



COMMON CRITERIA CERTIFICATION REPORT

Dell EMC™ Unity™ OE 4.2

383-4-421

22 September 2017

Version 1.0





FOREWORD

This certification report is an UNCLASSIFIED publication, issued under the authority of the Chief, Communications Security Establishment (CSE). Suggestions for amendments should be forwarded through departmental communications security channels to your Client Services Representative at CSE.

The Information Technology (IT) product identified in this certification report, and its associated certificate, has been evaluated at an approved evaluation facility – established under the Canadian Common Criteria Scheme – using the Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 4, for conformance to the Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 4. This certification report, and its associated certificate, applies only to the identified version and release of the product in its evaluated configuration. The evaluation has been conducted in accordance with the provisions of the Canadian CC Scheme, and the conclusions of the evaluation facility in the evaluation report are consistent with the evidence adduced. This report, and its associated certificate, are not an endorsement of the IT product by the Communications Security Establishment, or any other organization that recognizes or gives effect to this report, and its associated certificate, and no warranty for the IT product by the Communications Security Establishment, or any other organization that recognizes or gives effect to this report, and its associated certificate, is either expressed or implied.

If your department has identified a requirement for this certification report based on business needs and would like more detailed information, please contact:

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OVERVIEW

The Canadian Common Criteria Scheme provides a third-party evaluation service for determining the trustworthiness of Information Technology (IT) security products. Evaluations are performed by a commercial Common Criteria Evaluation Facility (CCEF) under the oversight of the Certification Body, which is managed by the Communications Security Establishment.

A CCEF is a commercial facility that has been approved by the Certification Body to perform Common Criteria evaluations; a significant requirement for such approval is accreditation to the requirements of ISO/IEC 17025:2005, the General Requirements for the Competence of Testing and Calibration Laboratories. Accreditation is performed under the Program for the Accreditation of Laboratories - Canada (PALCAN), administered by the Standards Council of Canada.

The CCEF that carried out this evaluation is EWA-Canada.

By awarding a Common Criteria certificate, the Certification Body asserts that the product complies with the security requirements specified in the associated security target. A security target is a requirements specification document that defines the scope of the evaluation activities. The consumer of certified IT products should review the security target, in addition to this certification report, in order to gain an understanding of any assumptions made during the evaluation, the IT product's intended environment, the evaluated security functionality, and the testing and analysis conducted by the CCEF.

The certification report, certificate of product evaluation and security target are posted to the Certified Products list (CPL) for the Canadian CC Scheme, and to the Common Criteria portal (the official website of the International Common Criteria Project).



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Table 1 TOE Identification2



EXECUTIVE SUMMARY

Dell EMC™ Unity™ OE 4.2 (hereafter referred to as the Target of Evaluation, or TOE), from Dell EMC, was the subject of this Common Criteria evaluation. A description of the TOE can be found in Section 1.2. The results of this evaluation demonstrate that TOE meets the requirements of the conformance claim listed in Table 1 for the evaluated security functionality.

EWA-Canada is the CCEF that conducted the evaluation. This evaluation was completed on 22 September 2017 and was carried out in accordance with the rules of the Canadian Common Criteria Scheme.

The scope of the evaluation is defined by the security target, which identifies assumptions made during the evaluation, the intended environment for TOE, and the security functional/assurance requirements. Consumers are advised to verify that their operating environment is consistent with that specified in the security target, and to give due consideration to the comments, observations and recommendations in this certification report.

Communications Security Establishment, as the Certification Body, declares that the TOE evaluation meets all the conditions of the Arrangement on the Recognition of Common Criteria Certificates and that the product will be listed on the Canadian Certified Products list (CPL), and the Common Criteria portal (the official website of the International Common Criteria Project).



1 IDENTIFICATION OF TARGET OF EVALUATION

The Target of Evaluation (TOE) is identified as follows:

Table 1 TOE Identification

TOE Name and Version	Dell EMC™ Unity™ OE 4.2
Developer	Dell EMC
Conformance Claim	EAL 2+ (ALC_FLR.2)

1.1 COMMON CRITERIA CONFORMANCE

The evaluation was conducted using the Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 4, for conformance to the Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 4.

1.2 TOE DESCRIPTION

The TOE is a midrange capacity storage system comprised of the Unity hardware platform and the Unity Operating Environment (OE) software.

The Unity hardware houses the disks in the storage array which are managed by the storage processors. It provides Network Access Server and Storage Area Network services by interfacing with the front-end clients (application hosts) and the back-end storage disks.

Application hosts (such as database servers, file servers, etc.) can access the Unity storage through traditional block and file protocols. The TOE presents storage to application hosts as a standard network-based virtual file server, or in the form of Logical Units to block-based client machines.

The TOE is managed by authorized administrators through the Unified Element Management Command Line Interface (UEMCLI) (also known as the Unisphere CLI) and the Unisphere Graphical User Interface.

1.3 TOE ARCHITECTURE

A diagram of the TOE architecture is as follows:

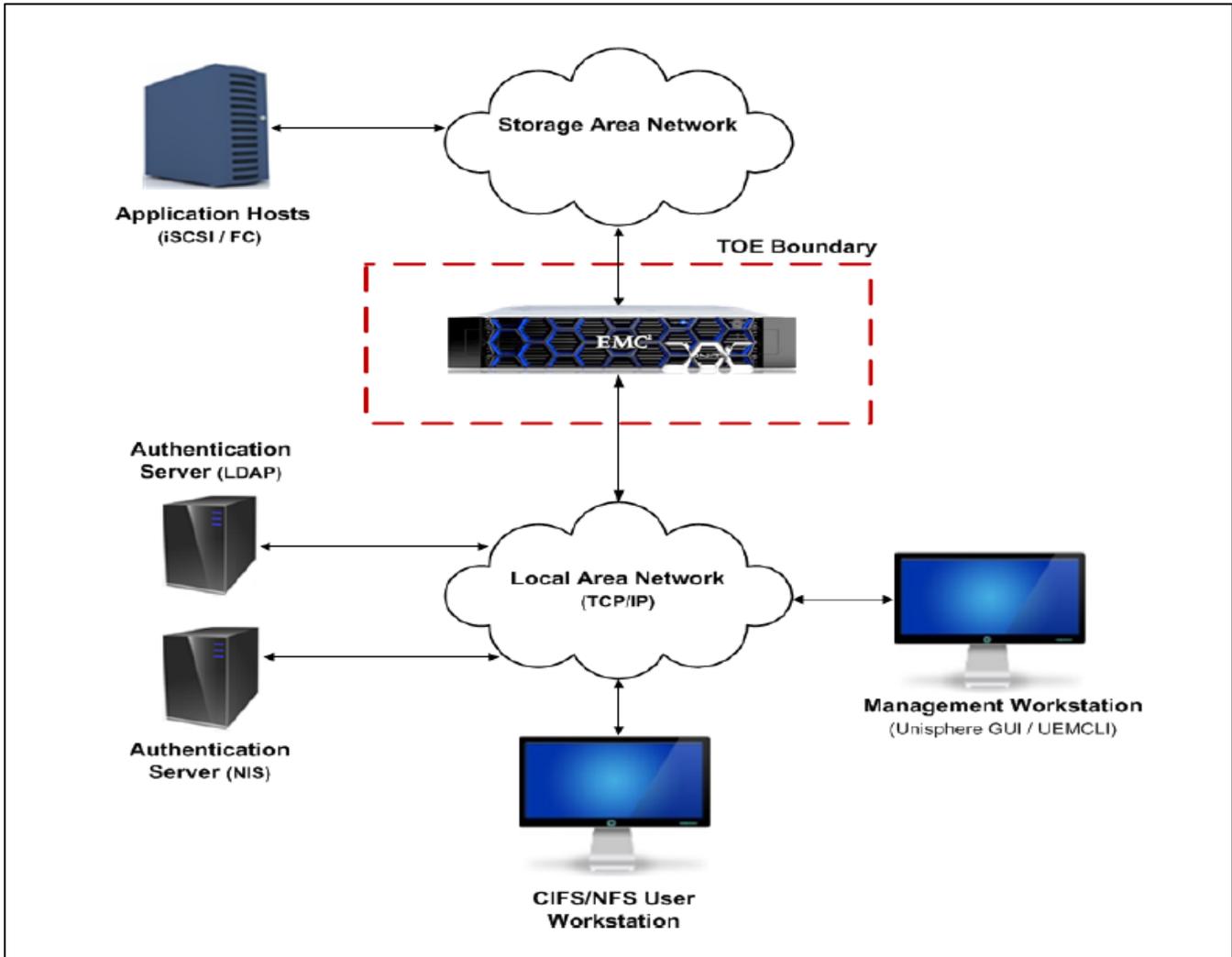


Figure 1 TOE Architecture



2 SECURITY POLICY

The TOE implements policies pertaining to the following security functional classes:

- Security Audit
- User Data Protection
- Identification and Authentication
- Security Management
- Protection of the TSF

Complete details of the security functional requirements (SFRs) can be found in the Security Target (ST) referenced in section 8.2.



3 ASSUMPTIONS AND CLARIFICATIONS OF SCOPE

Consumers of the TOE should consider assumptions about usage and environmental settings as requirements for the product's installation and its operating environment. This will ensure the proper and secure operation of the TOE.

3.1 USAGE AND ENVIRONMENTAL ASSUMPTIONS

The following assumptions are made regarding the use and deployment of the TOE:

- The attributes used by the TOE to make file storage access control decisions are provided by the operational environment.
- The TOE will be located within controlled access facilities, which will prevent unauthorized physical access.
- The authorized administrators are not careless, wilfully negligent, or hostile, are appropriately trained and will follow the instructions provided by the TOE documentation.



4 EVALUATED CONFIGURATION

The evaluated configuration for the TOE comprises the following software and hardware components:

- Dell EMC Unity Operating Environment version 4.2.0.9392909
- Dell EMC Unisphere version 4.2.0.9392909
- Unisphere CLI version 4.2.0.1.1786
- Unity 300 and Unity 350F, Unity 400 and Unity 450F, Unity 500 and Unity 550F, and Unity 600 and Unity 650F hardware

The following environmental components are required for operation of the TOE in the evaluated configuration:

- Management workstation
- Active Directory Server
- Network Information Service Server
- Application hosts

4.1 DOCUMENTATION

The following documents are provided to the consumer to assist in the configuration and installation of the TOE:

- a. Dell EMC Unity OE v4.2 Common Criteria Supplement, version 1.1, 17 July 2017
- b. Dell EMC Unity: Introduction to the Unity Platform, A Detailed Review, August 2016
- c. Dell EMC Unity™ Family, Dell EMC Unity All Flash, Unity Hybrid, UnityVSA Security Configuration Guide, July 2016
- d. Dell EMC Unity™ Family, Version 4.2 Unisphere® Command Line Interface User Guide, November 2016
- e. Dell EMC Unity™ Family, Dell EMC Unity All Flash, and Unity Hybrid Hardware Information Guide, May 2016
- f. Dell EMC Unity™ Family, EMC Unity All Flash, and Unity Hybrid Installation Guide, May 2016
- g. EMC Unity™ Quick Start Guide, rev 2, 2016
- h. Unisphere® Online Help, February 2016



5 EVALUATION ANALYSIS ACTIVITIES

The evaluation analysis activities involved a structured evaluation of the TOE. Documentation and process dealing with Development, Guidance Documents, and Life-Cycle Support were evaluated.

5.1 DEVELOPMENT

The evaluators analyzed the documentation provided by the vendor; they determined that the design completely and accurately describes the TOE security functionality (TSF) interfaces, the TSF subsystems and how the TSF implements the security functional requirements (SFRs). The evaluators determined that the initialization process is secure, that the security functions are protected against tamper and bypass, and that security domains are maintained.

5.2 GUIDANCE DOCUMENTS

The evaluators examined the TOE preparative user guidance and operational user guidance and determined that it sufficiently and unambiguously describes how to securely transform the TOE into its evaluated configuration and how to use and administer the product. The evaluators examined and tested the preparative and operational guidance, and determined that they are complete and sufficiently detailed to result in a secure configuration.

Section 4.1 provides details on the guidance documents.

5.3 LIFE-CYCLE SUPPORT

An analysis of the TOE configuration management system and associated documentation was performed. The evaluators found that the TOE configuration items were clearly marked.

The evaluators examined the delivery documentation and determined that it described all of the procedures required to maintain the integrity of the TOE during distribution to the consumer.

The evaluators reviewed the flaw remediation procedures used by developer for the TOE. The evaluators concluded that the procedures are adequate to track and correct security flaws, and distribute the flaw information and corrections to consumers of the TOE.



6 TESTING ACTIVITIES

Testing consists of the following three steps: assessing developer tests, performing independent functional tests, and performing penetration tests.

6.1 ASSESSMENT OF DEVELOPER TESTS

The evaluators verified that the developer has met their testing responsibilities by examining their test evidence, and reviewing their test results, as documented in the ETR. The correspondence between the tests identified in the developer's test documentation and the functional specification was complete.

6.2 CONDUCT OF TESTING

The TOE was subjected to a comprehensive suite of formally documented, independent functional and penetration tests. The detailed testing activities, including configurations, procedures, test cases, expected results and observed results are documented in a separate Test Results document.

6.3 INDEPENDENT FUNCTIONAL TESTING

During this evaluation, the evaluator developed independent functional tests by examining design and guidance documentation.

All testing was planned and documented to a sufficient level of detail to allow repeatability of the testing procedures and results. The following testing activities were performed:

- a. Repeat of Developer's Tests: The evaluator repeated a subset of the developers tests;
- b. Account Management: The objective of this test case is to verify enforcement of password composition rules and the use of the Administrator role for password changes; and
- c. Health Check: The objective of this test case is to confirm that TOE can initiate and perform a health check.

6.3.1 FUNCTIONAL TEST RESULTS

The developer's tests and the independent functional tests yielded the expected results, providing assurance that the TOE behaves as specified in its ST and functional specification.



6.4 INDEPENDENT PENETRATION TESTING

Subsequent to the independent review of public domain vulnerability databases and all evaluation deliverables, limited independent evaluator penetration testing was conducted. The penetration tests focused on:

- a. Use of automated vulnerability scanning tools to discover potential network, platform and application layer vulnerabilities such as Heartbleed, Shellshock, FREAK, POODLE, and GHOST; and
- b. Information Leakage: The objective of this test case is to attempt to observe communications between the TOE and the remote administrator; and
- c. Misuse: The objective of this test case is to attempt to deny real-time access to user data by causing a network outage.

6.4.1 PENETRATION TEST RESULTS

The independent penetration testing did not uncover any exploitable vulnerabilities in the intended operating environment.



7 RESULTS OF THE EVALUATION

This evaluation has provided the basis for the conformance claim documented in Table 1. The overall verdict for this evaluation is **PASS**. These results are supported by evidence in the ETR.

The IT product identified in this report has been evaluated at an approved evaluation facility established under the Canadian Common Criteria Scheme using the Common Methodology for IT Security Evaluation, Version 3.1 Revision 5, for conformance to the Common Criteria for IT Security Evaluation, Version 3.1 Revision 5. These evaluation results apply only to the specific version and release of the product in its evaluated configuration and in conjunction with the complete certification report.

The evaluation has been conducted in accordance with the provisions of the Canadian Common Criteria Scheme and the conclusions of the evaluation facility in the evaluation report are consistent with the evidence adduced. This is not an endorsement of the IT product by CSE or by any other organization that recognizes or gives effect to this certificate, and no warranty of the IT product by CSE or by any other organization that recognizes or gives effect to this certificate, is expressed or implied.

7.1 RECOMMENDATIONS/COMMENTS

It is recommended that all guidance outlined in Section 4.1 be followed to configure the TOE in the evaluated configuration.



8 SUPPORTING CONTENT

8.1 LIST OF ABBREVIATIONS

Term	Definition
CAVP	Cryptographic Algorithm Validation Program
CCEF	Common Criteria Evaluation Facility
CM	Configuration Management
CMVP	Cryptographic Module Validation Program
CSE	Communications Security Establishment
EAL	Evaluation Assurance Level
ETR	Evaluation Technical Report
GC	Government of Canada
IT	Information Technology
ITS	Information Technology Security
ITSET	Information Technology Security Evaluation and Testing
OE	Operating Environment
PALCAN	Program for the Accreditation of Laboratories – Canada
PP	Protection Profile
SFR	Security Functional Requirement
ST	Security Target
TOE	Target of Evaluation
TSF	TOE Security Function
UEMCLI	Unified Element Management Command Line Interface



8.2 REFERENCES

Reference
Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 4, September 2012.
Common Methodology for Information Technology Security Evaluation, CEM, Version 3.1 Revision 4, September 2012.
Dell EMC™ Unity® OE v4.2 Security Target, Version: 1.4, July 20, 2017.
Evaluation Technical Report for EAL 2+ Common Criteria Evaluation of Dell EMC Corporation Unity™ OE v4.2 Version 1.0, 22 September 2017.