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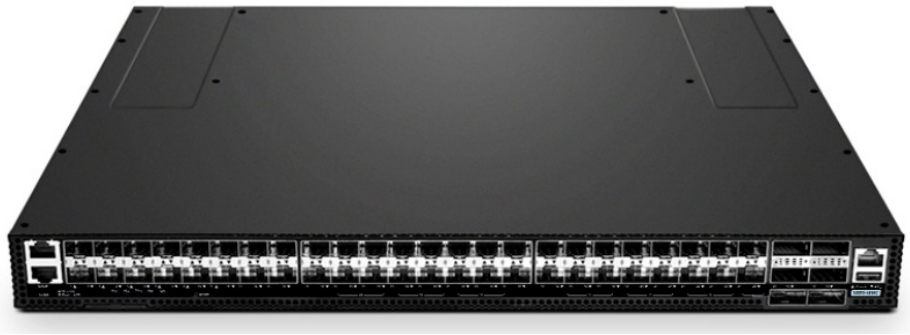
FS N5570-48S6C 48-Port Ethernet Data Center Switch



Product Overview

The N5570-48S6C switch delivers rich, low-latency Layer 2/Layer 3 features and advanced EVPN-VXLAN capabilities. With 48 native 10G downlink ports and 6 40/100GbE uplink ports, it is ideal for leaf roles in data centers and data center interconnect (DCI) deployments.

Featuring L3 gateway functionality for seamless routing between virtualized and bare-metal servers, the switch is designed for extremely agile data centers that require

support for overlay/underlay network architectures.

Figure 1 shows the FS N5570-48S6C Switch.

Figure 1: N5570-48S6C Switch

The N5570-48S6C is a compact 10GbE data center Leaf switch with the following features:

- 48 10GbE SFP+ Downlink Ports, Six 40/100GbE QSFP28 Uplink Ports
- Broadcom BCM56771 with 64GB (SSD) storage
- Up to 1.08 Tbps (unidirectional) L2 and L3 performance
- VXLAN support as an L2 or L3 gateway
- Advanced PicOS® features, such as Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN), MLAG, BGP, and EVPN multihoming.

Using breakout cables, the 100G port supports 40Gb and splits into 4×10Gb, as well as splitting into 4×25Gb.

PicOS®

- The high-performance N5570-48S6C switch runs PicOS®, a powerful and robust network operating system that supports all FS PicOS® network switches. Key PicOS® features that enhance the functionality and capabilities of the N5570-48S6C include:
  - Commit, Review, and Rollback: Prevents network configuration errors and enables rapid recovery to a stable state in case of anomalies, ensuring configuration accuracy and business continuity.
  - Virtual ASIC Technology: Implements a hardware abstraction layer, allowing support for multiple hardware platforms and chipsets with minimal modifications. This vendor-agnostic solution enables rapid iteration and updates.
  - Modular Design: Allows independent component operation and updates, enhancing system flexibility and stability. This architecture enables seamless integration of new features and simplifies maintenance and troubleshooting.
  - Linux Debian Architecture: One of the most innovative open network operating

systems in the industry, featuring built-in automation tools for easy implementation, management, customization, and scalability.

- Automation and Programmability: PicOS® offers a rich set of standardized programmable interfaces and automation tools, including Ansible, OpenFlow, and NETCONF, enabling automated network configuration and improved operational efficiency.

Data Center Deployments

Data centers require high-speed, low-latency, and converged network solutions for storage and I/O to maximize the performance of physical servers, virtual servers, and storage. The N5570-48S6C switch addresses these needs in a compact 1U platform with low-latency, lossless, high-density 10GbE interfaces. Additionally, the N5570-48S6C offers EVPN-VXLAN L2 and L3 gateway support, making it an ideal solution for edge routing or centralized routing overlay deployments in data centers. It supports front-to-back airflow, suitable for cold-aisle containment where cool air enters from the front and exits to the hot aisle at the rear.

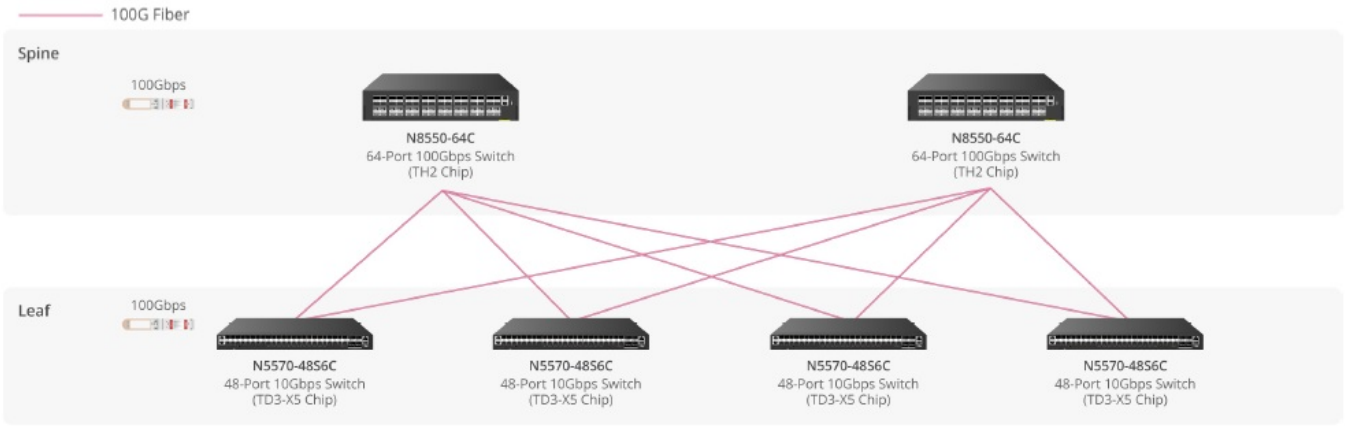
Data Center Server Access

At the Leaf layer, the N5570-48S6C switch provides 48 10GbE server access ports, supporting high-density virtualized server deployments within a single rack to meet the demands of VM-intensive workloads in cloud computing environments. By leveraging VXLAN encapsulation, the physical and logical networks are decoupled, allowing each tenant to achieve Layer 2 isolation through a unique VXLAN Network Identifier (VNI), enabling thousands of independent tenant services to run on the same physical network. With an EVPN-based BGP control plane, the switch enables automatic learning and synchronization of MAC/IP addresses. When a virtual machine migrates across

Leaf switches, EVPN dynamically update the forwarding path using Type 2 routes (MAC/IP routes), ensuring seamless business continuity. At the Spine layer, the N8550-64C switch provides 64 100GbE ports, supporting full-mesh ECMP (Equal-Cost Multi-Path) routing to ensure optimal traffic forwarding across Leaf switches, reducing migration latency.

Figure 2 shows the 10G/100G Spine-Leaf Fabric.

Figure 2: 10G/100G Spine-Leaf Fabric



Features and Benefits

- Built-in Broadcom Trident 3 Chip: Provides high-speed data transfer, low latency, and 1.08 Tbps throughput for superior stability and performance.
- VXLAN Overlays: The N5570-48S6C switch is capable of both L2 and L3 gateway services. Customers can deploy overlay networks to provide L2 adjacencies for applications over L3 fabrics. The overlay networks use VXLAN in the data plane and EVPN for programming the overlays.
- Ensuring Uninterrupted Services with MLAG: Two N5570-48S6C switches can operate as independent devices with separate control planes while achieving redundancy and load balancing by enabling link aggregation on connected devices and using STP to eliminate loop risks. This enhances network bandwidth, improves reliability and availability, and ensures the seamless operation of critical services.
- Unified Operating System and Management Platform: Unified PicOS® and AmpCon-DC management platform, automates the entire network lifecycle to simplify design and deployment.
- Free Virtual Machine (VM): PicOS®-V is a Virtual Machine designed to help customers become familiar with the network functionalities and performance of PicOS®, without the need to wait for switching hardware.

Ampcon-DC Management Platform

The FS AmpCon-DC management platform ensures fast, accurate, and consistent delivery of the changes needed for data center services. It also leverages built-in assurance and analytics features to quickly resolve Day-2 operational issues.

- Fabric Management: AmpCon-DC management platform provides full Day 0 through Day 2+ lifecycle management capabilities for IP/EVPN fabrics with closed-loop

assurance in the data center
Telemetry for Real-time Network Monitoring: Optimizes network performance through continuous data insights.

- Topology Auto-discover for Visual Management: Enhances efficiency in network management and operations.
- Overlay-based Auto Configuration*: Centralized configuration is automatically issued to overlay networks (such as VXLAN), increasing configuration efficiency by reducing command complexity, manual errors, and the time required to understand overlay-specific settings.
- Underlay-based Auto Configuration: Centralized configuration is automatically issued to the underlay network infrastructure (such as IP routing and interfaces), increasing configuration efficiency by reducing manual errors and the time required to learn traditional underlay configuration commands.
- Lossless Network Automation*: The overall network can be monitored and optimized, which improves business efficiency and the operation and maintenance efficiency of network administrators.
- Lossless Network O&M Monitoring: If a link failure occurs in the network, the chip can achieve sub-millisecond convergence, minimizing the impact on user services.

Notice Expected to be available in Q2 2025

N5570-48S6C Switch Specifications

Tables 1 through 4 show the FS N5570-48S6C switch hardware specifications.

Table 1: Interface options

P/N	N5570-48S6C
Console port	1
Management port	2 × RJ-45 port
USB port	1

1GbE SFP	48
10GbE SFP+	48 56 (with breakout cable)
25GbE SFP28	8 (with breakout cable)
40GbE QSFP+	6
100GbE QSFP28	6

NOTE: Due to hardware limitations, only ports xe-1/1/1 and xe-1/1/4 support being split into four 25G Ethernet interfaces; other ports are not supported to be split.

Table 2: Power supplies and fans

P/N	**N5570-48S6C**
Power supply	Dual 1+1 redundant power supplies (AC)
Fan number	5x Hot-swappable Fans (4+1 Redundancy)
Airflow	Front-Rear
Power consumption	Max power draw: 356W
Power max rating	400W
Input-voltage range and frequency	100-240VAC, 50-60Hz
Input current	6-3A

Table 3: Performance specifications

P/N	**N5570-48S6C**

Switching capacity	1.08/2.16Tbps (uni/bidirectional)
Forwarding rate	964.28 Mpps
Switch chip	Broadcom BCM56771 Trident 3
CPU	Intel Atom® C3558 2.2GHz 4-Core x86 processor
DRAM	2x 8 GB SO-DIMM
Flash memory	64GB
Packet buffer	32MB
MAC address table size	32K
VLAN ID	4K
IPv4 routes	32K
IPv6 routes	12K

Table 4: Product specifications

P/N	**N5570-48S6C**
Environmental	
Operating temperature	32°F to 104°F (0°C to 40°C)
Storage temperature	40°F to 158°F (-40°C to 70°C)
Operating humidity	5% to 95% (Non-condensing)
Storage humidity	5% to 95% (Non-condensing)
Temperature alarm	supported
Physical specifications	

Weight	21.14 lbs (9.59kg)
Dimensions (H x W x D)	1.73″x17.42″x18.63″ (43.95×442.5×473.3mm)
Rack units (RU)	1 RU
Electrical	
Voltage (auto ranging)	100-240VAC
Frequency	50-60Hz
Current	3A Max
Power rating (maximum consumption)	400W

Software Features Supported

Table 5 lists the software spotlights for the FS N5570-48S6C switch. Table 5: Software spotlights

Functionality	**Description**

System Management	• Hardware management of the system’s FAN and PSU • Syslog management • Boot diagnose • Recover the default configuration and password • Zero Touch Provisioning (ZTP) • System file management • User management • Support to configure login methods • System time management: manual method, NTP • Domain Name System (DNS)

	Ethernet Ports Management Configuration
	• Enable or disable the Ethernet port
	• Configuring port speed
	• MTU
	• Flow control
	• Flow statistics
	• Port breakout
	• Routed Interface and Sub-interface
	• Layer 3 VLAN Interface
	• Storm Control

	• Local loopback
	• Backup port
	• Link Fault Signaling (LFS)
	• Forwarding Error Correction (FEC)
	• Time Domain Reflectometry (TDR)
	• Clock and Data Recovery (CDR)
	MAC configuration
	• Static MAC entries and Dynamic MAC Address Learning
	Static Link Aggregation (LAG) Configuration
Layer 2 Switching Configuration	• Static LAG • Dynamic LAG (LACP)
	• Load balancing
	• Resilient LAG Hashing
	• Symmetric Hash for LAG
	MLAG
	• Basic MLAG
	• Support IPV6
	• MLAG Active-Active
	• Load balancing
	• MLAG DHCP Snooping

	• MLAG DHCP relay
	• MLAG IGMP snooping
	• MLAG VxLAN
	• MLAG PVST+
	Port access mode
	• ACCESS
	• Trunk
	• Hybrid
	VLAN
	• Port-based VLAN
	• MAC Trace

	• MAC-based VLAN **VLAN mapping** • QinQ **VLAN registration** • GVRP • MVRP **Private VLAN Voice VLAN** **Spanning Tree Protocol** • STP • RSTP

	• MSTP • PVST+ • BPDU Filter • BPDU Root Guard • BPDU TCN-Guard • BPDU-Guard • Edge port • Manual forwarding **BPDU Tunneling** • Layer 2 protocol messages, such as CDP, LLDP, LACP, and STP, are supported and can be transmitted through BPDU tunnels **Ethernet Ring Protection Switching (ERPS)** • ERPSv1ERPSv2 **Unidirectional Link Detection (UDLD) Loopback Detection**

	IPv4 Basic Configuration
	ARP
	• Static ARP
	• Dynamic ARP
	• ARP Proxy
	DHCP

	• DHCP server and DHCP client
	• DHCP relay and DHCP relay option 82
	• DHCPv6 Relay
	• DHCP snooping
	• DHCP snooping trust-port
	• DHCP snooping option 822
IP Service Configuration Guide	• DHCPv6 snooping **Equal-Cost Multipath Routing (ECMP)** • Max path
	• Load balancing
	• Symmetric Randomized Load Balance
	• Round-Robin Load Balance
	• Resilient Load Balancing
	VRF
	• Base VRF
	• Management of VRF and VRF Route Leaking
	IPv6
	• IPv6 DHCP Relay
	• IPv6 NDP
	• IPv6 ECMP
	• Path MTU Discovery

IP addressing

- IPv4 Addressing
- IPv6 Addressing
- SVI

Static routing

- IPv4/IPv6 static routing
- Multiple next stop static route

RIP

- RIP Network
- RIP VRF
- RIP timer
- RIP passive-interface
- Redistribution of static route, connected route, OSPF2 route and BGP routes into RIP with route map filtering

RIPng

- RIPng Network
- RIP VRF
- Redistribution of static route, connected route, OSPF2 route and BGP routes into RIP with route map filtering

OSPF

- Single OSPFv2 instance
- Single OSPFv2 instance for each VRF
- OSPFv2 Multiple instances
- Intra- and inter-area routing.
- Type 1 and 2 external routing.
- Broadcast and P2P interfaces.
- Stub areas.
- Not so stubby areas (NSSA)
- MD5 Authentication.
- Redistribution of static route, connected route, RIP route and BGP routes into OSPFv2 with route map filtering
- OSPFv2 passive interfaceOSPFv2 GR (Graceful Restart)

OSPFv3

- Single OSPFv3 instance
- Single OSPFv3 instance for each VRF
- Intra-and inter-area routing
- Type 1 and 2 external routing
- Broadcast and P2P interfaces
- Stub areas
- Redistribution of static route, connected route, ripng route and BGP routes into OSPFv3 with route map filtering
- OSPFv3 passive interface OSPFv3 GR (Graceful Restart)

IPv4/IPv6 BGP

- BGP Autonomous Systems
- BGP Route Selection
- IBGP and EBGP
- BGP Multiple Autonomous System
- BGP Peer group

Reserved

Multicast Configuration	**IGMP** • IGMPv2 query • IGMPv3 query **PIM** • PIM SM • Static Dynamic RP • PIM-SSM • PIM over GRE Tunnel **MSDP** • PIM-SM Inter-domain Multicast Using MSDP • Anycast RP **Multicast routing** • Multicast routing and forwarding **Multicast VLAN** • Multicast VLAN Registration (MVR) **IGMP Snooping** • IGMPv2 snooping • IGMPv3 snooping • mrouter port • static group • unregistered flood

VPN	**Generic Routing Encapsulation Protocol (GRE)**
VXLAN	**VXLAN EVPN** • BGP EVPN

	BFD • Static BFD • Dynamic BFD • Single-Hop BFD • Multi-Hop BFD • BFD for BGP • BFD for OSPF • BFD for PIM-SM **Uplink Failure Detection (UFD)** • Uplink Failure Detection **Priority Flow Control (PFC)** **Virtual Router Redundancy Protocol (VRRP)** • VRRP Active-Standby • VRRP Active-Active (load-balance) • VRRPv2 • VRRPv3 • preempt mode • priority

High Availability	• authentication • accept mode **EFM OAM** • OAM link discovery • Remote loopback

Lossless Network	**PFC, Priority Flow Control** • Enabling PFC • PFC Buffer **PFC Watchdog** • Enable PFC watchdog • detect-interval • restore-action • restore-interval **PFC Deadlock Prevention** • PFC uplink port groupModify the queue priority and DSCP **ECN, Explicit Congestion Notification** • Enable WRED • Set the maximum and minimum thresholds • Set drop probability • Enable ECN **Easy ECN** • Throughput-First mode • Latency-First mode **DLB, Dynamic Load Balancing** • Normal ModeOptimal ModeAssigned Mode

	AAA

- Radius Authentication
- Radius Authorization
- Radius Accounting
- TACACS+ Authentication
- TACACS+ Authorization
- TACACS+ Accounting
- Console Login
- OUT-band/IN-BAND Login
- Local Authentication
- local authentication fallback

NAC

- 802.1X
- MAC authentication
- CWA authentication
- Web authentication
- Host Mode
- Server Fail VLAN
- Block VLAN
- Dynamic VLAN
- Fallback to WEB
- EAP Packet Exchange
- Redirect URL

Security	• Change of Authorization (CoA) • Downloadable ACL • Dynamic ACL • session-timeout • Re-authentication **ACL** Match field: • destination-address-ipv4 • destination-address-ipv6 • destination-mac-address • destination-port • ether-type • first-fragment • ip • is-fragment • protocol • source-address-ipv4 • source-address-ipv6

	• source-mac-address • source-port

- time-range
- vlan
- ACL-based Traffic Policer
- ACL-based QoS
- ACL-based remark

Port Security

- Enable or disable port security

DAI

- Trust Port
- ARP Packets Validity Checking
- User Legitimacy Checking
- Dynamic ARP Inspection
- ARP Inspection Access List

CoPP

- System pre-defined control plane protocols
- Change the pre-defined CoPP policies
- System custom-defined control plane protocols

IPv4SG (IPv4 Source Guard)

- IPv4 Source Guard

IPv6SG (IPv6 Source Guard)

- IPv6 Source Guard

DHCPv6 Guard

	Neighbor Discovery Inspection • Enable ND inspection on a VLANValidate source-mac **Neighbor Discovery Snooping** • ND Snooping
QoS Service Configuration	**Queue scheduler** • Queue scheduler: SP WRR WFQ **Traffic policing** • Traffic policing: • guaranteed-rate • max-rate • Traffic classifier **Congestion management and avoidance** • Congestion management: WRED • Congestion avoidance: ECN

	SNMP
	• SNMP v2
	• SNMP v3
	• SNMP Access control
	• SNMP authentication
	• SNMP privacy

	• SNMP Trap
	• SNMP VRF
	RESTCONF
	Remote Network Monitoring (RMON)
	• Ethernet statistics function (etherStatsTable in RMON MIB)
	• History statistics function (etherHistoryTable in RMON MIB)
	• Event definition function (eventTable and logTable in RMO N MIB)
	• Alarm threshold setting function (alarmTable in RMON MIB)
	NETCONF
	LLDP
	• LLDP Mode
	• Selecting Optional TLVs
	• LLDP med
	Mirror Configuration
Network Manageme nt and Monitoring	• Local port mirror • ERSPAN
	• Base ACL ERSPAN
	Switch the Environment monitor.
	• boot-messages

	• connections
	• cpu-usage
	• fan
	• hwinfo
	• memory-usage
	• processes
	• rollback
	• rpsu
	• serial-number
	• temperature
	Packet Capture
	• tcpdump
	Telemetry Protocol
	SDN
	• Openflow
	sFlow
	• collector UDP port

	• source address • header length • sampling rate

Standards Compliance

Table 6 lists the standards compliance for the FS N5570-48S6C switch.

Table 6: Standards compliance

Category	Description
IEEE Standard	IEEE 802.1 IEEE 802.1AB IEEE 802.1ad IEEE 802.1ax IEEE 802.1D IEEE 802.1p IEEE 802.1Q IEEE 802.1Qbb IEEE 802.1w IEEE 802.3x
	RFC 768 UDP RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 826 ARP

RFC 854 Telnet client and server, RFC 894 IP over Ethernet

RFC 1058 RIP

RFC 1112 IP Multicast Host Extensions

RFC 1142 OSI IS-IS Intra-domain Routing Protocol RFC 1492 TAC ACS

RFC 1519 Classless Interdomain Routing (CIDR) RFC 1534 DHCP -BOOTP Interoperation

RFC 1745 BGP4/IDRP for IP—OSPF Interaction RFC 1771 BGP-4

RFC 1812 Requirements for IP Version 4 Routers, RFC 1997 BGP Communities Attribute

RFC 2080 RIP for IPv6, RFC 2131 DHCP

RFC 2132 DHCP Options & BOOTP Extensions RFC 2138 RADIU S Authentication

RFC 2139 RADIUS Accounting

RFC 2154 OSPF with Digital Signatures (Password, MD-5) RFC 22 36 IGMP v2

RFC 2328 OSPF v2 RFC 2338 VRRP

RFC 2370 OSPF Opaque LSA Option

RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option, RFC 2453 RIP v2

RFC 3031 MPLS Architecture

RFC 3032 MPLS Label Stack Encoding

RFC 3034 Label Switching over Frame Relay RFC 3036 LDP Spec ification

Supported RFCs	RFC 3037 LDP RFC 3046 DHCP Relay Agent Info Option, RFC 3101 NSSA Option RFC 3215 LDP State Machine RFC 3376 IGMP v3 RFC 3446 Anycast RP Mechanism (PIM+MSDP) RFC 3569 SSM Overview RFC 3618 MSDP RFC 4541 IGMP/MLD Snooping Guidelines RFC 4601 PIM-SM(Rescinded) RFC 4607 IP Source-Specific Multicast RFC 5036 LDP Specification (Updated)

	RFC 5443 LDP-IGP Synchronization RFC 5561 BGP-Signaled IP/VPNs RFC 5880 BFD Base Protocol RFC 5881 BFD for IPv4/IPv6 RFC 5882 BFD Generic Application RFC 5883 BFD for Multihop Paths RFC 6720 Early IANA Code Point Allocation RFC 7348 VXLAN RFC 7552 GMPLS Packet-Optical Integration RFC 8365 EVPN-VXLAN

Warranty, Service, and Support THE

FS N5570-48S6C switch has a 5-year limited warranty against defects in materials or workmanship. For more information on the FS Returns & Refunds policy, visit https://www.fs.com/policies/warranty.html or

- https://www.fs.com/policies/day_return_policy.html
- FS provides a personal account manager, free professional technical support, and 24/7 live customer service to each customer.
    - Professional Lab: Test each product with the latest and advanced networking equipment.

- Free Technical Support: Provide free & tailored solutions and services for your businesses.
- 80% Same-day Shipping: Immediate shipping for in-stock items.
- Fast Response: Direct and immediate assistance from an expert.

For more information, visit https://www.fs.com/service/fs_support.html

Ordering Information

Table 7 provides the ordering information for the N5570-48S6C switch and the AmpCon-DC management platform.

Table 7: Ordering information

Product	Description
Switch Hardware	
N5570-48S6C	N5570-48S6C, 48-Port Ethernet Data Center Switch, 48 x 10Gb SFP+, with 6 x 100Gb QSFP28 Uplinks, PicOS® , Broadcom Trident 3 Chip
AmpCon-DC Management Platform	
LIS-AMPCON-DC-FPSW-Foundation-1Y	AmpCon-DC Management Platform for PicOS® Data Center Switches with 1-Year Service Bundle, Support Remote Deployment and Automate Network Management (Per Device)
LIS-AMPCON-DC-FPSW-Foundation-3Y	AmpCon-DC Management Platform for PicOS® Data Center Switches with 3 Years Service Bundle, Support Remote Deployment and Automate Network Management (Per Device)

LIS-AMPCON-DC-FPSW-Foundation-5Y	AmpCon-DC Management Platform for PicOS® Data Center Switches with 5 Years Service Bundle, Support Remote Deployment and Automate Network Management (Per Device)

- Delaware, United States
- Address Delaware: 380 Centerpoint Blvd, New Castle, DE 19720, United States
- Email US@fs.com
- Tel +1 888-468-9910
- Germany
- Address Röntgenstraße 18, 85757 Karlsfeld, Germany
- Email DE@fs.com
- Tel +49 (0) 8131 377 3008
- Australia
- Address 57-59 Edison Rd, Dandenong South, VIC 3175, Australia
- Email AU@fs.com
- Tel +61 3 5909 9990
- Japan
- Address J S Progress Building 5F, 4-1-23, Heiwajima, Ota Ku, Tokyo, 143-0006, Japan
- Email JP@fs.com
- Tel +81-3-6897-9438
- California, United States
- Address California: 15241 Don Julian Rd, City of Industry, CA 91745, United States
- Email US@fs.com
- Tel +1 888-468-9910
- United Kingdom
- Address Unit 8, Urban Express Park, Union Way, Aston, Birmingham B6 7FH, United Kingdom Email UK@fs.com
- Tel +44 (0) 121 726 4775
- Singapore
- Address 7002 ANG MO KIO AVENUE 5 #05-02 Singapore 569914
- Email SG@fs.com

- Tel +65 31381992

FS has several offices around the world. Addresses, phone numbers are listed on the FS Website at https://www.fs.com/contact_us.html. FS and FS logo are trademarks or registered trademarks of FS in the U.S. and other countries.

Documents / Resources

	FS N5570-48S6C 48-Port Ethernet Data Center Switch [pdf] Instruction Manual N5570-48S6C 48-Port Ethernet Data Center Switch, N5570-48S6C, 48-Port Ethernet Data Center Switch, Ethernet Data Center Switch, Data Center Switch, Center Switch

References

- User Manual

FS

48-Port Ethernet Data Center Switch, Center Switch, Data Center Switch, Ethernet Data Center Switch, FS, N5570-48S6C, N5570-48S6C 48-Port Ethernet Data Center Switch

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