DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) 10 August 2018

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Joint Interoperability Certification of the Dell EMC Unity Family OE 4.4

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 OE 4.2; hereinafter referred to as the System Under Test (SUT), meets the critical requirements of the Unified Capabilities Requirements (UCR), Reference (b), and is certified for joint use as a Data Storage Controller (DSC) 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) 1. DTR 1 was requested to upgrade the SUT software version from OE 4.2 to OE 4.4. See paragraph 4 for the test details.

Table 1. Conditions

Condition	Operational Impact	Remarks
UCR Waivers		
None.		
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.

NOTES:
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 a no operational impact. DISA stated the intent to change this requirement in the next version of the UCR.

LEGEND:

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

3. **Interoperability Status.** Table 2 provides the SUT interface interoperability status and Table 3 provides the Capability Requirements (CR) and Functional Requirements (FR) status. Table 4 provides a DoDIN APL product summary.

Table 2. SUT Interface Status

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

NOTE(S):
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, Reference C.

LEGEND:

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

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. The applicability of each sub-requirement is provided in Enclosure 3, Reference (c).
2. The SUT met the requirements with the exceptions noted in Table 1. DISA adjudicated these exceptions as minor or as change requirements.
3. Security testing was accomplished by JITC-led Cybersecurity test teams and the results published in a separate report, Reference (d).

LEGEND:

CR	Capability Requirement	R	Required
DISA	Defense Information Systems Agency	SUT	System Under Test
FR	Functional Requirement	UCR	Unified Capabilities Requirements
ID	Identification		

Table 4. DoDIN APL Product Summary

Product Identification			
Product Name	Dell EMC Unity Family		
Software Release	OE 4.4 (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**,	4.4 (See note 1.)	

NOTES:
1. The software release was updated to OE 4.4 with DTR 1.
2. The detailed component and subcomponent list is provided in Enclosure 3, Reference (c).
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.

LEGEND:

DoDIN	Department of Defense Information Network	JITC	Joint Interoperability Test Command
F	Flash	SUT	System Under Test

4. **Test Details.** The extension of this certification is based upon DTR 1. The original certification, Reference (c), is based on interoperability testing, review of the vendor's Letters of Compliance (LoC), DISA adjudication of open test discrepancy reports (TDRs), and DISA Certifying Authority (CA) Recommendation for inclusion on the DoDIN APL. Interoperability testing was conducted at JITC's Global Information Grid Network Test Facility at Fort Huachuca, Arizona, from 30 October through 9 November 2017 using test procedures derived from Reference (e). A follow-on Verification and Validation Interoperability test was conducted 27 November – 1 December 2018 using test procedures derived from Reference (e). Review of the vendor's LoC was completed on 30 October 2017. DISA adjudication of TDRs was completed on 30 January 2018. Cybersecurity (CS) testing was conducted by JITC-led CS test teams and the results are published in a separate report, Reference (d). Enclosure 2, Reference (c), documents the test results and describes the tested network and system configurations. Enclosure 3, Reference (c), provides a detailed list of the interface, capability, and functional requirements.

DTR 1 was requested to upgrade the SUT version from OE 4.2 to OE 4.4. This upgraded software release addresses all CS POA&Ms, Reference (d), for which the vendor has provided sufficient artifacts to close. JITC analysis determined that no IO and no CS testing was required because there was no change to the certified features and functions of the SUT and no change to the CS posture. In addition, with no change to the approved CS posture of the SUT, the original CA approval still applies to this DTR. Therefore, with no change to the certified features and functions of the SUT, JITC approves this DTR.

5. **Additional Information.** JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Sensitive but Unclassified 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 Joint Interoperability Tool (JIT) at https://jit.fhu.disa.mil/. Due to the sensitivity of the information, the Cybersecurity Assessment Package (CAP) that contains the

approved configuration and deployment guide must be requested directly from the 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). Point of Contact (POC).** The JITC point of contact is 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:

CLARK.BRADLEY.ALAN.1231466564 Digitally signed by CLARK.BRADLEY.ALAN.1231466564 Date: 2018.08.13 07:06:00 -07'00'

Enclosure a/s

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ADDITIONAL REFERENCES

(c) Joint Interoperability Test Command, "Joint Interoperability of the Dell EMC Unity Family OE 4.4," 2 February 2018
(d) Joint Interoperability Test Command, “Cybersecurity Assessment Report for Dell EMC Unity Family OE 4.2 (Tracking Number 1709401),” October 2017
(e) Joint Interoperability Test Command, “Data Storage Controller (DSC) Test Procedures For Unified Capabilities Requirements (UCR) 2013 Change 1,” August 2016

Enclosure