



DEFENSE INFORMATION SYSTEMS AGENCY

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IN REPLY
REFER TO: Joint Interoperability Test Command (JTE)

25 Mar 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the TippingPoint Security Management System Version 3.0.0.7063 for Internet Protocol Version 6 Capability

References: (a) DoDD 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (h) see Enclosure 1

1. References (a) and (b) establish the Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.
2. The TippingPoint Security Management System (SMS) Version 3.0.0.7063 met the Internet Protocol (IP) Version 6 (IPv6) Capable interoperability requirements of the Simple Server product class as described in the Department of Defense (DoD) Information Technology Standards Registry, "DoD IPv6 Standard Profiles for IPv6 Capable Products Version 3.0," July 2008, reference (c). The TippingPoint SMS Version 3.0.0.7063 successfully completed the related IPv6 Interoperability portions of the "DoD IPv6 Generic Test Plan (GTP) Version 3," August 2007 reference (d), and is certified for listing on the Unified Capabilities (UC) Approved Products List (APL) as IPv6 Capable. This certification expires upon changes that could affect interoperability, but no later than 4 years from the date of this memorandum.
3. This special certification is based on IPv6 Capable Interoperability testing conducted by JITC at Fort Huachuca, Arizona, and the vendor's Letter of Conformance (LoC) dated 23 February 2009. Interoperability testing was conducted from 17 through 27 February 2009 at JITC's Advanced IP Technology Capability. Conformance testing was confirmed by TippingPoint and was verified in the LoC provided. Enclosure 2 documents the summary test results and describes the device. Users should verify interoperability before deploying the devices in an environment that varies significantly from that described.
4. The device's interoperability status summary is in Table 1, and Table 2 contains the equipment listing.

JITC Memo, JTE, Special Interoperability Test Certification of the TippingPoint Security Management System Version 3.0.0.7063 for Internet Protocol Version 6 Capability

6. The JITC point of contact is Donald L. Hann, DSN 879-5130, commercial (520) 538-5130, or e-mail don.hann@disa.mil.

FOR THE COMMANDER:



for RICHARD A. MEADOR
Chief
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2 Enclosures a/s

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DITO, Defense Information Systems Agency (DISA), Attn: GE36, P.O. Box 4502, Arlington, VA 22204-4502

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ADDITIONAL REFERENCES

- (c) Department of Defense (DoD) Information Technology Standards Registry (DISR), "DoD Internet Protocol Version 6 (IPv6) Standard Profiles for IPv6 Capable Products Version 3.0," July 2008
- (d) Defense Information Systems Agency, Joint Interoperability Test Command, "DoD IPv6 Generic Test Plan Version 3," August 2007
- (e) DoD Chief Information Officer (CIO) Memorandum, "IPv6," 9 June 2003
- (f) DoD CIO Memorandum, "IPv6 Interim Transition Guidance," 29 September 2003
- (g) DoD IPv6 Transition Office, "DoD IPv6 Master Test Plan, Version 2," September 2006
- (h) DoD, "DISR Global Information Grid (GIG) Convergence Master Plan (GCMP), Version 5.25," 29 March 2006

INTERNET PROTOCOL VERSION 6 CAPABLE TESTING SUMMARY

1. **SYSTEM TITLE.** The TippingPoint Security Management System (SMS) Version 3.0.0.7063, hereafter referred to as the device under test (DUT).
2. **PROPONENT.** Department of Defense (DoD) Internet Protocol (IP) Version 6 (IPv6) Transition Office (DITO).
3. **PROGRAM MANAGER/USER POC.** DITO, Defense Information Systems Agency (DISA), Attn: GE36 Sam Assi, P.O. Box 4502, Arlington, VA 22204-4502, (703) 882-0241, e-mail: sam.assi@disa.mil.
4. **TESTER.** Donald L. Hann, Joint Interoperability Test Command (JITC), P.O. Box 12798, Fort Huachuca, AZ 85670-2798, DSN: 879-5130, commercial: (520) 538-5130, e-mail: don.hann@disa.mil.
5. **DEVICE UNDER TEST DESCRIPTION.** The DUT was an SMS which is used to provision TippingPoint Intrusion Prevention Systems (IPSs) and configure policy for Peer-to-Peer, Exploits, and other categories. It is also used to collect event information from the IPSs that are deployed.
6. **OPERATIONAL ARCHITECTURE.** The operational architecture was the JITC simulated Defense Information Systems Network (DISN) IP Core Network as depicted in Figure 2-1.
7. **REQUIRED DEVICE INTERFACES.** All IPv6-capable products to be included on the Unified Capabilities Approved Product List must meet the requirements of the DoD Information Technology Standards Registry (DISR), "DoD IPv6 Standard Profiles for IPv6 Capable Products Version 3.0," July 2008. Product testing conducted against these requirements is in accordance with the "DoD IPv6 Generic Test Plan (GTP) Version 3," August 2007. The IPv6 Simple Server product class profile requirements for conformance and interoperability are in Table 2-1.

Table 2-1. IPv6 Capability Requirements and Status

TippingPoint SMS							
RFC	RFC Title	Testing Completed		Simple Server		Implemented	Comments
		Conformance	Interoperability	Requirement	Met/Not Met		
IPv6 Base							
2460	Internet Protocol version 6 (IPv6) Specification	Stated in LoC	Yes	M	Met	Yes	
5095	Deprecation of Type 0 Routing Headers in IPv6	Stated in LoC	Yes	M	Met	Yes	
4443	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification	Stated in LoC	Yes	M	Met	Yes	
2461	Neighbor Discovery for IP version 6 (IPv6)	Stated in LoC	Yes	M	Met	Yes	
2462	IPv6 Stateless Address Auto configuration	Stated in LoC	Yes	M	Met	Yes	
1981	Path Maximum Transmission Unit Discovery for IPv6	Stated in LoC	Yes	S	Met	Yes	
4291	IPv6 Addressing Architecture	Stated in LoC	Yes	M	Met	Yes	
4007	IPv6 Scoped Address Architecture	Stated in LoC	Yes	M	Met	Yes	
4193	Unique Local IPv6 Unicast Addresses	Not Stated	Not Tested	S	Not Tested	No	
2710	Multicast Listener Discovery (MLD)	Stated in LoC	Yes	M	Met	Yes	
3810	Multicast Listener Discovery Version 2 (MLDv2) for IPv6	Not Stated	Not Tested	S+	Not Tested	No	
2464	Transmission of IPv6 Packets over Ethernet Networks	Stated in LoC	Yes	CM	Met	Yes	Note 1
IPSec							
4301	Security Architecture for the Internet Protocol	Not Stated	Not Tested	S+	Not Tested	No	
4302	IP Authentication Header	Not Stated	Not Tested	S	Not Tested	No	
4303	IP Encapsulating Security Payload (ESP)	Not Stated	Not Tested	S+	Not Tested	No	
4308	Cryptographic Suites for IPSec	Not Stated	Not Tested	S+	Not Tested	No	
4305	Cryptographic Algorithm Implementation Requirements for Encapsulating Security Payload (ESP) and Authentication Header (AH)	Not Stated	Not Tested	S+	Not Tested	No	
4869	Suite B Cryptographic Suites for IPsec	Not Stated	Not Tested	S+	Not Tested	No	
3971	Secure Neighbor Discovery	Not Stated	Not Tested	S	Not Tested	No	
3972	Cryptographically Generated Addresses	Not Stated	Not Tested	S	Not Tested	No	
3041	Privacy Extensions for Stateless Address Auto configuration in IPv6	Not Stated	Not Tested	S	Not Tested	No	

Table 2-1. IPv6 Capability Requirements and Status (continued)

TippingPoint SMS							
RFC	RFC Title	Testing Completed		Simple Server		Implemented	Comments
		Conformance	Interoperability	Requirement	Met/Not Met		
4306	Internet Key Exchange (IKEv2) Protocol	Not Stated	Not Tested	S+	Not Tested	No	
4307	Cryptographic Algorithms for Internet Key Exchange Version 2 (IKEv2)	Not Stated	Not Tested	S+	Not Tested	No	
Transition Mechanisms							
4213	Transition Mechanisms for IPv6 Host and Routers	Not Stated	Not Tested	S	Not Tested	No	
2766	Network Address Translation – Protocol Translation (NAT-PT)	Not Stated	Not Tested	SN	Not Tested	No	
3053	IPv6 Tunnel Broker	Not Stated	Not Tested	CS	Not Tested	No	
QoS							
2474	Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers	Not Stated	Not Tested	O	Not Tested	No	
3168	The Addition of Explicit Congestion Notification (ECN) to IP	Not Stated	Not Tested	O	Not Tested	No	
2205	Resource ReSerVation Protocol (RSVP) – Version 1 Functional Specification	Not Stated	Not Tested	O	Not Tested	No	
2207	RSVP Extensions for IPSEC Data Flows	Not Stated	Not Tested	O	Not Tested	No	
2210	The Use of RSVP with IETF Integrated Services	Not Stated	Not Tested	O	Not Tested	No	
2750	RSVP Extensions for Policy Control	Not Stated	Not Tested	O	Not Tested	No	
3175	Aggregation of RSVP for IPv4 and IPv6 Reservations	Not Stated	Not Tested	O	Not Tested	No	
3181	Signaled Preemption Priority Policy Object	Not Stated	Not Tested	O	Not Tested	No	
2961	RSVP Refresh Overhead Reduction Extension	Not Stated	Not Tested	O	Not Tested	No	
4495	A Resource Reservation Protocol (RSVP) Extension for the Reduction of Bandwidth of a Reservation Flow	Not Stated	Not Tested	O	Not Tested	No	
2998	A Framework for Integrated Services Operation over DiffServ Networks	Not Stated	Not Tested	O	Not Tested	No	
2996	Format of the RSVP DCLASS Object	Not Stated	Not Tested	O	Not Tested	No	
2746	RSVP Operation Over IP Tunnels	Not Stated	Not Tested	O	Not Tested	No	
3182	Identity Representation for RSVP	Not Stated	Not Tested	O	Not Tested	No	
2872	Application and Sub Application Identity Policy Element for Use with RSVP	Not Stated	Not Tested	O	Not Tested	No	
2747	RSVP Cryptographic Authentication	Not Stated	Not Tested	O	Not Tested	No	
Mobility							
3775	Mobility Support in IPv6	Not Stated	Not Tested	CS	Not Tested	No	

Table 2-1. IPv6 Capability Requirements and Status (continued)

TippingPoint SMS							
RFC	RFC Title	Testing Completed		Simple Server		Implemented	Comments
		Conformance	Interoperability	Requirement	Met/Not Met		
3776	Using IPsec to Protect Mobile IPv6 Signaling Between Mobile Nodes and Home Agents	Not Stated	Not Tested	CS	Not Tested	No	
4877	Mobile IPv6 Operation with IKEv2 and the Revised IPsec Architecture	Not Stated	Not Tested	CS	Not Tested	No	
4282	The Network Address Identifier	Not Stated	Not Tested	CS	Not Tested	No	
4283	Mobile Node Identifier for Option for IPv6	Not Stated	Not Tested	CS	Not Tested	No	
RoHC							
3095	Robust Header Compression (RoHC)	Not Stated	Not Tested	O	Not Tested	No	
4815	Corrections and Clarification to RFC 3095	Not Stated	Not Tested	O	Not Tested	No	
4995	RoHC Framework	Not Stated	Not Tested	O	Not Tested	No	
4996	RoHC: A profile for TCP/IP	Not Stated	Not Tested	O	Not Tested	No	
3241	RoHC over PPP	Not Stated	Not Tested	O	Not Tested	No	
3843	RoHC: A Compression Profile for IP	Not Stated	Not Tested	O	Not Tested	No	
4362	RoHC: A Link-Layer Assisted Profile for IP/UDP/RTP	Not Stated	Not Tested	O	Not Tested	No	
2507	IP Header Compression	Not Stated	Not Tested	O	Not Tested	No	
2508	Compressing IP/UDP/RTP Headers for Low-Speed Serial Links	Not Stated	Not Tested	O	Not Tested	No	
3173	IP Payload Compression	Not Stated	Not Tested	O	Not Tested	No	
Automatic Configuration							
2462	IPv6 Stateless Address Auto configuration	Stated in LoC	Yes	M	Met	Yes	
3315	DHCPv6	Not Stated	Not Tested	CM	Not Tested	No	
3769	IPv6 Prefix Delegation	Not Stated	Not Tested	CM	Not Tested	No	
3633	IPv6 Prefix Options for DHCPv6	Not Stated	Not Tested	CM	Not Tested	No	
5175	Extensions to Router Advertisement Flags	Not Stated	Not Tested	CS+	Not Tested	No	
Server							
959	File Transfer Protocol	Not Stated	Not Tested	O	Not Tested	No	
2428	FTP Extensions for IPv6 and NAT	Not Stated	Not Tested	O	Not Tested	No	
2821	Simple Mail Transfer Protocol (SMTP)	Not Stated	Not Tested	O	Not Tested	No	
2911	Internet Printing Protocol	Not Stated	Not Tested	O	Not Tested	No	
3162	RADIUS (Remote Authentication dial-In User Service) and IPv6	Not Stated	Not Tested	O	Not Tested	No	
4330	Simple Network Time Protocol (SNTP)	Not Stated	Not Tested	O	Not Tested	No	
3226	DNS Security and IPv6 A6 Aware Server/Resolver Message Size Requirements	Not Stated	Not Tested	O	Not Tested	No	
3261	Session Initiation Protocol (SIP)	Not Stated	Not Tested	O	Not Tested	No	
3596	DNS Extensions to Support IPv6	Not Stated	Not Tested	O	Not Tested	No	
3053	IPv6 Tunnel Broker	Not Stated	Not Tested	O	Not Tested	No	

Table 2-1. IPv6 Capability Requirements and Status (continued)

TippingPoint SMS							
RFC	RFC Title	Testing Completed		Simple Server		Implemented	Comments
		Conformance	Interoperability	Requirement	Met/Not Met		
Host							
3484	Default Address Selection for IPv6	Not Stated	Not Tested	S	Not Tested	No	
3596	DNS Extensions to Support IPv6	Not Stated	Not Tested	S	Not Tested	No	
3986	Uniform Resource Identifier (URI): Generic Syntax	Not Stated	Not Tested	S	Not Tested	No	
LEGEND:							
CBC	Cipher Block Chaining		MAC		Message Authentication Code		
CCM	CBC MAC Mode		MIB		Management Information Base		
CM	Conditional Must		N/R		No Requirement		
CS	Conditional Should		NAT		Network Address Translation		
CS+	Conditional Should+		O		Optional (May)		
DHCPv6	Dynamic Host Configuration Protocol Version 6		OSPF		Open Shortest Path First		
DISR	DoD Information Technology Standards Registry		PPP		Point-to-Point Protocol		
DNS	Domain Name Service		QoS		Quality of Service		
DoD	Department of Defense		RFC		Request for Comment		
FTP	File Transfer Protocol		RoHC		Robust Header Compression		
HMC	Hardware Management Console		RSVP		Resource ReSerVation Protocol		
IETF	Internet Engineering Task Force		RTP		Real-Time Transport Protocol		
IKEv2	Internet Key Exchange Version 2		S		Should		
IP	Internet Protocol		SLAAC		Stateless Address Auto-configuration		
IPSec	Internet Protocol Security		SMS		Security Management System		
IPv4	Internet Protocol Version 4		SN		Should Not		
IPv6	Internet Protocol Version 6		S+		Should+		
LoC	Letter of Conformance		UDP		User Datagram Protocol		
M	Must						
NOTES:							
1. The device must be conformant to at least one of the Connection Technologies protocols							
2. The terms Must, Conditional Must, Should, Should+, Conditional Should, Conditional Should +, Should Not, and Optional are used to reference specific required RFCs from the IETF, the DoD Information Technology Standards Registry, and the DoD IPv6 Generic Test Plan.							

8. TEST NETWORK DESCRIPTION. The DUT was tested as part of the JITC simulated DISN IP Core Network managed by the Advanced IP Technology Capability, and configured as shown in Figure 2-2.

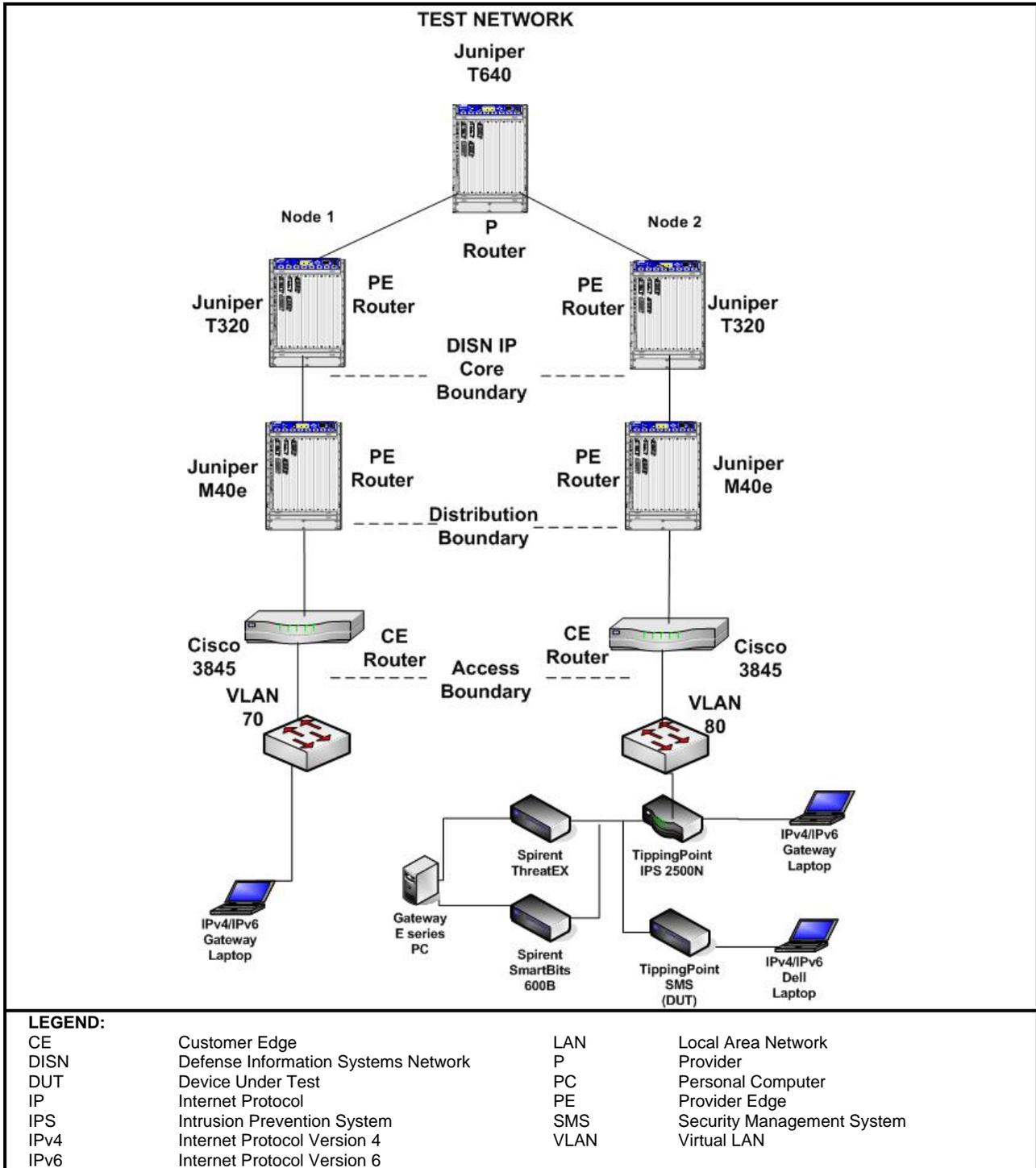


Figure 2-2. TippingPoint Test Network

9. DEVICE CONFIGURATIONS. Table 2-2 provides hardware and software components used in the TippingPoint test network.

Table 2-2. Test Configuration Hardware and Software

Equipment Name	Model Number	IOS/OS/Version(s)	
Hardware			
TippingPoint IPS	2500N	V 3.0.1.1110	
TippingPoint SMS - DUT	Dell PowerEdge 1950	Fedora Core 5/V 3.0.0.7063	
2 Cisco Routers	Cisco 3845	12.4(11)T	
2 Juniper Routers	Juniper M40e	V 7.6R3.6	
2 Juniper Routers	Juniper T320	V 7.5R4.4	
Juniper Router	Juniper T640	V 7.5R4.4	
Spirent	ThreatEX	V 3.32.62	
Spirent	SmartBits 600B	V 7.56	
2 Gateway Notebook	450ROG	MS Windows XP Professional	
Dell Notebook	8100	MS Windows XP Professional	
Gateway PC	E Series	MS Windows XP Professional	
Software			
Fedora Core 5	N/A	Linux V 2-6-15	
Avalanche	N/A	V 7.56 Build 45385	
MS Windows XP Professional	N/A	Build 5.1.2600 SP3	
VLC Media Player	N/A	V 0.8.6i	
Wireshark	N/A	V 1.0.5 (SVN Rev 26954)	
LEGEND:			
DUT	Device Under Test	R	Release
IOS	Internetworking Operating System	Rev	Revision
IPS	Intrusion Prevention System	SMS	Security Management System
LAN	Local Area Network	SP	Service Pack
MS	Microsoft	SVN	Software Version Number
N/A	Not Applicable	T	New Technology
OS	Operating System	V	Version
PC	Personal Computer	VLC	VideoLAN Client

10. TEST LIMITATIONS. None.

11. TEST RESULTS.

a. IPv6 Base.

Test Case C.1.2. The Request for Comments (RFC) 2460 IPv6 Specification is the base specification of the IPv6 protocol. It specifies a number of parameters that enable successful completion of IPv6 traffic addressing and control. The TippingPoint SMS met the test requirement.

Test Case Not Applicable . The RFC 5095, Deprecation of Type 0 Routing Headers, specifies that all IPv6 nodes MUST NOT initiate or propagate IPv6 packets containing Type 0 Routing Headers. Any IPv6 node that receives a packet with a destination address assigned to it that contains an RH0 extension header MUST NOT execute traffic-forwarding algorithms. The TippingPoint SMS met the test requirement.

Test Case C.1.14. The RFC 2463 identifies Internet Control Message Protocol messages for the IPv6 protocol. It includes message format and identifies two types of messages: error and informational. The TippingPoint SMS met the test requirement.

Test Case C.1.3. The RFC 2461 Neighbor Discovery for IPv6 specifies the neighbor discovery function that is similar to address resolution protocol in IP Version 4 (IPv4). It is necessary for implementing neighbor solicitations and neighbor advertisements within IPv6. The TippingPoint SMS met the test requirement.

Test Case C.1.4. The RFC 2462 IPv6 Stateless Address Auto-configuration specifies how a host auto-configures its interfaces in IPv6. These steps include determining whether the source addressing should be stateless or stateful, whether the information obtained should be solely the address or include other information, and Duplicate Address Detection. The TippingPoint SMS met the test requirement.

Test Case C.1.1. The RFC 1981 Path Maximum Transmission Unit Discovery for IPv6 is necessary for proper IPv6 implementations. It acts as a mechanism to determine the maximum size of packets to traverse the network without fragmentation. The TippingPoint SMS met the test requirement.

Test Case C.1.13. The RFC 4291 IPv6 Addressing Architecture defines the specifications for the addressing architecture of the IPv6 protocol. The definitions cover unicast addresses, anycast addresses, and multicast addresses. The TippingPoint SMS met the test requirement.

Test Case C.1.11. The RFC 4007 IPv6 Scoped Address Architecture defines the nature and characteristics for the usage of IPv6 addresses of different scopes. The TippingPoint SMS met the test requirement.

Test Case C.1.8. The RFC 2710 Multicast Listener Discovery (MLD) for IPv6 specifies the protocol used by an IPv6 router to discover the presence of multicast listeners (i.e., nodes wishing to receive multicast packets) on its directly attached links, and to discover specifically which multicast addresses are of interest to those neighboring nodes. The TippingPoint SMS met the test requirement.

Test Case C.1.5. The RFC 2464 Transmission of IPv6 Packets over Ethernet Networks specifies the frame format for transmission of IPv6 link-local addresses and statelessly auto-configured addresses on Ethernet networks. The TippingPoint SMS met the test requirement.

b. Conclusion. The TippingPoint SMS met all the required RFCs.

12. TEST AND ANALYSIS REPORT. All test data is maintained in the Advanced IP Technology Capability and is available upon request. This certification is available on the Joint Interoperability Tool (JIT). The JIT homepage is <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125/> (SIPRNet). The JIT has links to JITC interoperability documents to provide the DoD community, including the warfighter in the field, easy access to the latest interoperability information. System interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/.gov users on the NIPRNet at: <https://stp.fhu.disa.mil/>.