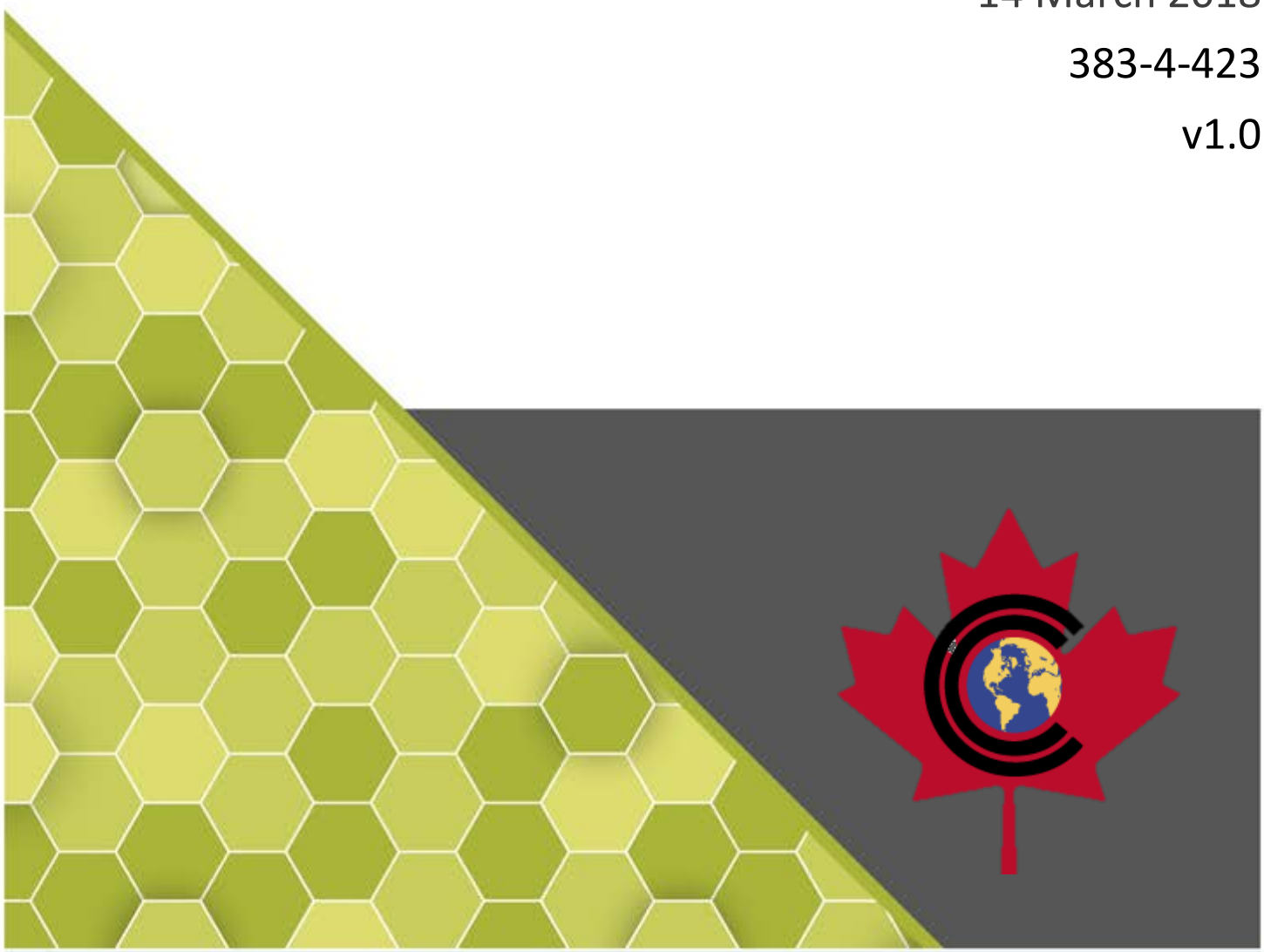
COMMON CRITERIA CERTIFICATION REPORT

NetApp ONTAP® 9.1

14 March 2018

383-4-423

v1.0



Canada

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.

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

NetApp ONTAP® 9.1 (hereafter referred to as the Target of Evaluation, or TOE), from NetApp, 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.

EWA-Canada is the CCEF that conducted the evaluation. This evaluation was completed 14 March 2018 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	NetApp ONTAP® 9.1
Developer	NetApp, Inc.
Conformance Claim	EAL 2 + ALC_FLR.3

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 proprietary operating system developed by NetApp, Inc. ONTAP 9.1 provides data management functions that include providing data storage and multi- protocol access.

The TOE is distributed with the following NetApp storage solution products:

- **FAS** - NetApp's FAS (Fabric Attached Storage) systems offer seamless access to a full range of enterprise data for users on a variety of FASxxxx platforms.
- **AFF** - NetApp's All Flash FAS systems offer seamless access to a full range of enterprise data for users on a variety of AFFxxxx platforms.

The TOE is also available in a virtualized implementation of ONTAP 9.1 as ONTAP Select 9.1.

1.3 TOE ARCHITECTURE

A diagram of the TOE architecture is as follows:

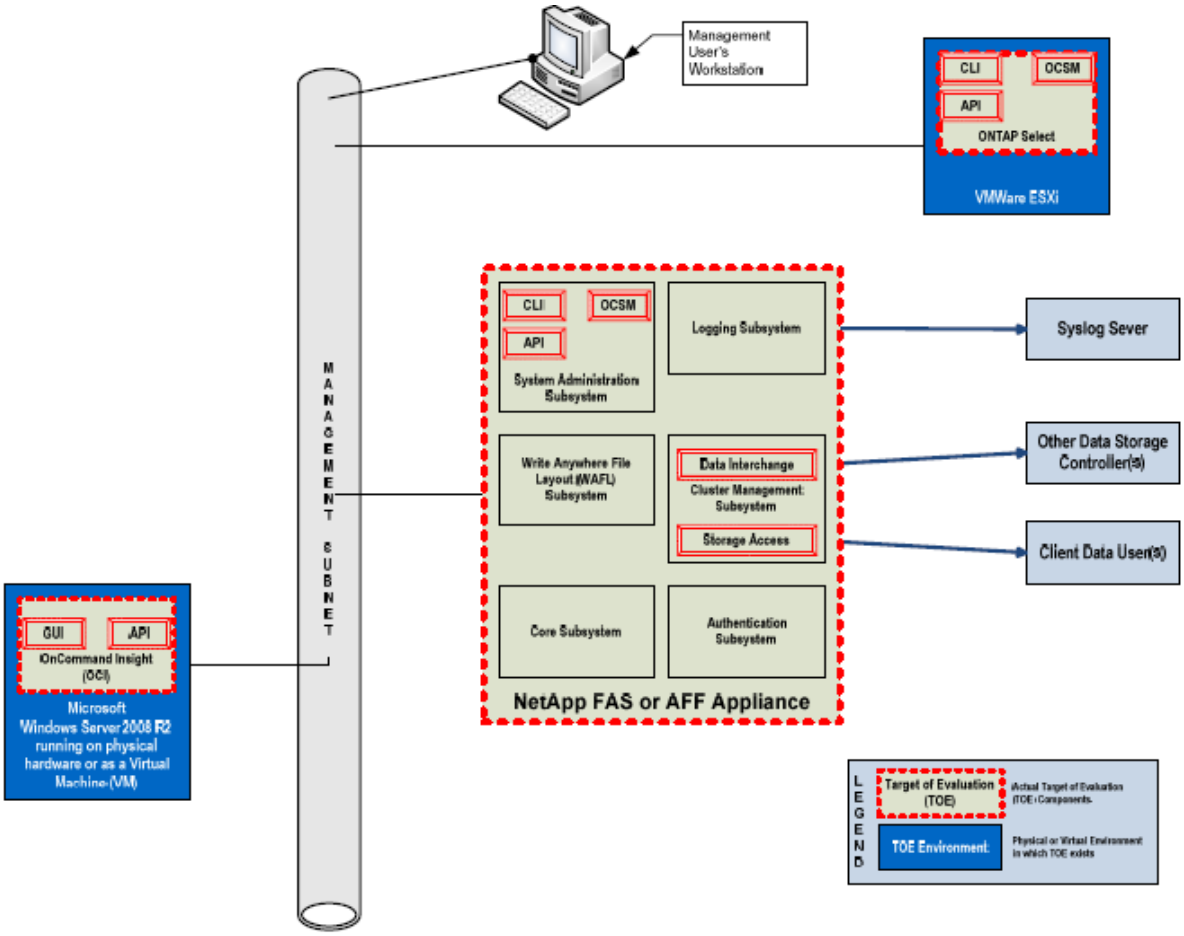

Figure 1 TOE Architecture

2 SECURITY POLICY

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

- Secure Audit;
- User Data Protection;
- Identification and Authentication;
- Security Management;
- Protection of the TSF; and
- TOE Access.

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:

- Any other systems with which the TOE communicates are assumed to be under the same management control and use a consistent representation for specific user and group identifiers;
- Security Management shall be provided to protect the Confidentiality and Integrity of transactions on the network;
- There will be one or more competent individuals assigned to manage the TOE and the security of the information it contains;
- The system administrative personnel are not hostile and will follow and abide by the instructions provided by the administrator documentation;
- Authorized users possess the necessary authorization to access at least some of the information managed by the TOE and are expected to act in a cooperating manner in a benign environment;
- The processing resources of the TOE critical to the Security Functional Policy enforcement will be protected from unauthorized physical modification by potentially hostile outsiders;
- Administrative functionality shall be restricted to authorized administrators;
- The IT Environment will be configured to provide the TOE to retrieve reliable time stamps by implementing the Network Time Protocol (NTP); and
- Physical security of the TOE and network, commensurate with the value of the TOE and the data it contains, is assumed to be provided by the environment.

4 EVALUATED CONFIGURATION

The evaluated configuration for the TOE comprises:

- The software Operating System ONTAP 9.1 running on one of the following appliances:

  FAS2240-2, FAS2520, FAS2552, FAS2554, FAS2620, FAS2650, FAS8020, FAS8040, FAS8060, FAS8080 EX, FAS8200, FAS9000, AFF A200, AFF A300, AFF A700, AFF A700s, AFF8040, AFF8080 EX; and

- the virtualized implementation of ONTAP Select.

4.1 DOCUMENTATION

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

a. ONTAP® 9 Software Setup Guide, January 2017;
b. ONTAP 9.1 Guidance Documentation Supplement version 0.3, September 2017;
c. ONTAP® 9 Commands: Manual Page Reference (Updated for ONTAP 9.1), January 2017;
d. ONTAP® 9 System Administration Reference, June 2017;
e. ONTAP® 9 Cluster Management Workflows for OnCommand® System Manager, June 2017;
f. ONTAP® 9 Cluster Management Using OnCommand® System Manager (Updated for 9.1), June 2017;
g. ONTAP® 9 High-Availability Configuration Guide, June 2017;
h. ONTAP® 9 Disks and Aggregates Power Guide (Updated for 9.1), September 2017;
i. ONTAP® 9 Network Management Guide, June 2017;
j. ONTAP® 9 Logical Storage Management Guide, September 2017;
k. ONTAP® 9 Data Protection Tape Backup and Recovery Guide, January 2017;
l. ONTAP® 9 NFS Reference, June 2017;
m. ONTAP® 9 NFS Configuration Power Guide, June 2017;
n. ONTAP® 9 NFS Configuration Express, June 2017;
o. ONTAP® 9 CIFS Reference, August 2017; and
p. ONTAP® 9 CIFS/SMB Configuration Express Guide, June 2017.

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. Account lockout: The objective of this test goal is to demonstrate that the TOE will lock an account after a configurable amount of time; and

c. Audit Log Access: The objective of this test goal is to demonstrate that only authorized users may access audit logs through the CLI.

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. Login Credential Protection: The objective of this test goal is to monitor to ensure that the login credentials are protected on the management interface.

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 4, for conformance to the Common Criteria for IT Security Evaluation, Version 3.1 Revision 4. 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
AFF	All Flash FAS
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
FAS	Fabric Attached Storage
GC	Government of Canada5
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 4, April 2017.
Common Methodology for Information Technology Security Evaluation, CEM, Version 3.1 Revision 4, April 2017.
NetApp, Inc. ONTAP® 9.1 Security Target version 1.3, March 14, 2018
Evaluation Technical Report for NetApp, Inc. ONTAP® 9.1 version 1.1, March 14, 2018