DEFENSE INFORMATION SYSTEMS AGENCY
P. O. BOX 4502
ARLINGTON, VIRGINIA 22204-4502

IN REPLY REFER TO: Joint Interoperability Test Command (JTE) 19 Aug 10

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Foundry-Brocade Assured Services Local Area Network (ASLAN) and non-ASLAN with Specified Software Releases

References: (a) DoD Directive 4630.05, "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 (g), see Enclosure

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Foundry-Brocade ASLAN and non-ASLAN with Specified Software Releases is hereinafter referred to as the system under test (SUT). The SUT meets all of its critical interoperability requirements and is certified as interoperable for joint use within the Defense Switched Network (DSN). The ASLAN is certified to support DSN Assured Services over Internet Protocol. The SUT components which are bolded and underlined in the tables throughout this certification letter are components that were tested in the JITC laboratory for this certification. The SUT components which are not bolded and not underlined, but also listed throughout the tables in this letter, are certified for joint use in the DSN as well. The JITC analysis determined these components contain the same hardware and software and are functionally identical to the tested components for interoperability certification purposes. If a system meets the minimum requirements for an ASLAN, it also meets the lesser requirements for a non-ASLAN. Non-ASLANs are "commercial grade" and provide support to Command and Control (C2) (ROUTINE only calls) (C2(R)) or non-C2 voice subscribers. The SUT is certified for joint use as a non-ASLAN for C2R and non-C2 traffic. Non-ASLANs may also be used to receive all levels of precedence, but are limited to originating ROUTINE precedence only. Non-ASLANs do not need to meet the availability or redundancy requirements of the C2 or Special C2 users, C2 users and Special C2 users are not authorized as subscribers on a non-ASLAN.

Testing did not include video services or data applications; however, simulated data traffic was generated during testing to determine the SUT's ability to prioritize and properly queue voice media and signaling traffic. No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that could

affect interoperability, but no later than three years from the date of the original memorandum (13 August 2009).

3. The extension of this certification is based upon Desktop Review (DTR) 3. The original certification is based on interoperability testing conducted by JITC, DISA adjudication of open test discrepancy reports, review of the vendor's Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation Working Group (DSAWG) accreditation. Testing was conducted at JITC's Global Information Grid Network Test Facility at Fort Huachuca, Arizona, from 20 April through 08 May 2009 and documented in Reference (c). Review of the vendor's LoC was completed on 3 August 2009. The DSAWG grants accreditation based on the security testing completed by DISA-led Information Assurance test teams and published in a separate report, Reference (d). The DSAWG accreditation was granted on 11 August 2009. This DTR was requested to include the -PREM6 extension on the following part numbers: FESX624, FESX648 and FESX624HF. The new part numbers are FESX624-PREM6, FESX648-PREM6, FESX624HF-PREM6. The JITC approved this DTR on 1 July 2010 because this is just clarifying the part numbers and does not change any approved system components. DSAWG accreditation for this DTR was granted on 19 August 2010.

4. The overall interoperability status of the SUT is indicated in Table 1. The ASLAN and non-ASLAN system requirements are listed in Table 2. In addition to system level requirements, components that comprise the SUT must meet specific criteria to be certified for use as core, distribution, or access components. The interoperability status of the SUT components is listed in Table 3. The ASLAN and non-ASLAN requirements used to certify the components are listed in Table 4. This interoperability test status is based on the SUT's ability to meet:

a. Assured Services as defined in Reference (e).

b. Local Area Network system requirements specified in Reference (f) verified through JITC testing and/or vendor submission of LoC.

c. The overall system interoperability performance derived from test procedures listed in Reference (g).

Table 1. SUT Interoperability Status

System Interoperability Status			
Components (See note 1.)	**Release**	**Status**	**Remarks**
Foundry NetIron XMR 4000/**8000**/16000/32000	FI 4.0.0f	Certified	All ASLAN and non-ASLAN system requirements were met when the SUT was configured in accordance with architecture provided in reference (c). Additional details about component level certification are provided in Table 3. Security testing is accomplished through DISA-led Information Assurance Test teams and published in a separate report, Reference (d).
Foundry NetIron MLX 4/**8**/16/32	FI 4.0.0f		
Foundry BigIron RX 4/**8**/16/32	FI 2.7.02a		
FastIron SX 800[2]/SX 1600/FastIron Super X	FI 5.1.0c		
FastIron FESX648-PREM6[2]/FESX624-PREM6/ FESX624HF-PREM6/FESX424/ FESX424-POE/FESX424HF/FESX448	FI 5.1.0c		
FastIron GS648P-PoE FGS624P-PoE/FGS648P/FGS624P/FLS648/FLS624	FI 4.3.02a		
FastIron WS648G-PoE/ FWS648G/ FWS648-POE/FWS648/FWS624G-POE/FWS624G/ FWS624-POE/FWS624	FI 4.3.02a		
FastIron Edge 4802-PoE/2402-PoE/ FES2402-PoE/FES4802/FES2402/FES12GCF	FI 4.1.01		

NOTES:

1 Components bolded and underlined were tested by JITC. The other components in the family series were not tested; however, they utilize the same software and hardware and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified for joint use.

2 Indicates these switches support one processor and must be configured to failover to a redundant Distribution switch.

LEGEND:

ASLAN	Assured Services Local Area Network	ME	Metro Ethernet
DISA	Defense Information Systems Agency	NEB	Network Equipment Building
DSN	Defense Switched Network	SUT	System Under Test
E	Enhanced	SE	System Engineering
IOS	Internetwork Operating System	UCR	Unified Capabilities Requirements
JITC	Joint Interoperability Test Command	WS	Workgroup Switch

Table 2. ASLAN and non-ASLAN System Requirements

System Requirements				
Requirement	**Criteria**		**UCR Paragraph**	**Required**
Delay	One-way packet delay for voice packets of an established call (signaling and media) shall be 5 ms or less averaged over any 5-minute period.		A3.3.2.1	Yes
Jitter	For voice media packets, jitter shall be 5 ms or less averaged over any 5-minute period.		A3.3.2.2	Yes
Packet Loss	Voice packet loss within the LAN shall not exceed 0.05% averaged over any 5-minute period.		A3.3.2.3	Yes
Network Management	LAN Network Management Interface. One of the following methods: In-band or Out-of-band		A3.3.7.1	Yes
	LAN Configuration Control		A3.3.7.2	Yes
	LAN Operational Changes		A3.3.7.3	Yes
	LAN Performance Monitoring		A3.3.7.4	Yes
	LAN Alarms		A3.3.7.5	Yes
	LAN Reporting		A.3.3.7.6	Yes
Availability	ASLAN	99.999% Availability	A3.3.9.2	Yes
	non-ASLAN	99.9% Availability	A3.3.9.2	Yes
Redundancy	ASLAN	No Single Point of Failure that can cause an outage of more than 64 IP telephony subscribers	A3.3.9.3	Yes
	non-ASLAN	No Single Point of Failure that can cause an outage of more than 64 IP telephony subscribers	A3.3.9.3	No
Survivability	ASLAN	Service continuity in the presence of faults within the network	A3.3.9.4	Yes
	non-ASLAN	Service continuity in the presence of faults within the network	A3.3.9.4	No
Traffic Engineering	Voice bandwidth not to exceed 25 percent of available bandwidth, ITU-T G.711 codec with 20ms sample size.		A3.3.9.6	Yes
IPv6	All IP devices shall be IPv6 capable.		1.7, A3.2.8, and A11	Yes
Security	DIACAP/IA (See note.)		A3.3.8	Yes

NOTE: Security testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, reference (d).

LEGEND:

A	Appendix	IPv6	Internet Protocol version 6
ASLAN	Assured Services LAN	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
DIACAP	Department of Defense Information Assurance Certification and Accreditation Process	LAN	Local Area Network
DISA	Defense Information Systems Agency	ms	milliseconds
G.711	PCM of voice frequencies	PCM	Pulse Code Modulation
IA	Information Assurance	UCR	Unified Capabilities Requirements
IP	Internet Protocol		

Table 3. SUT Component Interoperability Status

Component Interoperability Status					
Component (See note 1.)	**Release**	**Sub-component** (See note 1.)	**Status**	**Layer (s)**	**Remarks**
Foundry NetIron XMR 4000/**8000**/16000/32000	FI 4.0.0f	**NI-XMR-MR**	Certified	Core, Distribution, Access	All CRs and FRs were met.
		NI-XMR-32-MR	Certified		
		NI-X-SF1	Certified		
		NI-X-SF3	Certified		
		NI-X-32-SF	Certified		
		NI-XMR-10Gx4	Certified		
		NI-XMR-10Gx2	Certified		
		NI-XMR-1Gx20-SFP	Certified		
		NI-XMR-1Gx20-GC	Certified		
Foundry NetIron MLX 4/**8**/16/32	FI 4.0.0f	**NI-MLX-MR**	Certified	Core, Distribution, Access	All CRs and FRs were met.
		NI-MLX-32-MR	Certified		
		NI-X-SF1	Certified		
		NI-X-SF3	Certified		
		NI-X-32-SF	Certified		
		NI-MLX-10Gx4	Certified		
		NI-MLX-10Gx2	Certified		
		NI-MLX-1Gx20-SFP	Certified		
		NI-MLX-1Gx20-GC	Certified		
		NI-MLX-1Gx48-T	Certified		
Foundry BigIron RX 4/**8**/16/32	FI 2.7.02a	**RX-BI-MR**	Certified	Core, Distribution, Access	All CRs and FRs were met.
		RX-BI-MR2	Certified		
		RX-BI-32-MR	Certified		
		RX-BI-32-MR2	Certified		
		RX-BI-SFM1	Certified		
		RX-BI-SFM3	Certified		
		RX-BI-32-SFM	Certified		
		RX-BI2XG	Certified		
		RX-BI4XG	Certified		
		RX-BI24C	Certified		
		RX-BI24HF	Certified		
		RX-BI48T	Certified		
		RX-BI-16XG	Certified		
FastIron SX 800[2]/SX 1600/ FastIron Super X	FI 5.1.0c	**SX-FIZMR-6-PREM6**	Certified	Distribution, Access	All CRs and FRs were met.
		SX-FI624HF	Certified		
		SX-FI62XG	Certified		
		SX-FI624100FX	Certified		
		SX-FI624P	Certified		
		SX-FI624C	Certified		
		SX-24GCPOE	Certified		
		FI-FISF	Certified		
		SX-FI12GM-4	Certified		
		SX-FIZMR	Certified		
		SX-FI424F	Certified		
		SX-FI424C	Certified		
		SX-FI424HF	Certified		
		SX-FI42XG	Certified		
		SX-FI424P	Certified		
		SX-FI12GM-6	Certified		
		SX-FI12GM-6-PREM6	Certified		
		SX-FI8GMR6	Certified		
		SX-FI8GMR6-PREM6	Certified		
		SX-FI2XGMR6	Certified		
		SX-FI2XGMR6-PREM6	Certified		

Table 3. SUT Component Interoperability Status (continued)

Component (See note 1.)	Release	Sub-component (See note 1.)	Status	Layer (s)	Remarks
FastIron FESX648[2]**/** FESX624/FESX624HF/FESX424/ FESX424-PoE/ FESX424HF/FESX448	FI 5.1.0c	Not Applicable	Certified	Access Distribution	All CRs and FRs were met.
FastIron Edge 4802-PoE/FES2402-PoE/FES4802/FES2402/ FES12GCF	FI 4.1.01	Not Applicable	Certified	Access	All CRs and FRs were met.
FastIron GS648P-PoE FGS624P-PoE/FGS648P/ FGS624P/FLS648/ FLS624	FI 4.3.02a	Not Applicable	Certified	Access	All CRs and FRs were met.
FastIronWS648G-PoE/FWS648G/ FWS648-PoE/FWS648/ FWS624G-PoE/FWS624G/ FWS624-PoE/FWS624	FI 4.3.02a	Not Applicable	Certified	Access	All CRs and FRs were met.

NOTES:
1 Components bolded and underlined were tested by JITC. The other components in the family series were not tested; however, they utilize the same software and hardware and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified for joint use.
2 Indicates these switches support one processor and must be configured to failover to a redundant distribution switch.

LEGEND:

CRs	Capability Requirements
E	Enhanced
FRs	Feature Requirements
FX-MT	Foreign Exchange, ATM Term
GB	Gigabit GBIC
IOS	Internetwork Operating System
JITC	Joint Interoperability Test Command
L2	Layer 2
L3	Layer 3
ME	Metro Ethernet
NEB	Network Equipment Building
RJ	Registered Jack
S	Standard
SFP	Small Form Factor Pluggable
SUP	Supervisor
SUT	System Under Test
TX	The designation of a copper RJ-45 connection for Fast Ethernet
WS	Workgroup Switch

Table 4. ASLAN and non-ASLAN Component Requirements

Core/Distribution/Access Component Requirements				
Requirement	**Criteria**		**UCR Paragraph**	**Required**
Traffic Prioritization	Traffic within LAN components shall be prioritized by session media type in accordance with the NCIDs.		A3.3.3	Yes
Traffic Priority Method	LAN components shall support DSCP, and IEEE 802.1p to DSCP mapping.		A3.3.3.1	Yes
Queuing	LAN components shall support one of the following: - Priority Queuing - Weighted Fair Queuing - Class Based Weighted Fair Queuing		A3.3.4.1	Yes
	LAN components shall be capable of - four hardware queues (Expedited Forwarding, Assured Forwarding, Assured Forwarding Preferred, and Default) - Assigning any "tagged" session to any hardware queues		A3.3.4.1	Yes
LAN Behaviors	LAN components shall support Differential Service Per-Hop Behaviors per RFCs 2474, 2475, and 3260		A3.3.4.2	Yes
VLANs	LAN components shall support: - Port based VLANs - MAC address based VLANs - Shall be capable of reassigning VLAN IDs - Accepting VLAN tagged frames in accordance with IEEE 802.1Q		A3.3.5	Yes
IEEE Conformance	LAN components shall support: - IEEE 802.1d – Bridging - IEEE 802.1p/Q – Priority tagging/VLAN tagging - IEEE 802.1s – Per-VLAN Group Spanning Tree - IEEE 802.1v – VLAN Classification by port and protocol - IEEE 802.1w –Rapid Reconfiguration of Spanning Tree - IEEE 802.1x – Port Based Network Access Control - IEEE 802.3ad – Link Aggregation Protocol - IEEE 802.3af - Power over Ethernet (Conditional)		A3.3.9.1	Yes
Single Device Redundancy	ASLAN	LAN components shall support: - ASLAN components shall have a reliability of .99999 or better - Dual power supplies and dual processors (more than 64 users) - N+1 sparing for access (more than 64 users) - Redundancy protocol[1] - 2 second path restoral - No single point of failure will cause loss of more than 64 users	A3.3.9.3.1	Yes
	non-ASLAN	This requirement is conditional for a non-ASLAN.	A3.3.9.3.1	No
Security	LAN components shall employ the Network Infrastructure and VoIP STIGs.[2]		A3.3.8	Yes
IPv6	All IP devices shall be IPv6 capable.		1.7, A3.2.8, and A11	Yes

NOTES:
1 In accordance with UCR 2007, Appendix 3, A3.3.9.4, OSPF, IS-IS, and BGP are the routing protocols supported for core and distribution components. The redundancy protocol shall be VRRP or equivalent protocol for access components.
2 Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (d).

Table 4. ASLAN and non-ASLAN Component Requirements (continued)

LEGEND:

802.1d	Standard for Local and Metropolitan Area Networks: MAC Bridges	ASLAN	Assured Services LAN
802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization	BGP	Border Gateway Protocol
802.1Q	Standards for Local and Metropolitan Area Networks: Virtual Bridged Local Area Networks	CoS	Class of Service
802.1s	Standard for Local and Metropolitan Area Networks - Amendment 3 to 802.1Q Virtual Bridged Local Area Networks: Multiple Spanning Trees	CSMA/CD	Carrier Sense Multiple Access with Collision Detection
802.1v	Standard for Local and Metropolitan Area Networks - Virtual Bridge Local Area Networks - Amendment 2: VLAN Classification by Protocol and Port (Amendment to IEEE 802.1Q, 1998 Edition)	DISA	Defense Information Systems Agency
802.1w	Standard for Local and metropolitan area networks - Common Specifications - Part 3: Media Access Control (MAC) Bridges: Rapid Configuration	DSCP	Differentiated Services Code Point
802.1x	Standard for Local and Metropolitan Area Networks Port-Based Network Access Control	IEEE	Institute of Electrical and Electronics Engineers
802.3ad	Standard for Information Technology – Local and Metropolitan Area Networks – Part 3: CSMA/CD Access Method and Physical Layer Specifications–Aggregation of Multiple Link Segments	ID	Identification
802.3af	Standard for CSMA/CD Access Method and Physical Layer Specifications - Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI)	IP	Internet Protocol
A	Appendix	IPv6	Internet Protocol version 6
		IS-IS	Intermediate system-Intermediate System
		LAN	Local Area Network
		MAC	Media Access Control
		NCID	Net-Centric Implementation Document
		N	total VoIP users / 64
		OSPF	Open Shortest-Path First
		QoS	Quality of Service
		RFC	Request for Comment
		SNMP	Simple Network Management Protocol
		STIGs	Security Technical Implementation Guides
		UCR	Unified Capabilities Requirements
		VLANs	Virtual LANs
		VoIP	Voice over Internet Protocol
		VRRP	Virtual Router Redundancy Protocol

5. No detailed test report was developed in accordance with the Program Manager's request. 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 DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.

6. The JITC point of contact is Mr. Edward Mellon, DSN 879-5159, commercial (520) 538-5159, FAX DSN 879-4347, or e-mail to edward.mellon@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0833804.

FOR THE COMMANDER:

Steve Loxeski

Enclosure a/s

for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

Distribution (electronic mail):
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Office of Assistant Secretary of Defense (NII)/DOD CIO
U.S. Joint Forces Command, Net-Centric Integration, Communication, and Capabilities Division, J68
Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of the Foundry-Brocade Assured Services Local Area Network (ASLAN) and non-ASLAN with Specified Software Releases," 13 August 2009
(d) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Foundry-Brocade Assured Services Local Area Network (ASLAN) and non-ASLAN with Specified Software Releases (Tracking Number 833804)," 11 August 2009
(e) Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 6215.01C, "Policy for Department of Defense Voice Services with Real Time Services (RTS)," 9 November 2007
(f) Defense Information Systems Agency, "Department of Defense Networks Unified Capabilities Requirements," 21 December 2007
(g) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006