



OpenFabrics Alliance

Interoperability Working Group (OFA-IWG)

December 2008 Logo Event Report

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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 1.22 (August 29, 2008 DRAFT) was used:

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

The following table highlights the Mandatory test results for the DUT per the testplan referenced above. Complete results

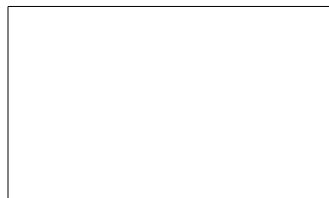
| Mandatory Test Procedures | IWG Test Status | Result/Notes |
|--|------------------|-------------------------|
| 10.1: IB Link Initialization | Mandatory | Passed – no issues seen |
| 10.2: IB Fabric Initialization | Mandatory | Passed – no issues seen |
| 10.3: IB IPoIB Connected Mode | Mandatory | Passed – no issues seen |
| 10.9: TI iSER | Mandatory | Not Available |
| 10.10: SRP | Mandatory | Passed – no issues seen |
| 10.11: SDP | Mandatory | Passed – no issues seen |

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 12/23/2008

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Table 1: Result Summary

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

| Test Procedures | IWG Test Status | Result/Notes |
|---|------------------|-------------------------|
| 10.1: IB Link Initialization | Mandatory | Passed – see comments |
| 10.2: IB Fabric Initialization | Mandatory | Passed – no issues seen |
| 10.3: IB IPoIB Connected Mode | Mandatory | Passed – no issues seen |
| 10.4: IB IPoIB Datagram Mode | Beta | Passed – no issues seen |
| 10.9: TI iSER | Mandatory | Not Available |
| 10.10 SRP | Mandatory | Passed – see comments |
| 10.11: SDP | Mandatory | Passed – no issues seen |
| 10.12: IB SM Failover and Handover | Beta | Not applicable to DUT |
| 10.13: TI MPI - OSU | Beta | Not applicable to DUT |
| 10.14: TI MPI - Intel | Beta | Not applicable to DUT |
| 10.15: HP MPI - HP | Beta | Not applicable to DUT |
| 10.16: TI MPI - Open | Beta | Not applicable to DUT |
| 10.17: TI uDAPL | Beta | Not applicable to DUT |
| 10.19: IB FibreChannel Gateway | Beta | Not applicable to DUT |
| 10.20: IB Ethernet Gateway | Beta | Not applicable to DUT |
| 10.21: IB Reliable Datagram Sockets | Beta | Not Tested |
| 10.22-23: TI Basic RDMA Interoperability | Beta | Not Tested |
| 10.24-25: TI RDMA Operations over Interconnect Components | Beta | Not Tested |

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http://www.iol.unh.edu/certifyDoc/certificates_and_fingerprints.php

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Report Revision History

- v1.0 Initial Release
- v1.01 Added Firmware and Hardware Version Numbers
- v1.02 Editorial Changes

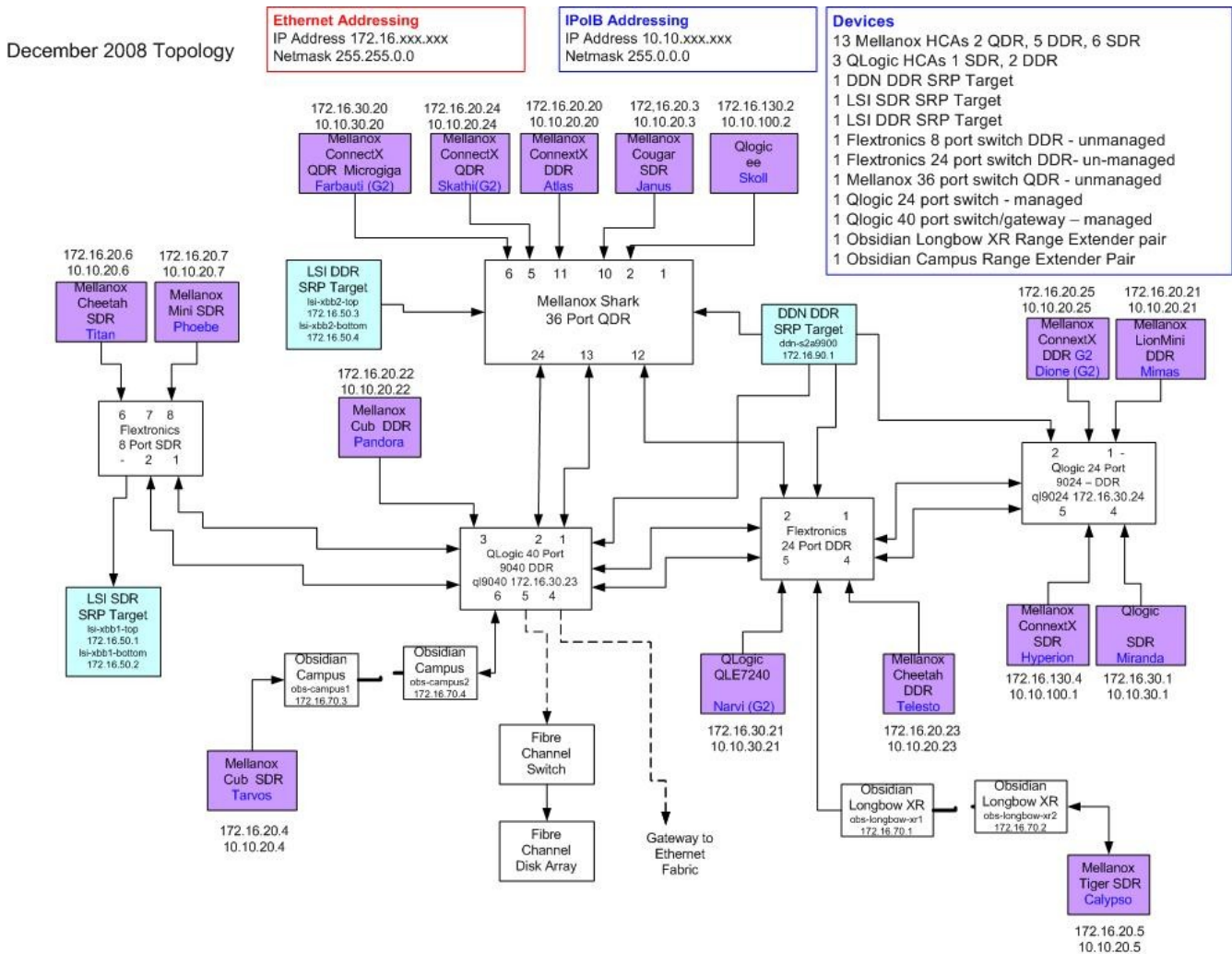
Table 1: Result Key

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 | Flextronics Ltd. | Firmware Rev | 5.6.0 |
| 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 | 1.0.0 |
| 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:

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 1.22 (August 29, 2008 DRAFT)

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|--|----------|-------------------------|-------------|
| Group 1: IB Link Initialize | Test #1: | Phy link is established | PASS |
| Discussion: Test #1: Phy link up all ports | | | |
| 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. | | | |

| Link Partner Device | F-X430044 | F-X430066 |
|--|-------------|-------------|
| QLogic SilverStorm 9024 (Switch) | PASS | PASS |
| QLogic SilverStorm 9040 (Switch) | PASS | PASS |
| Flextronics F-X430066 (Switch) | PASS | NA |
| Flextronics F-X430044 (Switch) | NA | PASS |
| Mellanox MTS3600 (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: Miranda HCA: QLogic QLE7140 SDR | PASS | PASS |
| Host: Tarvos HCA: Mellanox LionCub SDR | PASS | PASS |
| Host: Hyperion HCA: Mellanox Connectx SDR | PASS | PASS |
| Host: Janus HCA: Mellanox Cougar SDR | PASS | PASS |
| Host: Phoebe HCA: Mellanox LionMini SDR | PASS | PASS |
| Host: Titan HCA: Mellanox Cheetah SDR | PASS | PASS |
| Host: Calypso HCA: Mellanox Tiger SDR | PASS | PASS |
| Host: Skathi, G2 PCI Express HCA: Mellanox Connectx QDR | PASS | PASS |
| Host: Farbauti, G2 PCI Express HCA: Mellanox Connectx QDR | PASS | PASS |
| Host: Narvi, G2 PCI Express HCA: QLogic QLE7280 DDR | PASS | PASS |
| Host: Atlas HCA: Mellanox Connectx DDR | PASS | PASS |
| Host: Telesto | PASS | PASS |

| | | |
|---|-------------|-------------|
| HCA: Mellanox Cheetah DDR | | |
| Host: Dione, G2 PCI Express HCA: Mellanox Connectx DDR | PASS | PASS |
| Host: Mimas HCA: Mellanox LionMini DDR | PASS | PASS |
| Host: Skoll HCA: QLogic QLE7240 DDR | PASS | PASS |
| Host: Pandora HCA: Mellanox LionCub DDR | PASS | PASS |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|--|----------|-----------------------------|-------------|
| Group 2: IB Fabric Initialization | Test #1: | Port is Active with all SMs | PASS |
| Discussion: Test #1: Verify all SMs configure fabric | | | |
| <p>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 guides. Refer to the table below for SM details.</p> <p>SMs tested include: <i>OFED OpenSM (SM Only)</i>, <i>QLogic SilverStorm 9024 (Managed Switch)</i>, <i>QLogic SilverStorm 9040 (Managed Switch)</i></p> | | | |

| For <i>Flextronics F-X430066</i> | All ports Armed/Active | No Dup GUIDs | No Port errors |
|--|------------------------|--------------|----------------|
| OFED OpenSM (SM Only) | PASS | PASS | PASS |
| QLogic SilverStorm 9024 (Managed Switch) | PASS | PASS | PASS |
| QLogic SilverStorm 9040 (Managed Switch) | PASS | PASS | PASS |

| For <i>Flextronics F-X430044</i> | All ports Armed/Active | No Dup GUIDs | No Port errors |
|--|------------------------|--------------|----------------|
| OFED OpenSM (SM Only) | PASS | PASS | PASS |
| QLogic SilverStorm 9024 (Managed Switch) | PASS | PASS | PASS |
| QLogic SilverStorm 9040 (Managed Switch) | PASS | PASS | PASS |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|--|-----------|--------------------------------|-------------|
| Group 3: IPoIB Connected Mode | Test #1-3 | Tests completed without errors | 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. | | | |
| Discussion: 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. | | | |
| Discussion: 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 four times in each direction between all hosts, and the contents of the file was verified after each transfer. This procedure was repeated with each subnet manager independently managing the fabric. | | | |
| For all test cases, SMs tested include: <i>OFED OpenSM (SM Only)</i> , <i>QLogic SilverStorm 9024 (Managed Switch)</i> , <i>QLogic SilverStorm 9040 (Managed Switch)</i> | | | |

| | All Tests Succeeded |
|-----------------------|---------------------|
| Flextronics F-X430066 | PASS |
| Flextronics F-X430044 | PASS |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|------------------------------|-----------|-----------------|----------------------|
| Group 9: TI iSER | Test #1-4 | Not Available | Not Available |
| Discussion: Test #1-4 | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|--|----------|-----------------------|-------------|
| Group 10: IB SRP | Test #1: | Automated Test Script | PASS |
| Discussion: Test Result | | | |
| The automated test script was revised since the version published in the test document. The automated test script runs the operations in the test plan with every available host and logs the results. The Logs show that all SRP initiators were able to connect and perform the required data transfer operations with the SRP targets in a fabric incorporating this device while using OpenSM to configure the fabric. The 9024 and the 9040 SM's produced errors with 2 Mellanox HCA's during the SRP operations; Titan and Calypso. These failures have no bearing on these devices. | | | |

| | All Tests Succeeded |
|-----------------------|---------------------|
| Flextronics F-X430066 | PASS |
| Flextronics F-X430044 | PASS |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|----------------------|------------------|-------------------------------|-------------|
| Group 11: TI SDP | Test #1: Netperf | Test Completed without errors | PASS |
| | Test #2: FTP | Test Completed without errors | PASS |
| | Test #3: SCP | Test Completed without errors | PASS |

Discussion: Test #1-3

The automated test script used in the last event was used again during this event with the addition of a wrapper program to control the cluster environment and facilitate better logging. The automated test script runs the three parts of the SDP procedure between every possible pair of hosts without the hosts connecting to themselves and records the results to a log. The test logs show that no issues were seen with the procedures. Every operation completed for each pair. However, some hosts were noted to run significantly slower than others during the transfers. This is not a failure as per the current test plan, but it should be noted that this could become a topic of focus in future revisions of the Test Plan.

| | Netperf | SFTP | SCP |
|-----------------------|-------------|-------------|-------------|
| Flextronics F-X430066 | PASS | PASS | PASS |
| Flextronics F-X430044 | PASS | PASS | PASS |

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 1.22 (August 29, 2008 DRAFT)

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---|-----------|---|-------------|
| Group 4: IPoIB Datagram Mode | Test #1-3 | Tests succeeded between all IPoIB devices | PASS |
| Discussion: Test #1-3 | | | |
| IPoIB capable devices were interoperable over a fabric incorporating this device. All IPoIB datagram mode tests completed successfully between all IPoIB enabled devices in the fabric. | | | |

| | All Tests Succeeded |
|-----------------------|---------------------|
| Flextronics F-X430066 | PASS |
| Flextronics F-X430044 | PASS |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---------------------------------------|-----------|-----------------------|-----------------------|
| Group 12: IB SM Failover and Handover | Test #1-4 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|-------------------------------------|------------|-----------------------|-----------------------|
| Group 13: TI MPI – Ohio State Univ. | Test #1-14 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---------------------------------|------------|-----------------------|-----------------------|
| Group 14: MPI – Intel | Test #1-21 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---------------------------------|------------|-----------------------|-----------------------|
| Group 15: MPI – Hewlett-Packard | Test #1-21 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---------------------------------|------------|-----------------------|-----------------------|
| Group 16: MPI – Open | Test #1-21 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---------------------------------|------------|-----------------------|-----------------------|
| Group 17: TI uDAPL | Test #1-10 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|-----------------------------------|------------|-----------------------|-----------------------|
| Group 19: IB FibreChannel Gateway | Test #1-10 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---------------------------------|------------|-----------------------|-----------------------|
| Group 20: IB Ethernet Gateway | Test #1-10 | Not applicable to DUT | Not Applicable |
| Discussion: Test Results | | | |
| | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|--|------------|-----------------|-------------------|
| Group 21: IB Reliable Datagram Sockets | Test #1-10 | Not tested | Not Tested |
| Discussion: Test Results | | | |
| Not tested due to time constraints | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|---|------------|-----------------|-------------------|
| Group 22-23: TI Basic RDMA Interoperability | Test #1-10 | Not tested | Not Tested |
| Discussion: Test Results | | | |
| Not tested due to time constraints | | | |

| Test Number and Name | Part(s) | Summary Note(s) | Result(s) |
|--|------------|-----------------|-------------------|
| Group 24-25: TI RDMA Operations over Interconnect Components | Test #1-10 | Not tested | Not Tested |
| Discussion: Test Results | | | |
| Not tested due to time constraints | | | |