RESILIENT, AVAILABLE AND AFFORDABLE DESKTOP SWITCHING

NORTEL

Product Brief
Nortel Ethernet Routing Switch 4500 Series

The Nortel Ethernet Routing Switch 4500 product family is a stackable system that provides the high-performance, convergence-ready, secure and resilient Ethernet switching connectivity required by today's application- and competition-driven enterprise networks. The Ethernet Routing Switch (ERS) 4500 delivers 10/100 and 10/100/1000 switching with Power over Ethernet and 10 Gigabit uplink models for simplified and flexible network deployments, driving lower Total Cost of Ownership.

Convergence-ready

For businesses looking to bring together their major forms of communication — voice, video and data — onto a single infrastructure, the Ethernet Routing Switch 4500 Series delivers the functionality that makes converging these technologies simple.

Ethernet Routing Switch 4500 Series

Nortel Ethernet Routing Switch 4500 Series

Model	Port configurations
ERS 4526FX	24 100BaseFX ports plus 2 combo 10/100/1000/SFP ports
ERS 4526T	24 10/100BaseTX ports plus 2 combo 10/100/1000/SFP ports
ERS 4526T-PWR	24 10/100 802.3af PoE ports plus 2 combo 10/100/1000/SFP ports
ERS 4550T	48 10/100BaseTX ports plus 2 combo 10/100/1000/SFP ports
ERS 4550T-PWR	48 10/100 802.3af PoE ports plus 2 combo 10/100/1000/SFP ports
ERS 4524GT	24 10/100/1000BaseTX ports and 4 shared SFP ports
ERS 4526GTX	24 10/100/1000BaseTX ports and 4 shared SFP ports, plus 2 10GE XFP slots
ERS 4526GTX-PWR	24 10/100/1000 802.3af PoE ports and 4 shared SFP ports, plus 2 10GE XFP slots
ERS 4548GT	48 10/100/1000BaseTX ports and 4 shared SFP ports
ERS 4548GT-PWR	48 10/100/1000 802.3af PoE ports and 4 shared SFP

All switches include built-in Hi-Stack stacking ports that can deliver up to 320 Gbps performance, plus redundant power support. Additionally, each model can be stacked in any combination with other Ethernet Routing Switch 4500 models to form a stack up to eight units high — enabling you to choose port configurations based on your unique requirements.

Nortel Ethernet Routing Switch 4500 highlights

- Simplified converged deployments through PoE, Advanced QoS and IP Handset port auto-configuration

- High-density desktop connectivity supporting up to 400 user ports

- Resilience through fail-safe stacking, distributed trunking and power redundancy

- Flexible mix-and-match stacking capabilities to best meet customers requirements

Through support for standards-based Power over Ethernet (IEEE 802.3af PoE), power can be delivered to IP-based phones, which eliminates the need to have a separate power supply for each phone, thus reducing cabling and management costs when there are adds, moves or changes. Additionally, through the ability to auto-discover Nortel IP handsets, the Ethernet Routing Switch 4500 can automatically configure the switch port to which the phone is connected. This ensures that the right quality of service (QoS) and VLAN settings are applied, making mass phone deployments quick and easy.

Intelligent stacking solution delivering scalability, flexibility, resilience and performance

The creation of a stack through Nortel's intelligent stacking architecture is made flexible by being able to stack up to eight models within the Ethernet Routing Switch 4500 family together. This is an ideal solution for enterprises with Fast Ethernet, Gigabit users or a combination of both. As a single stacked entity, all switches are managed via a single IP address and offer the same high resiliency and common feature set, simplifying management and deployment across the network.

Nortel's Ethernet Routing Switch 4500 Series combines high resiliency with high-performance stacking, delivering up to 320-Gbps throughput. Intelligent bi-directional traffic flows between switches ensure that the highest performance and most efficient paths are used for traffic flows. Added to this, the ability to distribute trunks or aggregations across different units in the stack ensures that even in the unlikely event of a switch or link failure, traffic continues to flow virtually uninterrupted for the remaining units in the stack.

For seamless scalability, the Ethernet Routing Switch 4500 Series can deliver up to 400 ports, meeting almost any customer's requirements of scalability and port speed flexibility, allowing the network infrastructure to grow as the business requirements change.

Securing access at the edge

The Ethernet Routing Switch 4500 offers high levels of flexible security options, ensuring that only authorized personnel gain access to a company's LAN. Whether it is through use of an IEEE 802.1X-based EAP client or through a device's MAC address, network managers can ensure that only those who have successfully been authenticated have access to their specified resources. Through the use of Nortel's Secure Network Access solution, the Ethernet Routing Switch 4500 can not only provide user/device authentication, but can enforce endpoint security via advanced posture assessment capabilities.

For further flexibility, the Ethernet Routing Switch 4500 can support the authentication of multiple devices/users on a single port. For example, if a user's PC connects into the network via an IP handset (Figure 1), the PC and the IP Phone can be authenticated for authorized use to that port. Additionally, if your company frequently has visitors, support for a Guest VLAN allows non-authenticated users to still use the network but to only have access to those resources that have been pre-specified for the Guest VLAN, such as Internet access.

The Ethernet Routing Switch 4500's advanced capabilities enable the switches

to actively protect the network against malicious network attacks by protecting DHCP services, verifying and filtering ARP traffic via in hardware processing as well as controlling the flow of spanning tree BPDUs within the network.

The powerful filtering capabilities of the Ethernet Routing Switch 4500 that are often used for Quality of Service to ensure mission-critical traffic is prioritized can also be used to block certain types of network traffic with support for advanced packet classification and deep packet filtering up to 128 bytes into a packet.

Secure and simplified network management

Nortel's Ethernet Switch Software is supported on all Ethernet Routing Switch 4500 models delivering simplified network operations and management by having a single image operate on any mixture of models in a stack. This eliminates the need to worry about different software versions and capabilities on different products. The software image needs only to be loaded to the base unit of the stack, which automatically loads it to other switches. Even as switches are added to an existing stack, the Ethernet Routing Switch 4500 Series will ensure that the new switch software is appropriately upgraded to the software running on the stack.

The on-board USB port enables network administrators to quickly and easily upload or download a configuration file onto a USB stick, thus allowing the same configuration to either be deployed across several switches, making configuration of new switches seamless or serving as a backup in case a switch

Figure 1. Converged connectivity
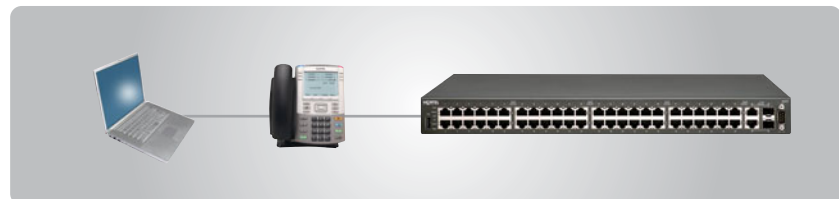
were to fail. The USB port also allows for quick upload of new software images or quick staging of new units through a simplified configuration capability.

Nortel's Ethernet Routing Switch 4500 supports robust switch management security with the support of management access control lists, Simple Network Management Protocol (SNMPv3), Secure Shell (SSHv2) and RADIUS authentication for management connection to the switch or stack.

The Ethernet Routing Switch 4500 Series is managed through Nortel's enterprise-class Command Line Interface (NNCLI). The NNCLI provides a common industry look and feel to CLI commands, helping to reduce training and operational costs. Additionally, use of either the Java Device Manager tool or the web-based user interface makes managing the Ethernet Routing Switch 4500 simple through a graphical management interface.

Redundant power support

With connectivity to Nortel's Redundant Power Supply (RPS15), the Ethernet Routing Switch 4500 delivers the redundant power support that is crucial in today's mission-critical environments. The RPS15 chassis can support up to three 600-watt power supply modules. Each power module can provide redundant power support to one Ethernet Routing Switch 4500 PWR model or up to four Ethernet Routing Switch 4500 non-PWR switches.*

Deployments in converged networks are greatly simplified through dynamic power management of the PoE ports, with the load sharing and redundant power offered by Nortel's RPS15. Combined, these features are designed to ensure that devices requiring PoE can be added to the network without power ever becoming an issue.

Lifetime warranty

All 4500 switches offer a lifetime warranty. A Nortel product hardware warranty is supported for as long as the original end user continues to own or use the product, including fan and power supply. In the event of a discontinuance of product manufacture, the Nortel warranty support is limited to five (5) years from the announcement of discontinuance.

Summary

With more than 100 years in telecommunications, Nortel is uniquely positioned to provide an end-to-end solution for your converged network. Let us show you how the Ethernet Routing Switch 4500 family, along with other Nortel products, can increase your profitability, streamline your business operations, increase productivity and help you gain a competitive edge.

* A DC cable connector cable is required to connect from an Ethernet Routing Switch 4500 to an RPS15 power supply; for non-PoE models, a DC-DC converter is also required.

Ordering information

Switch versions

Order code	Description
AL4500*01-E6	Ethernet Routing Switch 4526FX with 24 100BaseFX ports plus 2 combo 10/100/1000/SFP ports, Hi-Stack ports and RPS slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*02-E6	Ethernet Routing Switch 4550T with 48 10/100 BaseTX ports plus 2 combo 10/100/1000/SFP ports, Hi-Stack ports and RPS slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*03-E6	Ethernet Routing Switch 4526T with 24 10/100 BaseTX ports plus 2 combo 10/100/1000/SFP ports, Hi-Stack ports and RPS Slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*04-E6	Ethernet Routing Switch 4548GT with 48 10/100/1000 BaseTX ports and 4 shared SFP ports, plus Hi-Stack ports and RPS slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*05-E6	Ethernet Routing Switch 4524T with 24 10/100/1000 BaseTX ports and 4 shared SFP ports (including 100FX SFP support), Hi-Stack ports and RPS Slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*06-E6	Ethernet Routing Switch 4526GTX with 24 10/100/1000 BaseTX ports and 4 shared SFP ports, plus 2 10GE XFP slots, Hi-Stack ports and RPS Slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*12-E6	Ethernet Routing Switch 4550T PWR with 48 10/100 802.3af PoE ports plus 2 combo 10/100/1000/SFP ports, Hi-Stack ports and RPS connector. Includes Base Software License Kit and 46cm stack cable.
AL4500*13-E6	Ethernet Routing Switch 4526T-PWR with 24 10/100 802.3af PoE ports plus 2 combo 10/100/1000/SFP ports, Hi-Stack ports and RPS Slot. Includes Base Software License Kit and 46cm stack cable.
AL4500*14-E6	Ethernet Routing Switch 4548GT PWR with 48 10/100/1000 802.3af PoE ports and 4 shared SFP ports, plus Hi-Stack ports and RPS connector. Includes Base Software License Kit and 46cm stack cable.
AL4500*16-E6	Ethernet Routing Switch 4526GTX-PWR with 24 10/100/1000 802.3af PoE ports and 4 shared SFP ports, plus 2 10GE XFP slots, Hi-Stack ports and RPS Slot. Includes Base Software License Kit and 46cm stack cable.

* The seventh character (*) of the switch order number must be replaced with the proper code to indicate desired product nationalization:

"A" – No power cord included

"B" – Includes European "Schuko" power cord common in Austria, Belgium, Finland, France, Germany, The Netherlands, Norway, and Sweden

"C" – Includes power cord commonly used in the United Kingdom and Ireland

"D" – Includes power cord commonly used in Japan

"E" – Includes North American power cord

"F" – Includes Australian power cord, also commonly used in New Zealand and the People's Republic of China

Cables and SFPs

Order code	Description
AA1419014-E5	1-port 1000Base-SX SFP (connector: MT-RJ).
AA1419015-E5	1-port 1000Base-LX SFP (connector: LC).
AA1419025-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1470nm Wavelength, 40km.
AA1419026-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1490nm Wavelength, 40km.
AA1419027-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1510nm Wavelength, 40km.
AA1419028-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1530nm Wavelength, 40km.
AA1419029-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1550nm Wavelength, 40km.
AA1419030-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1570nm Wavelength, 40km.
AA1419031-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1590nm Wavelength, 40km.
AA1419032-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1610nm Wavelength, 40km.
AA1419033-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1470nm Wavelength, 70km.
AA1419034-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1490nm Wavelength, 70km.
AA1419035-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1510nm Wavelength, 70km.
AA1419036-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1530nm Wavelength, 70km.
AA1419037-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1550nm Wavelength, 70km.
AA1419038-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1570nm Wavelength, 70km.
AA1419039-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1590nm Wavelength, 70km.
AA1419040-E5	1-port 1000BaseCWDM SFP (connector: LC) – 1610nm Wavelength, 70km.
AA1419074-E6	1-port 100 Base-FX SFP (connector: LC). For use only in the ERS 4526FX, 4526T, 4526T-PWR, 4550T, 4550T-PWR and 4524GT.
AA1419075-E6	1-port T1 SFP. For use only in the ERS 4526FX, 4526T, 4526T-PWR, 4550T, 4550T-PWR and 4524GT.
AA1403001-E5	1-port 10GBase-LR/LW XFP. Supports single-mode fiber for interconnects up to 10km.
AA1403005-E5	1-port 10GBase-SR XFP Supports high modal bandwidth MMF for interconnects up to 300m. Please refer to documentation for fiber loss budgets.
AL4511001-E6	Ethernet Routing Switch 4500 Rack Mount Kit (Spare).
AL4518001-E6	4500-SSC Hi-Stack Stacking Cable 46cmm (1.5ft) for Ethernet Routing Switch 4500 series (for use as spare).
AL4518002-E6	4500-SSC Hi-Stack Stacking Cable 1.5m (5ft) for Ethernet Routing Switch 4500 series (spare or for use as return cable for resiliency).
AL4518003-E6	4500-SSC Hi-Stack Stacking Cable 3m (10ft) for Ethernet Routing Switch 4500 series (spare or for use as return cable for resiliency).
AL4518004-E6	4500-SSC Hi-Stack Stacking Cable 5m (16.4ft) for Ethernet Routing Switch 4500 series (spare or for use as return cable for resiliency).

Redundant Power Supply

Order number	Description
AA0005017-E5	Redundant Power Supply 15 Chassis (up to three RPS 15 power supplies can be installed in the chassis).
AA0005*19-E5	Redundant Power Supply 15 600-watt RPS power supply (1 DC cable per RPS module required).
AA0005018-E6	Redundant Power Supply 15 - Connecting Cable (6ft / 1.8m) for a single ERS 4526T-PWR, 4550T-PWR, 4526GTX-PWR or 4548GT-PWR.
AL1904007-E6	DC-to-DC converter for use with RPS 15. Connection cable AA005020-E6 or AA005021-E6. (For installation in the ERS 4526FX, 4526T, 4550T, 4524GT, 4526GTX or 4548GT.)
AA0005020-E6	Redundant Power Supply 15 - Long Connecting Cable (7.6m/25ft) for up to 4 x ERS 4526FX, 4526T, 4550T, 4524GT, 4526GTX or 4548GT.
AA0005021-E6	Redundant Power Supply 15 - Short Connecting Cable (3m/10ft) for up to 4 x ERS 4526FX, 4526T, 4550T, 4524GT, 4526GTX or 4548GT.

Maintenance Services

Order number	Description
GE5300xxx	Technical Support Service
GL5300xxx	Return & Replace Service
GF5300xxx	Managed Spares Services Pack - Next Business Day
GG5300xxx	Managed Spares Second Business Day
GH5300xxx	Managed Spares Services Pack - 4 Hour 7x24
GJ5300xxx	Managed On-Site with Spares Services Pack – Next Business Day
GK5300xxx	Managed Onsite with Spares SBD Svc Pack
GN5300xxx	Managed On-Site with Spares Services Pack – 4 Hour 7x24

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