



DEFENSE INFORMATION SYSTEMS AGENCY

P. O. BOX 4502
ARLINGTON, VIRGINIA 22204-4502

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

25 Mar 09

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the NetApp FAS3020 Family of Storage Systems Running the NetApp Data ONTAP Version 7.3.1 Software 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 NetApp FAS3020 storage system running the NetApp Data ONTAP Version 7.3.1 software 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 NetApp FAS3020 storage system running the NetApp Data ONTAP Version 7.3.1 software successfully completed the related IPv6 Interoperability portions of the "DoD IPv6 Generic Test Plan (GTP) Version 3," August 2007, reference (d), and has received Special Interoperability Certification for IPv6 Capability. The NetApp FAS3020 storage system supports IPv6 functionality through its Ethernet port that supports management and configuration. This certification is solely based on testing of this Ethernet port. The NetApp FAS3020 storage system is part of a family of NetApp storage systems running the NetApp Data ONTAP Version 7.3.1 software, including the FAS2020, FAS2050, FAS270, FAS3040, FAS3070, FAS3140, FAS3160, FAS3170, FAS6030, FAS6040, FAS6070, FAS6080, FAS980, SA200, SA300, SA600, V3020, V3040, V3070, V3140, V3160, V3170, V6030, V6040, V6070, V6080, and R200 storage systems that were not tested. JITC analysis determined that these members of the NetApp FAS3020 storage system family are functionally identical for certification purposes. Therefore, the NetApp FAS2020, FAS2050, FAS270, FAS3040, FAS3070, FAS3140, FAS3160, FAS3170, FAS6030, FAS6040, FAS6070, FAS6080, FAS980, SA200, SA300, SA600, V3020, V3040, V3070, V3140, V3160, V3170, V6030, V6040, V6070, V6080, and R200 storage systems running the NetApp Data ONTAP Version 7.3.1 software are also certified as IPv6 Capable. This certification expires upon changes that could affect interoperability, but no later than 4 years from the date of this memorandum.

JITC Memo, JTE, Special Interoperability Test Certification of the NetApp FAS3020 Family of Storage Systems Running the NetApp Data ONTAP Version 7.3.1 Software for Internet Protocol Version 6 Capability

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 4 March 2009. Interoperability testing was conducted from 9 through 13 March 2009 at JITC’s Advanced IP Technology Capability. Conformance testing was confirmed by NetApp and was verified in the LoC provided. Enclosure 2 documents the summary test results and describes the devices. 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.

Table 1. Interoperability Status Summary

NetApp FAS3020 Storage System		
Functional Category	Requirement	Verified
IPv6 Base	M	Yes
IPSec	S+	No
Transition Mechanisms	S	Yes
Quality of Service	O	No
Mobility	CS	No
RoHC	O	No
Automatic Configuration	M	Yes
Server	O	No
Host	S	No
LEGEND: CS Conditional Should O Optional IPSec Internet Protocol Security RoHC Robust Header Compression IPv6 Internet Protocol Version 6 S Should M Must S+ Should+		
NOTE: The terms Must, Should, Should+, Conditional Should, and Optional are used to reference specific required Request for Comments from the Internet Engineering Task Force, the Department of Defense Information Technology Standards Registry, and the Department of Defense Internet Protocol Version 6 Generic Test Plan.		

Table 2. Equipment Listing

NetApp FAS3020 Storage System		
Component	Firmware/Software	Interface
FAS3020	Data ONTAP V 7.3.1	Gigabit Ethernet
LEGEND: V Version		

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5. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive 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>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at <http://jit.fhu.disa.mil> (NIPRNet), or <http://199.208.204.125> (SIPRNet). Information related to IPv6 Capable testing is at <http://jitc.fhu.disa.mil/apl/ipv6.html>.

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
Battlespace Communications Portfolio

2 Enclosures a/s

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Division, J68

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

NetApp, Attn: Dorian Greene, 1921 Gallows Rd, Suite 600, Vienna, VA 22182

ADDITIONAL REFERENCES

- (c) Department of Defense (DoD) Information Technology Standards Registry (DISR), "DoD IPv6 Standard Profiles for IPv6 Capable Products Version 3.0," July 2008
- (d) 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 NetApp FAS3020 storage system running the NetApp Data ONTAP Version 7.3.1 software, 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 designed by NetApp to provide network attached storage and offer unmatched business agility, superior application uptime, and simplicity of management.
- 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 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 profile requirements for conformance and interoperability are in Table 2-1.

Table 2-1. IPv6 Capability Requirements and Status

NetApp FAS3020 Storage System							
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	
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	Not Stated	Not Tested	S	Not Tested	No	
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	Stated in LoC	Yes	S	Met	Yes	
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)

NetApp FAS3020 Storage System							
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	Stated in LoC	Yes	S	Met	Yes	
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)

NetApp FAS3020 Storage System							
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)

NetApp FAS3020 Storage System							
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	
Other							
1094, 1813, 3530	Network File System (NFSv2, NFSv3, & NFSv4) over IPv6	Stated in LoC	Yes	N/R	Met	Yes	Note 2
N/A	Common Internet File System (CIFS)/SMB Server over IPv6	Stated in LoC	Yes	N/R	Met	Yes	Note 2
3720	Internet SCSI (iSCSI) over IPv6	Stated in LoC	Yes	N/R	Met	Yes	Note 2
4251	Secure Shell (SSH) Protocol Architecture	Stated in LoC	Yes	N/R	Met	Yes	Notes 2 and 3
LEGEND:							
CBC	Cipher Block Chaining		MIB	Management Information Base			
CCM	CBC MAC Mode		N/A	Not Applicable			
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		SCSI	Small Computer System Interface			
IPSec	Internet Protocol Security		SLAAC	Stateless Address Auto-configuration			
IPv4	Internet Protocol Version 4		SMB	Server Message Block			
IPv6	Internet Protocol Version 6		SN	Should Not			
LoC	Letter of Conformance		S+	Should+			
M	Must		UDP	User Datagram Protocol			
MAC	Message Authentication Code						
NOTES:							
1. The device must be conformant to at least one of the Connection Technologies protocols.							
2. These RFCs are not included in the DISR Product Profile, but were tested per NetApp's request.							
3. Excludes X11 and proxy forwarding.							
4. 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.

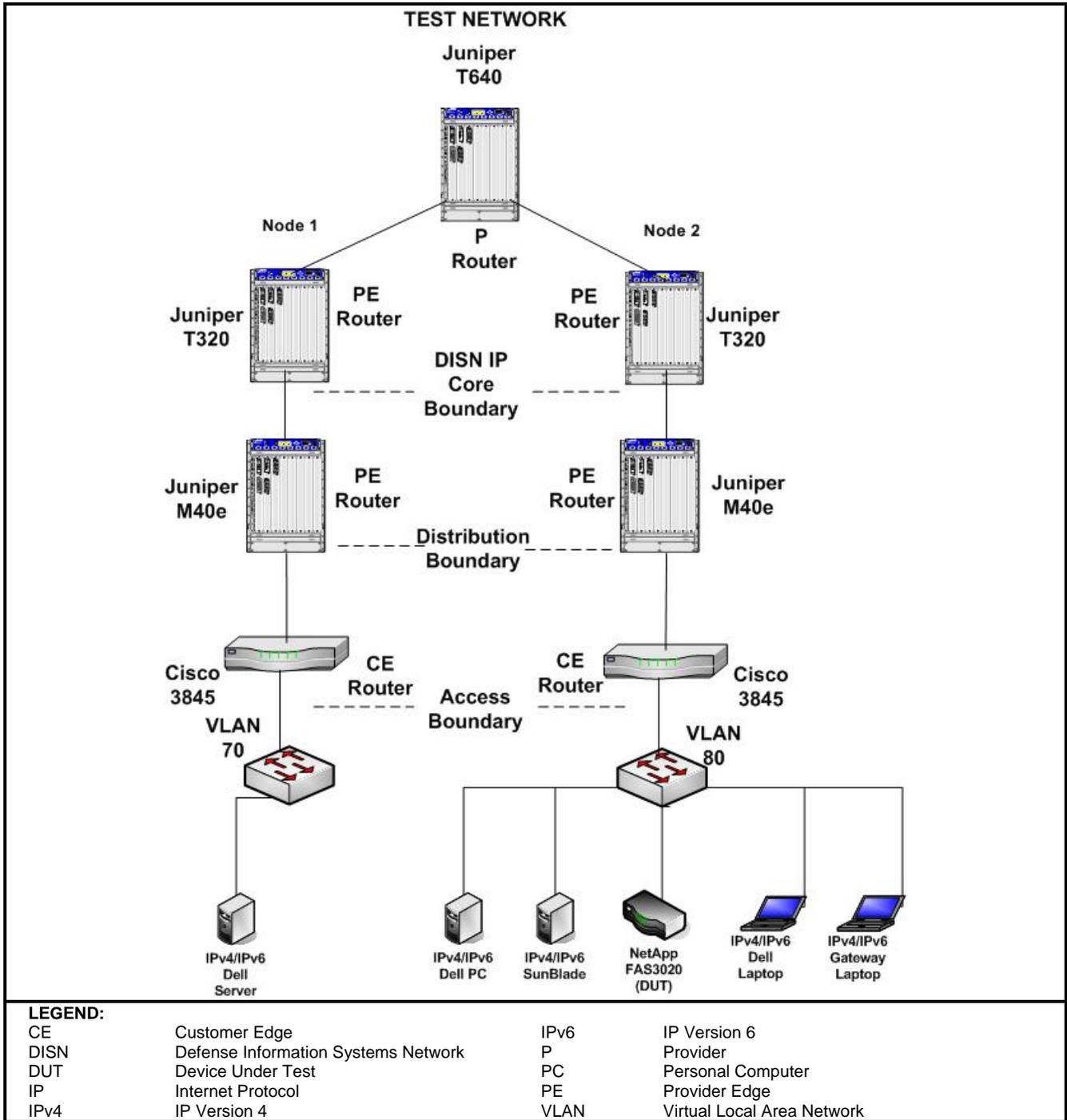


Figure 2-2. NetApp Test Network

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

Table 2-2. NetApp Test Configuration Hardware and Software

Equipment Name	Model Number	IOS/OS/Version(s)	
Hardware			
NetApp Storage System - DUT	FAS3020	NetApp Data ONTAP	
SunBlade	100	Sun Solaris 10	
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	
Dell Notebook	8100	MS Windows XP Professional	
Gateway Notebook	450ROG	MS Windows XP Professional	
Dell PC	OptiPlex 745	MS Windows Vista	
Dell Server	PowerEdge 2850	MS Windows 2003 Enterprise Server	
Software			
NetApp Data ONTAP	N/A	V 7.3.1	
MS Windows XP Professional	N/A	Build 5.1.2600 SP 3	
MS Windows Vista	N/A	Build 6.0.6001 SP 1	
MS Windows 2003 Enterprise Server	N/A	Build 5.2.3790 SP 2	
Sun Solaris 10	N/A	V 10 1/06 s10s_ulwos_19a SPARC	
Wireshark	N/A	V 1.0.5 (SVN Rev 26954)	
LEGEND:			
DUT	Device Under Test	Rev	Revision
IOS	Internetworking Operating System	R	Release
MS	Microsoft	SP	Service Pack
N/A	Not Applicable	SVN	Software Version Number
OS	Operating System	T	New Technology
PC	Personal Computer	V	Version

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 NetApp FAS3020 met the test requirement.

Test Case C.1.14. The RFC 4443 Internet Control Message Protocol (ICMP) for the IPv6 specification identifies ICMP messages for the IPv6 protocol. It includes message format and identifies two types of messages: error and informational. The NetApp FAS3020 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 NetApp FAS3020 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 whether Duplicate Address Detection identifies duplicate addresses on the network, and then issues a new address accordingly. The NetApp FAS3020 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 NetApp FAS3020 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 NetApp FAS3020 met the test requirement.

Test Case C.1.12. The RFC 4193 Unique Local IPv6 Unicast Addresses defines globally unique local addresses. Local IPv6 unicast addressing is intended to be used for local communications and is not expected to be routed to the internet. The NetApp FAS3020 met the test requirement.

Test Case C.1.8. The RFC 2710 Multicast Listener Discovery 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 NetApp FAS3020 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 NetApp FAS3020 met the test requirement.

b. Transition Mechanisms.

Test Case C.3.18. The RFC 4213 Transition Mechanisms for IPv6 Host and Routers specifies IPv4 co-existence mechanisms that can be implemented by IPv6 devices. The NetApp FAS3020 met the test requirement.

c. Additional Testing.

Test Case Not Applicable (N/A). The RFC 3530 Network File System (NFS) Version 4 (NFSv4) is a distributed file system protocol which owes heritage to NFS Protocol Version 2, RFC 1094, and Version 3, RFC 1813. The NFSv4 protocol supports traditional file access while integrating support for file locking and the mount protocol. Using the Test Network Topology referenced in Figure 2-3, the DUT will attempt to communicate over IPv6 using a Solaris 10 client and manually mount an NFSv4 share using the built-in NFS application. The DUT must be able to communicate with the Solaris 10 client using NFSv4 over IPv6. The NetApp FAS3020 met the test requirement.

Test Case N/A. Common Internet File System (CIFS) and Server Message Block (SMB) are proposed standard protocols that let programs make requests for files and services on remote hosts. Using the Test Network Topology referenced in Figure 2-4, the DUT will be configured as a SMB/CIFS server running an implementation of CIFS/SMB Server for IPv6. A Microsoft Vista SMB client will be used to test. The expected results are that the DUT will be able to successfully complete the IPv6 CIFS/SMB transaction over IPv6 transport. The NetApp FAS3020 met the test requirement.

Test Case N/A. The RFC 3720 Internet Small Computer Systems Interface (iSCSI) describes a transport protocol for iSCSI that works on top of Transmission Control Protocol. The iSCSI protocol aims to be fully compliant with the standardized Small Computer Systems Interface architecture model. Using the Test Network Topology referenced in Figure 2-5, the DUT will be configured as an iSCSI server and a Microsoft XP, Service Pack 3 client will be configured as an iSCSI client. The Windows iSCSI Initiator will be used. The DUT must be able to communicate with the Windows XP client using iSCSI over IPv6. The NetApp FAS3020 met the test requirement.

Test Case N/A. The RFC 4251 Secure Shell Protocol (SSH) defines how the SSH [6] protocol provides secure remote login and other secure network services over an unsecured network. The security of the connection relies on the server authenticating itself to the client as well as the user authenticating itself to the server. Using the Test Network Topology referenced in Figure 2-6, the DUT will be configured as an SSH server for IPv6. The Ubuntu Linux client will then attempt to connect to the server for root shell access. The expected results are that the DUT will be able to successfully complete the IPv6 SSH transaction over IPv6 transport. The NetApp FAS3020 met the test requirement.

d. Conclusion. The NetApp FAS3020 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/>.