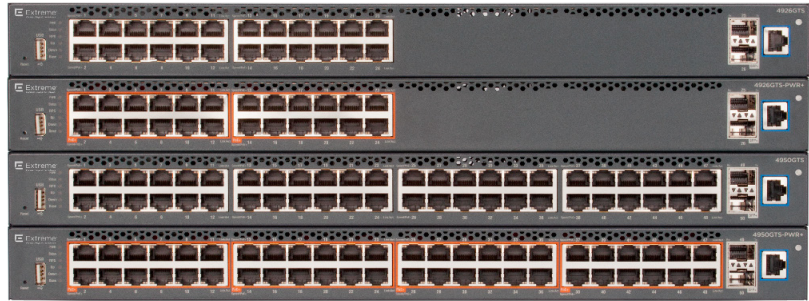**Extreme™**
Customer-Driven Networking

Highlights

- High-performance Wiring Closet Switches
- Delivers Enabled Edge
- Agile support for Extreme Fabric Connect
- Advanced IPv4 & IPv6 Routing
- Non-blocking, wire-speed switching performance
- High-capacity Stackable Chassis architecture
- 24 or 48 Ports of Gigabit Ethernet for Access connectivity
- 2 ports of 10 Gigabit Ethernet for Network Uplink connectivity
- Optional support for Full-Power PoE/PoE+
- Field-Replaceable AC Power with optional High-Availability

Benefits

- Convergence-ready Switches for the Wiring Closet and Network Edge
- Pay-as-you-grow Resilient Stacking
- Optimized for advanced communications
- Choice of PoE or PoE+ to Power Devices
- Simplified network operations
- Extend Fabric Services to the Network Edge
- Lifetime Warranty

Features and Capabilities

- Non-blocking, wire-speed
- Integrated design
- Feature-rich
- Extreme Stackable Chassis
- Extreme Fabric Connect
- Fabric Attach
- Advanced IPv4 and IPv6 Routing
- Field-replaceable Power

Ethernet Routing Switch 4900

Next-generation, high-performance, feature-rich Ethernet Switch platforms specifically optimized for the Wiring Closet demands of the mainstream Enterprise. Extreme Ethernet Routing Switch 4900 products deliver the agility to perform equally in conventional IP and Ethernet Fabric-based networking solutions.

The Ethernet Routing Switch 4900 products leverage the latest advances in network switching architecture design to maximize hardware performance and software capability. These products represent a clear evolutionary step for the Ethernet Routing Switch 4000 Series, particularly in terms of value and future-ready flexibility, and have been optimized for the Enabled Edge role.

The primary purpose of a network is to interconnect users with their applications, and the best networks do this reliably, efficiently, and with a high degree of agility. Extreme's Fabric-Based architecture empowers companies to extend the virtualized Ethernet Fabric beyond the Data Center, to the very edge of the network, delivering powerful integration of users, applications, and devices.

The new Ethernet Routing Switch 4900 (ERS 4900) products are an important part of this strategy, integrating Fabric Connect capabilities into a form-factor that is cost-effective, flexible, and reliable. The ERS 4900 products can be deployed standalone, or configured as a Stackable Chassis system of up to eight units/400 ports, supported by up to 416Gbps of virtual backplane bandwidth.
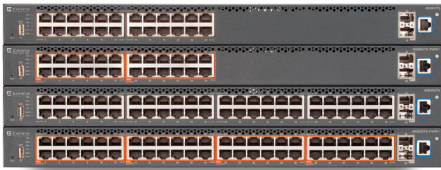
ERS 4900 Stackable Chassis

Rear View

ERS 4926 GTS

ERS 4926 GTS-PWR+

ERS 4950 GTS

ERS 4950 GTS-PWR+

Supporting modern Enterprise applications requires a flexible and highly reliable infrastructure, and the ERS 4900 products deliver against this challenge. These are highly strategic products, fit-for-purpose for conventional Routed IP connectivity requirements and future-ready for the evolving and emerging software-defined needs of tomorrow. Boasting equal competency for both IP- and Fabric-based networking give businesses the flexibility to satisfy all common deployment scenarios, with the added advantage of an easy transitioning between the two.

Extreme brings unique differentiation to the mainstream Wiring Closet role: with a flexible, non-blocking "Stackable Chassis" architecture. The proprietary Extreme "Flexible Advanced Stacking Technology" (FAST) protocol – implemented over dedicated Quality-of-Service aware interfaces – enables a resilient, high-performance solution that leverages a shortest path algorithm to minimizes transit hops in a multi-device configuration by providing active-active bi-directional traffic flows.

The Extreme Stackable Chassis technology can offer the same performance, resiliency, and ease of serviceability attributes of a traditional Chassis solution, but at a lower, pay-as-you-grow price point. Notable is the ability to swap-out an individual failed unit without the requirement to pre- or post-stage operating system software or configuration; providing equivalency to module replacement for a modular Chassis system.

The ERS 4900 products are purpose-built to support the demands of today's dynamic Wiring Closet with high-density, full-featured Gigabit Ethernet. It alleviates infrastructure complexity and reduces operational burden with a truly scalable and strategic architecture; it is designed to deliver a high-performance Enabled Edge solution that fully optimizes investments in next-generation application software.

Leveraging both next-generation hardware and software technology provides a solution that is ready to support both today's requirements and tomorrow's emerging needs. The ERS 4900 products enable business to future-proof with a highly software-definable network virtualization solution.

Product Overview

Broadly speaking, the Ethernet Routing Switch 4900 products provide a mix of Gigabit Ethernet ports for edge access and 10 Gigabit Ethernet ports for network uplinks. Model variants that support Power-over-Ethernet (PoE/PoE+) are also available, and all models support optional highly available AC power (up to 2 field-replaceable Power Supplies). Two different port configurations are available: 26-port and 50-port models, and each configuration is available in either a PoE or non-PoE format. The product range includes the following models:

- ERS 4926GTS – 24 x 10/100/1000 Mbps RJ45, plus 2 x 10 Gigabit SFP+
- ERS 4926GTS-PWR+ – 24 x 10/100/1000 Mbps RJ45 with PoE/PoE+, plus 2 x 10 Gigabit SFP+
- ERS 4950GTS – 48 x 10/100/1000 Mbps RJ45, plus 2 x 10 Gigabit SFP+
- ERS 4950GTS-PWR+ – 48 x 10/100/1000 Mbps RJ45 with PoE/PoE+, plus 2 x 10 Gigabit SFP+

The product's proven design leverages a sophisticated chipset from the Industry's leading supplier, featuring high-performance switching and frame forwarding. The switching core is designed to deliver wire-speed capabilities, with a fully integrated ASIC architecture that facilitates hardware-assisted feature execution.

The 26-port models – ERS 4926GTS and ERS 4926GTS-PWR+ – feature 24 1000BASE-T Gigabit Ethernet access ports with RJ45 interfaces; these ports also support 10/100Mbps connectivity. Two SFP+ interfaces provide for network uplink connectivity, and these ports support both Gigabit and 10 Gigabit pluggable transceivers.

The 50-port models – ERS 4950GTS and ERS 4950GTS-PWR+ – feature 48 1000BASE-T Gigabit Ethernet access ports with RJ45 interfaces; these ports also support 10/100Mbps connectivity. Two SFP+ interfaces provide for network uplink connectivity, and these ports support both Gigabit and 10 Gigabit pluggable transceivers.

Importantly, all ERS 4900 models feature two dedicated Stackable Chassis interfaces mounted on the rear; one a bi-directional uplink and the other a bi-directional downlink. These QoS-aware high-speed connections enable a resilient, high-performance hardware virtualization solution, leveraging a shortest path algorithm to minimizes transit hops in a multi-device configuration and supporting active-active bi-directional traffic flows.

The Power-over-Ethernet models – ERS 4926GTS-PWR+ and ERS 4950GTS-PWR+ – support full Standards-compliant IEEE 802.3af/802.3at PoE/PoE+ delivering up to 30W per port to power IP Phones, Wireless Access Points, networked IP CCTV Cameras, and other converged devices. Today, certain PoE devices require a surge of start-up power, over-and-above that defined by the IEEE Standards, and support for the High In-Rush mode enables these devices to function.

These PoE models require the 1,025W field-replaceable, hot-swappable power supply; the non-PoE models utilize the lower-rated 250W version. The PoE power budgets for the PWR+ models are as follows:

- ERS 4926GTS-PWR+ – up to 720W of PoE power with either 1 or 2 PSUs installed
- ERS 4950GTS-PWR+ – up to 1,440W of PoE power with 2 PSUs installed, and 750W with a single PSU

Benefits

The ERS 4900 products add significant flexibility to an Enterprise's networking capability. Deployed with other Extreme or third party Ethernet Switch devices, the ERS 4900 products provide high-capacity, high-performance connectivity solution for mainstream Wiring Closet applications.

The ERS 4900 products deliver key Enterprise-class benefits, including:

- **Always-On** – Stackable Chassis delivers a best-in-class high-availability solution, featuring hot-swappable unit replacement and integrated power redundancy.
- **Convergence-Ready** – Support for PoE/PoE+, optimized for high-definition video surveillance, true plug-and-play capabilities for communications, collaboration, and engagement deployments, and advanced QoS capabilities.
- **Powerfu**l – Wire-speed performance, truly scalable virtual backplane capabilities, delivering up to 412Gbps of throughput to support large-scale deployments.
- **Highly Secure** – Standards-based 802.1X Network Access Control can also be integrated with Extreme Management Center for centralized, policy-based authenticated network access.
- **Flexibility and Agility** – Best-in-class pay-as-you-grow scalability, versatile PoE/PoE+ support and 1/10 Gigabit network uplinks.
- **Fabric-Enabled** – Supporting Extreme's Fabric Connect technologies to empower a seamless transition to an agile, software-defined virtualized networking solution.
- **Energy Efficient** – Focusing on end-to-end energy efficiency, dynamic Energy Saver further reduces power consumption for both the Ethernet Switch (ranging 8-17%) and IP Phones without impacting service availability.

System Compatibility

From an operating system software perspective, the ERS 4900 products are being introduced via the 7.1 release; therefore, this will be the minimum level of system software required to operate the Switches. As of the 7.1 release, both the ERS 4900 and ERS 5900 Series products are supported by the same BOSS software image. This delivers harmonized feature availability – where applicable – across both the mainstream and premium product lines.

The recent BOSS 7.5 delivers the following enhancements:

- Integration into Extreme Management Center
- Adding Egress Filters for IPv4/IPv6, and Ingress Filters for IPv6
- Support for NTPv4

Features and Capabilities

Features and Capabilities

- Non-blocking, wire-speed switching architecture.

- Integrated design that is optimized for low latency and high Quality-of-Service (including QoS-aware Stackable Chassis interfaces).

- Feature-rich support for conventional VLAN, Private

- VLAN, Multi-Link Trunking, Spanning Tree technologies.

- Extreme Stackable Chassis technology supporting scalability up to 8 units/400 ports, and Auto-Unit Replacement for Software Image and Configuration.

- Extreme Fabric Connect technology supports L2 Virtual Service Networks (VSNs), IP Shortcut Routing, IP Multicast-over-Fabric Connect, ETREE, and Fabric Attach.

- IP Routing includes support for Static, RIP/RIPng, OSPF, ECMP, VRRP, Routing Polices and Source-based Routing, and PIM-SM/PIM-SSM.

High-Availability Power and Cooling

- Up to 2 field-replaceable, hot-swappable AC internal Power Supplies, available in 250W and 1,025W ratings for – respectively – non-PoE and PoE applications.

- Integrated internal Fans providing side-to-side airflow.

Warranty

- Lifetime Hardware Warranty, providing Next Business Day shipment of replacement hardware.

- Lifetime Software Warranty, providing access to Updates and Upgrades.

- Lifetime Basic Technical Support.

- 90-Day Post-Purchase Advanced Technical Support.

Software Licensing

- Base Software License, included with hardware purchase, enables most features with the exception of those specifically noted and enabled by the Advanced Software License.

- Advanced Software License, an optional accessory, enables the following features: OSPF, VRRP, ECMP, PIM-SM/PIM-SSM, IPv6 Routing (IP Static Routing, RIPng), and IP Shortcut Routing.

Country of Origin

- China (PRC)

Additional Information

For further information about Extreme Ethernet Switches, and the complete Extreme Networking portfolio, please visit www.extremenetworks.com

Specifications

General
- Physical Connectivity
  - 1000BASE-T Access Ports (supporting both Half- and Full-Duplex)
  - 10GBASE-SFP+ Network Uplink Ports
- Switching Fabric
  - 140Gbps (Full-Duplex) for 26-port models
  - 188Gbps (Full-Duplex) for 50-port models
- Frame Forwarding
  - 66Mpps for 26-port models
  - 102Mpps for 50-port models
- Nominal Latency: 3.5 microseconds for 64 Byte packets
- Nominal Jitter: 0.84 microseconds for 64 Byte packets
- Frame Length: 64 to 1518 Bytes (Untagged), 64 to 1522 Bytes (Tagged)
- Jumbo Frame: up to 9,216 Bytes (802.1Q Tagged)
- Stackable Chassis Throughput: 52Gbps
- (Full-Duplex) per Switch, up to 416Gbps

Layer 2
- MAC Address: up to 32,000
- Port-based VLANs: 1,024
- MSTP Instances: 8
- MLT/LACP Groups: 32
- Links per MLT/LACP Group: 8
- DHCP Snooping Entries: up to 1,024
- 802.1X Clients: up to 768
- LLDP Neighbors: up to 800
- Avaya SLPP Instances: 128

Layer 3 IPv4 Routing Services
- ARP Entries: 1,792
- Static ARP Entries: 256
- IP Interfaces: 256
- CLIP Interfaces: 16
- IP Routes: to up 2,000
- IP Static Routes: 512
- RIP Interfaces: up to 64
- RIP Routes: up to 2,000
- OSPF Interfaces: up to 64
- OSPF Routes: up to 2,000
- OSPF Areas: 4
- ECMP Groups: 128
- Paths per ECMP Group: 4
- VRRP Interfaces: 64
- IP Route Policies: 128

Layer 3 IPv6 Routing Services
- IPv6 Interfaces: 256
- IP Routes: up to 2,048
- IPv6 Static Neighbors: 256
- CLIP Interfaces: 16
- IPv6 Management Tunnels: 4
- IPv6 Data Tunnels: 8

Multicast
- IGMP Enabled VLANs: 256
- PIM Passive Interface: 28
- IP Multicast Groups: 512
- PIM Active Interfaces: 4
- PIM-SSM Static Channels: 512

Fabric Connect
- IEEE 802.1aq/RFC 6329 Shortest Path Bridging with custom extensions
- MAC Addresses: 32,000
- IS-IS Adjacencies: 4
- Fabric Attach modes: Server, Proxy, & Standalone Proxy
- BCB/BEB Nodes per Region: 750
- BEB Nodes per VSN: up to 750 (soft ceiling)
- L2 Virtual Service Networks: 500
- IP Shortcut Routes: 2,000

QoS and Filtering
- Priority Queues: 8
- Ingress and Egress ACLs: up to 256 per Precedence, up to 16 Precedence instances

Operations and Management
- Port- and VLAN-based Mirroring
- IPFIX Sampled Flows: up to 100,000
- Enterprise Device Manager GUI, on-box &
- Mirroring Instances: 4
- sFlow Flow Sampling off-box
- Time-Domain Reflectometry
- SSHv2 with AES128

Support Transceivers

- 10GBASE-LRM SFP+ (AA1403017-E6), up to 220m over FDDI-grade MMF
- 10GBASE-SR/SW SFP+ (AA1403015-E6), up to 300m over MMF
- 10GBASE-LR/LW SFP+ (AA1403011-E6), up to 10km over SMF
- 10GBASE-ER/EW SFP+ (AA1403013-E6), up to 40km over SMF
- 10GBASE-ZR/ZW SFP+ (AA1403016-E6), up to 80km over SMF
- 10GBASE-CX (AA1403019-E6) Dual-Attach Cable, up to 3m over Twinax
- 10GBASE-CX (AA1403020-E6) Dual-Attach Cable, up to 5m over Twinax
- 10GBASE-CX (AA1403021-E6) Dual-Attach Cable, up to 10m over Twinax

Physical Specifications

- Height: 44mm
- Width: 440mm
- Depth: 480mm
- Weight: 7.0-10.0kg

Power Specifications

- ERS 4926GTS

  - Up to 46.23W, up to 0.40A, and up to 157.73BTU/hr @ 200-240VAC
  - Up to 44.35W, up to 0.46A, and up to 151.32BTU/hr @ 100-110VAC
  - 34.9W power consumption at idle, and 40.0W under typical traffic load

- ERS 4926GTS-PWR+

  - Up to 816.03W, up to 3.78A, and up to 342.32BTU/hr @ 200-240VAC
  - Up to 839.64W, up to 7.73A, and up to 424.24BTU/hr @ 100-110VAC
  - 51.4W power consumption at idle, and 55.8W under typical traffic load (excluding PoE draw)

- ERS 4950GTS

  - Up to 58.88W, up to 0.44A, and up to 200.89BTU/hr @ 200-240VAC
  - Up to 59.53W, up to 0.58A, and up to 203.11BTU/hr @ 100-110VAC
  - 43.9W power consumption at idle, and 53.0W under typical traffic load

- ERS 4950GTS-PWR+

  - Up to 1,586.25W, up to 7.15A, and up to 584.30BTU/hr @ 200-240VAC
  - Up to 1,660.07W, up to 15.15A, and up to 837.88BTU/hr @ 100-110VAC
  - 65.9W power consumption at idle, and 73.4W under typical traffic load (excluding PoE draw)

Environmental Specifications

- Operating Temperature

  - 0°C to 50°C (32°F to 122°F)

- Storage Temperature

  - -40°C to 85°C (-40°F to 185°F)

- Operating Humidity

  - 0 to 95% maximum relative humidity, non-condensing

- Storage Humidity

  - 10 to 90% maximum relative humidity, non-condensing

- Operating Altitude

  - 0 to 3,048m (0 to 10,000ft) maximum Storage altitude: 0 to 12,192m (0 to 40,000ft) maximum

- Acoustic Noise

  - Less than 48dbA at 25°C
  - Less than 61dbA at 50°C

Note: SFP+ sockets are also capable of supporting a wide range of 1 Gigabit Ethernet Transceivers; please refer to the product documentation for complete details.

Safety Agency Approvals

- IEC 60950 International CB Certification
- EN 60950-1 Europe Safety (CE): CB Scheme Certification with Member Deviations
- UL 60950-1 USA Safety
- CSA-C22.2, #60950-1 Canada Safety
- NOM Mexico Safety
- EN 60950-1 Japan Safety
- Anatel Brazilian Safety
- ACMA-RCM Australia Safety
- Customs Union/EAC Safety of Low-Voltage Equipment Certification
- CCC & MIIT China Safety
- CNS 14336-1 Taiwan BSMI Safety
- UL 1069 Hospital Signaling and Nurse Call Equipment (relevant to PWR units only)

Electromagnetic Emissions and Immunity

- CISPR 22 International EMC Emissions
- CIRPR 24 International EMC Immunity
- FCC part 15B, Class A USA EMC Emissions
- ICES-003 Class A Canadian EMC Emissions
- VCCI Japan EMC Emissions
- EN 55022 Class A, CISPR 22 European EMC Emissions (CE)
- EN 55024, CISPR 24 including EN 61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8 & 4-11 European EMC Immunity (CE)
- ACMA-RCM Mark
- Australia EMC Emissions

- Anatel Brazilian EMC Certification
- Customs Union/EAC EMC Certification
- CCC & MIIT China EMC Certification
- KC mark: EMI & EMS Korean EMC Certification
- CNS 13438 Taiwan BSMI EMC

MTBF Values

(Base Unit with Single Power Supply)
- ERS 4926GTS – 212,509 hours (24.14 years)
- ERS 4926GTS-PWR+ – 211,044 hours (24.09 years)
- ERS 4950GTS – 199,834 hours (22.81 years)
- ERS 4950GTS-PWR+ – 195,578 hours (22.32 years)

Ordering Information

Part Code	Description
AL4900A01-E6	ERS 4926GTS 26-port Ethernet Switch, supporting 24 x 1000BASE-T & 2 x 10GBASE-SFP+ ports. Includes single 250W AC Power Supply, Base Software License, and 0.5m, Stacking Cable.
AL4900A02-E6	ERS 4926GTS-PWR+ 26-port Ethernet Switch, supporting 24 x 1000BASE-T PoE/PoE+ & 2 x 10GBASE-SFP+ ports. Includes single 1,025W AC Power Supply, Base Software License, and 0.5m Stacking Cable.
AL4900A03-E6	ERS 4950GTS 50-port Ethernet Switch, supporting 48 x 1000BASE-T & 2 x 10GBASE-SFP+ ports. Includes single 250W AC Power Supply, Base Software License, and 0.5m, Stacking Cable.
AL4900A04-E6	ERS 4950GTS-PWR+ 50-port Ethernet Switch, supporting 48 x 1000BASE-T PoE/PoE+ & 2 x 10GBASE-SFP+ ports. Includes single 1,025W AC Power Supply, Base Software License, and 0.5m Stacking Cable.
700511668	ERS 4900 Series Stacking Cable, 0.5 metre.
700511669	ERS 4900 Series Stacking Cable, 1.5 metre.
700511670	ERS 4900 Series Stacking Cable, 3.0 metre.
700511671	ERS 4900 Series Stacking Cable, 5.0 metre.
383772	ERS 4900 Advanced Software License. Enables additional functionality including: OSPF, VRRP, ECMP, PIM-SM, PIM-SSM/PIM-SSM, IPv6 Routing, and IP Shortcut Routing.

Note: Power cord is not included and must be ordered separately. For a list of available power cords, please refer to "Lifecycle Notification on ERS Power Cord Models" at: http://bit.ly/2Gz2csk

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