

## BayStack 5510 Switches

**Q: What are the BayStack 5510 Switches? What kind of user would benefit from them?**

**A:** BayStack 5510 Switches are stackable 10/100/1000 Mbps Ethernet Layer 3 routing switches that are designed to provide high-density Gigabit desktop connectivity for mid-size and large enterprise customers' wiring closets. BayStack 5510 Switches are available in two models. The BayStack 5510-48T Switch features 48 10/100/1000BASE-T RJ-45 ports and the BayStack 5510-24T Switch supports 24 10/100/1000BASE-T RJ-45 ports. Each switch supports two built-in SFP (Small Form factor Pluggable) GBIC ports for uplink and two built-in stacking connectors.

BayStack 5510 Switches offer a scalable and resilient solution, providing exceptional security features, and support for enhanced convergence while minimizing capital and operational expenses.

**Q: Why is the introduction of the BayStack 5510 Switches significant?**

**A:** The introduction of BayStack 5510 Switches demonstrates Nortel Networks continuing technology innovation for enterprise customers. With these switches Nortel Networks is delivering affordable Gigabit desktop connectivity while future-proofing customers' investment in the wiring closet for the long term.

**Q: Why is Gigabit to the desktop important?**

**A:** The way in which businesses use LANs is changing and the performance requirement at the edge of the network is becoming more demanding. As file sizes continue to grow, users need more bandwidth. Quite simply, the convergence of voice, video, data, and storage enables users to *do* more from their desktop. IP telephony and other collaborative applications are driving more traffic to the edge of the network.

Enterprises need to be able to address today's increased demands and still prepare for the unknown demands of tomorrow. By re-assessing how they're using the wiring closet, they can achieve both goals, and be assured that their investments will be protected for a long time to come.

**Q: Will the BayStack 5510 Switches stack with other BayStack Switches?**

**A:** BayStack 5510 switches will stack with other BayStack 5510 switches such as future Power over Ethernet models. However, as this is a new stacking architecture, BayStack 5510 Switches can not be stacked with the earlier switches such as BayStack 470.

**Q: Will Nortel Networks continue to offer the current BayStack Switches along with these new switches?**

**A:** Yes. We will continue to manufacture and market the existing BayStack Switches as the earlier switches address the 10/100 Mbps desktop switching needs. With the introduction of BayStack 5510 Switches, Nortel Networks customers will have a choice to migrate to the new high-performance 10/100/1000 platform or stay with cost-effective 10/100 resilient stacks including BayStack 470, BayStack 460, BayStack Business Policy Switch

and BayStack 450. At this time, we have no plans to end-of-life BayStack Business Policy Switch or BayStack 450.

**Q: Do these switches support BoSS (BayStack operating system Switching Software)?**

**A:** Yes. BoSS for BayStack 5510 Switches is a single software image that allows BayStack 5510-48T, BayStack 5510-24T, and future BayStack 5510 series switches to stack together. BoSS also simplifies network operations by reducing the number of steps required for software upgrades. BoSS for BayStack 5510 Switches is specific to this next generation of stacking switches, with a software image that supports this new architecture. Earlier BayStack switches support a different software image of BoSS—although all share the same core software.

**Q: What is the FAST stack architecture?**

**A:** Nortel Networks innovative FAST (Flexible Advanced Stacking Technology) stacking design of the BayStack 5510 allows for simultaneous bi-directional traffic flow on each stacking port. In a full stack, this design yields up to 640 Gbps—the highest stacking bandwidth in the industry today.

The FAST stacking design also supports an optimal data flow across the stack using a shortest path algorithm. If a packet needs to traverse across the stack from one switch to the other, this algorithm figures out the shortest path to the destination switch.

**Q: Do these switches support Layer 3 routing?**

**A:** BayStack 5510 switches are Layer 3 routing switches. They are capable of supporting Layer 3 routing in hardware. The first release of software will not have this functionality. However, a future software release is planned to introduce this functionality.

**Q: What are the resiliency features?**

**A:** Nortel Networks unique Distributed Multi-Link Trunking (DMLT) feature allows trunked ports to span multiple units of the stack for fail-safe connectivity to mission critical servers and the network center.

The Split Multi-Link Trunking (SMLT) feature of Passport 8600 eliminates single points of failure in the network and allows wiring closet switches, such as the BayStack 5510, to have multiple active connections to the network core. All links from a DMLT can be active simultaneously allowing customers to load-balance their network, double the bandwidth and use all the ports they have paid for.

Utilizing DMLT, MLT, FAST stacking and SMLT, Nortel Networks has created the next generation of flexible networking solutions.

BayStack 5510 Switches are architected to support SMLT in future.

With connectivity to the BayStack 10 Power Supply Unit (PSU) paired with a –48V DC-to-DC converter module, BayStack 5510 Switches deliver redundant power supply (RPS) and Uninterruptible Power Supply (UPS) support crucial in mission-critical environments.

**Q: What are the security features of the BayStack 5510 Switches?**

**A:** The BayStack 5510 Switches offer the highest level of security with features including Secure Shell (SSH)\*, IEEE 802.1x based security (also known as Extensible Authentication Protocol (EAP)), assignment of proper VLAN and priority, user-based policies\*, Simple Network Management Protocol (SNMPv3), IP Manager List, MAC-

address-based security, and Remote Authentication Dial-In User Service (RADIUS) authentication.

\* Planned future software release.

**Q: What are the QoS features of the BayStack 5510 Switches? Why is QoS important?**

**A:** The QoS features of the BayStack 5510 Switch allow users to utilize bandwidth more efficiently, optimizing existing network resources and capabilities, as well as provide packet classification and marking at the edge of the network, simplifying the QoS deployment at the aggregation and core of the network.

By classifying, prioritizing, policing, and marking LAN traffic networks can offer reliable connectivity and required bandwidth for mission-critical applications to specific groups, users, and individual devices.

**Q: How are these switches managed?**

**A:** Nortel Networks offers a comprehensive set of management tools. These tools include web-based management, Java™ Device Manager, CLI (Command Line Interface), QoS Wizard, Optivity Switch Manager\*, Optivity Network Management System\* and Optivity Policy Services\*.

\* Planned future software release

**Q: How should we differentiate the positioning of BayStack 5510 and Passport 1600?**

**A:** The BayStack 5510 Switches provide scalable 10/100/1000 Layer 3 desktop connectivity. The Passport 1600 series provides Layer 3 Gigabit aggregation.

**Q: How should we differentiate the positioning of BayStack 5510 and Passport 8300?**

**A:** Both BayStack 5510 Switches and Passport 8300 Ethernet Switches offer excellent desktop connectivity solutions for the wiring closet. BayStack 5510 is a stackable solution whereas Passport 8300 is a modular solution.

**Q: Will the BayStack 5510 Switches support Power over Ethernet?**

**A:** Yes. Future models which support Power over Ethernet (IEEE P802.3af compliant) are scheduled to be available in early 2004. These models will allow IP devices such as IP phones, wireless access points and surveillance cameras to be powered by the switch.

**Q: How do we position the BayStack 5510 Switches against the recently introduced Cisco Systems Catalyst 3750 Switches?**

- A:** BayStack 5510 Switches distinguish themselves in the following ways.
- 1) The BayStack 5510-48T Switch offers 48 10/100/1000 ports in a compact 1 rack unit (RU) high design. Cisco does not have a 48 10/100/1000 port offering.
  - 2) The BayStack 5510-24T Switch offers 24 10/100/1000 ports with 2 SFP GBIC ports in compact 1 rack unit (RU) high design. Cisco does not have a 24 10/100/1000 port offering with SFP GBIC ports in a 1 rack unit (RU) high design.
  - 3) In a full stack with 32 Gbps uplink capability, the BayStack 5510 Switches can offer a density of 384 10/100/1000 ports in a compact 8 RU space. The Catalyst 3750 can only achieve up to 216 10/100/1000 ports while taking up 11 RU space.

- 4) The BayStack 5510 Switches innovative FAST (Flexible Advanced Stacking Technology) design provides a stacking bandwidth of up to 640 Gbps in a full stack - 20X faster than the 32 Gbps offered by the Catalyst 3750.
- 5) The BayStack 5510 Switches include a switch fabric with 160 Gbps - 5 times faster than the 32 Gbps of the Catalyst 3750.
- 6) The BayStack 5510 Switches can provide up to 32 Gbps of uplink capacity in a full stack while the Catalyst 3750 can only provide up to 16 Gbps
- 7) The BayStack 5510 Switches have eight queues for proper QoS prioritization – double the number allowed by the Catalyst 3750 (four queues).



Nortel, Nortel Networks, the Nortel Networks corporate logo, the globemark design, BayStack, Passport and Optivity are trademarks of Nortel Networks. All other trademarks are the property of their respective owners.

Copyright (C) 2003 Nortel Networks Corporation. All rights reserved. Information in this document is subject to change without notice.