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

Mellanox SX5036

FDR devices are not yet supported by the logo program, but were tested at the December 2011 event and are listed in the Beta section for informative purposes. This is because the IBTA FDR Specification was not finalized in time for this event and none of the applicable test plan procedures had ever been run using FDR products.

The test suite referenced in this report is available at the IOL website. Release 1.4 (2011-Oct-25) was used.


The logo document referenced in this report is available at the IOL website. Release 1.14 (2011-Mar-01) was used.


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

Additional beta testing was performed using the DUT than is reflected in this report. A separate report will outline those results.

<table>
<thead>
<tr>
<th>Test Procedures</th>
<th>IWG Test Status</th>
<th>Result/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1: Link Initialization</td>
<td>Mandatory</td>
<td>FAIL</td>
</tr>
<tr>
<td>10.2: IB Fabric Initialization</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.3: IPoIB Connected Mode</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.4: IPoIB Datagram Mode</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.5: SM Failover and Handover</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.6: SRP</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.1: TI iSER</td>
<td>Mandatory</td>
<td>Not Available</td>
</tr>
<tr>
<td>12.2: TI NFS over RDMA</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.3: TI RDS</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.4: TI SDP</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.5: TI uDAPL</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.6: TI RDMA Basic Interop</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.8: TI RDMA Stress</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.11: TI MPI – Open</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.12: TI MPI – OSU</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Summary of all results follows on the second page of this report.
For Specific details regarding issues, please see the corresponding test result.
### Result Summary

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

<table>
<thead>
<tr>
<th>Test Procedures</th>
<th>IWG Test Status</th>
<th>Result/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1: Link Initialization</td>
<td>Mandatory</td>
<td>FAIL</td>
</tr>
<tr>
<td>10.2: IB Fabric Initialization</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.3: IPoIB Connected Mode</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.4: IPoIB Datagram Mode</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.5: SM Failover and Handover</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.6: SRP</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>10.7: Ethernet Gateway</td>
<td>Beta</td>
<td>Not Tested</td>
</tr>
<tr>
<td>10.8: FibreChannel Gateway</td>
<td>Beta</td>
<td>Not Tested</td>
</tr>
<tr>
<td>12.1: TI iSER</td>
<td>Mandatory</td>
<td>Not Available</td>
</tr>
<tr>
<td>12.2: TI NFS over RDMA</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.3: TI RDS</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.4: TI SDP</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.5: TI uDAPL</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.6: TI RDMA Basic Interoperability</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.8: TI RDMA Stress</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.10: TI MPI – Intel</td>
<td>Beta</td>
<td>Not Tested</td>
</tr>
<tr>
<td>12.11: TI MPI – Open</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
<tr>
<td>12.12: TI MPI – OSU</td>
<td>Mandatory</td>
<td>PASS</td>
</tr>
</tbody>
</table>

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- SHA-1 Fingerprint: 50 E2 CB 10 21 32 33 56 4A FC 10 4F AD 24 6D B3 05 22 7C C0
Report Revision History

- v1.0 Initial working copy
- v1.1 Revised working copy
- v1.2 Post arbitration resolution update

Configuration Files

<table>
<thead>
<tr>
<th>Description</th>
<th>Attachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Linux 6.1 Configuration File</td>
<td></td>
</tr>
<tr>
<td>OFED 1.5.4 Configuration File</td>
<td></td>
</tr>
</tbody>
</table>

Result Key

The following table contains possible results and their meanings:

<table>
<thead>
<tr>
<th>Result:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASS</td>
<td>The Device Under Test (DUT) was observed to exhibit conformant behavior.</td>
</tr>
<tr>
<td>PASS with Comments</td>
<td>The DUT was observed to exhibit conformant behavior however an additional</td>
</tr>
<tr>
<td></td>
<td>explanation of the situation is included.</td>
</tr>
<tr>
<td>FAIL</td>
<td>The DUT was observed to exhibit non-conformant behavior.</td>
</tr>
<tr>
<td>Warning</td>
<td>The DUT was observed to exhibit behavior that is not recommended.</td>
</tr>
<tr>
<td>Informative</td>
<td>Results are for informative purposes only and are not judged on a pass or fail</td>
</tr>
<tr>
<td>Refer to Comments</td>
<td>From the observations, a valid pass or fail could not be determined. An</td>
</tr>
<tr>
<td></td>
<td>additional explanation of the situation is included.</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>The DUT does not support the technology required to perform this test.</td>
</tr>
<tr>
<td>Not Available</td>
<td>Due to testing station limitations or time limitations, the tests could not be</td>
</tr>
<tr>
<td></td>
<td>performed.</td>
</tr>
<tr>
<td>Borderline</td>
<td>The observed values of the specific parameters are valid at one extreme and</td>
</tr>
<tr>
<td></td>
<td>invalid at the other.</td>
</tr>
<tr>
<td>Not Tested</td>
<td>Not tested due to the time constraints of the test period.</td>
</tr>
</tbody>
</table>
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: Mellanox  
Firmware Revision: 3.1.1080  
Model: SX6036  
Hardware Revision: B1  
Speed: FDR  
Located in Host: NA  
Firmware MD5sum: 3bcb05600a667ca6c060a81191e5f847

Additional Comments / Notes:
Mandatory Tests – IB Device Test Results:

10.1: Link Initialization

<table>
<thead>
<tr>
<th>Link Partner</th>
<th>SX6036</th>
<th>SX6025</th>
</tr>
</thead>
<tbody>
<tr>
<td>QLogic 12200 (Switch) – QDR</td>
<td>FAIL</td>
<td>PASS</td>
</tr>
<tr>
<td>Mellanox SX6025 (Switch) – FDR</td>
<td>PASS</td>
<td>NA</td>
</tr>
<tr>
<td>Mellanox SX6036 (Switch) – FDR</td>
<td>NA</td>
<td>PASS</td>
</tr>
<tr>
<td>Mellanox IS-5030 (Switch) – QDR</td>
<td>PASS</td>
<td>NA</td>
</tr>
<tr>
<td>Mellanox BX5020 (Gateway) – QDR</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>DataDirect Networks SFA10000 (SRP Target) – QDR</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>DataDirect Networks S2A9900 (SRP Target) – DDR</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>NetApp Pikes Peak (SRP Target) – QDR</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>NetApp XBB2 (SRP Target) – DDR</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Host: Themis HCA: MHQH29C-XTR (QDR)</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Host: Pan HCA: MHQH19B-XTR (QDR)</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Host: Hati HCA: MCX353A-FCBT (FDR)</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Host: Titan HCA: MCX354A-FCBT (FDR)</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Discussion:
It was noted during testing that certain port combinations between the Mellanox SX6036 switch and the QLogic 12200 switch linked at 4X DDR instead of the expected 4X QDR. This was more readily apparent when using passive copper cables five (5) meters in length when connected between ports on with long traces (generally edge ports).

10.2: Fabric Initialization

<table>
<thead>
<tr>
<th>Subnet Manager</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Result Discussion:
All subnet managers used while testing with OFED 1.5.4 were able to correctly configure the selected topology.

10.3: IPoIB Connected Mode

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – ping</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>B – SFTP</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>C – SCP</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Result Discussion:
IPoIB ping, SFTP, and SCP transactions completed successfully between all HCAs; each HCA acted as both a client and a server for all tests.
### 10.4: IPoIB Datagram Mode

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – ping</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>B – SFTP</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>C – SCP</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
IPoIB ping, SFTP, and SCP transactions completed successfully between all HCAs; each HCA acted as both a client and a server for all tests.

### 10.5: SM Failover and Handover

<table>
<thead>
<tr>
<th>SM Pairings</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenSM OFED 1.5.4</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
OpenSM was able to properly handle SM priority and state rules.

### 10.6: SRP

<table>
<thead>
<tr>
<th>Subnet Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenSM</td>
</tr>
<tr>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
SRP communications between all HCAs and all SRP targets succeeded while the above mentioned SMs were in control of the fabric.

### 12.1 TI iSER

<table>
<thead>
<tr>
<th>Subnet Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenSM</td>
</tr>
<tr>
<td>Not Tested</td>
</tr>
</tbody>
</table>

**Result Discussion:**
This test was not performed as there are no devices that support the iSER test procedure present in event topology.

### 12.2: TI NFS over RDMA

<table>
<thead>
<tr>
<th>Subnet Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenSM</td>
</tr>
<tr>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
Connectathon was used to test NFS over RDMA; each HCA acted as both a client and a server.
### 12.3: TI RDS

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – ping</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>B – stress</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
The reliable datagram socket protocol was tested between all HCAs; all communications completed successfully.

### 12.4: TI SDP

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – netperf</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>B – SFTP</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>C – SCP</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
All communications using the SDP protocol completed successfully; each HCA acted as both a client and a server for all tests.

### 12.5: TI uDAPL

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – ping</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
All communications using DAPL were seen to complete successfully as described in the referenced Test plan; each HCA acted as both a client and a server for all tests.

### 12.6: TI RDMA Basic Interoperability

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – ping</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
All devices were shown to correctly exchange core RDMA operations across a simple network path under nominal (unstressed) conditions; each HCA acted as both a client and a server for all tests.

### 12.8: TI RDMA Stress

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – ping</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
All IB switches were seen to properly handle a large load as indicated by the successfully completion of control communications between two HCAs while all other HCAs in the fabric were used to generate traffic in order to put a high load on the switch. Each HCA acted as both a client and a server for the control connection.
### 12.11: TI MPI – Open

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>B</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
Complete heterogeneity; 1 MPI process per OFED 1.5.4 deployed system as described in the cluster topology (red and purple system icons), IB device vendor agnostic.

### 12.12: TI MPI – OSU

<table>
<thead>
<tr>
<th>Part</th>
<th>OpenSM</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>B</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
<td>PASS</td>
</tr>
</tbody>
</table>

**Result Discussion:**
Complete heterogeneity; 1 MPI process per OFED 1.5.4 deployed system as described in the cluster topology (red and purple system icons), IB device vendor agnostic.
Beta Tests – IB Device Test Results:

### 10.7: IB Ethernet Gateway

<table>
<thead>
<tr>
<th>Subnet Manager</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
</tr>
</tbody>
</table>

**Result Discussion:**
This test was not performed as there are no devices that support the Ethernet Gateway test procedure present in event topology.

### 10.8: IB FibreChannel Gateway

<table>
<thead>
<tr>
<th>Subnet Manager</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
</tr>
</tbody>
</table>

**Result Discussion:**
This test was not performed as there are no devices that support the FibreChannel Gateway test procedure present in event topology.

### 12.10: MPI – Intel

<table>
<thead>
<tr>
<th>Subnet Manager</th>
<th>IS-5030 SM</th>
<th>SX-6036 SM</th>
<th>QL12200 SM</th>
<th>WinOF SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
<td>Not Tested</td>
</tr>
</tbody>
</table>

**Result Discussion:**
This test was not performed as the binaries for Intel MPI are not present on the compute nodes present in event topology.