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How to Buy

Benefits of Upgrading to Cisco Catalyst 9000 Switches

Why upgrade to the Cisco Catalyst 9000 switching family?

Reimagine, Reinforce, Redefine

The Cisco® Catalyst® 9000 family of switches are Cisco's lead fixed, modular and compact enterprise access, aggregation and core switching platform. They 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 9000 family, including the new Catalyst 9000X models, continue to shape the future with ongoing innovation that helps you reimagine connections, reinforce security, and redefine the experience for your hybrid workforce big and small.

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Why upgrade to the Catalyst 9200 Series?

The Catalyst 9200 Series switches extend the power of intent-based networking and Catalyst 9000 hardware and software innovation to a broader set of deployments. The Catalyst 9200 Series focuses on offering right-sized switching for simple branch deployments. With its family pedigree, the Catalyst 9200 Series offers simplicity without compromise. It is secure and always on and provides a new level of IT simplicity.

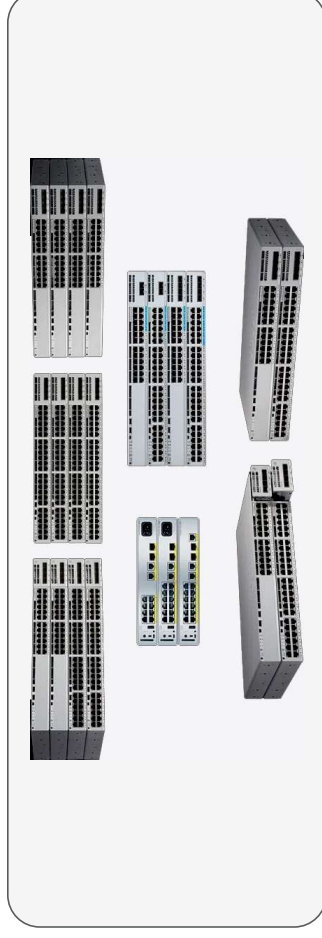Secure, simple, solid. That's how we build them.

Figure 1.   Catalyst 9200 Series

Table 1.   Benefits of the Catalyst 9200 Series switches compared to other Catalyst access switches in their class

| Trend | Feature | Legacy fixed access switches | | Catalyst 9200 Series | Benefits |
		Catalyst 2960-X Series	Catalyst 2960-XR Series		
Scale and performance	Bandwidth per stack	80 Gbps	80 Gbps	Up to 160 Gbps	Twice the density at nearly the same price.
	Uplinks	4x1G SFP 2x10G SFP+ 2x10/100/1000BASE-T	4x1G SFP 2x10G SFP+	4x1G SFP 4x10G SFP+	
Advanced security	Full Flexible NetFlow	✔	✔	✔	Orchestrate role-based access to corporate resources
	Cisco TrustSec® and SGT[1] for wired and wireless	✔	✔	✔	
	Trustworthy solutions	✔	✔	✔	AES-128, MACsec-128
	MACsec link encryption	-	-	✔	

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Trend	Feature	Legacy fixed access switches		Catalyst 9200 Series	Benefits
		Catalyst 2960-X Series	Catalyst 2960-XR Series		
Simplicity and automation	Cisco IOS® XE OS	-	-	✓	Single common network OS across switching, routing, wireless, and IoT.
	Model-driven programmability	-	-	✓	Standards-based programmable interfaces.
	Streaming telemetry	-	-	✓	Rich contextual insights.
	SD-Access programmability	-	-	✓	Automation and Assurance
	Cloud monitoring for Catalyst	-	-	✓	Visibility on Meraki Dashboard

¹SGT: Security Group Tag, SD-Access: Software-Defined Access

Table 2.   Benefits of the Cisco Catalyst 9200CX models compared to other Cisco Catalyst compact access switches in the same class

Trend	Feature	Installed-base access switches			Benefits
		Cisco Catalyst Benefits 2960-CX Series	Cisco Catalyst 3560-CX Series	Cisco Catalyst 9200CX models	
Scale and performance	Ports	8, 12x 1Gbps PoE+, data options	8, 12 x 1Gbps PoE+, data options	8, 12x 1Gbps PoE+, 2x 10G mGig UPOE, data options	Twice the density at nearly the same price
	Uplinks	2x 1G SFP + 2x 1G copper	2x 1G SFP, 2x 1G copper, 2x 10G SFP+	4x 10G SFP+ + 2x 1G copper	
Advanced security	Full Flexible NetFlow	X – NetFlow Lite	X – NetFlow Lite	✓	
	Cisco TrustSec® and SGT for wired and wireless	✓	✓	✓	Orchestrate role-based access to corporate resources
	Trustworthy solutions	-	-	✓	
	MACsec link encryption	-	-	✓	AES-256, MACsec-256

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Installed-base access switches

Trend	Feature	Cisco Catalyst 2960-CX Series	Cisco Catalyst 3560-CX Series	Cisco Catalyst 9200CX models	Benefits
Simplicity and automation	Cisco IOS® XE	-	-	✓	Single common network OS across switching, routing, wireless, and IoT
	Model-driven programmability	-	-	✓	Standards-based programmable interfaces
	Streaming telemetry	-	-	✓	Rich contextual insights
	SD-Access programmability	Extended node only	Extended node only	✓	Automation and assurance
	AC and HVDC power supplies	-	-	✓	Ideal for smart buildings

¹G: Gigabit Ethernet, SFP: Small Form-Factor Pluggable, SGT: Security Group Tag, SD-Access: Software-Defined Access

Why upgrade to the Catalyst 9300 Series?

The Catalyst 9300 Series switches give your users a superior network and service experience with next-generation observability from switch to Software as a Service (SaaS) and everything in between. These switches offer a broad range of port and management options, providing operational choice of physical or virtual appliances with Cisco Catalyst Center (formerly Cisco DNA Center), or by using Meraki cloud managed dashboard. The Catalyst 9300 Series includes advanced application hosting for solutions such as Cisco Spaces, giving you control and visibility inside the network, and Cisco ThousandEyes Enterprise Agents, giving you visibility beyond your campus perimeter to help you solve issues faster. Offering up to 1 Tbps of mixed fiber and copper stacking capacity, multigigabit, and 90W UPOE+, the Catalyst 9300 Series offers options from large to small.

Figure 2.   Catalyst 9300 Series

Table 3.   Benefits of the Catalyst 9300 Series compared to other Catalyst access switches in their class

| Trend | Feature | Legacy fixed access switches | | | Catalyst 9300 and 9300X models | Benefits |
		Catalyst 3560-X, 3750-X Series	Catalyst 3750G Series	Catalyst 3850 Series		
Scale and performance	Bandwidth per stack	No stacking/64 Gbps	32 Gbps	480 Gbps copper and fiber	Up to 1 Tbps copper and fiber	Greater throughput
	Uplinks	2x 10G[1]	4x 1G	4x 1G, 2x 10G, 4x 10G (all models)	2x, 4x dual-rate 100G/40G; 2x 40G; 2x, 8x multirate 25G, 10G, and 1G; 4x, 8x10G mGig; 4x 1G	Greater uplink scale to 100G
	Cisco Multigigabit (mGig) technology	-	-	✔	✔ (including uplinks)	Supports speeds above 1G in traditional cabling environments

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| Trend | Feature | Legacy fixed access switches | | | Catalyst 9300 and 9300X models | Benefits |
		Catalyst 3560-X, 3750-X Series	Catalyst 3750G Series	Catalyst 3850 Series		
Advanced security	Native Flexible NetFlow	-	-	✔	✔	Orchestrate role-based access to corporate resources.
	Cisco TrustSec and SGT[2] for wired and wireless	Wired	-	✔	✔	AES-256, MACsec-256 WAN-MACsec
	Trustworthy solutions	-	-	✔	✔	Most secure link authentication and encryption
	Native MACsec-256 encryption	-	-	Multigigabit, 10G models only	✔	Detect malware hiding in encrypted traffic without decrypting it
	Encrypted Traffic Analytics	-	-	-	✔	Cloud security service that provides a first line of defense against threats, wherever users access the internet—on or off the corporate network.
	Cisco Umbrella®	-	-	-	✔	

Feature comparison Cisco public

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Trend	Feature	Legacy fixed access switches			Catalyst 9300 and 9300X models	Benefits
		Catalyst 3560-X, 3750-X Series	Catalyst 3750G Series	Catalyst 3850 Series		
Simplicity and automation	x86 CPU	-	-	-	✓	Faster CPU performance
	Cisco IOS XE OS	-	-	✓	✓	Single common network OS across switching, routing, wireless, and IoT
	KVM³ and container-based hosting environments	-	-	-	✓	Application hosting in the network, including Docker containers
	Guest Shell	-	-	✓	✓	On-box Python scripting
	Model-driven programmability	-	-	✓	✓	Standards-based programmable interfaces
	Streaming telemetry	-	-	✓	✓	Rich contextual insights
	Fabric-in-a-box	-	-	-	✓	Enable SD-Access without needing a separate device for each fabric role

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Trend	Feature	Legacy fixed access switches			Catalyst 9300 and 9300X models	Benefits
		Catalyst 3560-X, 3750-X Series	Catalyst 3750G Series	Catalyst 3850 Series		
	SD-Access programmability	-	-	Optional subscription	✔	
	Cisco ThousandEyes Enterprise Agents	-	-	-	✔	Visibility from network to cloud for rapid problem isolation
	Cisco Spaces	-	-	-	✔	Visibility of wired and wireless network devices for smart buildings
	Meraki cloud management and monitoring	-	-	-	✔	Management and visibility on Meraki Dashboard

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Trend	Feature	Legacy fixed access switches			Catalyst 9300 and 9300X models	Benefits
		Catalyst 3560-X, 3750-X Series	Catalyst 3750G Series	Catalyst 3850 Series		
Bring Your Own Device (BYOD) and mobility	Wi-Fi 6E/6 and Wave 2 APs	-	-	24	48	Highest density of nextgeneration access points in a 1RU[4] box
	Maximum number of APs supported	-	-	100	200	
	UADP ASIC[5] for wired and wireless convergence	-	-	UADP 1.0	UADP 2.0 UADP 2.5sec	Enable converged wired and wireless access for operational simplicity and scale
	Application visibility across wired and wireless	-	-	✔	✔	
	End-to-end quality of experience[6]	-	-	-	✔	

Table 4. Benefits of the Catalyst 9300L models compared to Catalyst 3650 Series access switches

Trend	Feature	Catalyst 3650 Series	Catalyst 9300L Models	Benefits
Scale and performance	Bandwidth per stack	160 Gbps	320 Gbps	
	Uplinks	4x 1G, 2x 10G, 4x 10G, 8x 10G, 2x 40G Fixed	4x 1G, 4x 10G, 2x 40G fixed	
	Patching	–	Hot patching	Add patches without waiting for the next maintenance release
Advanced security	Native Flexible NetFlow	✔	✔	
	Cisco TrustSec and SGT for wired and wireless	✔	✔	Orchestrate role-based access to corporate resources
	Trustworthy solutions	✔	✔	
	Native MACsec-256 encryption	–	✔	AES-256, MACsec-256 Most secure link authentication and encryption
	Encrypted Traffic Analytics	–	✔	Detect malware hiding in encrypted traffic without decrypting it

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Trend	Feature	Catalyst 3650 Series	Catalyst 9300L Models	Benefits
Simplicity and automation	x86 CPU	-	✓	Accelerate innovation
	Cisco IOS XE OS	✓	✓	Single common network OS across switching, routing, wireless, and IoT
	KVM and container-based hosting environments	-	✓	Application hosting in the network
	Guest Shell	-	✓	On-box Python scripting
	Model-driven programmability	-	✓	Standards-based programmable interfaces
	Streaming telemetry	-	✓	Rich contextual insights
	SD-Access programmability	-	✓	Fabric-in-a-box deployment
	Cisco ThousandEyes Enterprise Agents	-	✓	Visibility from network to cloud for rapid problem isolation
	Wi-Fi 6E/6 and Wave 2 APs	12	12	
	Maximum number of APs supported	25	50	

Trend	Feature	Catalyst 3650 Series	Catalyst 9300L Models	Benefits
	UADP ASIC for wired and wireless convergence	UADP 1.0	UADP 2.0	Enable converged wired and wireless access for operational simplicity and scale
	Application visibility across wired and wireless	✓	✓	
	End-to-end quality of experience	-	✓	
	Cloud monitoring for Catalyst	-	✓	Visibility on Meraki Dashboard

Why upgrade to the Catalyst 9400 Series?

The Catalyst 9400 Series modular access and distribution switches are designed to help you flexibly bridge your network to your business and your business to your customers. The first purpose-built platforms designed for full fabric control with Cisco Catalyst Center and SD-Access support a large selection of copper, multigigabit, 90W Cisco UPOE+ and 60W Cisco UPOE, and fiber line cards for flexible and scalable access and backbone deployments. With higher-performance supervisor engines, resilient power supplies, and enhanced scale, the Catalyst 9400 Series extends Cisco's networking leadership with significant innovations in security, mobility, IoT, and cloud.
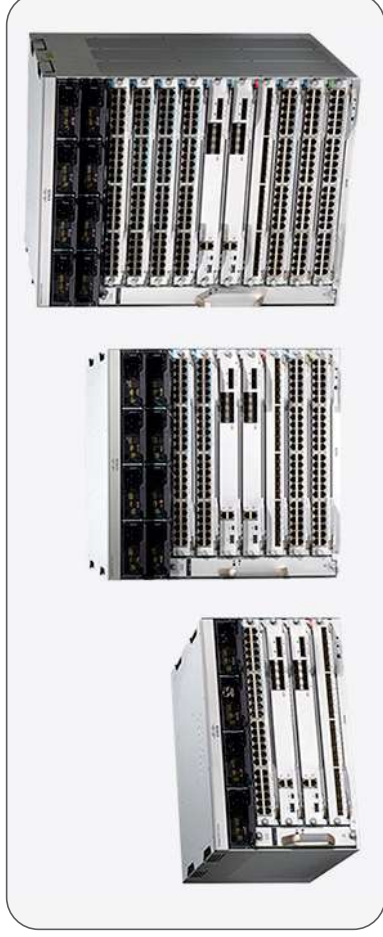

Figure 3. Catalyst 9400 Series

Table 5. Benefits of the Catalyst 9400 Series compared to other Catalyst modular access switches in their class

Trend	Feature	Legacy modular access switches		Catalyst 9400 Series	Benefits
		Catalyst 4500 Series	Catalyst 6500 Series		
Scale and performance versatility	Chassis bandwidth	960 Gbps	2 Tbps	9.6 Tbps	Better mix and variety of higher speeds with longevity of future upgrades without replacing switch.
	Throughput	250 Mpps	450 Mpps	900 Mpps	
	mGig and Cisco UPOE	Either mGig or Cisco UPOE	-	✓	
	mGig and Cisco UPOE+	-	-		Up to 90W PoE with 48HX, 48HN, 48H models
	100G/40G uplinks	-	-	✓	With SUP-2/2XL
	10G/5G/2.5G/1G	-	-	✓	

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| Trend | Feature | Legacy modular access switches | | Catalyst 9400 Series | Benefits |
		Catalyst 4500 Series	Catalyst 6500 Series		
Functionality	SD-Access programmability	Limited	-	✓	Next-generation overlay support for segmentation and policy-based management with integrated threat detection and mitigation. Advanced Layer 2 + Layer 3 functionality for aggregation and border nodes with open programmable interfaces. Gain visibility outside of your campus perimeter with native hosted ThousandEyes Enterprise Agents
	Cisco Spaces IoT Gateway[1]	-	-	✓	
	ThousandEyes Enterprise Agents	-	-	✓	
	MPLS-VPN	-	✓	✓	
	Programmability	Limited	-	✓	
	Application hosting/containers	-	-	✓	
High availability	Cisco StackWise® Virtual	VSS	VSS	✓	Higher reliability by way of link, component, and switch redundancy. Better manageability via hitless software upgrades
	ISSU[2]	✓	eFSU	✓	
	GIR and NSF[3]	-	-	✓	
	Hot patching	-	-	✓	

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Trend	Feature	Legacy modular access switches		Catalyst 9400 Series	Benefits
		Catalyst 4500 Series	Catalyst 6500 Series		
Security	MACsec 256-bit encryption	-	✓	✓	Orchestrate rolebased access to corporate resources
	Cisco TrustSec endpoint security	-	-	✓	AES-256, MACsec-256
	Trustworthy solutions	-	-	✓	Most secure link authentication and encryption
	Encrypted Traffic Analytics	-	-	✓	
	Cisco Umbrella	-	-	✓	

¹Cisco Spaces IoT Gateway is part of the Cisco Catalyst Advantage licenses and includes Cisco Spaces Extend functionality

²Hardware ready. | ³ISSU: In-Service Software Upgrade. | ⁴GIR: Graceful Insertion and Removal; NSF: Nonstop Forwarding.

Why upgrade to the Catalyst 9500 Series?

Cisco Catalyst 9500 Series switches are Cisco's lead fixed enterprise core and aggregation 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 new Catalyst 9500X model is based on Cisco Silicon One Q200 Application-Specific Integrated Circuit (ASIC), which is purpose built for the next generation core with a programmable pipeline (P4). It is the first network silicon to offer switching capacity up to 25.6 Tbps (12.8 Tbps full-duplex) in the enterprise. The Q200 ASIC offers high-performance along with full routing and switching capabilities without external memories.

This is enabled by a multiple slice (discreet processing pipeline) internal architecture that includes an on-chip 2.5D High Bandwidth Memory (HBM). The Catalyst 9500 Series leverages a high-performance multiple core x86 CPU, and is Cisco's leading purpose-built fixed core and WAN edge services enterprise switching platform, built for security, IoT, and cloud.

Figure 4.   Catalyst 9500 Series

Table 6.   Benefits of the Catalyst 9500 Series compared to other Catalyst fixed core switches in their class

| Trend | Feature | Legacy fixed core switches | | Catalyst 9500 Series | Benefits |
		Catalyst 4500-X Series (32x10)	Catalyst 3850 Fiber Series		
Scale and performance	Chassis bandwidth	800 Gbps	480 Gbps	Up to 25.6 Tbps	Supports 400G, 100G, 50G, 40G, 25G, and 10G
	400G	-	-	✔	
	10G, 25G, 40G, 50G, and 100G	10G, 25G, 40G only	10G, 25G, 40G only	✔	
	Max 10G density	40 ports	48 ports	60 ports	
	Max 25G/50G density	-	-	60 ports	
	Max 100G density	-	-	32 ports	

Trend	Feature	Legacy fixed core switches		Catalyst 9500 Series	Benefits
		Catalyst 4500-X Series (32x10)	Catalyst 3850 Fiber Series		
Advanced security	Native Flexible NetFlow	-	✓	✓	Orchestrate rolebased access to corporate resources
	Cisco TrustSec and SGT for wired and wireless	Wired only	✓	✓	AES-256, MACsec-256
	Trustworthy solutions	-	-	✓	Most secure link authentication and encryption
	Native MACsec-256 encryption	-	mGig and 10G models	✓	Uncompromised user experience: Assess, monitor, and troubleshoot network proactively
	Encrypted Traffic Analytics	-	-	✓	

Trend	Feature	Legacy fixed core switches		Catalyst 9500 Series	Benefits
		Catalyst 4500-X Series (32x10)	Catalyst 3850 Fiber Series		
BYOD and mobility	Fabric-enabled wireless	-	✓	✓	Enable converged wired and wireless access for operational simplicity and scale
	Common wired and wireless features	-	✓	✓	
	UADP ASIC for wired and wireless convergence	-	✓	✓	
	Application visibility across wired and wireless	-	✓	✓	
	Hierarchical wireless QoS[1]	-	✓	✓	

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Trend	Feature	Legacy fixed core switches		Catalyst 9500 Series	Benefits
		Catalyst 4500-X Series (32x10)	Catalyst 3850 Fiber Series		
Simplicity and automation	Common features for wired and wireless	–	✓	✓	Simplicity and business agility
	GIR and patching	–	–	✓	
	Cisco Catalyst Center and SD-Access programmability	–	Optional subscription	✓	
	Cloud monitoring for Catalyst	–	–	✓	Visibility on Meraki Dashboard

¹QoS: Quality of service

Why upgrade to the Catalyst 9600 Series?

Figure 5.   Catalyst 9600 Series

The Catalyst 9600 Series further expands the end-to-end Catalyst 9000 family, aligning our comprehensive solution with our customers' varying business and network strategies. When you need the most secure, most resilient, and most intelligent network, you need Catalyst 9600 Series switches, the industry's first purpose-built modular-configuration multi-rate 400G/200G*/100G dual-rate 100G/40G, multirate 50G*/25G/10G/1G and high-density 10G multigigabit line of switches for enterprise-class core and aggregation layers.

The new Catalyst 9600 SUP-2 supervisor is based on Cisco Silicon One Q200 Application-Specific Integrated Circuit (ASIC), which is purpose built for the next generation core with a programmable pipeline (P4). It is

the first network silicon to offer switching capacity up to 25.6 Tbps (12.8 Tbps full-duplex) in the enterprise. The Q200 ASIC offers high-performance along with full routing and switching capabilities without external memories. This is enabled by a multiple slice (discreet processing pipeline) internal architecture that includes an on-chip 2.5D High Bandwidth Memory (HBM). The Catalyst 9600 Series leverages a high-performance multiple core x86 CPU, and is Cisco's leading purpose-built modular core and WAN edge services enterprise switching platform, built for security, IoT, and cloud.

* Hardware capable

Table 7. Benefits of the Catalyst 9600 Series compared to other Catalyst modular core switches in their class

Trend	Feature	Legacy modular core switches			Catalyst 9600 Series	Benefits
		Catalyst 6500 Series Sup 720 3C	Catalyst 6500/6800 Series			
			Sup 2T	Sup 6T		
Scale and performance	Chassis bandwidth	720 Gbps	Up to 2 Tbps	Up to 6 Tbps	Up to 25.6 Tbps	Better mix and variety of higher speeds with longevity of future upgrades without replacing switch
	Throughput	450 Mpps	720 Mpps	780 Mpps	8 Bpps	
	400G (QSFP-DD) 200G (QSFP56)	-	-	-	✔	Line-rate 25G, 40G, 50G 100G, 200G* and 400G
versatility	100G (QSFP28) 40G (QSFP+)	-	40G only	40G only	✔	
	50G (SFP56) 25G (SFP28)	-	-	-	✔	

Trend	Feature	Legacy modular core switches			Catalyst 9600 Series	Benefits
		Catalyst 6500 Series Sup 720 3C	Catalyst 6500/6800 Series			
			Sup 2T	Sup 6T		
Functionality	SD-Access	-	Limited	Limited	✔	Next-generation overlay support for segmentation and policy-based management with integrated threat detection and mitigation. Advanced Layer 2 + Layer 3 functionality for aggregation and border nodes with open programmable interfaces
	MPLS-VPN	✔	✔	✔	✔	
	Programmability	-	Limited	Limited	✔	
	Application hosting/ containers	-	-	-	✔	
High availability	Cisco StackWise Virtual	-	✔	✔	✔	
	ISSU	-	Limited	Limited	✔	
	GIR and NSF	-	-	-	✔	
	Hot patching	-	-	-	✔	

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Trend	Feature	Legacy modular core switches			Catalyst 9600 Series	Benefits
		Catalyst 6500 Series Sup 720 3C	Catalyst 6500/6800 Series			
			Sup 2T	Sup 6T		
Security	MACsec-256 bit encryption	-	✓	✓	✓	Enable converged wired and wireless access for operational simplicity and scale
	MACsec-256 bit encryption	128 bit	128 bit	128 bit	✓	
	Cisco TrustSec endpoint security	-	✓	✓	✓	
	Trustworthy solutions	-	-	-	✓	

Cisco Services

With Cisco Services, you can achieve infrastructure excellence faster with less risk. Our services for the Cisco Catalyst 9000 switching family provide expert guidance to help you successfully plan, deploy, manage, and support your new switches. With unmatched networking expertise, best practices, and innovative tools, Cisco Services can help you reduce overall upgrade, refresh, and migration costs as you introduce new hardware, software, and protocols into the network. With a comprehensive lifecycle of services, Cisco experts will help you minimize disruption and improve operational efficiency to extract maximum value from your Cisco Catalyst infrastructure. Learn more.

Finance your switching migration with Cisco Capital

Let financing from Cisco Capital® make migrating your switches and accelerating your digital transformation even easier. Cisco Capital Easy Pay makes this transition as easy as possible with no upfront costs and predictable monthly payments. You pay 90% of the total over a 3-year period that is completely interest free. At the end of the term, you have the option to return and refresh the equipment, extend your lease, or purchase the solution at 10% of the original cost. Take advantage of this market-leading interest rate and use your budget for other investments.

Take advantage of Cisco Capital Easy Pay

Improve your results with our services

No matter where you are in your journey, Cisco and our partners offer services expertise to help you accelerate your digital network transformation—from upgrade and optimization services to award-winning support. We help you speed your upgrade deployments, reduce risk and complexity, and provide business continuity as you refresh your network. To simplify and support your upgrade, Cisco offers services to streamline the process and help you get the most out of your investment. The upgrade service helps control costs, improve operational excellence, and mitigate risk during your refresh.

Learn more about all services for switches.

More reasons to upgrade

- Reduce cost, complexity, and downtime with Cisco SD-Access. Automate policy, enable fast service creation, and get 360-degree contextual insights across users, devices, and applications. Assure network performance with real-time and historical data analytics, to learn, adapt, and even detect problems before they happen.

- Create better customer and employee experiences through higher performance, improved support for mobility, and service assurance with embedded ThousandEyes network testing

- Deploy advanced end-to-end security designed to work together to detect and stop threats, simplify security complexity, keep your business more secure, and make your IT more productive

The Catalyst 9000 family is also the first in the line to offer the Cisco IOS XE and Cisco Catalyst subscription-based software licenses, allowing customers to purchase the features and capabilities they need. See the benefits you could be receiving now by comparing the Cisco Catalyst 9000 switches to older switches (see Tables 1 through 6).