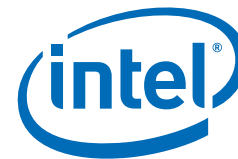


# Technical Brief

Intel® Ethernet 10 Gigabit Server Adapters  
Network Connectivity



## Fibre Channel over Ethernet (FCoE) for the Windows\*-based Intel® Ethernet Server Adapter X520 Series

10 Gigabit Ethernet (10 GbE), is quickly being adopted as the data-center deployment and upgrade standard, enabling applications to scale and perform at a higher level than ever before. In conjunction with new processor advancements, applications and operating systems can see virtually line rate on the 10 GbE adapters provided by Intel today.

Intel, as a long-time leader in the Datacenter Ethernet market, is now adopting the new Fibre Channel over Ethernet (FCoE) Standard (T11-FC-BB-5). Since the beginning of FCoE, Intel has worked hand-in-hand with other industry leaders and this work has helped in setting the standard for Fibre Channel over Ethernet today.

Upgrading to FCoE is as simple as acquiring a Fibre Channel Forwarding-enabled switch (such as Cisco\* Nexus\* 5000 or Brocade\* 8000), and a 10 GbE adapter that supports FCoE protocol. The Fibre Channel Forwarder (FCF) then connects to your traditional SAN and LAN infrastructures by an Inter-Switch Link (ISL) to the SAN (E-Port), and by trunk ports to the LAN (Spanning-Tree).

### Feature Introduction

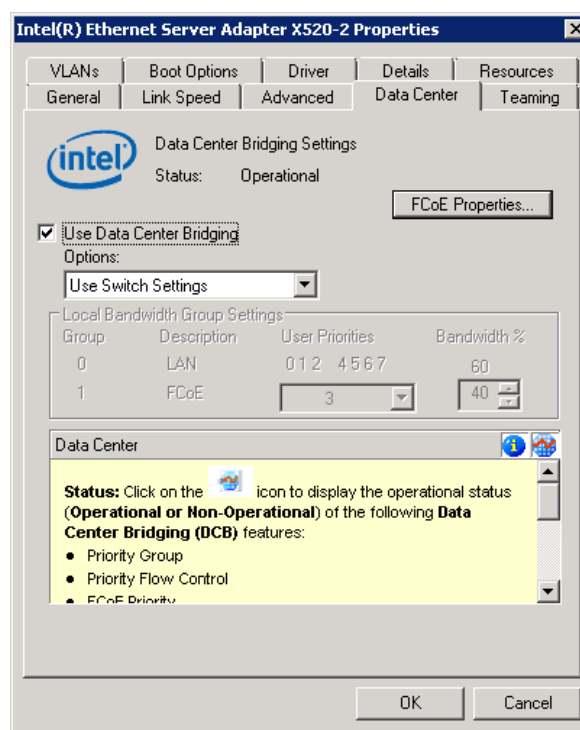
With its latest software releases, Intel is launching FCoE support for Microsoft\* Windows\* over X520 Family adapters. When developing these adapters, Intel architects designed them to support several offload features specifically for FCoE, including:

- Transmit and Receive (Tx – Rx) FC CRC Processing
- Receive Direct Data Placement (DDP)
- Receive Exchange-Id Packet Filtering
- Large Sequence Offload

These adapters also offload the main FCoE data paths to improve throughput. The result is comparable FCoE performance for realworld workloads compared to that of CNAs. While the supported offload assists do not completely offload the FCoE protocol, Intel has offloaded the most common and frequently used commands.

With FCoE also comes the lossless Ethernet of Data Center

Bridging (DCB) technology. DCB enables the switch to notify the adapter that there is congestion on the port and to pause individual traffic streams until it subsides.

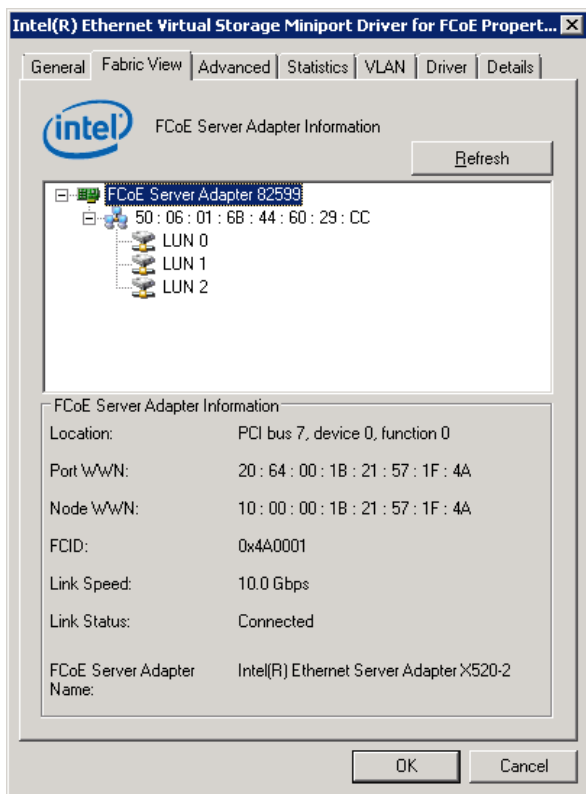


### Product Walk-Through

Intel has integrated the management of FCoE and the Virtual Storage Controllers into the Intel® PROSet for Windows Device Manager. There is no required application to install or manage. FCoE features give you the look and feel typical of industry-standard Fibre Channel.

Additional features include:

- Multi-Fabric Enabled Ports
- Queue Depth Management
- Link Down Timeout Settings
- Manual DCB Settings Option
- FCoE Boot Options
- Statistics



## Customer Support

Intel® Customer Support Services offers a broad selection of programs including phone support and warranty service. For more information, contact us at [support.intel.com/support/go/network/adapter/home.htm](http://support.intel.com/support/go/network/adapter/home.htm). Service and availability may vary by country.

## For Product Information

To speak to a customer service representative regarding Intel products, please call 1-800-538-3373 (U.S. and Canada) or visit [support.intel.com/support/go/network/contact.htm](http://support.intel.com/support/go/network/contact.htm) for the telephone number in your area. For additional product information on Intel Networking Connectivity products, visit [www.intel.com/go/ethernet](http://www.intel.com/go/ethernet).

## Operating Systems

Microsoft\*:

- Windows\* 2003 SP2 (Enterprise / DataCenter / Standard)\*
- Windows\* 2008 SP2 (Enterprise / DataCenter / Standard)\*
- Windows\* 2008 R2 (Enterprise / DataCenter / Standard)\*\*

\* x86, x86\_64 (or IA32, EM64E)

\*\* 64 bit only

## Summary

Intel's best-of-breed 10GB Ethernet solutions are now rounding out the Datacenter. Offering world-class Ethernet, mixed with the time-tested and proven protocol of Fibre Channel Storage, all in one adapter.

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