IPv6 Testing at the UNH InterOperability Laboratory

Overview

The UNH InterOperability Laboratory (UNH-IOL) has been testing Networking and Communications since 1988. Fully owned by the University of New Hampshire, UNH-IOL receives 100% of its funding from commercial companies in exchange for professional and testing services. Testing services include areas such as Ethernet, xDSL, Storage, Wireless and Internet Protocol (including IPv6).

Role in IPv6 testing programs

- Since 1996, the IPv6 testing consortium at the UNH-IOL has had a process in place to perform independent IPv6 equipment analysis. With IPv6 projects ranging from the IPv6 Forum, Moonv6 network testing, and custom IPv6 testing in house as well as in Asia, few organizations match the hands-on experience of the UNH-IOL.
    - The UNH-IOL is the North American representative for the IPv6 Ready Logo Committee testing program. Responsibilities include technical development on Logo Test Suites, reviewing North American applications and test results, cross-checking other lab test results when rolling out new programs and performing Logo testing as a service to UNH-IOL IPv6 Consortium Members.
    - The UNH-IOL is the project manager for the Moonv6 IPv6 network project. This project is the largest interoperability testing event in IPv6 technology. The UNH-IOL maintains the Moonv6 test bed and works closely with more commercial and government network operators to understand their technical needs. These needs were then realized in test plans and technology demonstrations with more than 30 different equipment suppliers.
    - The UNH-IOL uses in-house custom IPv6 testing software. The IPv6 results generated by this software have been subject to external review. This ensures our customers the following:
        - Reliable results
        - Lack of supplier issues
        - Lack of problems executing "free software" solutions

General IPv6 Testing Program Concerns

Test Suite Criteria:
A Test Suite should include references, detailed procedures and observable results. The test cases within the Test Suite should be referenced from standards and should include any MUSTs and SHOULDs defined in the specification.

Consistent Test Methods:
A successful program would want to avoid inconsistencies between the executable expected results in order to maintain confidence in both the program and the testing. A program

without lab cross checking results and abiding by one master Test Suite will create a hostile atmosphere between equipment vendors and labs challenging the validity of the different testing methods. In order to prevent antagonism, it is critical that there is one master Test Suite and procedures defined for cross checking results.

Result Database, website maintenance, approved product list
       Maintenance of a result database, vendor applications and approved products list should be maintained and those with access defined.
       Will NIST maintain the database, website and approved product list? Will the approved product list be viewable by the public? Will an approved product have to retest when new revisions for the test suites are released?

Cross-pollination between existing IPv6 Testing programs
       Will results from existing programs including the IPv6 Ready Logo and DoD be accepted for this profile?

Test Plan Maintenance policy
       It is critical that the Test Suites are updated and reflect the current specifications. If the standard specifications are modified, the Test Suites should be updated accordingly. There must be a policy in place to cross check the updates to ensure that all test methodologies are updated accurately.

Interoperability Testing and Test Bed Maintenance
       An Interoperability test bed must be maintained at the testing facility in order to perform the Interoperability Test Suite that includes the USG requirements. The Interoperability Test Suite must define a set number of different implementations that are required. The test bed is not exclusive to devices on the approved products list.