

NX5010ae



## NET NX5010ae Agile High Speed Network Exchange



- **Purpose-built for InfiniBand Extension and Grid Computing over WAN**
- **Seamless Inter-networking for Any Protocol**
- **Multi-service Edge Aggregation**
- **Facilitates Network Migration and Security Implementations**
- **Unprecedented scalability**

### THE NX5010AE MULTI-PROTOCOL ADVANTAGE

Delivering 10Gbps line rate performance and hard QoS for a wide array of applications and protocols, the NET NX5010 Agile High Speed Exchange™, is a compact, high capacity switching, routing and aggregation platform that provides multi-protocol conversion and transport over high speed networks.

Powered by the award winning Bay Microsystems Montego™ Network Processor, the NX5010 is architected around a 10 Gbps Universal Service Card (USC). Montego has a deterministic, pipe-lined architecture that enables the system to facilitate line rate internetworking between a wide array of today's protocols, while providing flexibility and programmability for utilizing additional protocols in the future.

The NX5010's USC utilizes a fully distributed modular design that contains a Virtual Output Queued (VOQ) buffered switching mechanism which eliminates the need for a complex, centralized switching fabric. This switch-on-a-card design simplifies the overall architecture and allows for any-to-any passive cross-connects.

The NX5010 utilizes a 2U stackable form factor which allows the system to scale in increments of 20 Gbps, enabling incremental network expansion in an economical pay-as-you-grow solution.

### EXTENDING INFINIBAND OVER WAN

The NX5010 has been designed from the ground up to provide agile network mediation, inter-networking, segmentation and reassembly of network traffic utilizing multiple protocols including InfiniBand, IP,

Ethernet, ATM, and MPLS. InfiniBand is the technology of choice for high performance networks that interconnect large data centers and compute clusters due to its unmatched progressive scalability and extremely low latency.

Until now, InfiniBand has been confined within the data center due to its sub-20m cable length limitations. With the NX5010, this limitation is removed and InfiniBand can be transported over a wide area network (WAN) allowing remotely located data centers and grid computing elements to be interconnected seamlessly.

The NX5010 can bridge InfiniBand over the WAN using OC-192 or 10G Ethernet and the high performance packet processing technology of the Bay Microsystems Montego™ Network Processor. This application enables locations to be part of the same InfiniBand subnet, and allows you to:

- Connect remote Compute Clusters into grids that operate (over the WAN) with low latency and utilize standard InfiniBand protocols
- Virtualize large databases over long distances.
- Deploy high speed, net centric applications handling large data payloads
- Extend Storage Networks over multiple locations.

These applications are all enhanced by the low latency of an InfiniBand solution. At equivalent bandwidths, InfiniBand has up to 80% lower latency than Ethernet.

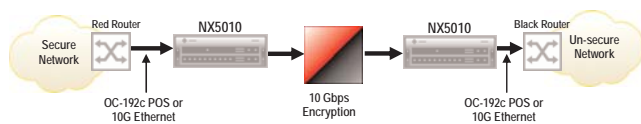
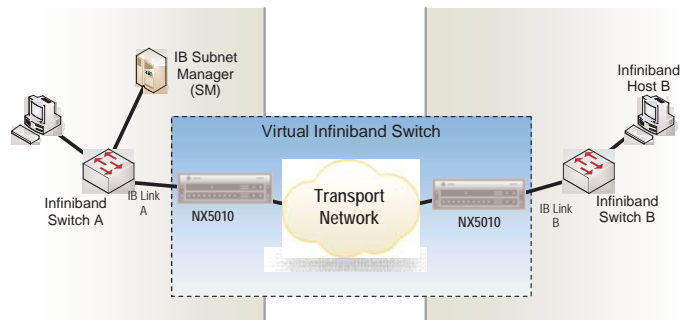
## MULTI-SERVICE EDGE AGGREGATION

The increasing demand for voice, video and data over a converged network is driving requirements for higher performance, more bandwidth and greater interoperability in next generation networks. Multiple OC-48, OC-192, and 10G Ethernet WAN connections are now common for broadband IP, grid computing, and virtual storage applications.

Additionally, applications and services are being pushed closer to the edge of the network while the transport network is relying on the edge to maintain quality of service (QoS), and aggregate multi-service, multi-protocol traffic at 10G and beyond. The NX5010 provides 10 Gbps line-rate protocol conversion for transporting IP or MPLS over a secure, connection oriented service providing hard QoS.

This Multi-service Edge network calls for a product that provides any-to-any inter-working, comprehensive traffic engineering, guaranteed service delivery,

and a robust scalable solution. The NET NX5010ae was created to meet these challenges. It collapses the edge by allowing virtual storage, grid computing and SAN network elements to attach directly to OC-48, OC-192, and 10G Ethernet wide area networks.



## NX5010ae SPECIFICATIONS

### SERVICES:

#### Storage Area Networks and Grid Computing

- InfiniBand bridging and switching
- SAN Bridging
- SAN Extension over WAN (IP, ATM)
- Virtual storage WAN aggregation

#### Line Rate Protocol Conversion

- IP to ATM
- MPLS to ATM
- Intelligent Demarc Services

### SPECIFICATIONS:

#### Interfaces:

##### SONET/SDH Interfaces:

- OC-192c/STM-64 and OC-48c/STM-16
- POS and ATM supported on all interfaces

#### SAN:

- OpenFabrics Alliance, OpenIB compatible 4x InfiniBand

#### Ethernet:

- Gigabit Ethernet
- 10 Gigabit Ethernet
- VLAN

- Ethernet Switching
- LAN Extension over WAN

#### IP:

- OSPF
- Policy based routing
- ACL
- Encapsulation: Ethernet, VLAN, PPP, HDLC, ATM (RFC 2684)
- Policing and shaping

#### ATM:

- ATM Switching, ATM UNI, ATM OAM,
- CBR, UBR, and VBR support with shaping and policing
- SAN (InfiniBand) extension over ATM
- LAN extension over ATM

#### System Capacity:

- Forwarding/Switching capacity: 20GBs non blocking bi-directional (40 Gbs unidirectional) full line rate at any packet size

#### Interface Support:

- 1 InfiniBand 4x port with 2 x 1G Ethernet ports
- 4 x OC-48c with 2 x 1G Ethernet
- 1 x OC-192c with 2 x 1G Ethernet

- 1 x 10G Ethernet with 2 x 1G Ethernet
- All interfaces have pluggable optics

#### System Administration and Management:

- In band and Out of band Management with SSHv2
- Operator Access Management (password, privileges)
- CLI, Secure Web Based Interface
- SNMP support
- NTP Client

#### Platform:

- 19" rack mountable
- Pluggable optics
- BITS timing
- -48DC and Redundant AC power
- < 250W per system

#### Normal operating environment:

- 5 C to 40 C (23 F to 104 F)
- 5% to 85% relative humidity, non condensing
- -60m to 1800m (-197ft. to 5905ft)



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Some features listed in the specifications are under development.

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