

Cisco Application Centric Infrastructure

At a glance: Cisco ACI solution

Cisco® Application Centric Infrastructure (Cisco ACI™) is the industry's most secure, open, and comprehensive Software-Defined Networking (SDN) solution. It radically simplifies, optimizes, and accelerates infrastructure deployment and governance and expedites the application deployment lifecycle.

Cisco ACI implements Cisco's intent-based networking framework. It captures higher-level business and user intent in the form of a policy and converts this intent into the network constructs necessary to dynamically provision the network, security, and infrastructure services. It uses a holistic systems-based approach, with tight integration between hardware and software and physical and virtual elements, an open ecosystem model, and innovative Cisco customer Application-Specific Integrated Circuits (ASICs) to enable unique business value for modern data centers. This unique approach uses a common policy-based operating model across the network, drastically reducing the cost and complexity of operating your network.

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Controller Multisite

Cisco Nexus 9000 Series leaf switches

Cisco Nexus 9000 Series spine switches

Cisco Nexus 9000 Series spine line cards

Cisco Nexus 2000 Series

Fabric Extenders

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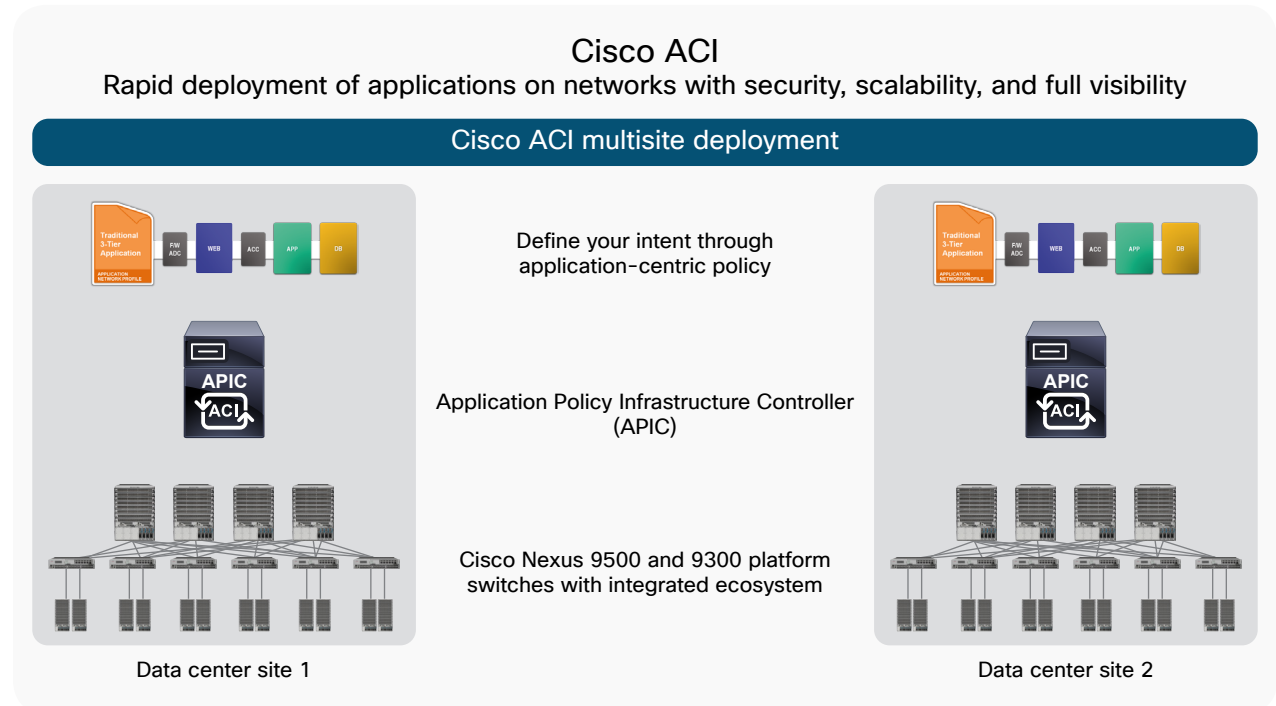
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Cisco ACI building blocks

The Cisco ACI solution consists of the following building blocks (Figure 1):

- Cisco Application Policy Infrastructure Controller (APIC)
- Cisco ACI multisite virtual appliance
- Cisco Nexus® 9000 Series spine and leaf switches for Cisco ACI
- Cisco Application Virtual Switch Next Generation (AVS-NG)

Figure 1. Cisco ACI architectural building blocks



Product compatibility matrix

Cisco APIC	Cisco Nexus 9000 Series Leaf switches	Cisco Nexus 9000 Series Spine switches	Cisco Nexus 9000 Series Line cards	Cisco Nexus 2000 Series Fabric extenders
Second generation	Second generation: FX Series	Fixed spine	Second generation - FX Series Nexus 9736-FX Second generation - EX Series	
APIC-M2	Nexus 93180YC-FX	Second generation fixed Nexus 9364C	Nexus 9732-EX	Nexus 2248PQ-10GE
APIC-L2	Nexus 93108TC-FX	First generation fixed Nexus 9336PQ	First generation	Nexus 2248TP-E
	Second generation: EX Series	Modular spine	Nexus 9736PQ	Nexus 2248TP-E
	Nexus 93180YC-EX	Nexus 9516		Nexus 2248TP-1GE
	Nexus 93180LC-EX	Nexus 9508		Nexus 2232PP-10GE
	Nexus 93180TC-EX	Nexus 9504		Nexus 2232TM-E
	Nexus 93108TC-EX			Nexus 2348UPQ (40G)
	First generation			
	Nexus 9396PX			
	Nexus 9396TX			
	Nexus 93128TX			
	Nexus 93120TX			
	Nexus 9372PX			
	Nexus 9372PX-E			
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Licensing

	Base	Essentials	Advantage
Fabric management and automation			
Inventory management and configuration	•	•	•
Zero-touch provisioning	•	•	•
Centralized management	•	•	•
Integrated overlay over IP fabric	•	•	•
Fault management	•	•	•
Monitoring and troubleshooting	•	•	•
Graceful node insertion and removal	•	•	•
Network virtualization	•	•	•
API-based automation and orchestration	•	•	•
Local Multi-Pod (Up to 2 Pods within 10 ms RTT)	•	•	•
Ecosystem			
Third-party integration through open APIs	•	•	•
Layer 4 through Layer 7 (L4-L7) service integration	•	•	•
Cisco ACI App Center	•	•	•
Virtualization			
Cisco Application Virtual Switch Next Generation (AVS-NG)	•	•	•
Integration with workload orchestrators	•	•	•
OpenStack integration	•	•	•
Kubernetes integration	•	•	•

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	Base	Essentials	Advantage
Security			
Zero-trust policy model	•	•	•
Role-Based Access Control (RBAC)	•	•	•
Cisco TrustSec® integration	•	•	•
Advanced microsegmentation	•	•	•
Secure and multifactor user authentication	•	•	•
Audit support and logging	•	•	•
Virtual Desktop Infrastructure (VDI) and automatic remediation	•	•	•
First-hop security	•	•	•
Endpoint authentication	•	•	•
Essentials			
Cisco NetFlow		•	•
Network telemetry for Cisco Tetration Analytics™		•	•
Precision Time Protocol (PTP)		•	•
Advantage			
Universal Multi-Pod (Up to 12 Pods with 50 ms RTT)			•
Multi-Site			•

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Cisco Services and Support

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco ACI implementation in your data center. The innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operation efficiency and improve your data center network. Cisco Advanced Services use an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet™ Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service capability, which offers proactive diagnostics and real-time alerts on your Cisco ACI deployment. Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise.

Product ordering information

Step 1. Select hardware and software product SKUs.

Application Policy Infrastructure Controller

Product SKU	Product description
Second generation	
APIC-CLUSTER-M2	APIC Cluster – For Medium Configurations (Up to 1000 Edge Ports)
APIC-CLUSTER-L2	APIC Cluster – For Large Configurations (More than 1000 Edge Ports)
APIC-M2	APIC Appliance – For Medium Configuration (Up to 1000 Edge Ports)
APIC-L2	APIC Appliance – For Large Configurations (More than 1000 Edge Ports)
APIC-M2=	APIC Appliance – For Medium Configuration (Up to 1000 Edge Ports) (SPARE)
APIC-L2=	APIC Appliance – For Large Configurations (More than 1000 Edge Ports) (SPARE)

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Multisite

Product SKU	Product description
ACI-MSITE-VAPPL	ACI Multi-Site Virtual Appliance

Cisco Nexus 9000 Series leaf switches

Product SKU	Product description
Second generation: FX Series	
N9K-C93180YC-FX	Nexus 9300 with 48p 10/25G SFP+, 6p 100G QSFP, MACsec, Unified Port
N9K-C93108TC-FX	Nexus 9300 with 48p 10G-T, 6p 100G QSFP, MACsec, Unified Port
N9K-C9348GC-FXP	Nexus 9300 with 48p 100M/1G, 4p 10/25G SFP+ and 2p 100G QSFP
Second generation: EX Series	
N9K-C93180YC-EX	Nexus 93180YC-EX switch, 48p 1/10/25G SFP+ & 6p 100G QSFP28
N9K-C93180LC-EX	Nexus 9300 with 48p 10/25G SFP+ and 6p 100G QSFP28
N9K-C93108TC-EX	Nexus 93108TC-EX switch, 48p 1/10BASE-T & 6p 100G QSFP28
First generation	
N9K-C9396PX	Nexus 9300 platform: 48-port 1/10 Gigabit Ethernet SFP+ and up to 12-port 40 Gigabit Ethernet Quad SFP (QSFP) switch
N9K-C9396TX	Nexus 9300 platform: 48-port 1/10BASE-T and up to 12-port 40 Gigabit Ethernet QSFP
N9K-C93128TX	Nexus 9300 platform: 96-port 1/10BASE-T and up to 8-port 40 Gigabit Ethernet QSFP

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Product SKU	Product description
First generation	
N9K-C93120TX	Nexus 9300 platform: 96-port 1/10BASE-T and up to 6-port 40 Gigabit Ethernet QSFP
N9K-C9372PX	Nexus 9300 platform: 48-port 1/10 Gigabit Ethernet SFP+ and 6-port 40 Gigabit Ethernet QSFP
N9K-C9372PX-E	Nexus 9300 with 48-port 1/10 Gigabit Ethernet SFP+ and 6-port 40 Gigabit Ethernet QSFP+
N9K-C9372TX	Nexus 9300 platform: 48-port 1/10BASE-T and up to 6-port 40 Gigabit Ethernet QSFP
N9K-C9372TX-E	Nexus 9300 platform: 48-port 1/10G-T and 6p 40G QSFP+ Nexus 9300 platform:
N9K-C9332PQ	Nexus 9300 platform: 32-port 40 Gigabit Ethernet QSFP

Cisco Nexus 9000 Series spine switches

Product SKU	Product description
Fixed spine: Second generation	
N9K-C9364C	Cisco Nexus 9364C ACI Spine Switch: 64p 40/100G QSFP28
Fixed spine: First generation	
N9K-C9336PQ	Cisco Nexus 9336PQ ACI Spine Switch: 36 fixed-port 40G Ethernet QSFP+
Modular spine	
N9K-C9516-B2	Cisco Nexus 9516 - 16 Active Slots Spine Switch
N9K-C9508-B2	Cisco Nexus 9516 - 8 Active Slots Spine Switch
N9K-C9504-B2	Cisco Nexus 9516 - 4 Active Slots Spine Switch

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Cisco Nexus 9000 Series spine line cards

Product SKU	Product description
Second generation – FX Series	
N9K-X9736C-FX	Cisco Nexus 9500 spine line card 36-port 40/100G
Second generation – EX Series	
N9K-X9732C-EX	Cisco Nexus 9500 spine line card: 32-port 100G QSFP28
First generation	
N9K-X9736PQ	Cisco Nexus 9500 spine line card for Cisco ACI: 36-port 40G Ethernet QSFP

Cisco Nexus 2000 Series Fabric Extenders

Product SKU	Product description
N2K-C2248PQ-10GE	Cisco Nexus 2248PQ 10GE Fabric Extender
N2K-C2248TP-E	Cisco Nexus 2248TP-E Fabric Extender
N2K-C2248TP-1GE	Cisco Nexus 2248TP GE Fabric Extender
N2K-C2232PP-10GE	Cisco Nexus 2232PP 10GE Fabric Extender
N2K-C2232TM-E	Cisco Nexus 2232TM 10GE Fabric Extender
N2K-C2348UPQ (40G FEX)	Cisco Nexus 2348UPQ 10GE Fabric Extender

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Step 2. Select the appropriate Cisco ACI license SKUs.

	Base	Essentials	Advantage	Multisite	Streaming telemetry
	(For New Nexus 9k orders)			(Upgrade-only SKUs for existing Nexus 9k deployment)	
For Cisco Nexus 9000 Series leaf switches					
For 32 port 40G ACI leaf switch	ACI-N9K-32Q (=)	ACI-ES-XF (=)	ACI-AD-XF (=)	ACI-MSITE-XF (=)	ACI-STEL-XF (=)
For 96 port 1/10G ACI leaf switch	ACI-N9K-96X (=)	ACI-ES-XF (=)	ACI-AD-XF (=)	ACI-MSITE-XF (=)	ACI-STEL-XF (=)
For 48 port 1/10G ACI leaf switch	ACI-N9K-48X (=)	ACI-ES-XF (=)	ACI-AD-XF (=)	ACI-MSITE-XF (=)	ACI-STEL-XF (=)
For 48 port 1G ACI leaf switch	ACI-N9K-48G (=)	ACI-ES-GF (=)	ACI-AD-GF (=)	ACI-MSITE-GF (=)	ACI-STEL-GF (=)
For Cisco Nexus 9000 Series spine switches					
There is no ACI license required on spine switches					
For Cisco Nexus 2000 Series Fabric Extenders					
For 48 port 1/10G ACI enabled FEX	ACI-F48X=	ACI-F48X=	ACI-F48X=	Not required	Not required
For 32 port 1/10G ACI enabled FEX	ACI-F32X=	ACI-F32X=	ACI-F32X=		
For 16 port 1/10G ACI enabled FEX	ACI-F16G=	ACI-F16G=	ACI-F16G=		
For 48 port 1G ACI enabled FEX	ACI-F48G=	ACI-F48G=	ACI-F48G=		

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Cisco Capital® financing can help you acquire the technology you need to achieve your objectives and stay competitive. We can help you reduce Capital Expenditures (CapEx), accelerate your growth, and optimize your investment dollars and ROI. Cisco Capital financing gives you flexibility in acquiring hardware, software, services, and complementary third-party equipment. And there's just one predictable payment. Cisco Capital financing is available in more than 100 countries. [Learn more.](#)

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