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. feet 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**
- DLNA & RVU
- TR-069
- IPv6 CE Router
- Wireless

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

**Broadband Systems**
- DSL
- G.fast
- 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
Products and Solutions

• 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.
  o IOL INTACT™ the same tool used for IPv6, IPsec, Routing, and Home Networking testing
  o MIPI Boards test fixtures performing M-PHY, C-PHY, D-PHY, DSI, and CSI-2 testing
  o IOL INTACT™ for gPTP and vIOLett™ for AVnu testing
  o IOL INTERACT™ software expedites and automates the testing of NVMe SSDs
  o BitPhyer and BitPhyer 10G for Copper Auto-Negotiation, Clause 40 PMA and 10BASE-TX TP-PMD
  o IOL vIOLett™ 802.1 Core Test Software for Ethernet Switching Protocols (ESP)
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