N3K-C36180YC-R Datasheet

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Overview

N3K-C36180YC-R is the Nexus 36180YC-R, with 48p 10/25G and 6p QSFP28. The Cisco Nexus C36180YC-R is a high-speed, high-density, 1, 10, 25, 40, or 100 Gigabit Ethernet switch designed for data center aggregation. The large buffers and routing table sizes of the Cisco Nexus C36180YC-R also make this switch an alternative for a wide range of applications, such as IP storage, Demilitarized Zone (DMZ), big data, and edge routing. The switch comes in a compact 1-Rack-Unit (1RU) form factor and provides extensive Layer 2 and Layer 3 functions. It is part of the R-Series family and runs the industry-leading NX-OS operating system software.

Quick Specs

Table 1 shows the Quick Specs.

Product Code	N3K-C36180YC-R
Physical	·1RU fixed-form-factor switch ·48 SFP ports; each supports native 25, 10, or 1 Gigabit Ethernet mode ·6 QSFP28 ports; each supports native 100 Gigabit Ethernet and 4 x 25 Gigabit Ethernet modes ·2 redundant power supplies ·Management, console, and USB flash-memory ports
Performance	·1.8-Tbps switching capacity ·Forwarding rate of up to 1.67 bpps ·Line-rate traffic throughput (both Layer 2 and 3) on all ports, for packet size bigger than 115B ·Configurable Maximum Transmission Unit (MTU) of up to 9216 bytes (jumbo frames)
Physical dimensions (H x W x D)	1.72 x 17.3 x 26.85 in. (4.4 x 43.9 x 68.2 cm)
Weight	27.1 lb (12.3 kg)

Product Details

The Cisco Nexus C36180YC-R provides the following main benefits:

1. Wire-rate Layer 2 and 3 switching on all ports, with up to 3.6 Terabits per second (Tbps) and up to 1.67 billion packets per second (bpps)

2. Programmability, with support for Cisco® NX-API, Linux containers, Extensible Markup Language (XML), and JavaScript Object Notation (JSON) Application Programming Interfaces (APIs), the OpenStack plug-in, Python, and Puppet and Chef configuration and automation tools

3. High performance and scalability with a 6-core CPU, 32 GB of DRAM, and 8 GB of dynamic buffer allocation, making the switch excellent for massively scalable data centers and big data applications

4. Flexibility:

(1) Both fiber and copper cabling solutions are available for 1-, 10-, 25-, 40-, 50-, and 100-Gbps connectivity, including Active Optical Cable (AOC) and Direct-Attached Cable (DAC)

(2) The QSFP28 ports can be configured to work as 4 x 25-Gbps or 4 x 10-Gbps ports

5. High availability:

(1) Virtual PortChannel (vPC) technology provides Layer 2 multipathing by eliminating the Spanning Tree Protocol. It also enables fully used bisectional bandwidth and simplified Layer 2 logical topologies without the need to change the existing management and deployment models

(2) Advanced maintenance capabilities include hot and cold patching and Graceful Insertion and Removal (GIR) mode

(3) The switch uses hot-swappable Power-Supply Units (PSUs) and fans

6. NX-OS operating system with comprehensive, proven innovations:

(1) Power-On Auto Provisioning (POAP) enables touchless bootup and configuration of the switch, drastically reducing provisioning time

(2) Cisco Embedded Event Manager (EEM) and Python scripting enable automation and remote operations in the data center

(3) EtherAnalyzer is a built-in packet analyzer for monitoring and troubleshooting control-plane traffic and is based on the popular Wireshark open-source network protocol analyzer

(4) Complete Layer 3 unicast and multicast routing protocol suites are supported, including Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Routing Information Protocol Version 2 (RIPv2), Protocol Independent Multicast Sparse Mode (PIM-SM), Source-Specific Multicast (SSM), and Multicast Source Discovery Protocol (MSDP)

The Accessories

Table 2 shows the supported accessories.

Model	Description
NXA-FAN-65CFM-PI	Nexus Fan, 65CFM, port side intake airflow
NXA-FAN-65CFM-PE	Nexus Fan, 65CFM, port side exhaust airflow
NXA-PAC-1100W-PE2	Nexus AC 1100W PSU - Port Side Exhaust
NXA-PHV-1100W-PI	Nexus 1100W Platinum HV-AC-DC PS, Port side Intake airflow
NXA-PHV-1100W-PE	Nexus 1100W Platinum HV-AC-DC PS, Port side Exhaust airflow
NXA-PAC-1100W-PI2	Nexus AC 1100W PSU - Port Side Intake

Compare to Similar Items

Table 3 shows the comparison.

Product Code	N3K-C3132C-Z	N3K-C36180YC-R
Ports	32 fixed 100 Gigabit Ethernet QSFP28 ports	·48 SFP ports; each supports native 25, 10, or 1 Gigabit Ethernet mode ·6 QSFP28 ports; each supports native 100 Gigabit Ethernet and 4 x 25 Gigabit Ethernet modes
Physical dimensions (H x W x D)	17.3W x 1.72H x 18.5D" (43.9 x 4.36 x 46.99cm)	1.72 x 17.3 x 26.85 in. (4.4 x 43.9 x 68.2 cm)
Weight	19.2 lb. with PSU and fan 13.8 lb. without PSU and fan	27.1 lb (12.3 kg)

Specification

N3K-C36180YC-R Specification		
Physical	· 1RU fixed-form-factor switch · 48 SFP ports; each supports native 25, 10, or 1 Gigabit Ethernet mode · 6 QSFP28 ports; each supports native 100 Gigabit Ethernet and 4 x 25 Gigabit Ethernet modes · 2 redundant power supplies · Management, console, and USB flash-memory ports	
Performance	· 1.8-Tbps switching capacity · Forwarding rate of up to 1.67 bpps · Line-rate traffic throughput (both Layer 2 and 3) on all ports, for packet size bigger than 115B · Configurable Maximum Transmission Unit (MTU) of up to 9216 bytes (jumbo frames)	
Hardware tables and scalability	Number of MAC addresses	750,000
	Number of VLANS	4096
	Number of spanning-tree instances	· Rapid Spanning Tree Protocol (RSTP): 512 · Multiple Spanning Tree Protocol (MSTP): 64
	Number of ACL entries	· 7000 ingress
	Routing table	· Maximum number of Longest-Prefix-Match (LPM) routes: 256,000 · Maximum number of IP host entries: 750,000 · Maximum number of MAC address entries: 750,000 · Maximum number of Layer 3 multicast entries: 128,000
	Number of EtherChannels	256 (with vPC)
	Number of ports per EtherChannel	32

	Buffer size	8 GB
	System memory	32 GB
	Boot-flash memory	128 GB
	Frequency	50 to 60 Hz
Power	Power-supply types	AC (forward and reverse airflow) DC (port-side exhaust)
	Typical operating power	Watts (W)
	Maximum power	771W
	AC Power-Supply Units (PSUs) · Input voltage · Frequency Efficiency	· 100 to 240 VAC · 50 to 60 Hz 89 to 91% at 220V
	· Power-supply efficiency	· 89 to 91% at 220V
	Maximum heat dissipation	2,631MBTU

	· Forward and reverse airflow schemes
	  ∘ Forward airflow: Port-side exhaust (air enters through fan tray and power supplies and exits through ports)
	  ∘ Reverse airflow: Port-side intake (air enters through ports and exits through fan tray and power supplies)
	Hot-swappable (must swap within 1 minute)	

Cooling	Measured sound power (maximum) · Fan speed: 40% duty cycle · Fan speed: 70% duty cycle · Fan speed: 100% duty cycle	
Sound	Dimensions (Height x Width x Depth)	1.72 x 17.3 x 26.85 in. (4.4 x 43.9 x 68.2 cm)
Environment	Weight	27.1 lb (12.3 kg)
	Temperature: Operating	32 to 104°F (0 to 40°C)
	Temperature: Storage	–40 to 158°F (–40 to 70°C)
	Relative humidity: Operating	· 10 to 85% noncondensing · Up to 5 days at maximum (85%) humidity Recommend American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) data center environment
	Relative humidity: Storage	· 5 to 95% noncondensing
	Altitude	0 to 10,000 ft (0 to 3000m)

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