



Intel® 12300 Switch

18-36 Port 40Gbps, Modular Configuration, Managed

Overview

High performance computing (HPC) solutions have used Intel® TrueScale™ InfiniBand networks to meet the needs of the most demanding set of applications. The Intel® 12300 is an 18-36 port, 40Gbps Intel TrueScale InfiniBand switch designed to cost-effectively link workgroup resources into a cluster or provide an edge switch option for a larger fabric. Customers can manage the modular Intel TrueScale InfiniBand switch internally or externally. The Intel 12300 is part of the 12000 Series of products that deliver an exceptional set of high-speed networking features and functions.



Highlights

Benefits

- Quad data rate (QDR) line rate performance
- Ultra-low latency under heavy loads
- Flexible QoS maximizes bandwidth utilization
- Protects existing Intel TrueScale InfiniBand investments
- Highly reliable and available
- Easy to manage
- Minimal power and cooling requirements

Features

- 18–36 ports of Intel TrueScale InfiniBand - 40Gbps performance with support for DDR and SDR
- 2.88Tbps aggregate bandwidth
- Intel TrueScale architecture with scalable, predictable low latency
- Multiple virtual lanes (VLs) per physical port
- Supports Virtual Fabric Partitioning
- Small QDR data center footprint with cost-effective Intel TrueScale InfiniBand edge port density
- External chassis management via optional Intel TrueScale InfiniBand Fabric Suite (IFS) management solution that provides an expanded set of fabric views and fabric tools
- RoHS 6 compliant
- Minimal power and cooling requirements
- Complies with Intel TrueScale InfiniBand Trade Association* (IBTA*) v1.2 standard



Simple Installation and Configuration

Using the installation and configuration wizards contained in the IFS package allows end users to deploy fabrics in days instead of weeks.

Low Latency

Intel's 12300 provides scalable, predictable low latency, even at 90 percent traffic utilization. Predictable latency means HPC applications can easily be scaled without having to worry about diminished cluster performance or costly system tuning efforts.

Flexible Partitioning

The Intel 12300 advanced design is based on an architecture that provides a comprehensive set of Virtual Fabric Partitioning capabilities, enabling the Intel TrueScale InfiniBand fabric to support the evolving requirements of an organization. The Intel TrueScale architecture, together with IFS, allows the fabric to be shared by mission critical applications while delivering maximum bandwidth utilization.

Investment Protection

The 12000 Series of switch products adhere to the IBTA* version 1.2 standard, ensuring the ability to interoperate with all other IBTA*-compliant devices.

Highly Reliable

The highly-reliable 12300 is built around state-of-the-art fault detection and recovery capabilities. It ships with hot-swappable, redundant power and cooling modules.

Easy to Manage

Customers can manage the 12300 by utilizing an optional embedded fabric management capability and by taking advantage of Intel's advanced IFS software to facilitate quicker installation and configuration. IFS tools verify fabric configuration, topology, and performance. Faults are automatically isolated to the component level and reported.

Power Optimized

Maximum performance is delivered with minimal power and cooling requirements as part of Intel's commitment to developing green solutions for the data center.

Switch Options

Switch Specifications

- 40/20/10Gbps auto-negotiation links
- Maximum of 36, 4x QDR ports (32 Gbit/s) or 18, 8x QDR ports (64 Gbit/s)
- Switching capacity: 2.88Tbps
- Virtual lanes: eight plus one management
- Maximum MTU size: 4,096 bytes
- Maximum multicast table size: 1,024 entries
- Supports quad small form factor pluggable (QSFP) optical and copper cable specifications

Switch Models

- 12300-BS01: 36 active ports
- 12300-BS18: 18 active ports

Interoperability

- Compliant with IBTA* specifications 1.0a, 1.1, 1.2, and 1.2.1

Fabric Management

Management Methods

- Command line interface
- Optional external server-based Intel TrueScale InfiniBand compliant subnet manager
- Optional embedded fabric management
- IBTA*-compliant SMA, PMA, and BMA
- SNMP support
- Chassis management user interface

Access Methods

- 10/100 Ethernet Base T(RJ45)
- Serial port (RS-232 with DB9)

LEDs

- One per Intel TrueScale InfiniBand port
- One for 10/100 Ethernet interface
- Two for Intel TrueScale InfiniBand switch status

Physical

Dimensions

- H x W x D: 43.2 x 439.6 x 609.6 mm (1.7 x 17.3 x 24 in)

Weight

- 11.8 kg (26 lbs)

Environmental

Operating

- 5°C–40°C
- Humidity: 5%–85% non-condensing
- Altitude: 0–10,000 feet
- Vibration: 5–500 Hz, 0.27g, 5 sweeps
- Shock: 3.5g, 3ms, half sine, 20 repetitions

Electrical

- Voltage: 100–240 VAC; 50–60 Hz
- Power consumption: 85W–226W

Non-Operating

- –40°C to 65°C
- Humidity: 5%–90% non-condensing
- Altitude: 0–40,000 feet
- Vibration: 2–200 Hz, 0.5g, 5 sweeps
- Shock: 50g, 4216mm/s, 13msec, 3 axis

Airflow

- Front-to-back



Agency Approvals

Safety:

UL/CSA/IEC/EN 60950-1

EMI:

FCC/VCCI/EN/IEC Class A

Marking:

FCC/ICES-003/TUV-CUE/CE/VCCI/G-Tick/ GOST/KCC

RoHS 6

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

A "Mission Critical Application" is any application in which failure of the Intel Product could result, directly or indirectly, in personal injury or death. SHOULD YOU PURCHASE OR USE INTEL'S PRODUCTS FOR ANY SUCH MISSION CRITICAL APPLICATION, YOU SHALL INDEMNIFY AND HOLD INTEL AND ITS SUBSIDIARIES, SUBCONTRACTORS AND AFFILIATES, AND THE DIRECTORS, OFFICERS, AND EMPLOYEES OF EACH, HARMLESS AGAINST ALL CLAIMS COSTS, DAMAGES, AND EXPENSES AND REASONABLE ATTORNEYS' FEES ARISING OUT OF, DIRECTLY OR INDIRECTLY, ANY CLAIM OF PRODUCT LIABILITY, PERSONAL INJURY, OR DEATH ARISING IN ANY WAY OUT OF SUCH MISSION CRITICAL APPLICATION, WHETHER OR NOT INTEL OR ITS SUBCONTRACTOR WAS NEGLIGENT IN THE DESIGN, MANUFACTURE, OR WARNING OF THE INTEL PRODUCT OR ANY OF ITS PARTS.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request. Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Copies of documents which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or go to: <http://www.intel.com/design/literature.htm>

© 2012 Intel Corporation. All rights reserved.

Intel, the Intel logo, and Xeon are trademarks of Intel Corporation in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

