What's new in IPv6 testing?

UNH InterOperability Laboratory

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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**

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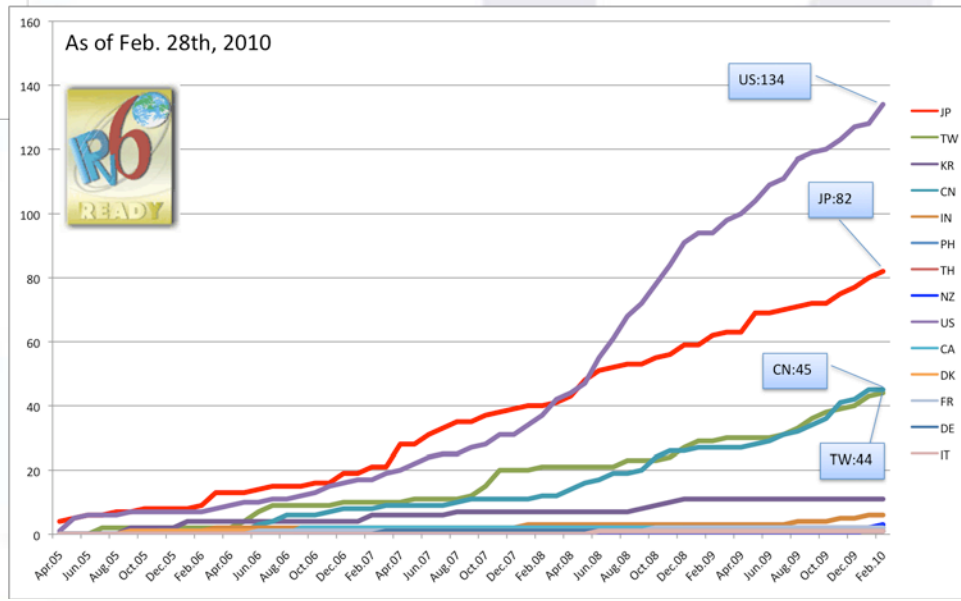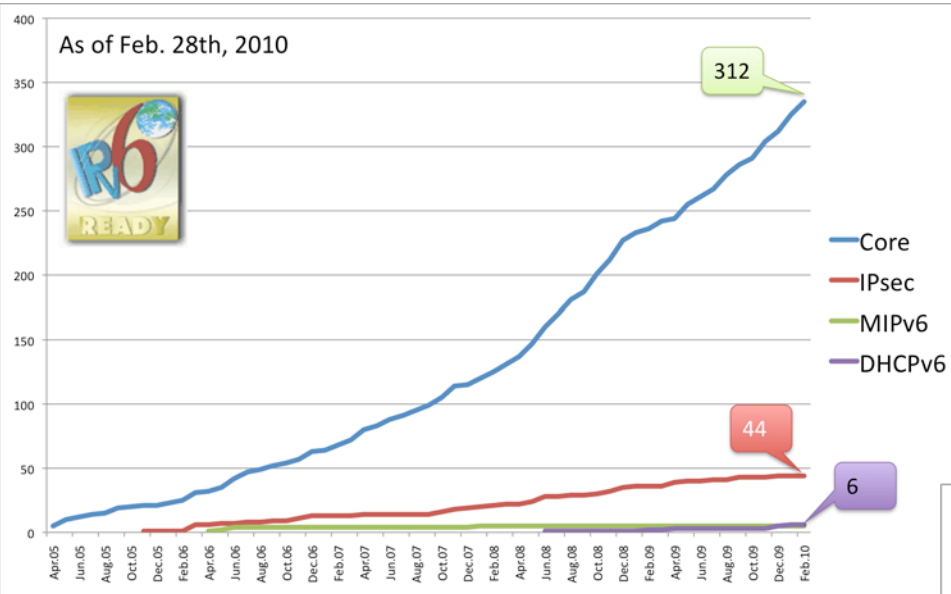# IPv6 Ready Logo Test Program

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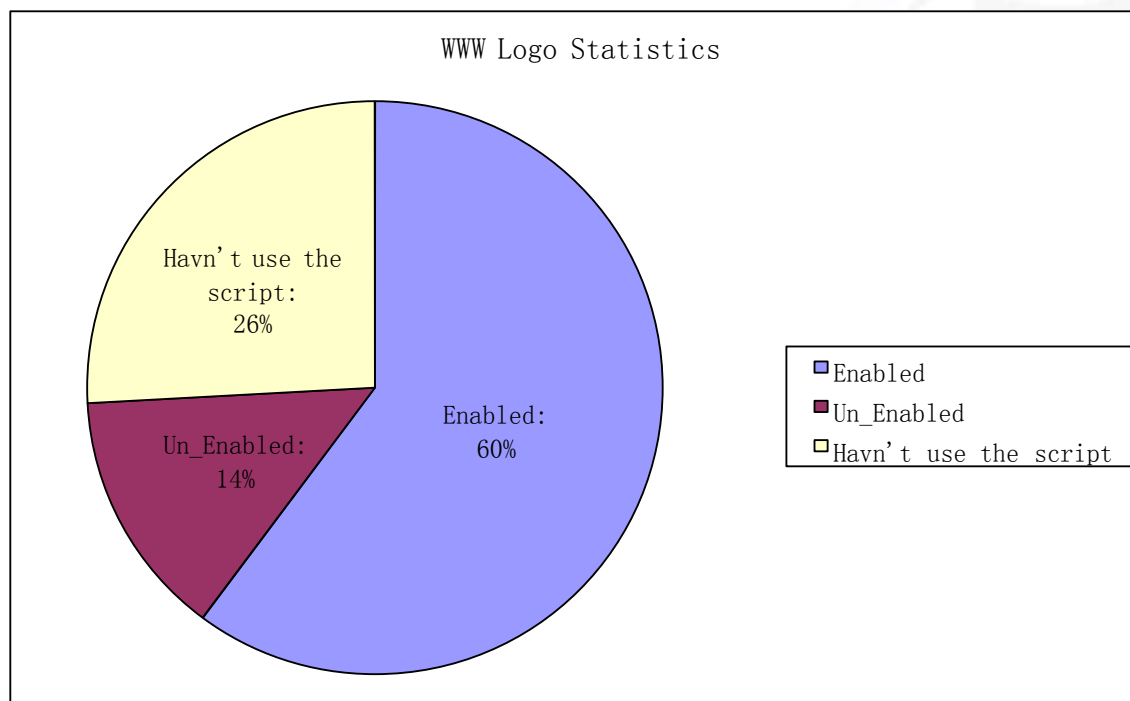
- ❖ IPv6 Core Protocols
- ❖ IPsec, IKEv2
- ❖ DHCPv6
- ❖ MLDv2
- ❖ SIP
- ❖ MIPv6
- ❖ SNMP

- ❖ UNH-IOL is the North American Regional Officer

IPv6 Ready Logo Status (Phase 2)

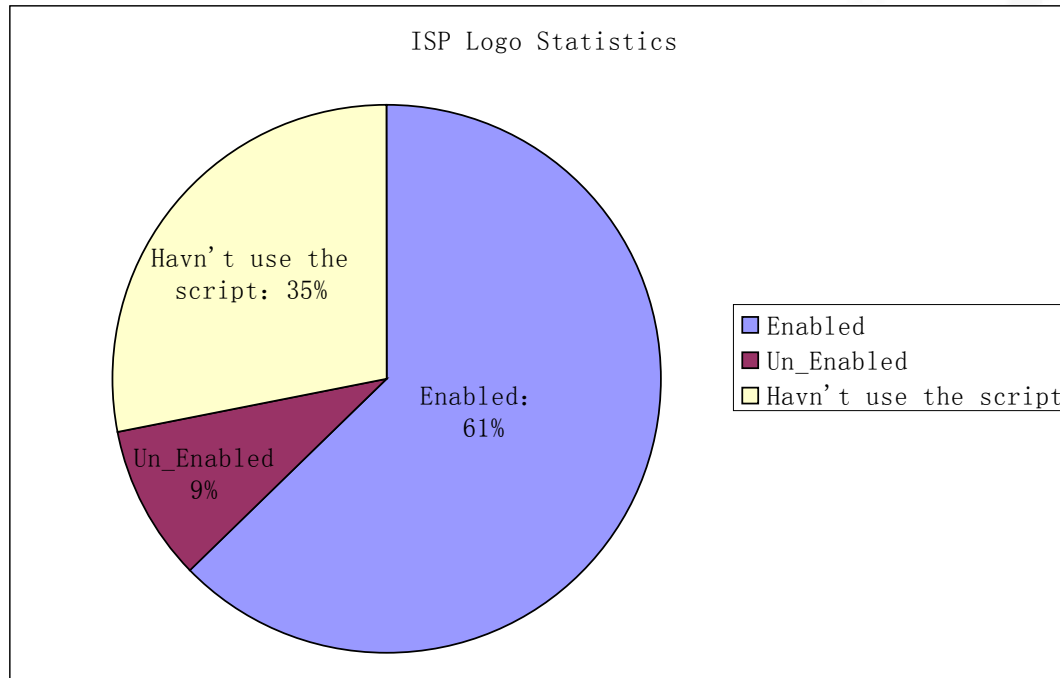Core 312!

IPv6 Enabled Program
WWW Status (as of March 2010)

WWW Logo Statistics

- Enabled: 60%
- Un_Enabled: 14%
- Havn't use the script: 26%

Legend:
- Enabled
- Un_Enabled
- Havn't use the script

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

IPv6 Enabled Program
ISP Status (as of March 2010)

ISP Logo Statistics

Havn't use the script: 35%

Enabled: 61%

Un_Enabled 9%

- Enabled
- Un_Enabled
- Havn't use the script

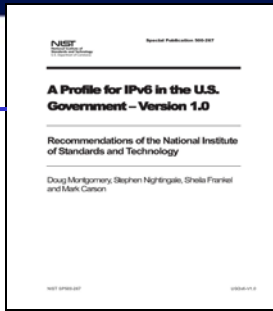http://www.ipv6forum.com/ipv6_enabled/

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.

•USGv6 Profile

•Users

•Vendors

•Capabilities Checklist/Product Specs

•Vendor's SDOC

•Test Results

•V6 Product

•Test Labs

Corroboration

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

Spec / Reference	Section	Additional Information / IPv6 Requirements	Configuration Option	Host	Router	NPD	Test Suite Conformance/NPD	Test Lab & Result ID	Test Suite Interop	Test Lab & Result ID
								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-Sever				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				Self Test	
		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 technology Link=		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

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It's Real

Host

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

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Router

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

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
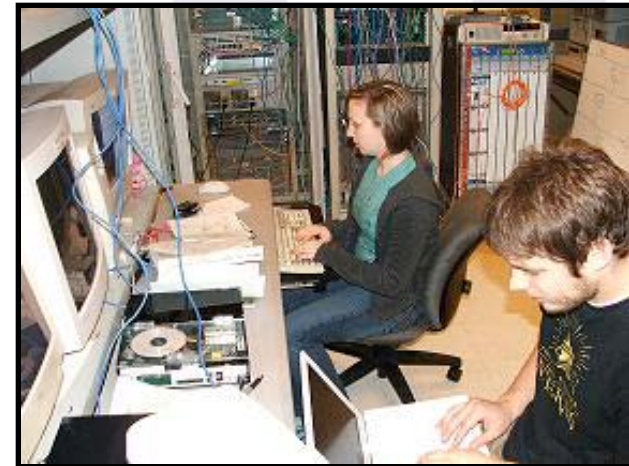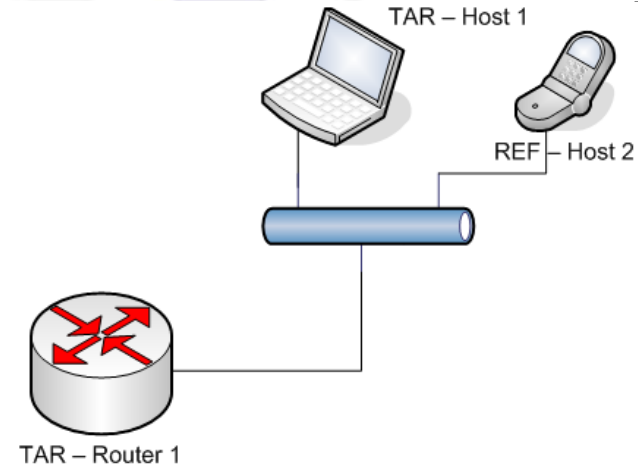
The UNH-IOL Laboratory

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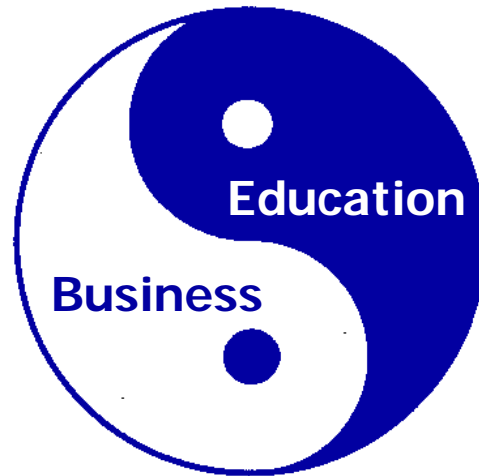
- **Educate students:** Provide *hands-on technical and business experience* for outstanding students

Any Questions?