The University of New Hampshire InterOperability Laboratory (UNH-IOL)

Lab Overview

www.iol.unh.edu
Presentation Outline

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Who We Are

- A neutral and independent lab that tests networking and data communications products for businesses across the globe.
- Started in 1988 on the University of New Hampshire Durham, NH campus.
- Non-profit organization and 100% funded by commercial industry with over 150+ member companies.
- State of the art facility with 28,000+ sq. ft. (1 hour outside Boston, USA).
- 4,200 sq. ft. of pre-wired space dedicated to Plugfests.
We are made up of full time staff and students.
Our Mission

To provide a neutral environment to foster multivendor interoperability, conformance to standards, and improvement of data networking while attracting students to, and educating them for, future employment in cutting-edge technologies.
Training Future Engineers

- More than 120 graduate and undergraduate student employees work with our staff, gaining hands-on experience with developing technologies and products.
- Our student employees average a 99% job placement, often before they graduate.
- We provide career advancement opportunities including tech talks, training for common industry tools, networking events and an online resume binder.
• We enable multivendor interoperability, conformance testing and develop custom testing solutions.
• Through our industry involvement we are able to provide guidance and insight into new technology areas with testing needs and certification for testing programs.
• Promote early adoption through collaborative group testing (Plugfests).
• Offer members access to our world-class, multi-million dollar shared test bed which continues to grow.
• Funded 100% by commercial industry.
Who We Work With

We work with companies in over 35 countries across 5 continents

Simply ship your device and we will take care of the rest! Engineers are not required to be present during testing.
Industry Engagement

Standards Groups

Users

Developers (R&D)

Standards

Feedback

Test Ideas

Feedback & Results

Devices

Results
Industry Involvement
Technology Testing Areas

**Home Networking**
- TR-069
- IPv6 CE Router
- Wireless

**IP Networking**
- IPv6
- Routing/SDN
- SIP
- IoT

**Broadband Systems**
- DSL
- Gfast
- GPON
- VDSL2 Vectoring

**Storage**
- Fibre Channel
- iSCSI
- NVMe
- PCIe
- SAS
- SATA

**Open Networking**
- Open Networking Test Service (OCP)
- OpenFlow (ONF)

**Mobile/Wireless**
- MIPI
- Wireless

**Ethernet/Enterprise**
- Power over Ethernet
- 40/100 Gigabit
- Backplane
- 10 Gigabit
- Automotive
- Gigabit
- Fast
- 10BASE-T
- Cable/Channel Testing

**Switching/Timing**
- Avnu
- IEEE 1588
- Ethernet Switching Protocols
- Automotive Networking
- Carrier Ethernet
How to Work with Us

• We bring together key players of networking technologies, providing services that are critical to driving multivendor interoperability and increasing user confidence.

• We will work with you to create custom and flexible testing options to meet your needs as well as Pay Per Test options.

• Our most popular model is through annual memberships. Here are some key features our memberships include:
  - Access to custom test equipment and software
  - Neutral testing environment (no technology is favored over another)
  - Industry recognized test reports for sales and certification
  - Increased confidence in your product through our testing services
  - Reduced time to market
We develop test tools to help us achieve our vision of being the world's premier data networking resource. Our tools have become an invaluable component of our testing services and through membership or direct purchase, these tools can be used in your own labs.

- IOL INTACT™ the same tool used for IPv6, IPsec, Routing, and Home Networking testing
- IOL INTACT™ for gPTP and vIOLett™ for Avnu testing
- IOL INTERACT™ software expedites and automates the testing of NVMe SSDs
- IOL vIOLett™ 802.1 Core Test Software for Ethernet Switching Protocols (ESP)
- Test Sentinel for DSL and Gfast Testing
- BitPhyer and BitPhyer 10G for Copper Auto-Negotiation, Clause 40 PMA and 10BASE-TX TP-PMD
- MIPI Board test fixtures performing C-PHY, D-PHY, DSI, and CSI-2 testing and CPHYGUI Software
UNH-IOL Contact
Mara Bernazzani
Marketing and Communications Coordinator
mbernazzani@iol.unh.edu
+1-603-862-0901

PR Contact
Melissa Power
Interprose
Melissa.power@interprosepr.com
+1-401-454-1314