OpenFabrics Alliance

Interoperability Logo Group (OFILG)

January 2015 Logo Event Report

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Date:	17 March 2015
Report Revision:	1.0
OFED Version on Compute Nodes:	3.12-1
Operating System on Compute Nodes:	Scientific Linux 7.0

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

Intel QLE7340 *Intel QLE7342*

The test suite referenced in this report is available at the UNH-IOL website. Release 1.51 (2014-Sep-23) was used.

https://iol.unh.edu/ofatestplan

The following table highlights the Mandatory test required for the OpenFabrics Interoperability Logo for the InfiniBand HCA device class per the Test Plan and the current OpenFabrics Interoperability Logo Program (OFILP).

Test Procedures	IWG Test Status	Result/Notes
11.1: Link Initialization	Mandatory	PASS
11.2: Fabric Initialization	Mandatory	PASS
11.3: IPoIB Connected Mode	Mandatory	PASS
11.4: IPoIB Datagram Mode	Mandatory	PASS
11.5: SM Failover and Handover	Mandatory	PASS
11.6: SRP	Mandatory	PASS
13.2: TI NFS over RDMA	Mandatory	FAIL
13.4: TI uDAPL	Mandatory	PASS
13.5: TI RDMA Basic Interoperability	Mandatory	PASS
13.6: TI RDMA Stress	Mandatory	PASS
13.7: RSockets	Mandatory	FAIL
13.8: TI MPI – Open	Mandatory	PASS

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

Testing Completed March 23, 2015

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UNH-IOL
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Reviewed & Issued March 24, 2015

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Result Summary

The Following table summarizes all results from the event pertinent to this IB device class (InfiniBand HCA).

Test Procedures	IWG Test Status	Result/Notes
11.1: Link Initialization	Mandatory	PASS
11.2: Fabric Initialization	Mandatory	PASS
11.3: IPoIB Connected Mode	Mandatory	PASS
11.4: IPoIB Datagram Mode	Mandatory	PASS
11.5: SM Failover and Handover	Mandatory	PASS
11.6: SRP	Mandatory	PASS
11.7: IB Ethernet Gateway	Beta	Not Tested
11.8: IB FibreChannel Gateway	Beta	Not Tested
13.2: TI NFS over RDMA	Mandatory	FAIL
13.4: TI uDAPL	Mandatory	PASS
13.5: TI RDMA Basic Interoperability	Mandatory	PASS
13.6: TI RDMA Stress	Mandatory	PASS
13.7: TI RSockets	Mandatory	FAIL
13.8: TI MPI – Open	Mandatory	PASS

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Report Revision History

- v1.0 Initial working copy

Configuration Files

Description	Attachment
Scientific Linux 7.0 Configuration File	
OFED 3.12-1 Configuration File	

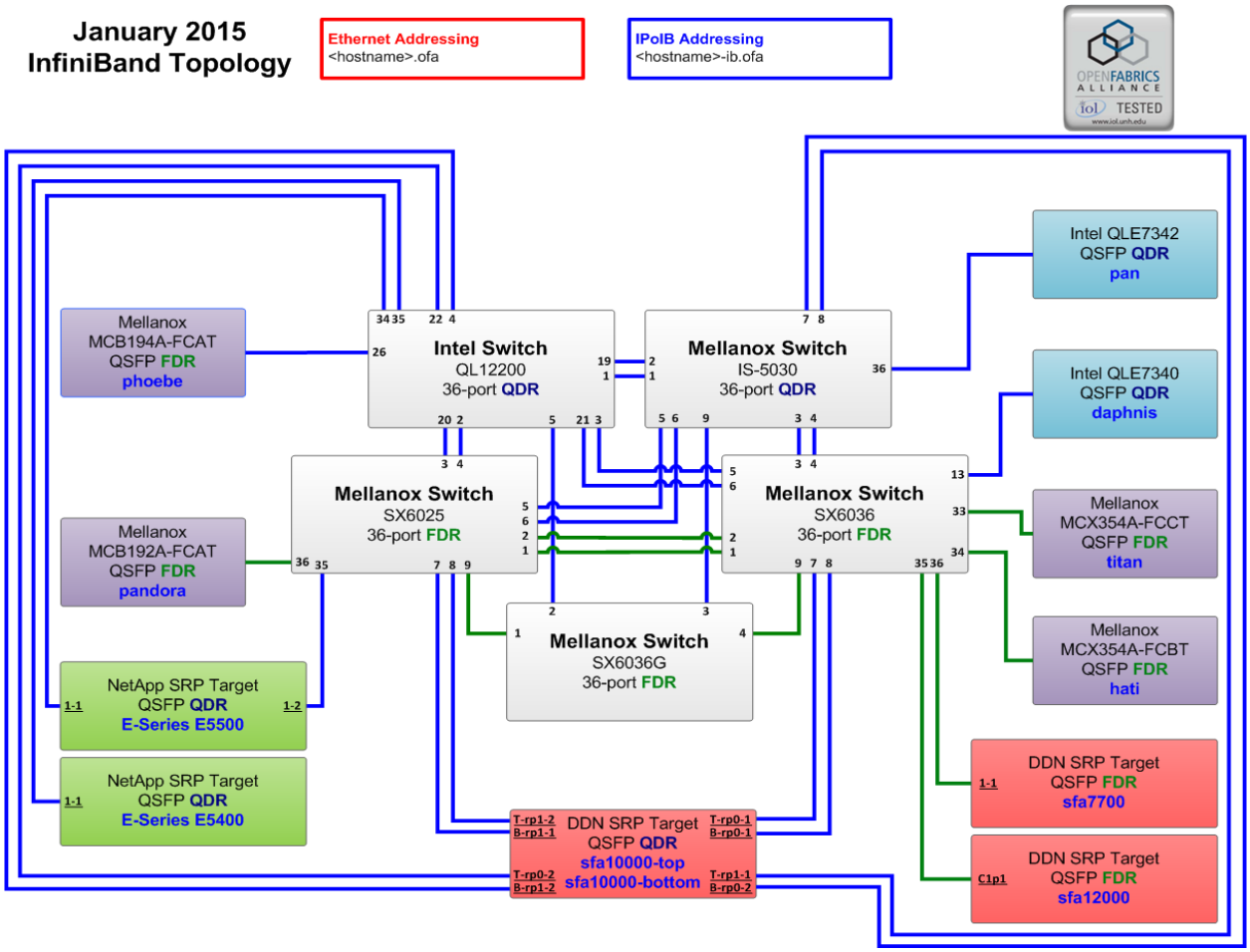
Result Key

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.
Qualified PASS	The DUT was observed to exhibit conformant behavior, with the exception of fault(s) or defect(s) which were previously known.
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 specific parameters are valid at one extreme and invalid at the other.
Not Tested	Not tested due to the time constraints of the test period.

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:	Intel	Firmware Revision:	N/A *
Model:	QLE7340	Hardware Revision:	2
Speed:	QDR	Located in Host:	daphnis
Firmware MD5sum:	N/A		
Additional Comments / Notes:			
* Contained in OFED 3.12-1			

DUT #2 Details			
Manufacturer:	Intel	Firmware Revision:	N/A *
Model:	QLE7342	Hardware Revision:	2
Speed:	QDR	Located in Host:	pan
Firmware MD5sum:	N/A		
Additional Comments / Notes:			
* Contained in OFED 3.12-1			

Mandatory Tests – IB Device Test Results:

11.1: Link Initialization

Results	
Part #1:	PASS
Discussion:	
All links established with the DUT were of the proper link speed and width.	

Link Partner		QLE7340	QLE7342
Intel 12200 (Switch) – QDR		PASS	PASS
Mellanox SX6025 (Switch) – FDR		PASS	PASS
Mellanox SX6036 (Switch) – FDR		PASS	PASS
Mellanox IS-5030 (Switch) – QDR		PASS	PASS
Mellanox SX6036G (Switch) – FDR		PASS	PASS
DataDirect Networks SFA12000 (SRP Target) – FDR		PASS	PASS
DataDirect Networks SFA10000 (SRP Target) – QDR		PASS	PASS
DataDirect Networks SFA7700 (SRP Target) – FDR		PASS	PASS
NetApp Soyuz (SRP Target) – QDR		PASS	PASS
NetApp Pikes Peak (SRP Target) – QDR		PASS	PASS
Host: hati	HCA: MCX354A-FCBT (FDR)	PASS	PASS
Host: titan	HCA: MCX354A-FCCT (FDR)	PASS	PASS
Host: phoebe	HCA: MCB194A-FCAT (FDR)	PASS	PASS
Host: pandora	HCA: MCB192A-FCAT (FDR)	PASS	PASS
Host: pan	HCA: QLE7342 (QDR)	PASS	NA
Host: daphnis	HCA: QLE7340 (QDR)	NA	PASS

11.2: Fabric Initialization

Subnet Manager	Result
OpenSM	PASS
Result Discussion:	
All subnet managers used while testing with OFED 3.12-1 were able to correctly configure the selected topology.	

11.3: IPoIB Connected Mode

Subnet Manager	Part A	Part B	Part C
OpenSM	PASS	PASS	PASS
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.			

11.4: IPoIB Datagram Mode

Subnet Manager	Part A	Part B	Part C
OpenSM	**PASS**	**PASS**	**PASS**
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.			

11.5: SM Failover and Handover

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

11.6: SRP

Subnet Manager	Result
OpenSM	**PASS**
Result Discussion:	
Communications between all HCAs and all SRP targets succeeded while OpenSM was in control of the fabric.	

13.2: TI NFS over RDMA

Subnet Manager	Result
OpenSM	**FAIL**
Result Discussion:	
No DUTs were able to complete all 4 sections of the Connectathon test suite in this Logo event. A subset of devices were able to complete the Basic, Locking, and Special sections of the suite. The General section exits with an error which may not be caused by the vendor hardware. To reproduce the issues refer to the ofatestplan NFSoRDMA Test Procedure in section 13.2.2 on page 72. Similar issues were observed with other pairs of devices with no Intel device in the pair. **Intel QLE7342 to Intel QLE7340** tested with both HCAs acting as client and server passes Connectathon Basic, Locking, and Special tests fails General tests with "Nroff ./stat: no data in nroff.time" **Intel to Mellanox MCB192A-FCAT** tested with both HCAs acting as client and server passes Connectathon Basic, Locking, and Special tests fails General tests with "Nroff ./stat: no data in nroff.time" **Intel to Mellanox MCX354A-FCBT** tested with both HCAs acting as client and server In all iterations with these pairs, the connectathon Basic test hangs with the client system displaying: ./test5: read and write and the client must be restarted before testing can begin again.	

13.4: TI uDAPL

Subnet Manager	Result
OpenSM	**PASS**
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.	

13.5: TI RDMA Basic Interoperability

Subnet Manager	Result
OpenSM	**PASS**
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.	

13.6: TI RDMA Stress

Subnet Manager	Result
OpenSM	**PASS**
Result Discussion:	
All IB switches were seen to properly handle a large load as indicated by the successful 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.	

13.7: TI RSockets

Subnet Manager	Result
OpenSM	**FAIL**

Result Discussion:

DUTs were noted to hang indefinitely when acting as either server or client during testing. When connected to another Intel device, each device was unable to complete RDMA Asynchronous, Blocking, and Non-blocking tests and instead hung on a polling thread. When connected to a non-Intel device the behavior is the same. Note that when two non-Intel devices are connected, the test performs properly. The issue was also observed when the Intel device was directly connected to an HCA. Logs for these issues are available from the UNH-IOL OFILG.

An example of the hung polling thread is shown below from the server side:

```
Starting program: /usr/bin/rstream -T a -S all
[Thread debugging using libthread_db enabled]
Using host libthread_db library "/lib64/libthread_db.so.1".
name      bytes   xfers   iters   total       time     Gb/sec    usec/xfer
^C
Program received signal SIGINT, Interrupt.
0x00007ffff7bd3bd8 in idm_lookup (index=9, idm=0x7ffff7ddb100 <idm>) at src/indexer.h:103
103     src/indexer.h: No such file or directory.
Missing separate debuginfos, use: debuginfo-install glibc-2.17-55.el7.x86_64
(gdb) bt
#0  0x00007ffff7bd3bd8 in idm_lookup (index=9, idm=0x7ffff7ddb100 <idm>) at src/indexer.h:103
#1  rs_poll_check (nfds=1, fds=0x7fffffffe390) at src/rsocket.c:2980
#2  rpoll (fds=fds@entry=0x7fffffffe390, nfds=nfds@entry=1, timeout=timeout@entry=0)
    at src/rsocket.c:3063
#3  0x0000000000402f72 in do_poll (fds=fds@entry=0x7fffffffe390, timeout=0) at
examples/common.c:161
#4  0x000000000040265e in recv_xfer (size=64) at examples/rstream.c:191
#5  0x00000000004028f4 in run_test () at examples/rstream.c:236
#6  0x0000000000401819 in run () at examples/rstream.c:502
#7  main (argc=<optimized out>, argv=<optimized out>) at examples/rstream.c:675
(gdb) info threads
  Id   Target Id         Frame
* 1    Thread 0x7ffff7feb740 (LWP 3246) "rstream" 0x00007ffff7bd3bd8 in idm_lookup (index=9,
    idm=0x7ffff7ddb100 <idm>) at src/indexer.h:103
```

13.8: TI MPI – Open

Subnet Manager	Part A	Part B
OpenSM	**PASS**	**PASS**

Result Discussion:

DUTs were capable of running the mpirun binary in accordance to the current test plan between all other hosts.