TrustCB B.V.

Certification Report

Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500

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Foreword

The Netherlands Scheme for Certification in the Area of IT Security (NSCIB) provides a third-party evaluation and certification service for determining the trustworthiness of Information Technology (IT) security products. Under this NSCIB, TrustCB B.V. has the task of issuing certificates for IT security products, as well as for protection profiles and sites.

Part of the procedure is the technical examination (evaluation) of the product, protection profile or site according to the Common Criteria assessment guidelines published by the NSCIB. Evaluations are performed by an IT Security Evaluation Facility (ITSEF) under the oversight of the NSCIB Certification Body, which is operated by TrustCB B.V. in cooperation with the Ministry of the Interior and Kingdom Relations.

An ITSEF in the Netherlands is a commercial facility that has been licensed by TrustCB B.V. to perform Common Criteria evaluations; a significant requirement for such a licence is accreditation to the requirements of ISO Standard 17025 “General requirements for the accreditation of calibration and testing laboratories”.

By awarding a Common Criteria certificate, TrustCB B.V. asserts that the product or site complies with the security requirements specified in the associated (site) security target, or that the protection profile (PP) complies with the requirements for PP evaluation specified in the Common Criteria for Information Security Evaluation. A (site) security target is a requirements specification document that defines the scope of the evaluation activities.

The consumer should review the (site) security target or protection profile, in addition to this certification report, to gain an understanding of any assumptions made during the evaluation, the IT product's intended environment, its security requirements, and the level of confidence (i.e., the evaluation assurance level) that the product or site satisfies the security requirements stated in the (site) security target.

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Recognition of the Certificate

Presence of the Common Criteria Recognition Arrangement (CCRA) and the SOG-IS logos on the certificate indicates that this certificate is issued in accordance with the provisions of the CCRA and the SOG-IS Mutual Recognition Agreement (SOG-IS MRA) and will be recognised by the participating nations.

International recognition

The CCRA was signed by the Netherlands in May 2000 and provides mutual recognition of certificates based on the Common Criteria (CC). Since September 2014 the CCRA has been updated to provide mutual recognition of certificates based on cPPs (exact use) or STs with evaluation assurance components up to and including EAL2+ALC_FLR.

For details of the current list of signatory nations and approved certification schemes, see http://www.commoncriteriaportal.org.

European recognition

The SOG-IS MRA Version 3, effective since April 2010, provides mutual recognition in Europe of Common Criteria and ITSEC certificates at a basic evaluation level for all products. A higher recognition level for evaluation levels beyond EAL4 (respectively E3-basic) is provided for products related to specific technical domains. This agreement was signed initially by Finland, France, Germany, The Netherlands, Norway, Spain, Sweden and the United Kingdom. Italy joined the SOG-IS MRA in December 2010.

For details of the current list of signatory nations, approved certification schemes and the list of technical domains for which the higher recognition applies, see https://www.sogis.eu.

1 Executive Summary

This Certification Report states the outcome of the Common Criteria security evaluation of the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500. The developer of the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500 is Huawei Technologies Co., Ltd located in Shenzhen, People's Republic of China and they also act as the sponsor of the evaluation and certification. A Certification Report is intended to assist prospective consumers when judging the suitability of the IT security properties of the product for their particular requirements.

The TOE is Huawei Router Software V800R023C10SPC500 running on NetEngine 8000 and 8800 Series Routers. These routers consist of both hardware (non-TOE) and software. The Router Software includes the VRP (Versatile Routing Platform) and the OS (operating system). The software platform running on the routers is denominated VRP developed by Huawei. VRP provides extensive security features, including different interfaces with according access levels for administrators, enforcing authentications prior to establishment of administrative sessions, auditing of security-relevant management activities. The OS is developed by Huawei base on Linux kernel and provides support functions such as basic file management services, hardware management and clock.

The TOE has been evaluated by SGS Brightsight B.V.located in Delft, The Netherlands. The evaluation was completed on 28 November 2025 with the approval of the ETR. The certification procedure has been conducted in accordance with the provisions of the Netherlands Scheme for Certification in the Area of IT Security *[NSCIB]*.

The scope of the evaluation is defined by the security target *[ST]*, which identifies assumptions made during the evaluation, the intended environment for the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500, the security requirements, and the level of confidence (evaluation assurance level) at which the product is intended to satisfy the security requirements. Consumers of the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500 are advised to verify that their own environment is consistent with the security target, and to give due consideration to the comments, observations and recommendations in this certification report.

The results documented in the evaluation technical report *[ETR]* [1] for this product provide sufficient evidence that the TOE meets the EAL4 augmented (EAL4+) assurance requirements for the evaluated security functionality. This assurance level is augmented with ALC_FLR.2 (Flaw Reporting Procedures).

The evaluation was conducted using the Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 5 *[CEM]* for conformance to the Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 5 *[CC]* (Parts I, II and III).

TrustCB B.V., as the NSCIB Certification Body, declares that the evaluation meets all the conditions for international recognition of Common Criteria Certificates and that the product will be listed on the NSCIB Certified Products list. Note that the certification results apply only to the specific version of the product as evaluated.

[1] The Evaluation Technical Report contains information proprietary to the developer and/or the evaluator, and is not available for public review.

2 Certification Results

2.1 Identification of Target of Evaluation

The Target of Evaluation (TOE) for this evaluation is the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500 from Huawei Technologies Co., Ltd located in Shenzhen, People's Republic of China.

The TOE is comprised of the following main components:

Delivery item type	Identifier	Version
Software	NetEngine8000-F8_V800R023C10SPC500.cc	V800R023C10SPC500
	NetEngine8000-Series-X_V800R023C10SPC500.cc	V800R023C10SPC500

To ensure secure usage a set of guidance documents is provided, together with the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500. For details, see section 2.5 “Documentation” of this report.

2.2 Security Policy

To counter the security threats listed in the [ST], the TOE provides the following security features:

- Security Audit:
  - The log module of the host software records operations on a device and events that occur to a device. The recorded operations and events are log messages. Log messages provide evidence for diagnosing and maintaining a system. Log messages reflect the operating status of a device and are used to analyze the conditions of a network and to find out the causes of network failure or faults.
- Cryptographic support:
  - The TOE provides cryptography in support of secure connections that includes remote administrative management.
- Identification and authentication:
  - The authentication functionality provides validation by user’s account name and password. Public key authentication is supported for SSH users. Detailed functionalities, for example max idle- timeout period, max log-in attempts, UI lock, user kick out, can be configured by administrator according to networking environment, customized security considerations, differential user role on TOE, and/or other operational concerns.
- Secure Management:
  - The TOE restricts the ability to determine the behaviour of and modify the behaviour of the function's transmission of audit data to the security administrator. Only the security administrator can manage the cryptographic keys. Only the security administrator has the right of opening/closing the security services and creation/deletion/modification of the user accounts.
- Protection of the TSF:
  - The TOE protects the pre-shared keys, symmetric keys, and private keys from reading them by an unauthorized entity. The TOE stores the users or administrator passwords in non-plaintext form preventing them from reading. The TOE verifies the packet before their installation and uses the digital signature. The TOE also obtains reliable timestamps from an external NTP server and performs self-test for integrity of the software and the cryptographic functions upon each boot.

- TOE Access through user authentication:
    - To protect the TOE from eavesdrop and to ensure data transmission security and confidentiality, SSH implements:
        - Authentication by password or by public-key;
        - AES encryption algorithms;
        - Secure cryptographic key exchange;
- Trusted path and channels for device authentication
    - The TOE supports the trusted connections using TLS for the communication with the audit(syslog) server, SSH Client.
- Trusted updates:
    - The TOE supports installation of software updates by administrators after a successful verification of their authenticity using secure and strong cryptographic algorithms based on digital signatures.

2.3 Assumptions and Clarification of Scope

2.3.1 Assumptions

The assumptions defined in the Security Target are not covered by the TOE itself. These aspects lead to specific Security Objectives to be fulfilled by the TOE-Environment. For detailed information on the security objectives that must be fulfilled by the TOE environment, see section 4.2 of the *[ST]*.

2.3.2 Clarification of scope

The evaluation did not reveal any threats to the TOE that are not countered by the evaluated security functions of the product.

2.4 Architectural Information

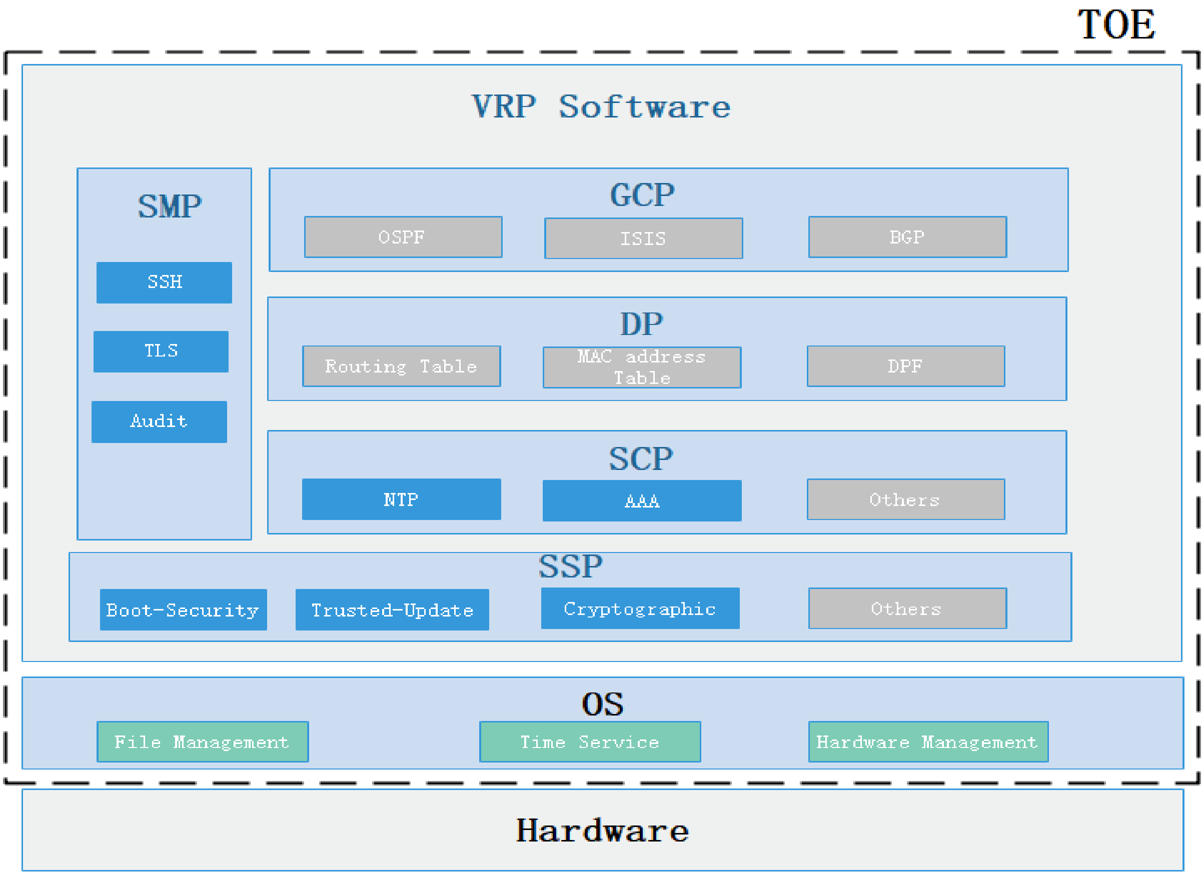
The TOE scope consists of the software running in the router device including VRP software and OS. The hardware is out of TOE scope.

The underlying OS on which the VRP software is a Linux kernel based operating system. The OS provides basic services including memory management, scheduling management, file management, and device management.

The VRP software is a network operating platform, which has a distributed, multi-process, and component-based architecture. It builds upon the hardware development trend and will meet carriers' exploding service requirements.

The VRP software is responsible for functional management, routing information generation, receiving generated routing information and formatting them into hardware-specific data to direct traffic forwarding.

The diagram below describes which modules of the VRP software are part of the TSF and which ones are not. Only the part of the TOE highlighted in green is included in the TSF.



Note: Router software consists of System Manage Plane(SMP), Service Control Plane(SCP), System Service Plane (SSP), Data Plane(DP) and General Control Plane(GCP) and the OS.

In TOE scope:

- System Manage Plane(SMP), implements management for external access, management for system configuration, information output on VRP;
- Service Control Plane(SCP), implements authentication, authorization, accounting and other serviceable functionality on VRP;.
- System Service Plane (SSP), implements system internal scheduling, communication, management of signals, events, timers, etc. System security functions are also implemented at this plane.
- General Control Plane(GCP), controls and manages the operation of all network protocols. The control plane provides various network information and forwarding query entries required for data processing and forwarding on the Data Plane.
- Data Plane (DP), processes and forwards various types of data on different ports of the router.
- OS, provide hardware and software resource management.

Out of TOE scope:

- Hardware, provide hardware resource management.

2.5 Documentation

The following documentation is provided with the product by the developer to the customer:

Identifier	Version
Huawei NetEngine 8000&8800 Series Routers' Software Preparative Procedures	V1.2
Huawei NetEngine 8000&8800 Series Routers' Software Operational User Guidance	V1.1
NetEngine 8000 F8 V800R023C10 Product Documentation	02
NetEngine 8000 X and 8800 X V800R023C10 Product Documentation	02
Huawei NetEngine 8000&8800 Series Routers' Software Upgrade Guide V1.1	V1.1
OpenPGP Signature Verification Guide	Issue 04

2.6 IT Product Testing

Testing (depth, coverage, functional tests, independent testing): The evaluators examined the developer's testing activities documentation and verified that the developer has met their testing responsibilities.

2.6.1 Testing approach and depth

Extensive tests were performed by the developer. The test cases were categorised based on SFR classes. The test cases were divided into seven areas These test cases covered all TSFI's and all subsystems and subsystem interactions. As all SFRs were tested, the complete TSF was tested.

For the testing performed by the evaluators, a selection of the developer tests were repeated, as well as a number of test cases designed by the evaluator.

2.6.2 Independent penetration testing

To identify potential vulnerabilities the evaluator performed the following activities:

- SFR design analysis: Based on the information obtained in the evaluation evidence, the SFR implementation details were examined. The aspects described in CEM annex B were considered. During this examination several potential vulnerabilities were identified.
- Additional security analysis: When the implementation of the SFR was understood, a coverage check was performed on the relevant aspects of all SFRs. This expanded the list of potential vulnerabilities.
- Scanning the TOE using the applicable vulnerability scanning tools (e.g., NMAP, NESSUS) to collect information about the TOE and identify potential vulnerabilities.
- Public vulnerability search: The evaluator performed public domain vulnerability search based on the TOE name, TOE type, and identified 3rd party security relevant libraries and/or services. Several additional potential vulnerabilities were identified during a search in the public domain.
- The potential vulnerabilities identified were analysed, and some of the potential vulnerabilities were concluded not exploitable within in the attack potential, or covered by guidance. For remaining potential vulnerabilities, penetration tests were devised.

The total test effort expended by the evaluators was 4 weeks. During that test campaign, 100% of the total time was spent on logical tests.

2.6.3 Test configuration

The configuration of the sample used for independent evaluator testing and penetration testing was the same as described in the *[ST]*.

Two of the possible four combinations of non-TOE hardware were used for Evaluator testing. Argumentation for the non-impacting nature of the different hardware models was examined by the Evaluator and accepted.

2.6.4 Test results

The testing activities, including configurations, procedures, test cases, expected results and observed results are summarised in the *[ETR]*, with references to the documents containing the full details.

The developer's tests and the independent functional tests produced the expected results, giving assurance that the TOE behaves as specified in its *[ST]* and functional specification.

No exploitable vulnerabilities were found with the independent penetration tests.

The algorithmic security level of cryptographic functionality has not been rated in this certification process, but the current consensus on the algorithmic security level in the open domain, i.e., from the current best cryptanalytic attacks published, has been taken into account.

2.7 Reused Evaluation Results

There has been extensive reuse of the ALC aspects for the sites involved in the development and production of the TOE, by use of 2 Site Technical Audit Reports.

2.8 Evaluated Configuration

The TOE is defined uniquely by its name and version number Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500.

2.9 Evaluation Results

The evaluation lab documented their evaluation results in the *[ETR]*, which references an ASE Intermediate Report and other evaluator documents, and Site Technical Audit Report(s) for the site(s) *[STAR]* [2].

The verdict of each claimed assurance requirement is "**Pass**".

Based on the above evaluation results the evaluation lab concluded the Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500, to be **CC Part 2 extended, CC Part 3 conformant** and to meet the requirements of **EAL 4 augmented with ALC_FLR.2**. This implies that the product satisfies the security requirements specified in Security Target *[ST]*.

2.10 Comments/Recommendations

The user guidance as outlined in section 2.5 "Documentation" contains necessary information about the usage of the TOE. Certain aspects of the TOE's security functionality, in particular the countermeasures against attacks, depend on accurate conformance to the user guidance of both the software and the hardware part of the TOE. There are no particular obligations or recommendations for the user apart from following the user guidance. Please note that the documents contain relevant details concerning the resistance against certain attacks.

In addition, all aspects of assumptions, threats and policies as outlined in the Security Target not covered by the TOE itself must be fulfilled by the operational environment of the TOE.

The customer or user of the product shall consider the results of the certification within his system risk management process. For the evolution of attack methods and techniques to be covered, the customer should define the period of time until a re-assessment for the TOE is required and thus requested from the sponsor of the certificate.

The strength of the cryptographic algorithms and protocols was not rated in the course of this evaluation. This specifically applies to the following proprietary or non-standard algorithms, protocols and implementations: None.

[2] The Site Technical Audit Report contains information necessary to an evaluation lab and certification body for the reuse of the site audit report in a TOE evaluation.

3 Security Target

The Huawei NetEngine 8000&8800 Series Routers’ Software V800R023C10SPC500 Security Target, Version 1.1, 20 October 2025 *[ST]* is included here by reference.

4 Definitions

This list of acronyms and definitions contains elements that are not already defined by the CC or CEM:

IT	Information Technology
ITSEF	IT Security Evaluation Facility
JIL	Joint Interpretation Library
NSCIB	Netherlands Scheme for Certification in the area of IT Security
SHA	Secure Hash Algorithm
TLS	Transport Layer Security
TOE	Target of Evaluation
TRNG	True Random Number Generator
TSF	TOE Security Functionality
TOE	Target of Evaluation
VLAN	Virtual LAN

5 Bibliography

This section lists all referenced documentation used as source material in the compilation of this report.

[CC]	Common Criteria for Information Technology Security Evaluation, Parts I, II and III, Version 3.1 Revision 5, April 2017
[CEM]	Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 5, April 2017
[ETR]	Evaluation Technical Report “Huawei NetEngine 8000&8800 Series Routers' Software V800R023C10SPC500” – EAL4+, 24-RPT-1597, Version 2.0, 22 October 2025
[NSCIB]	Netherlands Scheme for Certification in the Area of IT Security, Version 2.6, 02 August 2022
[ST]	Huawei NetEngine 8000&8800 Series Routers’ Software V800R023C10SPC500 Security Target, Version 1.1, 20 October 2025
[STAR-LFG]	Site Technical Audit Report - Huawei Langfang Data Center L17 site, 25-RPT-1059, Version 1.0, 21 October 2025
[STAR-NJG]	Site Technical Audit Report – Nanjing Development site N11, 25-RPT-1060, Version 1.0, 21 October 2025

(This is the end of this report.)