GX 550® Multiservice WAN Switch



Anchors ATM core networks to deliver highly reliable ATM and frame relay services.

Benefits

- Improve ROI and anchor carrier-class multiservice networks with a system that provides world-class reliability and industry leading port densities
- Deliver carrier-class availability, performance and reliability
- Support more end users and generate higher revenues with the capacity and scalability you need
- Transport data cost-effectively by connecting with DWDM
- Avoid the need for costly overlay networks by adding IP services to your existing ATM and frame relay (FR) networks with MXOS™ software
- Simplify network management and help reduce operating costs with *Navis*® network management software

Lucent Technologies
Bell Labs Innovations

Improve ROI with a system that provides world-class reliability and industry leading port densities to anchor carrier-class multiservice networks.

The Lucent GX 550® Multiservice WAN Switch provides the multiservice protocol support, capacity, port density, and availability you need to provide ATM and FR services on a single, unified multiservice network.

Designed for the core, the carrier-class GX 550® switch provides the availability, service-aware routing and high-speed switching you require at the heart of your multiservice network. With 25 Gbps full duplex ATM throughput, 32 Gbps full duplex packet throughput, and optical interfaces that connect directly to the transmission network, the GX 550® switch has the power to anchor the most demanding service provider networks.

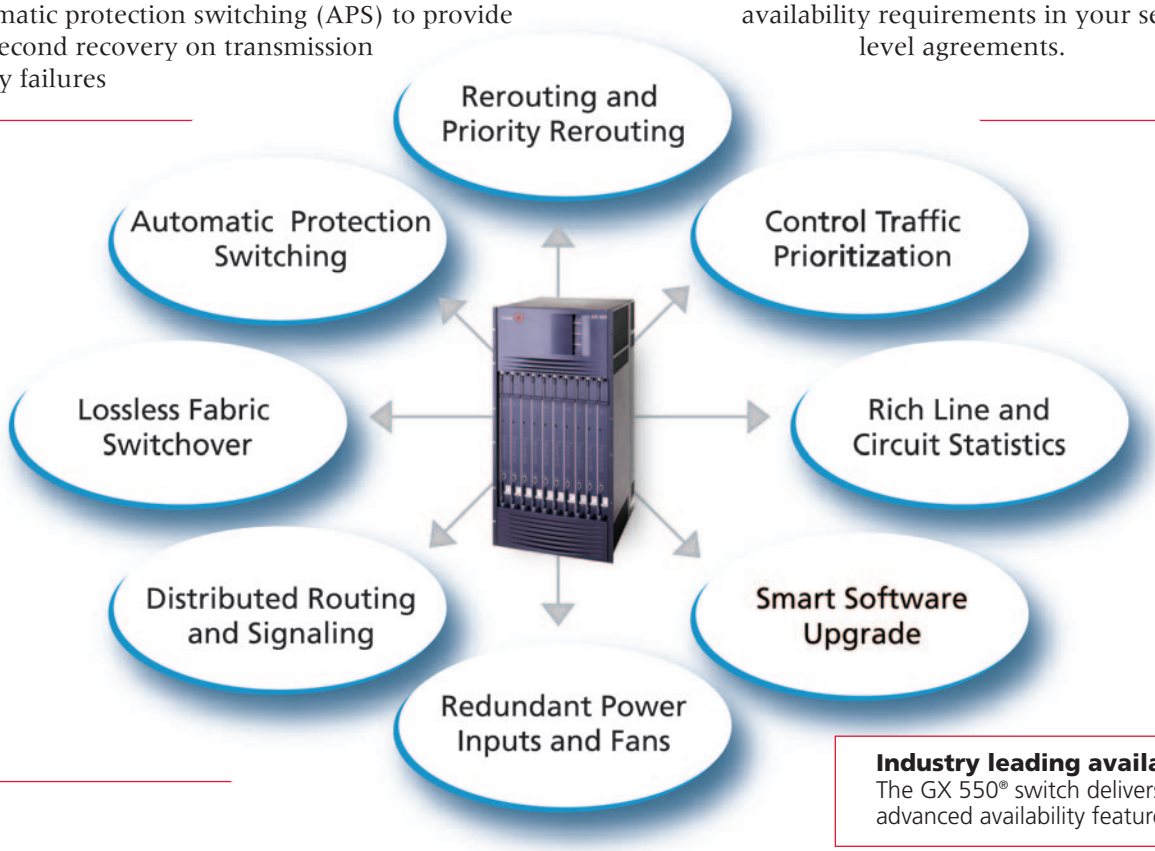
Robust QoS and industry-standard interfaces make the GX 550® switch a natural component of high-speed, high-density access deployments.

Providing carrier-class availability, performance and reliability

The GX 550® switch has a sophisticated feature set that provides carrier-class availability. These features go beyond redundant power supplies and cooling systems to include:

- The ability to switch over from the active to the standby switching fabric with no data loss or service interruptions
- Distributed routing and signaling control to help avoid single points of failure
- In-service software upgrades that can reduce user traffic disruptions by taking advantage of hardware-based switching during software reconfiguration
- Automatic protection switching (APS) to provide millisecond recovery on transmission facility failures
- Priority-based routing of hundreds of thousands of circuits per second to help keep services up and running if the transmission facility cannot be recovered
- Stratum 3 holdover timing to support continued operations, even if the switch loses its primary network-timing source
- Traffic prioritization control to help ensure that management traffic is delivered regardless of network congestion

The GX 550® switch also provides a rich set of line and circuit statistics to help you demonstrate to your business customers that your network has met the availability requirements in your service level agreements.



Industry leading availability
The GX 550® switch delivers advanced availability features.

Superior capacity and scalability

The GX 550® switch offers the high-speed, industry-standard, optical interfaces essential to core and access applications such as ATM access, private line and DSL. A single switch supports up to 156 OC-3/STM-1 ports, 39 OC-12/STM-4 ports, or 9 OC-48/STM-16 ports – although most deployments use a rich mix of port types.

The GX 550® switch also provides:

- Agile connection buffering with advanced traffic management to efficiently mix all traffic classes and users on a single network while maintaining QoS
- High rate of switched virtual circuit (SVC) setup – 5,000 SVCs per second and 8 million calls per busy hour for continued scalability
- Industry-leading virtual circuit (VC) support with a permanent virtual circuit (PVC) capacity of up to 1.28M simultaneous circuits, SVC capacity of up to 6.4M simultaneous circuits per GX 550 Switch
- Service-aware routing that provides end-to-end QoS and creates enhanced services, such as virtual private networks (VPNs)
- Advanced networking features to support secure and wide-ranging connectivity with closed user groups (CUGs), security screening, and SVC-to-PVC interworking

Cost-effective data transport

Today's data networks utilize OC-12/STM-4 rates at the core, but increasing data transport rates are quickly making it critical to upgrade to OC-48/STM-16 backbones. As data moves at OC-48/STM-16 speeds and as ATM switches become more resilient, the distinction between switching and transmission blurs. Rather than using a traditional SONET/SDH ring backbone, you have the option to connect GX 550® switches directly to fiber through DWDM equipment or direct fiber connections. This moves statistical multiplexing into the transmission facility—giving you more cost-effective and efficient data transport. In addition, this streamlined network can help lower operating costs and speed service provisioning.

Carrier-class MXOS™ Multiservice Switch Operating Software helps increase profitability

MXOS™ software supports ATM, FR and IP services on the CBX 500® and GX 550® Multiservice WAN Switches. MXOS™ enables delivery of multiple services from a single network infrastructure, allowing service providers to maintain existing profitable data services and avoid the need for costly overlay IP networks. It leverages Lucent's experience in building the most reliable voice networks and includes reliability features, such as improved fault management and improved manual and automatic service recovery. These features have been adapted to bring greater reliability to data switching networks. MXOS™ helps reduce operations costs with pro-active tools for network data collection and analysis, which quickly identify potential problems and prevent service disruptions.

Key features

- Protocol-independent multiservice switching — Flexibility to change your service mix to meet demand
- Small footprint — Scale to 25 Gbps full duplex capacity (32 Gbps for IP/MPLS) per chassis to provide 50/64 Gbps capacity per rack
- Superior availability — Lossless fabric switchover and 1+1 Automatic Protection Switching (APS) provide proven reliability
- Excellent scalability — High port densities, high virtual circuit support, and distributed routing and signaling increase service capacity
- Expandable design — Low-speed ATM interfaces supported on the GX 550® Extender Shelf including circuit emulation

Provides ATM-level QoS for all multiservice traffic

Simplify network management and reduce operating costs with *Navis*® software

Navis® network management software enables you to deliver new services to your business customers quickly and profitably. It provides end-to-end, standards-based management of Lucent IP/MPLS, FR, and ATM multiservice core and access networks. Navis software offers exceptional management of a GX 550® switch network, using industry-standard TCP/IP protocols such as SNMP, TFTP and Telnet. In addition, a command line interface provides Ethernet and asynchronous serial console connections for network monitoring, configuration and performance statistics collection. *Navis*® software also delivers sophisticated add-on functions, such as automated provisioning, real-time statistics monitoring, and accounting—giving you excellent network management control.

GX 550® Multiservice WAN Switch

Summary of Technical Specifications

Description	Specifications
1. Protocols Supported	
ATM:	UNI 3.0/3.1/4.0, TM 4.0, IISP, PNNI, B-ICI
Optical:	DWDM
Circuit Emulation:	via the GX 550® Extender Shelf
2. Physical Interface and Base Input/Output (I/O) Modules	
Physical Interface Modules	
a. 1-port OC-48/STM-16	Up to 9 ports per chassis
b. 1-port OC-48c/STM-16c with optional full 1+1 of SONET/SDH APS protection	Up to 10 ports per chassis
c. 1-port OC-12c/STM-4	Up to 39 ports per chassis
d. 4-port OC-3c/STM-1	Up to 156 ports per chassis
Interfaces support SONET/SDH laser-based intermediate reach (IR) and long-reach (LR) interfaces	
Base I/O Modules	
a. ATM Base I/O	BI01, BI02, BI0-C
GX 550® Extender Shelf	
a. DS3 circuit emulation/ATM	Up to 228 fully protected

3. System Architecture

- Hot-swappable components
- Lossless switchover to redundant switch fabric
- Distributed routing and signaling
- Port and line card redundancy
- Dedicated packet forwarding engines for IP/MPLS traffic
- QoS with 6 quality queues per port
- T1/E1 primary and secondary clock inputs
- Stratum 3e timing
- Multimode LED interfaces

4. Multiservice Switch Operating Software (MXOS™)

Carrier-class, innovative software for increased switch reliability and network scalability, IP/MPLS Feature Pack is available for advanced IP Services delivery

5. Navis® Network Management Software

- End-to-end, standards-based management of Lucent IP, MPLS, FR, and ATM multiservice networks
- Speed service activation and assure QoS with automated provisioning, unified network and service management
- Faster and easier service delivery, moves, adds and changes
- Helps minimize service provider training costs for multiservice solutions
- Fault and performance management
- Real-time statistics monitoring and accounting

6. Physical Dimensions	
Size:	Height 37" (93.98 cm)
	Width 19" (42.26 cm)
	Depth 23" (58.42 cm)
Rack Mount Options:	EIA 19" or 23" midmount, central office style
7. Power Requirements	
DC Power	-48 to -60 volts DC
Current	75 amps @ -48 volts DC
Thermal Dissipation	Maximum 3,000 watts (Average 1154 watts)
AC Power	120 to 240 volts AC External AC power converter required
Current	48 amps @ 120 volts AC
Thermal Dissipation	Maximum 450 watts

To learn more about our comprehensive portfolio, please contact your Lucent Technologies Sales Representative, Lucent BusinessPartner or, visit our web site at www.lucent.com or www.lucent.com/products/multiserviceswitching.

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