

Refurbished CISCO N3K-C3064-X-FA Datasheet

CISCO > SWITCHES

Cisco Nexus 3000 Series Switches

Benefits of Cisco NX-OS Software

Feature	
Feature	Benefit
<p>Common software throughout the data center: Cisco NX-OS runs on all Cisco data center switch platforms (Cisco Nexus 7000, 5000, 4000, 2000, and 1000V Series).</p>	<ul style="list-style-type: none"> Simplification of data center operating environment End-to-end Cisco Nexus and Cisco NX-OS fabric No retraining necessary for data center engineering and operations teams
<p>Software compatibility: Cisco NX-OS interoperates with Cisco products running any variant of Cisco IOS Software and also with any networking OS that conforms to the networking standards listed as supported in this data sheet.</p>	<ul style="list-style-type: none"> Transparent operation with existing network infrastructure Open standards No compatibility concerns
<p>Modular software design: Cisco NX-OS is designed to support distributed multithreaded processing. Cisco NX-OS modular processes are instantiated on demand, each in a separate protected memory space. Thus, processes are started and system resources allocated only when a feature is enabled. The modular processes are governed by a real-time preemptive scheduler that helps ensure timely processing of critical functions.</p>	<ul style="list-style-type: none"> Robust software Fault tolerance Increased scalability Increased network availability
<p>Troubleshooting and diagnostics: Cisco NX-OS is built with unique serviceability functions to allow network operators to take early action based on network trends and events, enhancing network planning and improving network operations center (NOC) and vendor response times. Cisco Smart Call Home and Cisco Online Health Management System (OHMS) are some of the features that enhance the serviceability of Cisco NX-OS.</p>	<ul style="list-style-type: none"> Quick problem isolation and resolution Continuous system monitoring and proactive notifications Improved productivity of operations teams
<p>Ease of management: Cisco NX-OS provides a programmatic XML interface based on the NETCONF industry standard. The Cisco NX-OS XML interface provides a consistent API for devices. Cisco NX-OS also provides support for Simple Network Management Protocol (SNMP) Versions 1, 2, and 3 MIBs.</p>	<ul style="list-style-type: none"> Rapid development and creation of tools for enhanced management Comprehensive SNMP MIB support for efficient remote monitoring
<p>Using the Cisco Nexus Data Broker software and Cisco Plug-in for OpenFlow agent, the Cisco Nexus 3064 switches can be used to build a scalable, cost-effective, and programmable tap or SPAN aggregation infrastructure. This approach replaces the traditional</p>	<ul style="list-style-type: none"> Scalable and cost effective Robust traffic filtering capabilities Traffic aggregation from multiple input ports across different switches Traffic replication and forwarding to multiple monitoring tools

purpose-built matrix switches with these switches. You can interconnect these switches to build a multilayer topology for tap or SPAN aggregation infrastructure.

Role-based access control (RBAC): Effective access control mechanism based on user roles
With RBAC, Cisco NX-OS enables Improved network device security
administrators to limit access to switch Reduction in network problems arising from human error
operations by assigning roles to users.
Administrators can customize access
and restrict it to the users who require
it.

Software Licensing for Cisco Nexus 3064 Switches

Software Package	Features Supported
System default: Base license (N3K-BAS1K9); included, with no additional purchase necessary)	Comprehensive Layer 2 feature set: VLAN, IEEE 802.1Q Trunking, vPC, LACP, Unidirectional Link Detection UDLD (standard and aggressive), MSTP, RSTP, Spanning Tree guards, and Transparent VLAN Trunk Protocol (VTP) Security: Authentication, authorization, and accounting (AAA); access control lists (ACLs), Dynamic Host Configuration Protocol (DHCP) snooping, storm control, private VLAN (PVLAN), and configurable Control-Plane Policing (CoPP) Management features: Cisco Data Center Network Manager (DCNM) support, console, Secure Shell Version 2 (SSHv2) access, Cisco Discovery Protocol, SNMP, and syslog Layer 3 IP routing: inter-VLAN routing (IVR), static routes, RIPv2, ACLs, OSPFv2 (limited to 256 routes), EIGRP stub, Hot Standby Router Protocol (HSRP), Virtual Router Redundancy Protocol (VRRP), and Unicast Reverse-Path Forwarding (uRPF) Multicast: PIM SM, SSM, and MSDP
LAN Enterprise license (N3K-LAN1K9); requires Base license	Advanced Layer 3 IP routing: OSPFv2, EIGRP, BGP, and Virtual Route Forwarding lite (VRF-lite)
Cisco Nexus Data Broker license (NDB-FX-SWT-K9)	License for using the tap and SPAN aggregation functions with Cisco Nexus Data Broker; only the Base license is needed for this feature

Software Features

Description	
Description	Specification
Layer 2	Layer 2 switch ports and VLAN trunks IEEE 802.1Q VLAN encapsulation Support for up to 4096 VLANs Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible) Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances Spanning Tree PortFast Spanning Tree Root Guard Spanning Tree Bridge Assurance Cisco EtherChannel technology (up to 32 ports per EtherChannel) Link Aggregation Control Protocol (LACP): IEEE 802.3ad Advanced PortChannel hashing based on Layer 2, 3, and 4 information vPC Jumbo frames on all ports (up to 9216 bytes) Storm control (unicast, multicast, and broadcast) Private VLANs
Layer 3	Layer 3 interfaces: Routed ports on interfaces, switch virtual interfaces (SVIs), PortChannels, and subinterfaces (total: 1024) 64-way ECMP 2000 ingress and 1000 egress ACL entries IPv6 routing: Static, OSPFv3, and BGPv6 Routing protocols: Static, RIPv2, EIGRP, OSPF, and BGP Bidirectional Flow Detection (BFD) for BGP, OSPF and ipv4 Static routes HSRP and VRRP ACL: Routed ACL with Layer 3 and 4 options to match ingress and egress ACLs VRF: VRF-lite (IP VPN), VRF-aware unicast (BGP, OSPF, and RIP), and VRF-aware multicast Unicast Reverse-Path Forwarding (uRPF) with ACL; strict and loose modes Jumbo frame support (up to 9216 bytes) Generic Routing Encapsulation (GRE) tunneling
Multicast	Multicast: PIMv2, PIM-SM, and SSM Bootstrap router (BSR), Auto-RP, and Static RP Multicast Source Discovery Protocol (MSDP) and Anycast RP Internet Group Management Protocol (IGMP) Versions 2 and 3

Quality of Service (QoS)	<ul style="list-style-type: none"> Layer 2 IEEE 802.1p (class of service [CoS]) 8 hardware queues per port Per-port QoS configuration CoS trust Port-based CoS assignment Modular QoS CLI (MQC) compliance ACL-based QoS classification (Layers 2, 3, and 4) MQC CoS marking Differentiated services code point (DSCP) marking Weighted Random Early Detection (WRED) CoS-based egress queuing Egress strict-priority queuing Egress port-based scheduling: Weighted Round-Robin (WRR) Explicit Congestion Notification (ECN) Configurable ECN (Marking) per port
Security	<ul style="list-style-type: none"> Ingress ACLs (standard and extended) on Ethernet Standard and extended Layer 3 to 4 ACLs include IPv4, Internet Control Message Protocol (ICMP), TCP, and User Datagram Protocol (UDP) VLAN-based ACLs (VACLs) Port-based ACLs (PACLs) Named ACLs ACLs on virtual terminals (vty) DHCP snooping with Option 82 Port number in DHCP Option 82 DHCP relay Dynamic Address Resolution Protocol (ARP) inspection Configurable CoPP
Cisco Nexus Data Broker	<ul style="list-style-type: none"> Topology support for tap andSPAN aggregation Support for QinQ to tag input source tap and SPAN ports Traffic load balancing to multiple monitoring tools Traffic filtering based on Layer 1 through Layer 4 header information Traffic replication and forwarding to multiple monitoring tools Robust RBAC Northbound Representational State Transfer (REST) API for all programmability support
Management	<ul style="list-style-type: none"> POAP Python scripting Cisco EEM Switch management using 10/100/1000-Mbps management or console ports CLI-based console to provide detailed out-of-band management In-band switch management Locator and beacon LEDs Configuration rollback SSHv2 Secure Copy (SCP) server Telnet AAA AAA with RBAC RADIUS TACACS+ Syslog Syslog generation on system resources (for example, FIB tables) Embedded packet analyzer SNMP v1, v2, and v3 Enhanced SNMP MIB support XML (NETCONF) support Remote monitoring (RMON) Advanced Encryption Standard (AES) for management traffic Unified username and passwords across CLI and SNMP Microsoft Challenge Handshake Authentication Protocol (MS-CHAP) Digital certificates for management between switch and RADIUS server Cisco Discovery Protocol Versions 1 and 2 RBAC Switched Port Analyzer (SPAN) on physical layer, PortChannel, and VLAN Tunable Buffer Allocation for SPAN Encapsulated Remote SPAN (ERSPAN) Ingress and egress packet counters per interface PTP (IEEE 1588) boundary clock Network Time Protocol (NTP) Cisco OHMS Comprehensive bootup diagnostic tests Cisco Call Home Cisco DCNM Advanced buffer utilization monitoring sFlow

Regulatory Standards Compliance: Safety and EMC

Specification

Regulatory compliance	Products should comply with CE Markings per directives 2004/108/EC and 2006/95/EC
Safety	UL 60950-1 Second Edition CAN/CSA-C22.2 No. 60950-1 Second Edition EN 60950-1 Second Edition IEC 60950-1 Second Edition AS/NZS 60950-1 GB4943
EMC: Emissions	47CFR Part 15 (CFR 47) Class A AS/NZS CISPR22 Class A CISPR22 Class A EN55022 Class A ICES003 Class A VCCI Class A EN61000-3-2 EN61000-3-3 KN22 Class A CNS13438 Class A
EMC: Immunity	EN55024 CISPR24 EN300386 KN24

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