National Information Assurance Partnership

Common Criteria Evaluation and Validation Scheme

Validation Report

for the

SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances

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1 Executive Summary

This Validation Report (VR) is intended to assist the end user of this product and any security certification Agent acting on behalf of an end user in determining the suitability of this Information Technology (IT) product for their environment. End users should review the Security Target (ST), which is where specific security claims are made, in conjunction with this VR, which describes how those security claims were tested and evaluated and any restrictions on the evaluated configuration. Prospective users should carefully read the Assumptions and Clarification of Scope in Section 5 and the Validator Comments in Section 10, where any restrictions on the evaluated configuration are highlighted.

This report documents the National Information Assurance Partnership (NIAP) assessment of the evaluation of the SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances Target of Evaluation (TOE). It presents the evaluation results, their justifications, and the conformance results. This VR is not an endorsement of the TOE by any agency of the U.S. Government and no warranty of the TOE is either expressed or implied. This VR applies only to the specific version and configuration of the product as evaluated and documented in the ST.

The evaluation was completed by Acumen Security in April 2020. The information in this report is largely derived from the Evaluation Technical Report (ETR) and associated test report, all written by Acumen Security. The evaluation determined that the product is both Common Criteria Part 2 Extended and Part 3 Conformant, and meets the assurance requirements defined in the U.S. Government Protection Profile for Security Requirements for collaborative Protection Profile for Stateful Traffic Filter Firewalls, Version 2.0+Errata 20180314, dated 14 March 2018; the Network Device Collaborative Protection Profile (NDcPP)/Stateful Traffic Filter firewall Collaborative Protection Profile (FWcPP) Extended Package VPN Gateway (VPNGWEP), Version 2.1 (VPNGWEP v2.1) dated 8 March 2017; and the collaborative Protection Profile for Network Devices /collaborative Protection Profile for Stateful Traffic Filter Firewalls Extended Package (EP) for Intrusion Prevention Systems (IPS) Version 2.11 dated 15 June 2017.

The Target of Evaluation (TOE) identified in this Validation Report has been evaluated at a NIAP approved Common Criteria Testing Laboratory using the Common Methodology for IT Security Evaluation (CEM), Version 3.1, Rev. 4, for conformance to the Common Criteria for IT Security Evaluation, Version 3.1, Rev. 4, as interpreted by the Assurance Activities contained in the collaborative Protection Profile for Stateful Traffic Filter Firewalls, Version 2.0+Errata 20180314, dated 14 March 2018; the Network Device Collaborative Protection Profile (NDcPP)/Stateful Traffic Filter firewall Collaborative Protection Profile (FWcPP) Extended Package VPN Gateway (VPNGWEP), Version 2.1 (VPNGWEP v2.1) dated 8 March 2017; and the collaborative Protection Profile for Network Devices /collaborative Protection Profile for Stateful Traffic Filter Firewalls Extended Package (EP) for Intrusion Prevention Systems (IPS) Version 2.11 dated 15 June 2017. This Validation Report applies only to the specific version of the TOE as evaluated. The evaluation has been conducted in accordance with the provisions of the NIAP Common Criteria Evaluation and Validation Scheme and the conclusions of the testing laboratory in the evaluation technical report are consistent with the evidence provided.

The validation team provided guidance on technical issues and evaluation processes and reviewed the individual work units documented in the ETR and the Assurance Activities Report (AAR). The validation team found that the evaluation showed that the product satisfies all the functional requirements and assurance requirements stated in the Security Target (ST). Based on these findings, the validation team concludes that the testing laboratory's findings are accurate, the conclusions justified, and the conformance results are correct. The conclusions of the testing laboratory in the evaluation technical report are consistent with the evidence produced.

2 Identification

The CCEVS is a joint National Security Agency (NSA) and National Institute of Standards effort to establish commercial facilities to perform trusted product evaluations. Under this program, security evaluations are conducted by commercial testing laboratories called Common Criteria Testing Laboratories (CCTLs). CCTLs evaluate products against Protection Profile containing Assurance Activities, which are interpretation of CEM work units specific to the technology described by the PP.

The NIAP Validation Body assigns Validators to monitor the CCTLs to ensure quality and consistency across evaluations. Developers of information technology products desiring a security evaluation contract with a CCTL and pay a fee for their product's evaluation. Upon successful completion of the evaluation, the product is added to NIAP's Product Compliance List.

Table 1 provides information needed to completely identify the product, including:

- The Target of Evaluation (TOE): the fully qualified identifier of the product as evaluated.
- The Security Target (ST), describing the security features, claims, and assurances of the product.
- The conformance result of the evaluation.
- The Protection Profile(s) and Packages(s) to which the product is conformant.
- The organizations and individuals participating in the evaluation.

Table 1: Evaluation Identifiers

Item	Identifier
Evaluation Scheme	United States NIAP Common Criteria Evaluation and Validation Scheme
TOE	SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances
Protection Profile	• Collaborative Protection Profile for Stateful Traffic Filter Firewalls (v2.0+Errata 20180314, 14-March-2018) [FWcPP] • Network Device Collaborative Protection Profile (NDcPP)/Stateful Traffic Filter Firewall Collaborative Protection Profile (FWcPP) Extended Package VPN Gateway (v2.1, dated 2017-03-08) [VPNEP]. • Network Device Collaborative Protection Profile (NDcPP)/Stateful Traffic Filter Firewall Collaborative Protection Profile (FWcPP) Extended Package for Intrusion Prevention Systems (v2.11, 15-June-2017) [IPSEP]
Security Target	SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances Security Target
Evaluation Technical Report	Evaluation Technical Report for SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO
CC Version	Version 3.1, Revision 4
Conformance Result	CC Part 2 Extended and CC Part 3 Conformant
Sponsor	SonicWALL, Inc.
Developer	SonicWALL, Inc.
Common Criteria Testing Lab (CCTL)	Acumen Security, LLC
CCEVS Validators	James Donndelinger, Marybeth Panock, Harry Beddo, Lian Bloch, George Odom

3 Architectural Information

The TOE is comprised of the SonicWall SonicOS Enhanced v6.5.4 software running on purpose built TZ and SOHO hardware appliance platforms.

The appliance firewall capabilities include stateful packet inspection. Stateful packet inspection maintains the state of network connections such as Transmission Control Protocol (TCP) streams and User Datagram Protocol (UDP) communication traveling across the firewall. The firewall distinguishes between legitimate packets and illegitimate packets for the given network deployment. Only packets adhering to the administrator-configured access rules are permitted to pass through the firewall, all others are rejected.

The appliance capabilities include deep-packet inspection (DPI) used for intrusion prevention and detection. These services employ stream-based analysis wherein traffic traversing the product is parsed and interpreted so that its content might be matched against a set of signatures to determine the acceptability of the traffic. Only traffic adhering to the administrator-configured policies is permitted to pass through the TOE.

The appliances support Virtual Private Network (VPN) functionality, which provides a secure connection between the device and the audit server. The appliances support authentication and protect data from disclosure or modification during transfer.

The appliances are managed through a web based Graphical User Interface (GUI) secured by TLS / HTTPS. All management activities may be performed through the web management GUI via a hierarchy of menu buttons. Administrators may configure policies, manage network traffic, users, and system logs. The appliances have local console access with limited administrative functionality that can be used to configure the network, perform system updates, and view logs.

4 Security Policy

The TOE implements the following security functions in support of the requirements:

- Security Audit
- Cryptographic Support
- Identification and Authentication
- Security Management
- Protection of the TSF
- TOE Access
- Trusted Path/Channels
- Intrusion Prevention
- Stateful Traffic Filtering
- Packet Filtering

Each of these security functionalities are listed in more detail below.

Security Audit

The TOE generates audit records for administrative activity, security related configuration changes, cryptographic key changes and startup and shutdown of the audit functions. Audit events can be associated with the administrator who performs them. The audit records are transmitted over an IPsec VPN tunnel to an external audit server in the IT environment for storage.

Cryptographic Support

The TOE provides cryptographic functions (key generation, key establishment, key destruction, cryptographic operation) to secure remote administrative sessions over Hypertext Transfer Protocol Secure (HTTPS)/Transport Layer Security (TLS), and to support Internet Protocol Security (IPsec) to provide VPN functionality and to protect the connection to the audit server.

Algorithm	Description	Mode Supported	CAVP Cert. #
AES	Used for symmetric encryption/decryption FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_COP.1/DataEncryption	CBC (128, 256) GCM (128, 256)	C743
SHS	Cryptographic hashing services FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_RBG_EXT.1 FCS_COP.1/SigGen FCS_COP.1/Hash FCS_COP.1/KeyedHash	SHA (1, 256, 384, 512)	C743
DRBG	Deterministic random bit generation FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_RBG_EXT.1 FCS_CKM.1 FCS_CKM.1/IKE	Hash (SHA-256)	C743

Algorithm	Description	Mode Supported	CAVP Cert. #
ECDSA (186)	Key Generation, SigGen, SigVer FCS_IPSEC_EXT.1 FCS_CKM.1 FCS_CKM.1/IKE FCS_COP.1/SigGen FPT_TUD_EXT.1	P-256, P-384	C743
RSA (186)	Key Generation FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_CKM.1 FCS_CKM.1/IKE	n (2048)	C743
	SigGen (PKCS1_V1.5) FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_COP.1/SigGen	n = 2048 SHA(256, 384, 512)	C743
	SigVer (PKCS1_v1.5) FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_COP.1/SigGen	n = 2048 SHA(1, 256, 384, 512)	C743
HMAC	Keyed hashing services FCS_TLSS_EXT.1 FCS_IPSEC_EXT.1 FCS_COP.1/KeyedHash	SHA (1, 256, 384, 512)	C743
KAS ECC	SP 800-56A FCS_IPSEC_EXT.1 FCS_CKM.2	Key Agreement (Initiator, Responder) EC: P-256, SHA-512 ED: P-384, SHA-512	C743
RSA	PKCS1_v1.5 FCS_TLSS_EXT.1 FCS_CKM.2	RSA Key Establishment	Vendor Affirmed

Table 2 CAVP Certificate References

Identification and Authentication

The TOE provides a password-based logon mechanism. This mechanism enforces minimum strength requirements and ensures that passwords are obscured when entered. The TOE also validates and authenticates X.509 certificates for all certificate use.

Security Management

The TOE provides management capabilities via a Web-based GUI, accessed over HTTPS. Management functions allow the administrators to configure and update the system, manage users and configure the Virtual Private Network (VPN) and Intrusion Prevention System (IPS) functionality.

Protection of the TSF

The TOE prevents the reading of plaintext passwords and keys. The TOE provides a reliable timestamp for its own use. To protect the integrity of its security functions, the TOE implements a suite of self-tests at startup and shuts down if a critical failure occurs. The TOE verifies the software image when it is loaded. The TOE ensures that updates to the TOE software can be verified using a digital signature.

TOE Access

The TOE monitors local and remote administrative sessions for inactivity and either locks or terminates the session when a threshold time period is reached. An advisory notice is displayed at the start of each session.

Trusted Path/Channels

The TSF provides IPsec VPN tunnels for trusted communication between itself and an audit server. The TOE implements HTTPS for protection of communications between itself and the Management Console.

Intrusion Prevention

The TOE performs analysis of IP-based network traffic and detects violations of administratively-defined IPS policies. The TOE inspects each packet header and payload for anomalies and known signature-based attacks and determines whether to allow traffic to traverse the TOE.

Stateful Traffic Filtering

The TOE restricts the flow of network traffic between protected networks and other attached networks based on addresses and ports of the network nodes originating (source) and/or receiving (destination) applicable network traffic, as well as on established connection information.

Packet Filtering

The TOE performs packet filtering on network packets.

5 Assumptions, Threats & Clarification of Scope

5.1 Assumptions

The specific conditions listed in the following subsections are assumed to exist in the TOE's environment. These assumptions include both practical realities in the development of the TOE security requirements and the essential environmental conditions on the use of the TOE.

ID	Assumption
A.PHYSICAL_PROTECTION	The firewall device is assumed to be physically protected in its operational environment and not subject to physical attacks that compromise the security and/or interfere with the firewall's physical interconnections and correct operation. This protection is assumed to be sufficient to protect the firewall and the data it contains. As a result, the cPP will not include any requirements on physical tamper protection or other physical attack mitigations. The cPP will not expect the product to defend against physical access to the firewall that allows unauthorized entities to extract data, bypass other controls, or otherwise manipulate the firewall.
A.LIMITED_FUNCTIONALITY	The firewall device is assumed to provide networking functionality as its core function and not provide functionality/services that could be deemed as general-purpose computing. For example, the firewall device should not provide a computing platform for general purpose applications (unrelated to networking/filtering functionality).
A.TRUSTED_ADMINISTRATOR	The Security Administrator(s) for the firewall device are assumed to be trusted and to act in the best interest of security for the organization. This includes being appropriately trained, following policy, and adhering to guidance documentation. Administrators are trusted to ensure passwords/credentials have sufficient strength and entropy and to lack malicious intent when administering the firewall. The firewall device is not expected to be capable of defending against a malicious Administrator that actively works to bypass or compromise the security of the device.
A.REGULAR_UPDATES	The firewall device firmware and software are assumed to be updated by an Administrator on a regular basis in response to the release of product updates due to known vulnerabilities.
A.ADMIN_CREDENTIALS_SECURE	The Administrator's credentials (private key) used to access the firewall device are protected by the platform on which they reside.
A.RESIDUAL_INFORMATION	The Administrator must ensure that there is no unauthorized access possible for sensitive residual information (e.g. cryptographic keys, keying material, PINs, passwords etc.) on firewall equipment when the equipment is discarded or removed from its operational environment.
A.CONNECTIONS/VPN	It is assumed that the TOE is connected to distinct networks in a manner that ensures that the TOE security policies will be enforced on all applicable network traffic flowing among the attached networks.

Table 1 Assumptions

5.2 Threats

The following table lists the threats addressed by the TOE and the IT Environment. The assumed level of expertise of the attacker for all the threats identified below is Enhanced-Basic.

ID	Threat
T.UNAUTHORIZED_ ADMINISTRATOR_ACCESS	Threat agents may attempt to gain administrator access to the firewall by nefarious means such as masquerading as an administrator to the firewall, masquerading as the firewall to an administrator, replaying an administrative session (in its entirety, or selected portions), or performing man-in-the-middle attacks, which would provide access to the administrative session, or sessions between the firewall and a network device. Successfully gaining administrator access allows malicious actions that compromise the security functionality of the firewall and the network on which it resides.
T.WEAK_CRYPTOGRAPHY	Threat agents may exploit weak cryptographic algorithms or perform a cryptographic exhaust against the key space. Poorly chosen encryption algorithms, modes, and key sizes will allow attackers to compromise the algorithms, or brute force exhaust the key space and give them unauthorized access allowing them to read, manipulate and/or control the traffic with minimal effort.
T.UNTRUSTED_ COMMUNICATION_CHANNELS	Threat agents may attempt to target firewalls that do not use standardized secure tunneling protocols to protect the critical network traffic. Attackers may take advantage of poorly designed protocols or poor key management to successfully perform man-in-the-middle attacks, replay attacks, etc. Successful attacks will result in loss of confidentiality and integrity of the critical network traffic, and potentially could lead to a compromise of the firewall itself.
T.WEAK_AUTHENTICATION _ENDPOINTS	Threat agents may take advantage of secure protocols that use weak methods to authenticate the endpoints – e.g. a shared password that is guessable or transported as plaintext. The consequences are the same as a poorly designed protocol, the attacker could masquerade as the Administrator or another device, and the attacker could insert themselves into the network stream and perform a man-in-the-middle attack. The result is the critical network traffic is exposed and there could be a loss of confidentiality and integrity, and potentially the firewall itself could be compromised.
T.UPDATE_COMPROMISE	Threat agents may attempt to provide a compromised update of the software or firmware which undermines the security functionality of the device. Non-validated updates or updates validated using non-secure or weak cryptography leave the update firmware vulnerable to surreptitious alteration.
T.UNDETECTED_ACTIVITY	Threat agents may attempt to access, change, and/or modify the security functionality of the firewall without Administrator awareness. This could result in the attacker finding an avenue (e.g., misconfiguration, flaw in the product) to compromise the device and

ID	Threat
	the Administrator would have no knowledge that the device has been compromised.
T.SECURITY_FUNCTIONALITY_COMPROMISE	Threat agents may compromise credentials and firewall data enabling continued access to the firewall and its critical data. The compromise of credentials includes replacing existing credentials with an attacker's credentials, modifying existing credentials, or obtaining the Administrator or firewall credentials for use by the attacker.
T.PASSWORD_CRACKING	Threat agents may be able to take advantage of weak administrative passwords to gain privileged access to the firewall. Having privileged access to the firewall provides the attacker unfettered access to the network traffic and may allow them to take advantage of any trust relationships with other network devices.
T.SECURITY_FUNCTIONALITY_FAILURE	An external, unauthorized entity could make use of failed or compromised security functionality and might therefore subsequently use or abuse security functions without prior authentication to access, change or modify device data, critical network traffic or security functionality of the device.
T.NETWORK_DISCLOSURE	An attacker may attempt to "map" a subnet to determine the machines that reside on the network, and obtaining the IP addresses of machines, as well as the services (ports) those machines are offering. This information could be used to mount attacks to those machines via the services that are exported.
T. NETWORK_ACCESS	With knowledge of the services that are exported by machines on a subnet, an attacker may attempt to exploit those services by mounting attacks against those services.
T.NETWORK_MISUSE	An attacker may attempt to use services that are exported by machines in a way that is unintended by a site's security policies. For example, an attacker might be able to use a service to "anonymize" the attacker's machine as they mount attacks against others.
T.MALICIOUS_TRAFFIC	An attacker may attempt to send malformed packets to a machine in hopes of causing the network stack or services listening on UDP/TCP ports of the target machine to crash.
T.DATA_INTEGRITY/VPN	Devices on a protected network may be exposed to threats presented by devices located outside the protected network, which may attempt to modify the data without authorization. If known malicious external devices are able to communicate with devices on the protected network or if devices on the protected network can establish communications with those external devices, then the data contained within the communications may be susceptible to a loss of integrity.
T.NETWORK_ACCESS/VPN	Devices located outside the protected network may seek to exercise services located on the protected network that are intended to only be accessed from inside the protected network or only accessed by entities using an authenticated path into the protected network. Devices located outside the protected network may, likewise, offer

ID	Threat
	services that are inappropriate for access from within the protected network. From an ingress perspective, VPN gateways can be configured so that only those network servers intended for external consumption by entities operating on a trusted network (e.g., machines operating on a network where the peer VPN gateways are supporting the connection) are accessible and only via the intended ports. This serves to mitigate the potential for network entities outside a protected network to access network servers or services intended only for consumption or access inside a protected network. From an egress perspective, VPN gateways can be configured so that only specific external services (e.g., based on destination port) can be accessed from within a protected network, or moreover are accessed via an encrypted channel. For example, access to external mail services can be blocked to enforce corporate policies against accessing uncontrolled e-mail servers, or, that access to the mail server must be done over an encrypted link.
T.NETWORK_ DISCLOSURE/VPN	Devices on a protected network may be exposed to threats presented by devices located outside the protected network, which may attempt to conduct unauthorized activities. If known malicious external devices are able to communicate with devices on the protected network, or if devices on the protected network can establish communications with those external devices (e.g., as a result of a phishing episode or by inadvertent responses to email messages), then those internal devices may be susceptible to the unauthorized disclosure of information. From an infiltration perspective, VPN gateways serve not only to limit access to only specific destination network addresses and ports within a protected network, but whether network traffic will be encrypted or transmitted in plaintext. With these limits, general network port scanning can be prevented from reaching protected networks or machines, and access to information on a protected network can be limited to that obtainable from specifically configured ports on identified network nodes (e.g., web pages from a designated corporate web server). Additionally, access can be limited to only specific source addresses and ports so that specific networks or network nodes can be blocked from accessing a protected network thereby further limiting the potential disclosure of information. From an exfiltration perspective, VPN gateways serve to limit how network nodes operating on a protected network can connect to and communicate with other networks limiting how and where they can disseminate information. Specific external networks can be blocked altogether or egress could be limited to specific addresses and/or ports. Alternately, egress options available to network nodes on a protected network can be carefully managed in order to, for example, ensure that outgoing connections are encrypted to further mitigate inappropriate disclosure of data through packet sniffing.

ID	Threat
T.NETWORK_MISUSE/VPN	Devices located outside the protected network, while permitted to access particular public services offered inside the protected network, may attempt to conduct inappropriate activities while communicating with those allowed public services. Certain services offered from within a protected network may also represent a risk when accessed from outside the protected network. From an ingress perspective, it is generally assumed that entities operating on external networks are not bound by the use policies for a given protected network. Nonetheless, VPN gateways can log policy violations that might indicate violation of publicized usage statements for publicly available services. From an egress perspective, VPN gateways can be configured to help enforce and monitor protected network use policies. As explained in the other threats, a VPN gateway can serve to limit dissemination of data, access to external servers, and even disruption of services – all of these could be related to the use policies of a protected network and as such are subject in some regards to enforcement. Additionally, VPN gateways can be configured to log network usages that cross between protected and external networks and as a result can serve to identify potential usage policy violations.
T.REPLAY_ATTACK/VPN	If an unauthorized individual successfully gains access to the system, the adversary may have the opportunity to conduct a "replay" attack. This method of attack allows the individual to capture packets traversing throughout the network and send the packets at a later time, possibly unknown by the intended receiver. Traffic is subject to replay if it meets the following conditions: • Cleartext: an attacker with the ability to view unencrypted traffic can identify an appropriate segment of the communications to replay as well in order to cause the desired outcome. • No integrity: alongside cleartext traffic, an attacker can make arbitrary modifications to captured traffic and replay it to cause the desired outcome if the recipient has no means to detect these modifications.
T.NETWORK_DISCLOSURE/IPS	Sensitive information on a protected network might be disclosed resulting from disclosure/transmitted information in violation of policy, such as sending unencrypted credit card numbers. The IPS TOE will be capable of inspecting packet payloads for data strings and patterns of characters.
T.NETWORK_ACCESS/IPS	An attacker may attempt to gain inappropriate access to one or more networks, endpoints, or services, such as through brute force password guessing attacks, or by transmitting malicious executable code, scripts, or commands. If malicious external devices are able to communicate with devices on the protected network, then those devices may be susceptible to the unauthorized disclosure of information.

ID	Threat
T.NETWORK_MISUSE/IPS	Access to services made available by a protected network might be used counter to Operational Environment policies. Devices located outside the protected network may attempt to conduct inappropriate activities while communicating with allowed public services, (e.g. manipulation of resident tools, SQL injection, phishing, forced resets, malicious zip files, disguised executables, privilege escalation tools, and botnets).
T.NETWORK_DOS/IPS	Attacks against services inside a protected network, or indirectly by virtue of access to malicious agents from within a protected network, might lead to denial of services otherwise available within a protected network. Resource exhaustion may occur in the event of co-ordinate service request flooding from a small number of sources. Though most IPS will provide some protection from DDoS (distributed denial of service) attacks, providing protection against DDoS attacks is not a requirement for conformant TOEs, as this is best counteracted by firewalls, cloud computing and design. Note however that DoS protection is required.

Table 2 Threats

5.3 Clarification of Scope

All evaluations (and all products) have limitations, as well as potential misconceptions that may benefit from clarification. This text covers some of the more important limitations and clarifications of this evaluation. Note that:

- As with any evaluation, this evaluation only shows that the evaluated configuration meets the security claims made, with a certain level of assurance. The level of assurance for this evaluation is defined within the (FWcPP), (VPNEP), and (IPSEP).
- Consistent with the expectations of the Protection Profile, this evaluation did not specifically search for, nor seriously attempt to counter, vulnerabilities that were not “obvious” or vulnerabilities to objectives not claimed in the ST. The CEM defines an “obvious” vulnerability as one that is easily exploited with a minimum of understanding of the TOE, technical sophistication and resources.
- The evaluation of security functionality of the product was limited to the functionality specified in the claimed PPs. Any additional security related functional capabilities included in the product were not covered by this evaluation. In particular, the functionality listed in Section 7.2 of this document is not covered.

6 Documentation

The following documents were provided by the vendor with the TOE for evaluation:

- SonicWall® SonicOS 6.5 Common Criteria Addendum, Version 1.4

The documentation listed above is the only documentation that should be trusted to install, administer, or use the TOE in its evaluated configuration. Any additional customer documentation provided with the product, or that which may be available online, was not included in the scope of the evaluation and therefore should not be relied upon to configure or operate the device as evaluated. Consumers are encouraged to download the configuration guides from the NIAP website to ensure the device is configured as evaluated.

7 TOE Evaluated Configuration

7.1 Evaluated Configuration

The TOE is a software and hardware TOE. It is a combination of a particular SOHO or TZ hardware appliance and the SonicOS v6.5.4.4-44n--federal-12n software that is configured in accordance with the Common Criteria Addendum described in Section 6. The following table lists all the instances of the TOE that operate in the evaluated configuration. All listed TOE instances offer the same core functionality but vary in number of processors, physical size, and supported connections.

Appliance Series	Hardware Model	Operational Environment
TZ	TZ 300P	Cavium Octeon III CN7020-800
	TZ 350W	Cavium Octeon III CN7020-800
	TZ 600P	Cavium Octeon III CN7130-1400
SOHO	SOHO 250	Cavium Octeon III CN7020-800
	SOHO 250W	Cavium Octeon III CN7020-800

Table 5 TOE Appliance Series and Models

The underlying platform that comprises the TOE has common hardware characteristics. These differing characteristics effect only non-TSF relevant functionality, such as throughput, processing speed, number and type of connections, and amount of internal storage.

In the evaluated configuration, the devices are placed in "Network Device Protection Profile (NDPP)" mode. "NDPP mode" is a configuration setting.

The SonicWall appliances are designed to filter traffic based on a set of rules created by a system administrator. The audit server provides a platform for sorting and viewing the log files that are produced by the appliance.

7.2 Excluded Functionality

The following features/functionality are excluded from this evaluation:

- Although SonicWall SonicOS Enhanced supports several authentication mechanisms, the following mechanisms are excluded from the evaluated configuration:
  - Remote Authentication Dial-In User Service (RADIUS)
  - Lightweight Directory Access Protocol (LDAP)
  - Active Directory (AD)
  - eDirectory authentication
- Command Line Interface (CLI) (Secure Shell (SSH))
- Hardware Failover
- Real-time Blacklist (Simple Mail Transfer Protocol (SMTP))
- Global Security Client (including Group VPN)
- Global Management System
- SonicPoint
- Voice over IP (VoIP)
- Network Time Protocol (NTP)
- Antivirus
- Application Firewall

8 IT Product Testing

This section describes the testing efforts of the developer and the evaluation team. It is derived from information contained in Evaluation Test Report for SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances, which is not publicly available. The Assurance Activities Report provides an overview of testing and the prescribed assurance activities.

8.1 Developer Testing

No evidence of developer testing is required in the Assurance Activities for this product.

8.2 Evaluation Team Independent Testing

The evaluation team verified the product according the vendor-provided guidance documentation and ran the tests specified in the (FWcPP), (VPNEP), and (IPSEP). The Independent Testing activity is documented in the Assurance Activities Report, which is publicly available, and is not duplicated here. A description of the test configurations and the test tools may be found in Section 4 of that report.

9 Results of the Evaluation

The results of the assurance requirements are generally described in this section and are presented in detail in the proprietary documents: A Detailed Test Report (DTR) and the Evaluation Technical Report (ETR). The reader of this document can assume that activities and work units received a passing verdict.

A verdict for an assurance component is determined by the resulting verdicts assigned to the corresponding evaluator action elements. The evaluation was conducted based upon CC version 3.1 Rev 4 and CEM version 3.1 Rev 4. The evaluation determined the SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances TOE to be Part 2 extended, and meets the SARs contained in the PP. Additionally the evaluator performed the Assurance Activities specified in the (FWcPP), (VPNEP), and (IPSEP).

9.1 Evaluation of Security Target

The evaluation team applied each ASE CEM work unit. The ST evaluation ensured the ST contains a description of the environment in terms of policies and assumptions, a statement of security requirements claimed to be met by the SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances that are consistent with the Common Criteria, and product security function descriptions that support the requirements. Additionally, the evaluator performed an assessment of the Assurance Activities specified in the (FWcPP), (VPNEP), and (IPSEP).

The validators reviewed the work of the evaluation team and found that sufficient evidence and justification was provided by the evaluation team to confirm that the evaluation was conducted in accordance with the requirements of the CEM, and that the conclusion reached by the evaluation team was justified.

9.2 Evaluation of Development Documentation

The evaluation team assessed the design documentation and found it adequate to aid in understanding how the TSF provides the security functions. The design documentation consists of a functional specification contained in the Security Target's TOE Summary Specification. Additionally, the evaluator performed the Assurance Activities specified in the (FWcPP), (VPNEP), and (IPSEP) related to the examination of the information contained in the TOE Summary Specification.

The validators reviewed the work of the evaluation team and found that sufficient evidence and justification was provided by the evaluation team to confirm that the evaluation was conducted in accordance with the Assurance Activities, and that the conclusion reached by the evaluation team was justified.

9.3 Evaluation of Guidance Documents

The evaluation team ensured the adequacy of the user guidance in describing how to use the operational TOE. Additionally, the evaluation team ensured the adequacy of the administrator guidance in describing how to securely administer the TOE. The guides were assessed during the design and testing phases of the evaluation to ensure they were complete. Additionally, the evaluator performed the Assurance Activities specified in the (FWcPP), (VPNEP), and (IPSEP) related to the examination of the information contained in the operational guidance documents.

The validators reviewed the work of the evaluation team and found that sufficient evidence and justification was provided by the evaluation team to confirm that the evaluation was conducted in accordance with the Assurance Activities, and that the conclusion reached by the evaluation team was justified.

9.4 Evaluation of Life Cycle Support Activities

The evaluation team found that the TOE was identified.

The validators reviewed the work of the evaluation team and found that sufficient evidence and justification was provided by the evaluation team to confirm that the evaluation was conducted in accordance with the requirements of the CEM, and that the conclusion reached by the evaluation team was justified.

9.5 Evaluation of Test Documentation and the Test Activity

The evaluation team ran the set of tests specified by the Assurance Activities in the (FWcPP), (VPNEP), and (IPSEP) and recorded the results in a Test Report, summarized in the Evaluation Technical Report and Assurance Activities Report.

The validators reviewed the work of the evaluation team and found that sufficient evidence was provided by the evaluation team to show that the evaluation activities addressed the test activities in the (FWcPP), (VPNEP), and (IPSEP), and that the conclusion reached by the evaluation team was justified.

9.6 Vulnerability Assessment Activity

The evaluation team performed a public search for vulnerabilities between February 20 and 25, 2020, and again on April 14, 2020, and did not discover any issues with the TOE. The evaluators searched for publicly available information at nvd.nist.gov and www.cvedetails.com. The following search terms were used:

- SonicWall SonicOS Enhanced v6.5.4
- SonicWall
- TZ 300P
- TZ 350W
- TZ 600P
- SOHO 250
- SOHO 250W
- SOHO
- TZ
- TLS 1.1
- TLS 1.2
- IPSEC
- HTTPS
- Firewall
- TCP
- UDP
- IPv4
- IPv6
- ICMPv4

- ICMPv6
- VPNGW
- VPN
- IPS
- Cavium Octeon III CN7020-800
- Cavium Octeon III CN7130-1400
- Cavium Octeon

The validators reviewed the work of the evaluation team and found that sufficient evidence and justification was provided by the evaluation team to confirm that the evaluation addressed the vulnerability analysis Assurance Activities in the (FWcPP), (VPNEP), and (IPSEP), and that the conclusion reached by the evaluation team was justified.

9.7 Summary of Evaluation Results

The evaluation team's assessment of the evaluation evidence demonstrates that the claims in the ST are met. Additionally, the evaluation team's test activities also demonstrated the accuracy of the claims in the ST.

The validation team's assessment of the evidence provided by the evaluation team is that it demonstrates that the evaluation team performed the Assurance Activities in the (FWcPP), (VPNEP), and (IPSEP), and correctly verified that the product meets the claims in the ST.

In the evaluated configuration, the devices are placed in “Network Device Protection Profile (NDPP)” mode. “NDPP mode” is a configuration setting.

10 Validator Comments & Recommendations

Administrators are cautioned to pay attention to the configurable options as there are services, protocols and capabilities that are not to be enabled in the evaluated configuration. See the list in section 7.2 in this document. For example, RADIUS, LDAP, Active Directory, NTP are not to be used in the evaluated configuration.

The TOE does not download/update IPS signatures as part of the trusted update process. A subscription to an IPS Service is how the TOE receives these signature updates, as discussed in the AGD. However, the IPS functionality specified in the ST is not dependent on this IPS Service. Generally, a 1-year subscription to the IPS service would be included with the purchase of a TOE; however, that is dependent on the specific purchase agreement.

The only approved software for use in the evaluated configuration is: SonicOS v6.5.4.4-44n--federal-12n software; no versions, either earlier or later, were evaluated.

All other concerns and issues are adequately addressed in other parts of this document.

11 Annexes

Not applicable.

12 Security Target

SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances Security Target, v1.9

13 Glossary

The following definitions are used throughout this document:

- **Common Criteria Testing Laboratory (CCTL).** An IT security evaluation facility accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and approved by the CCEVS Validation Body to conduct Common Criteria-based evaluations.
- **Conformance.** The ability to demonstrate in an unambiguous way that a given implementation is correct with respect to the formal model.
- **Evaluation.** The assessment of an IT product against the Common Criteria using the Common Criteria Evaluation Methodology to determine whether the claims made are justified; or the assessment of a protection profile against the Common Criteria using the Common Evaluation Methodology to determine if the Profile is complete, consistent, technically sound and hence suitable for use as a statement of requirements for one or more TOEs that may be evaluated.
- **Evaluation Evidence.** Any tangible resource (information) required from the sponsor or developer by the evaluator to perform one or more evaluation activities.
- **Feature.** Part of a product that is either included with the product or can be ordered separately.
- **Target of Evaluation (TOE).** A group of IT products configured as an IT system, or an IT product, and associated documentation that is the subject of a security evaluation under the CC.
- **Validation.** The process carried out by the CCEVS Validation Body leading to the issue of a Common Criteria certificate.
- **Validation Body.** A governmental organization responsible for carrying out validation and for overseeing the day-to-day operation of the NIAP Common Criteria Evaluation and Validation Scheme.

14 Bibliography

The Validation Team used the following documents to produce this Validation Report:

1. Common Criteria for Information Technology Security Evaluation - Part 1: Introduction and general model, Version 3.1 Revision 4.
2. Common Criteria for Information Technology Security Evaluation - Part 2: Security functional requirements, Version 3.1 Revision 4.
3. Common Criteria for Information Technology Security Evaluation - Part 3: Security assurance requirements, Version 3.1 Revision 4.
4. Common Evaluation Methodology for Information Technology Security Evaluation, Version 3.1 Revision 4.
5. Collaborative Protection Profile for Stateful Traffic Filter Firewalls (v2.0+Errata 20180314, 14-March-2018) [FWcPP]
6. Network Device Collaborative Protection Profile (NDcPP)/Stateful Traffic Filter Firewall Collaborative Protection Profile (FWcPP) Extended Package VPN Gateway (v2.1, dated 2017-0308) [VPNEP]
7. Network Device Collaborative Protection Profile (NDcPP)/Stateful Traffic Filter Firewall Collaborative Protection Profile (FWcPP) Extended Package for Intrusion Prevention Systems (v2.11, 15-June-2017) [IPSEP]
8. Assurance Activity Report for SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances Version 1.4 April 14, 2020
9. SonicWall® SonicOS 6.5 Common Criteria Addendum version 1.4 April 2020
10. Vulnerability Assessment for SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances Version 1.4 April14, 2020
11. Evaluation Technical Report for SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Version 1.4, April 14, 2020
12. SonicWall SonicOS Enhanced V6.5.4 with VPN and IPS on TZ and SOHO Appliances Security Target (FW-VPNGW-IPS) Version 1.9 April 2020