DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) 16 December 2024

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Certification for the Dell PowerEdge MX7000 with Software Release SmartFabric Operating System (OS) 10.6

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 Dell PowerEdge MX7000 with Software Release SmartFabric Operating System (OS) 10.6 is hereinafter referred to as the System Under Test (SUT). The SUT meets the critical requirements of the Unified Capabilities Requirements (UCR), Reference (b), as an Assured Services Local Area Network (ASLAN) Layer 2, Layer 3 Access switch and is certified for joint use 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) 3. DTR 3 was requested to update the SmartFabric OS Software Release version from 10.5.2 to 10.6.0.0.

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**		
DEL-0745-001	EDG-000080: Per ASLAN testing and Vendor documentation, the SUT does not support PoE IAW either 802.3af-2003 or 802.3at-2009. CoF: The SUT is certified for only data and VVoIP endpoints that do not require PoE, such as CCA, UCCS, and Soft Clients.	Minor with CoF	On 17 March 2020, DISA adjudicated this discrepancy as minor with CoF.
DEL-0745-003	IP6-000490: Per Vendor LoC, Stateless Address Autoconfiguration and Manual Address Assignment, IAW IP6-000490: Non-Comply - User must select desired flag values when enabling router advertisements. CoF: Managed Address Configuration flags must be set to desired value when implemented by the user. Vendor to include configuration in deployment guide.	Minor with CoF	On 17 March 2020, DISA adjudicated this discrepancy as minor with CoF.
TDR#	**Open Test Discrepancies**		
DEL-0745-002	IP6-000390: Per Vendor LoC, Router Advertisement inconsistencies are not logged. Vendor POA&M: 1. Dell has already implemented support for logging router advertisement inconsistencies. 2. This requirement will be met in all released versions as of OS10 10.5.1.	CLOSED (See note.)	On 17 March 2020, DISA adjudicated this discrepancy as minor with Vendor POA&M.
DEL-0745-004	UCR 2013 Change-2 Section Cybersecurity Requirements 4.2.	None UCR Change Requirement	On 17 March 2020, DISA adjudicated this discrepancy as Change Requirement to remove Cybersecurity requirements in new DCR.
DEL-0745-005	UCR 2013 Change-2 SEC EDG-000010 Packet Loss 7.2.1(b)(iii): LAN Switch and Router Product, Packet Loss IO-19. Per IO-19 ASLAN testing, packet loss is measured in downstream Low Priority Scavenging traffic when upstream traffic is oversubscribed (testing with 6 queues).	Information Only	On 17 March 2020, DISA adjudicated this discrepancy as Information Only.
DEL-0745-006	UCR 2013 Change-2 sections 7.2.2 and 5.2.1.14 EDG-000200, EDG-000210, and IP6-001190: IO-07 and IO-09 blade failovers not supported. Each blade operates independently. Blades do not support internal failover.	Information Only	On 17 March 2020, DISA adjudicated this discrepancy as Information Only.

NOTE(S): DEL-0745-002: On 24 February 2023, DISA adjudicated this TDR as closed based on the adjudication of Dell DEL-0731-002 under TN 1907701 DTR 2 based on an updated Vendor LoC stating compliance to the IP6-000390 requirement with the SmartFabric OS patch release 10.5.1.6 version, and subsequently closed with the SmartFabric OS Software Release update to 10.5.2 with this DTR 1.

LEGEND:

802.3af-2003	PoE up to 15.4 Watts	IP6	Internet Protocol version 6
802.3at-2003	PoE up to 25.5 Watts	LAN	Local Area Network
ASLAN	Assured Services Local Area Network	LoC	Letter of Compliance
CCA	Call Connection Agent	OS	Operating System
CoF	Conditions of Fielding	POA&M	Plan Of Action and Milestones
DCR	DoDIN Capabilities Requirements	PoE	Power Over Ethernet
DEL	Dell	SUT	System Under Test
DISA	Defense Information Systems Agency	TDR	Test Discrepancy Report
DoDIN	Department of Defense Information Network	TN	Tracking Number
DTR	Desktop Review	UCCS	Unified Capabilities Conference System
EDG	Edge	UCR	Unified Capabilities Requirements
IAW	In Accordance With	VVoIP	Voice and Video over Internet Protocol

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 a DoDIN APL Product Summary, to include all DTR updates.

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Table 2. Interface Status

Interface (See note 1.)	Applicability / Access	Status	Remarks
Network Management Interfaces			
IEEE 802.3i (10BaseT UTP)	C	Met	
IEEE 802.3u (100BaseT UTP)	C	Met	
IEEE 802.3u (100BaseFX)	O	Not Tested	See note 3.
IEEE 802.3ab (1000BaseT UTP)	C	Met	
IEEE 802.3z (1000BaseX Fiber)	O	Not Tested	See note 3.
Access (User) Interfaces (See note 2.)			
IEEE 802.3i (10BaseT UTP)	C	Not Tested	See note 3.
IEEE 802.3u (100BaseT UTP)	C	Not Tested	See note 3.
IEEE 802.3u (100BaseFX)	C	Not Tested	See note 3.
IEEE 802.3ab (1000BaseT UTP)	C	Met	See note 4.
IEEE 802.3z (1000BaseX Fiber)	C	Met	See note 4.
IEEE 802.3bz (2.5/5GBaseX)	O	Not Tested	See note 3.
IEEE 802.3ae (10GBaseX)	C	Met	
IEEE 802.3by (25GBaseX)	O	Met	See note 5.
IEEE 802.3ba (40GBaseX)	O	Met	
IEEE 802.3cd (50GBaseX)	O	Met	See note 5.
IEEE 802.3ba (100GBaseX)	O	Met	
IEEE 802.3bs (400GBaseX)	O	Not Tested	See note 3.
Uplink (Trunk) Interfaces (See note 2.)			
IEEE 802.3u (100BaseT UTP)	O	Not Tested	See note 3.
IEEE 802.3u (100BaseFX)	O	Not Tested	See note 3.
IEEE 802.3ab (1000BaseT UTP)	C	Met	See note 4.
IEEE 802.3z (1000BaseX Fiber)	C	Met	See note 4.
IEEE 802.3bz (2.5/5GBaseX)	O	Not Tested	See note 3.
IEEE 802.3ae (10GBaseX)	C	Met	
IEEE 802.3by (25GBaseX)	O	Met	See note 5.
IEEE 802.3ba (40GBaseX)	O	Met	
IEEE 802.3cd (50GBaseX)	O	Met	See note 5.
IEEE 802.3ba (100GBaseX)	O	Met	
IEEE 802.3bs (400GBaseX)	O	Not Tested	See note 3.

NOTE(S):
1. Table 3 depicts the SUT high-level requirements. Table 3-2 of Enclosure 3 in 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. The SUT does not support this (conditional or optional) interface.
4. USAISEC-TIC tested the 10/25/40/50/100GBaseX interfaces on the MX9116n and the MX5108n, but not the 1000BaseT and 1GBaseX interfaces. Analysis determined the 1000BaseT and 1GBaseX interfaces were low risk for certification based on compliance to IEEE 802.3 standards via the Vendor Letter of Compliance and the testing data collected at all other data rates.
5. The SUT supports 25GBaseX and 50GbaseX with breakout of the 100Gbps interfaces based on USAISEC-TIC testing on the MX9116n and MX5108n switches.

(Table continues next page.)

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Table 2. Interface Status (continued)

LEGEND:			
802.3ab	1000BaseT Gbps Ethernet over Twisted Pair	BaseX	Megabit Ethernet over Fiber or Copper
802.3ae	10 Gbps Ethernet over Fiber	C	Conditional
802.3ba	40 and 100 Gbps Ethernet over Twisted pair and Fiber	Co	Core
802.3bs	400GBaseX Ethernet Standard	D	Distribution
802.3by	25 Gbps Ethernet over Multi-Mode Fiber	GBaseX	Gigabit Ethernet over Fiber or Copper
802.3bz	2.5/5 Gbps Ethernet over balanced Twisted Pair	Gbps	Gigabits per second
802.3cd	50 Gbps Ethernet Standard	IEEE	Institute of Electrical and Electronics Engineers
802.3i	10BaseT 10 Mbps Ethernet over Twisted Pair	Mbps	Megabits per second
802.3u	Fast Ethernet at 100 Mbps, copper and Fiber	O	Optional
802.3z	Gigabit Ethernet over Fiber	SUT	System Under Test
A	Access	TIC	Technology Integration Center
BaseFX	Megabit Ethernet over Fiber	USAISEC	U.S. Army Information Systems Engineering Command
BaseT	Megabit (Baseband Operation, Twisted Pair) Ethernet	UTP	Unshielded Twisted Pair

Table 3. Capability Requirements and Functional Requirements Status

CR/FR ID	UCR Requirement (See note 1.)	UCR 2013 Change 2 Reference	Status
1	General LAN Switch and Router Product Requirements (R)	7.2.1	Partially Met (See note 2.)
2	LAN Switch and Router Redundancy Requirements (R)	7.2.2	Partially Met (See note 2.)
3	LAN Product Requirements Summary (R)	7.2.3	Partially Met (See notes 2 and 3.)
4	Multiprotocol Label Switching (O)	7.2.4	Not Tested (See note 4.)
5	IPv6	5.2	Partially Met (See note 2.)

NOTE(S):
1. The annotation of "required" refers to a high-level requirement category. Enclosure 3 in Reference (c) addresses the applicability of each sub-requirement.
2. Reference Table 1 for limitations and conditions.
3. A USAISEC-TIC-led Cybersecurity test team conducted Security testing and published the results in a separate report, Reference (d).
4. The SUT does not support this optional requirement.

LEGEND:

CR	Capability Requirement	R	Required
FR	Functional Requirement	SUT	System Under Test
ID	Identification	TIC	Technology Integration Center
IPv6	Internet Protocol version 6	UCR	Unified Capabilities Requirements
LAN	Local Area Network	USAISEC	U.S. Army Information Systems Engineering Command
O	Optional		

Table 4. DoDIN APL Product Summary

Product Identification			
Product Name	PowerEdge MX7000		
Software Release	SmartFabric OS 10.6 (See note 1.)		
UCR Product Type(s)	ASLAN Layer2/3 Access Switch		
Product Description	The PowerEdge MX7000 Chassis and MX9116n/MX5108n Switches deliver voice-class availability, 1/10/25/40/50/100 GbE RJ-45/QSFP+/QSFP28 for switching VoIP, video, and data traffic.		
DoDIN Certified Function	**Component/Sub-component Name** (See notes 2 and 3.)	**Tested Version** (See note 1.)	**Remarks**
ASLAN Access	**MX7000 Chassis** with **MX9116n Fabric Switching Module** **MX5108n Network Switching Module**	SmartFabric OS 10.6.0.0	Redundant power modules

NOTE(S):
1. The SUT was initially tested and certified with Software Release SmartFabric OS 10.5. Subsequent DTRs updated the SmartFabric OS software version as follows: DTR 1 from 10.5 to 10.5.2; DTR 3 from 10.5.2 (10.5.2.11) to 10.6 (10.6.0.0).
2. Table 3-3 of Enclosure 3 in Reference (c) provides the detailed descriptions on the initially tested components and sub-components.

(Table continues next page.)

Table 4. DoDIN APL Product Summary (continued)

NOTE(S): (continued)
3. Components bolded and underlined were tested by USAISEC-TIC. 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	QSFP+	Quad Small Form-factor Pluggable Enhanced
ASLAN	Assured Services Local Area Network	QSFP28	QSFP 28Mbps-Signaled
DoDIN	Department of Defense Information Network	RJ-45	Registered Jack 45
DTR	Desktop Review	SFP+	Small Form-factor Pluggable Plus
GbE	Gigabit Ethernet	TIC	Technology Integration Center
JITC	Joint Interoperability Test Command	UCR	Unified Capabilities Requirements
Mbps	Megabits per second	USAISEC	U.S. Army Information Systems Engineering Command
OS	Operating System	VoIP	Voice over Internet Protocol

4. Test Details. This extension of the certification is based on DTR 3. The original certification, documented in Reference (c), was based on IO testing, review of the Vendor's Letter of Compliance (LoC), Defense Information Systems Agency (DISA) adjudication of open TDRs, and the DISA Certifying Authority Recommendation for inclusion on the DoDIN APL. The United States Army Information Systems Engineering Command (USAISEC) – Mission Engineering Directorate (MED), Technology Integration Center (TIC), hereafter referred to as USAISEC-TIC, conducted testing at Fort Huachuca, Arizona, from 18 February through 28 February 2020, using test procedures derived from Reference (e), and completed review of the Vendor's LoC on 2 March 2020. DISA completed adjudication of outstanding TDRs on 17 March 2020. A USAISEC-TIC-led Cybersecurity (CS) test team conducted CS testing and published the results in a separate report, Reference (d). Enclosure 2 in Reference (c) documents the test results and describes the test network and system configurations. Enclosure 3 in Reference (c) provides the detailed interface, capability, and functional requirements and test results.

DTR 3 was requested to update the SmartFabric OS Software Release version from 10.5 (10.5.2) to 10.6 (10.6.0.0).

JITC analysis determined no additional CS or IO testing was required because the software update to implement minor bug fixes and new and enhanced features did not change the certified IO features and functions or approved CS posture of the SUT. Additionally, JITC analysis of the DTR 3 request was performed based on current UCR 2013 Change 2 test procedures, Reference (f).

Based on analysis and no change to the certified SUT IO features and functions, JITC approves DTR 3.

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

5. Additional Information. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Sensitive but Unclassified Internet Protocol 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.jitc.disa.mil/. Test reports, lessons learned, and related testing documents and

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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 Approved Products Certification Office (APCO) via e-mail: disa.meade.peo-transport.list.approved-products-certification-of@mail.mil. All associated information is available on the DISA APCO website located at http://aplits.disa.mil/.

6. Point of Contact (POC). JITC POC: Ms. Jenna Valenzuela; Phone: (667) 891-7508; Teams DSN: 94 (323) 890-7508; FAX: (520) 538-4347; E-mail: jenna.s.valenzuela.civ@mail.mil; Mailing Address: Joint Interoperability Test Command, C/O JTE-Ms. Lorraine Gardner, 2001 Brainard Road (MB59), Fort Huachuca, AZ 85613. The APCO tracking number for the SUT is 1907101.

FOR THE COMMANDER:

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Enclosure a/s

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ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command (JITC) Memo, JTE, "Joint Interoperability Certification of the Dell EMC PowerEdge MX7000 Chassis and MX9116n/MX5108n Switches with Software Release SmartFabric Operating System (OS) 10.5," 14 May 2020
(d) JITC, "Cybersecurity Assessment Report for Dell PowerEdge MX7000, Software Release SmartFabric Operating System (OS) 10.6, Tracking Number (TN) 1907101," December 2024
(e) JITC, "Assured Services Local Area Network (ASLAN) and Non-ASLAN Test Procedures Version 1.0 for Unified Capabilities Requirements (UCR) 2013 Change 2," October 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)