



## DEFENSE INFORMATION SYSTEMS AGENCY

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

23 May 2022

### MEMORANDUM FOR DISTRIBUTION

**SUBJECT:** Extension of the Joint Interoperability Certification of the Dell EMC Unity Family with Software Release Operating Environment (OE) 5.2

**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 EMC Unity Family with Software Release Operating Environment (OE) 5.2, hereinafter referred to as the System Under Test (SUT), meets the critical requirements of the Unified Capabilities Requirements, Reference (b), as a Data Storage Controller (DSC) and is certified for joint use 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.

This extension of the certification is for Desktop Review (DTR) 6. DTR 6 was requested to update the OE Software Release version from 5.1 to 5.2. See Paragraph 4 for additional details.

**Table 1. Conditions**

Description		Operational Impact	Remarks
<b>UCR Waivers</b>			
None.			
<b>TDR #</b>	<b>Conditions of Fielding</b>		
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. CoF: Not certified for "out-of-band" Global Namespace support.	Minor with CoF	See note 1.
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. CoF: Data must be sent across terrestrial networks.	Minor with CoF	See note 1.
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. CoF: Vendor is required to add the necessary steps to erase the data accidentally written to wrong place in the Military Unique Deployment Guide.	Minor with CoF	See note 1.
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. CoF: The SUT must be deployed with a site provided switch listed on the Approved Products List.	Minor with CoF	See note 1.
<b>TDR #</b>	<b>Open Test Discrepancies</b>		
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.	CLOSED	See note 2.
DMC-0669-004	The SUT does not support client-side load balancing.	None with UCR Change Requirement	See note 3.
<b>NOTE(S):</b>			
<p>1. DMC-0669-001: DISA accepted and approved the vendor's POA&amp;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.</p> <p>2. DMC-0669-002: DISA accepted and approved the vendor's POA&amp;M and adjudicated this discrepancy as having a minor operational impact. With DTR 1, the SUT version was updated from OE 4.2 to OE 4.4. With DTR 2, the SUT version was updated from updated from OE 4.4 to OE 4.5. Based on JITC analysis, the vendor provided sufficient documentation to show resolution of this deficiency with configuration of a custom MTU size between 1280 and 9216; therefore, this TDR was closed.</p> <p>3. DMC-0669-004: DISA accepted and approved the vendor's POA&amp;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.</p>			
<b>LEGEND:</b>			
CoF	Condition of Fielding	LoC	Letters of Compliance
DISA	Defense Information Systems Agency	MTU	Maximum Transmission Unit
DSC	Data Storage Controller	POA&M	Plan of Action and Milestones
DTR	Desktop Review	SUT	System Under Test
GNS	Global Name Service	TDR	Test Discrepancy Report
IP	Internet Protocol	UCR	Unified Capabilities Requirements
JITC	Joint Interoperability Test Command		

**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 (See note.)	Applicability	Status	Remarks																
<b>Network Attached Storage (NAS) Interfaces</b>																			
GbE IAW IEEE 802.3ab	C	Met																	
10 GbE IAW IEEE 802.3ac	C	Met																	
<b>Storage Array Net (SAN) Interfaces</b>																			
FC physical interfaces and FCP interfaces IAW ANSI X3.230, X3.297, and X3.303	C	Met																	
<b>Out-of-band Management Interfaces</b>																			
10 Mbps Ethernet	C	Met																	
100 Mbps Ethernet	C	Met																	
1 GbE Ethernet	C	Met																	
<b>Converged Network Adapter (CNA) Interfaces</b>																			
FCoE services over a 10 GbE physical interface IAW ANSI T11 FC-BB-5 standard for FCoE with a CNA	O	Not Tested	The SUT does not support this optional CNA interface.																
Data Center Bridging also known as Converged Enhanced Ethernet features IAW IEEE 802.1Qbb for Priority-Based Flow Control	O	Not Tested	The SUT does not support this optional CNA interface.																
Data Center Bridging also known as Converged Enhanced Ethernet features IAW IEEE 802.1Qaz for Enhanced Transmission Selection	O	Not Tested	The SUT does not support this optional CNA interface.																
Data Center Bridging also known as Converged Enhanced Ethernet features IAW IEEE 802.1Qaz Data Center Bridging Exchange Protocol	O	Not Tested	The SUT does not support this optional CNA interface.																
Data Center Bridging also known as Converged Enhanced Ethernet features IAW IEEE 802.1Qau for Congestion Notification	O	Not Tested	The SUT does not support this optional CNA interface.																
<p><b>NOTE(S):</b> Table 3 depicts the SUT high-level requirements. Enclosure 3 of Reference (c) provides a detailed list of requirements.</p> <p><b>LEGEND:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">ANSI American National Standards Institute</td> <td style="width: 50%;">IAW In Accordance With</td> </tr> <tr> <td>BB Backbone</td> <td>IEEE Institute of Electrical and Electronics Engineers</td> </tr> <tr> <td>C Conditional</td> <td>Mbps Megabits per second</td> </tr> <tr> <td>CNA Converged Network Adapter</td> <td>NAS Network Attached Storage</td> </tr> <tr> <td>FC Fibre Channel</td> <td>O Optional</td> </tr> <tr> <td>FCoE Fibre Channel over Ethernet</td> <td>R Required</td> </tr> <tr> <td>FCP FCP Protocol</td> <td>SAN Storage Array Net</td> </tr> <tr> <td>GbE Gigabit Ethernet</td> <td>SUT System Under Test</td> </tr> </table>				ANSI American National Standards Institute	IAW In Accordance With	BB Backbone	IEEE Institute of Electrical and Electronics Engineers	C Conditional	Mbps Megabits per second	CNA Converged Network Adapter	NAS Network Attached Storage	FC Fibre Channel	O Optional	FCoE Fibre Channel over Ethernet	R Required	FCP FCP Protocol	SAN Storage Array Net	GbE Gigabit Ethernet	SUT System Under Test
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**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.)										
<p><b>NOTE(S):</b></p> <ol style="list-style-type: none"> <li>The annotation of 'required' refers to a high-level requirement category. Enclosure 3 of Reference (c) provides the applicability of each sub-requirement.</li> <li>The SUT met the requirements with the exceptions noted in Table 1. DISA adjudicated these exceptions as minor or as change requirements.</li> <li>A JITC-led Cybersecurity test team accomplished Security testing and published the results in a separate report, Reference (d).</li> </ol> <p><b>LEGEND:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">CR Capability Requirement</td> <td style="width: 50%;">JITC Joint Interoperability Test Command</td> </tr> <tr> <td>DISA Defense Information Systems Agency</td> <td>R Required</td> </tr> <tr> <td>DSC Data Storage Controller</td> <td>SUT System Under Test</td> </tr> <tr> <td>FR Functional Requirement</td> <td>UCR Unified Capabilities Requirements</td> </tr> <tr> <td>ID Identification</td> <td></td> </tr> </table>				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	UCR Unified Capabilities Requirements	ID Identification	
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JITC Memo, JTE, Extension of the Joint Interoperability Certification of the Dell EMC Unity Family with Software Release Operating Environment (OE) 5.2

**Table 4. DoDIN APL Product Summary**

<b>Product Identification</b>			
Product Name	Dell EMC Unity Family		
Software Release	OE 5.2 (See note 1.)		
UCR Product Type(s)	Data Storage Controller		
Product Description	The SUT performs data replication, mirroring, back-up, continuance of operation, and disaster recovery functions.		
<b>Product Components</b> (See note 2.)	<b>Component Name</b> (See note 3.)	<b>Version</b> (See note 1.)	<b>Remarks</b>
Primary and Secondary Data Storage Controller (x2)	300, 300F 350F <u>400</u> /400F 450F 500/500F 550F 600 <u>650F</u>	5.2	
Primary and Secondary Data Storage Controller (x2)	380 380F 480 480F 680/680F 880/880F	5.2	See notes 1 and 4.
<b>NOTE(S):</b>			
1. The SUT was initially certified with Software Release version 4.2. DTR 1 updated the OE Software Release version from 4.2 to 4.4. DTR 2 updated the OE Software Release version from 4.4 to 4.5. DTR 3 updated the OE Software Release version from 4.5 to 5.0. DTR 5 updated the OE Software Release version from 5.0 to 5.1. DTR 6 updated the OE Software Release version from 5.1 to 5.2.			
2. Enclosure 3 of Reference (c) provides the details for the initially tested and certified component and subcomponent list.			
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 the tested and certified components and JITC analysis determined they were functionally identical for interoperability certification purposes.			
4. With DTR 3, the 380, 380F, 480, 480F, 680, 680F, 880, and 880F Dell EMC Unity models were added based on analysis (no testing) because they are functionally identical for interoperability certification purposes to the currently certified Unity models and they utilize the same OE software.			
<b>LEGEND:</b>			
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	UCR	Unified Capabilities Requirements

**4. Test Details.** This extension of the certification is based upon DTR 6. 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. JITC completed review of the Vendor’s initial LoC on 30 October 2017 and conducted testing at the Global Network Test Facility, Fort Huachuca, Arizona from 30 October through 9 November, and conducted a follow-on Verification and Validation IO test from 27 November to 1 December 2017, using test procedures derived from Reference (e). DISA adjudicated outstanding TDRs on 30 January 2018. A JITC-led Cybersecurity (CS) test team conducted Security testing and published the results in a separate report, Reference (d).

Based on JITC analysis, there were no changes to the DSC requirements with the update from UCR 2013 Change 1 to UCR 2013 Change 2 in September 2017; therefore, the SUT is certified in accordance with test procedures derived from Reference (f).

JITC Memo, JTE, Extension of the Joint Interoperability Certification of the Dell EMC Unity Family with Software Release Operating Environment (OE) 5.2

DTR 6 was requested to update the OE Software Release version from 5.1 to 5.2.

JITC analysis determined no further IO or CS testing was required because this software update to implement minor bug fixes and other feature enhancements did not change the certified IO features and functions or approved CS posture of the SUT. 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 IO Vendor POA&Ms, JITC approves this DTR.

Additionally, the current CS posture of the SUT is documented in a separate report, Reference (e).

**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 (JIT) 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](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).** JITC POC: Ms. Lorraine Gardner; commercial telephone (520) 538-5221; DSN telephone 879-5221; FAX DSN 879-4347; e-mail address: [lorraine.gardner.civ@mail.mil](mailto:lorraine.gardner.civ@mail.mil); mailing address: Joint Interoperability Test Command, ATTN: JTE2 (Ms. Lorraine Gardner), P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The APCO tracking number for the SUT is 1709401.

FOR THE COMMANDER:

Enclosure a/s

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Networks/Communications &  
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## **ADDITIONAL REFERENCES**

- (c) Joint Interoperability Test Command (JITC) Memo, JTE, “Joint Interoperability Certification of the Dell EMC Unity Family OE 4.2,” 2 February 2018
- (d) JITC, “Cybersecurity Assessment Report for Dell EMC Unity Family, Operating Environment (OE) 5.2, Tracking Number (TN) 1709401” May 2022
- (e) JITC, “Data Storage Controller (DSC) Test Procedures for Unified Capabilities Requirements (UCR) 2013 Change 1,” August 2016
- (f) Joint Interoperability Test Command (JITC), “Data Storage Controller (DSC) Test Procedures Version 1.1 for Unified Capabilities Requirements (UCR) 2013 Change 2,” December 2020