

# Ethernet Routing Switch 3600



## Highlights

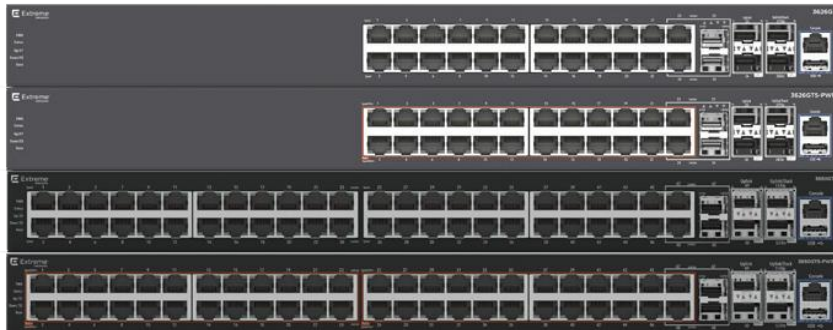
- High-performance Wiring Closet Switches
- Delivers Enabled Edge
- Static and Dynamic IP Routing
- Non-blocking, wire-speed switching performance
- High-capacity Stackable Chassis architecture
- 24 or 48 ports of Gigabit Ethernet for Access connectivity
- 2 ports of 10 Gigabit Ethernet for Network Uplink connectivity
- 2 dual-use ports of 10 Gigabit for Stackable Chassis or Network Uplink connectivity
- Optional support for full-power PoE/PoE+

## Benefits

- Ethernet Switches that are simple to operate
- Certified 1-Minute plug-and-play for IP Phones
- Auto Set-Up for Unified Communications
- Intelligent Stacking delivers Enterprise-class scalability
- Lifetime Warranty

## Features and Capabilities

- Non-blocking, wire-speed
- Integrated design
- Feature-rich
- Extreme Stackable Chassis
- Extreme Fabric Attach
- Static and Dynamic IP Routing

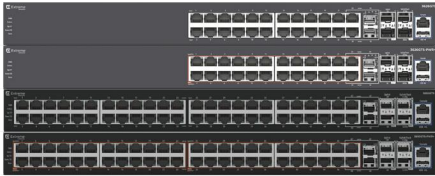


## Feature-Rich Ethernet Switch Platforms Optimized for the Branch Office and Smaller Wiring Closets

The Ethernet Routing Switch 3600 products leverage the latest advances in network switching architecture design to maximize hardware performance and software capability. These products offer a significant evolutionary step for the entry-level Ethernet Routing Switch 3000 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 Networks' 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 Ethernet Routing Switch 3600 (ERS 3600) products are an important part of this strategy, delivering Fabric Attach capabilities in a cost-effective form-factor. The ERS 3600 products can be deployed standalone or configured as a Stackable Chassis system of up to eight units/400 ports, supported by up to 192 Gbps of virtual backplane bandwidth.



ERS 3600 Stackable Chassis



ERS 3626GTS



ERS 3626GTS-PWR+



ERS 3650GTS



ERS 3650GTS-PWR+

Supporting modern Enterprise applications requires a flexible and highly reliable infrastructure, and the ERS 3600 products help deliver against this challenge. These are highly effective products, fit-for-purpose for conventional Routed IP connectivity requirements and future-ready for the evolving and emerging software-defined needs of tomorrow. Offering feature-rich support for both IP- and Fabric-based Edge networking gives businesses the flexibility to satisfy all common deployment scenarios, with the added advantage of an easy transitioning between the two.

Extreme Networks brings unique differentiation to the Branch Office and small-to-medium Wiring Closet role: with a flexible, non-blocking “Stackable Chassis” architecture. The proprietary Extreme Networks “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 minimize transit hops in a multi-device configuration by providing active-active bi-directional traffic flows. The Extreme Networks 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 3600 products are purpose-built to support the demands of today’s entry-level 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 3600 products enable businesses to future-proof with a highly software-definable network virtualization solution.

## Product Overview

Broadly speaking, the Ethernet Routing Switch 3600 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 feature a fixed, high-efficiency AC power supply. Two different port configurations are available: 26-port and 50-port models, each available in either a PoE or non-PoE format. The product range includes the following models:

- **ERS 3626GTS** – 24 x Gigabit RJ45 Access ports, including 2 x Combo Gigabit ports, plus 2 x 10 Gigabit SFP+ Uplink ports, and 2 x 10 Gigabit SFP+ dual-use Stack/Uplink ports
- **ERS 3626GTS-PWR+** – 24 x Gigabit RJ45 Access ports with PoE+, including 2 x Combo Gigabit ports, plus 2 x 10 Gigabit SFP+ Uplink ports, and 2 x 10 Gigabit SFP+ dual-use Stack/Uplink ports
- **ERS 3650GTS** – 48 x Gigabit RJ45 Access ports, including 2 x Combo Gigabit ports, plus 2 x 10 Gigabit SFP+ Uplink ports, and 2 x 10 Gigabit SFP+ dual-use Stack/Uplink ports
- **ERS 3650GTS-PWR+** – 48 x Gigabit RJ45 Access ports with PoE+, including 2 x Combo Gigabit ports, plus 2 x 10 Gigabit SFP+ Uplink ports, and 2 x 10 Gigabit SFP+ dual-use Stack/Uplink ports

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.

## 26-port Models

ERS 3626GTS and ERS 3626GTS-PWR+ feature 24 access ports of 1000BASE-T Gigabit Ethernet with RJ45 interfaces; these ports also support 10/100 Mbps connectivity. Two of these ports are configured in combination with SFP sockets for flexible use as Gigabit uplinks. Two SFP+ interfaces provide 10 Gigabit network uplink connectivity. There are also two additional interfaces that can be used for either Stackable Chassis virtual backplane links or additional network uplinks.

## 50-port Models

ERS 3650GTS and ERS 3650GTS-PWR+ feature 48 access ports of 1000BASE-T Gigabit Ethernet with RJ45 interfaces; these ports also support 10/100 Mbps connectivity. Again, two SFP+ interfaces provide 10 Gigabit network uplink connectivity. There are also two additional interfaces that can be used for either Stackable Chassis virtual backplane links or additional network uplinks.

The ERS 3600 models use of 10 Gigabit ports for Stackable Chassis connectivity delivers QoS-aware, high-speed connections that enable a resilient, high-performance hardware virtualization solution. This leverages a shortest path algorithm to minimize transit hops in a multi-device configuration and support active-active bi-directional traffic flows.

## Power-over-Ethernet Models

ERS 3626GTS-PWR+ and ERS 3650GTS-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. A PoE power budget of 720W is available for the PWR+ models, delivering the following:

**ERS 3626GTS-PWR+** – supporting all 24 access ports at up to 30W

**ERS 3650GTS-PWR+** – supporting 24 access ports at up to 30W, or 48 ports at up to 15W, or a variable mix of the two

## Benefits

The ERS 3600 products add significant flexibility to an enterprise's networking capability. Deployed with other Extreme Networks or third-party ethernet switch devices, the ERS 3600 products provide high-capacity, high-performance connectivity solution for Branch Office and small-to-medium Wiring Closet applications.

The ERS 3600 products deliver key enterprise-class benefits, including:

**Always-On** – Stackable Chassis delivers a best-in-class high-availability solution, featuring hot-swappable unit replacement.

**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.

**Powerful** – wire-speed performance, truly scalable virtual backplane capabilities, delivering up to 192 Gbps of throughput to support large-scale deployments.

**Highly Secure** – Standards-based 802.1X Network Access Control can also be integrated with Extreme Networks' award-winning Identity Engines technology 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 Networks' Fabric Attach technology 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.

## 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, Multi-Link Trunking, Spanning Tree technologies.
- Extreme Networks Stackable Chassis technology supporting scalability up to 8 units/400 ports, and Auto-Unit Replacement for Software Image and Configuration.
- Extreme Networks Fabric Connect technology support for Fabric Attach.
- Static, Non-Local IP Routing, and RIP Dynamic IP Routing.

### 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 all software features.

## System Compatibility

From an operating system software perspective, the ERS 3600 products are being introduced via the BOSS 6.0 release; therefore, this will be the minimum level of system software required to operate the Switches.

This release also delivers a number of major software enhancements:

- Extreme Networks Fabric Attach – delivering zero-touch Edge provisioning for unattended and IoT devices
- RIP v1/v2 Dynamic IP Routing
- DHCPv6 Guard
- Multicast Listener Discovery v1/v2 Snooping & Proxy
- IPv6 features, including First-Hop Security, Neighbor Discovery Inspection, Source Guard, and Router Advertisement Guard

# Specifications

## General

- Physical Connectivity:
  - 1000BASE-T Access Ports (supporting both Half- and Full-Duplex)
  - 1000BASE-SFP Combo Network Uplink Ports
  - 10GBASE-SFP+ Network Uplink Ports
- Switching Fabric:
  - 128 Gbps (Full-Duplex) for 26-port models
  - 188 Gbps (Full-Duplex) for 50-port models
- Frame Forwarding:
  - 95 Mpps for 26-port models
  - 130 Mpps 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: 24 Gbps (Full-Duplex) per Switch, up to 192 Gbps

## Layer 2

- MAC Address: up to 16,384\*
- Port-based VLANs: 256
- MSTP Instances: 8
- MLT/LACP Groups: 6
- Links per MLT/LACP Group: 4
- DHCP Snooping Entries: up to 512
- 802.1X Clients: 32 per Port
- LLDP Neighbors: up to 816

## Layer 3 IPv4 Routing Services

- ARP Entries: up to 512
- Static ARP Entries: up to 256
- IP Interfaces: up to 32
- IP Routes: up to 256
- IP Static Routes: up to 32
- IP Route Policies: up to 64
- RIP Interfaces: up to 16
- RIP Routes: up to 256

\* Based on unique MAC/VLAN hashes

## Multicast

- IGMP Enabled VLANs: 256
- IP Multicast Groups: up to 248

## QoS & Filtering

- QoS Precedences: 8
- QoS Filters per Switch: 256 per Precedence

## Operations & Management

- Port Mirroring Instances: 1, Many-to-One supported
- RMON Entries per Port: 4 Groups
- Auto-MDIX Detection
- Enterprise Device Manager GUI, on-box & off-box

## Supported Transceivers

- 10GBASE-LRM SFP+ (AA1403017-E6), up to 220 m over FDDI-grade MMF
- 10GBASE-SR/SW SFP+ (AA1403015-E6), up to 300 m over MMF
- 10GBASE-LR/LW SFP+ (AA1403011-E6), up to 10 km over SMF
- 10GBASE-ER/EW SFP+ (AA1403013-E6), up to 40 km over SMF
- 10GBASE-ZR/ZW SFP+ (AA1403016-E6), up to 80 km over SMF
- 10GBASE-CX (AA1403019-E6)\* Dual-Attach Cable, up to 3 m over Twinax
- 10GBASE-CX (AA1403020-E6)\* Dual-Attach Cable, up to 5 m over Twinax
- 10GBASE-CX (AA1403018-E6)\* Dual-Attach Cable, up to 10 m over Twinax

Note:

\*3M, 5M and 10M 10GBASE-CX DACs are also supported as stacking cables on ERS 3600.

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

For a complete listing of all specifications and compliance please refer to the product documentation.

## Physical Specifications

Item	Measurement
Height	44 mm
Width	440 mm
Depth	280 mm, except 380mm for 3650GTS-PWR+
Weight	3.5–6.3 kg

## Power Specifications

Item	Description
ERS 3626GTS	<ul style="list-style-type: none"> <li>Up to 24.78W, up to 0.24A, and up to 84.55 BTU/hr @ 200–240VAC</li> <li>Up to 24.60W, up to 0.42A, and up to 83.94 BTU/hr @ 100–110VAC</li> <li>14.82W power consumption at idle, and 18.28W under typical traffic load</li> </ul>
ERS 3626GTS-PWR+	<ul style="list-style-type: none"> <li>Up to 828.69W, up to 3.66A, and up to 360.61 BTU/hr @ 200–240VAC</li> <li>Up to 874.92W, up to 7.05A, and up to 518.35 BTU/hr @ 100–110VAC</li> <li>26.66W power consumption at idle, and 30.17W under typical traffic load (excluding PoE draw)</li> </ul>
ERS 3650GTS	<ul style="list-style-type: none"> <li>Up to 41.54W, up to 0.41A, and up to 141.73 BTU/hr @ 200–240VAC</li> <li>Up to 41.77W, up to 0.69A, and up to 142.52 BTU/hr @ 100–110VAC</li> <li>27.89W power consumption at idle, and 35.50W under typical traffic load</li> </ul>
ERS 3650GTS-PWR+	<ul style="list-style-type: none"> <li>Up to 858.16W, up to 3.79A, and up to 409.64 BTU/hr @ 200–240VAC</li> <li>Up to 903.51W, up to 8.21A, and up to 559.26 BTU/hr @ 100–110VAC</li> <li>39.84W power consumption at idle, and 46.11W under typical traffic load (excluding PoE draw)</li> </ul>

## Environmental Specifications

Item	Measurement
Operating Temperature:	0°C to 50°C (32°F to 122°F)
Storage Temperature:	–40°C to 70°C (–40°F to 158°F)
Operating Humidity:	0 to 95% maximum relative humidity, non-condensing
Storage Humidity:	10 to 95% maximum relative humidity, non-condensing
Operating Altitude:	0 to 3,048 m (0 to 10,000 ft) maximum Storage altitude: 0 to 12,192 m (0 to 40,000 ft) maximum
Acoustic Noise:	Less than 47 dbA at 25°C Less than 55 dbA at 50°C

## 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
- CES-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

- ERS 3626GTS – 336,851 hours (38.45 years)
- ERS 3626GTS-PWR+ – 136,469 hours (15.57 years)
- ERS 3650GTS – 346,169 hours (39.51 years)
- ERS 3650GTS-PWR+ – 140,827 hours (16.07 years)

## Ordering Information

Part Number	Description
AL3600A05-E6	ERS 3626GTS 26-port Ethernet Switch, supporting 24 x 1000BASE-T, including 2 x 1000BASE-SFP Combo, 2 x 10GBASE-SFP+ Uplink ports, 2 x 10GBASE-SFP+ dual-use Stack/Uplink ports, and a Base Software License
AL3600A15-E6	ERS 3626GTS-PWR+ 26-port Ethernet Switch, supporting 24 x 1000BASE-T PoE/PoE+, including 2 x 1000BASE-SFP Combo, 2 x 10GBASE-SFP+ Uplink ports, 2 x 10GBASE-SFP+ dual-use Stack/Uplink ports, and a Base Software License
AL3600A06-E6	ERS 3650GTS 50-port Ethernet Switch, supporting 48 x 1000BASE-T, including 2 x 1000BASE-SFP Combo, 2 x 10GBASE-SFP+ Uplink ports, 2 x 10GBASE-SFP+ dual-use Stack/Uplink ports, and a Base Software License
AL3600A16-E6	ERS 3650GTS-PWR+ 50-port Ethernet Switch, supporting 48 x 1000BASE-T PoE/POE+, including 2 x 1000BASE-SFP Combo, 2 x 10GBASE-SFP+ Uplink ports, 2 x 10GBASE-SFP+ dual-use Stack/Uplink ports, and a Base Software License
700512588	ERS 3600 Passive Stacking Cable 0.5 m
700512589	ERS 3600 Passive Stacking Cable 1.0 m

Note: A power cord is not included and must be ordered separately.

## Additional Information

For further information about Extreme Networks Ethernet Switches, and the complete Extreme Networks Networking portfolio, please visit [www.extremenetworks.com](http://www.extremenetworks.com).

