Passport 8000 Series Switches

Overview

The Nortel Networks Passport 8000 series delivers high-density, high performance Layer 2 through Layer 7 switching, routing and traffic classification to service providers, carriers and enterprises. The Passport 8000 series is a reliable, secure and intelligent solution that provides exponential increases in bandwidth, revenue potential and a competitive edge for today's application driven networks. Because it is a modular solution, the Passport 8000 series is a powerful solution for a variety of network locations, including enterprise wiring closets, the enterprise network core, as customer premises equipment at the edge of the Metropolitan Area Network (MAN) or in the Metro Optical Ethernet core. By combining different modules, the Passport 8000 series solution can support multiple access technologies, adapt to network expansion and maintain the flexibility required for today's networks.

Customer Profile

Enterprises:

- Medium to large campus networks
  - Layer 3 core
  - Layer 2/3 distribution
  - Layer 2/3 Edge
- Large enterprise metro networks
  - Metropolitan inter-campus connectivity
- Real-time and streaming application infrastructure
- IP Multicasting infrastructure
- Internet Telephony infrastructure
- Legacy 3Com, Cabletron and Lucent customers
- Enterprise wiring closets requiring high-density edge switching capacity

Vertical Markets:

- Finance
- Healthcare
- Manufacturing
- Education

Multi-Tenant Unit (MTU) and Multi-dwelling units (MDU) property developers:

- Internet access service infrastructure
- Internet telephony service infrastructure
- Broadcast audio and video service infrastructure
- Video on demand service infrastructure
- Videoconferencing service infrastructure

Service Providers and Carriers:

- Metropolitan and regional Ethernet services
- Optical Ethernet service infrastructure
  - Point of Presence
  - Central Office
- Internet Data Centre
  - L2 though L7
- Disaster Recovery Centre service infrastructure
- Transparent LAN service infrastructure
- Virtual Private Networking service infrastructure
- Managed service - customer premises equipment
- Internal service provider/carrier network

Defining needs

Enterprise Customers:

- Is reliability critical to your business?
- Do you plan to upgrade your existing Ethernet network?
- Do you plan do migrate your network from ATM or Token Ring to Ethernet?
- Do you plan to unify your communications onto one network?
- What are your plans for deploying web hosting services?
- Do you have mission-critical traffic requiring prioritisation?
- What are your plans for deploying Quality of Service?
- What are your plans for deploying Internet telephony?

- What are your plans for deploying streaming audio or video applications?
- What are your plans for deploying desktop-based instruction?
- What are your plans for deploying 10 Gigabit Ethernet?
- Do you plan to connect to an optical Ethernet service provider?
- Does fibre scarcity prevent you from providing high-speed data services to multiple sites?

Service Providers, Carriers and Property Developers:

- Do you plan to upgrade your Metropolitan network service to Ethernet?
- Do you want to connect your points of presence via Ethernet?
- What are your plans for deploying 10 Gigabit Ethernet?
- Do you require internal Ethernet Connectivity?
- What are your plans for offering Optical Ethernet services?
- What are your plans for deploying an Internet Data Centre?
- Is reliability critical to your customers?
- What are your plans for delivering Virtual Private Network services?
- What are your plans for delivering Transparent LAN services?
- What are your plans for offering streaming audio or video services?
- What are your plans for offering Video On Demand services?
- What are your plans for offering Internet Telephony services?
- Do you want to be able to support hundreds of multicasting groups?
- Is fibre scarcity a consideration for you in deploying an Optical Ethernet Metro network?

Typical Applications

Enterprise Customers:

- Desktop switching
- Enterprise core IP routing
- IP Multicasting
- Web hosting
- Metropolitan inter-site connectivity

Service Provider and Carriers:

- Metropolitan Ethernet Service
- Internet Data Centre
- Transparent LAN services
- Virtual Private Networking Services
- Disaster Recovery Services
- Service Provider internal networks

Key Points

High performance:

- 128 Gbps non-blocking switching fabric
- 96Mpps throughput
- Wire-speed L2 through L7 packet classification
- Wire-speed L2 through L7 forwarding for critical data traffic

Resilience:

- "Five-nines" carrier-grade reliability – no single point of failure
- Device-level redundancy – power supplies, fans, switching fabrics, modules
- All components hot swappable
- Link-level redundancy – Multi-Link Trunking, Split Multi-Link Trunking
- Network-level redundancy – Virtual Router Redundancy Protocol (VRRP), Equal Cost Multi-Path (ECMP) routing
- Security: Wire-speed security filtering, user authentication

Flexibility:

- 10/100 Mbps Ethernet
- 1 Gbps and 10 Gbps Ethernet
- Up to 384 10/100BaseTX ports, 192 100BaseFX Ports, 128 Gigabit Ethernet ports per chassis
- OC-3 and OC-12 ATM
- OC-3 and OC-12 Packet over SONET
- Integrated Web-switching functionality

Low Cost of Ownership:

- Single platform for service delivery
- Integrated L2 though L7 switching in a single chassis
- Simple solution – L2 Access, L3 Core
- Lowered training costs

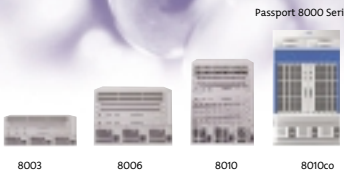
Features and Benefits

Feature	Benefit
Modular solution	One chassis with a variety of I/O modules for the wiring closet, enterprise network core, Metro edge or Metro Ethernet core delivers flexibility and simplifies design, sparing, training and operations
10, 6 or 3 slot chassis, Central Office chassis	Flexible solution series that can be deployed to meet a variety of different needs and that grows with your customer's network
Layer 2 thru Layer 7 switching, routing and traffic classification	Powerful Ethernet and web-switching capabilities in a single solution simplifies deployment and operations
Wire-speed frame switching, web switching, routing and classification	No performance penalty for real-time applications that demand Quality of Service, even during periods of network congestion
Redundant switch management / Switch Fabric modules	No single point of failure in the switch control plane
Load-sharing Switch Fabric modules	No wasted modules idling in standby
Hot swap on all chassis components	Prevents network outages when adding or changing modules
IP addressable and configurable	Simplifies management and operations
Copper and fiber Ethernet, ATM and PoS support	Flexible deployment options for both enterprise and Metropolitan connectivity needs

Ordering Information

For further information, please contact your local Nortel Networks Representative.

Passport 8000 Chassis



Overview

The Passport 8000 series is comprised of four chassis - the ten slot Passport 8010 and Passport 8010CO, the six slot Passport 8006 and the three slot Passport 8003. The series also includes two categories of modules, the Passport 8100 series Edge Switch modules and the Passport 8600 Routing Switch series modules.

The Passport 8010, 8010CO and 8006 chassis support all Passport 8000 modules. All chassis components are hot swappable and include N+1 power redundancy. These chassis provide high density, redundant solutions for both the wiring closet and network core:

- The 10-slot Passport 8010 chassis is designed for high-density campus wiring closet and backbones needing the highest levels of availability and scalability.
- The Passport 8010CO chassis is a NEBS 3-compliant chassis that supports all Passport 8000 series modules. This chassis provides Service Providers and Carriers with a fully redundant carrier class solution.
- The 6-slot chassis is designed for medium-sized, lower-density wiring closets and backbones.
- The Passport 8003 chassis supports all existing Passport 8600 series routing switch modules only. This chassis brings all the functionality of a larger core switch to a smaller footprint.

Customer Profile

- Enterprise customers
- Service Providers and Carriers

Defining needs

Enterprise Customers:

- Is reliability critical to your business?
- Do you plan to upgrade your existing Ethernet network?
- Do you plan do migrate your network from ATM or Token Ring to Ethernet?
- Do you plan to unify your communications onto one network?
- What are your plans for deploying web hosting services?
- Do you have mission-critical traffic requiring prioritisation?
- What are your plans for deploying Quality of Service?
- What are your plans for deploying Internet telephony?
- What are your plans for deploying streaming audio or video applications?
- What are your plans for deploying desktop-based instruction?
- What are your plans for deploying 10 Gigabit Ethernet?
- Do you plan to connect to an optical Ethernet service provider?
- Does fibre scarcity prevent you from providing high-speed data services to multiple sites?

Service Providers and Carriers:

- Do you plan to upgrade your Metropolitan network service to Ethernet?
- Do you want to connect your points of presence via Ethernet?
- What are your plans for deploying 10 Gigabit Ethernet?
- Do you require internal Ethernet Connectivity?
- What are your plans for offering Optical Ethernet services?
- What are your plans for deploying an Internet Data Centre?
- Is reliability critical to your customers?
- What are your plans for delivering Virtual Private Network services?

- What are your plans for delivering Transparent LAN services?
- What are your plans for offering streaming audio or video services?
- What are your plans for offering Video On Demand services?
- What are your plans for offering Internet Telephony services?
- Do you want to be able to support hundreds of multicasting groups?
- Is fibre scarcity a consideration for you in deploying an Optical Ethernet Metro network?

Typical Applications

Enterprise Customers:
- Desktop switching
- Enterprise core IP routing
- IP Multicasting
- Web hosting
- Metropolitan inter-site connectivity

Service Provider and Carriers:
- Metropolitan Ethernet Service
- Internet Data Centre
- Transparent LAN services
- Virtual Private Networking Services
- Disaster Recovery Services
- Service Provider internal networks

Key Points

High performance:
- 128 Gbps non-blocking switching fabric
- 96Mpps throughput
- Wire-speed L2 through L7 packet classification
- Wire-speed L2 through L7 forwarding for critical data traffic

Resilience:
- "Five-nines" carrier-grade reliability – no single point of failure
- Device-level redundancy – power supplies, fans, switching fabrics, modules
- All components hot swappable
- Link-level redundancy – Multi-Link Trunking, Split Multi-Link Trunking
- Network-level redundancy – Virtual Router Redundancy Protocol (VRRP), Equal Cost Multi-Path (ECMP) routing
- Security: Wire-speed security filtering, user authentication

Flexibility:
- 10/100 Mbps Ethernet
- 1 Gbps and 10 Gbps Ethernet
- Up to 384 10/100BaseTX ports, 192 100BaseFX Ports, 128 Gigabit Ethernet ports per chassis
- OC-3 and OC-12 ATM
- OC-3 and OC-12 Packet over SONET
- Integrated Web-switching functionality

Low Cost of Ownership:
- Single platform for service delivery
- Integrated L2 though L7 switching in a single chassis
- Simple solution – L2 Access, L3 Core
- Lowered training costs

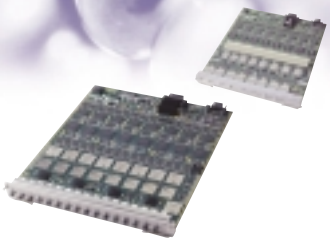
Features and Benefits

Feature	Benefit
Modular solution	One chassis with a variety of I/O modules for the wiring closet, enterprise network core, Metro edge or Metro Ethernet core delivers flexibility and simplifies design, sparing, training and operations
10, 6 or 3 slot chassis, Central Office chassis	Flexible solution series that can be deployed to meet a variety of different needs and that grows with your customer's network
Layer 2 thru Layer 7 switching, routing and traffic classification	Powerful Ethernet and web-switching capabilities in a single solution simplifies deployment and operations
Wire-speed frame switching, web switching, routing and classification	No performance penalty for real-time applications that demand Quality of Service, even during periods of network congestion
Redundant switch management / Switch Fabric modules	No single point of failure in the switch control plane No wasted modules idling in standby
Load-sharing Switch Fabric modules	Prevents network outages when adding or changing modules
Hot swap on all chassis components	Simplifies management and operations
IP addressable and configurable	Flexible deployment options for both enterprise and Metropolitan connectivity needs
Copper and fiber Ethernet, ATM and PoS support	

Ordering Information

For further information, please contact your local Nortel Networks Representative.

Passport 8100
Edge Switching Modules



Description

The Passport 8100 series Edge Switching modules deliver Layer 2 switching to the Passport 8000 platform. Typically deployed in wiring closet applications, the Passport 8100 series Edge Switch modules are supported in the Passport 8010, Passport 8006 and Passport 8010CO chassis. At least one Passport 8190 Switch Management module is required per chassis. Two Passport 8190 Switch Management modules ensure redundancy and sub-second fail over for maximum switch resilience. VLAN support and Layer 2 priority marking offer customers flexibility and efficiency.

Customer Profile

Enterprises deploying:

- Enterprise wiring closets requiring high-density edge switching capacity
- Customers who require a Layer 2 switch for aggregation with either copper or fibre
- Customers using 100BASE-FX for desktop connectivity or backbones
- Real-time and streaming applications
- IP Multicasting
- Internet Telephony

Service providers and carriers:

- Internal wiring closets requiring high-density edge switching capacity
- Internal Layer 2 switching for aggregation with either copper or fibre
- Connectivity where 100BASE-FX for desktop connectivity is required

Vertical Markets:

- Finance
- Healthcare
- Manufacturing
- Education

Defining needs

- Do you plan to upgrade your existing wiring closets from hubs to switching?
- Do you plan do migrate your network from ATM or Token Ring to Ethernet?
- Is reliability critical to your business?
- Do you plan to unify your communications onto one network?
- Do you plan to deploy Internet telephony?
- Do you plan to deploy videoconferencing on your data network?
- Do you plan to deploy streaming audio or video applications?
- Do you plan to deploy desktop-based instruction?

Typical Applications

- Desktop Switching
- Power User Group eg Graphic Workstations
- Wiring Closet aggregation

Key Points

- High Density Layer 2 switching
- Low Cost
- Advanced Features
- Redundancy
- Operational Simplicity
- Powerful Management

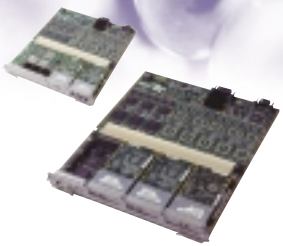
Features and Benefits

Feature	**Benefit**
50 Gbps forwarding performance	High capacity switching for high-density wiring closets
10, 6 or Central Office chassis, Central Office chassis	Flexible solution series that can be deployed to meet a variety of different needs and that grows with your customer's network
384 10/100BaseTX ports, 128 100BaseFX ports, or 64 copper or Fibre Gigabit Ethernet ports	High density for large wiring closet applications
Redundant switch management	No single point of failure in the switch control plane Prevents service and network management interruption
Sub-second switch Management fail-over	No single point of failure in the switch control plane No wasted modules idling in standby
Redundant switch management / Switch Fabric modules	Prevents network outages when adding or changing modules
Load-sharing Switch Fabric modules	Simplifies management and operations
Hot swap on all chassis components	Flexible support for IP multicast applications
IP addressable and configurable	Simple, flexible and powerful network management options
Internet Group Management Protocol (IGMP) snooping multicast support	Fewer devices to manage than with "pileables" or "stackables"; more flexibility in the wiring closet
Fully manageable and configurable with Command Line Interface (CLI) or graphic user interface (GUI) tools	
Modular solution	

Ordering Information

For further information, please contact your local Nortel Networks Representative.

Passport 8600 Series Routing Switches



Overview

The Passport 8600 series Routing Switch modules deliver a powerful and highly reliable routing solution, providing hardware-based Layer 2 through Layer 7 routing and traffic classification. These modules are specifically designed to offer high redundancy, high-density and high-bandwidth connections, wire speed performance and penalty-free QoS support to Enterprises, Service Providers and Carriers. Passport 8600 series Routing Switch modules typically reside in the Enterprise or Service Provider/Carrier network core. Ethernet connectivity options include 10/100 Mbps and 1Gbps copper, 100 Mbps, 1 Gbps fiber, 10 Gbps fibre (future) and OC-3/OC-12 ATM/PoS. Passport 8691 switch management modules provide redundancy, load sharing and sub-second fail-over. Wire-speed Quality of Service for business-critical applications is achieved though packet classification via DiffServ or IEEE 802.1p and queuing via eight hardware queues per port.

The Nortel Networks Passport 8600 series Routing Switch modules deliver a reliable, secure and intelligent network routing solution. Hardware-based wire speed performance enables fast and efficient traffic classification, policy enforcement and filtering, benefiting time-sensitive applications such as video and voice and revenue-generating applications requiring Quality of Service such as Web transaction processing and personalised content. The Passport 8600 series Routing Switch modules provide a robust, secure and intelligent platform that delivers a true competitive edge through performance, intelligence and five nines reliability.

Customer Profile

Enterprises:

- Medium to large campus networks
  - Layer 3 core
  - Layer 2/3 distribution
  - Layer 2/3 Edge
- Large enterprise metro networks
  - Metropolitan inter-campus connectivity
- Real-time and streaming application infrastructure
- IP Multicasting infrastructure
- Internet Telephony infrastructure
- Legacy 3Com, Cabletron and Lucent customers
- Enterprise wiring closets requiring high-density edge switching capacity

Vertical Markets:

- Finance
- Healthcare
- Manufacturing
- Education

Multi-Tenant Unit (MTU) and Multi-dwelling units (MDU) property developers:

- Internet access service infrastructure
- Internet telephony service infrastructure
- Broadcast audio and video service infrastructure
- Video on demand service infrastructure
- Videoconferencing service infrastructure

Service Providers and Carriers:

- Metropolitan and regional Ethernet services
- Optical Ethernet service infrastructure
  - Point of Presence
  - Central Office
- Internet Data Centre
  - L2 though L7
- Disaster Recovery Centre service infrastructure
- Transparent LAN service infrastructure
- Virtual Private Networking service infrastructure
- Managed service - customer premises equipment
- Internal service provider/carrier network

Defining needs

Enterprise Customers:

- Is reliability critical to your business?
- Do you plan to upgrade your existing Ethernet network?
- Do you plan do migrate your network from ATM or Token Ring to Ethernet?
- Do you plan to unify your communications onto one network?
- What are your plans for deploying web hosting services?
- Do you have mission-critical traffic requiring prioritisation?
- What are your plans for deploying Quality of Service?
- What are your plans for deploying Internet telephony?
- What are your plans for deploying streaming audio or video applications?
- What are your plans for deploying desktop-based instruction?
- What are your plans for deploying 10 Gigabit Ethernet?
- Do you plan to connect to an optical Ethernet service provider?
- Does fibre scarcity prevent you from providing high-speed data services to multiple sites?

Service Providers, Carriers and Property Developers:

- Do you plan to upgrade your Metropolitan network service to Ethernet?
- Do you want to connect your points of presence via Ethernet?
- What are your plans for deploying 10 Gigabit Ethernet?
- Do you require internal Ethernet Connectivity?
- What are your plans for offering Optical Ethernet services?
- What are your plans for deploying an Internet Data Centre?
- Is reliability critical to your customers?
- What are your plans for delivering Virtual Private Network services?
- What are your plans for delivering Transparent LAN services?
- What are your plans for offering streaming audio or video services?
- What are your plans for offering Video On Demand services?
- What are your plans for offering Internet Telephony services?
- Do you want to be able to support hundreds of multicasting groups?
- Is fibre scarcity a consideration for you in deploying an Optical Ethernet Metro network?

Typical Applications

Enterprise Customers:

- Power-user desktop switching
- Enterprise core IP routing
- IP Multicasting
- Web hosting
- Metropolitan inter-site connectivity

Service Provider and Carriers:

- Metropolitan Ethernet Service
- Internet Data Centre
- Transparent LAN services
- Virtual Private Networking Services
- Disaster Recovery Services
- Service Provider internal networks

Key Points

High performance:

- 128 Gbps non-blocking switching fabric
- 96Mpps throughput
- Wire-speed L2 through L7 packet classification
- Wire-speed L2 through L7 forwarding for critical data traffic

Resilience:

- "Five-nines" carrier-grade reliability – no single point of failure
- Device-level redundancy – power supplies, fans, switching fabrics, modules
- All components hot swappable

- Link-level redundancy – Multi-Link Trunking, Split Multi-Link Trunking
- Network-level redundancy – Virtual Router Redundancy Protocol (VRRP), Equal Cost Multi-Path (ECMP) routing
- Security: Wire-speed security filtering, user authentication

Flexibility:

- 10/100 Mbps Ethernet
- 1 Gbps and 10 Gbps Ethernet
- OC-3 and OC-12 ATM
- OC-3 and OC-12 Packet over SONET/SDH
- Integrated Web-switching functionality

Low Cost of Ownership:

- High Performance
- Optical Ethernet Ready

Features and Benefits

Feature	Benefit
Modular solution	One chassis with a variety of I/O modules for the wiring closet, Enterprise network core, Metro edge or Metro Ethernet core delivers flexibility and simplifies design, sparing, training and operations
10, 6 or 3 slot chassis, Central Office chassis	Flexible solution series that can be deployed to meet a variety of different needs and that grows with your customer's network
Layer 2 thru Layer 7 switching, routing and traffic classification	Powerful Ethernet and web-switching capabilities in a single solution simplifies deployment and operations
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Redundant switch management / Switch Fabric modules	No single point of failure in the switch control plane No wasted modules idling in standby
Load-sharing Switch Fabric modules	Prevents network outages when adding or changing modules
Hot swap on all chassis components	Simplifies management and operations
IP addressable and configurable	Flexible deployment options for both enterprise and Metropolitan connectivity needs
Copper and fibre Ethernet, ATM and PoS support	

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