Communications Security Establishment
Centre de la sécurité des télécommunications

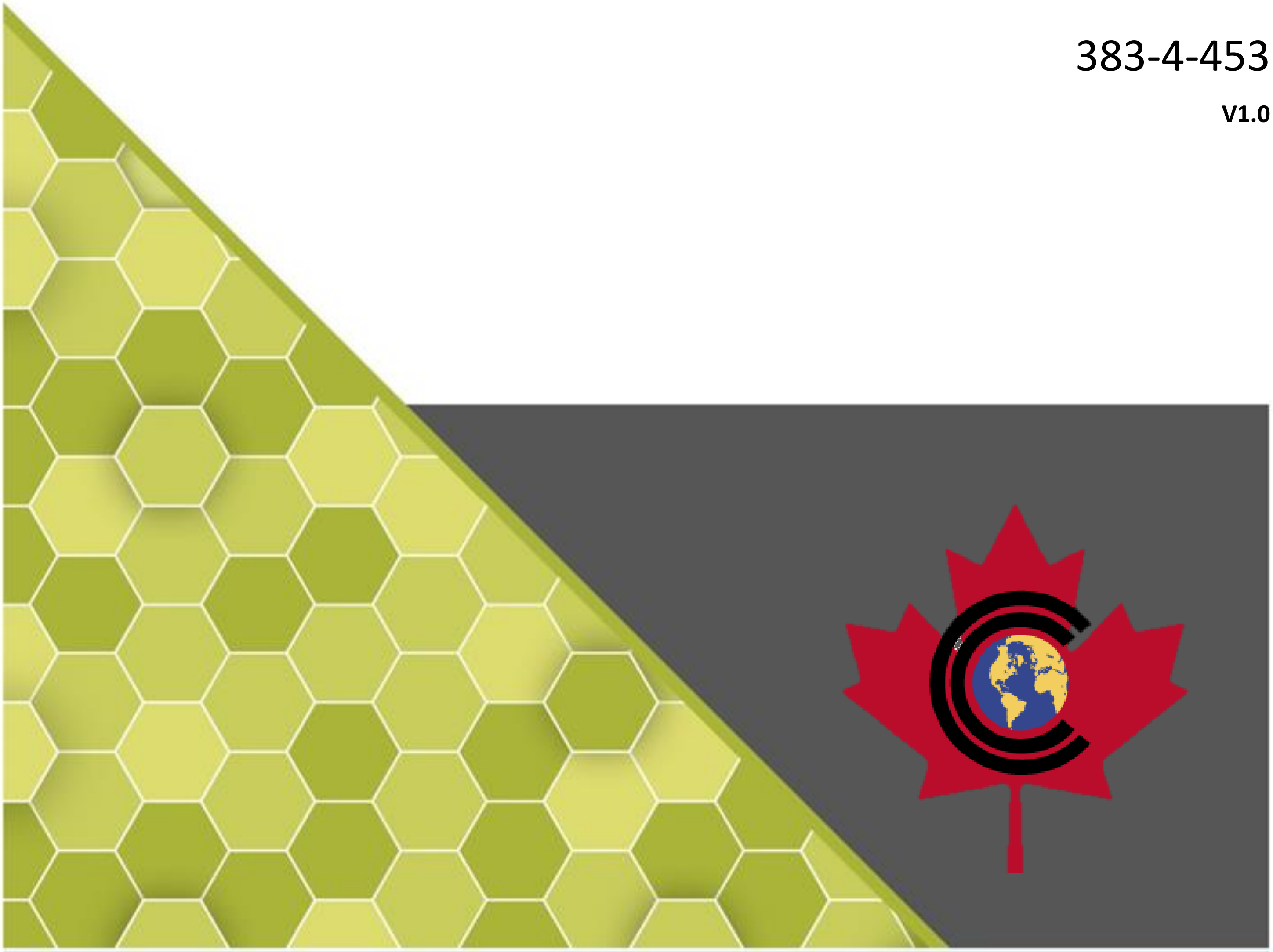
# COMMON CRITERIA CERTIFICATION REPORT

Trend Micro Deep Security 11.0

7 March 2019

383-4-453

**V1.0**



# 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 5, for conformance to the Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 5. 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 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 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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# EXECUTIVE SUMMARY

Trend Micro Deep Security 11.0 (hereafter referred to as the Target of Evaluation, or TOE), from Trend Micro Canada Technologies Inc., 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.

DXC Security Testing/Certification Laboratories is the CCEF that conducted the evaluation. This evaluation was completed 7 March 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 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** | Trend Micro Deep Security 11.0 |
| **Developer** | Trend Micro Canada Technologies Inc. |
| **Conformance Claim** | EAL 2 + (ALC_FLR.1) |

## 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.

## 1.2 TOE DESCRIPTION

Trend Micro Deep Security is a software intrusion detection and prevention software system that protects customers' IT system servers and applications. This solution can identify suspicious activity and behavior, and take proactive or preventive measures to ensure the security of the machines on which it is deployed. Several protection features are combined in centrally managed software agents, adding a suite of protection functionality to the intrusion detection and prevention system.

Deep Security provides the ability to protect itself and associated data from unauthorized access or modification and provides an audit trail to ensure accountability for authorized actions.

## 1.3 TOE ARCHITECTURE

A diagram of the TOE architecture is as follows:

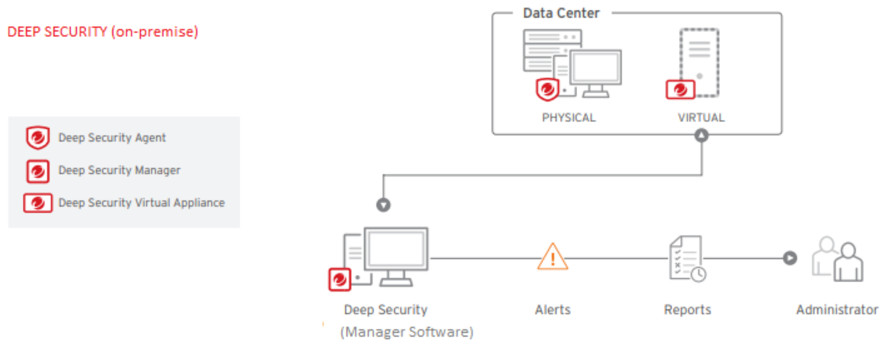

**Figure 1 TOE Architecture**

# 2 SECURITY POLICY

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

- Security Audit;
- TOE access;
- Identification and Authentication;
- Security Management;
- Protection of the TSF;
- Cryptographic Support;
- Trusted Path; and
- Intrusion Detection and Prevention.

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 Government of Canada approved cryptographic algorithms were evaluated by the CAVP and used by the TOE:

**Table 2 Cryptographic Algorithm(s)**

| Cryptographic Algorithm | Standard | Certificate Number |
|---|---|---|
| Advanced Encryption Standard (AES) | FIPS 197 | 5650, 4750, C 504 |
| Rivest Shamir Adleman (RSA) | FIPS 186-4 | 3040, 2594, C 504 |
| Secure Hash Algorithm (SHS) | FIPS 180-3 | 4531, 3893, C 504 |

# 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 TOE has access to all the IT system data it needs to perform its functions;
- The TOE will be managed in a manner that allows it to appropriately address changes in the IT System the TOE monitors;
- The TOE is appropriately scalable to the IT System the TOE monitors;
- The TOE hardware and software critical to security policy enforcement will be protected from unauthorized physical modification; and
- The processing resources of the TOE will be located within controlled access facilities, which will prevent unauthorized physical access.

## 3.2 CLARIFICATION OF SCOPE

The TOE incorporates CAVP-validated Cryptography and was not subjected to CMVP (FIPS-140) validation.

# 4 EVALUATED CONFIGURATION

The evaluated configuration for the TOE comprises:

- Deep Security 11.0 which is made up of the following components:
    - Deep Security Manager running on Windows Server 2012 (64 bit);
    - Deep Security Agent(s) running on either Windows Server 2012 R2 or Linux Red hat Enterprise Edition 7;
    - Deep Security Relay(s) running on either Windows Server 2012 R2 or Linux Red hat Enterprise Edition 7; and
    - Deep Security Virtual Appliance running VMware vCenter 6.0 with ESXi 6.0 (NSX environment);

The Deep Security Agent and Deep Security Relay component can be deployed on physical servers or virtual machines, while the Deep Security Virtual Appliance can be deployed on VMware ESXi cloud computing hosts.

## 4.1 DOCUMENTATION

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

a. Deep Security 11.0 Common Criteria Configuration Guide, January 23, 2019;

b. Deep Security 11.0 On-premise Administration Guide, January 14, 2019;

c. Deploy the Deep Security Virtual Appliance with NSX, January 14, 2019;

d. Deep Security Agent 11.0 Linux Kernel Support, March 12; and

e. Deep Security 11.0 Supported features by Platform Guide.

# 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 (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.

# 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. Toe Access without Authentication: The objective of this test goal is to verify that a user must properly authenticate before being given access to the TOE;

c. Selective Audit Review: The objective of this test goal is to verify that event logs are generated and can be viewed;

d. Management of Agent Policy: The objective of this test goal is to verify that TOE administrators have the capability of managing system data and that event logs are generated;

e. TOE Data Modification: The objective of this test goal is to verify that an administrator may modify TOE data and that event logs are generated of the actions;

f. User Management: The objective of this test goal is to demonstrate that TOE Administrators have the capability of managing users;

g. Auditor Access: The objective of this test goal is to verify the access rights of the Auditor role;

h. Audit Storage Exhaustion: The objective of this test goal is to verify that proper procedures are followed when database storage exhaustion occurs;

i. Start up and Shutdown of Audit: The objective of this test goal is to verify that proper messages are generated when audit is started or shut down;

j. Host System Reboot: The objective of this test goal is to verify that the reboot of the host system is captured on audit logs;

k. Anti Virus Scan: The objective of this test goal is to verify the Anti Virus capabilities of the TOE;

l. Web Reputation and IDS/IPS: The objective of this test goal is to verify the capability of the TOE to monitor web reputation and the performing of IDS scan; and

m. TLS and Crypto: The objective of this test goal is to verify the protection of communication between parts of the TOE.

### 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.

### 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 |
| 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. |
| Deep Security 11.0 Security Target, version 1.0, March 7, 2019. |
| Evaluation Technical Report Trend Micro Deep Security 11.0, version 1.0, March 7, 2019. |