



OpenFabrics Alliance

Interoperability Working Group (OFA-IWG)

October 2007 Interoperability Event Report

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 Report Rev1.0

Enclosed are the results from OFA Interoperability testing performed on the following devices under test (DUTs):

Cisco Systems High-Performance InfiniBand Subnet Manager v1.2

The test suite referenced in this report is available at the OFA website, at test time release 1.12 (September 12, 2007) was used:

<http://www.iol.unh.edu/services/testing/ofa/testplan.pdf>

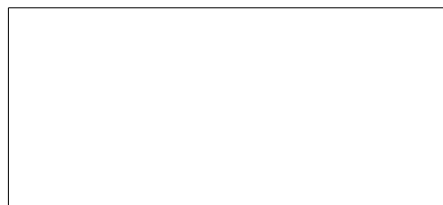
<http://www.openfabrics.org/downloads/OFA-IWG%20Interoperability%20Test%20Plan-v1.12.pdf>

Test Procedure	IWG Test Status	Result/Notes
Group 01: IB Link Initialize	Mandatory	Passed – no issues seen
Group 02: IB Fabric Initialization	Mandatory	Passed – no issues seen
Group 03: IB IPoIB	Mandatory	Passed – no issues seen
Group 04: TI iSER	Beta	Refer to Comments
Group 05: IB SRP	Mandatory	Passed – no issues seen
Group 06: TI SDP	Mandatory	Not applicable to DUT
Group 07: IB SM Failover	Beta	Not Tested
Group 08: TI MPI - OSU	Beta	Not applicable to DUT
Group 09: TI MPI - Intel	Beta	Not applicable to DUT
Group 10: TI uDAPL	Beta	Not applicable to DUT
Group 12: FibreChannel Gateway(IB)	Beta	Not applicable to DUT
Group 13: Ethernet Gateway(IB)	Beta	Not applicable to DUT

For specific details regarding issues please see the corresponding test result.

Testing Completed 10/30/2007

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Review Completed 11/29/2007

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Report Revision History

v1.0 Initial Release

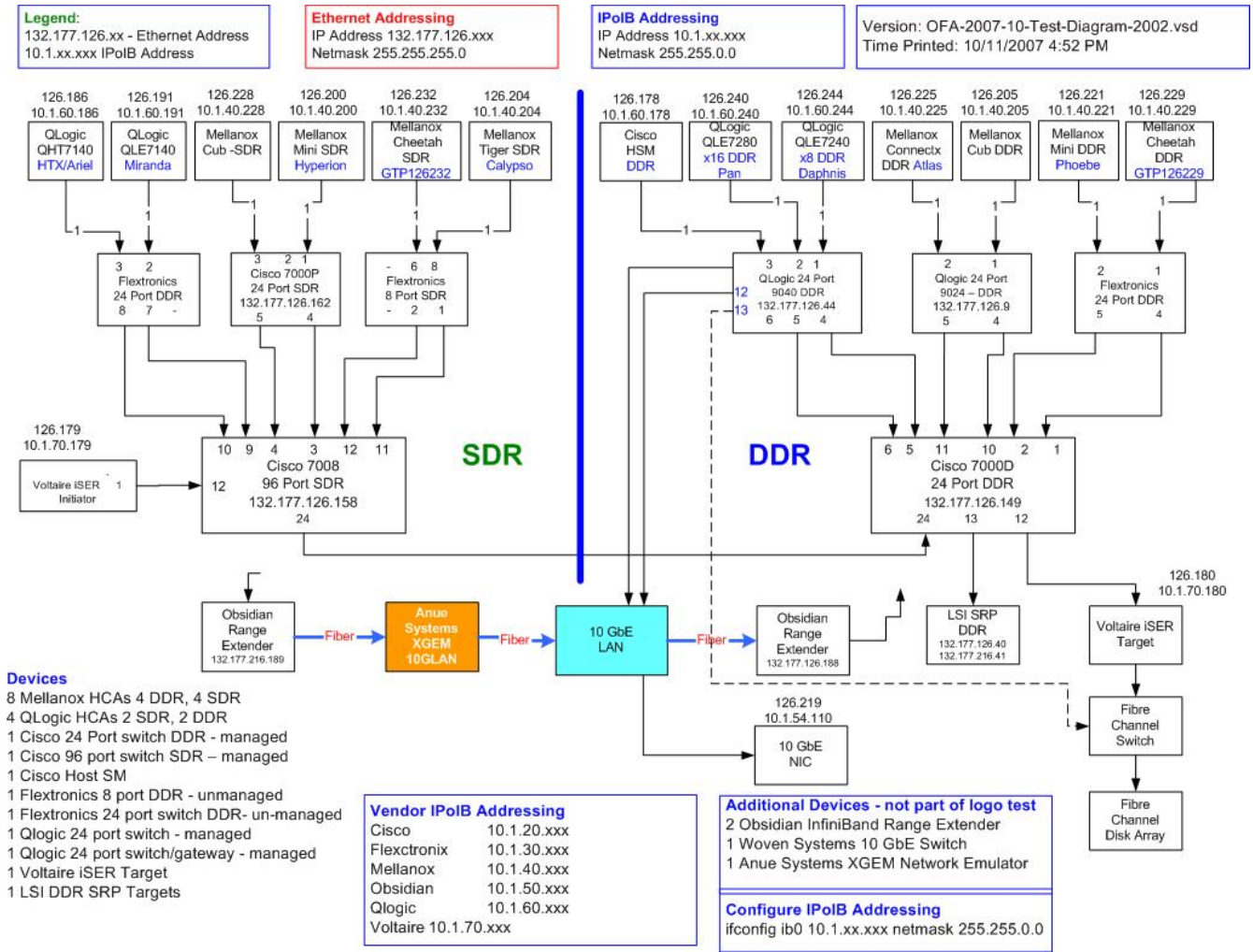
Table 1: Result Key

The following table contains possible results and their meanings:

Result:	Description:
PASS	The Device Under Test (DUT) was observed to exhibit conformant behavior.
PASS with Comments	The DUT was observed to exhibit conformant behavior however an additional explanation of the situation is included, such as due to time limitations only a portion of the testing was performed.
FAIL	The DUT was observed to exhibit non-conformant behavior.
Warning	The DUT was observed to exhibit behavior that is not recommended.
Informative	Results are for informative purposes only and are not judged on a pass or fail basis.
Refer to Comments	From the observations, a valid pass or fail could not be determined. An additional explanation of the situation is included.
Not Applicable	The DUT does not support the technology required to perform this test.
Not Available	Due to testing station limitations or time limitations, the tests could not be performed.
Borderline	The observed values of the specified parameters are valid at one extreme and invalid at the other.
Not Tested	Not tested due to the time constraints of the test period.

Table 2: DUT and Test Setup Information

Figure 1: The IB fabric configuration utilized for any tests requiring a multi-switch configuration is shown below.



DUT #1 Details			
Manufacturer	Cisco	Firmware Rev	N/A
Model	High-Performance InfiniBand Subnet Manager	Hardware Rev	N/A
Speed	N/A	IP Address in Fabric	10.1.60.178
Additional Comments/Notes			
Software version 1.2			

Mandatory Tests - IB Device Test Summary Results:

The following tables detail results for tests identified by the OFA-IWG as mandatory tests for the OFA Interoperability Logo Program (OFILP) per the OFA-IWG Interoperability Test Plan Release 1.12 (September 12, 2007)

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 1: IB Link Initialize	Test #1: Phy link up all ports	Link partners link as expected	PASS
	Test #2: Logical link up all ports switch SM	ibstatus reports active links	PASS
	Test #3: Logical link up all ports HCA SM	ibstatus reports active links	PASS
Discussion: Test #1: Phy link up all ports			
DDR cables were used for all link tests. Device LEDs validated visually. Link width and link speed validated via use of “ibdiagnet -lw 4x” and ibdiagnet -ls 10”			
Discussion: Test #2 & 3: Logical link up all ports switch SM / HCA SM			
The Cisco High performance SM (HSM) was used to validate that the link could be brought to the Active state as verified via the “ibstatus” command. The SM was initially off as the switches were powered up. After checking for an initial physical link, the SM under test was started and the state of the link verified. Refer to the table below for specific link configurations tested.			

	Cisco High perf. SM
Cisco SFS 7000D 24-port DDR (Managed Switch)	PASS
Cisco SFS 7000P 24-port SDR (Managed Switch)	PASS
Cisco SFS 7008 96-port SDR (Managed Switch)	PASS
Flextronics 8 Modular SDR (Unmanaged Switch)	PASS
Flextronics 24 Modular DDR (Unmanaged Switch)	PASS
Mellanox MHEA28-1TC “Lion Cub SDR” (HCA)	PASS
Mellanox MHEA28-XT “Lion Mini SDR” (HCA)	PASS
Mellanox MHGA28-1TC “Lion Cub DDR” (HCA)	PASS
Mellanox MHGA28-XTC “Lion Mini DDR” (HCA)	PASS
Mellanox MHES14-XT “Tiger SDR” (HCA)	PASS
Mellanox MHES18-XTC “Cheetah SDR” (HCA)	PASS
Mellanox MHGS18-XTC “Cheetah DDR” (HCA)	PASS
Mellanox MHGH28-XTC “ConnectX DDR” (HCA)	PASS
Qlogic SilverStorm 9024 24-port DDR (Managed Switch)	PASS
Qlogic SilverStorm 9040 40-port DDR (Managed Switch)	PASS
Qlogic QHT-7140 {SDR PCIe x8} (HCA)	PASS
Qlogic QLE-7140 {SDR PCIe x8} (HCA)	PASS
Qlogic QLE-7240 {DDR PCIe x8} (HCA)	PASS
Qlogic QLE-7280 {DDR PCIe x16} (HCA)	PASS
Voltaire IPSTOR (iSER Target / FC Gateway)	PASS

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 2: IB Fabric Initialization	Test #1: Verify all SMs configure fabric	Port is Active with all SMs	PASS
Discussion: Test #1: Verify all SMs configure fabric			
The fabric configuration shown in Figure 1 was used for this test. 'ibdiagnet -c 1000' showed no Port errors counters increment. Only one SM is run at a time. All switches are power cycled between SM trials. All links are validated via use of 'ibdiagnet' and on each host 'ibstatus' to validate speed, width and link state. Refer to the table below for SM details.			

For Voltaire IPStor (iSER Target)	All ports Armed/Active	No Dup GUIDs	No Port errors
Cisco High performance SM(HSM) Host (HCA)	PASS	PASS	PASS

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 3: IPoIB	Test #1: Ping Test all to all	HCA's can ping all to all with all byte sizes	PASS
	Test #2: Connect disconnect host	Connectivity functions after topology change	PASS
	Test #3: File Transfer Procedure	4MB file SFTP transfers were validated	PASS

Discussion: Test #1: Ping all to all

IP connectivity to all HCAs using the Cisco HSM was validated.
Note that to achieve ICMP echo requests (pings) with a packet size of 64, 256, 511, 512, 1024, 1025, 2044, 4096, 8192, 16384, 32768, 65507, ping -s # was utilized where # corresponds respectively in the following list: 36, 228, 483, 484, 996, 997, 2016, 4068, 8164, 16356, 32740, 65479
Note: One non-Cisco device was observed to not support pings beyond 2048 in size.

Discussion: Test #2: Disconnect and Reconnect HCA

The Cisco HSM was tested. Refer to the default fabric configuration. All HCAs were connected except the Qlogic x16 DDR HCA (10.1.60.240).
All SMs were disabled, all switches were then power cycled.
The SM under test was enabled, and all HCAs were confirmed to be reachable except for the station at 10.1.40.200.
The Mellanox ConnectX HCA (10.1.40.225) was removed from the fabric. All HCAs were confirmed to be reachable except the two disconnected HCAs.
The Qlogic x16 DDR HCA was then connected to the fabric. All HCAs are now reachable except the ConnectX.
The Mellanox ConnectX is now connected to the Qlogic 9040 Silverstorm DDR switch rather than the Qlogic 9024 Silverstorm DDR switch. All HCAs are now reachable.
Using host system 10.1.40.225, "ifconfig ib0 down" results in a loss of IP connectivity, "ifconfig ib0 up" results in a restoration of IP connectivity

Discussion: Test #3: File transfer procedure

For expediency, SCP was utilized as FTP servers were not configured at test time.
File transfer was validated from the Mini-SDR host (10.1.40.225) to each other station by sending a 4MB file to the remote station and then copying it back and comparing the file.
Tests were repeated 4 times. All file transfers completed successfully and the file was identical in all cases.

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 5: IB SRP	Test #1-4	No issues observed	PASS

Discussion: Test #1-4

No issues were observed during SRP testing with the Cisco Systems HSM. SRP target utilized for testing was the LSI Engenio 6498.

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 6: TI SDP	Test #1-3	Not Applicable to DUT	Not Applicable
Discussion: Test #1-4			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			

Beta Tests - IB Device Test Results:

The following table details results for tests identified by the OFA-IWG as beta tests for the OFA Interoperability Logo Program (OFILP) per the OFA-IWG Interoperability Test Plan Release 1.12 (September 12, 2007)

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 4: TI iSER	Test #1-5	Not tested	Refer to Comments
Discussion: Test Results			
iSER is currently a BETA test within the OFA Logo Program. Though iSER was tested during the October 2007 Interoperability Event, the use of all SMs was not exercised for this beta test. In future Interoperability Events, it is anticipated that validation of iSER functionality with all available SMs will be required once iSER is a mandatory test for the OFA Logo Program.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 7: IB SM Failover/Handover	Test #1-4	Not tested	Not Tested
Discussion: Test Results			
These tests were not performed during the October 2007 Interoperability Event			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 8: TI MPI – Ohio State University	Test #1-14	Not applicable to DUT	Not Applicable
Discussion: Test Results			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 9: MPI – Intel MPI	Test #1-21	Not applicable to DUT	Not Applicable
Discussion: Test Results			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10: TI uDAPLTEST Commands	Test #1-10	Not applicable to DUT	Not Applicable
Discussion: Test Results			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 11: iWARP Connectivity	Test #1-8	Not applicable to DUT	Not Applicable
Discussion: Test Results			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12: Fibre Channel Gateway (IB)	Test #1-10	Not applicable to DUT	Not Applicable
Discussion: Test Results			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 13: Ethernet Gateway (IB)	Test #1-7	Not applicable to DUT	Not Applicable
Discussion: Test Results			
The OFA Logo Program does not require these tests for a Subnet Manager (SM) under test.			