



VOLTAIRE

Voltaire ISR 6000™ InfiniBand Switch Router

Ideal for High-performance database clusters and entry-level HPC configurations

Overview

The Voltaire InfiniBand Switch Router ISR 6000 is a modular platform for building high performance InfiniBand clusters and interconnecting them with TCP/IP and Fibre Channel (FC) networks. The ISR 6000 enables cost effective high-performance InfiniBand clusters through its three-blade modular design. It extends the performance of InfiniBand clusters to LANs and SANs (Storage Area Networks) through its powerful router modules. The ISR 6000 is the only solution in the industry providing InfiniBand modular switching with TCP/IP and FC connectivity in a 1U enclosure.

High-Performance Non-blocking Switching

Installed with 3 switch modules, the ISR 6000 functions as an 18-port switch, providing the largest InfiniBand fabric available in a 1U device. Each high performance non-blocking 6-port switch module provides 160 Gbps of aggregate switching bandwidth. It provides wire-speed switching between the data ports and 40 Gbps of bandwidth to the ISR 6000 backplane.

Intelligent High-Performance IP Connectivity

The Voltaire RM-2GE InfiniBand to TCP/IP router module features a powerful ASIC that provides high-performance connectivity to IP networks based on Voltaire's unique TCP termination architecture. It enables enterprise-class network applications to span systems resident on Gigabit Ethernet Networks and InfiniBand fabrics while maximizing the performance characteristics of each network technology. Up to two modules may be installed in a single chassis, providing four gigabits of bandwidth between an InfiniBand cluster and an enterprise LAN.

Seamless Integration with Fibre Channel SANs

The Voltaire RM-4FC is a high-performance InfiniBand to Fibre Channel (FC) Router module. The Router centralizes the connectivity of an InfiniBand server cluster and Storage Area Network (SAN), I/O bottlenecks. The Voltaire RM-4FC provides advanced storage virtualization and management features significantly reducing storage costs and eliminating interoperability pains.

Comprehensive Management

The Voltaire ISR 6000 provides comprehensive and powerful management capabilities through the VoltaireVision™ management suite. VoltaireVision includes Voltaire's InfiniBand subnet manager, device managers and interfaces third party network management tools and virtualization applications. VoltaireVision provides a command line interface (CLI), web based GUI and an SNMP interface for flexible access to the ISR 6000's comprehensive management capabilities. The system collects performance statistics and environmental monitoring data and supports standard MIBs. The subnet manager software automatically discovers the fabric topology and configures the hosts and switches for ease of operation while providing advanced routing mechanisms.

High-Availability

The ISR 6000 delivers the reliability and availability characteristics that are required in mission-critical enterprise applications including redundant components such as power-supplies. It features system pooling, a unique capability that protects applications from failures at a port, module or the system level. System pooling enables multiple switch routers to dynamically distribute and balance routing and switching services among them. System pooling provides hierarchical redundancy and enables the fabric to deliver continuous service to the servers and storage systems.

Voltaire Product Family

The ISR 6000 is part of a family of end-to-end InfiniBand solutions from Voltaire, including the high-capacity ISR 9600 InfiniBand Switch Router, targeted for mid-size and large HPC clusters, the HCA 400 host channel adapter and robust support for SDP, DAPL, iPoIB, MPI, iSCSI RDMA and other host protocols. Using InfiniBand solutions from Voltaire, enterprise data centers and high performance computing clusters achieve higher performance while reducing the total cost of ownership.

Modular 3-slot chassis supports up to 18 InfiniBand 4x ports, up to 4 Gigabit Ethernet ports and up to 8 FC ports per 1U enclosure.

6-port, 4x (10 Gbps) switch module provides copper InfiniBand data interfaces.

InfiniBand to TCP/IP Router module provides high performance TCP/IP connectivity.

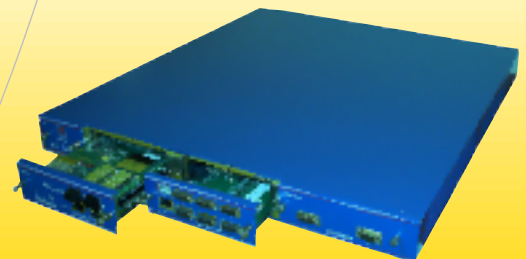
InfiniBand to Fibre Channel Router module delivers transparent connectivity with FC SANs.

System pooling feature enables multiple ISR 6000 to deliver, highly available and scalable switching and routing services.

Embedded subnet management software and VoltaireVision network management software.

Hierarchical link, module and system redundancy/fail-over capability ensures non-stop operation.

Redundant, hot-swappable power supplies meet stringent availability requirements.





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TECHNICAL SPECIFICATIONS

Voltaire ISR 6000

3-slot, 19" rack mountable chassis, 1U height, includes power supply and fans. Optional redundant power supply

Router Modules

RM-2GE

Up to 2 InfiniBand to TCP/IP Router modules may be installed per chassis
Connectors: 2 Gigabit Ethernet mini-GBIC (SMF)

RM-4FC

Up to 2 InfiniBand to FC Router modules may be installed per chassis
Connectors: 4 Fibre Channel external small form factor LC pluggable

SW-6IB4C Intelligent Switch Module

6, auto-sensing 1x/4x InfiniBand ports (2.5/10 Gbps) and 2, 4x backplane connections
Onboard processor runs VoltaireVision and Voltaire's subnet management software
Aggregate Data Throughput: 160 Gbps
Port-to-port Latency: 200 nanoseconds (max.)
Linear Forwarding Table: 48K entries
Multicast Table Size: 1K entries
Data Virtual Lanes : 8
Management Virtual Lanes: 1
MTU: 4096 Bytes, max
SNMP MIB II
Connectors: 6, 8-pair MicroGigaCN; EIA/TIA-232 console RJ-45 connector;
Ethernet 10/100 management RJ-45 connector
Indicators: Physical connectivity and logical connectivity LEDs per port

SW-6IB4 Switch Module

Same as SW-6IB4C, except does not include onboard processor and management capabilities

Mechanical

19-inch rack-mountable, Width: 17.5 in. (444 mm)
Secure stacking with optional feet
Optional front or rear rack mounting
Height: 1.75" (44.5mm), Width 18.94" (481mm), Depth: 18.84" (480 mm)

Environmental

Operating
Temperature: 32° to 104°F (0° to 45°C)
Humidity: 15 to 80%, non-condensing
Altitude: 0 to 9843 ft (3000m)

Storage
Temperature: -13° to 158°F (-25° to 70°C)
Humidity: 5 to 90% non-condensing
Altitude: 0 to 15,000 ft (4570m)

Electrical

Operating voltage: 100 to 120 VAC, 50 to 60 Hz auto-sensing
200 to 240 VAC, 50 to 60 Hz auto-sensing
Power consumption: 100 W (with 3 SW-6IB4C modules)



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