

Ruggedized Cisco 4948 Ethernet Switch, IOS Managed – 48+4 Ports



DuraNET 4948

- Ruggedized Datacenter Class Ethernet Switch
- High Density Connectivity: 52 Ethernet Ports in 2U 19" Rack Mount Form Factor
- MIL-STD-810G / MIL-STD-461F Qualified
- Cisco Enterprise IOS L2/L3 SW Features
- MIL-DTL-38999 Connectors



FEATURES

CISCO TECHNOLOGY

- Ruggedized Version of Cisco Catalyst 4948E Ethernet Switch with Best-in-Class Enterprise Services IOS® Software, Advanced QoS, IPv6 Support, Advanced Routing Protocols, BGP, 3DES

HIGH PERFORMANCE

- Non-Blocking 176-Gbps Aggregate Throughput
- Large 17.5 MB Shared Buffer Optimized to Handle Microbursts
- Advanced Quality of Service (QoS) with 8 Queues/per Port
- Data Center Server Virtualization Support for Larger Layer 2 Domains

INTERFACES

- Downlinks: 48x 10/100/10000 Gigabit Ethernet
- Uplinks: 2x 10Gig Ethernet; 1x 10Gig and 1x 1 Gig Multi-Mode Fiber
- Management: 1x RS-232 Serial Console, 1x 10/100 Management

RUGGEDIZATION

- Transient-Protected Power Supply for MIL Aircraft / Vehicle Use
- Qualified to meet MIL-STD-810 Thermal, Shock, Vibration, Altitude, Humidity, Conditions and MIL-STD-461 for EMI/EMC
- Rugged 2U, Aluminum Chassis with Front-to-Back Airflow
- Circular MIL-DTL-38999 Connectors for Reliable Network Connections
- Conformal Coated Boards for Humidity and Tin-Whisker Mitigation

APPLICATIONS

- Civil and Military Layer 2 / 3 LAN Switching / Routing
- 28V Ground Vehicle / Aircraft / Maritime Installations
- C4ISR Situational Awareness / Technology Refresh / Retrofit / LRU

- Defense & Homeland Security
- Aircraft, Vehicle, Shipboard Applications

The DuraNET® 4948 is a ruggedized version of Cisco Systems' high performance Catalyst 4948E data center switch with forty-eight (48) downlink and four (4) uplink ports in a hardened 2U chassis qualified to meet MIL-STD-810 environmental and MIL-STD-461 EMI requirements. This powerful, multilayer switch enables demanding military and civil IP networking technology refresh programs to leverage the best that Cisco switching technology has to offer, but in a ruggedized 19" rack mount solution suitable for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) applications.

This rugged Commercial-Off-the-Shelf (COTS) product extends the application use of industry-leading Cisco hardware through mechanical enhancement that support deployment of data and multimedia services in wider thermal, shock, vibration, altitude, and humidity conditions than offered by the standard commercial Cisco version. The DuraNET 4948 integrates redundant aircraft-grade power supplies, internal heaters, enhanced heatsinking, and upgraded cooling fans with efficient front-to-back chassis airflow management to reduce data center operating costs (by separating the inlet cold air and exhaust hot air).

Suitable for demanding military ground vehicle, aircraft, and maritime installations, the DuraNET 4948 comes equipped with rugged MIL-38999 connector interfaces, bringing out a total of 48 Gigabit Ethernet downlinks, plus three 10 Gigabit Ethernet uplinks (2 Copper/1 Fiber) and a Gigabit Fiber uplink. The unit features Cisco's full-featured Enterprise Services IOS software image with the advanced Quality of Service (QoS), high availability, security, and manageability that customers expect from Cisco for critical data center architectures. Advanced Layer 3 routing protocol support (i.e. BGP, RIP, EIGRP, OSPF, IS-IS), 3DES encryption and network management tools (AutoInstall, Cisco IOS Embedded Event Manager) are also supported.

Specifications



Front View



Side View



Rear View

CISCO TECHNOLOGY	<ul style="list-style-type: none"> • Integrated Cisco Catalyst 4948E; See Cisco.com for full list of supported software features. • Cisco Internetwork Operating Systems (IOS) Enterprise Services with 3DES and BGP Support • Non-Blocking Hardware-Based Switching/Routing; Support for Access/Distribution Level L3 Routing • IP Versions 4 and 6 (IPv4 and v6) Support
PORTS	<ul style="list-style-type: none"> • 48x 10/100/10000 Gigabit Ethernet (BASE-T) Downlinks (over Copper) • 2x 10 Gigabit Ethernet (10GBASE-CX4) Uplinks, Compatible w/ Copper Twinax Media • 1x 10 Gbps Multi-mode Fiber (10GBASE-LRM), Compatible w/ 62.5 micron/ 500 modal Bandwidth • 1x 1 Gbps Multi-mode Fiber (1000BASE-SX), Compatible w/ 50.0 micron / 500 modal Bandwidth • 1x EIA/TIA-232 Serial Console (Out-of-band management) • 1x 100BASE-T Management Ethernet (In-band management)
PERFORMANCE	<ul style="list-style-type: none"> • Switching Capacity: 176Gbps • Throughput: 131 mpps for IPv4; 110 mpps for IPv6 • Routes Supported: 57,000; MAC Addresses: 55,000; Active VLANs: 4094; Multicast Routes: 28,000 • Security and QoS Hardware Entries: 32,000; Switched Port Analyzer (SPAN): 8 ingress, 8 egress • Shared Buffer: 17.5 MB
STANDARDS	<ul style="list-style-type: none"> • IEEE 802.3/u/z/ab/aq: Ethernet, Fast Ethernet, Gigabit Ethernet, 10 Gigabit Ethernet • 10BASE-T, 100BASE-T, 1000BASE-T, 1000BASE-SX, 10GBASE-LRM, 10GBASE-CX4 • IEEE 802.1D/w/s Spanning Tree Protocol (STP), RSTP, MSTP • IEEE 802.3 ad Link Aggregation Control Protocol (LACP) • IEEE 802.1p Class of Service (CoS) Prioritization • IEEE 802.1Q Virtual Local Area Network (VLAN) • IEEE 802.1x User Authentication • Simple Network Management Protocol v1, v2, v3, incl. 3DES/AES Encryption • RMON I and II Standards
MULTIMEDIA OPTIMIZED	<ul style="list-style-type: none"> • Support for Protocol-Independent Multicast (PIM), Source-Specific Multicast (SSM), Bidirectional PIM (bidir-PIM), Providing End Users with Additional Scalability to Support Multimedia Applications. • Support for Internet Group Management Protocol (IGMP) Snooping, Multicast Listener Discovery (MLD) Snooping in Hardware.
IP ROUTING	<ul style="list-style-type: none"> • Static Routing, Routing Information Protocol (RIP) Versions 1 and 2, Enhanced Interior Gateway Routing Protocol Stub (EIGRP-Stub), Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Intermediate System-to-Intermediate System (IS-IS) Protocol, EIGRP
RESILIENCY	<ul style="list-style-type: none"> • Redundant DC Power Supplies & Fans for High Availability in Mission-Critical Applications • Optimized Forwarding Across Uplinks w/Equal-Cost Multipath (ECMP) Load Sharing • Protection from Attacks with Access Control Lists (ACLs), Control Plane Policing (CoPP), Address Resolution Protocol (ARP) Inspection, and Dynamic Host Configuration Protocol (DHCP) Snooping • Active Queue Management w/Dynamic Buffer Limiting (DBL) for Increased Security, Network Control
POWER	<ul style="list-style-type: none"> • Voltage Input: 28Vdc Nominal • Input & Transient Compliance: Designed for Aircraft Use • Power Consumption (Max): < 320 (max)
PHYSICAL	<ul style="list-style-type: none"> • Chassis: Aluminium Alloy, Corrosion Resistant, Black Anodize Finish (MIL-A-8625, Type II, Class 2) • Installation: EIA/ECA 19" Rack Mountable, Height: < 2 Rack Units (2RU) • Connectors: MIL-DTL-38999, Series III • Cooling: Air Cooled by Fans and Natural Convection • Weight: ~23 lbs (~10.4 kg) • Dimensions (Excluding Connectors, Mounting Flanges, Handles): Approx. 3.45" H x 17.40" W x 25.30" D (~8.76 cm H x ~44.20 cm D x ~64.26 cm L)
ENVIRONMENTAL	<ul style="list-style-type: none"> • Tested & Qualified to Meet MIL-STD-810G: • Operating Temp: -40° to +54°C / -40° to +129°F (MIL-810, Methods 501,502) w/ altitude derating • Storage Temp: -40° to +71°C / -40° to 160°F (MIL-810, Methods 501,502) w/ altitude derating • Transportation Vibration: 4G Peak Acceleration, MIL-STD-810, Method 514.6 Procedure I Category 4 • Operating Shock: 4g, 11ms, 3 pos/neg per axis, MIL-810, Method 516.6 • Transit Drop Shock: per MIL-810, Method 516.6, Procedure IV • Humidity: Up to 95% RH, Non-Condensing (MIL-810G, Method 507.5, Proc. II) • Salt-Fog / Fungus: per MIL-810G (Qualification via Analysis – Conformal Coat, Sealed BGAs) • Operational Altitude: Up to 25,000 feet (7,620 meters) - MIL-STD-810, Method 500 • Storage Altitude: Up to 40,000 feet (12,192 meters) -MIL-STD-810, Method 500
EMI/EMC	<ul style="list-style-type: none"> • Tested & Qualified to Meet MIL-STD-461F: • Conducted Emissions: CE101, CE102; Conducted Susceptibility: CS101, CS114, CS115, CS116 • Radiated Emissions: RE101, RE102; Radiated Susceptibility: RS101, RS103
RELIABILITY	<ul style="list-style-type: none"> • MTBF: Estimated at 75,000+ hours (@ 35C, 25,000ft Altitude) - Calculated per MIL-HDBK-217F • Conformal Coated Boards for Humidity and Tin-Whisker Mitigation
OPTIONS	<ul style="list-style-type: none"> • Starter Breakout Cable Sets from 38999 Connectors to Commercial RJ-45/DB-9/Fiber for Lab Use • Lower-Level IOS Options: LAN Base (L2 Switching only); IP Base (for static routes, limited routing)
WARRANTY	<ul style="list-style-type: none"> • Standard 90-Day Return to Depot Warranty; Extended Service Agreements Bundling Cisco SmartNET Available (for Access to IOS Software Upgrades/Updates)

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