



E-RATE FY2023 PROPOSAL TO:

Wheaton – Community School District 200

RFP 230021528

Submitted By:

Sentinel Technologies, Inc. – SPIN #: 143008231

MARCH 17, 2023



TABLE OF CONTENTS

GENERAL CONTACT INFORMATION 3

COVER LETTER..... 4

EXECUTIVE SUMMARY..... 5

PRICING 6

SCOPE OF WORK 11

 Executive Summary 11

 Project Overview--Project Phases 11

 Scope of Work 12

PROPOSAL ASSUMPTIONS 17

 General Proposal Assumptions 17

 Cisco Campus - Network Switching 19

SAMPLE OF OUR ILLINOIS EDUCATION CUSTOMERS 20

EDUCATIONAL REFERENCES 21

ACCEPTANCE OF RFP TERMS 23

E-RATE PROJECT AND PAYMENT TERMS..... 24

E-RATE EXPERIENCE 26

APPENDIX A – SENTINEL TECHNOLOGIES OVERVIEW..... 27

APPENDIX B – DATA SHEETS..... 49

General Contact Information

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Cover Letter



Sentinel Technologies

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February 13nd, 2023

Jason Spencer
Community Unit School District 200
130 W Park Ave
Wheaton, IL 60187

Dear Jason,

Sentinel Technologies, Inc. (founded in 1982, Federal Tax ID # 36-3199182) is pleased to submit this proposal in response to FCC Form 470 Number 230021528 Funding Year 2023. The response within provides CUSD 200 with a networking proposal that will effectively address the overall objectives outlined in the 470. We have provided the exact request for a Cisco Data Network.

Sentinel's experienced professional staff, commitment to on-going training, concentration of resources, and assurance of customer satisfaction are the cornerstones of the company. Sentinel prides itself on servicing our clients utilizing our proven track record of success, executable processes, and vision. Our success is directly attributed to our ability to design and implement Sentinel's vast technical expertise and depth of resources to meet and exceed our customer's expectations. Our team is exceptional, our technicians and engineers are skilled, and our methodology is mature, proven, and reliable. This unique combination of ability, reliability, and experience allows Sentinel to provide its customers with unmatched value and efficiency.

Thank you for this opportunity to grow this already strong partnership with your District. Sentinel looks forward to meeting and exceeding the business objectives described within the RFP.

Sincerely,

Chris Vasquez
Sr. Sales Executive
630-769-9654
cvasquez@sentinel.com

Executive Summary

Sentinel Technologies is pleased to present our proposal under SPIN 143008231. The pricing quoted provides special one-time provisions from our manufacturer partner, Cisco. Our companies have partnered for many years which has allowed the two companies to bring our strengths together for a common goal.

Sentinel Technologies is a Master Certified Gold Cisco Partner. Please see more detail contained within our proposal. We employ full-time engineers and project managers (not contractors) which means that the district will have a high level of continuity and accountability from Sentinel.

Sentinel Technologies has vast experience installing Network Infrastructure and Wireless in schools within the E-Rate program. In this proposal, we have included specific K-12 school references that have completed projects using E-Rate funds for your review. Please contact these references to learn of Sentinel's outstanding work and reputation.

We look forward to working with you and are happy to answer any questions about our technical design, scope of work and qualifications.

Pricing

SUMMARY

E-Rate FY2023 Internal Connections

E-Rate Hardware, Software and Maintenance

		Extended Price
Jefferson	\$	52,804.59
Johnson	\$	41,366.61
Lowell	\$	41,366.61
Woodland	\$	7,896.99
Hardware, Software, Maintenance & Services Sub-Total	\$	143,434.80

TOTAL PROJECT - Project Total Cost is based on the combined purchase of all Hardware/Software, Professional Services and Solution Maintenance from Sentinel as detailed in the attached Bill of Materials. Unbundling or materially reducing any of these essential elements of the solution may result in modifications to the cost of the remaining elements.

		Extended Price
E-Rate Hardware, Software and Maintenance	\$	143,434.80
Professional Services	\$	13,230.00
Project Total	\$	156,664.80
		<i>Plus applicable tax, shipping & handling</i>

*Regarding the resale of any products, pricing may be subject to a manufacturer price increase before the expiration date of the quote.

PRICING

WOODLAND

Woodland

Cisco Catalyst PoE Switches

Part Number	Description	Qty	Unit Price	Ext Price	Special Notes
Cisco Equipment Description with EDU Warranty Bundle					
C9300-48UXM-EDU	Catalyst 9300 48-port(12 mGig&36 2.5Gbps), K12	1	\$ 5,783.49	\$ 5,783.49	
C9300-NW-A-48	C9300 Network Advantage, 48-port license	1	\$ -	\$ -	
SC9300UK9-176	Cisco Catalyst 9300 XE 17.6 UNIVERSAL UNIVERSAL	1	\$ -	\$ -	
PWR-C1-1100WAC-P	1100W AC 80+ platinum Config 1 Power Supply	1	\$ -	\$ -	
CAB-TA-NA	North America AC Type A Power Cable	1	\$ -	\$ -	
C9300-SSD-NONE	No SSD Card Selected	1	\$ -	\$ -	
TE-C9K-SW	TE agent for IOSXE on C9K	1	\$ -	\$ -	
C9300-DNA-A-48	C9300 DNA Advantage, 48-Port Term Licenses	1	\$ -	\$ -	
C9300-DNA-A-48-3Y	C9300 DNA Advantage, 48-Port, 3 Year Term License	1	\$ 1,659.35	\$ 1,659.35	
PHLFAS-T	Prime Infrastructure Lifecycle & Assurance Term - Smart Lic	1	\$ -	\$ -	
PHLFAS-AP-T-3Y	PI Dev Lic for Lifecycle & Assurance Term 3Y	1	\$ -	\$ -	
D-DNAS-EXT-S-T	Cisco DNA Spaces Extend Term License for Catalyst Switches	1	\$ -	\$ -	
D-DNAS-EXT-S-3Y	Cisco DNA Spaces Extend for Catalyst Switching - 3Year	1	\$ -	\$ -	
TE-EMBEDDED-T	Cisco ThousandEyes Enterprise Agent IBN Embedded	1	\$ -	\$ -	
TE-EMBEDDED-T-3Y	ThousandEyes - Enterprise Agents	1	\$ -	\$ -	
NETWORK-PNP-LIC	Network Plug-n-Play Connect for zero-touch device deployment	1	\$ -	\$ -	
C9300-STACK-NONE	No Stack Cable Selected	1	\$ -	\$ -	
C9300-SPWR-NONE	No Stack Power Cable Selected	1	\$ -	\$ -	
NM-BLANK-T1	Cisco Catalyst Type 1 Network Module Blank	1	\$ -	\$ -	
C9300-NM-NONE	No Network Module Selected	1	\$ -	\$ -	
SFP-10G-SR=	10GBASE-SR SFP Module	1	\$ 454.15	\$ 454.15	
E-Rate Hardware, Software, Maintenance and Professional Services Sub-Total:				\$	7,896.99

PRICING

LOWELL

Lowell

Cisco Catalyst PoE Switches

Part Number	Description	Qty	Unit Price	Ext Price	Special Notes
Cisco Equipment Description with EDU Warranty Bundle					
C9300-48UXM-EDU	Catalyst 9300 48-port(12 mGig&36 2.5Gbps), K12	5	\$ 5,783.49	\$ 28,917.45	
C9300-NW-E-48	C9300 Network Essentials, 48-port license	5	\$ -	\$ -	
SC9300UK9-176	Cisco Catalyst 9300 XE 17.6 UNIVERSAL UNIVERSAL	5	\$ -	\$ -	
PWR-C1-1100WAC-P	1100W AC 80+ platinum Config 1 Power Supply	5	\$ -	\$ -	
CAB-TA-NA	North America AC Type A Power Cable	5	\$ -	\$ -	
C9300-SSD-NONE	No SSD Card Selected	5	\$ -	\$ -	
STACK-T1-50CM	50CM Type 1 Stacking Cable	5	\$ 44.02	\$ 220.10	
C9300-DNA-E-48	C9300 DNA Essentials, 48-Port Term Licenses	5	\$ -	\$ -	
C9300-DNA-E-48-3Y	C9300 DNA Essentials, 48-port - 3 Year Term License	5	\$ 492.96	\$ 2,464.80	
NETWORK-PNP-LIC	Network Plug-n-Play Connect for zero-touch device deployment	5	\$ -	\$ -	
C9300-SPS-NONE	No Secondary Power Supply Selected	5	\$ -	\$ -	
PWR-C1-BLANK	Config 1 Power Supply Blank	5	\$ -	\$ -	
C9300-NM-8X	Catalyst 9300 8 x 10GE Network Module	5	\$ 1,122.37	\$ 5,611.85	
CAB-SPWR-30CM	Catalyst Stack Power Cable 30 CM	5	\$ 41.82	\$ 209.10	
PWR-C1-1100WAC-P=	1100W AC 80+ platinum Config 1 Power Supply Spare	2	\$ 836.28	\$ 1,672.56	
CAB-TA-NA	North America AC Type A Power Cable	2	\$ -	\$ -	
SFP-10G-SR=	10GBASE-SR SFP Module	5	\$ 454.15	\$ 2,270.75	

E-Rate Hardware, Software, Maintenance and Professional Services Sub-Total: \$ 41,366.61

PRICING

JOHNSON

Johnson

Cisco Catalyst PoE Switches

Part Number	Description	Qty	Unit Price	Ext Price	Special Notes
Cisco Equipment Description with EDU Warranty Bundle					
C9300-48UXM-EDU	Catalyst 9300 48-port(12 mGig&36 2.5Gbps), K12	5	\$ 5,783.49	\$ 28,917.45	
C9300-NW-E-48	C9300 Network Essentials, 48-port license	5	\$ -	\$ -	
SC9300UK9-176	Cisco Catalyst 9300 XE 17.6 UNIVERSAL UNIVERSAL	5	\$ -	\$ -	
PWR-C1-1100WAC-P	1100W AC 80+ platinum Config 1 Power Supply	5	\$ -	\$ -	
CAB-TA-NA	North America AC Type A Power Cable	5	\$ -	\$ -	
C9300-SSD-NONE	No SSD Card Selected	5	\$ -	\$ -	
STACK-T1-50CM	50CM Type 1 Stacking Cable	5	\$ 44.02	\$ 220.10	
C9300-DNA-E-48	C9300 DNA Essentials, 48-Port Term Licenses	5	\$ -	\$ -	
C9300-DNA-E-48-3Y	C9300 DNA Essentials, 48-port - 3 Year Term License	5	\$ 492.96	\$ 2,464.80	
NETWORK-PNP-LIC	Network Plug-n-Play Connect for zero-touch device deployment	5	\$ -	\$ -	
C9300-SPS-NONE	No Secondary Power Supply Selected	5	\$ -	\$ -	
PWR-C1-BLANK	Config 1 Power Supply Blank	5	\$ -	\$ -	
C9300-NM-8X	Catalyst 9300 8 x 10GE Network Module	5	\$ 1,122.37	\$ 5,611.85	
CAB-SPWR-30CM	Catalyst Stack Power Cable 30 CM	5	\$ 41.82	\$ 209.10	
PWR-C1-1100WAC-P=	1100W AC 80+ platinum Config 1 Power Supply Spare	2	\$ 836.28	\$ 1,672.56	
CAB-TA-NA	North America AC Type A Power Cable	2	\$ -	\$ -	
SFP-10G-SR=	10GBASE-SR SFP Module	5	\$ 454.15	\$ 2,270.75	

E-Rate Hardware, Software, Maintenance and Professional Services Sub-Total: \$ 41,366.61

PRICING

JEFFERSON

Jefferson

Cisco Catalyst PoE Switches

Part Number	Description	Qty	Unit Price	Ext Price	Special Notes
Cisco Equipment Description with EDU Warranty Bundle					
C9300-48UXM-EDU	Catalyst 9300 48-port(12 mGig&36 2.5Gbps), K12	3	\$ 5,783.49	\$ 17,350.47	
C9300-NW-A-48	C9300 Network Advantage, 48-port license	3	\$ -	\$ -	
SC9300UK9-176	Cisco Catalyst 9300 XE 17.6 UNIVERSAL UNIVERSAL	3	\$ -	\$ -	
PWR-C1-1100WAC-P	1100W AC 80+ platinum Config 1 Power Supply	3	\$ -	\$ -	
CAB-TA-NA	North America AC Type A Power Cable	3	\$ -	\$ -	
C9300-SSD-NONE	No SSD Card Selected	3	\$ -	\$ -	
TE-C9K-SW	TE agent for IOSXE on C9K	3	\$ -	\$ -	
C9300-DNA-A-48	C9300 DNA Advantage, 48-Port Term Licenses	3	\$ -	\$ -	
C9300-DNA-A-48-3Y	C9300 DNA Advantage, 48-Port, 3 Year Term License	3	\$ 1,659.35	\$ 4,978.05	
PI-LFAS-T	Prime Infrastructure Lifecycle & Assurance Term - Smart Lic	3	\$ -	\$ -	
PI-LFAS-AP-T-3Y	PI Dev Lic for Lifecycle & Assurance Term 3Y	3	\$ -	\$ -	
D-DNAS-EXT-S-T	Cisco DNA Spaces Extend Term License for Catalyst Switches	3	\$ -	\$ -	
D-DNAS-EXT-S-3Y	Cisco DNA Spaces Extend for Catalyst Switching - 3Year	3	\$ -	\$ -	
TE-EMBEDDED-T	Cisco ThousandEyes Enterprise Agent IBN Embedded	3	\$ -	\$ -	
TE-EMBEDDED-T-3Y	ThousandEyes - Enterprise Agents	3	\$ -	\$ -	
NETWORK-PNP-LIC	Network Plug-n-Play Connect for zero-touch device deployment	3	\$ -	\$ -	
STACK-T1-50CM	50CM Type 1 Stacking Cable	3	\$ 44.02	\$ 132.06	
C9300-SPS-NONE	No Secondary Power Supply Selected	3	\$ -	\$ -	
PWR-C1-BLANK	Config 1 Power Supply Blank	3	\$ -	\$ -	
C9300-NM-8X	Catalyst 9300 8 x 10GE Network Module	3	\$ 1,122.37	\$ 3,367.11	
CAB-SPWR-30CM	Catalyst Stack Power Cable 30 CM	3	\$ 41.82	\$ 125.46	
C9300-48UXM-EDU	Catalyst 9300 48-port(12 mGig&36 2.5Gbps), K12	3	\$ 5,783.49	\$ 17,350.47	
SC9300UK9-176	Cisco Catalyst 9300 XE 17.6 UNIVERSAL UNIVERSAL	3	\$ -	\$ -	
PWR-C1-1100WAC-P	1100W AC 80+ platinum Config 1 Power Supply	3	\$ -	\$ -	
CAB-TA-NA	North America AC Type A Power Cable	3	\$ -	\$ -	
C9300-SSD-NONE	No SSD Card Selected	3	\$ -	\$ -	
NETWORK-PNP-LIC	Network Plug-n-Play Connect for zero-touch device deployment	3	\$ -	\$ -	
STACK-T1-50CM	50CM Type 1 Stacking Cable	3	\$ 44.02	\$ 132.06	
C9300-NW-E-48	C9300 Network Essentials, 48-port license	3	\$ -	\$ -	
C9300-DNA-E-48	C9300 DNA Essentials, 48-Port Term Licenses	3	\$ -	\$ -	
C9300-DNA-E-48-3Y	C9300 DNA Essentials, 48-port - 3 Year Term License	3	\$ 492.96	\$ 1,478.88	
C9300-SPS-NONE	No Secondary Power Supply Selected	3	\$ -	\$ -	
PWR-C1-BLANK	Config 1 Power Supply Blank	3	\$ -	\$ -	
C9300-NM-8X	Catalyst 9300 8 x 10GE Network Module	3	\$ 1,122.37	\$ 3,367.11	
CAB-SPWR-30CM	Catalyst Stack Power Cable 30 CM	3	\$ 41.82	\$ 125.46	
SFP-10G-SR=	10GBASE-SR SFP Module	6	\$ 454.15	\$ 2,724.90	
PWR-C1-1100WAC-P=	1100W AC 80+ platinum Config 1 Power Supply Spare	2	\$ 836.28	\$ 1,672.56	
CAB-TA-NA	North America AC Type A Power Cable	2	\$ -	\$ -	

E-Rate Hardware, Software, Maintenance and Professional Services Sub-Total: \$ 52,804.59

Scope of Work

Executive Summary

Wheaton School District 200 is looking to refresh their current Cisco switching with new Cisco 9300 switching solution. It is the intent of this engagement that Sentinel will architect, design, and implement the project according to Sentinel established best practices and, in a manner, ready for production computing. During this project, knowledge transfer of general administration tasks, points of scale, and the environment will be provided to prepare the Customer staff moving forward after the engagement.

The next section “Project Overview” highlights the main phases involved in this project. The “Scope of Work” section then lays out in further detail what is covered as part of this project. Finally, “Customer Responsibilities and Assumptions” details important assumptions Sentinel has made in discussion with Wheaton School District’s Team.

Project Overview--Project Phases

PHASE 1 - PROJECT INITIATION MEETING

Sentinel Project Management will coordinate a kick-off meeting to review and approve the Scope of Work provided to the Customer. Customer and Sentinel provided resources will be introduced and their relevant roles for the project discussed. Sentinel Project Management will then coordinate a time for a site visit by Sentinel Engineers in order to draft a blueprint of all proposed work which will be provided to the Customer. High level timelines for project milestones will also be identified and discussed.

PHASE 2 - ANALYSIS & DESIGN

Sentinel engineers will perform a high-level audit of the Customer’s relevant infrastructure. The data collected from this audit will be used to generate a design for the implementation of the solution. Sentinel engineers will inform the Customer of any design requirements that will need to be completed by the Customer’s IT staff prior to the start of the next phase (such as provisioning of storage space, acquisitions of licenses, and other essential design components not covered within this document). Upon acceptance of the work as detailed within the blueprint by the Customer, Sentinel engineers and project managers will then coordinate specific dates and times appropriate for accommodating the nature of the work involved (i.e. work which will require outages will be scheduled during appropriate maintenance windows).

PHASE 3 - STAGING

During the staging phase, equipment will be unboxed, burned-in, configured and tested off-site before being repacked and delivered for onsite implementation. This ensures maximum efficiency and quality while minimizing the disruptions and impacts to the Customer’s environment.

PHASE 4 - IMPLEMENTATION

Sentinel engineers will proceed with the implementation of all items specified within this Scope of Work and further detailed in the Customer approved Design Document.

Campus Network Switching

The Campus Network Switching solution will be installed and configured at all relevant sites as defined in the Implementation section.

PHASE 5 - MIGRATIONS/CUTOVER

After implementations are complete, Sentinel engineers will proceed with all migrations and cutovers. Sentinel engineers will work with Sentinel's project managers to coordinate any needed maintenance windows for the completion of the project.

PHASE 6 - POST SUPPORT

Sentinel engineers will be dedicated to being available for the resolution of any problems or issues that arise during the post support portion of the project.

PHASE 7 - PROJECT COMPLETION

Upon conclusion of all other phases of work Sentinel's engineers will provide the Customer with updated design documents for the project. Sentinel's project management team will then arrange for a meeting with the Customer to review the status of all project items. If no project items remain open Sentinel's project managers will request that the Customer sign off on the project, thus closing the project at that time.

Scope of Work

PLANNING AND PRE-ENGAGEMENT PREPARATION

- Identification of key Customer project team members with whom Sentinel will work to accomplish the tasks defined in this Scope.
- Review required hardware, software, networking and facilities required to successfully complete this engagement.

ANALYSIS & DESIGN

General

- Analyze the current environment to make sure the environment is ready for infrastructure implementation based upon the assumptions laid out in the next section.
- Engage with the Customer team to brainstorm the technical requirements and use case design for the implementation.
- Develop specific requirements, design and use case specifications blueprint document based upon Customer discussion.

IMPLEMENTATION & UPGRADE – CAMPUS NETWORK SWITCHING

Implementation and Configuration – Campus Network Switching (Woodland Elementary School, Wheaton Illinois 60189)

- Sentinel will install and configure (1) Catalyst C9300-48UXM-EDU, K12, with Network Advantage licensing.
 - Rack and power up to (1) Campus access switch in Customer provided racks within the site.
 - (1) switch will be configured as stackwise access switches with respective uplink modules and redundant power supplies.

SCOPE OF WORK

- Configure all necessary Layer 2 VLANs within the site.
- Configure uplink ports from aggregation to access switches.
- Configure the switch hostname, domain name, NTP, and DNS on the newly deployed switches.
- Configure EIGRP/OSPF routing if required.
- Configure spanning-tree, as necessary, on the newly deployed switches.
- Perform a code upgrade on the newly deployed switches to the latest Cisco recommended code versions, or a Customer requested and documented code version.
- Configure all Layer 3 SVIs and/or routing for up to one supported protocol on the newly deployed switches. Any routing configuration changes on existing switches are not included but can be added with an approved project change request.
- Label, as necessary, and patch new or existing Customer provided cabling for the interfaces on the newly deployed switches within the site. No relocation or installation of cabling other than standard intra-rack patch cables is included but this can be added with an approved project change request.

Implementation and Configuration – Campus Network Switching

(Jefferson Early Childhood Center, 130 N. Hazelton Avenue, Wheaton Illinois 60187)

- Sentinel will install and configure (3) Catalyst C9300-48UXM-EDU, K12, with Network Advantage licensing.
 - Rack and power up to (3) Campus access switches in Customer provided racks within the MDF at the site.
 - (3) switches will be configured as stackwise access switches with respective uplink modules and redundant power supplies.
 - Configure all necessary Layer 2 VLANs within the site.
 - Configure uplink ports from aggregation to access switches.
 - Configure the switch hostname, domain name, NTP, and DNS on the newly deployed switches.
 - Configure EIGRP/OSPF routing if required.
 - Configure spanning-tree, as necessary, on the newly deployed switches.
 - Perform a code upgrade on the newly deployed switches to the latest Cisco recommended code versions, or a Customer requested and documented code version.
 - Configure all Layer 3 SVIs and/or routing for up to one supported protocol on the newly deployed switches. Any routing configuration changes on existing switches are not included but can be added with an approved project change request.
 - Label, as necessary, and patch new or existing Customer provided cabling for the interfaces on the newly deployed switches within the site. No relocation or installation of cabling other than standard intra-rack patch cables is included but this can be added with an approved project change request.

SCOPE OF WORK

- Sentinel will install and configure (3) Catalyst C9300-48UXM-EDU, K12, with Network Essentials licensing.
 - Rack and power up to (3) Campus access switches in Customer provided racks within the IDF at the site.
 - (3) switches will be configured as stackwise access switches with respective uplink modules and redundant power supplies.
 - Configure all necessary Layer 2 VLANs within the site.
 - Configure uplink ports from aggregation to access switches.
 - Configure the switch hostname, domain name, NTP, and DNS on the newly deployed switches.
 - Configure spanning-tree, as necessary, on the newly deployed switches.
 - Perform a code upgrade on the newly deployed switches to the latest Cisco recommended code versions, or a Customer requested and documented code version.
 - Any routing configuration changes on existing switches are not included but can be added with an approved project change request.
 - Label, as necessary, and patch new or existing Customer provided cabling for the interfaces on the newly deployed switches within the site. No relocation or installation of cabling other than standard intra-rack patch cables is included but this can be added with an approved project change request.

Implementation and Configuration – Campus Network Switching (Lowell Elementary School, 312 South President Street, Wheaton Illinois 60555)

- Sentinel will install and configure (5) Catalyst C9300-48UXM-EDU, K12, with Network Essentials licensing.
 - Rack and power up to (5) Campus access switches in Customer provided racks within the IDF at the site.
 - (5) switches will be configured as stackwise access switches with respective uplink modules and redundant power supplies.
 - Configure all necessary Layer 2 VLANs within the site.
 - Configure uplink ports from aggregation to access switches.
 - Configure the switch hostname, domain name, NTP, and DNS on the newly deployed switches.
 - Configure spanning-tree, as necessary, on the newly deployed switches.
 - Perform a code upgrade on the newly deployed switches to the latest Cisco recommended code versions, or a Customer requested and documented code version.
 - Any routing configuration changes on existing switches are not included but can be added with an approved project change request.
 - Label, as necessary, and patch new or existing Customer provided cabling for the interfaces on the newly deployed switches within the site. No relocation or installation of cabling other than standard intra-rack patch cables is included but this can be added with an approved project change request.

SCOPE OF WORK

Implementation and Configuration – Campus Network Switching (Johnson Elementary School, 2S700 Continental Drive, Wheaton Illinois 60555)

- Sentinel will install and configure (5) Catalyst C9300-48UXM-EDU, K12, with Network Essentials licensing.
 - Rack and power up to (5) Campus access switches in Customer provided racks within the IDF at the site.
 - (5) switches will be configured as stackwise access switches with respective uplink modules and redundant power supplies.
 - Configure all necessary Layer 2 VLANs within the site.
 - Configure uplink ports from aggregation to access switches.
 - Configure the switch hostname, domain name, NTP, and DNS on the newly deployed switches.
 - Configure spanning-tree, as necessary, on the newly deployed switches.
 - Perform a code upgrade on the newly deployed switches to the latest Cisco recommended code versions, or a Customer requested and documented code version.
 - Any routing configuration changes on existing switches are not included but can be added with an approved project change request.
 - Label, as necessary, and patch new or existing Customer provided cabling for the interfaces on the newly deployed switches within the site. No relocation or installation of cabling other than standard intra-rack patch cables is included but this can be added with an approved project change request.

CUTOVER/MIGRATION STRATEGY

Sentinel has provided Engineering and Project Management professional services to support (4) cutover/migration strategy. The project team will deploy the solution within an estimated (4) cutover window(s) per switching closet and per datacenter. Any additional cutovers, or phased installation work will be added into scope via the change order (PCR) process and may require additional professional services to complete.

Cutover Planning Services Provided by Sentinel

Installation/Cutover Planning – Prior to any cutover, the Sentinel PM and Lead Engineer on the project will provide a “Solution Installation and Cutover Plan” which details the following:

- Start time and End time that is targeted for the maintenance window required for the cutover.
- Step by step plan for the work that is to be done prior to the installation, during the installation, and after the installation.
- Task ownership for each of the tasks identified.
- Task durations for each of the tasks identified.
- Back-out plan – along with a timeframe that identifies when we will initiate the back out plan.
- Test and Acceptance plans to be executed.

SCOPE OF WORK

Once the cutover/installation plan has been created, the Sentinel Project Team and the Customer will meet to review and approve the plan. Prior to the cutover, a “go/no-go” call will take place to once again review the cutover plan and ensure that all stakeholders involved in the cutover are available, and all pre-cutover tasks have been completed successfully in preparation for the maintenance window. If a Customer requests to cancel and reschedule a cutover, rescheduling charges may apply. Any impact to Customer resource schedules as a result of a “no-go” call, will be Customer responsibility.

DOCUMENTATION AND KNOWLEDGE TRANSFER

- Provide documentation of the setup including a revised Sentinel design doc as well as any available vendor-created administrative and/or best practices guides.
- Provide knowledge transfer including basic functional overviews of products implemented, demonstrating the normal operations as installed in the Customer’s environment.
 - Note that knowledge transfer and functional overviews are not a substitute for formal vendor product Customer Education courses available. Sentinel strongly encourages attendance at Customer Education classes to gain further insight into the product architecture and its integration.

PROJECT MANAGEMENT

Sentinel will provide a project manager committed to the success of the project. The project manager will be responsible for:

- Complete success of the project.
- Optimal coordination of all resources.
- Guiding the Customer on aspects of the project they are required to perform.
- Tracking and reporting of progress.
- Management of agreed to budget issues.
- Management of expected timelines for implementation.
- Changes to the project and communications of changes in writing using a Project Change Form.
- Post installation document gathering, assembly and presentation.
- Post installation project completion agreement and signature.

Project management will ensure complete project success. Communication is the cornerstone of project management, and the project manager will be the central communication mechanism for all parties. This will assure all relevant parties are informed about decisions that may affect the success of their component of the solution.

Proposal Assumptions

The following is a list of responsibilities and/or tasks that Sentinel assumes have been completed or reviewed by Wheaton SD 200 prior to the execution of the above-mentioned project. If additional responsibilities are uncovered during the project, Sentinel will make sure that Wheaton School District 200 is made aware of any issues promptly to determine resolution.

General Proposal Assumptions

PRODUCT LEAD TIMES

Depending on the technologies quoted, orders may be direct or through distribution. Lead times should be expected to be 8 weeks but can exceed 8 weeks. Should expedited equipment requirements arise, there could be an additional charge to source through a warehousing distribution partner.

SITE READINESS AND SITE SURVEY REQUIREMENT

Every effort has been made to ensure that proper power cords and patch cables have been included to match your environment's infrastructure. The notes section of the Bill of Materials (BOM) explicitly states the quantity and type of cords quoted.

Four options are available to ensure the accuracy of the selected items; please initial next to which method you agree to: (SELECT AND INITIAL ONLY ONE)

Note: In the absence of the Customer selecting one of the four options below, it is agreed that the contract will default to Option #1.

Initials

OPTION 1

Customer waives the opportunity to complete a site/closet checklist, has reviewed the BOM and agrees to quantity, type and length of the power and patch cables provided. [Financial obligation for labor and materials for changes identified post order will be the Customer's responsibility]

JS
JS

OPTION 2

Customer has provided a site/closet review checklist document and confirms the quantity, type and length of the power and patch cables quoted. [Financial obligation for labor and materials for changes identified post order will be the Customer's responsibility, unless Sentinel provided the incorrect part based upon the provided checklist]

OPTION 3

Customer elects a "for charge" onsite survey of the facilities and closets to determine the quantity, type and length of the power and patch cables required. In addition, Sentinel will assess each closet's cooling and UPS readiness for the proposed equipment being provided. [Financial obligation for labor and materials for changes identified post order will be Sentinel's full responsibility, unless changes to the site have taken place subsequent to the site assessment]

OPTION 4

Not applicable. This SOW does not contain any work that would be performed in or impacted by the Customer's MDF, IDF or Data Center facilities.

PROPOSAL ASSUMPTIONS

FIBER

It is assumed that the Customer's existing fiber will support proposed transmission speeds (i.e. 1GB, 10GB, 40GB, etc.). Customer must ensure that the fiber optic cabling is within manufacturer tolerances for distance and loss in order to support the required transport speeds. In some cases, specialized equipment, such as attenuators and mode conditioning cables, may be required to properly support these speeds. This equipment will be at the expense of the Customer.

OPTICS (SFP, SFP+, GBIC, ETC...)

Every effort was made in the pre-sales process through white board sessions, BOM reviews and diagrams to identify any and all optics required. **ANY CHANGES IN OPTICS WILL BE HANDLED VIA A PCR UTILIZING THE CONTINGENCY ALLOCATION AS IDENTIFIED AND VALIDATED BY THE CUSTOMER AND PROJECT TEAM TO ASSURE PROPER OPTICS, CABLES AND ACCESSORIES ARE ORDERED TO MATCH THE PHYSICAL DEPLOYMENT REQUIREMENTS.** Migration items and integration items to existing equipment, if not noted, are not included nor is time for the interconnection, planning or design of same. Should any question exist as to the total number, types and use of the optics, Sentinel can set up a design review and white board session prior to the order upon request.

POWER, RACKS AND COOLING

Like the optics, Sentinel has made a best effort to match any power requirements and answer any requests of the Customer related to equipment specifications, power cables included or other physical requirements. Any adjustments to fit in racks, connect to specific power terminal types, or secure electrician services to run a new service are beyond the fixed bid project price. Sentinel will respond to any inquiry and provide product literature. Any sizing charts provided are done so as a convenience to the Customer and DO NOT represent a commitment by Sentinel that, as sold, the equipment is ready for the Customer site. Sentinel offers Technology Area Design (TAD) consulting services should the Customer prefer a more formal and accurate solution.

PATCH CABLES/CABLE LENGTHS

In most cases the BOM includes any note(s) on cable lengths included. Without the design validation of a formal TAD engagement, only a best effort is made to match the site requirements. Any changes to the cord lengths, connectors or other site readiness items will be in addition to the solution once the order is placed with the manufacturer(s). Many of the vendors offer the ability to select the appropriate items prior to order, but will charge for any replacements needed after the order and this offer will be extended to the Customer through the Sentinel Project Change Request (PCR) process. Unless specified, Sentinel assumes the Customer will provide all patch cables needed and can provide the product literature on any devices upon request.

LABOR UNION REQUIREMENTS

Sentinel has NOT included any parameters for Union workers. Any requirement would require a subcontract arrangement to be determined up front and would increase the cost of deployment.

PERMITS & ACCESS

Unless otherwise agreed, all permits, variances, access to facilities, roof access, building warranty concerns or other site specific information and procedures are the responsibility of the Customer. Sentinel can assist as needed, but will need to be informed of any requirements prior to the site survey to consider these within the validation process.

PROPOSAL ASSUMPTIONS

PATCHING OF EQUIPMENT CABLING

Sentinel assumes, unless noted here, that the Customer will patch in all equipment to the cabling plant within the facility. Sentinel can perform this connection service at an additional charge with an approved PCR.

REMOTE SUPPORT

Sentinel's service estimate assumes remote access support through IP VPN or IP PPP connection. Without this access, additional services may be incurred for optimization and tuning required pre and post installation.

TRAVEL REQUIREMENTS AND COST

Unless specified within the proposal, all travel expenses and time are not included. Travel time shall be invoiced at pre-negotiated rates and expenses plus per diem at actual costs.

Cisco Campus - Network Switching

NETWORK PERFORMANCE

Sentinel engineers work to define and deploy reliable network infrastructures in regard to performance and stability however, cabling, connectors, connected systems, power, cooling, routing, and other considerations can impact network performance and general stability. Sentinel recommends a paid network assessment to evaluate the Customer's environment in order to account for variable(s) with regard to Campus Network Switching. Without a relevant prior paid assessment, a best effort will be made based on Customer input during the pre-sales process.

Sample of Our Illinois Education Customers

Acero/Uno Charter Schools	Midlothian School District 143
Addison School District 4	Minooka High School District 111
Alsip-Hazelgreen-Oaklawn 126	Morton Grove School District 70
Argo – Summit Community	New Lenox SD 122
Arlington Heights School District 214	New Trier Township District 203
Ball-Chatham School District 5	Noble Network of Charter Schools
Brookwood School District 167	Northern Suburban Special ED District
Catalyst School Chicago	Oswego School District 308
Channahon School District 17	Palatine School District 15
Chicago Charter Schools Foundation	Peotone School District 207U
Chicago Public Schools	Plano School District 88
District 327	Prairie-Hills School District 144
Dolton School District 148	Schiller Park District 81
Elgin School District U46	School District 146
Evanston School District 202	School District 200
Frankfort School District 157C	School District 217
Glencoe School District 35	School District 50
Hillside School District 93	South Holland School District 150
Hononegah Community School District 207	St. Francis High School
Illini Bluffs Community Unit School	Steger School District 194
Intrinsic Schools	Tinley Park-Community Consolidated
Iroquois Kankakee	Township High School District 214
Kankakee School District 111	Washington School District 52
Kirby School District 140	Wheaton Community Unit
LaGrange School District 102	Woodland Community Consolidated
Lemont-Bromberek School District 113A	Worth School District 127
Manteno School District 5	

EDUCATIONAL REFERENCES

Educational References

Reference 1	
Customer Name	Catalyst Schools
Contact Name	Imran Shamim
Contact Title	IT Director
Phone Number	773.527.7246
Email Address	ishamim@catalystschools.org

Reference 2	
Customer Name	School District, 207U Peotone
Contact Name	Ruben Suarez
Contact Title	IT Manager
Phone Number	708.258.0991
Email Address	rsuarez@peotoneschools.org

Reference 3	
Customer Name	Kankakee School District 111
Contact Name	Daniel W. Dannenberg
Contact Title	Technology Supervisor
Phone Number	815.803.7727
Email Address	daniel-dannenberg@ksd111.org

EDUCATIONAL REFERENCES

Reference 4	
Customer Name	Dolton West School District 148
Contact Name	Jairo Frausto
Contact Title	Informational Systems Specialist
Phone Number	fraustoj@district148.net
Email Address	708.841.2445

NOTE: Sentinel is proud to have a significant number of Customers willing to share their experiences with our prospective Customers. As a courtesy to our current Customers (and the same courtesy we will afford you in the future when we have the opportunity to share your name as a reference), we would like to request that you please contact your Sentinel Sales Executive to check with these Customers to find a time that would be mutually convenient for your schedules.

Acceptance of RFP Terms

Sentinel Response: Sentinel Technologies Inc. has read, understands, and agrees to the terms of the RFP unless otherwise noted.

E-Rate Project and Payment Terms

This proposal is valid through the FY2023 E-Rate Filing Period. Upon dual execution, this proposal shall be governed by the below Agreement between the parties.

Agreement No. 001

Project Terms

Pending board approval. All sections of this project, other than those sections expressly identified as Non-E-Rate or E-Rate Ineligible, are contingent on the project being accepted and approved, and a Funding Commitment Decision Letter (FCDL) with funding commitment issued by the USAC-SLD of the FCC (E-Rate) for the items and services requested. In the event that an E-Rate funding award is not made for the items or services sought in this agreement, this project and subsequent award at Customer's election, may be considered null and void.

Upon issuance of an FCDL and confirmation of intent to proceed by the Customer in the form of a duly filed Form 486 with the SLD, Sentinel will order all equipment and items approved by the SLD for non-recurring services funding. For recurring services, Sentinel will commence services upon the date of Customer filed FCC Form 486 or the start of the E-Rate funding period.

SLD Funded Payment Terms

After proceeding as outlined above, Sentinel will invoice the Customer only their portion of E-Rate funding commitment (non-discounted amounts), all E-Rate ineligible costs and costs in excess of the SLD funding commitment amounts. Sentinel will invoice USAC-SLD for all SLD committed funding amounts. In the event the SLD deems any or all of the project as ineligible, the Customer is responsible for those portions of the contract as well as the Customer's matching portions.

In the event that a funding commitment from the SLD has not been received at the time the services are to commence, the Customer may elect to proceed with the services (recurring or non-recurring) in advance of a funding commitment, so far as work commences within E-Rate's fiscal year. If the Customer elects to proceed with the services in advance of receiving necessary funding commitments from the SLD, Sentinel will invoice the Customer all costs in FULL, including otherwise discounted amounts anticipated from the SLD. At such time funding commitments are received from the SLD, the Customer may then seek reimbursement for the discounted committed funding amounts from the SLD by filing a Form 472 Billed Entity Applicant Reimbursement (BEAR) form, which Sentinel will certify for work completed or in-progress.

Non E-Rate Payment Terms

Hardware/Software: For orders over \$100K, 50% at contract execution, balance upon shipment from manufacturer

All Invoices: Net 30

E-RATE PROJECT AND PAYMENT TERMS


Fixed Price

Fixed Fee Services will be progress billed monthly based on percentage of completion. Generally, services for all non-business impacting tasks are quoted at a standard rate for labor from 9:00 a.m. – 5:00 p.m. If Customer requires, Contractor can perform some of these services outside of normal business hours at an overtime labor rate. Notwithstanding the above, services related to migrations, cutovers, or changes to critical core infrastructure are assumed to be performed outside of business hours and are included in the services pricing provided in this contract. For the fixed charges listed, the Contractor shall furnish all of the materials and perform all of the work shown on the drawings and/or described in the specifications entitled Appendix A, as annexed hereto as it pertains to work to be performed at designated Customer locations. Any alteration or deviation from the above specifications, including but not limited to any such alteration or deviation involving additional material and/or labor costs, will be executed only upon a written order for same, signed by Customer and Contractor, and if there is any charge for such alteration or deviation, the additional charge will be added to the contract price detailed above.

On this 22nd day of February, 2023, this Proposal has been respectfully submitted by Sentinel Technologies, Inc., signed by its duly authorized agent below:

CUSTOMER:

Wheaton – Community School District 200

Signature:  Jason Spencer (Mar 24, 2023 14:21 CDT)

Printed Name: Jason Spencer

Title: Executive Director of Innovation and Technology

Date: Mar 24, 2023

CONTRACTOR:

Sentinel Technologies, Inc.

Signature: 

Printed Name: Robert Lenartowicz

Title: Chief Operations Officer

Date: 3/17/2023

E-Rate Experience

Sentinel wants to help our education Customers meet their networking demands and obtain the right tools to support learning in our digital world. We have extensive E-Rate experience working with educational institutions and school districts of all sizes. The systemic processes we have established over the last 20+ years incorporate lessons learned as well as industry-leading project management methodologies and a large staff of highly trained engineers. Sentinel has developed proven workflows, reporting tools, collaborative dashboards, approval structures, and documentation procedures to ensure our projects are effectively managed. We become an adjunct member of each Customer's team as we collaborate together to reach a common objective.

Sentinel works closely with E-Rate consultants to initiate and monitor discussions surrounding any proposed modifications or technology additions to the Eligible Services List (ESL). These consultants also help to verify and validate ambiguities in E-Rate policies so we can guide our Customers toward expedited funding commitments.

The results for E-Rate Customers include increased visibility of school and/or school district stakeholders, better communication with school leaders, faster deployment schedules, and more detailed documentation in order to reduce the risk of an audit. Sentinel's project management team has dedicated roles for orchestration, financial, and communication responsibilities, as our experience has shown these investments result in highly successful projects. We are committed to ensuring our education Customers have the essential resources to modernize their technology environments and achieve more through the E-Rate program.

Appendix A – Sentinel Technologies Overview

For more than 39 years, Sentinel Technologies has been recognized as a premier business technology services provider dedicated to delivering the highest quality Customer service and support. Even as our services have spanned generations of technology, Sentinel has stayed at the forefront of IT developments and maintained a singular focus on providing practical and innovative solutions. With single-source accountability, Sentinel processes and teams can efficiently address a range of IT needs - from end-to-end solutions to targeted applications. Our proven success has allowed us to expand from our original charter of providing technology maintenance services to our current standing as one of the leading IT services and solutions providers in the U.S.

Cisco Gold Partner

Three Cisco Masters Certifications

Cisco 2015 SLED Partner of the Year

Cisco Worldwide Partner of the Year 2003

Cisco IP Communications Partner of the Year Multiple Years

To see more, go to Cisco.com, search for partner locator, enter Sentinel Technologies, Inc.



SSAE 16 SOC 2, Type II Attestation

Standing at the apex of Sentinel’s myriad awards, honors and certifications is its SSAE 16 Service Organization Control (SOC) 2, Type II Attestation which has been undertaken annually by the nationally-renowned auditing firm Plante Moran, PLLC for the past three years. The SOC 2, Type II attestation is the highest and most rigorous in the SSAE 16 portfolio of audits, evaluating Controls and Processes that encompass the Five Trust Service Principles of Security, Availability, Processing Integrity, Confidentiality and Privacy.

Why should this matter to you? The SSAE 16 attestation provides independent validation and assurance that Sentinel is in compliance with best practices regarding items of critical importance to you -- security, confidentiality, data protection, project management and IT strategic solutions, to name a few. If you are seeking consulting or services support for your IT environment, the SOC 2, Type II attestation should be one of the most important factors in your evaluation.



The SSAE 16 Attestation is a standard that was created by the American Institute of Certified Public Accountants (AICPA) in 2010 to replace the SAS 70 certification process, and expand reporting to the effectiveness of a service organization’s controls relating to operations and compliance.



SENTINEL TECHNOLOGIES
A PREMIER BUSINESS SOLUTIONS
PROVIDER

2550 WARRENVILLE RD, DOWNERS GROVE, IL 60515
WWW.SENTINEL.COM



COMPANY OVERVIEW

OUR VISION

To create a more secure, efficient, accessible, and comprehensive IT environment posture for businesses across all verticals.

OUR MISSION

Providing thought leadership and best-in-class business technology, engendering fanatical customer loyalty through uncompromising customer service, and creating a work environment that encourages creativity, fosters growth, and rewards success.



TABLE OF CONTENTS

3	WELCOME STATEMENT	11	ALWAYS SECURE
4	ALWAYS LEADING	12	SECURITY EXCELLENCE AND OUR AWARDS
5	ALWAYS DELIVERING	13	KEY PARTNERS
6	ALWAYS INVOLVED AND CAPABLE	14	VALUED PARTNERS
7	ALWAYS CONNECTED	15	OUR SPECIALIZATION AND QUALIFICATIONS
8	ALWAYS ENGAGED	16	COMPANY AND INDIVIDUAL CERTIFICATIONS
9	ALWAYS EFFICIENT	17	EMPLOYEE SATISFACTION QUALIFICATIONS
10	OUR METHODOLOGY	18	OUR LOCATIONS

WELCOME STATEMENT

“Welcome to Sentinel! From the Office of the President, we first want to thank you for considering a partnership with Sentinel. We take all of our obligations and commitments very seriously as we have since our inception in 1982. We can assure you that no matter what assignment Sentinel might be selected for, we will deliver our very best. Our ultimate objective is to always deliver a solution that provides true value to your business.

We truly look forward to engaging and providing an outstanding customer experience!”

- Office of the President

Tim Hill
Co-President
Chief Financial Officer

Robert Lenartowicz
Co-President
Chief Operations Officer

Brian Osborne
Co-President
Chief Sales and Marketing Officer





ALWAYS LEADING

Sentinel excels at providing customers with world-class IT solutions, consulting, customer service, and support. Our Always Leading approach includes the relentless pursuit of innovative solutions, the development of strong partnerships, as well as the acquisition of top certifications from global technology leaders. These factors have enabled Sentinel to become a single source capable of addressing IT needs for organizations of all sizes and industries. Sentinel's comprehensive portfolio includes solutions focused on advisory, cloud, security, communications, lifecycle, and managed services. Our goal is to ensure your organization has the right technologies and capabilities to achieve unprecedented levels of growth and success.

ALWAYS DELIVERING

Creating and maintaining growth is difficult for any organization, especially when you're stuck handling the day-to-day tasks associated with the management of an IT environment. Sentinel's Managed Services significantly ease the burden on your IT team and operations, allowing them to focus on value-adding projects and delivering quality business outcomes. Our three-step process ensures the enhancement of any IT environment: We develop a custom strategy based on your organization's needs, proactively monitor your IT environment 24x7x365 to maximize uptime, and provide full remediation when needed. This approach guarantees the chosen solutions and their management contribute to the growth of your organization.



ALWAYS INVOLVED

Sentinel remains Always Involved by providing our customers with innovative and comprehensive IT solutions that contribute to the growth of their organization for years to come. Technology is constantly evolving, and we make every effort to evolve alongside it with our continuous pursuit of world-class solutions. Once the latest technology has been acquired, we then customize it to serve the unique needs of each customer. Customization is done using Sentinel's unique seven-point approach: vision, design, product, implementation, documentation, training, and support. Each represents a critical element in the development process, ultimately resulting in a solution able to meet customer demand and build upon an already strong foundation for success.

ALWAYS CAPABLE

Sentinel provides IT solutions to organizations of all sizes and industries, including education, finance, healthcare, manufacturing, legal, and government. Our goal is to ensure customers have a comprehensive understanding of each solution and how it will impact their organization. That means detailing the vision and design of the solution along with the products used during development to create a sense of familiarity prior to deployment. The Sentinel team then handles training on the solution and 24x7x365 support services. We are deeply devoted to thought leadership and customer satisfaction, ensuring our customers receive the maximum value and impact of their investments. When you choose Sentinel, you gain a trusted, experienced partner who wants to contribute to the positive developments of your organization.



ALWAYS CONNECTED

The scalability, reliability, enhanced security, and “as a service” architecture of Sentinel’s CloudSelect® makes it easier than ever to remain Always Connected with co-workers, business partners, and customers from anywhere at any time on any device. Our extensive CloudSelect® portfolio is built on a high availability platform with customizable service options, so organizations can benefit no matter their size, industry, or budget. We tailor your CloudSelect® experience to align with the specific needs and goals of your organization and help optimize operations to ensure you get the most from your investments. Customers are also safer on CloudSelect® with Sentinel’s Native Secure Architecture, which combines innovative strategies with industry-best solutions to deliver multiple layers of defense against all types of threats.

CORE SOLUTIONS

- Sentinel CloudSelect®
- Sentinel High Availability Network Support (HANS™)
- Cloud Advisory
- Cloud Migration
- Managed Cloud
- Hybrid and Multi-Cloud Services
- Desktop as a Service
- Collaboration as a Service



ALWAYS ENGAGED

Evolving technology trends and business demands can make it difficult for organizations to achieve their goals and remain competitive. The most successful businesses understand that regular assessments, a detailed IT strategy, streamlined processes, strong solution design and deployment, as well as continued support are necessary to adapt and maintain consistent progress. Sentinel's Advisory Services team helps your organization navigate the challenges tied to aligning your IT investments with critical business priorities. Our highly experienced consultants use industry-best practices to stay Always Engaged with expert guidance so you can discover the building blocks for long-term growth and get the most from your people, processes, and technology.

CORE SOLUTIONS

- Assessments and Workshops
- Process Consulting
- Strategic Vision
- Strategic Technology Plans
- Ongoing Services





ALWAYS EFFICIENT

Sentinel's objective is simple: to provide our customers with world-class IT solutions and services through our Always Efficient and highly proven methodology. This process utilizes professional project management as the cornerstone of each endeavor to ensure the deployment and integration of new solutions into your environment isn't an unnecessary strain on the time, money, and resources of your organization. The Sentinel project management team adds simplicity and transparency to every aspect of a project through a unique blend of formal planning techniques and sophisticated virtualized workflows. They keep a close eye on everything from contracts, scopes of work, and bill of materials to keep everything on track and within the carefully defined parameters. The guidance, clear communication, and detailed work assignments help all participants fully understand their roles, monitor progress, avoid unnecessary confusion, and minimize risk.

CORE SOLUTIONS

- Risk Plan Development
- Communication Plan Development
- Resource Scheduling
- Task Scheduling
- Process Monitoring and Updates
- Administrative Document Management (Contracts, Scope of Work, Bill of Materials)



OUR METHODOLOGY

Sentinel offers our customers project management services to ensure their projects are completed on time and on budget. Sentinel Project Management includes detailed planning, monitoring, and management of all project activities in accordance with a defined scope of work established for each customer. Project Managers take time to understand the customer’s needs and desired outcomes, then function as a liaison between the customer and the Sentinel team to meet all milestones and deadlines.

Sentinel’s Project Managers utilize industry-best practices, tools, and proven methodologies to ensure projects are run efficiently and achieve high quality results that satisfy or exceed expectations. Customers are given access to our “My Sentinel” online portal to leverage Sentinel’s ecosystem of expanding features that allows teams to share project information, documents, and reports.

When project management is required, Sentinel adheres to the following key initiation guidelines:



Introduction Call

Within two business days of PMO notification, a Sentinel Project Manager will contact you to make an introduction and to answer any questions you might have.



Schedule Customer Kick-Off

Within three business days of the Introduction Call, the Project Manager will call again to arrange a time and date to set up an initial “Customer Kick-Off” meeting with you and your team.



Customer Kick-Off Meeting

Within ten business days of the Introduction Call, the Customer Kick-Off will be held either virtually or at the customer’s location.

The purpose of this meeting is to:

- Hold a formal kick-off with project stakeholders, risk review, and key milestone planning
- Conduct a site walkthrough (if required for the project)
- Schedule initial analysis and blueprint meeting(s)

ALWAYS **SECURE**

Sentinel Technologies proudly presents Fortis: a comprehensive portfolio of security services and solutions designed to proactively protect every aspect of your digital and physical environment.

People, process, and technology are the primary factors that make Fortis by Sentinel unique. Our team is comprised of 350+ highly experienced and skilled security professionals with certifications from many industry-leading vendors. They take time to learn about the specific needs of each customer in order to deliver streamlined, best-of-breed solutions in conjunction with a battalion of our innovative security partners. That includes high-touch SOC monitoring and managed detection & response (MDR) services, which proactively patrol your network armed with the latest threat intelligence to help stop attacks before they can even start. We also understand security is a living organism that needs to adapt with an ever-changing technology landscape. Fortis offers a comprehensive suite of ActiveDefense Monitoring solutions designed to provide 24x7x365 threat protection and enhance your security posture. This multi-layered approach enables us to maintain a close eye on nearly every portion of your environment, making it easier to detect suspicious activity, issue alerts, mitigate significant threats, and achieve compliance.



SECURITY EXCELLENCE

Fortis by Sentinel has been recognized as one of the nation's top cybersecurity providers at the 2022 Cybersecurity Excellence Awards, receiving Gold designation in the following categories:

CYBERSECURITY COMPANY

- Best Cybersecurity Company
- Cybersecurity Service Provider of the Year

CYBERSECURITY TEAM

- Cybersecurity Team of the Year
- SOC Team of the Year

CYBERSECURITY PRODUCT AND SERVICE

- Cybersecurity as a Service (SECaaS)
- Cybersecurity Assessments
- Incident Response (IR)
- Security Monitoring (SOC)
- Managed Security
- Managed Detection and Response (MDR)
- Penetration Testing as a Service (Pen Test)



OUR AWARDS

Along with our security awards, Sentinel has numerous technology partner awards.

[VISIT OUR WEBSITE TO LEARN MORE TODAY!](#)



KEY PARTNERS

Sentinel recognizes the quality of our solution partners directly affects the quality of the solutions we deliver. Our strategy is to establish strong partnerships with the best IT providers in the industry and obtain the highest possible levels of certification. This ensures we have the technical and business expertise to deliver on our promise.

Sentinel is proud to call the following organizations our key strategic business partners:



VALUED PARTNERS

In addition to our key partners, Sentinel maintains a large number of valued partnerships that enable us to efficiently provide customers with world-class solutions.



OUR SPECIALIZATIONS

The following Manufacturing Technology Certifications recognize Sentinel's expertise within each of our manufacturer partner's technologies:

Cisco Specialist Designations:

- Gold Level Partner
- Master Unified Communications
- Master Security
- Cisco Cloud & Managed Services Master
- Master Cloud Builder
- Cisco Powered Cloud Services
- Cisco Powered Managed Services
- Advanced Routing & Switching
- Advanced Data Center Networking Infrastructure
- Advanced Borderless Network
- Advanced Content Security
- Advanced Unified Computing & Unified Fabric
- TelePresence Video Advanced Plus
- Advanced Wireless LAN
- Cisco Partner Support Services
- Digital Media



OUR QUALIFICATIONS

Microsoft Authorizations:

- Gold Management and Virtualization
- Gold Communications
- Silver Midmarket Solutions Provider
- Silver Server Platform
- Silver Messaging



Dell Technologies Authorizations:

- Platinum Partner Level
- Authorized Service Partner
- Data Protection Services Specialty
- Storage Services Specialty



VMware Authorizations:

- Solution Provider Enterprise Partner
- Infrastructure Virtualization
- Business Continuity
- Desktop Virtualization



NetApp Authorizations:

- Gold Level Partner
- Virtualization Specialized
- FlexPod Specialized
- NetApp Support Services Certified



COMPANY CERTIFICATIONS

GSA Advantage

PCI Compliance

SSAE 16 Attestation (SOC 2)



INDIVIDUAL CERTIFICATIONS

Sentinel makes substantial investments in keeping the training of our technical, sales and design team members up to date. This ensures we have the technical and business expertise to deliver on our promise.

Microsoft Certifications: 980+



Cisco Certifications: 700+



Dell Technologies Certifications: 290+



NetApp Certifications: 115+



AWS Certifications: 70+



PureStorage Certifications: 35+



EMPLOYEE SATISFACTION QUALIFICATIONS

Since the inception of Sentinel in 1982, the company has abided by a simple philosophy – “happy and motivated employees equal happy customers”. To that end, Sentinel has been vigilant in creating a work environment that encourages creativity, fosters growth, and rewards success. Sentinel has received independent recognition for their ability to create an outstanding work environment and has been recognized as a “Best Place to Work” by the Chicago Tribune, Crain’s Chicago Business, and AZCentral.com. Sentinel has also received hundreds of letters of recommendation from national and international customers for the outstanding support delivered by the Sentinel team.

Sentinel is proud to have been recognized as a “Best Place to Work” in the U.S. Midwest and Southwest regions. In the Midwest, Sentinel has been named a Top 100 Workplace by the Chicago Tribune every year since 2012 and also recently received recognition as a “Top 100 Workplace” for Arizona. In both cases, Sentinel was selected based on employee feedback compared to other companies in the region. Sentinel has also been recognized as a “Best Place to Work” by Crain’s Chicago Business. Sentinel has also gained recognition from the Detroit Free Press as a top workplace for multiple years.



OUR LOCATIONS

Headquartered in Downers Grove IL, Sentinel Technologies has independently managed offices in eleven locations:

- Chicago, IL
- Columbus, OH
- Denver, CO
- Detroit, MI
- Fort Lauderdale, FL
- Grand Rapids, MI
- Houston, TX
- Lansing, MI
- Milwaukee, WI
- Phoenix, AZ
- Springfield, IL





CONTACT US

2550 WARRENVILLE RD, DOWNERS GROVE, IL 60515
WWW.SENTINEL.COM
PHONE: 800.769.4343
FAX: 630.769.1399

Appendix B – Data Sheets

Catalyst 9K - Advantage vs. Essentials	
C9300, C9400, C9500	
Advantage	Essentials
DNA Advantage (Inclusive of DNA Essentials)	DNA Essentials
3,5,7 Year Terms	3,5,7 Year Terms
<p>Advanced Automation</p> <ul style="list-style-type: none"> SD-Access Application Policy Encrypted Traffic Analytics DNA Service for Bonjour Third-party App Hosting <p>Element Management</p> <ul style="list-style-type: none"> Patch Lifecycle Management 	<p>Assurance & Analytics</p> <ul style="list-style-type: none"> Global Insights, Trends, Compliance, Custom Reports Switch 360 & Wired Client 360 SD-Access and Switch Insights Application Health, Application 360, Performance (Loss, Latency, Jitter) <p>Telemetry & Visibility</p> <ul style="list-style-type: none"> ERSPAN AVC (NBAR2) Wireshark
Network Advantage (Inclusive of Network Essentials)	Network Essentials
Perpetual	Perpetual
<p>Enhanced Security Controls</p> <p>MACSEC-256</p> <p>IoT & Mobility</p> <p>CoAP, AVB, PTP</p> <p>Full Routing Functionality</p> <p>BGP, HSRP, OSPF, ISIS, GLBP</p>	<p>Flexible Network Segmentation</p> <p>VRF, VXLAN, LISP, SGT, MPLS</p> <p>High Availability & Resiliency</p> <p>NSF, GIR, Stackwise Virtual*, ISSU/eFSU, Patching (CLI)</p> <p>Optimize Bandwidth Utilization with Multicast</p> <p>MSDP, mVPN, AutoRP, PIM-BIDIR</p>
DNA Advantage (Inclusive of DNA Essentials)	DNA Essentials
3,5,7 Year Terms	3,5,7 Year Terms
<p>Basic Automation</p> <ul style="list-style-type: none"> PnP Application LAN Automation Embedded Event Manager <p>Element Management</p> <ul style="list-style-type: none"> Software Image Management Discovery, Inventory, Topology 	<p>Basic Assurance</p> <ul style="list-style-type: none"> Health Dashboards – Network, Client, Application Basic Switch & Wired Client Health Monitoring <p>Telemetry</p> <ul style="list-style-type: none"> Full Flexible NetFlow
Network Advantage (Inclusive of Network Essentials)	Network Essentials
Perpetual	Perpetual
<p>Essential Switch Capabilities</p> <p>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</p>	<p>DevOps Integration</p> <ul style="list-style-type: none"> Netconf, Restconf, gRPC Yang Data Models GuestShell (On-Box Python) PnP Agent, ZTP <p>Telemetry & Visibility</p> <ul style="list-style-type: none"> Model-driven Telemetry Sampled NetFlow SPAN, RSPAN
<ul style="list-style-type: none"> C9K HW includes the Perpetual Network Stack - Network Essentials or Network Advantage Mandatory to attach DNA License when ordering C9K DNA License includes Switch and DNA Center Features 	
*9400/9500	

Cisco Catalyst 9300 Series Switches

Contents

Built to reimagine connection, reinforce security and redefine experience	3
Product overview	5
Platform details	7
Platform benefits	21
Software requirements	30
Specifications	34
Warranty	62
Product sustainability	63
Cisco Services	64
Ordering information	64
Cisco Capital	73
Document history	74

Built to reimagine connection, reinforce security and redefine experience

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

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

The many industry's first include:

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

The Foundation of Software-Defined access

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

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

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

Cisco DNA Software

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

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

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

Product overview

Product highlights

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

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

Platform details

Switch models and configurations

Table 1. Product Family Configurations

Models	Modular Uplinks and Speeds	Stacking Bandwidth Support	mGig Density	Cisco StackPower	HW-Based IPSEC	App-Hosting Capacity
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

Model	Total 10/100/1000, Multigigabit copper or SFP Fiber	Uplink Configuration	Default AC power supply
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
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.

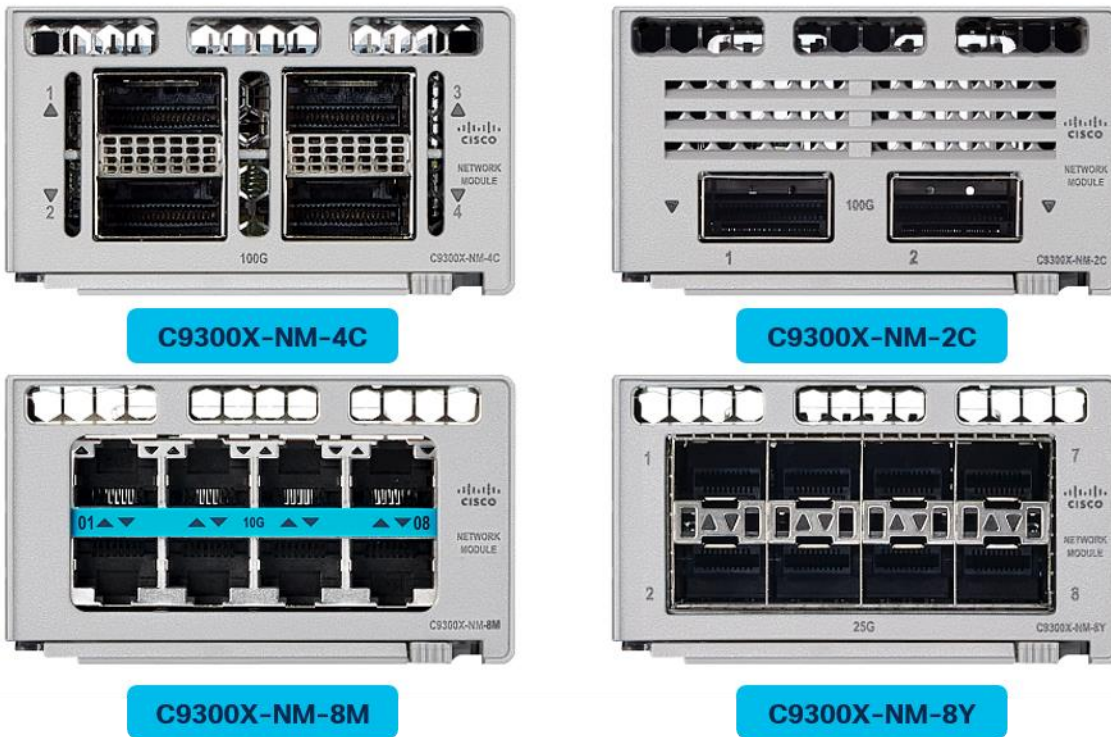


Figure 2.
Cisco Catalyst 9300X Network Modules



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
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
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*

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
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
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*

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

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

** Limited by design

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

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

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

Stacking

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



Figure 5.

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

Table 5 lists the supported stacking options.

Table 5. Supported stacking options

Model	Stacking support	Stacking bandwidth support	Optional Stacking hardware	Number of members	Supported stack members
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 C9300LM 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

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)
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

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



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

Fan

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

Table 7. Fan modules

Model	Description
FAN-T2=	Fan module

Performance and scalability

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

Performance specifications

Table 8. Performance specifications

Description	Catalyst 9300X modular uplink models	Catalyst 9300 modular uplink models	Catalyst 9300 higher scale, models	Catalyst 9300L/LM fixed uplink models
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 flow on 24- and 48-port Gigabit Ethernet models 128,000 flows on 24-port Multigigabit	128,000 flow on 24- and 48-port Gigabit Ethernet models 256,000 flows on 24-port Multigigabit	64,000 flow on 24- and 48-port Gigabit Ethernet models
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
C9300X-12Y	1,000 Gbps	2,000 Gbps	744.04 Mpps	1488 Mpps
C9300X-24Y	2,000 Gbps	3,000 Gbps	1488 Mpps	2232 Mpps
C9300LM-48UX-4Y	440 Gbps	760 Gbps	327.36 Mpps	565.44 Mpps

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

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

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 DNA Advantage License and Umbrella License per device.

Service Assurance

- **Cisco ThousandEyes Integration:**

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

Resiliency and high availability

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



Figure 7.
Cisco Catalyst 9300 Series StackPower

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

Deep buffer Technology

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

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, 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], 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 UPOE+, Cisco UPOE, PoE+ and PoE, thereby addressing the largest range of network power needs.

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

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

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

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

	24-port PoE switch	48-port PoE switch
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 DNA Software for Access Switching is available for the Cisco Catalyst 9300 Series.

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

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

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

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

Licensing Packaging

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

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

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

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

License consumption is easily determined by the package itself. While perpetual licenses are always permanent and without an expiration date, subscription licenses have to be purchased for a 3-, 5-, or 7-year term (and hence are also known as term-based licenses). Table 13 shows the combinations of perpetual and subscription licenses that must be purchased.

Table 14. Licensing combinations

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

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

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

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

Introduction to Smart Licensing

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

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

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

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

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

Table 15. Network Essentials and Advantage package features

Features	Network Essentials	Network Advantage
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 DNA Essentials and Advantage package features (add a section for other software support and add Prime, ISE and Stealthwatch support)

Features	Cisco DNA Essentials	Cisco DNA Advantage
Switch features		
Optimized network deployments Cisco DNA 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 DNA Essentials	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	✓
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-UDLDP-MIB

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

Description	Specification	
	CISCO-NTP-MIB CISCO-PAGP-MIB CISCO-PORT-SECURITY-MIB	
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
Input current	12-6A	10-5A	4-2A	24-12A

Description	Specification			
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

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

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

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

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

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

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

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

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

ATIS Testing - 100%				Measured P(W)															
				Half Port Traffic					Full Port Traffic					Weighted Average Pw	No Link	PoE Test (No Traffic)			
				0.01%/EEE	10%	30%	50%	100%	0.01%/EEE	10%	30%	50%	100%			25%	50%	90%	100%
				SKU	Archer FEP	Uplink	Input												
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

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

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

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

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

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

Safety and compliance

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

Table 24. Safety and compliance information

Description	Specification
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 DNA term components

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

Ordering information

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

https://www.cisco.com/en/US/ordering/or13/or8/order_customer_help_how_to_order_listing.html.

Table 26. Ordering information

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

Switches

C9300X-48HXN-A	Catalyst 9300 36-port 5G/mGig, 12-port 10G with modular uplink, UPOE+, Network Advantage
C9300X-24HX-E	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE+, Network Essentials
C9300X-24HX-A	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE+, Network Advantage
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-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
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
C9300-24P-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
C9300-24U-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
C9300-24UB-E	Catalyst 9300 higher scale 24-port 1G copper with modular uplinks, UPOE, Network 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 with modular uplink, UPOE, Network Essentials
C9300-24UX-A	Catalyst 9300 24-port 10G/mGig with modular uplink, UPOE, Network Advantage
C9300-24UXB-E	Catalyst 9300 higher scale 24-port 10G/mGig with modular uplink, UPOE, Network Essentials
C9300-24UXB-A	Catalyst 9300 higher scale 24-port 10G/mGig with modular uplink, UPOE, Network Advantage
C9300-48T-E	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Essentials

Switches	
C9300-48T-A	Catalyst 9300 48-port 1G copper with modular uplinks, data only, Network Advantage
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
C9300-48U-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
C9300-48UB-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
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
C9300-48UN-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
C9300-24S-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
C9300-48S-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
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

Switches	
C9300L-48T-4G-A	Catalyst 9300 48-port 1G copper, with fixed 4x1G SFP uplinks, data only Network Advantage
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-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-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-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-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 Advantage
C9300L-48UXG-4X-E	Catalyst 9300 48-port fixed uplinks UPOE, 12x mGig (100M/1G/2.5G/5G/10G) + 36x 10M/100M/1G, 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-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

Switches	
	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, 40-port 1G, 4x 25G uplinks, Network Essentials
C9300LM-48UX-4Y-A	Catalyst 9300 mini 48-port UPOE, 8-port 10G Multigigabit, 40-port 1G, 4x 25G uplinks, Network Advantage
C9300LM-48U-4Y-E	Catalyst 9300 mini 48-port 1G UPOE, 4x 25G uplinks, Network Essentials
C9300LM-48U-4Y-A	Catalyst 9300 mini 48-port 1G UPOE, 4x 25G uplinks, Network Advantage
C9300LM-48T-4Y-E	Catalyst 9300 mini 48-port 1G data, 4x 25G uplinks, Network Essentials
C9300LM-48T-4Y-A	Catalyst 9300 mini 48-port 1G data, 4x 25G uplinks, Network Advantage
C9300LM-24U-4Y-E	Catalyst 9300 mini 24-port 1G UPOE, 4x 25G uplinks, Network Essentials
C9300LM-24U-4Y-A	Catalyst 9300 mini 24-port 1G UPOE, 4x 25G uplinks, Network Advantage
Network modules	
Product number	Product description
C9300X-NM-8M	Catalyst 9300X 8 x 10G/mGig Network Module
C9300X-NM-8M=	Catalyst 9300X 8 x 10G/mGig Network Module, spare
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

Switches	
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 Network Module
C9300-NM-4M=	Catalyst 9300 4 x 10G/mGig 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
C9300-DNA-E-24-3Y	C9300 Cisco DNA Essentials, 24-port, 3 Year Term license
C9300-DNA-E-24-5Y	C9300 Cisco DNA Essentials, 24-port, 5 Year Term license
C9300-DNA-E-24-7Y	C9300 Cisco DNA Essentials, 24-port, 7 Year Term license
C9300-DNA-A-24-3Y	C9300 Cisco DNA Advantage, 24-port, 3 Year Term license
C9300-DNA-A-24-5Y	C9300 Cisco DNA Advantage, 24-port, 5 Year Term license
C9300-DNA-A-24-7Y	C9300 Cisco DNA Advantage, 24-port, 7 Year Term license
C9300-DNA-E-48-3Y	C9300 Cisco DNA Essentials, 48-port, 3 Year Term license
C9300-DNA-E-48-5Y	C9300 Cisco DNA Essentials, 48-port, 5 Year Term license
C9300-DNA-E-48-7Y	C9300 Cisco DNA Essentials, 48-port, 7 Year Term license
C9300-DNA-A-48-3Y	C9300 Cisco DNA Advantage, 48-port, 3 Year Term license
C9300-DNA-A-48-5Y	C9300 Cisco DNA Advantage, 48-port, 5 Year Term license
C9300-DNA-A-48-7Y	C9300 Cisco DNA Advantage, 48-port, 7 Year Term license
C9300-DNA-E-24S-3Y	C9300 1G Fiber Cisco DNA Essentials, 24-port, 3 Year Term license

Switches	
C9300-DNA-E-24S-5Y	C9300 1G Fiber Cisco DNA Essentials, 24-port, 5 Year Term license
C9300-DNA-E-24S-7Y	C9300 1G Fiber Cisco DNA Essentials, 24-port, 7 Year Term license
C9300-DNA-A-24S-3Y	C9300 1G Fiber Cisco DNA Advantage, 24-port, 3 Year Term license
C9300-DNA-A-24S-5Y	C9300 1G Fiber Cisco DNA Advantage, 24-port, 5 Year Term license
C9300-DNA-A-24S-7Y	C9300 1G Fiber Cisco DNA Advantage, 24-port, 7 Year Term license
C9300-DNA-E-48S-3Y	C9300 1G Fiber Cisco DNA Essentials, 48-port, 3 Year Term license
C9300-DNA-E-48S-5Y	C9300 1G Fiber Cisco DNA Essentials, 48-port, 5 Year Term license
C9300-DNA-E-48S-7Y	C9300 Cisco DNA Essentials, 48-port, 7 Year Term license
C9300-DNA-A-48S-3Y	C9300 1G Fiber Cisco DNA Advantage, 48-port, 3 Year Term license
C9300-DNA-A-48S-5Y	C9300 1G Fiber Cisco DNA Advantage, 48-port, 5 Year Term license
C9300-DNA-A-48S-7Y	C9300 1G Fiber Cisco DNA Advantage, 48-port, 7 Year Term license
C9300-DNA-L-E-3Y	C9300 Cisco DNA Essentials license (3Y) for 12Y, 24Y SKU
C9300-DNA-L-E-5Y	C9300 Cisco DNA Essentials license (5Y) for 12Y, 24Y SKU
C9300-DNA-L-E-7Y	C9300 Cisco DNA Essentials license (7Y) for 12Y, 24Y SKU
C9300-DNA-L-A-3Y	C9300 Cisco DNA Advantage license (3Y) for 12Y, 24Y SKU
C9300-DNA-L-A-5Y	C9300 Cisco DNA Advantage license (5Y) for 12Y, 24Y SKU
C9300-DNA-L-A-7Y	C9300 Cisco DNA Advantage license (7Y) for 12Y, 24Y SKU
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
Software licenses for C9300L SKUs	
Product number	Product number
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

Switches	
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 3850 StackPower cable 30cm spare
CAB-SPWR-150CM=	Cisco Catalyst 3850 StackPower cable 150cm spare
Cisco StackWise-320 Accessories	

Switches	
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
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 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.	Nov 13, 2018
Updated Platinum Power Supply specifications	Platinum rated power supplies available on the C9300 switches.	Oct 5, 2018
Updated availability of SSD card	Availability of 120G storage module for the C9300.	Oct 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.	Mar 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.	Dec 15, 2017

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