Frame Relay Networks

NSGDatacom has a long and established history of manufacturing Frame Relay switches from two port FRAD's to fully fault tolerant, backbone class switches capable of supporting thousands of subscribers. With a large installed base of thousands of switches world-wide supporting hundreds of thousands of users in carrier, government and enterprise networks, NSGDatacom is a leader in the industry and remains committed to supporting Frame Relay technology.

While some existing Frame Relay networks are transitioning to IP, NSGDatacom's backbone class switch, the Nx 2500, has offered the ability to build backbone networks up to 100Mb/s over point-to-point, Frame Relay, ATM and IP connections for many years now. The Nx2500 is currently used around the world for Frame Relay networks by many carriers and large enterprises supporting millions of voice, video, and data sessions daily. These operators require fully fault systems to provide greater than five nines availability to their customers. The Nx2500 runs at level 4 with VC auto reconnect to minimize the effect of network interruptions. Both SVC and PVC services are offered on an interface by interface basis. Additionally, TDM channels can be configured for transparent operation of video circuits in mixed voice, data, and video applications. With a single switch port density running into the thousands, a throughput of 1.2 GB and a switching capacity of over 200,000 frames per second the Nx2500 is the ideal backbone switch for Frame Relay networks.

Large Installed Base

Edge and Backbone Products

Video, Voice, and Data

High Reliability

Network Management via GUI

Along with the Nx2500, the Nx2200 platform is used to build a full carrier class Frame Relay backbone/ edge network. Scaleable from 4 to 32 FRAD or switch ports with high speed serial or Ethernet trunks, the Nx2200 series can be used as the core of smaller networks or as edge switches for larger voice and/ or data networks. The Nx2200 is fully inter-operable with the Nx2500, and shares the NetrixView network management system, which has extensive, sophisticated configuration, management and diagnostic capabilities. NetrixView incorporates an easy to use GUI with simple pop-ups and sliders to configure all components in the network. All address tables are generated automatically and PVC's are built simply by defining the DLCI's for the end points. All alarms are configurable and are shown as color changes on maps. Full CDR's are generated for operators charging on a usage basis.

Family of Products

PicoTurbo 100

PicoTurbo II

NX2210

NX2550

Fault Tolerant Networking
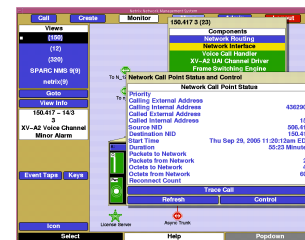- Adaptive routing and cost-effective redundancy

Scalability
- From 2 port FRAD devices to 1000's of Frame Relay switch ports per node

Redundancy
- Fully redundant hardware architecture

QoS
- Provides QoS service level for Frame Relay traffic (e.g. GPRS)

NMS
- Easy to use graphical interface
- Extensive monitoring, configuration, & diagnostics

The newest member of the Nx2200 series of products being released in 2006, the Nx2222, is an ideal edge or small Frame Relay network switch. With up to 18 high speed Frame Relay serial interfaces, 4 auto sensing 10/100BaseT Ethernet ports and optional DS3/Optical fiber interface the Nx2222 can be deployed as CPE or in the network. In either application minimum space is required as the unit can be rack mounted in 1U or can be supplied as a table top version.
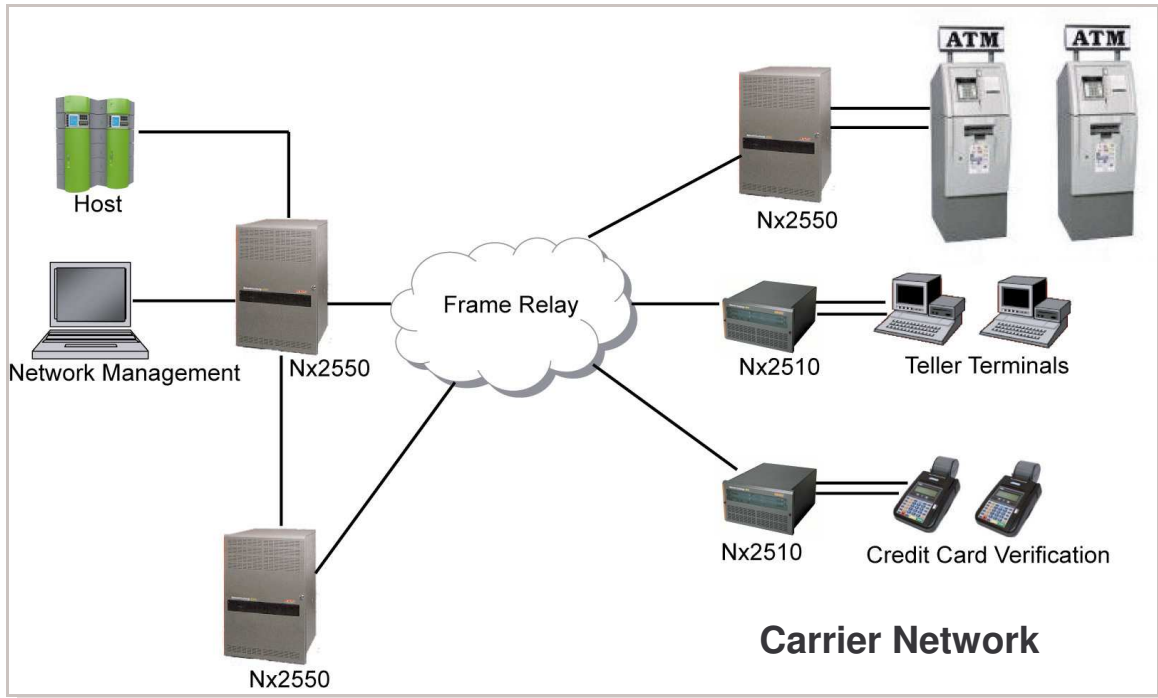
Additionally, NSGDatacom's range of TURBO products provides a very scalable edge solution for transparently supporting legacy applications such as X.25, SNA, Asynch, SCADA etc. The Turbo platforms range from a simple low port density 3 port FRAD or switch to a fault tolerant 72 port access switch. TURBO Frame Relay trunks can run up to 2.048Mb/s.

All the above platforms have a rich Frame Relay implementation. Interfaces can be configured for UNI or NNI. CIR and burst rates can be specified and policed, throttling back bandwidth when necessary while allowing users to access their contracted bandwidth. Routing can be based on CIR ensuring that QoS agreements are met. There is full support for LMI, Annex G and Q.333 Annex D. FECN, BECN and the DE bit are fully supported and acted on. PVC's and SVC can be run simultaneously. Encapsulation is included and edge devices have native support for many legacy packet based protocols, such as X.25, SNA and BSYNC. This native support provides local spoofing which improves throughput and eliminates potential time-outs.
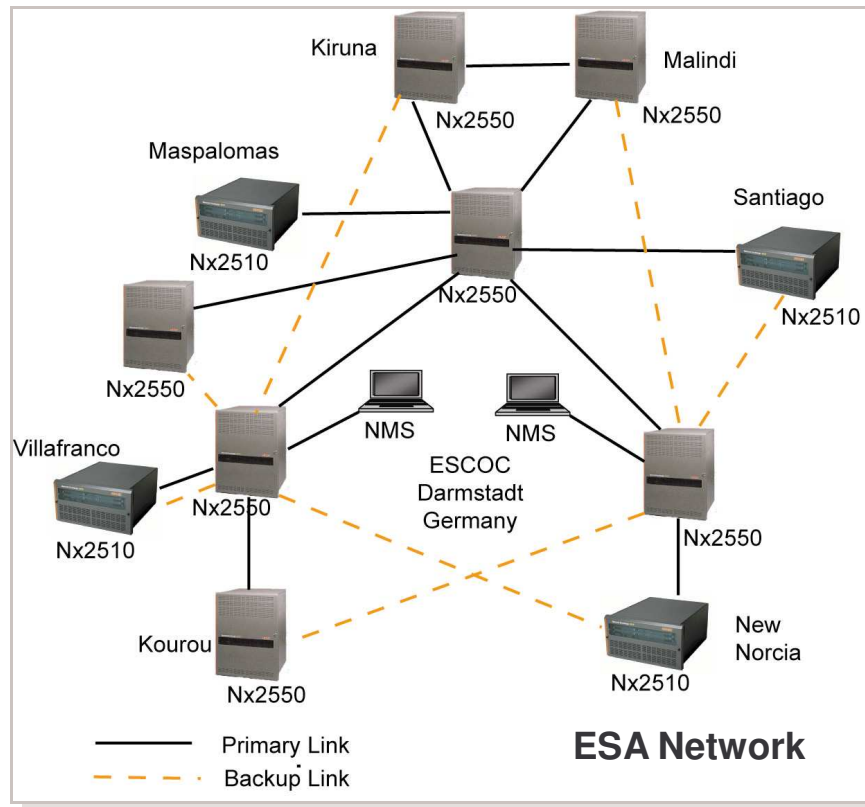
Customer Networks

An international Carrier uses the Nx2500 to provide Frame Relays services to public and private companies. The Nx2500 provides a fully fault tolerant backbone system so that customers are always guaranteed service (see diagram 1). With many customers being financial institutions, the fully fault-tolerant hardware and software architecture of the Nx2500 provides dynamic adaptive routing, allows implementation of self-healing, and high network availability which is essential in this environment. The high packet throughput and short latency of the Nx 2500 makes it ideal for supporting financial transactions. Indeed, over 70% of all the credit card transactions in the USA, and a significant number of international transactions daily are transported over a backbone network comprising of Nx2500 Frame switches.

Diagram 1

Carrier Network

The European Space agency (ESA) uses both the Nx2500 and Nx2200 series products for mission critical voice and data applications over Frame Relay. The Nx2200 is used for the reliable transmission of satellite telemetry, tele-command and tracking data into space. Additionally the Nx2200 provides a voice compression function, which is used to interconnect on-site intercom systems and supports the conferencing of voice coordination loops. Voice is transferred over Frame Relay connections with QoS to ensure voice quality is always maintained, even in the presence of mission critical data traffic. The standard analog telephone interfaces of the intercom voice channels are directly connected to the Nx2200, which perform digitization and compression functions prior to transmission over the Frame Relay core network (see diagram 2).

Diagram 2

ESA Network

NSGDatacom provides a proven, cost effective, and highly reliable solutions for Frame Relay networks. Our products are central in core Carrier, Enterprise, GSM, and Government networks for the transmission of mission critical voice and data. NSGDatacom remains a leader in the industry and continues to be committed to developing and building products to support Frame Relay networks.

NSGDatacom

www.nsgdata.com

| 3863 Centerview Drive
Chantilly, VA, 20151-3232 USA
Phone: +(1) 703 793 2000
Fax: +(1) 703 793 2001 | 7435 New Technology Way
Frederick, MD, 21703 USA
Phone: +(1) 301 662 5926
Fax: +(1) 301 694 6279 | The Brackens, London Road
Ascot, Berkshire SL5 8BE, UK
Phone: +(44) 1344 893 000
Fax: +(44) 1344 891 990 |