



DEFENSE INFORMATION SYSTEMS AGENCY

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

19 July 2021

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Joint Interoperability Certification of the Dell EMC Unity Family with Software Release Operating Environment (OE) 5.1

- 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 with Software Release Operating Environment (OE) 5.1, 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.

This extension of the certification is for Desktop Review (DTR) 5. DTR 5 was requested to update the OE Software Release version from 5.0 to 5.1. See Paragraph 4 for additional details.

Table 1. Conditions

Table with 3 columns: Condition, Operational Impact, Remarks. Row 1: UCR Waivers. Row 2: None.

(Table continues on next page.)

JITC Memo, JTE, Extension of the Joint Interoperability Certification of the Dell EMC Unity Family with Software Release Operating Environment (OE) 5.1

**Table 1. Conditions (continued)**

Condition	Operational Impact	Remarks																								
<b>Conditions of Fielding</b>																										
<b>TDR DMC-0669-001:</b> 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 with CoF	See note 1.																								
<b>TDR DMC-0669-003:</b> 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 with CoF	See note 1.																								
<b>TDR DMC-0669-005:</b> 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 with CoF	See note 1.																								
<b>TDR DMC-0669-006:</b> 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 with CoF	See note 1.																								
<b>Open Test Discrepancies</b>																										
<b>TDR DMC-0669-002:</b> 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.	None	CLOSED (See note 2.)																								
<b>TDR DMC-0669-004:</b> The SUT does not support client-side load balancing.	None	See note 3.																								
<p><b>NOTE(S):</b></p> <ol style="list-style-type: none"> <li>DISA has 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.</li> <li>DISA has accepted and approved the vendor's POA&amp;M and adjudicated this discrepancy as having a minor operational impact. Under DTR 1, the SUT version was updated from OE 4.2 to OE 4.4. Under DTR 2, the SUT version was updated from OE 4.4 to OE 4.5. This update included the resolution of this TDR, allowing the capability of the SUT to configure a custom MTU size between 1280 and 9216. Based on JITC analysis, the vendor provided documentation is sufficient to close this TDR.</li> <li>DISA has 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.</li> </ol> <p><b>LEGEND:</b></p> <table border="0"> <tr> <td>DISA</td> <td>Defense Information Systems Agency</td> <td>LoC</td> <td>Letters of Compliance</td> </tr> <tr> <td>DSC</td> <td>Data Storage Controller</td> <td>MTU</td> <td>Maximum Transmission Unit</td> </tr> <tr> <td>DTR</td> <td>Desktop Review</td> <td>POA&amp;M</td> <td>Plan of Action and Milestones</td> </tr> <tr> <td>GNS</td> <td>Global Name Service</td> <td>SUT</td> <td>System Under Test</td> </tr> <tr> <td>IP</td> <td>Internet Protocol</td> <td>TDR</td> <td>Test Discrepancy Report</td> </tr> <tr> <td>JITC</td> <td>Joint Interoperability Test Command</td> <td>UCR</td> <td>Unified Capabilities Requirements</td> </tr> </table>			DISA	Defense Information Systems Agency	LoC	Letters of Compliance	DSC	Data Storage Controller	MTU	Maximum Transmission Unit	DTR	Desktop Review	POA&M	Plan of Action and Milestones	GNS	Global Name Service	SUT	System Under Test	IP	Internet Protocol	TDR	Test Discrepancy Report	JITC	Joint Interoperability Test Command	UCR	Unified Capabilities Requirements
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**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														
<b>Network Attached Storage (NAS) Interfaces</b>																	
1 GbE (Ethernet) (R)	1	Met															
10 GbE (Ethernet) (R)	1	Met															
<b>Storage Array Net (SAN) Interfaces</b>																	
Fibre Channel (FC)	1	Met															
FC Protocol (FCP)	1	Met															
<b>Out-of-band Management Interfaces</b>																	
10 Mbps Ethernet (R)	1	Met															
100 Mbps Ethernet (R)	1	Met															
1 GbE Ethernet (R)	1	Met															
<b>Converged Network Adapter (CNA) Interfaces</b>																	
10 GbE (Ethernet) (O)	1	Not Tested	The SUT does not support this														
<p><b>NOTE(S):</b> 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.</p> <p><b>LEGEND:</b></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">CNA Converged Network Adapter</td> <td style="width: 50%;">Mbps Megabits per second</td> </tr> <tr> <td>CR Capability Requirement</td> <td>NAS Network Attached Storage</td> </tr> <tr> <td>FC Fibre Channel</td> <td>O Optional</td> </tr> <tr> <td>FCP FFC Protocol</td> <td>R Required</td> </tr> <tr> <td>FR Functional Requirement</td> <td>SAN Storage Array Net</td> </tr> <tr> <td>GbE Gigabit Ethernet</td> <td>SUT System Under Test</td> </tr> <tr> <td>ID Identification</td> <td>UCR Unified Capabilities Requirements</td> </tr> </table>				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
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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 (e).</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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**Table 4. DoDIN APL Product Summary**

<b>Product Identification</b>			
Product Name	Dell EMC Unity Family		
Software Release	OE 5.1 (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, <b>400</b> , 400F, 450F, 500, 500F, 550F, <b>600</b> , <b>650F</b> ,	5.1	
Primary and Secondary Data Storage Controller (x2)	380, 380F, 480, 480F, 680, 680F, 880, 880F	5.1	See notes 1 and 4.
<b>NOTE(S):</b>			
1. With DTR 1, the OE Software Release version was updated from 4.2 to 4.4. With DTR 2, the OE Software Release version was updated from 4.4 to 4.5. With DTR 3, the OE Software Release version was updated from 4.5 to 5.0. With DTR 5, the OE Software Release version was updated from 5.0 to 5.1.			
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; 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 SUT 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.** The extension of this certification is based upon DTR 5. 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 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 (d). DISA adjudicated outstanding TDRs on 30 January 2018. A JITC-led Cybersecurity (CS) test team conducted CS testing and published the results in a separate report, Reference (e).

DTR 5 was requested to update the OE Software Release version from 5.0 to 5.1.

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.

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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

for JEFFREY P. O'DONNELL  
LTC, USA  
Acting Chief  
Networks/Communications &  
DoDIN Capabilities Division

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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, "Data Storage Controller (DSC) Test Procedures for Unified Capabilities Requirements (UCR) 2013 Change 1," August 2016
- (e) JITC, "Cybersecurity Assessment Report for Dell EMC Unity Family, Operating Environment (OE) 5.1, Tracking Number (TN) 1709401" July 2021