OpenFabrics Alliance
Interoperability Working Group (OFA-IWG)
June 2009 Logo Event Report

Michael Dulkin   August 21, 2009
Flextronics (Israel) Ltd.   Report Rev1.3
1 Hastia str. Ramat Gavrial Ind. Zone Migdal Haemek   OFED Version: 1.4.1
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Enclosed are the results from OFA Logo testing performed on the following devices under test (DUTs):

Flextronics F-X430066 (8 Port SDR InfiniBand Switch)
Flextronics F-X430044 (24 Port DDR InfiniBand Switch)

The test suite referenced in this report is available at the OFA website, at test time release 1.28 (March 27, 2009 DRAFT) was used:

http://openfabrics.org/downloads/OFA-IWG Interoperability Test Plan-v1.28.pdf

The following table highlights the Mandatory test results required for the OpenFabrics Interoperability Logo for the DUT per the testplan referenced above and the current OpenFabrics Interoperability Logo Program (OFILP).

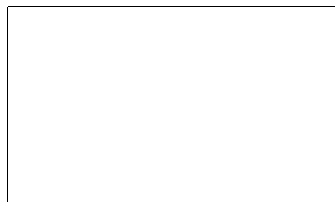| Mandatory Test Procedures	IWG Test Status	Result/Notes
10.1: IB Link Initialization	**Mandatory**	**PASS with Comments**
10.2: IB Fabric Initialization	**Mandatory**	**PASS**
10.3: IB IPoIB Connected Mode	**Mandatory**	**PASS**
10.4: IB IPoIB Datagram Mode	**Mandatory**	**PASS with Comments**
10.6: IB SRP	**Mandatory**	**PASS**
12.1: TI iSER	**Mandatory**	**Not Available**
12.4: TI SDP	**Mandatory**	**PASS**

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

Summary of all results follows on the second page of this report.

Testing Completed 06/19/2009   Review Completed 08/12/2009

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Table 1: Result Summary

The following table summarizes all results from the event pertinent to an IB device.

Note: **Failing a beta test does not necessarily indicate a failure of the device under test.** There are several reasons that a device might fail a beta test that are beyond the control of the device manufacturer. Such reasons include unresolved problems with the OFED software, with other vendors' devices, and with the test plan procedures.

Test Procedures	IWG Test Status	Result/Notes
10.1: IB Link Initialization	**Mandatory**	**PASS with Comments**
10.2: IB Fabric Initialization	**Mandatory**	**PASS**
10.3: IB IPoIB Connected Mode	**Mandatory**	**PASS**
10.4: IB IPoIB Datagram Mode	**Mandatory**	**PASS with Comments**
10.5: IB SM Failover and Handover	Beta	**PASS**
10.6: IB SRP	**Mandatory**	**PASS**
10.7: IB Ethernet Gateway	Beta	**Not Applicable**
10.8: IB FibreChannel Gateway	Beta	**Not Applicable**
12.1: TI iSER	**Mandatory**	**Not Available**
12.10: HP MPI - HP	Beta	**Not Applicable**
12.11: TI MPI - Intel	Beta	**Not Applicable**
12.12: TI MPI - Open	Beta	**Not Applicable**
12.13: TI MPI - OSU	Beta	**Not Applicable**
12.3: TI Reliable Datagram Service	Beta	**Not Applicable**
12.4: TI SDP	**Mandatory**	**PASS**
12.5: TI uDAPL	Beta	**Not Applicable**
12.6-7: TI Basic RDMA Interoperability	Beta	**Not Tested**
12.8-9: TI RDMA Operations.	Beta	**Not Tested**

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Report Revision History

- v1.0 Initial working copy

- v1.1 Fixed topology and device names

- v1.2 Fixed topology and device names. Added note about beta tests in results summary.
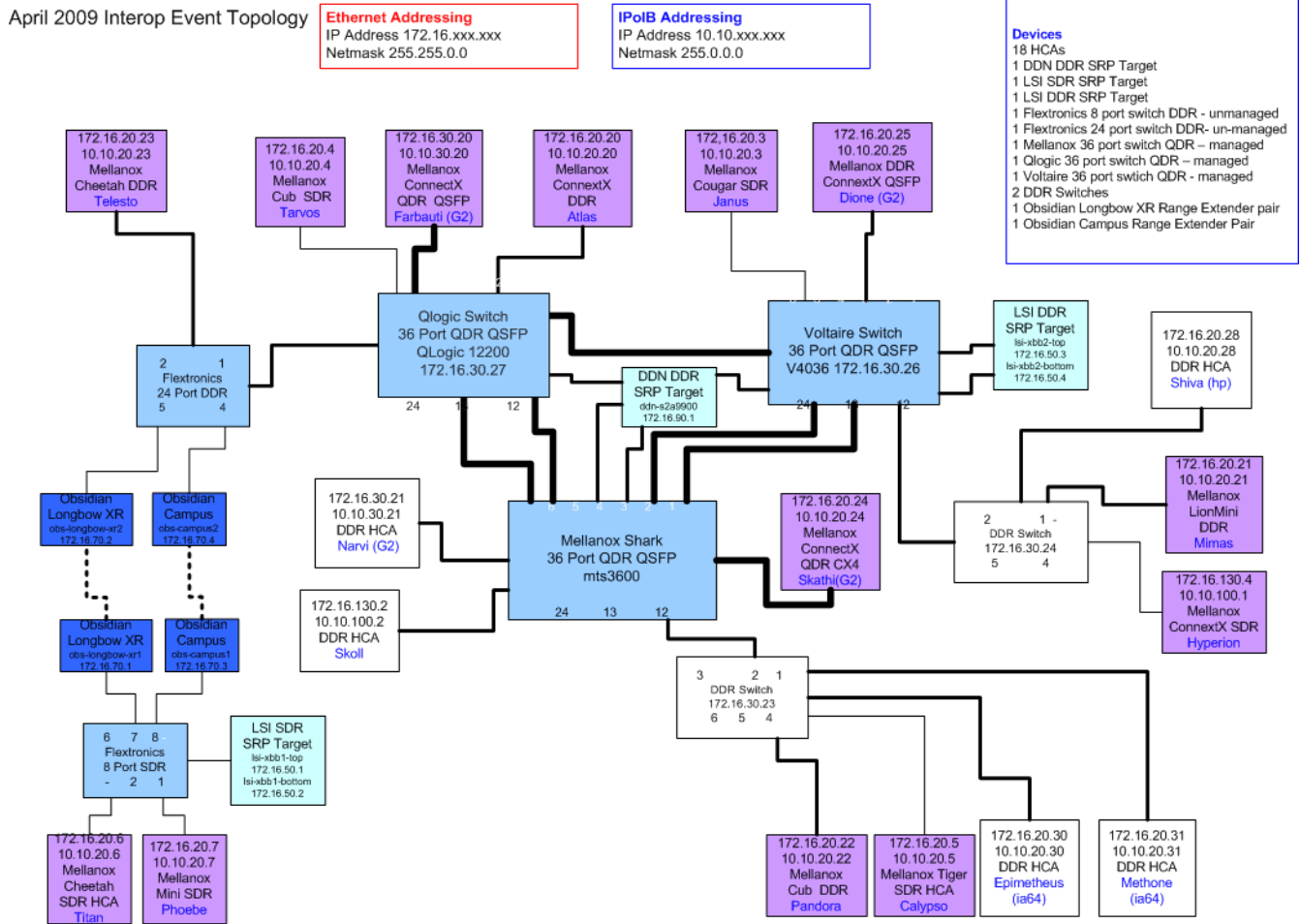
- V1.3 Changed topology diagram.

Table 2: 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 3: 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	Flextronics Ltd.	Firmware Rev	N/A
Model	F-X430066	Hardware Rev	A102/8
Speed	SDR 4x	IP Address in Fabric	N/A
Additional Comments/Notes			
Flextronics F-X430066 (8 Port SDR InfiniBand Switch)			

DUT #2 Details			
Manufacturer	Flextronics Ltd.	Firmware Rev	N/A
Model	F-X430044	Hardware Rev	I7
Speed	DDR 4x	IP Address in Fabric	N/A
Additional Comments/Notes			
Flextronics F-X430044 (24 Port DDR InfiniBand Switch)			

Mandatory Tests - IB Device Test Summary Results:

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.1: IB Link Initialize	Test #1	Phy link is established	**PASS with Comments**
Discussion:			

Physical link initialization was verified between this device and every other device in the fabric. Link status was observed visually via status lights on the device. Port width and link speed was verified via ibdiagnet.

This version of the test plan does not explicitly demand a link to be at the proper speed, the next version will. Logo testing in the 2nd half of 2009 will require proper link speed between all link combinations. Narvi, Skoll, and the 12200 switch only link at SDR speeds even though they are rated to perform at speeds higher then SDR and the F-X430044 is a DDR switch.

Link Partner Device		*F-X430044*	*F-X430066*
QLogic 12200 (Switch)		**PASS with Comments**	**PASS**
Flextronics F-X430066 (Switch)		**PASS**	**N/A**
Flextronics F-X430044 (Switch)		**N/A**	**PASS**
Mellanox MTS3600 (Switch)		**PASS**	**PASS**
Voltaire v4036 (Switch)		**PASS**	**PASS**
Obsidian Longbow-XR (Range Extender)		**PASS**	**PASS**
Obsidian Longbow-XR (Range Extender)		**PASS**	**PASS**
Obsidian Longbow Campus (Range Extender)		**PASS**	**PASS**
Obsidian Longbow Campus (Range Extender)		**PASS**	**PASS**
LSI XBB1 (SRP Target)		**PASS**	**PASS**
LSI XBB2 (SRP Target)		**PASS**	**PASS**
DataDirect Networks (SRP Target)		**PASS**	**PASS**
Host: Dione, G2 PCI e	HCA: Mellanox ConnectX DDR	**PASS**	**PASS**
Host: Hyperion	HCA: Mellanox LionCub DDR	**PASS**	**PASS**
Host: Skoll	HCA: DDR HCA	**PASS with Comments**	**PASS**
Host: Narvi, G2 PCI e	HCA: DDR HCA	**PASS with Comments**	**PASS**
Host: Telesto	HCA: Mellanox Cheetah DDR	**PASS**	**PASS**
Host: Pandora	HCA: Mellanox ConnectX SDR	**PASS**	**PASS**
Host: Titan	HCA: Mellanox Cheetah SDR	**PASS**	**PASS**
Host: Phoebe	HCA: Mellanox Lion Mini SDR	**PASS**	**PASS**
Host: Calypso	HCA: Mellanox Tiger SDR	**PASS**	**PASS**
Host: Skathi	HCA: Mellanox ConnectX QDR	**PASS**	**PASS**
Host: Janus	HCA: Mellanox Cougar SDR	**PASS**	**PASS**
Host: Tarvos	HCA: Mellanox Lion Cub SDR	**PASS**	**PASS**
Host: Farbauti, G2 PCI e	HCA: Mellanox ConnectX QDR	**PASS**	**PASS**
Host: Atlas	HCA: Mellanox ConnectX DDR	**PASS**	**PASS**
Host: Mimas	HCA: Mellanox Lion Mini DDR	**PASS**	**PASS**
Host: Shiva	HCA: Mellanox ConnectX DDR	**PASS**	**PASS**
Host: Methone, IA_64	HCA: Mellanox InfiniHost III DDR	**PASS**	**PASS**
Host: Epimetheus, IA_64	HCA: Mellanox InfiniHost III DDR	**PASS**	**PASS**

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.2: IB Fabric Initialization	Test #1:	Port is Active with all SMs	**PASS**

Discussion:

The fabric configuration shown in Figure 1 was used for this test. 'ibdiagnet -c 1000' showed no Port error 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 'ibchecknet' was used to verify that there were no duplicate guids. Refer to the table below for SM details.

SMs tested include: *OFED OpenSM (SM Only), QLogic 12200 (Managed Switch), Mellanox MTS3600 (Managed Switch) and Voltaire v4036 (Managed Switch)*

F-X430044	All ports Armed/Active	No Dup GUIDs	No Port errors
OFED OpenSM (SM only)	**PASS**	**PASS**	**PASS**
QLogic 12200 (Managed Switch)	**PASS**	**PASS**	**PASS**
Mellanox MTS3600 (Managed Switch)	**PASS**	**PASS**	**PASS**
Voltaire v4036 (Managed Switch)	**PASS**	**PASS**	**PASS**

F-X430066	All ports Armed/Active	No Dup GUIDs	No Port errors
OFED OpenSM (SM only)	**PASS**	**PASS**	**PASS**
QLogic 12200 (Managed Switch)	**PASS**	**PASS**	**PASS**
Mellanox MTS3600 (Managed Switch)	**PASS**	**PASS**	**PASS**
Voltaire v4036 (Managed Switch)	**PASS**	**PASS**	**PASS**

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.3: IPoIB Connected Mode	Test #1	Automated Test Script	**PASS**
	Test #2	Automated Test Script	**PASS**
	Test #3	Automated Test Script	**PASS**

Discussion:

Test #1: An automated test script was used to send ICMP Echo Request packets with payloads of specific sizes between all hosts on the configured fabric. This procedure was repeated with each subnet manager independently managing the fabric.

Test #2: An HCA was disconnected from the fabric and reconnected in a different location; the ICMP Echo Reply packets ceased while the HCA was disconnected, and then resumed when it was reconnected. This procedure was repeated once with each subnet manager independently managing the fabric.

 Test #3: An automated test script was used to transfer a 4MB file using the SFTP protocol between all hosts on the configured fabric. The file was transferred once in each direction between all hosts, and the contents of the file were verified after each transfer. This procedure was repeated with each subnet manager independently managing the fabric.

SMs tested include: *OFED OpenSM (SM Only), QLogic 12200 (Managed Switch), Mellanox MTS3600 (Managed Switch) and Voltaire v4036 (Managed Switch)*

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
	Test #1	Automated Test Script	**PASS with Comments**
Group 10.4: IPoIB Datagram Mode	Test #2	Automated Test Script	**PASS**
	Test #3	Automated Test Script	**PASS**
Discussion:			

Test #1: An automated test script was used to send ICMP Echo Request packets with payloads of specific sizes between all hosts on the configured fabric. This procedure was repeated with each subnet manager independently managing the fabric.

The last packet size tested; 65507 bytes, was seen to lose the very first packet sent. This can be fixed by setting the systems qlen value to 18.

Test #2: An HCA was disconnected from the fabric and reconnected in a different location; the ICMP Echo Reply packets ceased while the HCA was disconnected, and then resumed when it was reconnected. This procedure was repeated once with each subnet manager independently managing the fabric.

Test #3: An automated test script was used to transfer a 4MB file using the SFTP protocol between all hosts on the configured fabric. The file was transferred once in each direction between all hosts, and the contents of the file were verified after each transfer. This procedure was repeated with each subnet manager independently managing the fabric.

SMs tested include: *OFED OpenSM (SM Only), QLogic 12200 (Managed Switch), Mellanox MTS3600 (Managed Switch) and Voltaire v4036 (Managed Switch)*

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.6: IB SRP	Test #1:	Automated Test Script	**PASS**
Discussion:			

No SRP issues were observed with this switch

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.1: TI iSER	Test #1-4	Not Available	**Not Available**
Discussion:			

This test was not performed due to the unavailability of an iSER target device in the fabric

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
	Test #1: Netperf	Automated Test Script	**PASS**
Group 12.4: TI SDP	Test #2: SFTP	Automated Test Script	**PASS**
	Test #3: SCP	Automated Test Script	**PASS**
Discussion:			

No SDP issues were observed with this switch.

Beta Tests - IB Device Test Results:

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.5: IB SM Failover and Handover	Test #1-4	No problems detected	**PASS**
Discussion:			
SM failover/handover succeeded in a fabric utilizing these DUT's. OpenSM was the only SM tested.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.7: IB Ethernet Gateway	Test #1-10	Not applicable to DUT	**Not Applicable**
Discussion:			
The OFA Logo Program does not require these tests to be performed on a device that does not support this functionality.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 10.8: IB FibreChannel Gateway	Test #1-10	Not applicable to DUT	**Not Applicable**
Discussion:			
The OFA Logo Program does not require these tests to be performed on a device that does not support this functionality.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.3: TI Reliable Datagram Service	Test #1-10	Not applicable to DUT	**Not Applicable**
Discussion:			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.5: TI uDAPL	Test #1	Not applicable to DUT	**Not Applicable**
Discussion:			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.6: TI Basic RDMA Interoperability – Using XanStorm	Test #1-10	Not Tested	**Not Tested**
Discussion:			
Due to time constraints this test was not performed.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.7: TI Basic RDMA Interoperability – Using Command Line	Test #1-10	Not Tested	**Not Tested**
Discussion:			
Due to time constraints this test was not performed.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.8: TI RDMA Operations. Using XANStorm	Test #1-10	Not Tested	**Not Tested**
Discussion:			
Due to time constraints this test was not performed.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.9: TI RDMA Operations. Using Command Line	Test #1-10	Not Tested	**Not Tested**
Discussion:			
Due to time constraints this test was not performed.			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.10: MPI – Hewlett-Packard	Test #1-24	Not applicable to DUT	**Not Applicable**
Discussion:			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.11: TI MPI – Intel	Test #1 PingPing and PingPong	Not applicable to DUT	**Not Applicable**
	Test #2 All	Not applicable to DUT	**Not Applicable**
Discussion:			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.12: TI MPI – Open	Test #1 PingPing and PingPong	Not applicable to DUT	**Not Applicable**
	Test #2 All	Not applicable to DUT	**Not Applicable**
Discussion:			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.13: TI MPI – Mvapich1	Test #1 PingPing and PingPong	Not applicable to DUT	**Not Applicable**
	Test #2 All	Not applicable to DUT	**Not Applicable**
Discussion:			

Test Number and Name	Part(s)	Summary Note(s)	Result(s)
Group 12.13: TI MPI – Mvapich2	Test #1 PingPing and PingPong	Not applicable to DUT	**Not Applicable**
	Test #2 All	Not applicable to DUT	**Not Applicable**
Discussion:			