Communications Security Establishment
Centre de la sécurité des télécommunications

CANADIAN CENTRE FOR CYBER SECURITY

COMMON CRITERIA CERTIFICATION REPORT

Integrated Dell™ Remote Access Controller 9

Dell Technologies

13 November 2019

383-4-479

V1.0

Canada

FOREWORD

This certification report is an UNCLASSIFIED publication, issued under the authority of the Chief, Communications Security Establishment (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 Centre for Cyber Security (CCCS). 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 Canadian Centre for Cyber Security, 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 Canadian Centre for Cyber Security, or any other organization that recognizes or gives effect to this report, and its associated certificate, is either expressed or implied.

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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 Canadian Centre for Cyber Security.

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, the General Requirements for the Competence of Testing and Calibration Laboratories.

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 listed on the Certified Products list (CPL) for the Canadian CC Scheme and posted on the Common Criteria portal (the official website of the International Common Criteria Project).

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The Integrated Dell™ Remote Access Controller 9 (hereafter referred to as the Target of Evaluation, or TOE), from Dell Technologies , 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 the 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 13 November 2019 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 the 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.

The Canadian Centre for Cyber Security, as the Certification Body, declares that this evaluation meets all the conditions of the Arrangement on the Recognition of Common Criteria Certificates and that the product is listed on the Certified Products list (CPL) for the Canadian CC Scheme 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	Integrated Dell™ Remote Access Controller 9
Developer	Dell Technologies

1.1 COMMON CRITERIA CONFORMANCE

The evaluation was conducted using the Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 5, for conformance to the Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 5.

The TOE claims the following conformance;

EAL 2+ ALC_FLR.2

1.2 TOE DESCRIPTION

The Integrated Dell™ Remote Access Controller 9 (iDRAC9) is a systems management solution that provides remote management capabilities, crashed system recovery, and power control functions for Dell PowerEdge systems. The iDRAC9 uses an integrated System-on-Chip microprocessor for the remote monitor/control system. The iDRAC9 co-exists on the system board with the managed PowerEdge server. The server operating system is concerned with executing applications; the iDRAC9 is concerned with monitoring and managing the server's environment and state outside of the operating system.

1.3 TOE ARCHITECTURE

A diagram of the TOE architecture is as follows:

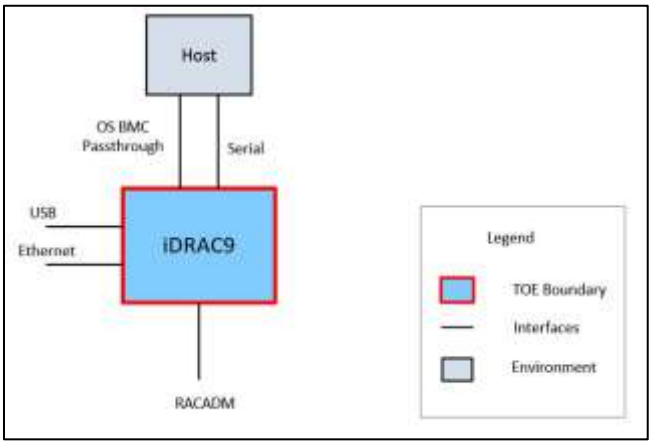

Figure 1: TOE Architecture

2 SECURITY POLICY

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

- Security Audit
- Cryptographic Support
- User Data Protection
- Identification and Authentication
- Security Management
- Protection of the TSF
- TOE Access
- Trusted Path/Channel

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

2.1 CRYPTOGRAPHIC FUNCTIONALITY

The following cryptographic implementation has been evaluated by the CMVP and is used by the TOE:

Table 2: Cryptographic Implementation

Cryptographic Module	Certificate Number
Dell Crypto Library for Dell iDRAC, Dell CMC and Dell OME-M	2861

3 ASSUMPTIONS AND CLARIFICATION 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 TOE will be located within controlled access facilities, which will prevent unauthorized physical access.
- There are one or more competent individuals assigned to manage the TOE.
- An internal management network is provided for the sole use of management of internal resources, and is logically separate from other networks.
- The authorized administrators are not careless, wilfully negligent, or hostile, are appropriately trained and will follow the instructions provided by the TOE documentation.

3.2 CLARIFICATION OF SCOPE

The following features are excluded from the evaluated configuration:

- Windows multifactor authentication
- Telnet, Secure Shell and Simple Network Management Protocol are not exercised in the evaluated configuration
- Hardware Root of Trust
- SELinux Policy Enforcement

4 EVALUATED CONFIGURATION

The evaluated configuration for the TOE comprises the Integrated Dell™ Remote Access Controller 9 3.34.34.34 on the following Dell platforms:

- PowerEdge T440
- PowerEdge T640
- PowerEdge R440
- PowerEdge R540
- PowerEdge R740
- PowerEdge R740xd
- PowerEdge R640
- PowerEdge R840
- PowerEdge 940
- PowerEdge R940xa

The evaluated configuration also requires a Windows Server 2016 Domain Controller with Active Directory, an NTP server, and an administrator workstation running Windows 10.

4.1 DOCUMENTATION

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

a) Integrated Dell Remote Access Controller 9 Version 3.30.30.30 User's Guide, Rev. A00
b) iDRAC9 with Lifecycle Controller Version 3.30.30. 30 RACADM CLI Guide, Rev. A00
c) iDRAC9 with Lifecycle Controller Version 3.31.31.31 Redfish API Guide, Rev. A00
d) Integrated Dell Remote Access Controller 9 Common Criteria Guidance Supplement, Version1.0, 19 August 2019

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 and how the TSF implements the security functional requirements. 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.

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 Evaluation Technical Report (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 developer's tests;

b. Verification of the Cryptographic Module: The objective of this test is to confirm the presence of the claimed cryptographic module;

c. Security Management: The objective of this test is to confirm that users are assigned appropriate privileges when assigned to a specific role and that they are maintained over the WSman and Redfish interfaces;

d. User Authentication: The objective of this test is to confirm that users must be identified and authenticated before being granted access to the TOE;

e. Separation of Roles: The objective of this test is to demonstrate that separation of roles is maintained during concurrent operator sessions; and

f. Concurrent User Login: The objective of this test is to confirm that the TOE is resistant to concurrent administrator logins.

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;
b) Information Leakage Verification: The objective of this test case is to confirm that information useful to an attacker is not disclosed during start up, shutdown, and login scenarios; and
c) Trusted Path: The objective of this test is to confirm that communications between the TOE and the remote administrator are appropriately protected.

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.

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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
CCCS	Canadian Centre for Cyber Security
EAL	Evaluation Assurance Level
ETR	Evaluation Technical Report
GC	Government of Canada
IT	Information Technology
ITS	Information Technology Security
NTP	Network Time Protocol
PP	Protection Profile
SFR	Security Functional Requirement
ST	Security Target
TOE	Target of Evaluation
TSF	TOE Security Function

8.2 REFERENCES

Reference
Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 5, April 2017.
Common Methodology for Information Technology Security Evaluation, CEM, Version 3.1 Revision 5, April 2017.
Integrated Dell™ Remote Access Controller 9 Security Target, Version 1.3, 22 October 2019.
Integrated Dell™ Remote Access Controller 9 Evaluation Technical Report, Version 1.2, 13 November 2019.