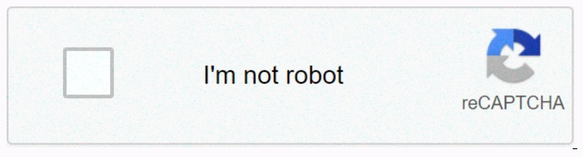

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Cisco nexus 9500 platform switches datasheet

Product overview Architectures and deployment modes are rapidly evolving. Modern applications are multitwoth, highly modular and deployed in a combination of bare metal, virtual and cloud data centers. In addition, different departments within an organisation have different infrastructure and network needs. These factors require data center networks to be simple, programmable, expandable, scalable, and sharing to meet application requirements. The Cisco Nexus® 9,000 series of keys work in one of two modes – Cisco Targeting Application Infrastructure (Cisco ACI™) or Cisco NX-OS. In ACI Cisco mode, these keys provide turnkey, fully automated, rules-based architecture for designing and managing data center tissues. In Cisco NX-OS mode, these switches provide the ability to use fundamental technologies 2/3, as well as advanced technologies such as VXLAN, with border gateway protocol\u2012Ethernet VPN (BGP-EVPN) control plane, routing segment, Multiprocoal Label Label (MPLS) and Automation via NX-APIs. The Cisco Nexus 9000 key series includes Nexus 9500 Series modular switches and nexus 9200/9300 series fixed keys. The Cisco Nexus 9000 Series 9500 series modular keys support a comprehensive selection of linear and canvas modules that provide 1-, 10-, 25-, 40-, 50-, 100-, 200th and 400-gigabit interfaces. Using these linear maps, Cisco Nexus 9500 series switches can be configured with up to. 1. 256 400-gigabit Ethernet ports (or) 2. 524,200 gigabit Ethernet ports# (or) 3. 1024 100-gigabit Ethernet ports (or) 4. 2048 50-gigabit Ethernet ports (or) 5. 1024 40-gigabit Ethernet ports (or) 6. 2304 25-gigabit Ethernet ports (or) 7. 2304 1/10-Gigabit Ethernet ports Supervisor, system controller, power supplies and linear cards are common to the three switches. However, each switch has unique fabric modules and fan trays that plug vertically into the back of the chassis. 1. Table 1. Features and benefits Advantages The Cisco Nexus 9500 Series switch provides non-blocking performance at latency of 5 microseconds or less at speeds of 400, 100, 50- 50, 40, 25- 10 and 1-gigabit Ethernet. This allows customers to build robust and scalable high-speed fabrics that can support several thousand high-speed access ports. Cisco Nexus 9500 Series telemetry supports extensive switching and flow telemetry capabilities that provide wide real-time visibility in switch states and fabrics. High density 1- 10-, 25-, 40- and 50-gigabit Ethernet configuration organizations can switch from low-jump (100-megabit Ethernet and 1-gigabit Ethernet) server access design to high-speed (1-, 10-, 25-, 40-, and 50-Gigabit Ethernet) design the same port density. 10-, 40- and 400-gigabit Ethernet Aggregation and Spine Configuration Series Cisco Nexus 9500 Help Help Transition from 1- and 10 gigabit Ethernet infrastructure to 10-, 40-, 100-and 400-gigabit Ethernet infrastructures to support increased demand for scaling speed, multi-channel application environments. The compatibility of 400-gigabit Ethernet modules QSFP-DD, 100-gigabit Ethernet QSFP28 modules and 40-gigabit Ethernet QSFP+ modules allow migration and coexistence of 40-, 100 and 400-gigabit Ethernet ports in the fabric. High availability, reliability and scalability Cisco Nexus 9500 series switches are designed with duplicate supervisors, system controllers, power supplies and fan trays that eliminate any single chassis failure point. These switches also support up to 6 sheet modules that provide alternation and graceful degradation of switching capacity in case of damage to the textile module. All transceivers can maintain the highest possible average difference between failures (MTBF) for the key. Designed for the future, the Cisco Nexus 9500 Series switches are designed for future expansion with the ability to maintain higher speed ports and more traffic. Power efficiency The Cisco Nexus 9500 Key Series is the first chassis designed without an average plan. Linear maps and tissue modules connect directly. This revolutionary design provides optimal front-to-back airflow and helps the switch run with less energy. In addition, all Cisco Nexus 9500 series power supplies are rated 80PLUS Platinum for AC inputs and equivalent efficiency for DC inputs. The usual power consumption of a 10-gigabit Ethernet port is less than 3.5 watts (W). The typical energy consumption of a 40- and 100 gigabit Ethernet port is less than 14W and 22W respectively. Cisco Nexus 9500 Series deployment scenarios support different deployment scenarios: ● Spinal nodes in spine fabric ● Core or network aggregation L2/L3 ● Boundary gateway in L2/L 3 network systems for spine tissue Fabric High port density and ability to support multi-crack ports on the same chassis make the Cisco Nexus 9500 Series switch an ideal choice as a spine in the fabrics of the spine. Cisco Nexus 9500 series switches can function as a backbone either in Cisco ACI or Cisco NX-OS (Figure 2). Spine sheet Architecture using Cisco Nexus 9300 and 9500 Switches Cisco ACI is the most comprehensive solution that allows automation of data centers and flexibility of applications. It provides a secure, scalable, deterministic and integrated policy-based architecture that allows for rapid application deployment and workload mobility in data centers. Cisco Nexus 9000 Series cloud number switches are the basis for deploying and starting Cisco ACI. Cisco Nexus 9500 Series cloud number switches and choice of Cisco cloud-scale claudi switches provide the functionality of ACI for the spine in Cisco's ACI fabric. Cisco Nexus 9300 9300 series switches functions of the ACI leaves in the Cisco ACI fabric. In Cisco NX-OS mode, the Cisco Nexus 9500 Series switches supports fundamental routing and switching technologies, along with advanced technologies such as VXLAN with BGP-EVPN control plane, segment routing, MPLS, and open APIs. These technologies provide the flexibility to build spine-date fabrics or classic networks of three-step data centers. In this Cisco® Data Center Network Manager (DCNM) mode, you can manage Cisco Nexus 9500 Series switches. The basic, aggregation, and roles of Cisco Nexus 9500 Series Switches gateways support linear maps that provide a selection of smart buffers, deep buffers, large tables, and high-speed high-density Ethernet interfaces. These hardware capabilities, along with wide routing and software switching capabilities, make the Cisco Nexus 9500 Series switch excellent as a core, aggregation, or gateway. End-of-line access switch Since the Cisco Nexus 9500 Series switch supports multicenter, multismoked Ethernet ports, these keys can also be deployed as circuit breakers at the end of the line, providing connections to access the blades or servers on the shelves. Cisco Nexus 9500 serial switches also provide the flexibility to move gradually from lower server connection speeds to higher server connection speeds. The Cisco Nexus 9500 Series Switch Components Cisco Nexus 9500 series includes the components shown in Figure 3. The Cisco Nexus 9500 Series Cisco Nexus 9500 Series switch components support several linear maps and fabric modules. The following data sheets describe each family of linear maps and woven modules: ● Cisco Nexus 9500 Cloud Scale Scale maps and fabric modules. URL: . ● Maps and fabric modules for Cisco Nexus 9500 R series (deep buffer). URL: . ● Cisco Nexus 9500 classic maps and fabric modules. URL: . Switching chassis for the Cisco Nexus 9500 Series Cisco Nexus 9500 series has three chassis – 4-slot, 8-slot and 16-slot chassis. N9K-C9504: 4-slot chassis ● Up to 6 fabric modules of the same type ● Up to 2 system controllers ● Up to 2 supervisors of the same type N9K-C9508: 8-slot chassis ● Up to 6 canvas modules of the same type ● Up to 2 supervisors of the same type N9K-C9508: 8-slot chassis ● Up to 6 canvas modules of the same type ● Up to 2 supervisors of the same type N9K-C9508: 8-slot chassis ● Up to 6 canvas modules of the same type ● Up to 2 supervisors of the same type 2 system controllers ● Up to 2 supervisors of the same type N9K-C9516: 16-Slot chassis ● Up to 10 power supplies ● Up to 6 sheet modules of the same type ● Up to 2 system controllers ● Up to 2 supervisors of the same type Table 2. Cisco Nexus 9504 Cisco Cisco Nexus 9508 Chassis Chassis Specifications Cisco Nexus 9516 Chassis Number of Linear Card Slots 4 8 Dimensions (HB x D) 12.25 x 17.50 x x 22,70 x 17,50 x 31,76 инча (57,78 x 44,50 x 80,67 см) 36,70 x 17,50 x 31,76 инча Тегло 84,2 кг (38,2 кг) 68,2 kg (68,2 кг) 192 фунта (87,3 кг) Рафтови единици 7 13 21 Средно време между Отказ (MTBF) Часове 1 038 080 928.910 680,000 Работна температура 32 до 104° F (0 до 40°C) Неработеща температура -40 до 158°F (-40 до 7 Влажност от 5 до 95% (безкондензиращ) Височина 0 до 13,123 ft (0 до 4000m) Продуктите за регулиране трябва да отговарят на се маркировката съгласно Директиви 2004/108/EO и 2006/95/EO безопасност 60950-1 Второ издание CAN/CSA-C22.2 No 60950-1 Второ издание EN 60950-1 Второ издание IEC 60950-1 второ издание AS/NZS 60950-1 GB4943 EMK : Емисии 47CFR част 15 (CFR 47) клас A AS/NZ CISPR22 клас A CISPR22 клас A EN55022 клас A ICES003 клас A VCCI клас A EN61000-3-2 EN61000-3-3 KN2 2 Клас A CNS13438 Клас A EMC : Immunity EN55024 CISPR24 EN300386 KN 61000-4 The product is compatible with RoHS-6 with exceptions for lead balls with grille and lead connectors for press-yearly. Supervisor modules for the Cisco Nexus 9500 series A pair of redundant supervisor modules controls all operations switches using a synchronized, active standby model. The supervisor adopts an external clock and supports multi-port control – two USB ports, a serial port, and a 10/100/1000 Mbps Ethernet port. All supervisors support Cisco ACI or NX-OS deployments. Redundant supervisory authorities should be of the same type within the chassis. 3. Table 3. Specifications for supervisor modules Cisco Nexus 9500 N9K-SUP-A N9K-SUP-A+ N9K-SUP-B N9K-SUP-B+ processor 4 core, 4 thread 1.8 GHz x86 4, 8 thread 1.8GHz x 86 6 core, 12 thread 2.2GHz x86 6 cores, 12 thread 1.9GHz X86 DRAM 16 GB 24 GB 32GB 64GB 64GB 256 GB 256 GB Weight 4.84 lb (2.2 kg) 5.2 lb (2.37 lb) 5.2 lb (2.2 lb) 37 lb kg) 6.00 lb (2.72 kg) 5.3 lb (2 lb .39 kg) Typical power 69 W 69 W 75 W 75 W Maximum power 80 W 80 W 90 W MTBF hours 312,070 414,0 240 292,110 421,040 Hot airflow suction port-side controller for Cisco Nexus 9500 A pair of redundant system controllers unloads chassis management functions from surveillance modules. Controllers are responsible for power management and fan trays; they are also the central point for Gigabit Ethernet Output Channel (EOBC) between supervisors, fabric modules and linear maps. 4. Table 4. Cisco Nexus 9500 N9K-SC-A Series System Controller Specifications Weight 1.91 lb (0.9 kg) Typical power 14 W Maximum power 25 W MTBF hours 1,380,21 Hot shift Yes Airflow Port side-s input module for the Cisco Nexus 9500 platform Each Cisco Nexus 9500 series chassis supports up to six canvas modules, vertically at the rear of the chassis behind the fan trays. The Cisco Nexus 9500 linear map and tissue module information sheets provide additional information about the different fabric modules. Cisco Nexus 9500 Cisco Nexus Platform Fan Dashboards The chassis supports two versions of hot fan trays that are compatible with specific fabric modules. Each fan tray covers twolots for a fabric module and allows the flow of air from front to back for the entire chassis. Suitable blank for module fabric should be installed in all empty slots for the fabric module to ensure proper air flow and cooling of the chassis. 5. Fan tray specifications N9K-C9504-FAN N9K-C9504-FAN2 N9K-C9508-FAN N9K-C9508-FAN2 N9K-C9516-FAN Fabric Module N9K-C9504-FM-E N9K-C9504-FM-R N9K-C9504-FM-S N9K-C9504-FM N9K-C9504-FM-G N9K-C9508-FM-E2 N9K-C9508-FM-E N9K-C9508-FM-R N9K-C9508-FM-S N9K-C9508-FM N9K-C9508-FM-G N9K-C9516-FM-E2 N9K-C9516-FM-E N9K-C9504-FM Fabric Module Blank N9K-C9504-FM-CV N9K-C9504-FAN-PWR N9K-C9508-FM-CV N9K-C9508-FAN-PWR N9K-C9516-FM-CV Weight 5.76 lb (2.6 kg) 8.2 lb (3.7 kg) 9.59 lb (4.4 kg) 8.6 lb (3.9 kg) 11.50 lb (5.2 kg) Typical power 95 W 306W 176 W 450W 330 W Maximum power 150 W 600W 250 W 900W 451 W Hot swappable Yes Airflow Port-side intake Cisco Nexus 9500 platform power supply The Cisco Nexus 9500 platform supports hot-swappable, front-panel-accessible AC, DC, and universal high voltage AC/DC power supplies. The total power budget required for a mix and number of linear maps and fabric modules installed in the chassis determines the ability to maintain the excess power modes – combined, n + 1, n + n or excess input source. The AC/DC 3150W high voltage power supply offers two power inputs, each of which can provide up to 3150 W output power. This unique feature offers more flexibility in providing backup power for the chassis. 6. Table 6. Power specifications Cisco Nexus 9500 3000W AC power supply Cisco Nexus 9500 3000W DC power supply Cisco Nexus 9500W 3000W HV AC/DC power supply Cisco Nexus 9500 3150W HV AC/1 0000 Power output power 3000 W 3000 W 3000 W 3150 W input voltage AC: 200V to 240V DC: -48V to -60V (nominal) -40V to -72V (min - max.) AC: 200V to 277V DC: 240V to 380V (nominal) 192V to 400V (min - max)AC: 200V to 277V DC: 240V to 380V (nominal) 192V (nominal) 192V (nominal) 192V V to 400V (min – max.) Number of inputs 1 2 (1500 W input output) 1 2 (3150 W input output) Frequency 50 to 60 Hz N/A AC: 47 to 63 Hz DC: N/A : 47 up to 63 Hz DC: No efficiency 80PLUS platinum 80PLUS Platinum equivalent 80PLUS platinum (AC) 80PLUS Platinum equivalent (DC) 80PLUS Titanium (AC) 80PLUS Titanium equivalent (DC) Weight 2.2 lb (2.8 kg) 6.4 lb (2 kg) .9 kg 5,9 lb (2. 7 kg) 9,9 lb (4,5 kg) MTBF hours 868 870 1,761 580 965 700 838 900 Hot swapped Yes airflow Yes Table 7. Order Information No. N9K-SUP-A+(=) Cisco Nexus 9500 4-core/8-thread supervisory N9K-SUP-SUP+(=) Cisco Nexus 9500 6-core/12-thread surveillance N9K-SUP(=) Cisco Nexus 9500 4-core/4-thread surveillance N9K-SUP-B(= Nexus 9500 6-Core/12-Thread Supervisor N9K-SC-A(=) Cisco Nexus 9500 System Controller N9K-PAC-3000W-B(=) Cisco Nexus 9500 3000W 200V to 240V AC PS, Port-Side Intake N9K-PDC-3000W-B(=) Cisco Nexus 9500 3000W -48V-60V DC PS, Port-Side Intake N9K-PUV-3000W-B(=) Cisco Nexus 9500 3000W 200V to 277V AC or 240V to 380V DC Universal high voltage AC/DC PS, Port-Side Intake N9K-PUV2-3000W-B(=) Cisco Nexus 9500 3150W 200V to 277V AC or 240V to 380V DC Universal high voltage AC/DC PS, Port-Side Intake N9K-C9504-FAN(=) Fan Tray for Cisco Nexus 9504 Chassis N9K-C9504-FAN2(=) Nexus 9500 4-slot chassis 400G cloud scale fan tray (Generation 2) N9K-C9504-FAN-PWR(=) Nexus 9500 4-slot chassis 400G cloud scale fan tray power connector N9K-C9508-FAN(=) Fan Tray for Cisco Nexus 9508 Chassis N9K-C9508-FAN2(=) Nexus 9500 8-slot chassis 400G cloud scale fan tray (Generation 2) N9K-C9508-FAN-PWR(=) Nexus 9500 8-slot chassis 400G cloud scale fan tray power connector N9K-C9516-FAN(=) Fan Tray for Cisco Nexus 9516 Chassis Accessories N9K-C9500-RMK= Cisco Nexus 9500 Set of rack mounts for Nexus 9508 and Nexus 9516 chassis N9K-C9504-RMK = Cisco Nexus 9500 Rack mounting kit for Nexus 9504 N9K-C9500-ACK = Cisco Nexus 9500 Accessory Note All parts numbers with sign = refer to spare parts number to order. The Cisco Nexus 9500 platform guarantee has a 1-year limited hardware warranty. The warranty includes replacing hardware with a 10-day return order from obtaining a Return Permission (RMA). Information on Cisco's environmental sustainability on Cisco's environmental sustainability policies and initiatives for our products, solutions, operations and expanded operations or supply chain is provided in the Environmental Sustainability section of Cisco's Corporate Social Responsibility (CSR) report. References to information on key environmental sustainability topics (mentioned in the Environmental Sustainability section of the CSR report) are presented in the following table: Sustainability Topic Product content reference information laws and regulations Materials Information on electronic waste, including products, batteries and packaging Cisco provides packaging data available for informational purposes only. It may not reflect the most up-to-date legal events and Cisco does not represent, warrant or warrant that it is complete, accurate or up-to-date. This information shall be subject to change without notice. Cisco offers a wide range of services to accelerate your success in deploying and optimizing the Cisco Nexus 9500 platform in your data center. These innovative Cisco services are provided through a unique combination of people, processes, tools and partners and are aimed at helping to increase performance and improve the network of data centers. Cisco's advanced services use an architectural approach to help you bring your infrastructure to data centers business objectives and to achieve long-term value. Cisco SMARTnet™ Service helps you resolve mission-critical direct access issues at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of Cisco's Smart Call Invitation service, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 9500 platform switch. Covering the entire life cycle of the network, Cisco's services help increase investment protection, optimize network operations, support migration operations, and strengthen your IT experience. Cisco flexible payment solutions for flexible payment solutions that help you achieve your goals Cisco Capital makes it easy to get the right technology to achieve goals, activate business transformation, and stay competitive. We can help you reduce overall property costs, create capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire third-party hardware, software, services and additional equipment for easy, predictable payments. Find out more. For more information about the Cisco Nexus 9000 series, visit . .