



DEFENSE INFORMATION SYSTEMS AGENCY

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

19 April 2022

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Certification of the Dell EMC PowerMax Array with Management User Interface Software Release 9.2.1 and Specified Servers

- 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 (e), see Enclosure

1. Certification Authority. Reference 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 EMC PowerMax Array (models 2000 and 8000) with Management User Interface (UI) Software Release 9.2.1 and Specified Servers, hereinafter referred to as the System Under Test (SUT), meets the critical requirements of the Unified Capabilities Requirements (UCR), Reference (b), as a Data Storage Controller (DSC) with the conditions listed in Table 1. This certification expires upon changes that affect interoperability, but no later than the expiration date listed in the DoDIN Approved Products List (APL) memorandum.

This extension of the certification is for Desktop Review (DTR) 1. DTR 1 was requested to update the SUT Software Release version from 9.1 to 9.2.1 to resolve several open Cybersecurity (CS) findings. See Section 4 for additional details.

Table 1. Conditions

Table with 3 columns: Description, Operational Impact, Remarks. Rows include UCR Waivers and Conditions of Fielding.

(Table continues next page.)

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**Table 1. Conditions (continued)**

Description		Operational Impact	Remarks
<b>TDR#</b>	<b>Open Test Discrepancies</b>		
DMC-0746-014	DAT-000420: Per the LoC, the SUT relies on the underlying OS of the host server and the site RAE infrastructure to meet the NIS Client directory service requirement; therefore, the SUT does not comply with this requirement.	None UCR Change Requirement	DISA adjudicated this discrepancy as a UCR Change Requirement.
DMC-0746-015	DAT-000430: Per the LoC, the SUT relies on the underlying OS of the host server and the site RAE infrastructure to meet the NIS Netgroups Client directory service requirement; therefore, the SUT does not comply with this requirement.	None UCR Change Requirement	DISA adjudicated this discrepancy as a UCR Change Requirement.
DMC-0746-017	DAT-000550: Per Vendor LoC, the site provided Windows Server hosting the Unisphere for PowerMax provides the necessary functionality to address this requirement. However, the SUT does not comply with L3 CoS and QoS requirements because the Windows Server is not part of the SUT.	None UCR Change Requirement	DISA adjudicated this discrepancy as a UCR Change Requirement.
<b>LEGEND:</b>			
CoS	Class of Service	OS	Operating System
DAT	Data Storage Requirement	QoS	Quality of Service
DISA	Defense Information Systems Agency	RAE	Required Ancillary Equipment
DMC	Dell EMC	SUT	System Under Test
L3	Layer 3	TDR	Test Discrepancy Report
LoC	Letter of Compliance	UCR	Unified Capabilities Requirements
NIS	Network Information Service		

**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 subsequent DTR updates.

**Table 2. SUT Interface Status**

Interface	Applicability	Threshold CR/FR Requirements	Status	Remarks
<b>Network Attached Storage (NAS) Interfaces</b>				
1 GbE (Ethernet)	C	1	Not Tested	See note 2.
10 GbE (Ethernet)	C	1	Not Tested	See note 2.
<b>Storage Array Net (SAN) Interfaces</b>				
8 Gbps Fibre Channel (FC)	C	1	Met	See note 3.
16 Gbps FC	C	1	Not Tested	
32 Gbps FC	C	1	Not Tested	
<b>Out-of-Band Management Interfaces</b>				
10 Mbps Ethernet	C	1	Not Tested	See note 2.
100 Mbps Ethernet	C	1	Not Tested	See note 2.
1 GbE (Ethernet)	C	1	Not Tested	See note 2.
<b>Converged Network Adapter (CNA) Interfaces</b>				
10 GbE (Ethernet)	O	1	Not Tested	See note 2.
<b>NOTE(S):</b>				
1. The UCR does not identify interface CR/FR applicability. The SUT high-level CR and FR ID numbers depicted in the Threshold CRs/FRs column are cross-referenced with Table 3.2 in Enclosure 3 of Reference (c).				
2. This SUT interface was not interoperability tested but met this interface requirement based on the Vendor LoC.				
3. This interface was validated when the SUT was functionally tested during CS testing.				

(Table continues next page.)

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**Table 2. SUT Interface Status (continued)**

<b>LEGEND:</b>			
C	Conditional	LoC	Letter of Compliance
CNA	Converged Network Adapter	Mbps	Megabits per second
CR	Capability Requirement	NAS	Network Attached Storage
FC	Fibre channel	O	Optional
FR	Functional Requirement	SAN	Storage Array Net
GbE	Gigabit Ethernet	SUT	System Under Test
Gbps	Gigabit per second	UCR	Unified Capabilities Requirements
ID	Identification		

**Table 3. SUT Capability Requirements and Functional Requirements Status**

<b>CR/FR ID</b>	<b>UCR Requirement (High-Level)</b> (See note 1.)	<b>UCR 2013 Reference</b>	<b>Status</b>
1	Cybersecurity (R)	Section 4	Met (See note 2.)
2	Data Storage Controller (DSC) (R)	Section 14	Partially Met (See note 3.)
3	IPv6 (R)	Section 5	Met (See note 3.)

**NOTE(S):**

- The annotation of 'required' refers to a high-level requirement category.
- A USAISEC-TIC-led CS test team conducted CS testing and published the results in a separate report, Reference (d).
- JITC accepted the Vendor LoC in lieu of IO testing; therefore, the SUT CR/FR status is based on USAISEC-TIC and JITC analysis of the Vendor LoC. See Table 1 for limitations and conditions of the SUT.

**LEGEND:**

CR	Capability Requirement	JITC	Joint Interoperability Test Command
CS	Cybersecurity	LoC	Letter of Compliance
DSC	Data Storage Controller	R	Required
FR	Functional Requirement	SUT	System Under Test
ID	Identification	TIC	Technology Integration Center
IO	Interoperability	UCR	Unified Capabilities Requirements
IPv6	Internet Protocol version 6	USAISEC	U.S. Army Information Systems Engineering Command

**Table 4. DoDIN APL Product Summary**

<b>Product Identification</b>			
Product Name	Dell EMC PowerMax Array with Management UI and Specified Servers		
Software Release	Software Release 9.2.1 (See note 1.)		
UCR Product Type(s)	Data Storage Controller		
Product Description	Dell PowerMax array is an external flash storage array accessible for I/O and management over SAN.		
<b>Product Components</b>	<b>Component Name</b> (See note 2.)	<b>Tested Version</b> (See note 1.)	<b>Remarks</b>
Dell EMC PowerMAX Array with Management UI and Specified Servers	<u>PowerMax 2000 Array</u> PowerMax 8000 Array	NA	
	<u>Unisphere for PowerMax</u>	9.2.1	
	<u>Solutions Enabler</u>	9.2.1	
	<u>Windows Server 2016</u>	Windows Server 2016	Site provided
	FC Supported Server	(See note 3.)	

**NOTE(S):**

- The SUT was initially certified with Software Release version 9.1. DTR 1 updated the SUT Software Release version from 9.1 to 9.2.1.

(Table continues next page.)

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**Table 4. DoDIN APL Product Summary (continued)**

<b>NOTE(S):</b> (continued)			
2. Components bolded and underlined were functionally 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.			
3. The FC Supported Server is a Generic Linux or Windows OS Server supporting CIFS, NFS, Load-Balancing, LDAP, GNS, and other required OS functions for Dell PowerMax as a Data Storage Controller.			
<b>LEGEND:</b>			
APL	Approved Products List	NA	Not Applicable
CIFS	Common Internet File System	NFS	Network File System
DoDIN	Department of Defense Information Network	OS	Operating System
DTR	Desktop Review	SAN	Storage Area Network
FC	Fibre Channel	SUT	System Under Test
GNS	Global Name Service	TIC	Technology Integration Center
I/O	Input / Output	UCR	Unified Capabilities Requirements
JITC	Joint Interoperability Test Command	UI	User Interface
LDAP	Lightweight Directory Access Protocol	USAISEC	U.S. Army Information Systems Engineering Command

**4. Test Details.** This extension of the certification is based on DTR 1. The original certification, documented in Reference (c), was based on review of the Vendor’s Letter of Compliance (LoC) and DISA Certifying Authority (CA) Recommendation for inclusion on the DoDIN APL. JITC accepted the Vendor LoC, Reference (e), in lieu of interoperability testing; however, the SUT was functionally tested during CS testing. USAISEC-TIC completed review of the Vendor’s LoC on 30 July 2020. A USAISEC-TIC-led CS test team conducted CS testing and published the results in a separate report, Reference (d).

DTR 1 was requested to update the SUT Software Release version from 9.1 to 9.2.1 to resolve several open CS findings.

JITC analysis, with input from USAISEC-TIC, determined CS testing was required to validate resolution of the CS Findings with the updated software, but no IO testing was required because the software update to resolve the CS findings did not alter the certified IO features and functions of the SUT.

USAISEC-TIC conducted CS testing on the SUT with the 9.2.1 software from 24 February through 4 March 2022 and published the results in a separate report, Reference (d).

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

**5. Additional Information.** JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-but-Sensitive 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.fhu.disa.mil/>. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Industry Toolkit (JIT) at <https://jit.fhu.disa.mil/>. Due to the sensitivity of the information, the CS Assessment Package (CAP) that contains the approved configuration and deployment guide must be requested directly from the APCO via e-mail:

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[disa.meade.ie.list.approved-products-certification-office@mail.mil](mailto: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).** USAISEC-TIC testing POC: Ms. Michelle Lavery; commercial telephone 520-533-3766; DSN 312-821-3766; e-mail address: [michelle.w.lavery.civ@mail.mil](mailto:michelle.w.lavery.civ@mail.mil). JITC certification POC: Ms. Lisa Esquivel; commercial telephone 520-538-5531; email address: [lisa.r.esquivel.civ@mail.mil](mailto:lisa.r.esquivel.civ@mail.mil); mailing address: Joint Interoperability Test Command, ATTN: JTE (Ms. Lisa Esquivel), P.O. Box 12798, Fort Huachuca, Arizona 85670-2798. The APCO tracking number for the SUT is 1923901.

FOR THE COMMANDER:

Enclosure a/s

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## ADDITIONAL REFERENCES

- (c) Joint Interoperability Test Command (JITC) Memo, JTE, “Joint Interoperability Certification of the Dell EMC PowerMax Array with Management User Interface Software Release 9.1 and Specified Servers,” 24 June 2021
- (d) U.S. Army Information Systems Engineering Command, Mission Engineering Directorate, Technology Integration Center (USAISEC MED TIC), “Cybersecurity Assessment Report for Dell EMC PowerMAX Array and Management UI Software Release 9.2.1 (Tracking Number 1923901),” Desktop Review (DTR) 1: March 2022 (Draft)
- (e) Dell EMC, “Letter of Compliance (LoC) for Dell EMC PowerMax Array and Management UI Software Release 9.1 (Tracking Number 1923901),” July 2020