DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **26 Oct 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Brocade FastIron CX (FCX) Series from Release 7.3.0c to Release 7.3.0d

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 (f), see Enclosure

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

2. The Brocade FCX648S-HPOE-ADV Release 7.3.0c is hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interoperability requirements and is certified for joint use within the Defense Information System Network (DISN) as an Assured Services Local Area Network (ASLAN) Core and Distribution switch in a stacked configuration and as a Layer 2/Layer 3 Access switch in either a stacked or single component configuration. The SUT is certified as interoperable for joint use with other ASLAN components listed on the UC APL with the following interfaces: 100/1000Base SX/LX, 10GbaseX, and 10/100/1000BaseT. The FCX648 and FCX624 product series listed in Table 1 employs the same software and similar hardware as the SUT. JITC analysis determined these systems to be functionally identical to the SUT for interoperability certification purposes and therefore, they are also certified for joint use. The SUT meets the critical interoperability requirements set forth in Reference (c), using test procedures derived from Reference (d).

The SUT is certified to support Assured Services within an ASLAN. If a component meets the minimum requirements for deployment in an ASLAN, it also meets the lesser requirements for deployment in 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. When deployed in a non-ASLAN, the SUT may also be used to receive all levels of precedence, but is limited to supporting calls that are originated at ROUTINE precedence only. Non-ASLANs do not meet the availability or redundancy requirements for C2 or Special C2 users and therefore are not authorized to support precedence calls originated above ROUTINE.

No other configurations, features, or functions, except those cited within this document, are certified by JITC. This certification expires upon changes that could affect interoperability, but

no later than three years from the date of the original Unified Capabilities (UC) Approved Product List (APL) memorandum (24 July 2012).

3. The extension of this certification is based upon Desktop Review (DTR) 1. The original certification is based on interoperability testing conducted by JITC, review of the vendor's Letters of Compliance (LoC), DISA adjudication of open test discrepancy reports (TDRs), and DISA Certifying Authority (CA) Recommendation, and documented in Reference (e). Interoperability testing was conducted by JITC, Fort Huachuca, Arizona, from 12 March through 5 April 2012. Review of the vendor's LoC was completed on 9 April 2012. DISA adjudication of outstanding TDRs was completed on 24 April 2012. The DISA CA provided a positive Recommendation on 13 July 2012 based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (f). This DTR was requested to update the SUT from Release 7.3.0c to Release 7.3.0d. This release includes minor software changes related to commercial functionality and doesn't affect Assured Services. Therefore, JITC approves this DTR. The IA posture has not changed. Therefore, the original IA approval applies to this DTR.

4. Table 1 provides a UC APL product summary. Table 2 provides the SUT interface interoperability status and Table 3 provides the Capability Requirements (CR) and Functional Requirements (FR) status. The threshold CR/FRs for ASLAN components are established by Section 5.3.a of Reference (c) and were used to evaluate the interoperability of the SUT.

Table 1. UC APL Product Summary

SUT (See note.)	Release	Function	Sub-component	Description
Brocade FCX648S-HPOE-ADV, FCX624-E, FCX624-E-ADV, FCX624-I, FCX624-I-ADV, FCX624S, FCX624S-ADV, FCX624S-HPOE, FCX624S-HPOE-ADV, FCX624S-F, FCX624S-F-ADV, FCX648-E, FCX648-E-ADV, FCX648-I, FCX648-I-ADV, FCX648S, FCX648S-HPOE	7.3.0d	Core, Distribution, Access	Not Applicable	One rack-unit high stackable switch

NOTE: 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 similar hardware and JITC analysis determined them to be functionally identical for interoperability certification purposes and they are also certified for joint use.

LEGEND:

APL	Approved Products List	JITC	Joint Interoperability Test Command
HPOE	High Power over Ethernet	UC	Unified Capabilities

Table 2. SUT Interface Interoperability Status

Interface	Applicability			UCR 2008, Change 3 Reference	Threshold CR/FR[1]	Status	Remarks
	Co	D	A				
Serial	C	C	C	5.3.1.3.9	1-4	Certified	The SUT met the CRs and FRs with the following standard: EIA-232.
10Base-X	C	C	C[2]	5.3.1.3.1	1-6	Certified	The SUT met CRs and FRs with the following IEEE standard: 802.3i (10BaseT).
100Base-X	R	R	C[2]	5.3.1.3.1	1-6	Certified	The SUT met CRs and FRs with the following IEEE standard: 802.3u (100BaseT).
1000Base-X	R	R	C[2]	5.3.1.3.1	1-6	Certified	The SUT met CR and FRs with the following IEEE standards: 802.3ab (1000BaseT), 802.3z (1000Base-SX, 1000Base-LX).
10000Base-X	C	C	C	5.3.1.3.1	1-6	Certified	The SUT met CRs and FRs with the following IEEE standard: 802.3ae (10GBase-SR, 10GBase-LR).
Wireless	C	C	C	5.3.1.3.1/5.3.1.7.2	1-6	Not Tested[3]	

NOTES:
1. The SUT high-level CR and FR ID numbers depicted in the Threshold CRs/FRs column can be cross-referenced in Table 3. These high-level CR/FR requirements refer to a detailed list of requirements provided in Reference (e), Enclosure 3.
2. Core and Distribution products must minimally support 100Base-X (802.3u) and 1000Base-X (802.3z). Access products must minimally support one of the following standards: 802.3i (10BaseT), 802.3j (10BaseF), 802.3u (100BaseT/F), 802.3z (1000BaseF), or 802.3ab (1000BaseT). Other rates and standards may be provided as conditional interfaces.
3. The SUT does not support this interface. This interface is not required for a core, distribution, or access switch.

LEGEND:

802.3ab	1000BaseT Gbps Ethernet over twisted pair at 1 Gbps (125 Mbps)	EIA	Electronic Industries Alliance
802.3ae	10 Gbps Ethernet	EIA-232	Standard for defining the mechanical and electrical characteristics for connecting Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) data communications devices
802.3i	10BaseT Mbps over twisted pair		
802.3j	10 Mbps over fiber		
802.3u	Standard for carrier sense multiple access with collision detection at 100 Mbps	FR	Functional Requirement
		Gbps	Gigabits per second
802.3z	Gigabit Ethernet Standard	ID	Identification
A	Access	IEEE	Institute of Electrical and Electronics Engineers
C	Conditional	Mbps	Megabits per second
Co	Core	R	Required
CR	Capability Requirement	SUT	System Under Test
D	Distribution	UCR	Unified Capabilities Requirements

Table 3. SUT CRs and FR Status

CR/FR ID	Capability/Function	Applicability[1]	UCR Reference	Status
1	**General Performance Parameters**			
	Performance Parameters	Required	5.3.1.3	Met
	Port Interface Rates	Required	5.3.1.3.1	Met
	Port Parameter Requirements	Required	5.3.1.3.2	Met
	Class of Service Markings	Required	5.3.1.3.3	Met
	VLAN Capabilities	Required	5.3.1.3.4	Met
	Protocols	Required	5.3.1.3.5	Met
	QoS Features	Required	5.3.1.3.6	Met
	Network Monitoring	Required	5.3.1.3.7	Met
	Security	Required	5.3.1.3.8	Met
2	**E2E Performance Requirements**			
	Voice Services	Required	5.3.1.4.1	Met[2]
	Video services	Required	5.3.1.4.2	Met[2]
	Data services	Required	5.3.1.4.3	Met[2]
3	**NM Requirements**			
	Configuration Control	Required	5.3.1.6.1	Met
	Operational Changes	Required	5.3.1.6.2	Met
	Performance Monitoring	Required	5.3.1.6.3	Met
	Alarms	Required	5.3.1.6.4	Met
	Reporting	Required	5.3.1.6.5	Met
4	**Engineering Requirements**			
	Physical Media	Required	5.3.1.7.1	Met[3]
	Wireless	Conditional	5.3.1.7.2	Not Tested
	Traffic Engineering	Required	5.3.1.7.3	Met[3]
	Availability	Required	5.3.1.7.6	Met[3]
	Redundancy	Required	5.3.1.7.7	Met[3, 4]
5	**MPLS**			
	MPLS Requirements	Conditional	5.3.1.8.4.1	Not Tested
	MPLS VPN Augmentation to VLANs	Conditional	5.3.1.8.4.2	Not Tested
6	**IPv6 Requirements**			
	Product Requirements	Required	5.3.5.4	Partially Met[5, 6, 7]

NOTES:
1. The annotation of 'required' refers to a high-level requirement category. The applicability of each sub-requirement is provided in Reference (e), Enclosure 3. The system under test does not need to provide conditional requirements. However, if a capability is provided, it must function according to the specified requirements in order to be certified for that capability.
2. This requirement was verified and met using simulated voice, video, and data traffic in an operational emulated environment to meet E2E requirements. The SUT must be deployed in accordance with deployment guide and engineering guidelines provided in UCR Change 3, paragraph 5.3.1.4.
3. This requirement was met with the following stipulations: It is the site's responsibility to configure the SUT in a manner which meets the engineering requirements listed in Reference (e), Enclosure 2, Section 11.2 d and that does not create a single point of failure which could impact more than 96 C2 users.
4. The SUT operates in a stack configuration. In the stack, there is an element which is the Master and another which is the Standby. Remaining elements will be Members and may assume the role of standby upon failure of the Master. Upon failure of the Master element, the standby element becomes Master. However, IPv6 streams required up to 25 seconds before they were resumed. If a Member or Standby element of the stack failed, then IPv6 streams resumed within the required 5 seconds. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

Table 3. SUT CRs and FR Status (continued)

NOTES (continued):
5. The SUT does not support the following IPv6 RFC: RFC 2711. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
6. The SUT does not support the following IPv6 RFC: RFC 4302. DISA adjudicated this deficiency as minor because this RFC addresses requirements for IPSec, which is not implemented in the fielded configuration.
7. The SUT does not support the following IPv6 RFC: RFC 5340. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.

LEGEND:

C2	Command and Control	NM	Network Management
CR	Capability Requirement	POA&M	Plan of Action and Milestones
DISA	Defense Information Systems Agency	QoS	Quality of Service
E2E	End-to-End	RFC	Request For Comment
FR	Functional Requirement	SUT	System Under Test
IPSec	Internet Protocol Security	UCR	Unified Capabilities Requirements
IPv6	Internet Protocol version 6	VLAN	Virtual Local Area Network
MPLS	Multiprotocol Label Switching	VPN	Virtual Private Network

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). 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: disa.meade.ns.list.unified-capabilities-certification-office@mail.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.a.mellon.civ@mail.mil. JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The Tracking Number for the SUT is 1132701.

FOR THE COMMANDER:

Enclosure a/s

for BRADLEY A. CLARK
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Extension of the Special Interoperability Test Certification of the Brocade FastIron CX (FCX) Series from Release 7.3.0c to Release 7.3.0d

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ADDITIONAL REFERENCES

(c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008, Change 3," September 2011
(d) Joint Interoperability Test Command, "ASLAN Component Test Plan (UCTP)," November 2010
(e) Joint Interoperability Test Command, Memo, JTE, "Special Interoperability Test Certification of the Brocade FastIron CX (FCX) Series with Release 7.3.0c," 20 July 2012
(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Brocade FCX Series Release (Rel.) 7.3.0c (Tracking Number 1132701)," Draft