DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) 24 October 2022

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Certification of Aruba, a Hewlett Packard Enterprise company 3810M Switch Series with Software Release 16.11

References: (a) Department of Defense Instruction 8100.04, "DoD Unified Capabilities (UC)," 9 December 2010
(b) Office of the Department of Defense Chief Information Officer, "Department of Defense Unified Capabilities Requirements 2013, Change 2," September 2017
(c) through (f), see Enclosure

1. Certification Authority. Reference (a) establishes the Joint Interoperability Test Command (JITC) as the Joint Interoperability Certification Authority for the Department of Defense Information Network (DoDIN) products, Reference (b).

2. Conditions of Certification. The Aruba 3810M Switch Series with Software Release 16.11, hereinafter referred to as the System Under Test (SUT), meets the critical requirements of the Unified Capabilities Requirements, Reference (b), as an Assured Services Local Area Network (ASLAN) Core, Distribution, and Access Switch and is certified for joint use for Standalone and for stacked configurations with the conditions described in Table 1. This certification expires upon changes that affect interoperability, but no later than the expiration date specified in the DoDIN Approved Products List (APL) memorandum.

This extension of the certification is for Desktop Review (DTR) 4. DTR 4 was requested to update the SUT Software Release version from 16.08 to 16.11. See Paragraph 4 for additional details.

Table 1. Conditions

Description	Operational Impact	Remarks
UCR Waivers		
None.		

(Table continues next page.)

Table 1. Conditions (continued)

Description		Operational Impact	Remarks
TDR#	**Conditions of Fielding**		
ANI-0721-002	The SUT 3810M JL074A switch does not fully support auto negotiation in accordance with IEEE 802.3ab. The SUT does not default to half duplex for the conditions specified in IEEE 802.3ab. CoF: Ensure that link-partner device software configuration matches the actual hardware functionality.	Minor with CoF	See note 1.
ANI-0721-003	The SUT 3810M JL076A and JL075A switches do not fully support force mode negotiation in accordance with IEEE 802.3ab. The SUT could not be force mode configured for 100 Mbps half duplex to either duplex at 10 Mbps. CoF: Ensure that the deployment topology includes fully IEEE 802.3ab compliant devices.	Minor with CoF	See note 1.
TDR#	**Open Test Discrepancies**		
ANI-0721-001	The Stack Failover of the 3810M JL076A, JL075A, and JL074A switches exceeds the 5second limit of packet loss. DISA adjudicated this TDR and added the following CoF: The SUT is certified as a non-stacked Layer 2/3 Access switch. UPDATE: With DTR 2 V&V testing with patch release 16.08.0018, the 3810M JL076A, JL075A, and JL074A switches met stack failover requirements and the SUT was certified for Core, Distribution and Access.	CLOSED	See note 2.
ANI-0721-005	When stack failover is performed (Master Switch is powered down), one of the other two adjacent switches not affected by the power down *can* have a 40G interface fail. UPDATE: With DTR 2 V&V testing with patch release 16.08.0018, the switches successfully passed multiple failover iterations on the 40G interfaces.	CLOSED	See note 3.

NOTE(S):
1. TDRs ANI-0721-002 and ANI-0721-003: DISA accepted the Vendor's POA&M and adjudicated this DTR 1 test discrepancy as having minor operational impact. The product supports the required minimum interface types. The product does not support half-duplex, which is a minimal operational requirement.
2. TDR ANI-0721-001: DISA accepted the Vendor's POA&M and adjudicated this DTR 1 test discrepancy as having a critical operational impact for Core and Distribution; therefore, the SUT is certified for non-stacked Layer 2/3 Access only. During DTR 2 V&V testing with patch release 16.08.0018 conducted by USAISEC TIC 30 November-4 December 2020, the SUT met Stack Failover requirements; therefore, this TDR was closed and the SUT was certified for both stacked and non-stacked configurations as a Core, Distribution, and Access switch.
3. TDR ANI-0721-005: With DTR 2 V&V testing with patch release 16.08.0018 conducted by USAISEC-TIC 30 November-4 December 2020, the SUT successfully passed multiple failover iterations with the 40G interfaces and this corresponding TDR was closed.

LEGEND:

802.ab	1000BaseT Ethernet over twisted pair at 1 Gbps	POA&M	Plan of Action and Milestones
BaseT	Mbps (Baseband Operation, Twisted Pair) Ethernet	SUT	System Under Test
CoF	Condition of Fielding	TDR	Test Discrepancy Report
DISA	Defense Information Systems Agency	TIC	Technology Integration Center
DTR	Desktop Review	UCR	Unified Capabilities Requirements
Gbps	Gigabits per second	USAISEC	U.S. Army Information Systems Engineering Command
IEEE	Institute of Electrical and Electronics Engineers	V&V	Verification and Validation
Mbps	Megabits per second		

3. Interoperability Status. Table 2 provides the SUT interface interoperability status, Table 3 provides the Capability Requirements and Functional Requirements status, and Table 4 provides the DoDIN APL Product Summary, to include subsequent DTR updates.

Table 2. SUT Interface Status

Interface (See note 1.)	Applicability (ASLAN)			Status	Remarks
	Co	D	A		
Network Management Interfaces (See note 2.)					
IEEE 802.3i (10BaseT UTP)	C	C	C	Not Tested	See note 3.
IEEE 802.3u (100BaseT UTP)	C	C	C	Not Tested	See note 3.
IEEE 802.3ab (1000BaseT UTP)	C	C	C	Met	
Access (User) Interfaces (See note 2.)					
IEEE 802.3i (10BaseT UTP)	C	C	C	Partially Met	See note 4.
IEEE 802.3u (100BaseT UTP)	C	C	C	Partially Met	See note 4.
IEEE 802.3u (100BaseFX)	C	C	C	Not Tested	See note 5.
IEEE 802.3ab (1000BaseT UTP)	C	C	C	Met	
IEEE 802.3z (1000BaseX Fiber)	C	C	C	Met	
IEEE 802.3bz (2.5/5GBaseX)	O	O	O	Not Tested	See note 5.
IEEE 802.3ae (10GBaseX)	C	C	C	Met	
IEEE 802.3by (25GBaseX)	O	O	O	Not Tested	See note 5.
IEEE 802.3ba (40GBaseX)	C	C	C	Met	See note 6.
IEEE 802.3cd (50GBaseX)	O	O	O	Not Tested	See note 5.
IEEE 802.3ba (100GBaseX)	C	C	C	Not Tested	See note 5.
Uplink (Trunk) Interfaces (See note 2.)					
IEEE 802.3ab (1000BaseT UTP)	C	C	C	Not Tested	See note 5.
IEEE 802.3z (1000BaseX Fiber)	C	C	C	Met	See note 7.
IEEE 802.3bz (2.5/5GBaseX)	O	O	O	Not Tested	See note 5.
IEEE 802.3ae (10GBaseX)	C	C	C	Met	See note 7.
IEEE 802.3by (25GBaseX)	O	O	O	Not Tested	See note 5.
IEEE 802.3ba (40GBaseX Fiber)	C	C	C	Met	
IEEE 802.3cd (50GBaseX)	O	O	O	Not Tested	See note 5.
IEEE 802.3ba (100GBaseX Fiber)	C	C	C	Not Tested	See note 5.

NOTE(S):

1. Table 3 depicts the SUT high-level requirements. Table 3-2 in Enclosure 3 of Reference (c) provides a detailed list of requirements.
2. Core, Distribution, and Access products must minimally support one of the interfaces listed in this table as conditional for the given role. Other rates and standards may be provided as optional interfaces.
3. Testing on management ports was performed on the 1 Gbps interfaces. JITC analysis determined the 10BaseX and 100Base X interfaces are low risk for certification based on the vendor's Letter of Compliance (LoC) compliance with the IEEE 802.3i and 802.3u standards and the testing data collected at higher data rates.
4. During the DTR 1 test event, all Access (User) link testing was performed on the 1 Gbps and 10 Gbps interfaces. On the latter interfaces, they were unable to connect at 10 Meg full and half duplex, and 100 Meg half duplex. JITC analysis determined the 10BaseX and 100BaseX rates worked well on the 1G interfaces, but experienced problems with the 1/10G interfaces. DISA adjudicated TDR 002 and TDR 003 as minor for the 1/10G interfaces (see Table 1).
5. The SUT does not support this conditional/optional interface
6. This interface was tested during DTR 1 test event.
7. During the initial test event, all Uplink (Trunk) testing was performed on the 40 Gbps interfaces. JITC analysis determined the 1000BaseX and 10GBase X interfaces are low risk for certification based on the vendor's LoC compliance with the IEEE 802.3u and 802.3ab standards and the testing data collected at higher data rates.

LEGEND:

A	Access	Gbps	Gigabits per second
ASLAN	Assured Services Local Area Network	IEEE	Institute of Electrical and Electronics Engineers
BaseFX	Mbps Ethernet over Fiber	JITC	Joint Interoperability Test Command
BaseT	Mbps (Baseband Operation, Twisted Pair) Ethernet	LoC	Letter of Compliance
BaseX	Mbps Ethernet over Fiber or Copper	Mbps	Megabits per second
C	Conditional	O	Optional
Co	Core	SUT	System Under Test
D	Distribution	UTP	Unshielded Twisted Pair
GBaseX	Gbps Ethernet over Fiber or Copper		

Table 3. SUT Capability Requirements and Functional Requirements Status

CR/FR ID	UCR Requirement (See notes 1 and 2.)	UCR 2013 Change 2 Reference	Status
1	General LAN Switch and Router Product Requirements (R)	7.2.1	Partially Met (See note 3.)
2	LAN Switch and Router Redundancy Requirements (R)	7.2.2	Met (See note 4.)
3	LAN Product Requirements Summary (R)	7.2.3	Met
4	Multiprotocol Label Switching (O)	7.2.4	Not Tested (See note 5.)

NOTE(S):
1. The annotation of "required" refers to a high-level requirement category. Enclosure 3 of Reference (c) addresses the applicability of each sub-requirement.
2. A JITC Cybersecurity test team conducted Security testing and published the results in a separate report, Reference (d).
3. The SUT met the requirements with the exceptions as noted in Table 1. DISA adjudicated these exceptions as minor with the condition of fielding.
4. With DTR 2 V&V testing conducted by USAISEC TIC 30 November-4 December 2020, the SUT met Stack Failover requirements and the SUT was certified for both stacked and non-stacked configurations as a Core, Distribution and Access switch.
5. The SUT does not support this optional requirement.

LEGEND:

CR	Capability Requirement	O	Optional
FR	Functional Requirement	R	Required
ID	Identification	SUT	System Under Test
JITC	Joint Interoperability Test Command	UCR	Unified Capabilities Requirements
LAN	Local Area Network		

Table 4. DoDIN APL Product Summary

Product Identification				
Product Name	Aruba, a Hewlett Packard Enterprise company 3810M Switch Series			
Software Release	16.11 (See note 1.)			
UCR Product Type(s)	ASLAN stacked and non-stacked Layer 2/3 Core, Distribution and Access Switch (See note 2.)			
Product Description	An Ethernet Switch that provides Ethernet services for the Assured Services Local Area Network (ASLAN). It provides 1GBaseT with up to 30 Watts of Power over Ethernet (PoE+) support on 24 or 48 downlink ports. The modular uplinks support either 1G Small Form-factor Pluggable (SFP), 10G SFP+, or 40G Quad Small Form-factor Pluggable (QSFP)+ Transceivers. This switch has dual modular power supply bays accepting various power supplies as determined by user need. Switching functions include backplane stacking, Border Gateway Protocol (BGP), Open Shortest Path First (OSPF) Routing, Tunneled Node to tunnel all network traffic to a network controller for detailed control of what the connected device can communicate with and visibility to all traffic, robust Quality of service (QoS), and IPv6.			
DoDIN Certified Function (See note 2.)	**Component** (See note 3.)	**Sub-Component** (See note 3.)	**Tested Version** (See note 1.)	**Remarks**
ASLAN Layer 2/3 Stacked and non-Stacked Core/Distribution/Access	**Aruba 3810M**	**JL074A** **JL075A** **JL076A** **JL078A** **JL079A** JL071A JL072A JL073A	16.11	
		JL084A JL081A JL083A		

(Table continues next page.)

Table 4. DoDIN APL Product Summary (continued)

NOTE(S):
1. The SUT was initially certified with Software Release version 16.04. Subsequent DTRs updated the SUT Software Release version as follows: DTR 1 (patch release) - from 16.04 to Rel. 16.08; DTR 2 (patch release) - from 16.08.0005 to 16.08.0018; DTR 4 - from 16.08 to 16.11.
2. With DTR 2, V&V testing with patch release 16.08.0018 conducted by USAISEC-TIC 30 November-4 December 2020, the SUT met Stack Failover requirements; therefore, corresponding TDR 005 was closed and the SUT was certified for stacked and non-stacked configurations as a Core, Distribution and Access switch, as noted in Table 1.
3. Components bolded and underlined were tested by JITC. The other components in the family series were not tested; however, JITC certified the other components for joint use because they utilize the same software and similar hardware as tested and certified components and JITC analysis determined they were functionally identical for interoperability certification purposes.

LEGEND:

APL	Approved Products List	Mbps	Megabits per second
ASLAN	Assured Services Local Area Network	OSPF	Open Shortest Path First
BaseT	Mbps (Baseband Operation, Twisted Pair) Ethernet	PoE	Power over Ethernet
BGP	Border Gateway Protocol	QoS	Quality of Service
DoDIN	Department of Defense Information Network	QSFP	Quad Small Form-factor Pluggable
DTR	Desktop Review	SFP	Small Form-factor Pluggable
G	Gigabyte	SUT	System Under Test
GbE	Gigabit Ethernet	TIC	Technology Integration Center
IPv6	Internet Protocol version 6	UCR	Unified Capabilities Requirements
JITC	Joint Interoperability Test Command	USAISEC	U.S. Army Information Systems Engineering Command

4. Test Details. This extension of the certification is based on DTR 4. The original certification, documented in Reference (c), was based on interoperability (IO) testing, review of the Vendor's Letters of Compliance (LoC), Defense Information Systems Agency (DISA) adjudication of open Test Discrepancy Reports (TDRs), and the DISA Certifying Authority Recommendation for the inclusion on the DoDIN APL. JITC conducted testing at JITC's Global Network Test Facility, Fort Huachuca, Arizona, from 16 July through 3 August 2018, using test procedures derived from Reference (e), and completed review of the Vendor's LoC on 3 August 2018. A JITC-led CS test team conducted Security testing and published the results in a separate report, Reference (d). Enclosure 2 of Reference (c) documents the test results and describes the tested network and system configurations. Enclosure 3 of Reference (c) provides the detailed interface, capability, and functional requirements and test results

DTR 4 was requested to update the SUT Software Release version from 16.08 to 16.11.

JITC analysis determined no additional CS or IO testing was required because the software update to implement minor security enhancements and feature updates did not change the certified IO features and functions or approved CS posture of the SUT. In addition, analysis of this DTR request was based on current UCR 2013 Change 2 test procedures, Reference (f). Furthermore, there were no past due CS or IO Vendor Plan of Action and Milestones (POA&Ms).

Based on analysis, no change to the certified SUT IO features and functions, and no past due Vendor POA&Ms, JITC approves DTR 4.

In addition, the current CS posture of the SUT is documented in a separate report, Reference (d).

JITC Memo, JTE, Extension of the Joint Interoperability Certification of Aruba, a Hewlett Packard Enterprise company 3810M Switch Series with Software Release 16.11

5. Additional Information. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Sensitive but Unclassified Internet Protocol (IP) Data (formerly known as NIPRNet) e-mail. Interoperability status information is available via the JITC System Tracking Program (STP). STP is accessible by .mil/.gov users at https://stp.fhu.disa.mil/. Test reports, lessons learned, and related testing documents and references are on the JITC Industry Toolkit (JIT) at https://jit.fhu.disa.mil/. Due to the sensitivity of the information, the CS Assessment Package containing the approved configuration and deployment guide must be requested directly from the DoDIN Approved Products Certification Office (APCO) via e-mail: disa.meade.ie.list.approved-products-certification-office@mail.mil. All associated information is available on the DISA APCO website located at https://aplits.disa.mil/.

6. Point of Contact (POC). JITC POC: Ms. Jenna Valenzuela; commercial phone (520) 538-5436, DSN 879-5436; e-mail address: jenna.s.valenzuela.civ@mail.mil; mailing address: Joint Interoperability Test Command, ATTN: JTE2 (Ms. Jenna Valenzuela), P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The APCO tracking number for the SUT is 1802501.

FOR THE COMMANDER:

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Enclosure a/s

for LAWRENCE T. DORN
Chief
Specialized Test Division

JITC Memo, JTE, Extension of the Joint Interoperability Certification of Aruba, a Hewlett Packard Enterprise company 3810M Switch Series with Software Release 16.11

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ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command (JITC) Memo, JTE, "Joint Interoperability Certification of the Aruba 3810M Switch Series, Software Release 16.04," 28 August 2018
(d) JITC, "Cybersecurity Assessment Report for Aruba, a Hewlett Packard Enterprise company 3810M Switch Series, Software Release 16.11, Tracking Number (TN) 1802501," September 2022
(e) JITC, "Assured Services Local Area Network (ASLAN) and Non-ASLAN Test Procedures Version 1.2 for Unified Capabilities Requirements (UCR) 2013 Change 2," November 2017
(f) JITC, "Assured Services Local Area Network (ASLAN) and Non-ASLAN Test Procedures Version 1.1 for Unified Capabilities Requirements (UCR) 2013 Change 2," April 2022 (Draft)