



OpenFabrics Alliance Interoperability Program April 2013 Update

OFILG Membership Update

- **New Members**
 - Emulex
 - IBM
- **Current Members**



OpenFabrics Interoperability Logo Group (OFILG) Updates



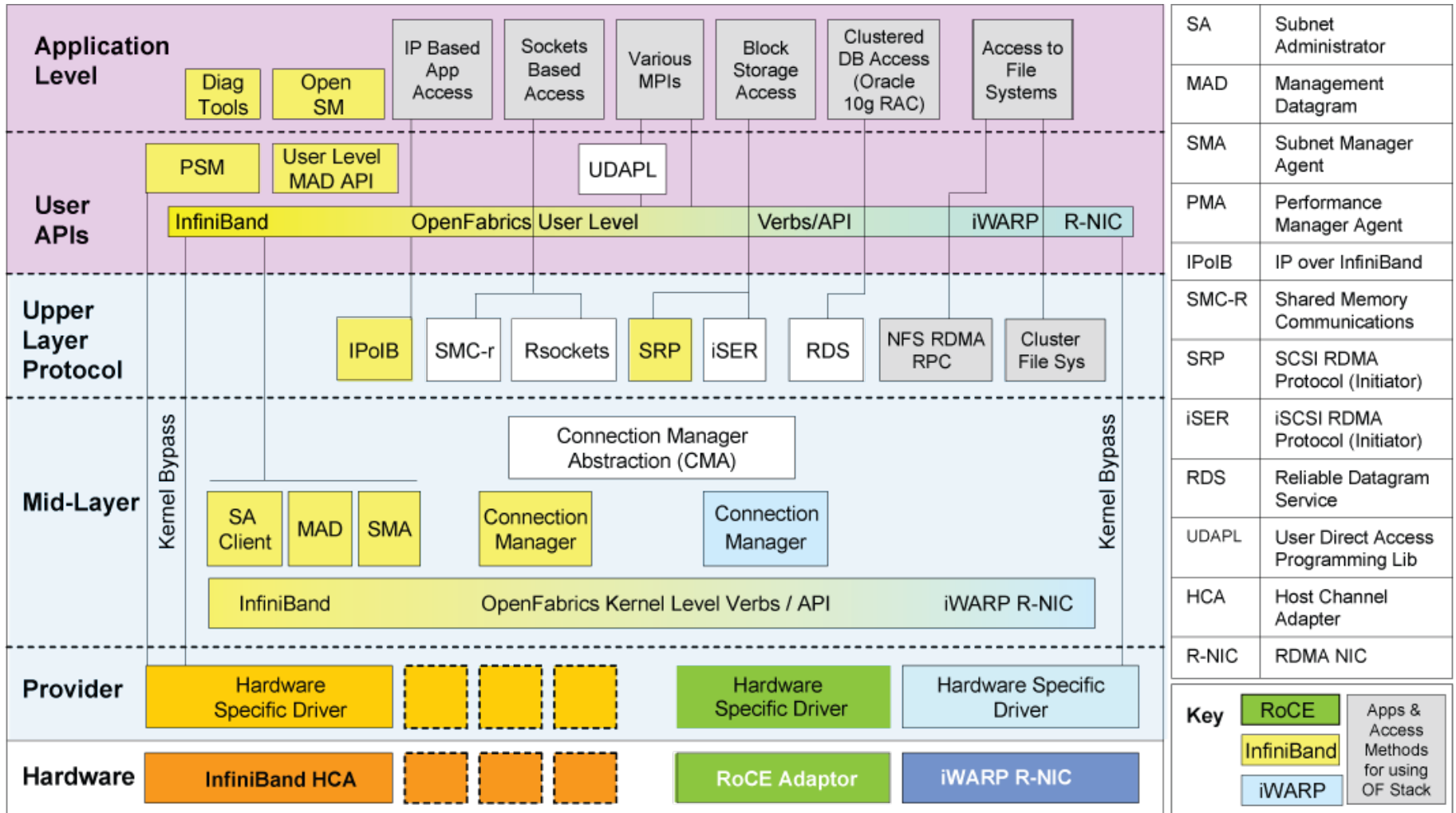
- Updated funding model
 - Subscription plus per product test fees
- Focus on member needs
 - Concentrate the testing on the hardware and software supported by OFILG members
- Deprecate non-crucial tests
 - iSER
 - MVAPICH
 - NFSoRDMA
 - RDS
 - Vendor SM Testing

OpenFabrics Interoperability Logo Program (OFILP) Updates



- **Qualified Pass**
 - Allow a product on the Logo List as long as all issues and defects are very clearly outlined.
- **Arbitration Committee**
 - Allow additional OFA members to participate in Arbitration process.
- **Determining components to test**
 - Allow more feedback from OFILG members regarding qualified products to be included in Interop Logo testing
- **More Transparency and Openness**
 - Make Interop issues more broadly known to the OFA community and the end users without breaking NDA guidelines

Updated OFA Software Diagram



Interoperability Program Summary



- Complete heterogeneous cluster environment
 - Complete selection of IB, iWARP & RoCE hardware available
 - Setup your cluster requirements in less than 30 minutes
- Cluster Availability
 - VPN access is granted to all OFILG Members.
 - Week long testing slots are available
- Automated Test Suites
 - OFILP test scripts can be run over VPN
- Distro testing as well as OFED testing available
- Superb resources available at the UNH-IOL
 - IB, iWARP and RoCE RDMA Testing
 - 10/40/100 Ethernet, DCB and IPv6 Testing
 - Home for the OFA Training Program
 - Resident RDMA Verbs expert – Dr Robert Russell

OFILP Program Details

- OFA Logo Program
 - <http://iol.unh.edu/ofilp>
- OFA Test Plan
 - <http://www.iol.unh.edu/services/testing/ofa/testsuites/>
- OFA Logo Grants
 - <http://iol.unh.edu/ofilglist>
- OFA Training Programs
 - Programming with Verbs
 - IB Fabric Admin
 - <https://www.openfabrics.org/resources/training/training-offerings.html>
- UNH-IOL
 - <http://www.iol.unh.edu/services/testing/ofa/>

UNH-IOL Group Test Period area



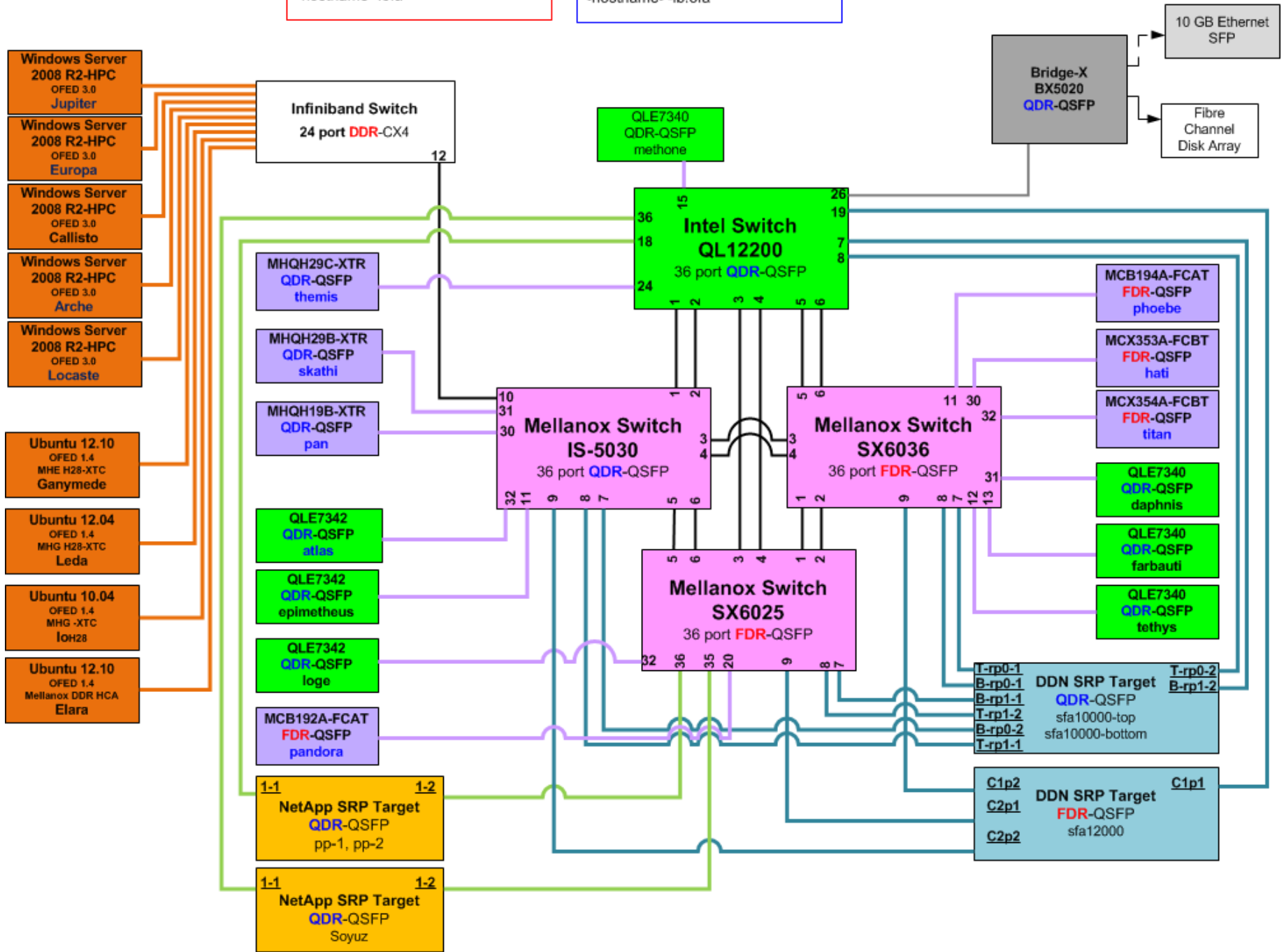
InfiniBand Testing

- **Mandatory**
 - Link Initialization
 - Fabric Initialization
 - IPoIB CM Mode
 - IPoIB Datagram Mode
 - Open MPI
 - RDMA Interop
 - SM Failover/Handover
 - SRP
 - uDAPL
- **Optional**
 - Ethernet Gateway
 - iSER
 - NFSoRDMA
 - RDS
 - RSocketS

April 2013 InfiniBand Topology

Ethernet Addressing
<hostname>.ofa

IPoIB Addressing
<hostname>-ib.ofa



Ethernet Testing

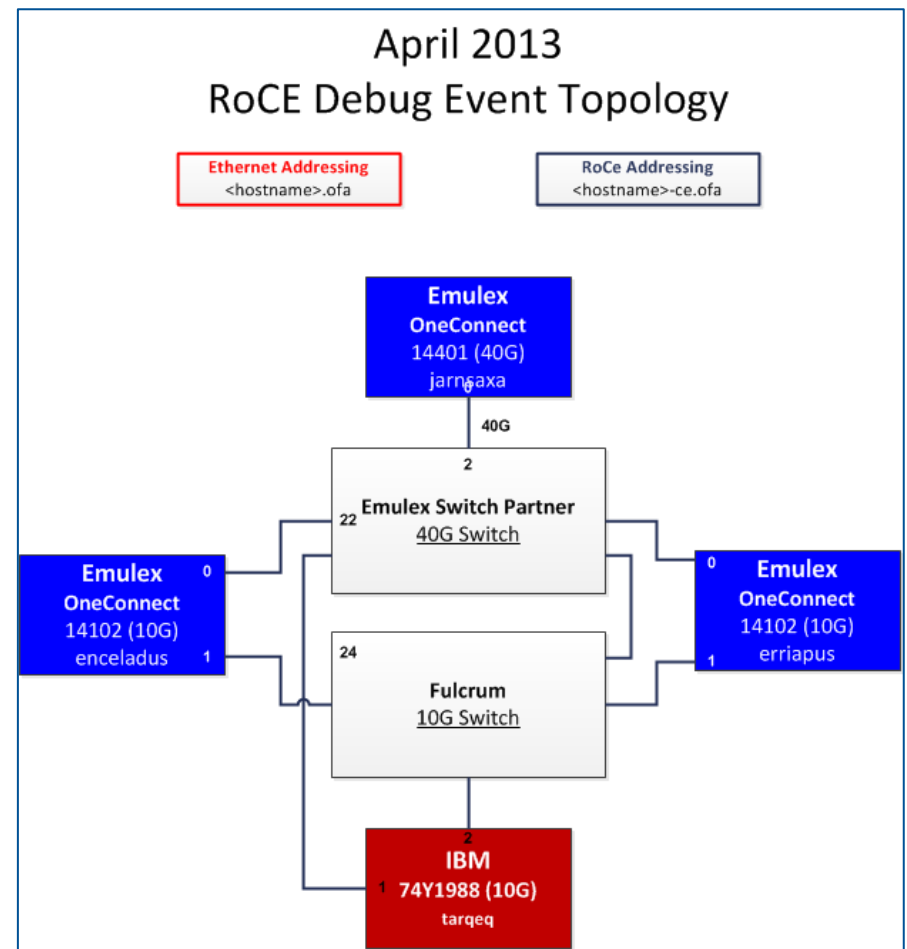
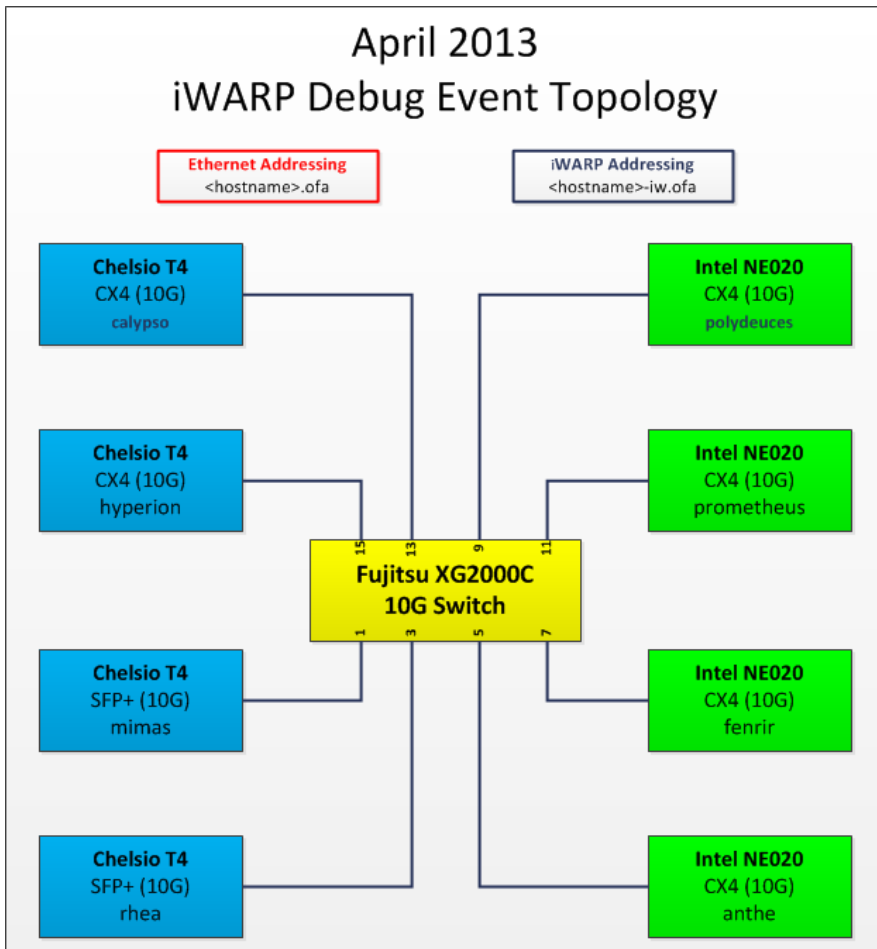
iWARP

- **Mandatory**
 - Link Initialization
 - Open MPI
 - RDMA Interop
 - RDMA Stress
 - uDAPL
- **Optional**
 - iSER
 - NFSoRDMA

RoCE

- **Beta**
 - Link Initialization
 - Open MPI
 - RDMA Interop
 - RDMA Stress
 - uDAPL
- **Future tests**
 - Bonding
 - IPv6
 - RSocket

iWARP and RoCE Topology



OFA Interop Event Overview

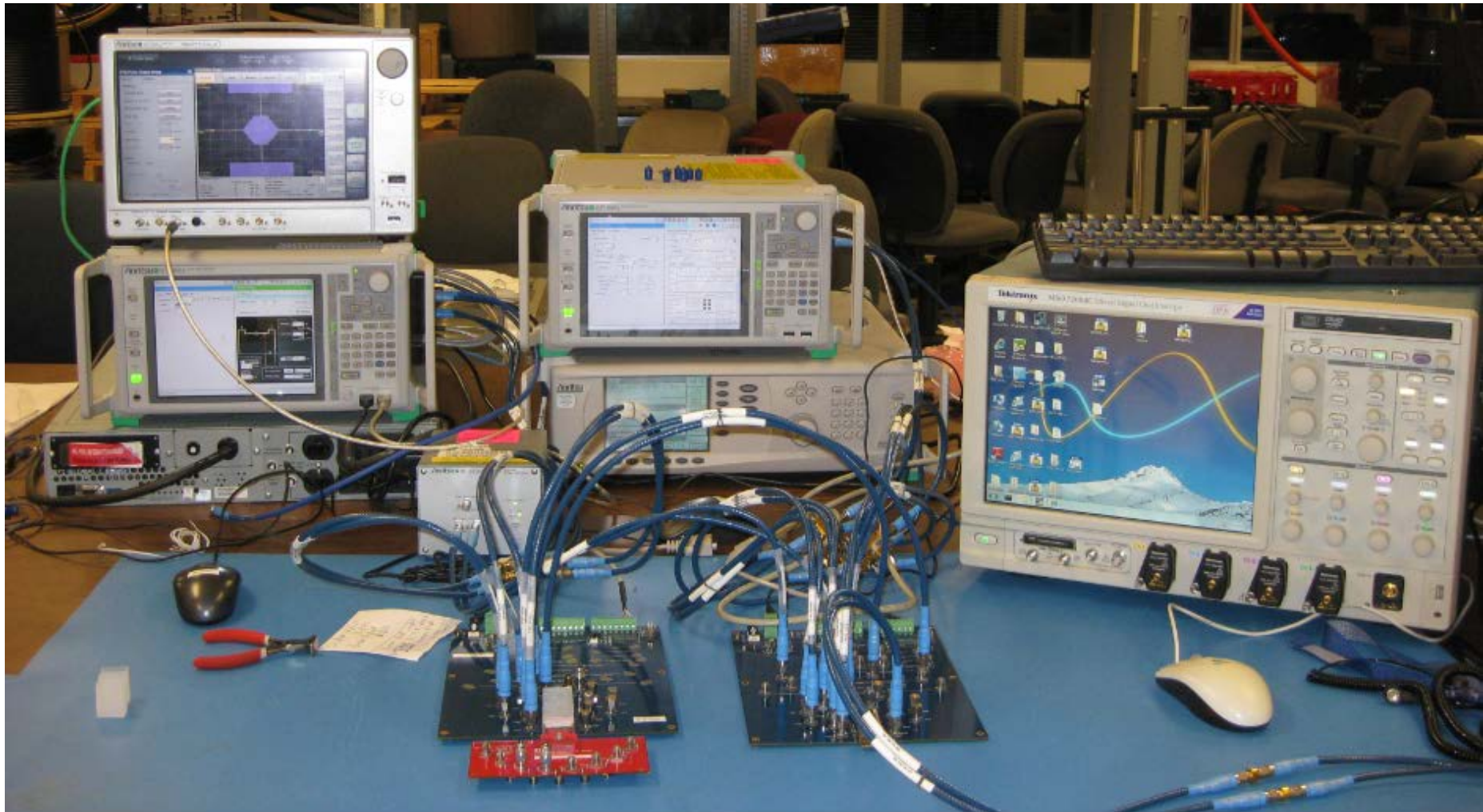


- Most Recent Event
 - April 2013 – Interop Debug Event - OFED 3.5
- Vendor participation
 - Chelsio, DataDirect Networks, Emulex, IBM, Intel, Mellanox NetApp
- Major Accomplishments
 - RoCE Interoperability testing between Emulex and IBM
- Upcoming OFA IWG Interop Events
 - May 2013 – Logo GA Validation Event - OFED 3.5
 - October 2013 – Interop Debug Event
 - This will be the 14th OFA-IWG Interop event
- Hosted by University of NH Interoperability Lab ([UNH-IOL](#))

IBTA C&I complements OFA Interop

- Devices
 - Volume 1 Protocol Layer testing
 - Volume 2 Physical Layer testing
 - System Interoperability testing
- Cables
 - Eye Opening testing
 - Memory Map testing
 - TDR and VNA Testing
 - Active Time Domain testing for Active Cables
 - System Interop

Active Cable Time Domain testing



IBTA April 2013 Testing

- Devices
 - New FDR Receiver testing
 - Updated FDR Transmitter testing
- Cables
 - Updated Active Time Domain Testing
 - EDR cable testing
- System Interop - new heterogeneous testing
 - Mellanox to Intel
 - FDR to QDR

Test Equipment Vendors

Agilent, Anritsu, Molex, Tektronix, Wilder



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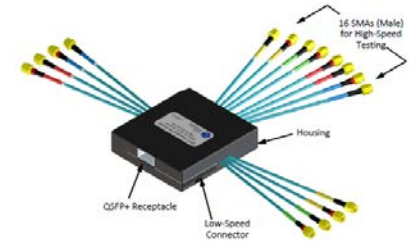
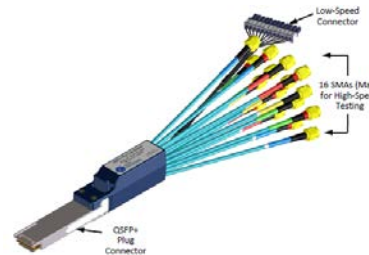
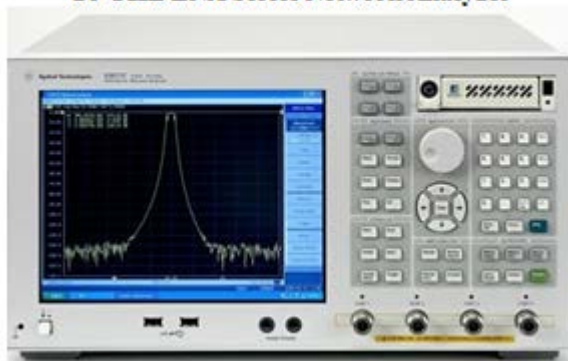
86100D_DCA-X with 86108B_module



BERT - Signal Quality Analyzer (SQA)



20 GHZ ENA Series Network Analyzer



OFA & IBTA Test Results

- Let us try before you buy
- OFA Interoperability Logo List
 - <https://www.iol.unh.edu/services/testing/ofa/interoplast/>
- IBTA Integrators' List
 - http://www.infinibandta.org/content/pages.php?pg=integrators_list_overview



Thank You



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Backup





Useful references

- InfiniBand Architecture
 - http://www.infinibandta.org/content/pages.php?pg=technology_download
- Introduction to InfiniBand™ for End Users
 - http://members.infinibandta.org/kwspub/Intro_to_IB_for_End_Users.pdf
- iWARP RFCs – www.ietf.org/rfc.html
 - [RFC 5040](#) – A Remote Direct Memory Access Protocol Specification (RDMA)
 - [RFC 5041](#) – Direct Data Placement over Reliable Transports (DDP)
 - [RFC 5044](#) – Marker PDU Aligned Framing for TCP Specification (MPA)
 - others
- Mellanox User's Manual
 - http://www.mellanox.com/related-docs/prod_software/RDMA_Aware_Programming_user_manual.pdf
- The Linux Cross Reference for OFED
 - <http://support.systemfabricworks.com/lxr/ofed>