



What's new in IPv6 testing?

UNH InterOperability Laboratory

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May 26, 2010

Presentation Overview

- ❖ What's Old is New Again- IPv6 Ready Logo
 - ❖ Logo Holder status
 - ❖ Program developments
- ❖ What's New – IPv6 Enabled Program
 - ❖ WWW/ISP
- ❖ What's New – USGv6 Test Program
 - ❖ Program details
 - ❖ Comparison with IPv6 Ready Logo
 - ❖ Testing vendor status
 - ❖ Program developments
- ❖ What's Next

IPv6 Ready Logo Test Program



- ❖ IPv6 Forum launched program ~2002

- ❖ Objectives of the IPv6 Ready Logo Program

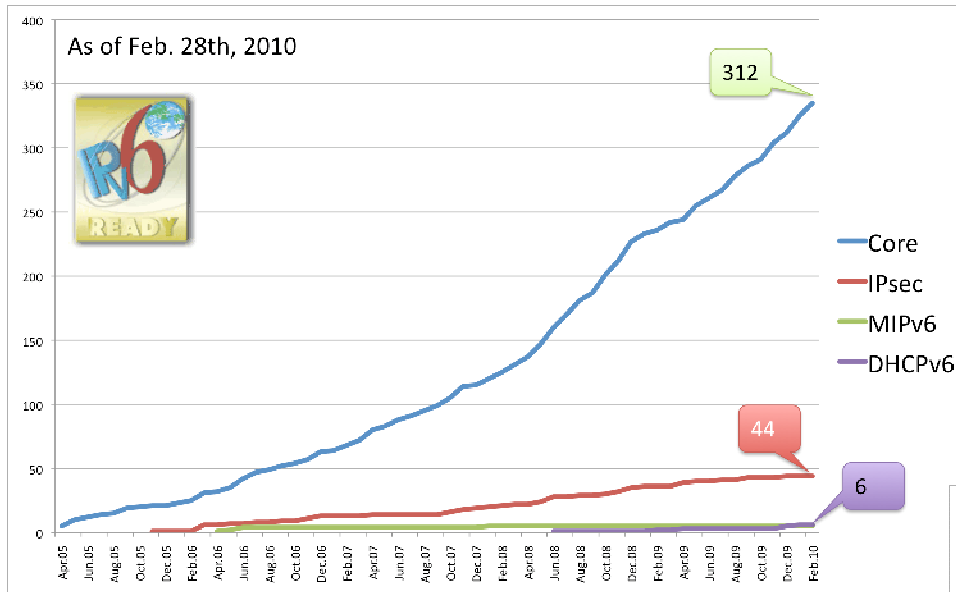
- ❖ Verify protocol implementation and validate interoperability of IPv6 products.
- ❖ Provide access to free self-testing tools.
- ❖ Provide IPv6 Ready Logo testing laboratories across the globe dedicated to provide testing assistance or services.



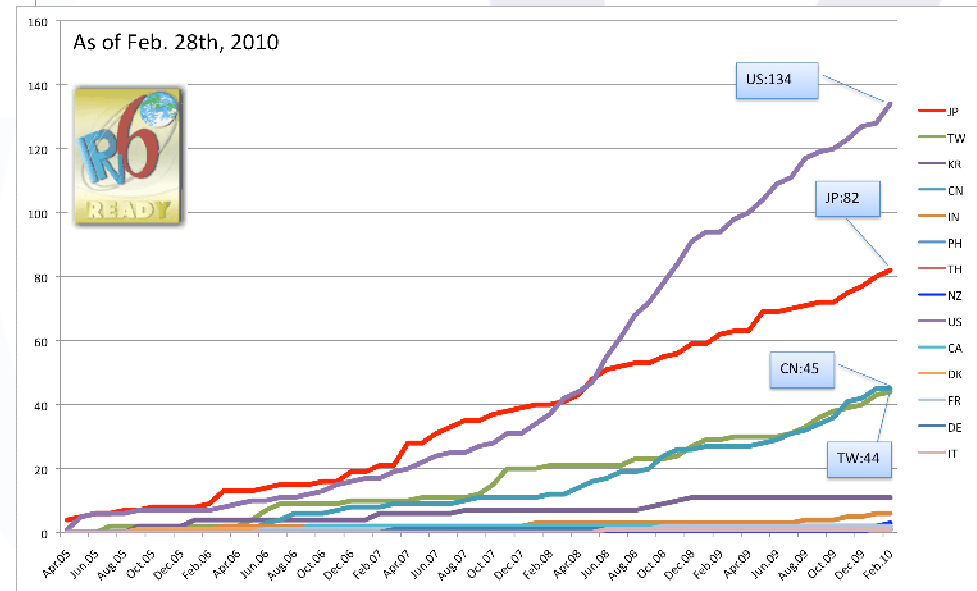
- ❖ IPv6 Core Protocols
- ❖ IPsec, IKEv2
- ❖ DHCPv6
- ❖ MLDv2
- ❖ SIP
- ❖ MIPv6
- ❖ SNMP

- ❖ UNH-IOL is the North American Regional Officer

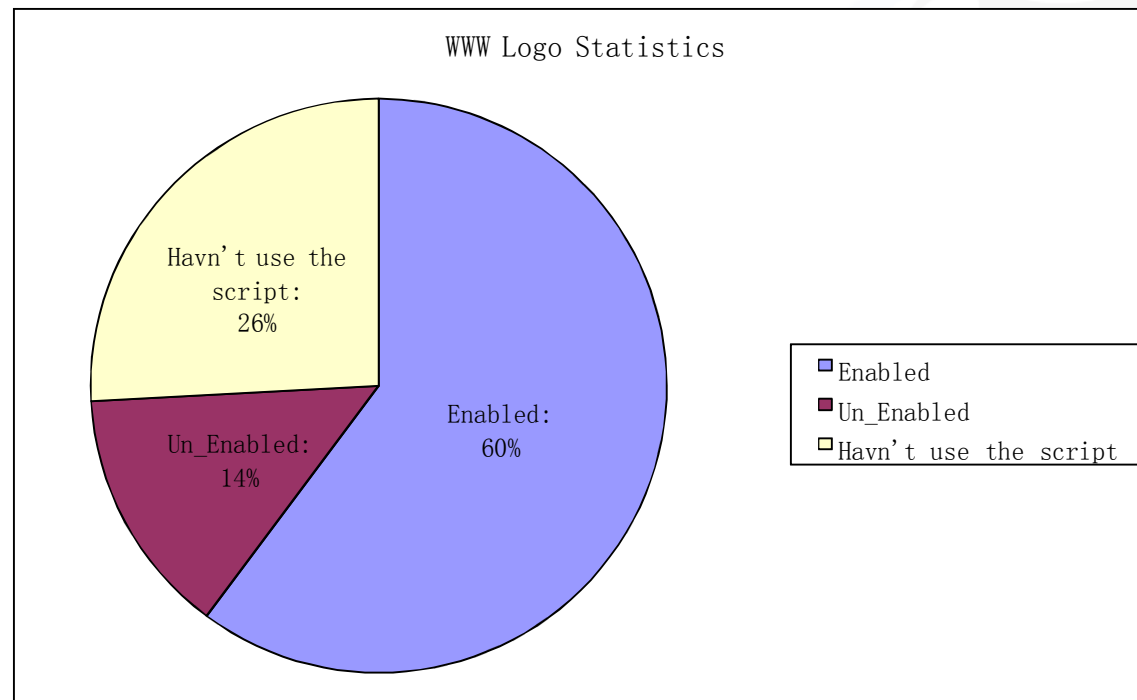
IPv6 Ready Logo Status (Phase 2)



Core 312!

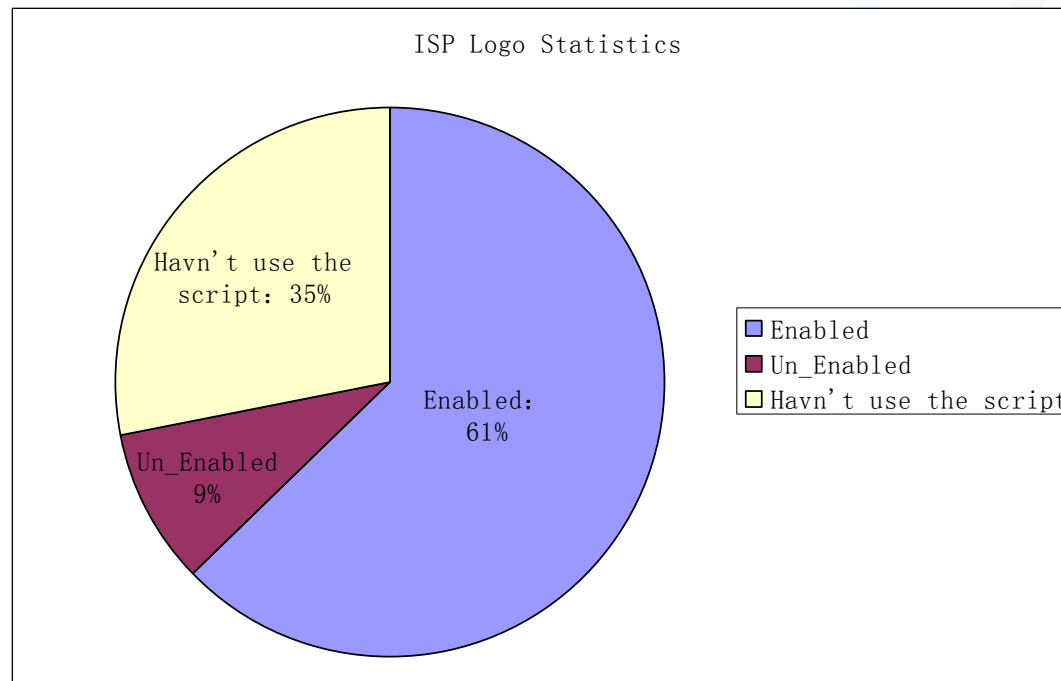


IPv6 Enabled Program WWW Status (as of March 2010)



http://www.ipv6forum.com/ipv6_enabled/

IPv6 Enabled Program ISP Status (as of March 2010)



http://www.ipv6forum.com/ipv6_enabled/

USGv6 Test Program

- ❖ The Federal Acquisition Regulation document is released on December 10, 2009.
 - ❖ The FAR language states “Unless the agency Chief Inspection Officer waives the requirement, when acquiring information technology using internet protocol, the requirements documents must include reference to the appropriate technical capabilities defined in the USGv6 Profile and the corresponding declarations of conformance defined in the USGv6 Test Program”
- ❖ Supplier’s Declaration of Conformity (SDOC)
- ❖ USGv6-V1-Capable (What does this mean?)
- ❖ The UNH-IOL is one of two accredited ISO/IEC 17025 USGv6 Test Laboratories.





Image by: Stephen Nightingale, NIST

Supplier Declaration of Conformity

Supplier's Declaration of Conformity for USGv6-v1.0 Products		Page 1
1	Product Identifier	
2	Supplier's name, address and contact details	
3	Product Description: Product Name, S/W, H/W, H/W-S/W combination, Revision Level, Product Family.	
4	Product implementation summary, e.g. USGv6-v1-Capable+IPv4+DHCP-Client+DNS-Client+URI+Link=Ethernet	
5	The Document Requiring Conformity	
USGv6 Profile version 1.0, July 2008.		
Check One	Attestations The results of conformance and interoperability testing the USGv6 capabilities of this product are listed in this original SDOC. -OR- The USGv6 capabilities of this product are provided by bundling in a single USGv6 stack, identified above. The results of conformance and interoperability testing are referenced by attaching the original SDOC. -OR- The USGv6 capabilities of this product are provided by the integration of two or more components identified above. The results of conformance testing the independent components are referenced by attaching their SDOCs. The interoperability testing results are unique, referenced in this original SDOC and attested here.	
Check	Product Family Attestation (if applicable) All of the products listed in this product family are implemented such that their USGv6 capabilities are identical in form and function across the entire product family. The specific conformance and interoperability test results for the USGv6 capabilities of an identified member of this product family are	

Supplier Declaration of Conformity

Supplier's Declaration of Conformity for USGv6-v1.0 Products										
Product Id										
Spec /		Additional Information	Configuration				Test Suite	Test Lab & Result ID	Test Suite Interop	Test Lab & Result ID
Reference	Section	IPv6 Requirements	Option	Host	Router	NPD	Conformance/NPD			
								e.g <lab> & <ID> OR "Self Declaration"		e.g <lab> & <ID> OR "Self Declaration"
SP500-267	6.1	IPv6 Basic Requirements		M	M		Basic_v1.*_C		Basic_V1.*_I	
		support of stateless address auto-configuration	SLAAC				SLAAC-V1.*_C		SLAAC-V1.0_I	
		support of SLAAC privacy extensions	PrivAddr				Self Test		Self Test	
		support of stateful (DHCP) address auto-configuration	DHCP-Client				Self Test		DHCP_Client_v1.*_I	
		support of automated router prefix delegation	DHCP-Prefix				Self Test		Self Test	
		support of neighbor discovery security extensions	SEND				Self Test		Self Test	
SP500-267	6.6	Addressing Requirements		M	M		Addr_Arch_v1.*_C		Addr_Arch_v1.*_I	
		support of cryptographically generated addresses	CGA				Self Test		Self Test	
SP500-267	6.7	IP Security Requirements		M	M					
		support of the IP security architecture	IPsec-V3	M	M		IPsecv3_v1.*_C		IPsecv3_v1.*_I	
		support for automated key management	IKEv2	M	M		IKEv2v1.*_C		IKEv2v1.0_I	
		support for encapsulating security payloads in IP	ESP	M	M		ESP_v1.*_C		ESP_v1.*_I	
SP500-267	6.11	Application Requirements								
		support of DNS client/resolver functions	DNS-Client				Self Test		Self Test	
		support of Socket application program interfaces	SOCK				Self Test		Self Test	
		support of IPv6 uniform resource identifiers	URI				Self Test		Self Test	
		support of a DNS server application	DNS-Server				Self Test		Self Test	
		support of a DHCP server application	DHCP-Server				Self Test		DHCP_Serv_v1.*_I	
SP500-267	6.2	Routing Protocol Requirements								
		support of the intra-domain (interior) routing protocols	IGW				Self Test		OSPFv3_v1.*_I	
		support for inter-domain (exterior) routing protocols	EGW				Self Test		BGP_v1.*_I	
SP500-267	6.4	Transition Mechanism Requirements								
		support of interoperation with IPv4-only systems	IPv4				Self Test		Self Test	
		support of tunneling IPv6 over IPv4 MPLS services	6PE				Self Test		Self Test	
SP500-267	6.8	Network Management Requirements			M					
		support of network management services	SNMP		M		Self Test		Self Test	
SP500-267	6.9	Multicast Requirements		M	M					
		full support of multicast communications	SSM				Self Test		Self Test	
SP500-267	6.10	Mobility Requirements								
		support of mobile IP capability	MIP				Self Test		Self Test	
		support of mobile network capabilities	NEMO				Self Test		Self Test	
SP500-267	6.3	Quality of Service Requirements								
		support of Differentiated Services capabilities	DS				Self Test		Self Test	
SP500-267	6.12	Network Protection Device Requirements				M				
		support of basic firewall capabilities	FW				N1_FW			
		support of application firewall capabilities	APFW				N2_App_FW			
		support of intrusion detection capabilities	IDS				N3_IDS			
		support of intrusion protection capabilities	IPS				N4_IPS			
SP500-267	6.5	Link Specific Technologies		M	M		Self Test		Self Test	
		support of robust packet compression services	ROHC							
		support of link technologies		M	M		Self Test		Self Test	

Available USGv6 Test Services

- **Host and Router**

- IPv6 Basic Requirements
- Addressing Requirements
- IP Security Requirements
 - IPsecv3, ESP, IKEv2
- Routing Protocol Requirements

- **Network Protection Devices**

- Basic Firewall Capabilities
- Application Firewall Capabilities
- Intrusion detection Capabilities
- Intrusion protection Capabilities

It's Real

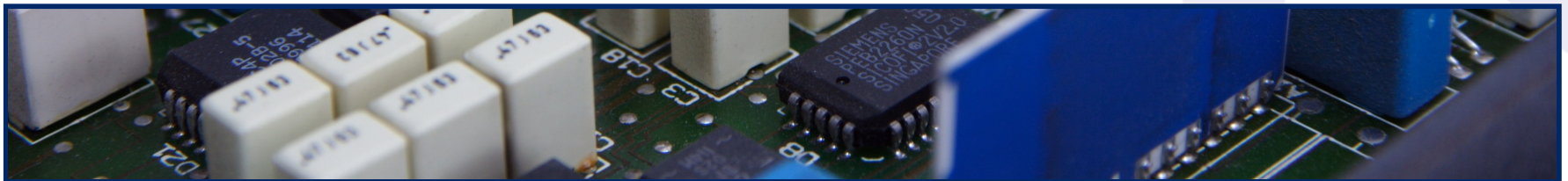
Host

Company	Product Name	Product Version	Applicable Series	Test Selection Table									
				Basic	SLAAC	Router Arch	DHCP Client	DHCP Server	IPSEC	IKE	ESP	Notes	
Microsoft	Windows 7	6.1.7.000		v1.0_C v1.0_	v1.0_C v1.1_		DHCP_Client_v1.0_I						

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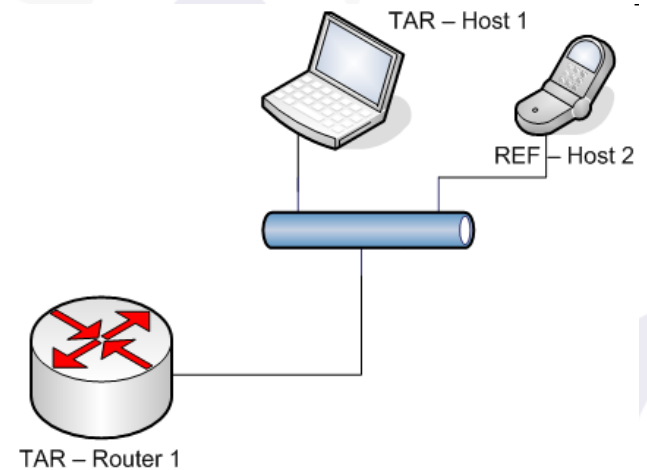
Router

Company	Product Name	Product Version	Applicable Series	Test Selection Table										Notes
				Basic	SLAAC	Router Arch	DHCP Server		IPSEC	IKE	ESP	BGP	OSPF	
Cisco Systems	Cisco 2821	15.0(1)M1	1800 Series 2800 Series 3800 Series	v1.0_C v1.0_	v1.0_C v1.1_	v1.1_C v1.0_						v1.0_		



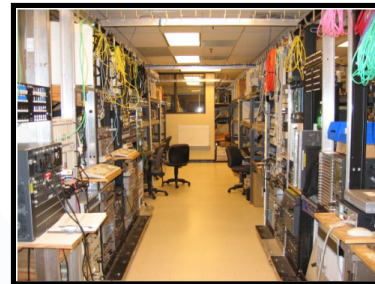
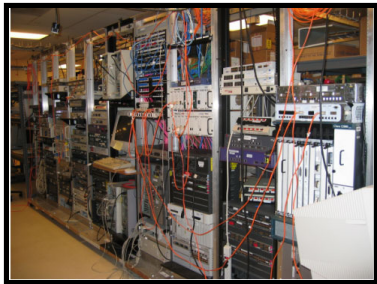
USGv6 and IPv6 Ready Logo

- **Similarities:** Harmonized Test Specifications used for USGv6 where available
 - Shared Maintenance schedules
 - Shared Test Tools
- **Differences:** USGv6 requires testing in an accredited laboratory and uses SDoC
 - No central Approved Product Listing
 - No Sticker or Logo
 - No testing committee



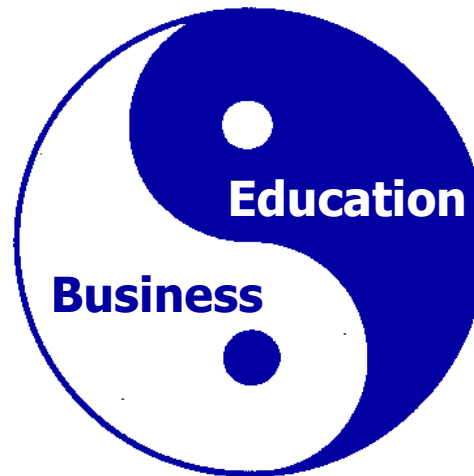
The UNH-IOL Laboratory

- ❖ Industry leading 3rd-party neutral test facility for data communications & consumer electronics
- ❖ 100% funded by commercial industry
 - ❖ 150+ companies provide market motivation
- ❖ 32,000 sq ft lab facility – Boston Area
- ❖ 7,200 sq-ft pre-wired space dedicated to Plugfests



The Mission

- **Improve data networking:**
Develop test suites and software tools, and provide testing services that facilitate interoperability efforts in a given industry in a cooperative manner



- **Educate students:**
Provide *hands-on technical and business experience* for outstanding students

Any Questions?