software Support are entitled to maintenance releases and software updates for **Cisco DNA SD-WAN and Routing software only**. Support for the Catalyst 8000 platform's OS and network stack, along with OS updates, is covered by the support contract on the Catalyst 8000 platform.
- For ThousandEyes support, C8200L-1N-4T must be upgraded to a minimum of 8GB DRAM

Cisco Solution Support is a premium support purpose-built for today's multiproduct, multivendor network environments and provides:

- A primary point of contact, centralizing support across a solution deployment
- Solution, product, and interoperability expertise
- No requirement for customers to isolate their issue to a product to open a case
- 30-minute service response objective for Severity 1 and 2 cases
- Prioritized case handling over product support cases
- Product support team coordination (Cisco and Solution Support Alliance Partners)
- Accountability for multiproduct, multivendor issue management from first call to resolution, no matter where the issue resides

Learn more about Cisco Solution Support at: www.cisco.com/go/solutionsupport

Cisco Subscription Embedded Software Support includes:

- Access to support and troubleshooting via online tools and web case submission. Case severity or escalation guidelines are not applicable.
- Cisco Technical Assistance Center (TAC) access 24 hours per day, 7 days per week to assist by telephone, or web case submission and online tools with application software use and troubleshooting issues.
- Access to www.cisco.com, providing helpful technical and general information on Cisco products, as well as access to Cisco's online Software Center library.

Note: No additional products or fees are required to receive embedded support for Cisco DNA Software for SD-WAN and Routing. However, if using embedded support for this software, hardware support for the Catalyst 8000 platforms must be purchased separately, as Cisco Subscription Embedded Software Support does not cover hardware. In this case, Cisco Smart Net Total Care® Service is recommended for the Catalyst 8000 platforms.

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For more information

For more information about the Cisco Catalyst 8200 Series Edge Platforms, Visit: <https://www.cisco.com/go/C8200> or contact your local Cisco account representative.

Document history

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Cisco Catalyst 9300 Series Switches

Contents

Built to reimagine connection, reinforce security and redefine experience	3
Product overview	5
Platform details	7
Platform benefits	20
Software requirements	29
Specifications	35
Warranty	63
Product sustainability	64
Cisco Services	65
Ordering information	65
Cisco Capital	77
Document history	78

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. With Catalyst 9300 switches, you choose how you want to manage your network - on-premise, virtual or from the cloud.

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 32 ports of 90W UPOE+ for standalone or 256 ports of 90W UPOE+ with an 8-member stack.
- **Stack Power 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).
- **Cisco ASAc Firewall enabled:** Using application hosting on Cisco Catalyst 9300 Switches, Cisco Adaptive Security Virtual Appliance (ASAc) and stateful inspection of traffic in a network can be seamlessly added to existing networks without any additional hardware.
- **Cloud management and monitoring:** Cloud management and monitoring provides the ability to manage or view Catalyst 9300 switch statistics, configuration, and troubleshooting capabilities in Meraki dashboard.
- **Investment Protection:** Catalyst 9300X redundant fans and power supplies, data stack and StackPower cables are backward compatible with the Catalyst 9300.

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 Catalyst, Cisco DNA and Meraki Software

Cisco Catalyst, Cisco DNA and Meraki Software subscriptions offer a valuable and flexible way to buy software for the access, WAN, and data center domains. At each stage in the product lifecycle, Cisco Catalyst, Cisco DNA and Meraki Software helps make buying, managing, and upgrading your network and infrastructure software easier. Cisco 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 Catalyst Software Subscription for Switching support model.
- Choose what management model works best for you - on-premises, virtual or in the cloud.
- Access to end-to-end network visibility with Cisco Spaces, service assurance through Cisco ThousandEyes Network and Application Synthetics and Cisco ASAc firewall (with Cisco Catalyst and Cisco DNA Advantage licenses).

Cisco Catalyst 9300 Series switches lets you manage your entire switching structure as a single, converged component. With one management system, whether on-premises or in the cloud, and one policy for wired and wireless networks, it offers an efficient way to provide more secure access.

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 Catalyst and DNA Advantage license).
 - Fully managed Meraki cloud customers are able to take advantage of power of Catalyst 9300 switching in their Meraki cloud through the cloud-management service.
 - **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 Catalyst Center and Meraki Dashboard.
 - Policy handled through the Cisco Identity Services Engine (ISE).
 - Network assurance provided through the Cisco Catalyst Center and Meraki Dashboard.
 - 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
Catalyst 9300X	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)
Catalyst 9300	10G, 25G, 40G and mGig	Stackwise-480	48x5G and 24x10G	✓	✗	✓
Catalyst 9300L	✗	Stackwise-320	12x10G	✗	✗	✓
Catalyst 9300LM	✗	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
Modular uplink models			
C9300X-48HX	48 port Cisco UPOE+, 48x 10G Multigigabit (10G/5G/2.5G/1G/100M) with 90W UPOE+	Modular Uplinks	1100W AC
C9300X-48TX	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
C9300X-48HXN	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
C9300X-24HX	24 port Cisco UPOE+, 24x 10G Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300X-12Y	12 port 25G/10G/1G SFP28	Modular Uplinks	715W AC
C9300X-24Y	24 port 25G/10G/1G SFP28	Modular Uplinks	715W AC
C9300-24T	24 port Data	Modular Uplinks	350W AC
C9300-48T	48 port Data	Modular Uplinks	350W AC
C9300-24P	24 port PoE+	Modular Uplinks	715W AC
C9300-48P	48 port PoE+	Modular Uplinks	715W AC
C9300-24U	24 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-48U	48 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-24UX	24 port Multigigabit Cisco UPOE (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-48UXM	48 port Cisco UPOE, 36 ports 100M/1G/2.5G + 12 ports Multigigabit (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-48UN	48 port 5Gbps Multigigabit UPOE ports (5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-24UB	24 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-24UXB	24 port Multigigabit Cisco UPOE (10G/5G/2.5G/1G/100M)	Modular Uplinks	1100W AC
C9300-48UB	48 port Cisco UPOE	Modular Uplinks	1100W AC
C9300-24H	24 port Cisco UPOE+	Modular Uplinks	1100W AC
C9300-48H	48 Cisco UPOE+	Modular Uplinks	1100W AC
C9300-24S	24 1G SFP	Modular Uplinks	715W AC
C9300-48S	48 port 1G SFP	Modular Uplinks	715W AC
Fixed uplink models			
C9300L-24T-4G	24 port Data	4x 1G fixed uplinks	350W AC
C9300L-24T-4X	24 port Data	4x 10G/1G fixed uplinks	350W AC
C9300L-48T-4G	48 port Data	4x 1G fixed uplinks	350W AC

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
C9300L-48T-4X	48 port Data	4x 10G/1G fixed uplinks	350W AC
C9300L-24P-4G	24 port PoE+	4x 1G fixed uplinks	715W AC
C9300L-24P-4X	24 port PoE+	4x 10G/1G fixed uplinks	715W AC
C9300L-48P-4G	48 port PoE+	4x 1G fixed uplinks	715W AC
C9300L-48P-4X	48 port PoE+	4x 10G/1G fixed uplinks	715W AC
C9300L-48PF-4G	48 port PoE+	4x 1G fixed uplinks	1100W AC
C9300L-48PF-4X	48 port PoE+	4x 10G/1G fixed uplinks	1100W AC
C9300L-24UXG-4X	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
C9300L-24UXG-2Q	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
C9300L-48UXG-4X	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
C9300L-48UXG-2Q	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
C9300LM-48UX-4Y	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 ¹
C9300LM-48U-4Y	48 port 1G (1G/100M/10M) with Cisco UPOE	4x25G fixed uplinks	1000W AC ¹
C9300LM-24U-4Y	24 port 1G (1G/100M/10M) with Cisco UPOE	4x25G fixed uplinks	600W AC ¹
C9300LM-48T-4Y	48 port 1G (1G/100M/10M) Data	4x25G fixed uplinks	600W AC ¹

¹C9300LM 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.

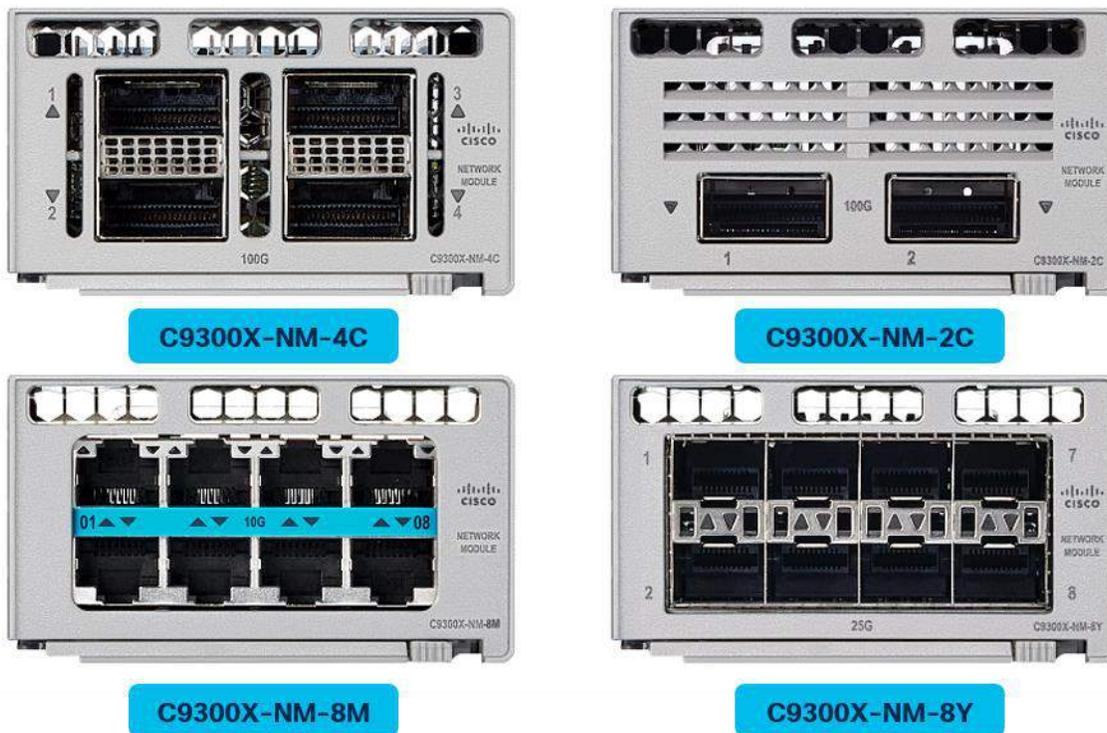


Figure 2.
Cisco Catalyst 9300X Network Modules



Figure 3.
Cisco Catalyst 9300 Series Network Modules

Table 3. Network module numbers and descriptions

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

Network module	Description
C9300-NM-4M	Catalyst 9300 Series 4x Multigigabit Network Module
C9300-NM-8X	Catalyst 9300 Series 8x 10G/1G Network Module
C9300-NM-2Q	Catalyst 9300 Series 2x 40G Network Module
C9300-NM-2Y	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
C9300X-48HX	PWR-C1-1900WAC-P	Upgrade	1390W	1740W	2105W	2490W	3290W
	PWR-C1-1100WAC-P	Default	590W	940W	1305W	1690W	2490W
C9300X-48TX	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE

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
C9300X-48HXN	PWR-C1-1900WAC-P	Upgrade	1490W	1840W	2205W	2590W	3390W
	PWR-C1-1100WAC-P	Default	690W	1040W	1405W	1790W	2590W
C9300X-24HX	PWR-C1-1900WAC-P	Upgrade	1535W	1885W	2160W*	2160W*	2160W*
	PWR-C1-1100WAC-P	Default	735W	1085W	1450W	1835W	2160W*
C9300X-24Y	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9300X-12Y	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9300-48H	PWR-C1-1900WAC-P	Upgrade	1622W	1972W	2337W	2722W	2880W
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1922W	2722W
C9300-24H	PWR-C1-1900WAC-P	Upgrade	1630W	1980W	2160W*	2160W*	2160W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1545W	1930W	2160W
C9300-48UN	PWR-C1-1900WAC-P	Upgrade	1445W	1795W	2160W	2545W	2880W*
	PWR-C1-1100WAC-P	Default	645W	995W	1360W	1745W	2545W
C9300-48UXM	PWR-C1-1900WAC-P	Upgrade	1290W	1640W	2005W	2880W*	2880W*
	PWR-C1-1100WAC-P	Default	490W	840W	1205W	1590W	2390W
C9300-24UX	PWR-C1-1900WAC-P	Upgrade	1360W	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	560W	910W	1275W	1440W*	1440W*
C9300-48U	PWR-C1-1900WAC-P	Upgrade	1622W	1800W**	1800W**	1800W**	1800W**
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1800W**	1800W**
C9300-24U	PWR-C1-1900WAC-P	Upgrade	1440W*	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1152W	1440W*	1440W*
C9300-48P	PWR-C1-1100WAC-P	Upgrade	822W	1172W	1440W*	1440W*	1440W*
	PWR-C1-715WAC-P	Default	437W	787W	1152W	1440W*	1440W*
C9300-24P	PWR-C1-1100WAC-P	Upgrade	720W*	720W*	720W*	720W*	720W*
	PWR-C1-715WAC-P	Default	445W	720W*	720W*	720W*	720W*
C9300-48T	PWR-C1-350WAC-P***	Default	No POE	No POE	No POE	No POE	No POE
C9300-24T	PWR-C1-350WAC-P***	Default	No POE	No POE	No POE	No POE	No POE

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
C9200-48S	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9200-24S	PWR-C1-715WAC-P	Default	No POE	No POE	No POE	No POE	No POE
C9300-48UB	PWR-C1-1900WAC-P	Upgrade	1622W	1800W**	1800W**	1800W**	1800W**
	PWR-C1-1100WAC-P	Default	822W	1172W	1537W	1800W**	1800W**
C9300-24UB	PWR-C1-1900WAC-P	Upgrade	1440W*	1440W*	1440W*	1440W*	1440W*
	PWR-C1-1100WAC-P	Default	830W	1180W	1440W*	1440W*	1440W*
C9300-24UXB	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
C9300L-24T-4G	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-24T-4X	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-48T-4G	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-48T-4X	PWR-C1-350WAC-P	Default	No PoE	No PoE	No PoE	No PoE
C9300L-24P-4G	PWR-C1-715WAC-P	Default	505W	720W*	720W*	720W*
C9300L-24P-4X	PWR-C1-715WAC-P	Default	505W	720W*	720W*	720W*
C9300L-48P-4G	PWR-C1-715WAC-P	Default	505W	855W	1220W	1440W*
C9300L-48P-4X	PWR-C1-715WAC-P	Default	505W	855W	1220W	1440W*
C9300L-48PF-4G	PWR-C1-1100WAC-P	Default	890W	1240W	1440W	1440W*
C9300L-48PF-4X	PWR-C1-1100WAC-P	Default	890W	1240W	1440W	1440W*
C9300L-24UXG-4X	PWR-C1-1100WAC-P	Default	880W	1230W	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-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 60W UPOE 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
C9300X SKUs	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
C9300 SKUs	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
C9300L SKUs	StackWise-320	320 Gbps	C9300L-STACK-KIT Or C9300L-STACK-KIT2	8	Stacks with other Catalyst 9300L and 9300LM models with same license level
C9300LM SKUs	StackWise-320	320 Gbps	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
STACK-T1-50CM	Data stack 50 cm (cable option with C9300 and C9300X SKUs)

Model	Description
STACK-T1-1M	Data stack 1m (cable option with C9300 and C9300X SKUs)
STACK-T1-3M	Data stack 3m (cable option with C9300 and C9300X SKUs)
C9300L-STACK-KIT	Stack kit for C9300L SKUs only: Two data stack adapters and one data stack cable
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
Total number of MAC addresses	32,000	32,000	64,000	32,000
Total number of IPv4 routes (ARP plus learned routes)	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)
IPv6 routing entries	19,500	16,000	56,000	16,000
Multicast routing scale	8,000	8,000	16,000	8,000
QoS scale entries	4,000	5,120	18,000	5,120
ACL scale entries	8,000	5,120	18,000	5,120
Packet buffer per SKU	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
FNF entries	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 flows on 24- and 48-port Gigabit Ethernet models 128,000 flows on 24-port Multigigabit	128,000 flows on 24- and 48-port Gigabit Ethernet models 256,000 flows on 24-port Multigigabit	64,000 flows on 24- and 48-port Gigabit Ethernet models
DRAM	16 GB	8 GB	8 GB	8 GB
Flash	16 GB	16 GB	16 GB	16 GB
VLAN IDs	4094	4094	4094	4094
Total Switched Virtual Interfaces (SVIs)	1000	1000	1000	1000
Jumbo frames	9198 bytes	9198 bytes	9198 bytes	9198 bytes
Total routed ports per Catalyst 9300 Series	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

SKU	Switching capacity	Switching capacity with stacking	Forwarding rate	Forwarding rate with stacking
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
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.

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.

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 Catalyst and Cisco DNA Advantage License and Umbrella License per device.

- **Cisco ASAc App hosting Integration:**

The integration of ASAc on Cisco Catalyst 9000 switches simplifies the network design by providing the flexibility to plug in small-form factor firewalls in the network closer to the source. It also avoids complex tunnels to centralized firewalls. This design lowers the total cost of ownership by reducing the number of physical firewall appliances in the network.

The ASAc Firewall App hosting solution hosts a virtual firewall or ASAc on Cisco Catalyst 9300 switches. All the physical firewalls next to a switch can be virtualized and deployed on the switch itself. As in a traditional network, the SecOps manage the ASAc firewalls deployed on the Catalyst switches, and the NetOps teams instantiate the application and perform lifecycle management using Cisco Catalyst Center. The SecOps team controls policy management using the Cisco Defense Orchestrator. Both the SecOps and NetOps teams can seamlessly manage the network without any disruptions.

The container-version of the Cisco ASAc provides full firewall functionality to secure IT, OT, and IoT converged networks. ASAc uses Layer 3 firewall policies and does a stateful inspection of the traffic.

The ASAc firewall runs on a 240G external Solid-State Drive (SSD) that is mounted on a Cisco Catalyst 9300 Series switch. Cisco Catalyst Center deploys the ASAc on these Catalyst switches, and ASAc is then onboarded to the Cisco Defense Orchestrator.

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 Catalyst and 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 Catalyst and Cisco DNA Advantage option with a 3 year, 5 year or a 7 year subscription. [Please see this guide](#) for more information about the free Cisco ThousandEyes entitlements that come with your Cisco Catalyst 9300 or 9400 Series Cisco DNA Advantage subscription.

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.

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.

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.

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.

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, 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 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
PoE on all ports (15.4W per port)	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
PoE+ on all ports (30W per port)	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*
Cisco UPOE (60W per port) & IEEE 802.3bt type3 on all ports (24-port switch) or up to 30 ports (48-port switch)	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
Cisco UPOE+ (90W per port) & IEEE 802.3bt type4 on 21 ports (24-port and 48-port switch)	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
PoE on all ports (15.4W per port)	1 PWR-C1-715WAC-P/PWR-C1-715WDC	1 PWR-C1-1100WAC-P or 2 PWR-C1-715WAC-P
PoE+ on all ports (30W per port)	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.

Software requirements

[Cisco Catalyst and Cisco DNA Software for Access Switching](#) is available for the **Cisco Catalyst 9300 Series**. Meraki Software for cloud management is also available for certain models.

Cisco Catalyst and Cisco DNA Software for Access Switching offers comprehensive solutions for the enterprise campus and branch offices. Cisco Catalyst and 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 Catalyst and 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 Catalyst and Cisco DNA Advantage Software with full Cisco DNA capabilities and SD-Access, bundled with ISE Base, ISE Plus, and StealthWatch.

For ordering information for Cisco Catalyst and 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.

The Meraki Software option combines the simplicity of the Meraki dashboard with power of Catalyst 9000 switching hardware. To satisfy high-bandwidth applications and the deployment of high-speed 802.11ax/Wi-Fi 6/6E access points, the Meraki Software option provides multigigabit ports, 480G stacking, and modular 10/40G uplinks. Catalyst 9300 models with the Meraki Software option deliver resiliency with fast stack convergence and StackPower. They provide Adaptive Policy using an over-the-wire tag which segments traffic into security groups to deliver scalable security. The Catalyst 9300 models integrated under the Meraki dashboard provide a simple, powerful solution to the most demanding wired access applications.

Catalyst 9300 model switches come with Adaptive Policy to provide simple and scalable security policies to segment traffic using Security Groups in Meraki Dashboard. Security Groups are created in the dashboard using natural language such as “IoT device” and “Guest.” The security policy intent (e.g. Permit or Deny) is then simply provisioned between Security Groups which results in the segmentation of each group’s traffic. By making security policy management intuitive and scalable relative to legacy IP-address based Access Control Lists, Adaptive Policy empowers operators to confidently secure their network traffic independent of future network changes.

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 Catalyst and Cisco DNA Essentials, Cisco Catalyst and Cisco DNA Advantage and Meraki Advanced and Enterprise options. In addition to on-box capabilities, the features available with this package provide Cisco innovations on the switch, as well as on Cisco Catalyst Center. and Meraki Dashboard. For Catalyst 9300 models ordered with a Network Essentials and Network Advantage license, a Cisco Catalyst or Cisco DNA subscription license is mandatory at the time of configuration. For Catalyst 9300 models ordered with a Meraki SKU, the term license is ordered separately but is required to be recognized in Meraki Dashboard. With Cisco Catalyst and 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 Catalyst and Cisco DNA Software subscription stacks (Cisco Catalyst and 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 Network Essentials and Network Advantage 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 13 shows the combinations of Network perpetual and Cisco Catalyst and Cisco DNA Software subscription licenses that must be purchased.

Table 14. Cisco Catalyst, Cisco DNA and Network Licensing combinations

	Cisco Catalyst and Cisco DNA Essentials	Cisco Catalyst and Cisco DNA Advantage
Network Essentials	Yes**	Yes**
Network Advantage	No*	Yes

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

**Network Advantage is inclusive of Network Essentials features.

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 Catalyst or Cisco DNA subscription term license in order to purchase a switch with Network Essentials or Network Advantage perpetual licenses. 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 Catalyst Center just to use Cisco Catalyst, Cisco DNA or Network packages. Meraki Dashboard is required to deploy a Catalyst 9300 switch with a Meraki software license.

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).

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide.

Software licenses

	Cisco Catalyst Software subscription ^{new}	Cisco DNA Software subscription	Cisco Meraki Software subscription ^{new}	Network Stack
Packages¹	3Y, 5Y or 7 Year Terms	3Y, 5Y or 7 Year Terms	1Y, 3Y, 5Y, 7Y or 10 Year Terms	Perpetual
Tiers	Advantage, Essentials	Advantage, Essentials	Advanced, Enterprise	Advantage, Essentials
Portability²	✓	✓		✓
Management options	Catalyst Center, Meraki Dashboard Monitoring	Catalyst Center, Meraki Dashboard Monitoring	Meraki Dashboard Management	Meraki Dashboard CLI, Web UI
Included support	Base product-level support for Hardware, Software and OS	Software support (SWSS)	Product-level support for Hardware, Software and OS	X
Included³ add-ons: Common ISE policy, Thousand Eyes network and application assurance, Cisco Spaces	✓	✓	X	X

¹For all new orders, subscription licenses are mandatory and must be of the same tier as network licenses

²Portability within the same Catalyst 9K series of hardware

³Only available with Advantage tier

There are three choices for software subscription: Cisco DNA, Cisco Catalyst or Cisco Meraki. They provide:

- 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).
- Base product-level support for hardware, software, and Cisco IOS (Catalyst Software only).
- ISE licenses included in the Advantage tier to facilitate zero-trust network security* (Catalyst Software only).
- Access to end-to-end network visibility with Cisco Spaces, service assurance through Cisco ThousandEyes Network and Application Synthetics and app hosted ASAc Firewall (with the Advantage license).

Manage your entire switching structure as a single, converged component. With one management system, on-premises, virtual or in the cloud, and one policy for wired and wireless networks, it offers an efficient way to provide more secure access.

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

Table 15. Network Essentials and Advantage package features

Features	Network Essentials	Network Advantage
Switch fundamentals 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	✓	✓
Advanced switch capabilities and scale BGP, EIGRP, HSRP, IS-IS, BSR, MSDP, PIM-BIDIR,* IP SLA, OSPF	x	✓
Network segmentation VRF, VXLAN, LISP, TrustSec, SGT, MPLS, mVPN	x	✓
Automation NETCONF, RESTCONF, gRPC, YANG, PnP Agent, ZTP/Open PnP, GuestShell (On-Box Python)	✓	✓
Telemetry and visibility Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	✓	✓
High availability and resiliency Nonstop Forwarding (NSF), Graceful Insertion and Removal (GIR), Extended Fast Software Upgrade (xFSU), Software Patching (CLI Based)	x	✓
IOT integration AVB, PTP, CoAP	x	✓
Security MACsec-256	x	✓

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

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

Features	Cisco Catalyst and Cisco DNA Essentials	Cisco Catalyst and Cisco DNA Advantage
Advanced security Encrypted Traffic Analytics (ETA), IPsec	X	✓
Cisco DNA Center features		
Day-0 network bring-up automation Cisco Network Plug-and-Play application, network settings, device credentials, LAN automation, host onboarding	✓	✓
Element management Discovery, inventory, topology, software image, licensing, and configuration management	✓	✓
Element management Patch management	X	✓
Basic Assurance Health dashboards – Network, Client, Application; switch and wired client health monitoring	✓	✓
Cisco ThousandEyes Network and Application Synthetics Network performance metrics, dashboarding, visibility into app and service experience, end-to-end visibility across cloud and DC applications	X	✓
App hosted Cisco ASAc Firewall Stateful inspection of network traffic with Cisco Adaptive Security Virtual Appliance (ASAc) without any additional hardware	X	✓
SD-Access Policy-based automation and assurance for wired and wireless	X	✓
Network assurance and analytics 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
C9300X-48HX	1.73 x 17.5 x 19	1.73 x 17.5 x 22.03	1.73 x 17.5 x 22.03
C9300X-48TX	1.73 x 17.5 x 19	1.73 x 17.5 x 20.56	1.73 x 17.5 x 22.03
C9300X-48HXN	1.73 x 17.5 x 17.57	1.73 x 17.5 x 20.63	1.73 x 17.5 x 20.63
C9300X-24HX	1.73 x 17.5 x 17.57	1.73 x 17.5 x 20.63	1.73 x 17.5 x 20.63
C9300X-12Y	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.6	1.73 x 17.5 x 19.2
C9300X-24Y	1.73 x 17.5 x 17.6	1.73 x 17.5 x 19.2	1.73 x 17.5 x 20.7
C9300-24T	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-24P	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-24U	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-24UX	1.73 x 17.5 x 17.1	1.73 x 17.5 x 20.2	1.73 x 17.5 x 20.2
C9300-24UB	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-24UXB	1.73 x 17.5 x 17.1	1.73 x 17.5 x 20.2	1.73 x 17.5 x 20.2
C9300-24H	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-48T	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-48P	1.73 x 17.5 x 16.1	1.73 x 17.5 x 17.7	1.73 x 17.5 x 19.2
C9300-48U	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-48UXM	1.73 x 17.5 x 19.1	1.73 x 17.5 x 22.2	1.73 x 17.5 x 22.2
C9300-48UN	1.73 x 17.5 x 19.1	1.73 x 17.5 x 22.2	1.73 x 17.5 x 22.2
C9300-48UB	1.73 x 17.5 x 16.1	1.73 x 17.5 x 19.2	1.73 x 17.5 x 19.2
C9300-48H	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

General Specifications		
C9300LM-48T-4Y	11	4.99
C9300L-24T-4G	14.93	6.78
C9300L-24T-4X	14.93	6.78
C9300L-48T-4G	15.41	7.0
C9300L-48T-4X	15.41	7.0
C9300L-24P-4G	14.99	6.81
C9300L-24P-4X	14.99	6.81
C9300L-48P-4G	15.46	7.03
C9300L-48P-4X	15.46	7.03
C9300L-48PF-4G	15.48	7.03
C9300L-48PF-4X	15.48	7.03
C9300L-24UXG-4X	15.73	7.13
C9300L-24UXG-2Q	16.01	7.26
C9300L-48UXG-4X	16.86	7.65
C9300L-48UXG-2Q	16.86	7.65
Mean Time Between Failures - MTBF (hours)		
C9300X-48HX	185,420	
C9300X-48TX	206,480	
C9300X-48HXN	188,200	
C9300X-24HX	220,250	
C9300X-12Y	265,650	
C9300X-24Y	249,350	
C9300-24T	314,790	
C9300-24P	299,000	
C9300-24U	238,410	
C9300-24UX	214,760	
C9300-24UB	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	
Acoustic noise Measured per ISO 7779 and declared per ISO 9296 Bystander positions operating to an ambient temperature of 25° C	With AC power supply (with 24 PoE+ ports loaded for C9300 SKUs) <ul style="list-style-type: none"> • LpA: 45dB typical, 48 dB max • LwA: 5.6B typical, 5.9B max With AC power supply (with half the number of PoE+ ports loaded for C9300L SKUs) <ul style="list-style-type: none"> • LpA: 44dB typical, 47 dB max • LwA: 5.5B typical, 5.8B max 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

Connectors and cabling	<ul style="list-style-type: none"> • 1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling • Multigigabit-T ports: RJ-45 connectors, 4-pair Cat 5E, Cat 6, Cat 6A UTP cabling • 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling • SFP transceivers: LC fiber connectors (single-mode or multimode fiber) • SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) • QSFP+ transceivers: MPO and LC fiber connectors (single-mode or multimode fiber) • QSFP+ connector • SFP+ connector • Cisco StackWise stacking ports: copper-based Cisco StackWise cabling • Cisco StackPower: Cisco proprietary power stacking cables • Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling • Management console port: RJ-45-to-DB9 cable for PC connections
Power connectors	<ul style="list-style-type: none"> • Customers can provide power to a switch by using the internal power at the back of the switch • 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

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	
Management	BRIDGE-MIB	CISCO-PORT-STORM-CONTROL-MIB
	CISCO-BRIDGE-EXT-MIB	CISCO-POWER-ETHERNET-EXT-MIB
	CISCO-BULK-FILE-MIB	CISCO-PRIVATE-VLAN-MIB
	CISCO-CABLE-DIAG-MIB	CISCO-PROCESS-MIB
	CISCO-CALLHOME-MIB	CISCO-PRODUCTS-MIB
	CISCO-CEF-MIB	CISCO-RF-MIB
	CISCO-CIRCUIT-INTERFACE-MIB	CISCO-RTP-METRICS-MIB
	CISCO-CONFIG-COPY-MIB	CISCO-RTTMON-ICMP-MIB
	CISCO-CONFIG-MAN-MIB	CISCO-STACKWISE-MIB
	CISCO-DEVICE-LOCATION-MIB	CISCO-STP-EXTENSIONS-MIB
	CISCO-DHCP-SNOOPING-MIB	CISCO-SYSLOG-MIB
	CISCO-EIGRP-MIB	CISCO-TCP-MIB
	CISCO-EMBEDDED-EVENT-MGR-MIB	CISCO-UDLD-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	
Standards	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
Power supply rated maximum	1100W	715W	350W	715W
Total output BTU (note: 1000 BTU/hr = 293W)	3793 BTU/hr, 1100W	2465 BTU/hr, 715W	1207 BTU/hr, 350W	2440 BTU/hr
Input-voltage range and frequency	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

Description	Specification			
Input current	12-6A	10-5A	4-2A	24-12A
Output ratings	-56V at 19.64A	-56V at 12.8A	-56V at 6.25A	-56V at 12.8A
Output holdup time	10 ms minimum at 100VAC	16.7 ms minimum at 100VAC	16.7 ms minimum at 100VAC	2 ms minimum at -48Vdc
Power-supply input receptacles	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C14 (IEC60320-C14)	Right angle barrier style terminal block
Power cord rating	15A	15A	10A	25A@100VDC
Physical specifications	(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	
Power supply rated maximum output power	1500W With 115V	1900W With 230 V	1100W	715W	350W
Total output BTU (note: 1000 BTU/hr = 293W)	5118 BTU/hr, with 115V	6483 BTU/hr, With 230V	3754 BTU/hr, 1100W	2440 BTU/hr, 715W	1194 BTU/hr, 350W
Input-voltage range and frequency	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
Input current	16A maximum	12A maximum	12-6A	10-5A	4-2A
Output ratings	-56V at 26.78A	-56V at 33.92A	-56V at 19.64A	-56V at 12.8A	-56V at 6.25A
Output holdup time	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
Power-supply input receptacles	IEC 320-C22	IEC 320-C22	IEC 320-C16 (IEC60320-C16)	IEC 320-C16 (IEC60320-C16)	IEC 320-C14 (IEC60320-C14)

Description	Specification				
Power cord rating	20A	16A	15A	15A	10A
Physical specifications	(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)
Operating temperature	<p>Normal operating temperature* and altitudes:</p> <ul style="list-style-type: none"> -5° C to +45° C, up to 5000 feet (1500m) -5° C to +40° C, up to 10,000 feet (3000m) -5° C to +35° C, up to 15,000 feet (5000m) <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"> -5° C to +55° C, at sea level -5° C to +50° C, up to 5000 feet (1500m) -5° C to +45° C, up to 10,000 feet (3000m) -5° C to +35° C, up to 15,000 feet (5000m) <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"> -5° C to +45° C, up to 5000 feet (1500m) -5° C to +40° C, up to 10,000 feet (3000m) <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"> -5° C to +50° C, up to 5000 feet (1500m) -5° C to +45° C, up to 10,000 feet (3000m) -5° C to +45° C, at sea level with single fan failure <p>*Not more than following in one-year period: 96 consecutive hours, or 360 hours total, or 15 occurrences</p>		
Storage temperature	40° to 158° F (-40° to 70° C)		-40° to 158° F (-40° to 70° C)		

Description	Specification	
Relative humidity operating and nonoperating noncondensing	5% to 90% noncondensing	5% to 90% noncondensing
Altitude	10,000 ft. (3000 meters), up to 45° C	10,000 ft. (3000 meters), up to 45° C
EMI and EMC compliance	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
Safety compliance		
LED indicators	“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 P _w	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	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%	Weighted average Pw	No link	25%	50%	90%	100%			
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		

				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%
C9300-24UB	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		

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																			
C9300-48P	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		

				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%		
C9300-48H	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)				
SKU	FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%					25%	50%	90%
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)																
				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%
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)			
				SKU	Archer FEP	Uplink	Input	0.01%/EEE	10%	30%	50%	100%	0.01%/EEE			10%	30%	50%	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	115Vacc	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

				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%
	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					

				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%
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	

				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%
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				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																	
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	94.72	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
Safety certifications	<ul style="list-style-type: none"> • UL 60950-1 • CAN/CSA-C222.2 No. 60950-1 • EN 60950-1 • IEC 60950-1 • AS/NZS 60950.1 • IEEE 802.3
Electromagnetic compatibility certifications	<ul style="list-style-type: none"> • 47 CFR Part 15 • EN 300 386 V1.6.1 • EN 55032 Class A • CISPR 32 Class A • EN61000-3-2 • EN61000-3-3 • ICES-003 Class A • TCVN 7189 Class A • V-3 Class A • CISPR 35 • EN 300 386 • EN 55035 • TCVN 7317 • V-2/2015.04 • V-3/2015.04 • CNS13438 • KN32 • KN35 <p>Additional Certifications for C9300L SKUs:</p> <ul style="list-style-type: none"> • QCVN 118:2018/BTTTT • VCCI-CISPR 32 Class A
Environmental	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
Devices covered	Applies to Cisco Catalyst 9300 Series Switches.
Warranty duration	As long as the original customer owns the product.
End-of-life policy	In the event of discontinuance of product manufacture, Cisco warranty support is limited to 5 years from the announcement of discontinuance.
Hardware replacement	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.
Effective date	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).
TAC support	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.
Cisco.com access	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
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
	Information on product takeback and reuse program	Cisco Takeback and Reuse Program
	Safety and compliance	Table 23. Safety and compliance information
	Mean Time Between Failures - MTBF (hours)	Table.16 Model Dimensions, Weight, and Mean Time between failures metrics
Power	Default AC power supply	Table 1. Cisco Catalyst 9300 Series switch configurations
	Power supplies	Table 3. Power supply models Table 19. Power specifications Table 20. Power specifications – platinum rated power supplies
	Fan	Table 6. Fan modules
	Energy Efficient Ethernet	Smart operation
	Power over ethernet (Cisco UPOE and UPOE+)	Power over ethernet leadership
	Power connectors	Table 17. Power connectors
	Power consumption (ATIS)	Table 21. Power Consumption of Standalone 9300 Series Switches Table 22. Power consumption of Standalone 9300 Series Switches with platinum rated power supply
Material	Product packaging weight and materials	Contact: environment@cisco.com
	Dimensions	Table.16 Model Dimensions, Weight, and Mean Time between failures metrics.
	Weight	Table.16 Model Dimensions, Weight, and Mean Time between failures metrics.
	Elimination of wet paint on plastic bezel	2019 Cisco Corporate Social Responsibility Report, 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 Catalyst and 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 Catalyst and Cisco DNA Essentials and Cisco Catalyst 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.

Table 26. Ordering information

Switches	
Product number	Product description
C9300X-48HX-E	Catalyst 9300 48-port 10G/mGig copper with modular uplink, UPOE+, Network Essentials
C9300X-48HX-A	Catalyst 9300 48-port 10G/mGig copper with modular uplink, UPOE+, Network Advantage
C9300X-48HX-M	Catalyst 9300 48-port 10G/mGig copper with modular uplink, Meraki Advance or Enterprise
C9300X-48TX-E	Catalyst 9300 48-port 10G/mGig copper with modular uplink, data only, Network Essentials
C9300X-48TX-A	Catalyst 9300 48-port 10G/mGig copper with modular uplink, data only, Network Advantage

Switches	
Product number	Product description
C9300X-48TX-M	Catalyst 9300 48-port 10G/mGig copper with modular uplink, data only, Meraki Advance or Enterprise
C9300X-48HXN-E	Catalyst 9300 36-port 5G/mGig, 12-port 10G copper with modular uplink, UPOE+, Network Essentials
C9300X-48HXN-A	Catalyst 9300 36-port 5G/mGig, 12-port 10G copper with modular uplink, UPOE+, Network Advantage
C9300X-48HXN-M	Catalyst 9300 36-port 5G/mGig, 12-port 10G copper with modular uplink, UPOE+, Meraki Advance or Enterprise
C9300X-24HX-E	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE+, Network Essentials
C9300X-24HX-A	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE+, Network Advantage
C9300X-24HX-M	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE+, Meraki Advance or Enterprise
C9300X-12Y-E	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Network Essentials
C9300X-12Y-A	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Network Advantage
C9300X-12Y-M	Catalyst 9300 12-port 25G/10G/1G SFP28 with modular uplinks, Meraki Advance or Enterprise
C9300X-24Y-E	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Network Essentials
C9300X-24Y-A	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Network Advantage
C9300X-24Y-M	Catalyst 9300 24-port 25G/10G/1G SFP28 with modular uplinks, Meraki Advance or Enterprise
C9300-24T-E	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Network Essentials
C9300-24T-A	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Network Advantage
C9300-24T-M	Catalyst 9300 24-port 1G copper with modular uplinks, data only, Meraki Advance or Enterprise
C9300-24P-E	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Network Essentials
C9300-24P-A	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Network Advantage
C9300-24P-M	Catalyst 9300 24-port 1G copper with modular uplinks, PoE+, Meraki Advance or Enterprise
C9300-24U-E	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-24U-A	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-24U-M	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-24UB-E	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network

Switches	
Product number	Product description
	Essentials
C9300-24UB-A	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-24U-E-UL	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
C9300-24U-A-UL	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
C9300-24H-E	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE+, Network Essentials
C9300-24H-A	Catalyst 9300 24-port 1G copper with modular uplinks, UPOE+, Network Advantage
C9300-24UX-E	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE, Network Essentials
C9300-24UX-A	Catalyst 9300 24-port 10G/mGig copper with modular uplink, UPOE, Network Advantage
C9300-24UX-M	Catalyst 9300 24-port 10G/mGig copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-24UXB-E	Catalyst 9300 higher scale 24-port 10G/mGig copper with modular uplink, UPOE, Network Essentials
C9300-24UXB-A	Catalyst 9300 higher scale 24-port 10G/mGig copper with modular uplink, UPOE, Network Advantage
C9300-48T-E	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Essentials
C9300-48T-A	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Advantage
C9300-48T-M	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Meraki Advance or Enterprise
C9300-48P-E	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Network Essentials
C9300-48P-A	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Network Advantage
C9300-48P-M	Catalyst 9300 48-port 1G copper with modular uplinks, PoE+, Meraki Advance or Enterprise
C9300-48U-E	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-48U-A	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Advantage
C9300-48U-M	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-48UB-E	Catalyst 9300 higher scale 48-port 1G copper with modular uplinks, UPOE, Network Essentials
C9300-48UB-A	Catalyst 9300 higher scale 48-port 1G copper with modular uplinks, UPOE, Network Advantage

Switches	
Product number	Product description
C9300-48U-E-UL	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Essentials (Compatible with UL1069 Standard*)
C9300-48U-A-UL	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE, Network Advantage (Compatible with UL1069 Standard*)
C9300-48H-E	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE+, Network Essentials
C9300-48H-A	Catalyst 9300 48-port 1G copper with modular uplinks, UPOE+, Network Advantage
C9300-48UXM-E	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Network Essentials
C9300-48UXM-A	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Network Advantage
C9300-48UXM-M	Catalyst 9300 48-port 2.5G (12 10G/mGig) copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-48UN-E	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Network Essentials
C9300-48UN-A	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Network Advantage
C9300-48UN-M	Catalyst 9300 48-port 5G copper with modular uplinks, UPOE, Meraki Advance or Enterprise
C9300-24S-E	Catalyst 9300 24-port 1G SFP with modular uplinks, Network Essentials
C9300-24S-A	Catalyst 9300 24-port 1G SFP with modular uplinks, Network Advantage
C9300-24S-M	Cisco Catalyst 9300 24-port 1G SFP, modular uplinks, Meraki Advance or Enterprise
C9300-48S-E	Catalyst 9300 48-port 1G SFP with modular uplinks, Network Essentials
C9300-48S-A	Catalyst 9300 48-port 1G SFP with modular uplinks, Network Advantage
C9300-48S-M	Catalyst 9300 48-port 1G SFP with modular uplinks, Meraki Advance or Enterprise
C9300L-24T-4G-E	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Essentials
C9300L-24T-4G-A	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Advantage
C9300L-24P-4G-E	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, PoE+, Network Essentials
C9300L-24P-4G-A	Catalyst 9300 24-port 1G copper, with fixed 4x1G SFP uplinks, PoE+, Network Advantage
C9300L-48T-4G-E	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Essentials
C9300L-48T-4G-A	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only, Network Advantage

Switches	
Product number	Product description
C9300L-48P-4G-E	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, PoE+, Network Essentials
C9300L-48P-4G-A	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+, Network Advantage
C9300L-48PF-4G-E	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+, Network Essentials
C9300L-48PF-4G-A	Catalyst 9300 48-port 1G copper with fixed 4x1G SFP uplinks, PoE+, Network Advantage
C9300L-24T-4X-E	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Essentials
C9300L-24T-4X-A	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Advantage
C9300L-24T-4X-M	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Meraki Advanced or Enterprise
C9300L-24P-4X-E	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Essentials
C9300L-24P-4X-A	Catalyst 9300 24-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Advantage
C9300L-24UXG-4X-E	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
C9300L-24UXG-4X-A	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
C9300L-24UXG-4X-M	Catalyst 9300 24-port 8XmGig (100M/1G/2.5G/5G/10G) + 16x 10M/100M/1G copper with fixed 4x10G/1G SFP+ uplinks, UPOE, Meraki Advanced or Enterprise
C9300L-48T-4X-E	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Essentials
C9300L-48T-4X-A	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Network Advantage
C9300L-48T-4X-M	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, data only, Meraki Advanced or Enterprise
C9300L-48P-4X-E	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Essentials
C9300L-48P-4X-A	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Network Advantage
C9300L-48P-4X-M	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, PoE+, Meraki Advanced or Enterprise
C9300L-48PF-4X-E	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+, Network Essentials
C9300L-48PF-4X-A	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+, Network

Switches	
Product number	Product description
	Advantage
C9300L-48PF-4X-M	Catalyst 9300 48-port 1G copper with fixed 4x10G/1G SFP+ uplinks, full PoE+, Meraki Advanced or Enterprise
C9300L-48UXG-4X-E	Catalyst 9300 48-port fixed uplinks UPOE, 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G copper, 4x 10G uplinks, Network Essentials
C9300L-48UXG-4X-A	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
C9300L-48UXG-4X-M	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, Meraki Advanced or Enterprise
C9300L-24UXG-2Q-E	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
C9300L-24UXG-2Q-A	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 Advantage
C9300L-48UXG-2Q-E	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
C9300L-48UXG-2Q-A	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
C9300LM-48UX-4Y-E	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit copper, 40-port 1G, 4x 25G uplinks, Network Essentials
C9300LM-48UX-4Y-A	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit copper, 40-port 1G, 4x 25G uplinks, Network Advantage
C9300LM-48U-4Y-E	Catalyst 9300 mini 48-port 1G copper, UPOE, 4x 25G uplinks, Network Essentials
C9300LM-48U-4Y-A	Catalyst 9300 mini 48-port 1G copper, UPOE, 4x 25G uplinks, Network Advantage
C9300LM-48T-4Y-E	Catalyst 9300 mini 48-port 1G copper, data, 4x 25G uplinks, Network Essentials
C9300LM-48T-4Y-A	Catalyst 9300 mini 48-port 1G copper, data, 4x 25G uplinks, Network Advantage
C9300LM-24U-4Y-E	Catalyst 9300 mini 24-port 1G copper, UPOE, 4x 25G uplinks, Network Essentials
C9300LM-24U-4Y-A	Catalyst 9300 mini 24-port 1G copper, UPOE, 4x 25G uplinks, Network Advantage

Network modules	
Product number	Product description
C9300X-NM-8M	Catalyst 9300X 8 x 10G/mGig copper Network Module
C9300X-NM-8M=	Catalyst 9300X 8 x 10G/mGig copper Network Module, spare

Network modules	
Product number	Product description
C9300X-NM-8Y	Catalyst 9300 8 x 25G/10G/1G multi-rate SFP Network Module
C9300X-NM-8Y=	Catalyst 9300 8 x 25G/10G/1G multi-rate SFP Network Module, spare
C9300X-NM-2C	Catalyst 9300 2 x 100G/40G dual rate QSFP Network Module
C9300X-NM-2C=	Catalyst 9300 2 x 100G/40G dual rate QSFP Network Module, spare
C9300X-NM-4C	Catalyst 9300 4 x 100G/40G dual rate QSFP Network Module
C9300X-NM-4C=	Catalyst 9300 4 x 100G/40G dual rate QSFP Network Module, spare
C9300-NM-4G	Catalyst 9300 4 x 1GE SFP Network Module
C9300-NM-4G=	Catalyst 9300 4 x 1GE SFP Network Module, spare
C9300-NM-8X	Catalyst 9300 8 x 10G/1G SFP+ Network Module
C9300-NM-8X=	Catalyst 9300 8 x 10G/1G SFP+ Network Module, spare
C9300-NM-2Q	Catalyst 9300 2 x 40GE QSFP Network Module
C9300-NM-2Q=	Catalyst 9300 2 x 40GE QSFP Network Module, spare
C9300-NM-2Y	Catalyst 9300 2 x 25G/10G/1G SFP28 Network Module
C9300-NM-2Y=	Catalyst 9300 2 x 25G/10G/1G SFP28 Network Module, spare
C9300-NM-4M	Catalyst 9300 4 x 10G/mGig copper Network Module
C9300-NM-4M=	Catalyst 9300 4 x 10G/mGig copper Network Module, spare
NM-BLANK-T1=	Cisco Catalyst Type 1 Network Module Blank, spare

Storage Module	
Product number	Product description
SSD-120G	Cisco pluggable USB3.0 120G SSD storage
SSD-120G=	Cisco pluggable USB3.0 120G SSD storage, spare
SSD-240G	Cisco pluggable USB3.0 240G SSD storage
SSD-240G=	Cisco pluggable USB3.0 240G SSD storage, spare

Software licenses for C9300 SKUs	
Product number	Product description

Software licenses for C9300 SKUs

Product number	Product description
C9300-DNX-E-24-3Y	C9300 Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9300-DNX-E-24-5Y	C9300 Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9300-DNX-E-24-7Y	C9300 Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9300-DNX-A-24-3Y	C9300 Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9300-DNX-A-24-5Y	C9300 Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9300-DNX-A-24-7Y	C9300 Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9300-DNX-E-48-3Y	C9300 Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9300-DNX-E-48-5Y	C9300 Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9300-DNX-E-48-7Y	C9300 Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9300-DNX-A-48-3Y	C9300 Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9300-DNX-A-48-5Y	C9300 Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9300-DNX-A-48-7Y	C9300 Cisco Catalyst Advantage, 48-port, 7 Year Term license
C9300-DNX-E-24S-3Y	C9300 1G Fiber Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9300-DNX-E-24S-5Y	C9300 1G Fiber Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9300-DNX-E-24S-7Y	C9300 1G Fiber Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9300-DNX-A-24S-3Y	C9300 1G Fiber Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9300-DNX-A-24S-5Y	C9300 1G Fiber Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9300-DNX-A-24S-7Y	C9300 1G Fiber Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9300-DNX-E-48S-3Y	C9300 1G Fiber Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9300-DNX-E-48S-5Y	C9300 1G Fiber Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9300-DNX-E-48S-7Y	C9300 1G Fiber Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9300-DNX-A-48S-3Y	C9300 1G Fiber Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9300-DNX-A-48S-5Y	C9300 1G Fiber Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9300-DNX-A-48S-7Y	C9300 1G Fiber Cisco Catalyst Advantage, 48-port, 7 Year Term license
C9300-DNA-L-E-3Y	C9300 Cisco DNA Essentials license, for 12Y, 24Y SKUs, 3 Year Term license
C9300-DNA-L-E-5Y	C9300 Cisco DNA Essentials license, for 12Y, 24Y SKUs, 5 Year Term license

Software licenses for C9300 SKUs

Product number	Product description
C9300-DNA-L-E-7Y	C9300 Cisco DNA Essentials license, for 12Y, 24Y SKUs, 7 Year Term license
C9300-DNA-L-A-3Y	C9300 Cisco DNA Advantage license, for 12Y, 24Y SKUs, 3 Year Term license
C9300-DNA-L-A-5Y	C9300 Cisco DNA Advantage license, for 12Y, 24Y SKUs, 5 Year Term license
C9300-DNA-L-A-7Y	C9300 Cisco DNA Advantage license, for 12Y, 24Y SKUs, 7 Year Term license
C9300-LIC=	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
LIC-C9300-24A-1Y	C9300 Cisco Meraki Advanced Software license, 24-port, 1 Year Term license
LIC-C9300-24A-3Y	C9300 Cisco Meraki Advanced Software license, 24-port, 3 Year Term license
LIC-C9300-24A-5Y	C9300 Cisco Meraki Advanced Software license, 24-port, 5 Year Term license
LIC-C9300-24A-7Y	C9300 Cisco Meraki Advanced Software license, 24-port, 7 Year Term license
LIC-C9300-24A-10Y	C9300 Cisco Meraki Advanced Software license, 24-port, 10 Year Term license
LIC-C9300-24E-1Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 1 Year Term license
LIC-C9300-24E-3Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 3 Year Term license
LIC-C9300-24E-5Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 5 Year Term license
LIC-C9300-24E-7Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 7 Year Term license
LIC-C9300-24E-10Y	C9300 Cisco Meraki Enterprise Software license, 24-port, 10 Year Term license
LIC-C9300-48A-1Y	C9300 Cisco Meraki Advanced Software license, 48-port, 1 Year Term license
LIC-C9300-48A-3Y	C9300 Cisco Meraki Advanced Software license, 48-port, 3 Year Term license
LIC-C9300-48A-5Y	C9300 Cisco Meraki Advanced Software license, 48-port, 5 Year Term license
LIC-C9300-48A-7Y	C9300 Cisco Meraki Advanced Software license, 48-port, 7 Year Term license
LIC-C9300-48A-10Y	C9300 Cisco Meraki Advanced Software license, 48-port, 10 Year Term license
LIC-C9300-48E-1Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 1 Year Term license
LIC-C9300-48E-3Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 3 Year Term license
LIC-C9300-48E-5Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 5 Year Term license
LIC-C9300-48E-7Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 7 Year Term license
LIC-C9300-48E-10Y	C9300 Cisco Meraki Enterprise Software license, 48-port, 10 Year Term license

Software licenses for C9300L SKUs

Product number	Product number
C9300L-DNX-E-24-3Y	C9300L Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9300L-DNX-E-24-5Y	C9300L Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9300L-DNX-E-24-7Y	C9300L Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9300L-DNX-A-24-3Y	C9300L Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9300L-DNX-A-24-5Y	C9300L Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9300L-DNX-A-24-7Y	C9300L Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9300L-DNX-E-48-3Y	C9300L Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9300L-DNX-E-48-5Y	C9300L Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9300L-DNX-E-48-7Y	C9300L Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9300L-DNX-A-48-3Y	C9300L Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9300L-DNX-A-48-5Y	C9300L Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9300L-DNX-A-48-7Y	C9300L Cisco Catalyst Advantage, 48-port, 7 Year Term license
C9300L-DNA-E-24-3Y	C9300L Cisco DNA Essentials, 24-port, 3 Year Term license
C9300L-DNA-E-24-5Y	C9300L Cisco DNA Essentials, 24-port, 5 Year Term license
C9300L-DNA-E-24-7Y	C9300L Cisco DNA Essentials, 24-port, 7 Year Term license
C9300L-DNA-A-24-3Y	C9300L Cisco DNA Advantage, 24-port, 3 Year Term license
C9300L-DNA-A-24-5Y	C9300L Cisco DNA Advantage, 24-port, 5 Year Term license
C9300L-DNA-A-24-7Y	C9300L Cisco DNA Advantage, 24-port, 7 Year Term license
C9300L-DNA-E-48-3Y	C9300L Cisco DNA Essentials, 48-port, 3 Year Term license
C9300L-DNA-E-48-5Y	C9300L Cisco DNA Essentials, 48-port, 5 Year Term license
C9300L-DNA-E-48-7Y	C9300L Cisco DNA Essentials, 48-port, 7 Year Term license
C9300L-DNA-A-48-3Y	C9300L Cisco DNA Advantage, 48-port, 3 Year Term license
C9300L-DNA-A-48-5Y	C9300L Cisco DNA Advantage, 48-port, 5 Year Term license
C9300L-DNA-A-48-7Y	C9300L Cisco DNA Advantage, 48-port, 7 Year Term license
C9300L-LIC=	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

Power supplies	
Product number	Product description
PWR-C1-350WAC=	350WAC power supply spare
PWR-C1-715WAC=	715WAC power supply spare
PWR-C1-715WDC=	715WDC power supply spare
PWR-C1-1100WAC=	1100WAC power supply spare
PWR-C1-1900WAC=	1900WAC Power supply spare
PWR-C1-350WAC-P=	350WAC Platinum-rated power supply spare
PWR-C1-715WAC-P=	715WAC Platinum-rated power supply spare
PWR-C1-1100WAC-P=	1100WAC Platinum-rated power supply spare
PWR-C1-715WAC-UP	Upgrade to 715WAC Platinum-rated power supply
PWR-C1-1100WAC-UP	Upgrade to 1100WAC Platinum-rated power supply
PWR-C1-1900WAC-UP	Upgrade to 1900WAC Platinum-rated power supply

Cisco StackWise-480/1T and StackPower cables	
Product number	Product description
STACK-T1-50CM=	Cisco StackWise-480/1T 50cm stacking cable spare
STACK-T1-1M=	Cisco StackWise-480/1T 1m stacking cable spare
STACK-T1-3M=	Cisco StackWise-480/1T 3m stacking cable spare
CAB-SPWR-30CM=	Cisco Catalyst StackPower cable 30cm spare
CAB-SPWR-150CM=	Cisco Catalyst StackPower cable 150cm spare

Cisco StackWise-320 Accessories	
Product number	Product description
C9300L-STACK-KIT	Stack Kit for C9300L SKUs - includes 2 Stack Adaptors and 1 Stack Cable
C9300L-STACK-KIT=	Stack Kit for C9300L SKUs - includes 2 Stack Adaptors and 1 Stack Cable, spare
STACK-T3-50CM	50CM Type 3 Stacking Cable - default with Stack Kit for C9300L SKUs
STACK-T3-50CM=	50CM Type 3 Stacking Cable, spare for C9300L SKUs
STACK-T3-1M	1M Type 3 Stacking Cable for C9300L SKUs

Cisco StackWise-320 Accessories

Product number	Product description
STACK-T3-1M=	1M Type 3 Stacking Cable, spare for C9300L SKUs
STACK-T3-3M	3M Type 3 Stacking Cable for C9300L SKUs
STACK-T3-3M=	3M Type 3 Stacking Cable, spare for C9300L SKUs
Spare power cords	
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-250VAC-JP=	Japan 250VAC power cord for Cisco Catalyst (Japan)
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

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.

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Document history

New or revised topic	Described In	Date
Added new models supporting the Meraki Software options	All relevant sections	February 6, 2024
Added Cisco Catalyst and Meraki Software options	All relevant sections	December 5, 2023
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	Table 3: Power supply models	June 20, 2019
Product name change: Cisco ONE to Cisco DNA	Introduction	May 10, 2019
Wi-Fi 6 addition	Product Overview: Features	May 10, 2019
Add: Features	Product Overview: Features	May 10, 2019
Add: Modular uplink models table	Platform Details	May 10, 2019
Edit: Cisco Catalyst 9300 Series modular uplink	Platform Details	May 10, 2019
Edit: Table 1: Cisco Catalyst 9300 Series Switch configurations; uplink configuration add	Platform Details	May 10, 2019
Edit: Table 2: Name change to “Catalyst 9300...”	Platform Details	May 10, 2019
Add: Figure 3: picture for C9300L	Platform Details	May 10, 2019
Edit: Table 3: Power supply models	Platform Details	May 10, 2019

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

New or revised topic	Described In	Date
Updated Product overview	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.	March 31, 2018
Updated Audio Video Bridging	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.	December 15, 2017

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Cisco Catalyst 9200 Series Switches

Contents

Introduction	4
Product overview	4
Product highlights	4
Features and benefits Platform details	5
Switch models and configurations	5
Network modules	8
Platform resiliency	9
Performance and scalability	13
Performance specifications	13
Bandwidth specifications	15
Software	16
Platform software benefits	16
Secure Segmentation with SD-Access	17
Software-Defined Access	17
Smart operation	19
Licensing	20
Introduction to Smart Licensing	20
Network licensing	21
Cisco Catalyst Software licensing	22
Managing licenses with Smart Accounts	23
Product sustainability	23
Specifications	24
Dimensions, weight, acoustic, mean time between failures	24
Connectors	29
Management and standards support	29
Power supply specifications	32
Power consumption of Standalone 9200 Series switches	35
Safety and compliance	39
Warranty	39
Cisco enhanced limited lifetime hardware warranty	39
Cisco services for next-generation Cisco Catalyst switches	40

Ordering	41
Ordering information	41
Switch Models	41
Software licenses	44
Stacking Cables	50
Power supplies	50
Mounting Accessories	52
Optics online reference	53
Cisco Services	53
CSR/Social Responsibility	53
Cisco Capital	53
Document history	54

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 CLI, Cisco Catalyst Center (formerly Cisco DNA Center) on-premises management, 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.
- Resiliency with **Field-Replaceable Units (FRU)** and redundant power supply, fans, and modular uplinks for C9200 models. C9200CX models are fanless and 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 models 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 models, policy-based segmentation, and trustworthy solutions for the whole Catalyst 9200 Series.
- **Layer 3** <https://apps.cisco.com/Commerce/> and CLI operations options

- 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 Catalyst 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 ¹
Modular uplink models (C9200 Enhanced VN SKUs)	Yes	Yes	Yes	160 Gbps	Yes (32 Virtual Networks) ²
Modular uplink models (C9200 SKUs)	Yes	Yes	Yes	160 Gbps	Yes (4 Virtual Networks)
Fixed uplink Models (C9200L SKUs)	Yes	No	No	80 Gbps	Limited (1 Virtual Network)
Compact Models (C9200CX SKUs)	Fixed internal power supply	Fanless	No	No	Yes (16 Virtual Networks)

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

Catalyst 9200CX can support 25 Access Tunnels for fabric enabled APs with IOS-XE 17.9.5 and above.

Catalyst 9200L is 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.

² 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
Modular uplink models				
C9200-24T	24 ports data	Modular uplink options	PWR-C6-125WAC	FRU redundant
C9200-24P	24 ports full PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-24PB	24 ports full PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-24PXG	24 ports full PoE+ (8 mGig ports up to 10G, 16 ports up to 1G)	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-48T	48 ports data	Modular uplink options	PWR-C6-125WAC	FRU redundant
C9200-48P	48 ports full PoE+	Modular uplink options	PWR-C6-1KWAC	FRU redundant
C9200-48PL	48 Ports partial PoE+	Modular uplink options	PWR-C6-600WAC	FRU redundant
C9200-48PB	48 ports full PoE+	Modular uplink options	PWR-C6-1KWAC	FRU redundant
C9200-48PXG	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
Fixed uplink models				
C9200L-24T-4G	24 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-24P-4G	24 ports full PoE+	4x 1G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48T-4G	48 ports data	4x 1G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-48P-4G	48 ports full POE+	4x 1G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-48PL-4G	48 Ports partial PoE+	4X 1G Fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-24T-4X	24 ports data	4x 1/10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-24P-4X	24 ports full PoE+	4x 1/10G fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-48T-4X	48 ports data	4x 1/10G fixed uplinks	PWR-C5-125WAC	Fixed redundant
C9200L-48P-4X	48 ports full PoE+	4x 1/10G fixed uplinks	PWR-C5-1KWAC	Fixed redundant
C9200L-48PL-4X	48 Port partial PoE+	4X 1/10G Fixed uplinks	PWR-C5-600WAC	Fixed redundant
C9200L-24PXG-4X	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
C9200L-48PXG-4X	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
C9200L-24PXG-2Y	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
C9200L-48PXG-2Y	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
Compact models				
C9200CX-12T-2X2G	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
C9200CX-12P-2X2G	12 ports PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
C9200CX-8P-2X2G	8 ports full PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W AC internal	Fanless
C9200CX-8UXG-2X	8 ports UPOE (4 mGig ports up to 10G, 4 ports up to 1G)	2x 10G SFP+ fixed uplinks	315W AC internal	Fanless

Switch model	Downlinks total 10/100/1000 or PoE+ copper ports	Uplink configuration	Default primary power supply	Fans
C9200CX-12P-2XGH	12 ports PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless
C9200CX-8P-2XGH	8 ports full PoE+	2x 1G copper, 2x 10G SFP+ fixed uplinks	315W HVDC/AC internal	Fanless
C9200CX-8UXG-2XH	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
C9200-NM-2Y¹	2 x 25G Network Module
C9200-NM-2Q¹	2 x 40G Network Module
C9200-NM-4G²	4x 1G network module
C9200-NM-4X	4x 1G/10G network module
C9200-NM-BLANK	No network module

¹ Supported only on C9200-24PXG, C9200-48PXG

² 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	Primary power supply	Available PoE power with single primary power supply only ¹	Optional secondary power supply	Available PoE power with additional secondary power supply ¹
C9200-24P	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC= ²	485W	PWR-C6-715WDC=	740W
C9200-24PB	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	740W
C9200-24PXG	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	740W
C9200-48P	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200-48PL	PWR-C6-600WAC	370W	PWR-C6-600WAC	740W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200-48PB	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W

Model	Primary power supply	Available PoE power with single primary power supply only ¹	Optional secondary power supply	Available PoE power with additional secondary power supply ¹
C9200-48PXG	PWR-C6-1KWAC	740W	PWR-C6-1KWAC	1440W
	PWR-C6-715WDC=	485W	PWR-C6-715WDC=	970W
C9200L-24P-4G	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC= ²	485W	PWR-C5-715WDC=	740W
C9200L-24P-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	740W
C9200L-48P-4G	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-48PL-4G	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-48P-4X	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-48PL-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-24PXG-4X	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	740W
C9200L-48PXG-4X	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
C9200L-24PXG-2Y	PWR-C5-600WAC	370W	PWR-C5-600WAC	740W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	740W
C9200L-48PXG-2Y	PWR-C5-1KWAC	740W	PWR-C5-1KWAC	1440W
	PWR-C5-715WDC=	485W	PWR-C5-715WDC=	970W
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

Model	Primary power supply	Available PoE power with single primary power supply only ¹	Optional secondary power supply	Available PoE power with additional secondary power supply ¹
C9200CX-8P-2XGH	315W HVDC/AC internal	240W	N/A	N/A
C9200CX-8UXG-2XH	315W HVDC/AC internal	240W	N/A	N/A

¹ Limited by port number and port rating (for example, 24 PoE+ 30W ports = 720W)

² PWR-C5-715WDC= and PWR-C6-715WDC= are available to order as spare only and supported in IOS-XE 17.8.1 and above

PWR-C5-715WDC= and PWR-C6-715WDC= are only supported on C9200L and C9200 PoE models.

PWR-C5-715WDC= and PWR-C6-715WDC= can mix with AC power supplies as primary/secondary on the same device for C9200L and C9200.

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
Modular models (C9200 SKUs)	StackWise-160	160 Gbps	C9200-STACK-KIT	8	Other C9200 models with same license level
Fixed models (C9200L SKUs)	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
C9200-STACK-KIT	Stack kit for C9200 SKUs only: Two data stack adapters and one data stack cable
C9200L-STACK-KIT	Stack kit for C9200L SKUs only: Two data stack adapters and one data stack cable
STACK-T4-50CM	Data stack 50 cm cable (default cable with Stack Kit)

Model	Description
STACK-T4-1M	Data stack 1 m cable
STACK T4-3M	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
FAN-T2=	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
Virtual Networks	4 for C9200-24T, C9200-24P, C9200-48T, C9200-48P, C9200-24PXG, C9200-48PXG, C9200-48PL 32 for C9200-24PB, C9200-48PB	1	16

Description	C9200 SKUs	C9200L SKUs	C9200CX SKUs
Stacking bandwidth	160 Gbps	80 Gbps	N/A
Total number of MAC addresses	32,000	16,000	32,000
Total number of IPv4 routes (ARP plus learned routes)	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)
IPv4 routing entries	4,000	3,000	4,000
IPv6 routing entries	2,000	1,500	2,000
Multicast routing scale	1,000	1,000	1,000
QoS scale entries	1,000	1,000	1,000
ACL scale entries	1,600	1,500	1,600
Packet buffer per SKU	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
Flexible NetFlow (FNF) entries	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
DRAM	4 GB	2 GB	4 GB
Flash	4 GB	4 GB	8 GB
VLAN IDs	4096	4096	4096
PVST Instances	128	128	128
STP Virtual Ports (Port VLANs) for PVST	13,000	13,000	13,000
STP Virtual Ports (Port VLANs) for MST	13,000	13,000	13,000
Total Switched Virtual Interfaces (SVIs)	1000	512	1000
Jumbo frames	9198 bytes	9198 bytes	9198 bytes
Wireless bandwidth per switch	Up to 48 Gbps on 24-port and 48-port Gigabit Ethernet model	N/A	N/A
IP SGT binding scale	8K	10K	8K
Number of IPv4 bindings	8K	10K	8K

Description	C9200 SKUs	C9200L SKUs	C9200CX SKUs
Number of SGT/DGT policies	2K	2K	2K
Number of SXP Sessions	200	200	200

Bandwidth specifications

Table 9. Bandwidth specifications

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
C9200-24T	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24P	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24PB	128 Gbps	288 Gbps	95.23 Mpps	214 Mpps
C9200-24PXG	352 Gbps	532 Gbps	261.90 Mpps	395 Mpps
C9200-48T	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48P	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48PL	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48PB	176 Gbps	336 Gbps	130.95 Mpps	250 Mpps
C9200-48PXG	400 Gbps	580 Gbps	297.61 Mpps	431 Mpps
C9200L-24T-4G	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
C9200L-24P-4G	56 Gbps	136 Gbps	41.66 Mpps	101 Mpps
C9200L-48T-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-48P-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-48PL-4G	104 Gbps	184 Gbps	77.38 Mpps	137 Mpps
C9200L-24T-4X	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
C9200L-24P-4X	128 Gbps	208 Gbps	95.23 Mpps	155 Mpps
C9200L-48T-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-48P-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-48PL-4X	176 Gbps	256 Gbps	130.95 Mpps	190 Mpps
C9200L-24PXG-4X	272 Gbps	352 Gbps	214.28 Mpps	262 Mpps
C9200L-24PXG-2Y	292 Gbps	372 Gbps	229.16 Mpps	277 Mpps

Description	Switching capacity	Switch capacity with Stacking	Forwarding rate	Forwarding rate with Stacking
C9200L-48PXG-4X	392 Gbps	472 Gbps	291.66 Mpps	351 Mpps
C9200L-48PXG-2Y	340 Gbps	420 Gbps	252.97 Mpps	313 Mpps
C9200CX-12T-2X2G	70 Gbps	N/A	52.08 Mpps	N/A
C9200CX-12P-2X2G	68 Gbps	N/A	50.59 Mpps	N/A
C9200CX-8P-2X2G	60 Gbps	N/A	44.64 Mpps	N/A
C9200CX-8UXG-2X	128 Gbps	N/A	95.23 Mbps	N/A
C9200CX-12P-2XGH	68 Gbps	N/A	50.59 Mpps	N/A
C9200CX-8P-2XGH	60 Gbps	N/A	44.64 Mpps	N/A
C9200CX-8UXG-2XH	128 Gbps	N/A	95.23 Mbps	N/A

*Measured with 64 byte packets

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.
 - 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 Catalyst 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

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.

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, RIPng, 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.

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).

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide

Software licenses

Table 10. License matrix

	Cisco Catalyst Software Subscription new	Cisco DNA subscription	Network Stack
Packages¹	3, 5 or 7 Year Terms	3, 5 or 7 Year Terms	Perpetual
Tiers	Advantage, Essentials	Advantage, Essentials	Advantage, Essentials
Portability²	✓	✓	✓
Management options	Catalyst Center, Meraki Dashboard	Catalyst Center, Meraki Dashboard	CLI, Web UI
Included support	Base product-level support for Hardware, Software and OS	Software support (SWSS)	X
Included³ add-ons: Common ISE policy, Thousand Eyes network and application assurance, Cisco Spaces	X	X	X

¹ For all new orders, subscription licenses are mandatory and must be of the same tier as network licenses

² Portability within the same Catalyst 9K series of hardware

³ Only available with Advantage tier

Network licensing

Table 11. Network Essentials and Advantage (Perpetual) features

Features on Cisco Catalyst uplink switches	Network Essentials	Network Advantage
Switch fundamentals Layer 2, Static Routing, 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	Yes	Yes
Advanced switch capabilities and scale EIGRP, HSRP, IS-IS, BSR, MSDP, IP SLA, OSPF	No	Yes
Network segmentation VRF, VXLAN, LISP, SGT	No	Yes
Automation NETCONF, RESTCONF, YANG, PnP Agent, PnP	Yes	Yes
Telemetry and visibility Model-driven telemetry, sampled NetFlow, SPAN, RSPAN	Yes	Yes

Features on Cisco Catalyst uplink switches	Network Essentials	Network Advantage
Advanced security MACsec-256 on C9200CX SKUs	No	Yes

Cisco Catalyst Software licensing

Table 12. Cisco Catalyst Essentials and Advantage Package Features

Features	Cisco Catalyst Essentials	Cisco Catalyst Advantage	Cisco DNA Essentials	Cisco DNA Advantage
Advanced telemetry and visibility Full Flexible NetFlow, EEM	Yes	Yes	Yes	Yes
Optimized telemetry and visibility AVC (NBAR2)	No	Yes	No	Yes
Day-0 network bring-up automation Cisco Network Plug-and-Play application, network settings, device credentials, LAN automation, host onboarding	Yes	Yes	Yes	Yes
Element management Discovery, inventory, topology, software image, licensing, and configuration management	Yes	Yes	Yes	Yes
Element management Patch management	No	Yes	No	Yes
Basic Assurance Health dashboards – Network, Client, Application; switch and wired client health monitoring	Yes	Yes	Yes	Yes
SD-Access Policy-based automation and assurance for wired and wireless	No	Yes	No	Yes
Network assurance and analytics 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)	No	Yes	No	Yes
Cloud monitoring for Catalyst	Yes*	Yes	Yes*	Yes

*Limited device visibility

For a full list of features, please refer to [Cisco Feature Navigator](https://cisco.com/featurenavigator) [cfnng.cisco.com](https://cisco.com/featurenavigator)

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 Catalyst Center, just to use one of the above packages.

Table 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.

Product sustainability

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

Table 13. Sustainability References

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

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

Specifications

Dimensions, weight, acoustic, mean time between failures

Table 14-17 show the dimensions, weights, acoustic, and mean time between failures of all models of Cisco Catalyst 9200 Series switches.

Table 14. Model Dimensions

Platform Physical Specifications				
Model	Chassis Dimensions		Chassis + FEP + Fan Dimensions (HxWxD)	
	Inches	Centimeters	Inches	Centimeters
C9200-24T	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
C9200-24P	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
C9200-24PB	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
C9200-24PXG	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
C9200-48T	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
C9200-48P	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
C9200-48PL	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
C9200-48PB	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
C9200-48PXG	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
C9200L-24T-4G	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
C9200L-24P-4G	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
C9200L-48T-4G	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
C9200L-48P-4G	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
C9200L-48PL-4G	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
C9200L-24T-4X	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
C9200L-24P-4X	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
C9200L-48T-4X	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
C9200L-48P-4X	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
C9200L-48PL-4X	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
C9200L-24PXG-4X	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
C9200L-24PXG-2Y	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
C9200L-48PXG-4X	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
C9200L-48PXG-2Y	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
C9200CX-12T-2X2G	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
C9200CX-12P-2X2G	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
C9200CX-8P-2X2G	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
C9200CX-8UXG-2X	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
C9200CX-12P-2XGH	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
C9200CX-8P-2XGH	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
C9200CX-8UXG-2XH	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 15. Model Weights

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

Model	Pounds	Kilograms
C9200CX-12P-2XGH	6.6	2.99
C9200CX-8P-2XGH	6.6	2.99
C9200CX-8UXG-2XH	7.0	3.18

Table 16. Model Mean time between failures metrics

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

Mean time between failures (hours)	
C9200L-48PXG-2Y	337,260
C9200CX-12T-2X2G	960,180
C9200CX-12P-2X2G	704,430
C9200CX-8P-2X2G	736,000
C9200CX-8UXG-2X	711,500
C9200CX-12P-2XGH	702,630
C9200CX-8P-2XGH	734,030
C9200CX-8UXG-2XH	709,660
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 17. Model Environmental Ranges

Environmental ranges	
<p>Acoustic noise</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"> • LpA: 42dB typical, 45 dB max • LwA: 5.3B typical, 5.6B max <p>With AC power supply (with 24 PoE+ ports loaded):</p> <ul style="list-style-type: none"> • LpA: 42dB typical, 45 dB max • LwA: 5.3B typical, 5.6B max <p>Typical: Noise emission for a typical configuration</p> <p>Maximum: Statistical maximum to account for variation in production</p>

Connectors

Table 18 shows the supported connectors for Cisco Catalyst 9200 Series switches.

Table 18. Connectors

Power	
Connectors and cabling	<ul style="list-style-type: none"> • 1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling • 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling • 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) • 10GBASE-SR, LR, LRM (only C9200), ER, ZR, DWDM SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber) • SFP+ connector • Cisco StackWise-160/80 stacking ports: copper-based Cisco StackWise cabling • Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling • 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
Power connectors	<ul style="list-style-type: none"> • 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.

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.

Management and standards support

Table 19 shows management and standards support for Cisco Catalyst 9200 Series switches.

Table 19. Management and standards support*

Description	Specification	
Management	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
Standards	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 20 lists the power specifications for Cisco Catalyst 9200 Series switches based on the kind of power supply used.

Table 20. Power supply specifications

Description	Specification											
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	PWR-C5-715WDC	PWR-C6-715WDC	C9200CX Internal 315W AC	C9200CX Internal 315W	C9K-80W-ADPT	C9K-ADPT-DC
Power supply rated maximum	125W	125W	600W	600W	1000W	1000W	715W	715W	315W	315W	80W	80W
Total output BTU (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	2440 BTU/hr, 715W	2440 BTU/hr, 715W	1057.1 BTU/hr, 315W	1057.1 BTU/hr, 315W	273 BTU/hr, 80W	273 BTU/hr, 80W
Input-voltage range and frequency	100 to 240 VAC, 50 to 60 Hz	-40 to -72 VDC	-40 to -72 VDC	100 to 240 VAC, 50 to 60 Hz	120-418 VDC 100 to 277 VAC, 50 to 60 Hz	100 to 240 VAC, 50 to 60 Hz	18 to 60 VDC					
Input current	1.6-0.7A	1.6-0.7A	7-2.8A	7-2.8A	12-6A	12-6A	20-11.3A	20-11.3A	3.95-1.5A	3.95-0.92A	1.8A	6A - 1.6A
Output ratings	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 13.25A 5V at 0.3A	55V at 13.25A 5V at 0.3A	-55V at 4.5A 5V at 14A	-55V at 4.5A 5V at 14A	53V at 1.5A	53V at 1.5A
Output holdup time	20 ms minimum at 100 VAC	2 ms minimum at -40 VDC	2 ms minimum at -40 VDC	20 ms minimum at 100 VAC	20 ms minimum at 100 VAC and 380 VDC	20 ms minimum at 100 VAC	0.5 ms minimum at 18 VDC					

Description	Specification											
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	PWR-C5-715WDC	PWR-C6-715WDC	C9200CX Internal 315W AC	C9200CX Internal 315W	C9K-80W-ADPT	C9K-ADPT-DC
Power-supply input receptacles	IEC 320-C14 (IEC603 20-C14)	IEC 320-C14 (IEC603 20-C14)	IEC 320-C16 (IEC603 20-C16)	IEC 320-C16 (IEC6032 0- C16)	IEC 320-C16 (IEC603 20-C16)	IEC 320-C16 (IEC603 20-C16)	Terminal block	Terminal block	IEC 320-C14 (IEC603 20-C14)	Saf-D-Grid	IEC 320-C8 (IEC603 20-C8)	Terminal block
Power cord rating	10A	10A	15A	15A	15A	15A	25A	25A	10A	10A	7A	10A
Physical specifications	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 1.5 lb (0.68 kg)	(H x W x D): 1.58" x 4.0" x 7.6" Weight: 1.5 lb (0.68 kg)	(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 (0.77 kg)	(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)	(H x W x D): 1.6" x 4.0" x 7.1" Weight: 3.5 lb (1.59 kg)	(H x W x D): 1.6" x 4.0" x 7.1" Weight: 3.5 lb (1.59 kg)	N/A	N/A	(H x W x D): 1.18" x 1.73" x 5.1" Weight: 0.6 lb (0.27 kg)	(H x W x D): 1.4" x 2.6" x 6.2" Weight: 0.8 lb (0.36 kg)
Supported Product Family	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200, C9200L	C9200	C9200CX	C9200CX	C9200CX	C9200CX
Operating temperature	<p>Normal operating temperature* and altitudes:</p> <ul style="list-style-type: none"> -5° C to +45° C, up to 5000 feet (1500m) (-5° C to +40° C for C9200CX-8UXG-2X and C9200CX-8UXG-2XH) -5° C to +40° C, up to 10,000 feet (3000m) <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"> -5° C to +50° C, up to 5000 feet (1500m) -5° C to +45° C, up to 10,000 feet (3000m) -5° C to +45° C, at sea level with single fan failure <p>*Not more than following in one-year period: 96 consecutive hours, or 360 hours total, or 15 occurrences</p>											

Description	Specification											
	PWR-C5-125WAC	PWR-C6-125WAC	PWR-C5-600WAC	PWR-C6-600WAC	PWR-C5-1KWAC	PWR-C6-1KWAC	PWR-C5-715WDC	PWR-C6-715WDC	C9200CX Internal 315W AC	C9200CX Internal 315W	C9K-80W-ADPT	C9K-ADPT-DC
Storage temperature	-40° to 158°F (-40° to 70° C)											
Relative humidity operating and nonoperating noncondensing	5% to 90% noncondensing											
Altitude	10,000 ft. (3000 meters), up to 45° C											
EMC compliance	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											
Safety compliance	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											
LED indicators	“AC OK”: Input power to the power supply is OK “PS OK”: Output power from the power supply is OK											

*Use shielded cables for locations other than telecom centers

Power consumption of Standalone 9200 Series switches

Table 21 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 21. 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
C9200-48PXC	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
C9200-48PXC	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
C9200-48PXC	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
		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

				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)		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	315W AC	Fixed	115VAC	34.5	35.6	35.7	35.8	35.9	35.1	37.8	37.9	38.0	38.3	37.6	33.3	86.9	150.9	254.3	280.2
			230VAC	34.3	35.4	35.5	35.5	35.7	35.0	37.5	37.6	37.8	38.0	37.3	33.1	85.9	148.8	249.4	274.5
C9200 CX-8P-2XGH	315W HVDC/AC	Fixed	277VAC	34.0	35.3	35.3	35.4	35.5	34.8	37.5	37.6	37.7	37.9	37.2	32.8	89.6	153.1	254.4	279.4
			380VDC	34.0	35.1	35.1	35.2	35.4	34.6	37.3	37.4	37.5	37.7	37.0	32.8	89.8	153.0	253.4	278.7
C9200 CX-12P-2X2G	315W AC	Fixed	115VAC	34.9	37.0	37.1	37.2	37.4	35.7	39.5	39.6	39.8	40.2	39.2	33.8	88.0	152.3	256.2	281.9
			230VAC	34.6	36.7	36.7	36.8	37.0	35.5	39.2	39.4	39.5	39.8	38.9	33.5	87.1	150.4	251.1	276.7
C9200 CX-12P-2XGH	315W HVDC/AC	Fixed	277VAC	34.6	36.7	36.8	36.9	37.0	35.3	39.1	39.3	39.4	39.7	38.7	33.4	92.3	155.1	255.9	281.4
			380VDC	34.5	36.5	36.5	36.6	36.8	35.2	38.9	39.0	39.2	39.6	38.6	33.3	92.7	155.0	256.5	281.8
C9200 CX-12T-2X2G	80W AC	Fixed	115VAC	20.0	21.9	22.0	22.1	22.3	21.1	25.1	25.3	25.4	25.9	24.7	18.7	no PoE	no PoE	no PoE	no PoE
			230VAC	20.1	22.0	22.1	22.2	22.4	21.1	25.1	25.3	25.4	25.9	24.8	18.8	no PoE	no PoE	no PoE	no PoE
C9200 CX-8UXG-2X	315W AC	Fixed	115VAC	43.4	45.1	45.3	45.3	45.5	46.7	50.3	50.5	50.6	50.9	50.0	40.1	105.5	170.5	275.7	301.9
			230VAC	43.1	44.7	44.8	44.9	45.0	46.5	49.9	50.1	50.2	50.5	49.6	39.9	103.5	166.8	268.7	293.9
C9200 CX-8UXG-2XH	315W HVDC/AC	Fixed	277VAC	43.2	45.0	45.0	45.1	45.3	46.4	50.4	50.5	50.7	51.0	50.0	40.1	103.1	166.1	267.4	292.3
			380VDC	43.1	44.9	44.9	45.0	45.1	46.5	50.0	50.1	50.3	50.5	49.7	39.6	103.7	166.4	267.3	292.2

* C9200CX HVDC models can also operate at 115V or 230V AC, the power consumption is the same as the corresponding AC models.

Safety and compliance

Table 22 lists the safety and compliance information for Cisco Catalyst 9200 Series switches.

Table 22. Safety and compliance information

Description	Specification
Safety certifications	<ul style="list-style-type: none">• IEC 60950-1/62368-1• UL 60950-1/62368-1• CAN/CSA C22.2 No. 60950-1/62368-1• EN 60950-1/62368-1• AS/NZS 60950.1, AS/NZS 62368.1• Class I Equipment
Electromagnetic compatibility certifications	<ul style="list-style-type: none">• 47 CFR Part 15• CISPR 32 Class A• CNS 13438• EN 300 386*• EN 55032 Class A• EN61000-3-2• EN61000-3-3• ICES-003 Class A• KN 32• TCVN 7189 Class A• V-3 Class A• CISPR 35• EN 300 386*• EN 55035• KN 35• TCVN 7317
Environmental	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 23 provides information about the E-LLW.

Table 23. Warranty information

	Cisco E-LLW
Devices covered	Applies to Cisco Catalyst 9200 Series switches.
Warranty duration	As long as the original customer owns the product.
End-of-life policy	In the event of discontinuance of product manufacture, Cisco warranty support is limited to 5 years from the announcement of discontinuance.
Hardware replacement	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.
Effective date	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).
TAC support	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.
Cisco.com access	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 Networking cloud ready infrastructure.

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

Ordering

Ordering information

Table 22 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.

Switch Models

C9200 models

Table 24. C9200 Models Ordering information

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

Network modules

Table 25. C9200 Models Ordering information – network modules

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

C9200L models

Table 26. C9200L Models Ordering information

Product number	Product description
C9200L-24T-4G-A	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Advantage
C9200L-24T-4G-E	Catalyst 9200L 24-port Data 4x1G uplink Switch, Network Essentials
C9200L-24P-4G-A	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Advantage
C9200L-24P-4G-E	Catalyst 9200L 24-port PoE+ 4x1G uplink Switch, Network Essentials
C9200L-48T-4G-A	Catalyst 9200L 48-port Data 4x1G uplink Switch, Network Advantage
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

Product number	Product description
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-24PXG-2Y-A	Catalyst 9200L 24-port 8xmGig, 16x1G, 2x25G, PoE+, Network Advantage
C9200L-48PXG-2Y-E	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Essentials
C9200L-48PXG-2Y-A	Catalyst 9200L 48-port 8xmGig, 40x1G, 2x25G PoE+, Network Advantage

C9200CX models

Table 27. C9200CX Models Ordering information

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

Software licenses

C9200 software licenses

Table 28. C9200 Models Ordering information – software licenses

C9200 Cisco DNA software licenses	
Product number	Product description
C9200-DNA-E-24	C9200 Cisco DNA Essentials Term 24-port
C9200-DNA-E-24-3Y	C9200 Cisco DNA Essentials, 24-port, 3 Year Term license
C9200-DNA-E-24-5Y	C9200 Cisco DNA Essentials, 24-port, 5 Year Term license
C9200-DNA-E-24-7Y	C9200 Cisco DNA Essentials, 24-port, 7 Year Term license
C9200-DNA-E-48	C9200 Cisco DNA Essentials Term 48-port
C9200-DNA-E-48-3Y	C9200 Cisco DNA Essentials, 48-port, 3 Year Term license
C9200-DNA-E-48-5Y	C9200 Cisco DNA Essentials, 48-port, 5 Year Term license
C9200-DNA-E-48-7Y	C9200 Cisco DNA Essentials, 48-port, 7 Year Term license
C9200-DNA-A-24	C9200 Cisco DNA Advantage Term 24-port
C9200-DNA-A-24-3Y	C9200 Cisco DNA Advantage, 24-port, 3 Year Term license
C9200-DNA-A-24-5Y	C9200 Cisco DNA Advantage, 24-port, 5 Year Term license
C9200-DNA-A-24-7Y	C9200 Cisco DNA Advantage, 24-port, 7 Year Term license
C9200-DNA-A-48	C9200 Cisco DNA Advantage Term 48-port
C9200-DNA-A-48-3Y	C9200 Cisco DNA Advantage, 48-port, 3 Year Term license
C9200-DNA-A-48-5Y	C9200 Cisco DNA Advantage, 48-port, 5 Year Term license
C9200-DNA-A-48-7Y	C9200 Cisco DNA Advantage, 48-port, 7 Year Term license
C9200-LIC=	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
C9200-24-E-A	C9200 24-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200-24-E-A-3	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200-24-E-A-5	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200-24-E-A-7	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y
C9200-48-E-A	C9200 48-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200-48-E-A-3	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y

C9200 Cisco DNA software licenses

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

C9200 Cisco Catalyst software licenses

Product number	Product description
C9200-DNX-E-24-3Y	C9200 Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9200-DNX-E-24-5Y	C9200 Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9200-DNX-E-24-7Y	C9200 Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9200-DNX-E-48-3Y	C9200 Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9200-DNX-E-48-5Y	C9200 Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9200-DNX-E-48-7Y	C9200 Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9200-DNX-A-24-3Y	C9200 Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9200-DNX-A-24-5Y	C9200 Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9200-DNX-A-24-7Y	C9200 Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9200-DNX-A-48-3Y	C9200 Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9200-DNX-A-48-5Y	C9200 Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9200-DNX-A-48-7Y	C9200 Cisco Catalyst Advantage, 48-port, 7 Year Term license

C9200L software licenses

Table 29. C9200L Models Ordering information – software licenses

C9200L Cisco DNA software licenses	
Product Number	Product Description
C9200L-DNA-E-24	C9200L Cisco DNA Essentials Term 24-port
C9200L-DNA-E-24-3Y	C9200L Cisco DNA Essentials, 24-port, 3 Year Term license
C9200L-DNA-E-24-5Y	C9200L Cisco DNA Essentials, 24-port, 5 Year Term license
C9200L-DNA-E-24-7Y	C9200L Cisco DNA Essentials, 24-port, 7 Year Term license
C9200L-DNA-E-48	C9200L Cisco DNA Essentials Term 48-port
C9200L-DNA-E-48-3Y	C9200L Cisco DNA Essentials, 48-port, 3 Year Term license
C9200L-DNA-E-48-5Y	C9200L Cisco DNA Essentials, 48-port, 5 Year Term license
C9200L-DNA-E-48-7Y	C9200L Cisco DNA Essentials, 48-port, 7 Year Term license
C9200L-DNA-A-24	C9200L Cisco DNA Advantage Term 24-port
C9200L-DNA-A-24-3Y	C9200L Cisco DNA Advantage, 24-port, 3 Year Term license
C9200L-DNA-A-24-5Y	C9200L Cisco DNA Advantage, 24-port, 5 Year Term license
C9200L-DNA-A-24-7Y	C9200L Cisco DNA Advantage, 24-port, 7 Year Term license
C9200L-DNA-A-48	C9200L Cisco DNA Advantage Term 48-port
C9200L-DNA-A-48-3Y	C9200L Cisco DNA Advantage, 48-port, 3 Year Term license
C9200L-DNA-A-48-5Y	C9200L Cisco DNA Advantage, 48-port, 5 Year Term license
C9200L-DNA-A-48-7Y	C9200L Cisco DNA Advantage, 48-port, 7 Year Term license
C9200L-LIC=	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
C9200L-24-E-A	C9200L 24-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200L-24-E-A-3	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200L-24-E-A-5	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200L-24-E-A-7	24-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y
C9200L-48-E-A	C9200L 48-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200L-48-E-A-3	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200L-48-E-A-5	48-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y

C9200L Cisco DNA software licenses

Product Number	Product Description
C9200L-48-E-A-7	48-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y

C9200L Cisco Catalyst software licenses

Product number	Product description
C9200L-DNX-E-24-3Y	C9200L Cisco Catalyst Essentials, 24-port, 3 Year Term license
C9200L-DNX-E-24-5Y	C9200L Cisco Catalyst Essentials, 24-port, 5 Year Term license
C9200L-DNX-E-24-7Y	C9200L Cisco Catalyst Essentials, 24-port, 7 Year Term license
C9200L-DNX-E-48-3Y	C9200L Cisco Catalyst Essentials, 48-port, 3 Year Term license
C9200L-DNX-E-48-5Y	C9200L Cisco Catalyst Essentials, 48-port, 5 Year Term license
C9200L-DNX-E-48-7Y	C9200L Cisco Catalyst Essentials, 48-port, 7 Year Term license
C9200L-DNX-A-24-3Y	C9200L Cisco Catalyst Advantage, 24-port, 3 Year Term license
C9200L-DNX-A-24-5Y	C9200L Cisco Catalyst Advantage, 24-port, 5 Year Term license
C9200L-DNX-A-24-7Y	C9200L Cisco Catalyst Advantage, 24-port, 7 Year Term license
C9200L-DNX-A-48-3Y	C9200L Cisco Catalyst Advantage, 48-port, 3 Year Term license
C9200L-DNX-A-48-5Y	C9200L Cisco Catalyst Advantage, 48-port, 5 Year Term license
C9200L-DNX-A-48-7Y	C9200L Cisco Catalyst Advantage, 48-port, 7 Year Term license

C9200CX software licenses

Table 30. C9200CX Models Ordering information – software licenses

C9200CX Cisco DNA software licenses	
Product Number	Product Description
C9200CX-DNA-E-8	C9200CX Cisco DNA Essentials Term 8-port
C9200CX-DNAE-8-3Y	C9200CX Cisco DNA Essentials, 8-port, 3 Year Term license
C9200CX-DNAE-8-5Y	C9200CX Cisco DNA Essentials, 8-port, 5 Year Term license
C9200CX-DNAE-8-7Y	C9200CX Cisco DNA Essentials, 8-port, 7 Year Term license
C9200CX-DNA-A-8	C9200CX Cisco DNA Advantage Term 8-port
C9200CX-DNAA-8-3Y	C9200CX Cisco DNA Advantage, 8-port, 3 Year Term license
C9200CX-DNAA-8-5Y	C9200CX Cisco DNA Advantage, 8-port, 5 Year Term license
C9200CX-DNAA-8-7Y	C9200CX Cisco DNA Advantage, 8-port, 7 Year Term license
C9200CX-DNA-E-12	C9200CX Cisco DNA Essentials Term 12-port
C9200CX-DNAE-12-3Y	C9200CX Cisco DNA Essentials, 12-port, 3 Year Term license
C9200CX-DNAE-12-5Y	C9200CX Cisco DNA Essentials, 12-port, 5 Year Term license
C9200CX-DNAE-12-7Y	C9200CX Cisco DNA Essentials, 12-port, 7 Year Term license
C9200CX-DNA-A-12	C9200CX Cisco DNA Advantage Term 12-port
C9200CX-DNAA-12-3Y	C9200CX Cisco DNA Advantage, 12-port, 3 Year Term license
C9200CX-DNAA-12-5Y	C9200CX Cisco DNA Advantage, 12-port, 5 Year Term license
C9200CX-DNAA-12-7Y	C9200CX Cisco DNA Advantage, 12-port, 7 Year Term license
C9200CX-LIC=	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
C9200CX-8-E-A	C9200CX 8-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade
C9200CX-8-E-A-3	C9200CX 8-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200CX-8-E-A-5	C9200CX 8-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200CX-8-E-A-7	C9200CX 8-port NW and Cisco DNA Ess to NW and DNA Adv Upgrade License 7Y
C9200CX-12-E-A	C9200CX 12-port NW and Cisco DNA Essentials to NW and Cisco DNA Advantage Upgrade

C9200CX Cisco DNA software licenses

Product Number	Product Description
C9200CX-12-E-A-3	C9200CX 12-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 3Y
C9200CX-12-E-A-5	C9200CX 12-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 5Y
C9200CX-12-E-A-7	C9200CX 12-port NW and Cisco DNA Ess to NW and Cisco DNA Adv Upgrade License 7Y

C9200CX Cisco Catalyst software licenses

Product Number	Product Description
C9200CX-DNXE-12-3Y	C9200CX Cisco Catalyst Essentials software subscription, 12P, 3 Yr Lic
C9200CX-DNXE-12-5Y	C9200CX Cisco Catalyst Essentials software subscription, 12P, 5 Yr Lic
C9200CX-DNXE-12-7Y	C9200CX Cisco Catalyst Essentials software subscription, 12P, 7 Yr Lic
C9200CX-DNXE-8-3Y	C9200CX Cisco Catalyst Essentials software subscription, 8P, 3 Yr Lic
Product Number	Product Description
C9200CX-DNXE-8-5Y	C9200CX Cisco Catalyst Essentials software subscription, 8P, 5 Yr Lic
C9200CX-DNXE-8-7Y	C9200CX Cisco Catalyst Essentials software subscription, 8P, 7 Yr Lic
C9200CX-DNXA-12-3Y	C9200CX Cisco Catalyst Advantage software subscription, 12P, 3 Yr Lic
C9200CX-DNXA-12-5Y	C9200CX Cisco Catalyst Advantage software subscription, 12P, 5 Yr Lic
C9200CX-DNXA-12-7Y	C9200CX Cisco Catalyst Advantage software subscription, 12P, 7 Yr Lic
C9200CX-DNXA-8-3Y	C9200CX Cisco Catalyst Advantage software subscription, 8P, 3 Yr Lic
C9200CX-DNXA-8-5Y	C9200CX Cisco Catalyst Advantage software subscription, 8P, 5 Yr Lic
C9200CX-DNXA-8-7Y	C9200CX Cisco Catalyst Advantage software subscription, 8P, 7 Yr Lic

Stacking Cables

Table 31. StackWise Cable Ordering information

StackWise-80 and StackWise-160 Kit and cables	
Product number	Product description
C9200-STACK-KIT=	C9200 Stack Kit Spare
C9200L-STACK-KIT=	C9200L Stack Kit Spare
STACK-T4-50CM	50CM Type 3 Stacking Cable
STACK-T4-50CM=	50CM Type 3 Stacking Cable, spare
STACK-T4-1M	1M Type 3 Stacking Cable
STACK-T4-1M=	1M Type 3 Stacking Cable, spare
STACK-T4-3M	3M Type 3 Stacking Cable
STACK-T4-3M=	3M Type 3 Stacking Cable, spare

Power supplies

Table 32. 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-C5-715WDC=	715W DC Config 5 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

Power supplies	
Product Number	Product Description
PWR-C6-1KWAC/2	1KW AC Config 6 Power Supply - Secondary Power Supply
PWR-C6-715WDC=	715W DC Config 6 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 33. 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

Spare power cords	
Product Number	Product Description
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

* For 9200CX switch models with internal HVDC power supply, customer or system integrator is responsible for the power cable as HVDC switches are usually installed in DC micro grid with customized cables and connectors. For more information, please consult with your Cisco sales representative.

Mounting Accessories

Table 34. 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
REC-KIT-T1=	Recessed 1RU rack mount for 9200L and 9200 switches
C9K-MGNT-TRAY	Magnet and Mounting Tray for compact switches
C9K-CMPCT-DIN-MNT	DIN Rail Mount for compact switches
RACKMNT-19-CMPACT	19-Inch Rack Mounting Brackets for compact switches
C9K-CMPCT-CBLE-GRD	Cable guard for compact switches (for C9K-WALL-TRAY)
C9K-WALL-TRAY	Wall mount bracket for compact switches
C9K-CMPCT-DESK-MNT	Under desk mount for compact switches
C9K-ACC-RBFT	Rubber Feet For Table Top Setup 9200 and 9300
C9K-ACC-SCR-4	12-24 and 10-32 Screws For Rack Installation, Qty 4
CAB-GUIDE-1RU	1RU Cable Management Guides 9200 and 9300

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://tmgmatrix.cisco.com>

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

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Document history

New or revised topic	Described In	Date
Added recessed mounting kit and DC power supply for 9200L and 9200.	Various locations	Jun 26, 2023
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 1 , 3 , 7 , 8 , 12 , 16 , 18 , 21	September 22, 2020
Added correct images for module uplinks	Network Modules	February 21, 2020
Added New C9200 mGig and C9200 32 VN information	Table 1 , 3 , 7 , 8 , 12 , 19	January 28, 2020
Added New C9200 Network Modules	Table 2 , 19	January 28, 2020
Added New Power Supply information PWR-C6-600WAC	Table 3 , 15 , 18 , 21	October 09, 2019
Forwarding rate with Stacking	Table 8	October 09, 2019
Cloud Security Information	General Information	October 09, 2019
Adding C9200L mGig SKUs	Table 1 , 3 , 8 , 11 , 18	May 14, 2019
Revisions of Weight, addition of LIC upgrade and other minor edits	Software licenses table and weights table	April 01, 2019
Revised Table of Contents Headings	Specifications (was “Dimensions, eight, acoustic, mean time between failures”) , added Document History	January 03, 2019

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