DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) 30 April 2019

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Certification of the Dell EMC Unity Family OE 4.5

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 1," June 2016
(c) through (e), see Enclosure

1. **Certification Authority.** Reference establish 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 Unity Family Operating Environment (OE) 4.5, hereinafter referred to as the System Under Test (SUT), meets the critical requirements of the Unified Capabilities Requirements, Reference (b), and is certified for joint use as a Data Storage Controller with the conditions described in Table 1. The Dell EMC Unity Flash 650 and Dell EMC Unity Hybrid 400 models were tested. The additional EMC Unity models listed in Table 4 are also certified with the conditions described in Table 1. These additional models utilize the same software and similar hardware. JITC analyses determined these systems to be functionally identical to the Unity Flash 650 and the Unity Hybrid 400; therefore, they are covered under this certification. This certification expires upon changes that affect interoperability, but no later than the expiration date listed in the DoDIN Approved Products List (APL) memorandum.

The extension of this certification is for Desktop Review (DTR) 2. DTR 2 was requested to update the SUT software version from OE 4.4 to OE 4.5 and to close open Cybersecurity (CS) findings. See Paragraph 4 for the test details.

Table 1. Conditions

Condition	Operational Impact	Remarks
UCR Waivers		
None.		

Table 1. Conditions (continued)

Condition	Operational Impact	Remarks
Conditions of Fielding		
TDR DMC-0669-001: The SUT does not Support the GNS or single Name space functionality. The SUT supports only "in-band" (local) single namespace functionality. Not certified for "out-of-band" Global Namespace support.	Minor	See note 1.
TDR DMC-0669-003: The SUT does not support statically provisioned or dynamically adjusted large IP packet receive buffers for replication (mirroring) session traffic received on the Ethernet physical interfaces. Data must be sent across terrestrial networks.	Minor	See note 1.
TDR DMC-0669-005: Per the vendor LoC, the SUT does not support Rapid recovery from sensitive data spills, where the wrong data is accidentally written to the wrong place. Vendor is required to add the necessary steps to erase the data accidentally written to wrong place in the Military Unique Deployment Guide.	Minor	See note 1.
TDR DMC-0669-006: The SUT does not provide Class of Service and Quality of Service marking on egress traffic at layer 3 per Section 6, Network Infrastructure End-to-End Performance. The SUT must be deployed with a site provided switch listed on the Approved Products List.	Minor	See note 1.
Open Test Discrepancies		
TDR DMC-0669-002: The SUT does not support a configurable MTU between 1280 bytes and 1540 bytes to ensure packets can transit type 1 encryptors. The system default MTU shall be 1540 bytes.	Minor	See note 2.
TDR DMC-0669-004: The SUT does not support client-side load balancing.	None	See note 3.

NOTE(S):
1. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact with a condition of fielding. The SUT does not support disparate and remote network based file systems because the GNS exists within a DSC cluster, which must be co-located in a campus type environment. The SUT supports only "in-band" (local) single namespace functionality. The SUT is not certified for "out-of-band" Global Namespace support.
2. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as having a minor operational impact.
3. DISA has accepted and approved the vendor's POA&M and adjudicated this discrepancy as a change requirement having no operational impact. DISA stated the intent to change this requirement in the next version of the UCR.

LEGEND:

DISA	Defense Information Systems Agency	MTU	Maximum Transmission Unit
DSC	Data Storage Controller	POA&M	Plan of Action and Milestones
GNS	Global Name Service	SUT	System Under Test
IP	Internet Protocol	TDR	Test Discrepancy Report
LoC	Letter of Compliance	UCR	Unified Capabilities Requirements

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 all subsequent DTR updates.

Table 2. SUT Interface Status

Interface	Threshold CR/FR Requirements (See Note)	Status	Remarks
Network Attached Storage (NAS) Interfaces			
1 GbE (Ethernet) (R)	1	Met	
10 GbE (Ethernet) (R)	1	Met	
Storage Array Net (SAN) Interfaces			
Fibre Channel (FC)	1	Met	
FC Protocol (FCP)	1	Met	
Out-of-band Management Interfaces			
10 Mbps Ethernet (R)	1	Met	
100 Mbps Ethernet (R)	1	Met	
1 GbE Ethernet (R)	1	Met	

Table 2. SUT Interface Status (continued)

Interface	Threshold CR/FR Requirements (See Note)	Status	Remarks
Converged Network Adapter (CNA) Interfaces			
10 GbE (Ethernet) (O)	1	Not Tested	The SUT does not support this optional CNA interface.

NOTE(S): The UCR does not identify interface CR/FR applicability. The SUT high-level CR and FR ID numbers depicted in the Threshold CR/FR Requirements column are cross-referenced with Table 3.

LEGEND:

CNA	Converged Network Adapter	Mbps	Megabits per second
CR	Capability Requirement	NAS	Network Attached Storage
FC	Fibre Channel	O	Optional
FCP	FFC Protocol	R	Required
FR	Functional Requirement	SAN	Storage Array Net
GbE	Gigabit Ethernet	SUT	System Under Test
ID	Identification	UCR	Unified Capabilities Requirements

Table 3. SUT Capability Requirements and Functional Requirements Status

CR/FR ID	UCR Requirement (High-Level) (See note 1.)	UCR 2013 Reference	Status
1	Data Storage Controller (DSC) (R)	Section 14	Partially Met (See notes 2 and 3.)

NOTES:

1. The annotation of 'required' refers to a high-level requirement category. Enclosure 3 of Reference (c) provides the applicability of each sub-requirement.
2. The SUT met the requirements with the exceptions noted in Table 1. DISA adjudicated these exceptions as minor or as change requirements.
3. A JITC-led Cybersecurity test team accomplished Security testing and published the results in a separate report, Reference (e).

LEGEND:

CR	Capability Requirement	JITC	Joint Interoperability Test Command
DISA	Defense Information Systems Agency	R	Required
DSC	Data Storage Controller	SUT	System Under Test
FR	Functional Requirement		

Table 4. DoDIN APL Product Summary

Product Identification			
Product Name	Dell EMC Unity Family		
Software Release	OE 4.5 (See note 1.)		
DoDIN Product Type(s)	Data Storage Controller		
Product Description	The SUT performs data replication, mirroring, back-up, continuance of operation, and disaster recovery functions.		
Product Components (See note 2.)	**Component Name (See note 3.)**	**Version**	**Remarks**
Primary and Secondary Data Storage Controller (x2)	300, 300F, 350F, **400**, 400F, 450F, 500, 500F, 550F,600, **650F**,	4.5 (See note 1.)	

NOTE(S):

1. The software version was upgraded from OE 4.2 to OE 4.4 with DTR 1. DTR 2 updated the SUT software version from OE 4.4 to OE 4.5.
2. Enclosure 3 of Reference (c) provides the detailed component and subcomponent list
3. Components bolded and underlined were tested by JITC. The other components in the family series were not tested, but are also certified for joint use. JITC certifies those additional components because they utilize the same software and similar hardware and JITC analysis determined them to be functionally identical for interoperability certification purposes.

Table 4. DoDIN APL Product Summary (continued)

LEGEND:			
APL	Approved Products List	JITC	Joint Interoperability Test Command
DoDIN	Department of Defense Information Network	OE	Operating Environment
DTR	Desktop Review	SUT	System Under Test
F	Flash		

4. **Test Details.** The extension of this certification is based upon DTR 2. The original certification, Reference (c), was based on interoperability (IO) testing, review of the vendor's Letters of Compliance (LoC), the Defense Information Systems Agency (DISA) adjudication of open Test Discrepancy Reports (TDRs), and the DISA Certifying Authority Recommendation for inclusion on the DoDIN APL. Conducted testing at JITC's Global Network Test Facility at Fort Huachuca, Arizona, from 30 October through 9 November 2017, using test procedures derived from Reference (d). Conducted a follow-on Verification and Validation IO test from 27 November to 1 December 2017, using test procedures derived from Reference (d). Completed review of the vendor's LoC on 30 October 2017. DISA adjudicated outstanding TDRs on 30 January 2018. A JITC-led CS test team conducted CS testing and published the results in a separate report, Reference (e).

The extension of the certification is for DTR 2. DTR 2 was requested to update the SUT software version from OE 4.4 to OE 4.5. This software update resolves open CS Findings. JITC analysis determined no further IO was required because this update did not affect the certified IO features. JITC analysis also determined that no CS testing was required because the vendor provided sufficient artifacts to close the findings identified in the DTR request. The updated CS findings are document in a separate report, Reference (e). Therefore, with no change to the certified IO features and functions of the SUT, JITC approves this DTR.

5. **Additional Information.** JITC distributes interoperability information via the JITC Electronic Report Distribution 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.fhu.disa.mil/. Test reports, lessons learned, and related testing documents and references are on the JITC Industry Toolkit at https://jit.fhu.disa.mil/. Due to the sensitivity of the information, the CS Assessment Package that contains the approved configuration and deployment guide must be requested directly from the Approved Products Certification Office (APCO), e-mail: disa.meade.ie.list.approved-products-certification-office@mail.mil. All associated information is available on the DISA APCO website located at http://www.disa.mil/Services/Network-Services/UCCO.

6. **Point of Contact (POC).** JITC POC: Ms. Sibylle Gonzales, commercial telephone (520) 538-5483, DSN telephone 879-5483, FAX DSN 879-4347; e-mail address: Sibylle.j.gonzales.civ@mail.mil; mailing address: Joint Interoperability Test Command, ATTN: JTE (Ms. Sibylle Gonzales), P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The APCO tracking number for the SUT is 1709401.

FOR THE COMMANDER:

SCHULTE.JOSEPH.T.1230983891 Digitally signed by SCHULTE.JOSEPH.T.1230983891 Date: 2019.05.17 14:12:00 -07'00'

Enclosure a/s

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ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command, "Joint Interoperability Certification of the Dell EMC Unity Family OE 4.2," 2 February 2018
(d) Joint Interoperability Test Command, "Data Storage Controller (DSC) Test Procedures for Unified Capabilities Requirements (UCR) 2013 Change 1," August 2016
(e) Joint Interoperability Test Command, "Cybersecurity Assessment Report for Dell EMC Unity Family Operating Environment (OE) 4.5 Tracking Number (TN) 1709401)," April 2019