Trustwave SIEM LP Software and SIEM Operations Edition Security Target

Version 1.12

June 28, 2012

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DOCUMENT INTRODUCTION

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REVISION HISTORY

Rev	Description
1.0	May 21, 2011, Initial release
1.1	May 29, 2011, Addressed vendor comments
1.2	August 3, 2011, Addressed ORs/CRs from the ST evaluation
1.3	August 23, 2011, addressed ORs/CRs from the ST evaluation
1.4	September 19, 2011, Addressed ORs/CRs from the ST evaluation
1.5	October 4, 2011, Addressed ORs/CRs from the ST evaluation
1.6	December 7, 2011, FSP consistency
1.7	December 16, 2011, changed the TOE versions
1.8	February 22, 2012, changes for test consistency
1.9	February 25, 2012, additional changes for SIEM OE 5.9
1.10	April 10, 2012, added HF5 and HF6 to the SIEM OE and SP10 to SIEM LP evaluated versions
1.11	April 13, 2012, corrected SIEM LP build number and added report information
1.12	June 28, 2012, Added another guidance document to the TOE boundary

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ACRONYMS LIST

CC ..... **Common Criteria**
CCEVS ..... **Common Criteria Evaluation and Validation Scheme**
DA ..... **Data Acquisition**
DBMS ..... **DataBase Management System**
EAL ..... **Evaluation Assurance Level**
FTP ..... **File Transfer Protocol**
GUI ..... **Graphical User Interface**
IDS ..... **Intrusion Detection System**
IP ..... **Internet Protocol**
IPS ..... **Intrusion Prevention System**
IT ..... **Information Technology**
I&A ..... **Identification & Authentication**
JDBC ..... **Java DataBase Connectivity**
NIAP ..... **National Information Assurance Partnership**
OE ..... **Operations Edition**
OID ..... **Object IDentifier**
PC ..... **Personal Computer**
PP ..... **Protection Profile**
RHEL ..... **Red Hat Enterprise Linux**
SAR ..... **Security Assurance Requirement**
SCP ..... **Secure CoPy**
SDW ..... **Secure Data Warehouse**
SFR ..... **Security Functional Requirement**
SIEM ..... **Security Information and Event Management**
SNMP ..... **Simple Network Management Protocol**
SOC ..... **Security Operations Center**
ST ..... **Security Target**
TD ..... **Threat Detector**
TE ..... **Threat Evaluator**
TOE ..... **Target of Evaluation**
TSF ..... **TOE Security Function**
UDP ..... **User Datagram protocol**
URL ..... **Uniform Resource Locator**

1. Security Target Introduction

This Security Target (ST) describes the objectives, requirements and rationale for the Trustwave SIEM LP Software and SIEM Operations Edition. The language used in this Security Target is consistent with the *Common Criteria for Information Technology Security Evaluation, Version 3.1, Revision 3*. As such, the spelling of terms is presented using the internationally accepted English.

1.1 Security Target Reference

Trustwave SIEM LP Software and SIEM Operations Edition Security Target, Version 1.12, dated June 28, 2012

1.2 TOE Reference

Trustwave SIEM Operations Edition Version 5.9.0 (Build 44 with Hotfixes 1-6), and SIEM LP Software Version 1.2.1 (Build 269 with SP-10and DM-7).

1.3 Evaluation Assurance Level

Assurance claims conform to EAL3 (Evaluation Assurance Level 3) augmented by ALC_FLR.2 from the *Common Criteria for Information Technology Security Evaluation*, Version 3.1 Revision 3.

1.4 Keywords

Security information and event management, SIEM, security information management, SIM, threats, risk, collection, analysis, correlation.

1.5 TOE Overview

1.5.1 Usage and Major Security Features

Trustwave Security Information and Event Management Operations Edition (SIEM OE) and SIEM LP are separate products that may be operated as stand-alone products or in cooperation with one another. In this evaluation, the products are operating in cooperation with one another.

1.5.1.1 SIEM OE

SIEM OE is a comprehensive security information solution that monitors security information according to configured criteria. Users may:

- Monitor and investigate events generated by third party devices and alerts generated according to configured rules. These third party devices may include Intrusion Detection System (IDS)/Intrusion Prevention System (IPS) sensors and/or scanners, firewalls, servers, or other types of systems capable of sending security information to the TOE.
- Generate reports
- Monitor alert information
- Configure alert monitoring, escalation and correlation information

These tasks are performed using the SIEM OE Consoles (Administration or Operations) and related web applications. Tasks that can be performed with the Operations Console are:

- View alerts assigned to the logged-on user

- View correlated alerts
- View primary and secondary alerts
- Take ownership of alerts
- View alert details
- View raw log details
- Visually analyze detailed alert and event information graphically
- Monitor system health
- Monitor reporting device status
- Open incidents (this functionality is not included in the evaluation)

The Administration Console provides all of the functionality of the Operations Console, and also permits configuration of:

- Alert actions
- Event correlation criteria
- Event escalation criteria
- Rules for processing events
- Users and groups
- Assets and asset groups

The Web Applications available to users via the Operations Console include:

- Security Manager Reports — generate compliance, control, event and alert reports.
- Event View — monitor and investigate events.
- Log View — monitor raw log file information.
- Visual Analysis — analyze groups of events graphically, to explore and uncover hidden relationships.

The Administration Console provides access to these additional web applications:

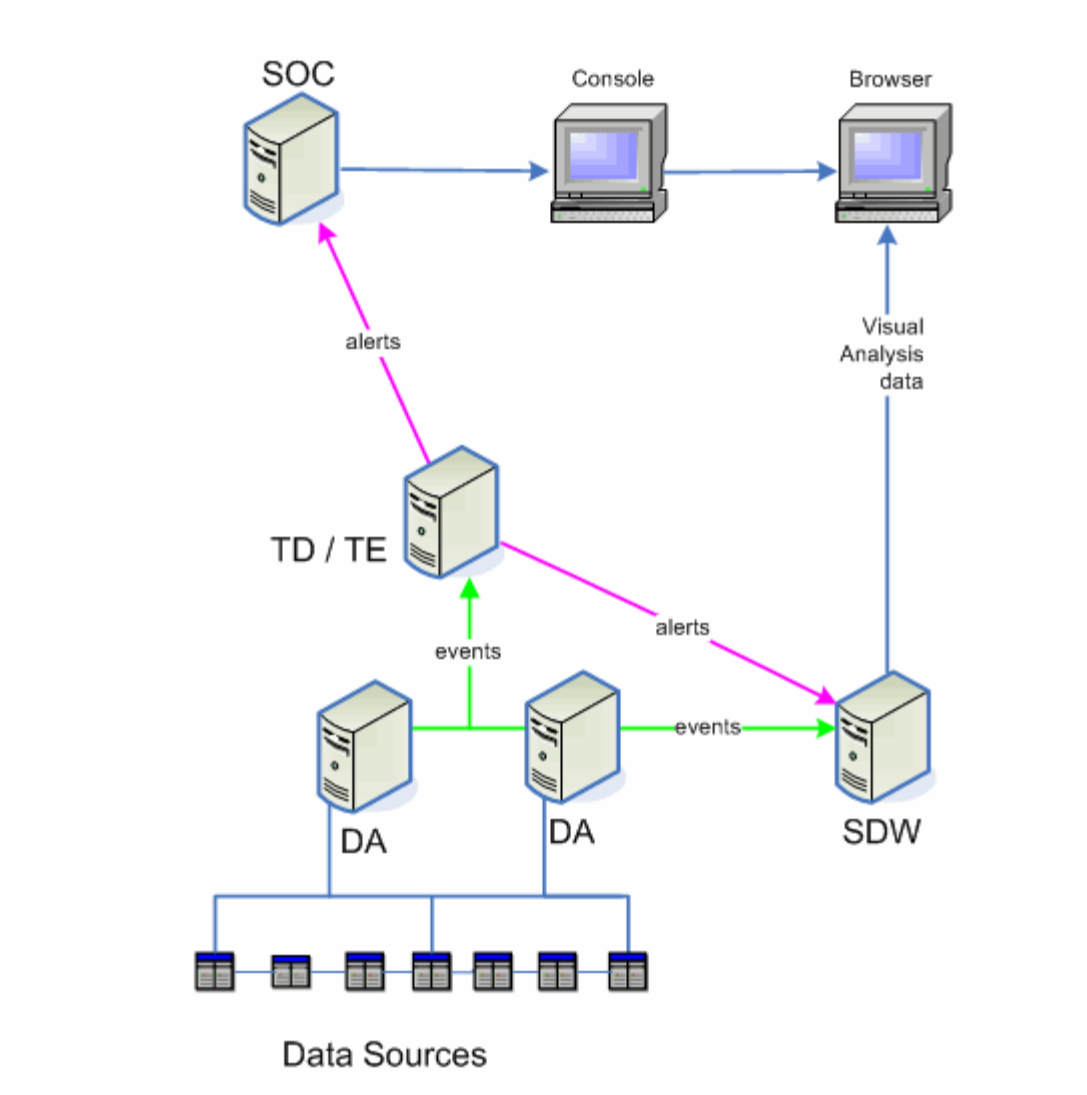
- Event ID Manager — edit, import and export taxonomy information.
- List Manager — add alert items to lists that are referenced by correlations.
- Asset/Zone Manager — configure the properties of networks, contacts, assets and asset groups.
- Data Export — export event data to external files. This functionality is not included in the evaluation.

A typical SIEM OE installation consists of the following components:

- One or more Data Acquisition (DA) components that receive information from third party devices or SIEM appliances

- One Security Data Warehouse (SDW) component is responsible for packaging alerts and preparing report and Visual Analysis data for review in a browser window
- One each Threat Detector (TD) and Threat Evaluator (TE) components are responsible for collecting data, applying correlation rules to alerts, and sending them to the SOC server. In environments with a high volume of security information, additional TD and/or TE instances may be deployed.
- One Security Operations Center (SOC) component, which is responsible for presentation of alerts on Administration and Operations Consoles
- One or more Administration and/or Operations Consoles on one or more Windows PCs

Figure 1 - Representative SIEM OE Deployment



Data Acquisition Servers

Data Acquisition (DA) servers are collectors that receive information from security data sources. They are responsible for inbox monitoring, event filtering and output of event information.

Security Data Warehouse Server

The Security Data Warehouse (SDW) server stores the raw and processed events received from the Data Acquisition (DA) servers, as well as the alerts that are generated by the Threat Detector (TD) and Threat Evaluator (TE) servers, and all SIEM OE configuration.

The SIEM OE database resides on the SDW server. It is a MySQL database that is installed automatically during the SIEM OE installation.

Threat Detector and Threat Evaluator Servers

The Threat Detector (TD) and Threat Evaluator (TE) servers collect information from the DA servers and apply correlation rules to events and alerts. The collected information is then routed to the SOC server.

Security Operations Center Server

The Security Operations Center server (SOC) collects information from the Threat Detector (TD) and Threat Evaluator (TE) servers and populates the alert routing tables. The alert information is then presented to the user on the Administration or Operations Consoles.

Administration or Operations Consoles

Consoles provide the user interface to SIEM OE. These Consoles can be installed on many computers throughout a network, so that multiple users can have access to SIEM OE. The Administration Console provides access to Trustwave administrative functions. The Operations Console provides more restricted access to operator functions such as reviewing Events and Alerts.

Incident Management

The optional Incident Management web application manages trouble tickets generated by SIEM OE as incidents are detected. Since users may choose to send trouble tickets to third party incident management products instead, this functionality is not included in the evaluation.

1.5.1.2 SIEM LP Software

SIEM LP is a family of logging and event management appliances. SIEM LP appliances work together or stand alone to collect, store, search and report on logs and events. SIEM LP Software is the software added to the hardened Linux kernel on the appliance to perform the custom functions specific to SIEM functionality. SIEM LP Software collects information from third party devices, analyzes that information locally, and forwards the data upstream to a SIEM OE Data Acquisition server. In this mode SIEM LP appliances are between the third party devices and the DA components of SIEM OE.

SIEM LP Software provides a web server for user access via remote web browsers. Browser sessions are used to control and monitor the SIEM LP Software (limited to Administrators) and for analysis of security information (available to Administrators and Users). The security information available for review is limited to the information received by each SIEM LP Software instance or information it generated (e.g. Alerts or local audit records).

SIEM LP Software may forward security information that it receives to third party systems. This functionality is not evaluated.

SIEM LP appliances support a high availability configuration. This configuration is not included in the evaluation.

Trustwave SIEM solutions include other models, LA and XL, which provide a subset of the LP functionality. These models are not included in the evaluation.

1.5.2 TOE Type

IDS Analyzer

1.5.3 Required Non-TOE Hardware/Software/Firmware

The TOE consists of software executing on multiple platforms. The dependencies for each of the software components are described in subsequent paragraphs.

SIEM OE server components must be installed on one or more dedicated servers meeting the minimum requirements in the following table. Distribution of the components across multiple platforms provides higher performance and processing power for large installation, but the security functionality is equivalent for any installation scenario. If multiple components are installed on a single server, the maximum requirement for any installed components from the following table should be used.

Table 1 - SIEM OE Minimum Hardware/Software Requirements

Item	Requirements
Operating System	Red Hat Enterprise Linux (RHEL) 5, or AS 4/ES 4 (Update 4 or Update 5), 32 bit/64 bit The minimal RPMs required are specified in *RPMs for Minimal Install*
Processors	Two single-core processors or a single dual-core processor, 3.0 GHz CPU or higher
Memory	SDW: 8G recommended for both 32-bit and 64-bit install DA, TD/TE, and SOC: 4G recommended for 32-bit install and 6G recommended for 64-bit install
Hard Disk Free Space	20GB for /opt 150GB for /var
Other Hardware	533 MHz front-side bus SCSI drive
Other Software (installed automatically during the SIEM OE installation)	MySQL J2SDK 1.5.0_09 Apache Web Server (SOC only) syslog-ng (DA only) A complete list of required software can be found in *Trustwave SIEM Operations Edition Installation Guide 5.7*.

Administration and Operations Consoles must be installed on Windows PCs meeting the minimum requirements in the following table. Any number of Consoles may be installed, the only caveat being that at least one Administration Console must be installed in order to manage the TOE. Administration Consoles and Operations Consoles cannot both be installed on the same PC.

Table 2 - Console Minimum Hardware/Software Requirements

Item	Requirements
Operating System	Microsoft Windows XP SP3 or Windows 7
Processors	3GHz CPU Intel Pentium 4 or AMD Athlon XP
Memory	2GB
Hard Disk Free Space	1GB
Other Hardware	Display driver capable of 24 bit color at 1024x768
Browser	Internet Explorer 6.0, Internet Explorer 7.0, Internet Explorer 8.0, or Mozilla Firefox 2 to 3.0.19 with pop-up blocker tools disabled and the following functionality enabled: • Cookies • Java • JavaScript • ActiveX

SIEM LP Software is installed on hardened Linux servers. The operating system and SIEM LP Software are pre-installed on appliances supplied by Trustwave. SIEM LP Software is available on multiple models; all models have equivalent security functionality. The only differences involve processing power and storage capacity, which facilitate processing differing amounts of security information from third party devices. The following appliance choices are supported.

Table 3 - SIEM Appliances

Model HW Item	LP1	LP2	LP3	LP4	LP5
CPU(s)	Intel Quad-core Xeon E5630 2.53Ghz	Intel Hexa-core Xeon X5650, 2.66Ghz	Intel Hexa-core Xeon X5650, 2.66Ghz	Dual Intel Hexa-core Xeon X5650, 2.66Ghz	Dual Intel Hexa-core Xeon X5650, 2.66Ghz
RAM	8GB	12GB	16GB	24GB	48GB
Disk	1T / RAID 5	2T / RAID 5	4T / RAID 5	6T / RAID 5	12T / RAID 5
RAID with battery backup	PERC 6/i with 256MB battery-backed cache				
NIC	Two dual-port embedded Broadcom® NetXtreme IITM 5709c Gigabit Ethernet NIC with failover and load balancing				
Software	The following software is pre-installed on the appliance by the vendor: Linux, MySQL, Tomcat, snmpd, ldap, ntpd, Syslog-ng, java.				

The TOE components communicate with one another via a segregated management network to prevent disclosure or modification of the data exchanged between TOE components. It is the responsibility of the operational environment to protect the traffic on the management network from other (non-TOE) devices.

Two physical interfaces are supported on the SIEM LP appliances. For these TOE components, one interface (used to receive security information from third-party devices) is attached to the Enterprise Network and the other (used to communicate with other TOE components) is attached to the management network.

Third party devices supply security information to TOE components; this information may be sent to SIEM LP components (on their Enterprise Network interface) or to SIEM OE Data Acquisition (DA) servers. This traffic is limited to one-way UDP traffic from the third party devices to those TOE components. If the security information is sent to a SIEM OE DA interface connected to the management network, at least one router must interconnect the management network with the Enterprise Network. Any routers performing this function must be configured so that one-way UDP security information from the third party devices is permitted to flow from the Enterprise Network to the SIEM OE DA interfaces on the management network. No other traffic between devices connected to the management network and devices in the Enterprise Network is required by the TOE and should be blocked by the router.

1.6 TOE Description

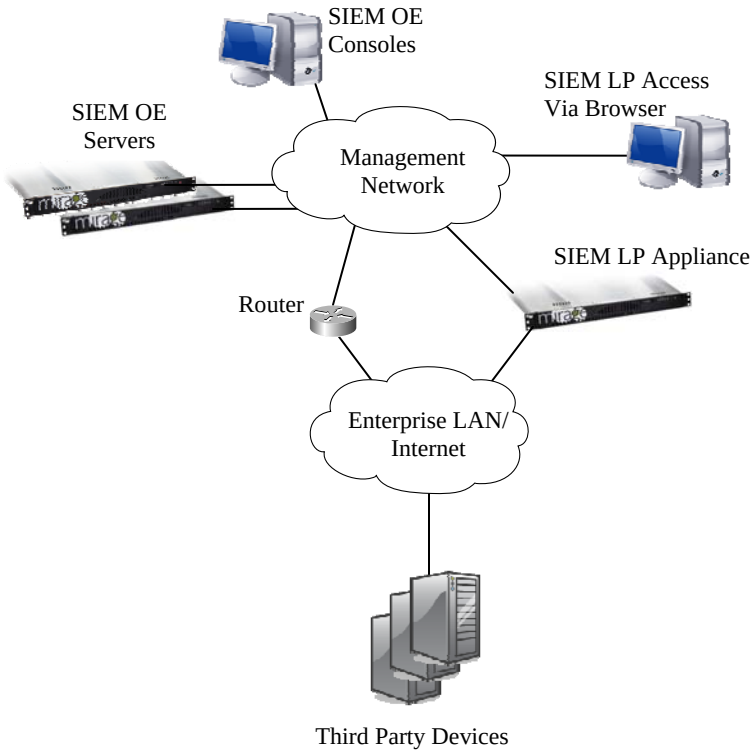
The TOE provides Security Information and Event Management (SIEM) functionality to normalize and correlate security information received from third party security devices and generate alerts for configured conditions. These third party security devices may include IDS/IPS sensors and/or scanners, firewalls, servers, or other types of systems capable of sending security information to the TOE. The TOE consists of software only.

SIEM OE server components are installed on one or more dedicated Red Hat Linux servers; SIEM OE Consoles are installed on one or more Windows systems.

SIEM LP Software is pre-installed on appliances by Trustwave. Each instance is installed on a dedicated appliance.

A typical deployment for these components is shown in the following diagram.

Figure 2 - Typical TOE Deployment



1.6.1 Physical Boundary

The physical boundary of the TOE is depicted in the following diagram (shaded items are within the TOE boundary).

Figure 3 - Physical Boundary

SIEM LP Appliance	SIEM OE Server	SIEM OE Console
SIEM LP Applications and Services	SIEM OE SOC, TD, TE, DA, and/or SDW Applications and Services	SIEM OE Administration and/or Operations Console Applications
MySQL, Apache Tomcat, snmpd, ldap, ntpd, Syslog-ng, J2RE	MySQL, Apache Tomcat, Syslog-ng, J2SDK	Internet Explorer or Mozilla, J2RE
Linux	Red Hat Enterprise Linux	Microsoft Windows
Hardware	Hardware	Hardware

The physical boundary of the TOE includes the services and applications distributed by Trustwave to perform the SIEM-specific functions described in this document.

The hardware, operating system (Linux or Windows), DBMS (MySQL), web server (Apache Tomcat), and Java Virtual Machine are not included in the TOE boundary.

The physical boundary includes the following guidance documentation:

1. *Trustwave SIEM Operations Edition - Installation Guide – Version 5.9*
2. *Trustwave SIEM Operations Edition - Getting Started Guide – Version 5.9*
3. *Trustwave SIEM Operations Edition - Configuration Guide - Version 5.9*
4. *Trustwave SIEM Operations Edition - Administration Guide – Version 5.9*
5. *Trustwave SIEM Operations Edition - Alert Management User Guide - Version 5.9*
6. *Trustwave SIEM Operations Edition - Reporting Guide - Version 5.9*
7. *Trustwave SIEM Administration Guide for LP and XL*
8. *Trustwave SIEM User Guide for LP and XL*
9. *Trustwave SIEM Quick Start Guide*
10. *Trustwave SIEM Administration Guide for LP and XL*
11. *Trustwave SIEM Notifications Guide*
12. *Trustwave SIEM Common Criteria Supplement*

1.6.2 Logical Boundary

1.6.2.1 Audit

Audit records are generated for specific actions performed by users. The audit records are saved and may be reviewed by authorized administrators.

1.6.2.2 Management

The TOE provides functionality for administrators to configure and monitor the operation of the TOE via the Consoles and web browser sessions. The following administrator roles are supported on SIEM OE: Administrators, Security_admins, Analysts, Operators and Everyone. On SIEM LP Software, Administrators (members of the Administrators group) and Users (members of the Public group).

1.6.2.3 Security Information and Event Management (SIEM)

The TOE receives and normalizes security information and event messages from remote security devices. This information is received by the SIEM LP Software and/or Data Acquisition components of SIEM OE via real-time feeds (e.g. syslog) or files. The received information is correlated and analyzed by SIEM LP Software and/or SIEM OE to determine if any alerts should be generated.

Users may perform analysis against the saved information via the Consoles and web sessions.

1.6.2.4 I&A

The TOE identifies and authenticates users of Consoles and web sessions before they are granted access to any TSF functions or data. When valid credentials are presented, security attributes for the user are bound to the session.

Syslog feeds from remote security devices may be received without I&A.

1.6.3 TOE Data

The following table describes the TOE data for SIEM OE.

Table 4 - SIEM OE TOE Data Descriptions

TOE Data	Description
Alerts	Alerts are the results of analysis of the Events. Attributes include: • Type of Alert • Owner • Associated Events
Asset Groups	Define groups of Assets with similar attributes. Asset Group attributes include: • Name • Description • Member Assets • Associated Zones
Assets	Define physical resources, such as servers or workstations, which may be the subject of security information sent to the TOE. Asset attributes include: • IP address • Hostname • Operational Risk • Compliance Risk • Contact • Zone • Location • Hardware/Software Details
Contacts	Define contact information that is associated with Assets or Zones. Contact attributes include: • Name • Title • Phone Number • Email Address • Cell Phone Number
Data Partitioning	Defines whether data partitioning is enabled.
Domain	Each SIEM OE instance is assigned a name. This name refers collectively to the TOE server components that are part of the instance.
Events	Events are the parsed and normalized form of the security information received from remote security devices.

TOE Data	Description
Graph Permissions	Define the User Accounts and/or Group Accounts authorized to access each Graph. For each account, the Graph Permission may be configured as for any or all of the following: • View the graph, • Add operators, edges, and nodes, • Delete operators, edges, and nodes, • Modify operators, edges, and nodes, • Modify Graph Permissions
Graphs	Define views that are used to display Events and/or Analyzer Data. The information included on each Graph may be configured by accounts with the Add, Delete, or Modify permission for the Graph.
Group Accounts	Define the set of Groups that are used to assign access permissions to users. Per the evaluated configuration, the default Group Accounts are used.
Inbox Status Settings	Defines status parameters for devices sending data to the TOE via an inbox, including: • Name of the inbox used to receive data • Maximum latency time for receipt of data from each device using the inbox
Networks	Define networks to assist in associating security information with an Asset when IP addresses are not unique, such as MSSP environments. Network attributes include: • Name • Detector IP address or hostname • DA IP address or hostname • Acquiring IP address or hostname • Associated Assets and/or Asset Groups
Report Permissions	Define what Group Accounts have access to the interactions to generate Reports.
Reports	Published Reports that may be viewed via the Report Server.
Rules	Define the analysis of Events for correlation and alert generation. Attributes include: • Correlation parameters • Alert triggers • Alert notifications
System Latency Settings	Define the maximum time allowed for receipt of data from each source before an Alert is generated, and whether Alert generation for this condition is enabled.

TOE Data	Description
User Accounts	Define the set of users that are authorized to use the TOE, with the following attributes: • User Name • Password • Enabled • Full Name • Title • Email Address • Homepage • Description • Account Expiry Date (or Never) • User Is Allowed To Change Password • Group Account Memberships
Zones	Define a logical grouping of Networks (and through them Assets) used to implement data partitioning. Zone attributes include: • Name • Description • Associated Networks

The following table describes the TOE data for SIEM LP Software.

Table 5 - SIEM LP Software TOE Data Descriptions

TOE Data	Description
Alarm Setup	Define the setup for Alarms that are generated. Attributes include: • Email parameters (enabled, server, credentials, applicable types, recipients) • SNMP parameters (enabled, applicable types, server, version) • Alarm Categories (associated Event, name, message text, and severity) • Alarm Actions (protocols and servers for sending an Alarm to multiple destinations) • Email Groups (set of email addresses)
Alarms	Alarms indicate the occurrence of configured conditions detected about the SIEM LP Software or appliance. Attributes include: • Unique ID • Application (source) • State (Unacked, Acked or Cleared) • Message • Category • Severity • Time stamp • Workstation

TOE Data	Description
Asset Groups	Define groups of Assets with similar attributes. Asset Group attributes include: • Name • IP address mask/range • Zone name • Network name • Contact • Location • Hardware/Software Details • Description
Assets	Define physical resources, such as servers or workstations, which may be the subject of security information sent to the TOE. Asset attributes include: • IP address • Hostname • Zone name • Network name • Contact • Location • Hardware/Software Details
Contacts	Define contact information that is associated with Assets or Zones. Contact attributes include: • Name • Title • Phone Number • Email Address • Cell Phone Number
Dashboards	Define one or more charts containing summary or statistical data. Attributes include: • Public or private • Owner • Refresh interval • Charts included
Devices	Define vendor device types which may provide security information to the TOE. A single Device may have multiple instances configured if more than one protocol may be used to transfer security information. Some Device types have type-specific attributes. Attributes include: • Whether security information receipt is enabled • Normalization parameters (raw log or full parsing (must be full), timezone setting, priority mappings, priority filtering) • Acquisition parameters (type (Syslog, SNMP, JDBC, SCP, FTP, or adapters), listening port, filters, credentials) • Whether security information for the Device is forwarded to SIEM OE • Data expiry values

TOE Data	Description
Email and SNMP Configuration	Define the parameters for Email and SNMP servers used when sending report status, report results or Notifications. Attributes include: • Server addresses and ports • Email recipient address • SNMP version • OID
Events	Events are the parsed and normalized form of the security information received from remote security devices.
Networks	Define networks to assist in associating security information with an Asset when IP addresses are not unique. Network attributes include: • Name • Detector IP address or hostname • Acquiring IP address or hostname • Associated Assets and/or Asset Groups
Notifications	Define the analysis of Events for correlation and Email or SNMP message generation. Attributes include: • Send a message via Email or SNMP • Type-specific parameters to trigger the Notification • Filters to exclude Events • Whether the Notification is enabled
Scheduled Reports	Define the Reports that are scheduled to be run. Attributes include: • Time submitted • Report type • Name • Frequency • Status (enabled or not) • Filter criteria
Upstream Data Transfer Parameters	Define the parameters used to forward security information from third party security devices to SIEM OE. Attributes include: • Whether Events are consolidated when forwarded (must be No) • Transmission Method (must be Push Without Acknowledgement) • Syslog Forwarding (must be Full) • SIEM OE DA Address
User Accounts	Define the set of users that are authorized to use the TOE, with the following attributes: • User Name • Password • Enabled • Full Name • Group memberships • Assigned Devices • Assigned Zones • Title • Email Address

TOE Data	Description
Zones	Define a logical grouping of Networks used to implement data partitioning. Zone attributes include: • Name • Description • Associated Networks

1.7 Evaluated Configuration

The evaluated configuration of the TOE includes:

1. SOC – 1 instance
2. SDW – 1 instance
3. TD – 1 or more instances
4. TE – 1 or more instances
5. DA – 1 or more instances
6. Administration Console – 1 or more instances
7. Operations Console – 0 or more instances
8. SIEM LP Software – 1 or more instances, each installed on a dedicated appliance

The SIEM OE server components may be installed on a common server or on separate servers.

SIEM LP Software instances are configured to forward information to SIEM OE.

The following configuration restrictions apply to the evaluated configuration:

1. The administrator configures the Linux servers hosting SIEM OE components as specified in Chapter 13, "Securing the Servers in Your Environment", of the *Trustwave SIEM Operations Edition Administration Guide*.
2. SIEM LP Software instances are configured to push security information received from third party security devices to SIEM OE.
3. The default SIEM OE Group Accounts and their default permission sets are used to assign access permissions to users.
4. Non-administrators in SIEM OE are not permitted to change their own password.
5. Data expiry on the DA is disabled (this is the default behavior).
6. Integration of external URLs with the SIEM OE context menus is not configured.
7. SIEM LP instances are configured to generate an alarm for the Resources Error Alarm category, in order to provide an alarm when the file system fills up and audit or analyzer data must be discarded. Trustwave recommends that the Resources Warning Alarm category is also configured to generate an alarm.
8. In SIEM OE, advanced attribute parameters for configuration objects are only modified with the assistance of Trustwave personnel.

9. The Graph operators and elements in SIEM OE are only modified with the assistance of Trustwave personnel.
10. On SIEM OE, data expiry is configured and enabled on the DA and SDW components during installation.
11. On systems hosting SIEM OE server components, the iptables firewall is configured to reject incoming traffic to any ports not required for TOE functions.
12. On SIEM OE, the Health Manager is configured to monitor the filesystems of all the systems hosting TOE server components. SNMP traps messages are configured to be sent when any file system is full.
13. On SIEM OE, the configuration of the composition rules for passwords is not modified from the factory default.
14. On SIEM OE, access to the following Reports bookmarks on the Security Reports Manager Navigation Pane is restricted to the administrators Group Account: Report Requests, SM User Access and Authorization, Security Manager Activity, Security Manager Activity by Account, Security Manager Activity by Type, All SM Activity, All SM Activity by Account, and All SM Activity by Type.

2. Conformance Claims

2.1 Common Criteria Conformance

Common Criteria version: Version 3.1 Revision 3, dated July 2009

Common Criteria conformance: Part 2 extended and Part 3 conformant

2.2 Security Requirement Package Conformance

EAL3 augmented by ALC_FLR.2

The TOE does not claim conformance to any security functional requirement packages.

2.3 Protection Profile Conformance

The TOE claims demonstrable conformance to the U.S. Government Protection Profile Intrusion Detection System Analyzer For Basic Robustness Environments, version 1.3, dated July 25, 2007.

3. Security Problem Definition

3.1 Introduction

This chapter defines the nature and scope of the security needs to be addressed by the TOE. Specifically this chapter identifies:

A) assumptions about the environment,

B) threats to the assets and

C) organisational security policies.

This chapter identifies assumptions as A.*assumption,* threats as T.*threat* and policies as P.*policy*.

3.2 Assumptions

The specific conditions listed in the following subsections are assumed to exist in the Operational Environment.

Table 6 - Assumptions

A.Type	Description
A.ACCESS	The TOE has access to all the IT System resources necessary to perform its functions.
A.LOCATE	The processing resources of the TOE will be located within controlled access facilities, which will prevent unauthorized physical access.
A.MANAGE	There will be one or more competent individuals assigned to manage the TOE and the security of the information it contains.
A.MGMTNETWORK	The TOE components will be interconnected by a segregated management network that protects the intra-TOE traffic from disclosure to or modification by untrusted systems or users, and limits traffic from the enterprise network entering the management network to security information from third party security devices being sent via UDP to the DA components of the TOE.
A.NOEVIL	The authorized administrators are not careless, willfully negligent, or hostile, and will follow and abide by the instructions provided by the TOE documentation.
A.NOTRST	The TOE can only be accessed by authorized users.
A.PROTCT	The TOE hardware and software critical to security policy enforcement will be protected from unauthorized physical modification.

3.3 Threats

The threats identified in the following table are addressed by the TOE and the Operational Environment.

Table 7 - Threats

T.Type	Description
T.COMDIS	An unauthorized person may attempt to disclose the data analyzed and produced by the TOE by bypassing a security mechanism.
T.COMINT	An unauthorized person may attempt to compromise the integrity of the data analyzed and produced by the TOE by bypassing a security mechanism.
T.FALACT	The TOE may fail to react to identified or suspected vulnerabilities or inappropriate activity.

T.Type	Description
T.FALASC	The TOE may fail to identify vulnerabilities or inappropriate activity based on association of IDS data received from all data sources.
T.FALREC	The TOE may fail to recognize vulnerabilities or inappropriate activity based on IDS data received from each data source.
T.IMPCON	The TOE may be susceptible to improper configuration by an authorized or unauthorized person causing potential intrusions to go undetected.
T.INFLUX	An unauthorized user may cause malfunction of the TOE by creating an influx of data that the TOE cannot handle.
T.LOSSOF	An unauthorized person may attempt to remove or destroy data analyzed and produced by the TOE.
T.NOHALT	An unauthorized person may attempt to compromise the continuity of the TOE's analysis functionality by halting execution of the TOE.
T.PRIVIL	An unauthorized user may gain access to the TOE and exploit system privileges to gain access to TOE security functions and data.

3.4 Organisational Security Policies

The Organisational Security Policies identified in the following table are addressed by the TOE and the Operational Environment.

Table 8 - Organisational Security Policies

P.Type	Description
P.ACCACT	Users of the TOE shall be accountable for their actions within the IDS.
P.ACCESS	All data analyzed and generated by the TOE shall only be used for authorized purposes.
P.ANALYZ	Analytical processes and information to derive conclusions about intrusions (past, present, or future) must be applied to IDS data and appropriate response actions taken.
P.DETECT	Static configuration information that might be indicative of the potential for a future intrusion or the occurrence of a past intrusion of an IT System must be collected.
P.INTGTY	Data analyzed and generated by the TOE shall be protected from modification.
P.MANAGE	The TOE shall only be managed by authorized users.
P.PROTCT	The TOE shall be protected from unauthorized accesses and disruptions of analysis and response activities.

4. Security Objectives

This section identifies the security objectives of the TOE and the TOE's Operational Environment. The security objectives identify the responsibilities of the TOE and the TOE's Operational Environment in meeting the security needs. Objectives of the TOE are identified as *O.objective*. Objectives that apply to the operational environment are designated as *OE.objective*.

4.1 Security Objectives for the TOE

The TOE must satisfy the following objectives.

Table 9 - Security Objectives for the TOE

O.Type	Description
O.ACCESS	The TOE must allow authorized users to access only appropriate TOE functions and data.
O.AUDITS	The TOE must record audit records for data accesses and use of the Analyzer functions.
O.EADMIN	The TOE must include a set of functions that allow effective management of its functions and data.
O.IDACTS	The Analyzer must accept data from IDS Sensors or IDS Scanners and then apply analytical processes and information to derive conclusions about intrusions (past, present, or future).
O.IDAUTH	The TOE must be able to identify and authenticate authorized users prior to allowing access to TOE functions and data.
O.INTEGR	The TOE must ensure the integrity of all audit and Analyzer data.
O.OFLOWS	The TOE must appropriately handle potential audit and Analyzer data storage overflows.
O.PROTCT	The TOE must protect itself from unauthorized modifications and access to its functions and data.
O.RESPON	The TOE must respond appropriately to analytical conclusions.

4.2 Security Objectives for the Operational Environment

The TOE's operational environment must satisfy the following objectives.

Table 10 - Security Objectives of the Operational Environment

OE.Type	Description
OE.AUDIT_PROTECTION	The IT Environment will provide the capability to protect audit information.
OE.AUDIT_SORT	The IT Environment will provide the capability to sort the audit information.
OE.CREDEN	Those responsible for the TOE must ensure that all access credentials are protected by the users in a manner which is consistent with IT security.
OE.INSTAL	Those responsible for the TOE must ensure that the TOE is delivered, installed, managed, and operated in a manner which is consistent with IT security.
OE.INTROP	The TOE is interoperable with the IT System it monitors and other IDS components within its IDS.

OE.Type	Description
OE.MGMTNETWORK	The operational environment will provide a segregated management network interconnecting the TOE components that protects the intra-TOE traffic from disclosure to or modification by untrusted systems or users, and limits traffic from the enterprise network entering the management network to security information from third party security devices being sent via UDP to the DA components of the TOE.
OE.PERSON	Personnel working as authorized administrators shall be carefully selected and trained for proper operation of the Analyzer.
OE.PHYCAL	Those responsible for the TOE must ensure that those parts of the TOE critical to security policy are protected from any physical attack.
OE.TIME	The IT Environment will provide reliable timestamps to the TOE.

5. Extended Components Definition

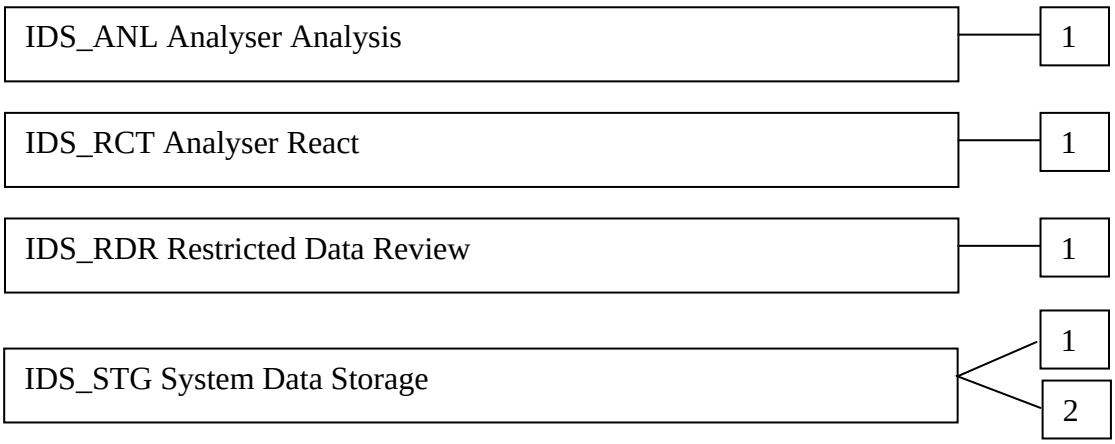
5.1 Extended Security Functional Components

5.1.1 Class IDS: Intrusion Detection

All of the components in this section are taken directly from the U.S. Government Protection Profile Intrusion Detection System Analyzer For Basic Robustness Environments.

This class of requirements is taken from the IDS Analyzer PP to specifically address the data analysed by an IDS analyzer. The audit class of the CC (FAU) was used as a model for creating these requirements. The purpose of this class of requirements is to address the unique nature of analyser data and provide for requirements about analyzing, reviewing and managing the data.

Application Note: The PP does not provide hierarchy and dependency information for the extended SFRs defined in the PP. This information has been derived from the model SFRs referenced by the PP.

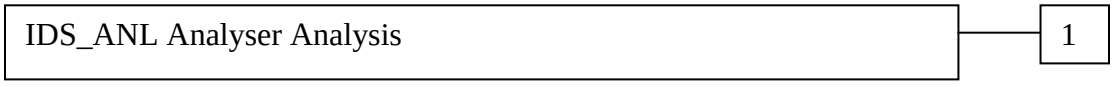


5.1.1.1 IDS_ANL Analyser Analysis

Family Behaviour:

This family defines the requirements for the TOE regarding analysis of information related to security events received from remote IT systems.

Component Levelling:



IDS_ANL.1 Analyser Analysis provides for the functionality to require TSF controlled analysis of data received from remote IT systems regarding information related to security events.

Management:

The following actions could be considered for the management functions in FMT:

a) Configuration of the analysis to be performed.

Audit:

There are no auditable events foreseen.

IDS_ANL.1 Analyser Analysis

Hierarchical to: No other components.

Dependencies: None

IDS_ANL.1.1 The TSF shall perform the following analysis function(s) on all IDS data received:

a) **[selection: *statistical, signature, integrity*]; and**

b) **[assignment: *other analytical functions*].**

Application Note: Statistical analysis involves identifying deviations from normal patterns of behaviour. For example, it may involve mean frequencies and measures of variability to identify abnormal usage. Signature analysis involves the use of patterns corresponding to known attacks or misuses of a system. For example, patterns of system settings and user activity can be compared against a database of known attacks. Integrity analysis involves comparing system settings or user activity at some point in time with those of another point in time to detect differences.

IDS_ANL.1.2 The TSF shall record within each analytical result at least the following information:

a) **Date and time of the result, type of result, identification of data source; and**

b) **[assignment: *other security relevant information about the result*].**

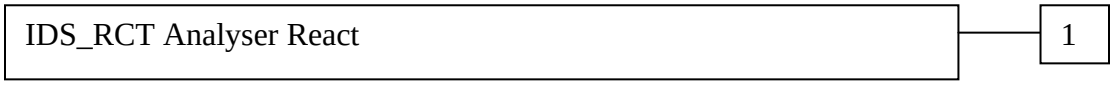
Application Note: The analytical conclusions drawn by the analyser should both describe the conclusion and identify the information used to reach the conclusion.

5.1.1.2 IDS_RCT Analyser React

Family Behaviour:

This family defines the requirements for the TOE regarding reactions to the analysis of information related to security events received from remote IT systems when an intrusion is detected.

Component Levelling:



IDS_RCT.1 Analyser React provides for the functionality to require TSF controlled reaction to the analysis of data received from remote IT systems regarding information related to security events when an intrusion is detected.

Management:

The following actions could be considered for the management functions in FMT:

a) the management (addition, removal, or modification) of actions.

Audit:

There are no auditable events foreseen.

IDS_RCT.1 Analyser React

Hierarchical to: No other components.

Dependencies: IDS_ANL.1 Analyser Analysis

IDS_RCT.1.1 The TSF shall send an alarm to [assignment: *alarm destination*] and take [assignment: *appropriate actions*] when an intrusion is detected.

Application Note: There must be an alarm, though the ST should refine the nature of the alarm and define its target (e.g., administrator console, audit log). The TSF may optionally perform other actions when intrusions are detected; these actions should be defined in the ST. An intrusion in this requirement applies to any conclusions reached by the analyser related to past, present, and future intrusions or intrusion potential.

5.1.1.3 IDS_RDR Restricted Data Review

Family Behaviour:

This family defines the requirements for the TOE regarding review of the analyser data collected by the TOE.

Component Levelling:

IDS_RDR Restricted Data Review	1

IDS_RDR.1 Restricted Data Review provides for the functionality to require TSF controlled review of the analyser data collected by the TOE.

Management:

The following actions could be considered for the management functions in FMT:

a) maintenance (deletion, modification, addition) of the group of users with read access right to the analyser data records.

Audit:

The following actions should be auditable if FAU_GEN Security audit data generation is included in the ST:

a) Basic: Attempts to read analyser data that are denied.

b) Detailed: Reading of information from the analyser data records.

IDS_RDR.1 Restricted Data Review

Hierarchical to: No other components.

Dependencies: IDS_ANL.1 Analyser Analysis

IDS_RDR.1.1 The Analyser shall provide [assignment: *authorised users*] with the capability to read [assignment: *list of Analyser data*] from the Analyser data.

Application Note: This requirement applies to authorised users of the Analyser. The requirement is left open for the writers of the ST to define which authorised users may access what Analyser data.

IDS_RDR.1.2 The Analyser shall provide the Analyser data in a manner suitable for the user to interpret the information.

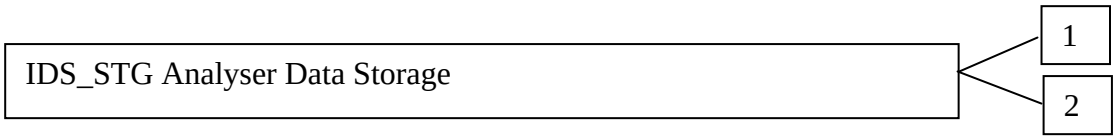
IDS_RDR.1.3 **The Analyser shall prohibit all users read access to the Analyser data, except those users that have been granted explicit read-access.**

5.1.1.4 IDS_STG Analyser Data Storage

Family Behaviour:

This family defines the requirements for the TOE to be able to create and maintain a secure analyser data trail.

Component Levelling:



IDS_STG.1 Guarantee of Analyser Data Availability requires that the analyser data be protected from unauthorised deletion and/or modification and defines the behaviour when specific conditions occur.

IDS_STG.2 Prevention of Analyser Data Loss defines the actions to be taken if the analyser data storage capacity has been reached.

Management: IDS_STG.1

The following actions could be considered for the management functions in FMT:

a) maintenance of the parameters that control the analyser data storage capability.

Management: IDS_STG.2

The following actions could be considered for the management functions in FMT:

a) maintenance (deletion, modification, addition) of actions to be taken in case analyser data storage capacity has been reached.

Audit: IDS_STG.1

There are no auditable events foreseen.

Audit: IDS_STG.2

There are no auditable events foreseen.

IDS_STG.1 Guarantee of Analyser Data Availability

Hierarchical to: No other components.

Dependencies: IDS_ANL.1 Analyser Analysis

IDS_STG.1.1 **The Analyser shall protect the stored Analyser data from unauthorised deletion.**

IDS_ STG.1.2 **The Analyser shall protect the stored Analyser data from modification.**

Application Note: Authorised deletion of data is not considered a modification of Analyser data in this context. This requirement applies to the actual content of the Analyser data, which should be protected from any modifications.

IDS_ STG.1.3 The Analyser shall ensure that [assignment: *metric for saving Analyser data*] Analyser data will be maintained when the following conditions occur: [selection: *Analyser data storage exhaustion, failure, attack*].

Application Note: The ST needs to define the amount of Analyser data that could be lost under the identified scenarios.

IDS_STG.2 Prevention of Analyser data loss

Hierarchical to: No other components.

Dependencies: IDS_ANL.1 Analyser Analysis

IDS_STG.2.1 The Analyser shall [selection: *'ignore Analyser data', 'prevent Analyser data, except those taken by the authorised user with special rights', 'overwrite the oldest stored Analyser data'*] and send an alarm if the storage capacity has been reached.

Application Note: The ST must define what actions the analyser takes if the result log becomes full. Anything that causes the Analyser to stop analysing events may not be the best solution, as this will only affect the Analyser and not the system on which it is analysing data (e.g., shutting down the Analyser).

5.2 Extended Security Assurance Components

None

6. Security Requirements

This section contains the functional requirements that are provided by the TOE. These requirements consist of functional components from Part 2 of the CC.

The CC defines operations on security requirements. The font conventions listed below state the conventions used in this ST to identify the operations.

Assignment: indicated in italics

Selection: indicated in underlined text

Assignments within selections: indicated in italics and underlined text

Refinement: indicated with bold text

Iterations of security functional requirements may be included. If so, iterations are specified at the component level and all elements of the component are repeated. Iterations are identified by numbers in parentheses following the component or element (e.g., FAU_ARP.1(1)).

6.1 TOE Security Functional Requirements

The functional requirements are described in detail in the following subsections. Additionally, these requirements are derived verbatim from Part 2 of the *Common Criteria for Information Technology Security Evaluation* with the exception of completed operations.

6.1.1 Security Audit (FAU)

6.1.1.1 FAU_GEN.1 Audit Data Generation

Refinement Rationale: The specifics of the audit records generated by SIEM OE and SIEM LP Software are different. FAU_GEN.1 is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FAU_GEN.1.1(1) The TSF shall be able to generate an audit record of the following auditable events **involving SIEM OE components**:

a) Start-up and shutdown of the audit functions;

b) All auditable events for the basic level of audit; and

c) *Access to the Analyser and access to the TOE and Analyser data*.

Table 11 - Auditable Events for SIEM OE

SFR	Event	Audit Record	Details
FAU_GEN.1	Start-up and shutdown of audit functions	startup.*component*, where *component* may be: • td for Threat Detector • te for Threat Evaluator • da for Data Acquisition • soc for Security Operations Center • sdw for Security Data Warehouse shutdown.*component*, where *component* may be: • td for Threat Detector	

SFR	Event	Audit Record	Details
		• te for Threat Evaluator • da for Data Acquisition • soc for Security Operations Center • sdw for Security Data Warehouse	
	Access to Analyser	auth.remote.ssl.info	IP address and TCP port, cipher suite name, SSL/TLS protocol type (e.g. TLSv1)
	Access to the TOE Analyser data	infosec.permission.success	URL accessed
		report.query	Names of requested report
FAU_SAR.1	Reading of information from the audit records	infosec.permission.success	URL is /alert/status_sm_audit or /alert/status/sm_audit
FAU_SAR.2	Unsuccessful attempts to read information from the audit records	infosec.permission.deny	URL is /alert/status_sm_audit or /alert/status/sm_audit
FAU_SEL.1	All modifications to the audit configuration that occur while the audit collection functions are operating	conf.auth.rule.*operation*.success, where *operation* is create, modify, or delete	
FIA_UAU.1	All use of the authentication mechanism	conf.auth.login.success conf.auth.login.deny conf.auth.login.lockout	User identity, location
FIA_UID.1	All use of the identification mechanism	conf.auth.login.success conf.auth.login.deny conf.auth.login.lockout	User identity, location
FMT_MOF.1	All modifications in the behaviour of the functions of the TSF	alert.suppress.source/target/etc	
FMT_MTD.1	All modifications to the values of TSF data	alert.closed alert.own alert.relinquish alert.reopen conf.auth.user.*operation*.success, where *operation* is add, update, or delete conf.graph.*object*.*operation*.success, where *object* is graph or node and *operation* is create, modify, or delete	Name added or deleted; type of update Object identifier
FMT_SMR.1	Modifications to the group of users that are part of a role	conf.auth.group.modify.success	Group name
IDS_RDR.1	Attempts to read analyser data that are denied	infosec.permission.deny	URL of the attempted access

FAU_GEN.1.2(1) The TSF shall record within each audit record **involving SIEM OE components** at least the following information:

a) Date and time of the event, type of event, subject identity (if applicable), and the outcome (success or failure) of the event; and

b) For each audit event type, based on the auditable event definitions of the functional components included in the PP/ST, *the associated TOE server component, the IP address of the associated Administration or Operations Console, and the additional information specified in the Details column of the preceding table*.

FAU_GEN.1.1(2) The TSF shall be able to generate an audit record of the following auditable events **involving SIEM LP Software instances**:

a) Start-up and shutdown of the audit functions;

b) All auditable events for the basic level of audit; and

c) *Access to the Analyser and access to the TOE and Analyser data*.

Table 12 - Auditable Events for SIEM LP Software

SFR	Event	Audit Record	Details
FAU_GEN.1	Start-up and shutdown of audit functions	admin.healthmanager.launched	
	Access to Analyser	user.login	
	Access to the TOE Analyser data	user.chart.run user.eventexplorer,run user.report.run user.report.scheduled	Object ID, Requested access
FAU_SAR.1	Reading of information from the audit records	user.report.run	Report name is SIEM User Activity, SIEM User Activity by Type, SIEM User Activity by User, or SIEM User Management
FAU_SAR.2	Unsuccessful attempts to read information from the audit records	n/a – All users are authorized to access all audit records.	
FAU_SEL.1	All modifications to the audit configuration that occur while the audit collection functions are operating	n/a - Modifications to the audit generation configuration are only made when the audit functions are not operating.	
FIA_UAU.1	All use of the authentication mechanism	user.login	User identity, location
		user.login.fail	User identity, location, number of failed attempts
		admin.account.lockout	User identity
		user.logoff user.timeout	User identity

SFR	Event	Audit Record	Details
FIA_UID.1	All use of the identification mechanism	user.login	User identity, location
		user.login.fail	User identity, location, number of failed attempts
		admin.account.lockout	User identity
		user.logoff user.timeout	User identity
FMT_MOF.1	All modifications in the behaviour of the functions of the TSF	user.notification.edit	Notification identifier
FMT_MTD.1	All modifications to the values of TSF data	admin.*objecttype*.*operation*, where *objecttype* identifies the object type being modified (e.g. user) and *operation* is add, delete, disable, edit, or enable user.password.edit user.report.scheduled user.schedule.report.launched user.schedule.report.finished	Object identifier
FMT_SMR.1	Modifications to the group of users that are part of a role	admin.account.enable admin.account.disable	User identity
IDS_RDR.1	Attempts to read analyser data that are denied	n/a – The user is not presented with an option to attempt to access unauthorized Analyzer data.	

FAU_GEN.1.2(2) The TSF shall record within each audit record **involving SIEM LP Software instances** at least the following information:

a) Date and time of the event, type of event, subject identity (if applicable), and the outcome (success or failure) of the event; and

b) For each audit event type, based on the auditable event definitions of the functional components included in the PP/ST, *the additional information specified in the Details column of the preceding table*.

6.1.1.2 FAU_SAR.1 Audit Review

Refinement Rationale: The specifics of the audit review by SIEM OE and SIEM LP Software are different. FAU_SAR.1 is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FAU_SAR.1.1(1) The TSF shall provide *authorized users of SIEM OE that are members of the administrators group* with the capability to read *the timestamp, TOE server component generating the audit, user, event, associated URL, and IP address of the user system from the Administrator Console, and all audit information via the Reports Server* from the audit records.

FAU_SAR.1.2(1) The TSF shall provide the audit records **of SIEM OE** in a manner suitable for the user to interpret the information.

FAU_SAR.1.1(2) The TSF shall provide *all authorized users of SIEM LP Software* with the capability to read *all audit information* from the audit records.

FAU_SAR.1.2(2) The TSF shall provide the audit records **of SIEM LP Software** in a manner suitable for the user to interpret the information.

6.1.1.3 FAU_SAR.2 Restricted Audit Review

FAU_SAR.2.1 The TSF shall prohibit all users read access to the audit records, except those users that have been granted explicit read-access.

6.1.1.4 FAU_SAR.3 Selectable Audit Review

FAU_SAR.3.1 The TSF shall provide the ability to **perform** *sorting* of audit data based on *date and time, subject identity, type of event, and success or failure of related event*.

Refinement Rationale: The word "apply" was replaced with "perform" to match the PP SFR presentation, which was based on an earlier version of the CC.

6.1.1.5 FAU_SEL.1 Selective Audit

Refinement Rationale: The specifics of the audit record selectivity generated by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FAU_SEL.1.1(1) The TSF shall be able to include or exclude auditable events **on SIEM OE** from the set of audited events based on the following attributes:

a) event type*;*

b) *TOE Server component; and IP address of the associated Administration or Operations Console*.

FAU_SEL.1.1(2) The TSF shall be able to include or exclude auditable events **on SIEM LP Software instances** from the set of audited events based on the following attributes:

a) event type*;*

b) *no other attributes*.

6.1.1.6 FAU_STG.2 Guarantees of Audit Data Availability

FAU_STG.2.1 The TSF shall protect the stored audit records from unauthorised deletion.

FAU_STG.2.2 The TSF shall be able to **prevent** unauthorised modifications to the **audit records**.

Refinement Rationale: The words "stored audit records in the audit trail" were replaced with "audit records" to match the PP SFR presentation, which was based on an earlier version of the CC. The intent of the 2 versions of the SFR is understood to be the same.

Refinement Rationale: The "detect" assignment from the PP was replaced with the "prevent" assignment option from the original SFR. Preventing modifications is more restrictive than detecting modifications after the fact.

FAU_STG.2.3 The TSF shall ensure that *the most recent* **audit records** will be maintained when the following conditions occur: audit storage exhaustion.

Refinement Rationale: The words "stored audit records" were replaced with "audit records" to match the PP SFR presentation, which was based on an earlier version of the CC. The intent of the 2 versions of the SFR is understood to be the same.

6.1.1.7 FAU_STG.4 Prevention of Audit Data Loss

FAU_STG.4.1 The TSF shall overwrite the oldest stored audit records and *send an alarm* if the audit trail is full.

6.1.2 Identification and Authentication (FIA)

6.1.2.1 FIA_AFL.1 Authentication Failure Handling

Refinement Rationale: The instance of this SFR specified in the PP has been deleted per NIAP/CCEVS PD-0127; it is not required because no I&A is performed between TOE components. This instance has been inserted to describe the behaviour of the TOE upon repeated failed login attempts by users.

FIA_AFL.1.1 The TSF shall detect when 3 unsuccessful authentication attempts occur related to *consecutive login failure attempts of an individual User Account*.

FIA_AFL.1.2 When the defined number of unsuccessful authentication attempts has been met or surpassed, the TSF shall *disable the User Account*.

6.1.2.2 FIA_ATD.1 User Attribute Definition

FIA_ATD.1.1 The TSF shall maintain the following list of security attributes belonging to individual users:

a) User identity;

b) Authentication data;

c) Authorisations; and

d) Status (enabled or disabled).

6.1.2.3 FIA_UAU.1 Timing of Authentication

Refinement Rationale: The specifics of the options made available to users before authentication by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FIA_UAU.1.1(1) The TSF shall allow *a list of main web pages that may be accessed via the Reports Server to be displayed* on behalf of the user to be performed before the user is authenticated **by SIEM OE**.

FIA_UAU.1.2(1) The TSF shall require each user to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user **by SIEM OE**.

FIA_UAU.1.1(2) The TSF shall allow *no actions* on behalf of the user to be performed before the user is authenticated **by SIEM LP Software**.

FIA_UAU.1.2(2) The TSF shall require each user to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user **by SIEM LP Software**.

6.1.2.4 FIA_UID.1 Timing of Identification

Refinement Rationale: The specifics of the options made available to users before identification by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FIA_UID.1.1(1) The TSF shall allow *a list of main web pages that may be accessed via the Reports Server to be displayed* on behalf of the user to be performed before the user is identified **by SIEM OE**.

FIA_UID.1.2(1) The TSF shall require each user to be successfully identified before allowing any other TSF-mediated actions on behalf of that user **by SIEM OE**.

FIA_UID.1.1(2) The TSF shall allow *no actions* on behalf of the user to be performed before the user is identified **by SIEM LP Software**.

FIA_UID.1.2(2) The TSF shall require each user to be successfully identified before allowing any other TSF-mediated actions on behalf of that user **by SIEM LP Software**.

6.1.3 Security Management (FMT)

6.1.3.1 FMT_MOF.1 Management of Security Functions Behaviour

FMT_MOF.1.1 The TSF shall restrict the ability to modify the behaviour of the functions *of analysis and reaction* to *authorised Analyser administrators*.

6.1.3.2 FMT_MTD.1 Management of TSF Data

Refinement Rationale: The specifics of the options made available to users before identification by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FMT_MTD.1.1(1) The TSF shall restrict the ability to query **and add Analyser and audit data, and shall restrict the ability to query and modify all other TOE data on SIEM OE** to *the authorised identified roles identified in the following table.*

Refinement Rationale: The first two operations (selection and assignment) of the official SFR have been refined to reflect the wording of the PP. The meaning of the refined SFR is the same as the official SFR.

Table 13 - SIEM OE TSF Data Access Details

TSF Data	administrators	security_admins	analysts	operators
Alerts	Query and Modify for authorized Zones and Assets Delete	None	Query and Modify for authorized Zones and Assets	Query and Modify for authorized Zones and Assets
Asset Groups	Create, Modify, Query, Delete	Query	Query	Query subject to authorized Assets
Assets	Create, Modify, Query, Delete	Query	Query	Query subject to authorized Assets
Contacts	Create, Modify, Query, Delete	None	None	None
Data Partitioning	Query, Modify	None	None	None
Events	Query for authorized Zones and Assets	Query for authorized Zones and Assets	Query for authorized Zones and Assets	Query for authorized Zones and Assets
Graph Permissions	Query, Modify	Query, Modify if the Graph Permissions explicitly authorize the user	Query, Modify if the Graph Permissions explicitly authorize the user	Query, Modify if the Graph Permissions explicitly authorize the user
Graphs	Query if the Graph Permissions authorize the user to View the Graph. Information displayed is limited to authorized Zones and Assets. Modify the Graph operators, edges, or nodes if the Graph Permissions authorize the user to Add, Modify or Delete those items	Query if the Graph Permissions authorize the user to View the Graph. Information displayed is limited to authorized Zones and Assets. Modify the Graph operators, edges, or nodes if the Graph Permissions authorize the user to Add, Modify or Delete those items	Query if the Graph Permissions authorize the user to View the Graph. Information displayed is limited to authorized Zones and Assets. Modify the Graph operators, edges, or nodes if the Graph Permissions authorize the user to Add, Modify or Delete those items	Query if the Graph Permissions authorize the user to View the Graph. Information displayed is limited to authorized Zones and Assets. Modify the Graph operators, edges, or nodes if the Graph Permissions authorize the user to Add, Modify or Delete those items
Group Accounts	Query (Per the evaluated configuration, the default Group Accounts are used).	None	None	None
Inbox Status Settings	Query, Modify	Query, Modify	None	None
Networks	Create, Modify, Query, Delete	Create, Modify, Query, Delete	None	None
Report Permissions	Modify	None	None	None

TSF Data	administrators	security_admins	analysts	operators
Reports	Query any, Create	Query any created for the security_admins or everyone Group Accounts, Create	Query any created for the analysts or everyone Group Accounts, Create	Query any created for the operators or everyone Group Accounts, Create
Rules	Create, Modify, Query, Delete	Create, Modify, Query, Delete	Create, Modify, Query, Delete	None
System Latency Settings	Query, Modify	Query, Modify	None	None
User Accounts	Create, Modify, Query, Delete	None	None	None
Zones	Create, Modify, Query, Delete	Create, Modify, Query, Delete	None	None

Application Note: The "everyone" role does not have access permission to any TSF data.

FMT_MTD.1.1(2) The TSF shall restrict the ability to query **and add Analyser and audit data, and shall restrict the ability to query and modify all other TOE data on SIEM LP Software** to *the authorised identified roles identified in the following table.*

Refinement Rationale: The first two operations (selection and assignment) of the official SFR have been refined to reflect the wording of the PP. The meaning of the refined SFR is the same as the official SFR.

Table 14 - SIEM LP Software Data Access Details

TSF Data	Administrator	Public
Alarm Setup	Query, Modify	None
Alarms	Query, Modify	None
Asset Groups	Query, Create, Modify, Delete	Query
Assets	Query, Create, Modify, Delete	Query
Contacts	Query, Create, Modify, Delete	Query
Dashboards	Query, Create, Modify, Delete	Query all dashboards Create, Modify, Delete your own dashboards
Devices	Query, Modify	Query
Email and SNMP Configuration	Query, Modify	None
Events	Query	Query
Networks	Query, Create, Modify, Delete	Query
Notifications	Query, Create, Modify, Delete your own	Query, Create, Modify, Delete your own
Scheduled Reports	Query, Create, Modify, Delete	Query, Create, Modify, Delete
Upstream Data Transfer Parameters	Query, Create, Modify, Delete	Query
User Accounts	Query, Create, Modify, Delete	Modify their own password None for other information
Zones	Query, Create, Modify, Delete	Query

6.1.3.3 FMT_SMF.1 Specification of Management Functions

Refinement Rationale: The specifics of the management functions provided by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FMT_SMF.1.1(1) The TSF shall be capable of performing the following management functions **on SIEM OE**:

a) User management;

b) Group management;

c) Graph management;

d) Asset management;

e) Alert management.

FMT_SMF.1.1(2) The TSF shall be capable of performing the following management functions **on SIEM LP Software instances**:

a) User management;

b) Asset management;

c) Device Management;

d) Notification management.

6.1.3.4 FMT_SMR.1 Security Roles

Refinement Rationale: The roles provided by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

FMT_SMR.1.1(1) The TSF shall maintain the **following SIEM OE** roles *authorised administrator, authorised Analyser administrators, operators and everyone*.

Refinement Rationale: The word "following" has been added to reflect the wording of the PP, which does not alter the meaning of the official SFR.

Application Note: The TOE supports the following Group Accounts (roles): administrators, analysts, everyone, operators, and security_admins. The "administrator" role required by the PP consists of users that are members of the administrators Group Account. The "Analyser administrator" role required by the PP consists of users that are members of the administrators, analysts, and/or security_admins Group Accounts.

FMT_SMR.1.2(1) The TSF shall be able to associate **SIEM OE** users with roles.

FMT_SMR.1.1(2) The TSF shall maintain the **following SIEM LP Software** roles *Administrator and Public*.

Refinement Rationale: The word "following" has been added to reflect the wording of the PP, which does not alter the meaning of the official SFR.

Application Note: The "administrator" role required by the PP consists of users that are assigned the Administrator role. The "Analyser administrator" role required by the PP consists of users that are assigned the Administrator or Public role.

FMT_SMR.1.2(2) The TSF shall be able to associate **SIEM LP Software** users with roles.

6.1.4 Protection of the TSF (FPT)

6.1.4.1 FPT_ITT.1 Basic Internal TSF Data Transfer Protection

FPT_ITT.1.1 The TSF shall protect TSF data from disclosure, modification when it is transmitted between separate parts of the TOE.

6.1.5 Intrusion Detection (IDS)

6.1.5.1 IDS_ANL.1 Analyser Analysis

Refinement Rationale: The analysis provided by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

IDS_ANL.1.1(1) The TSF shall perform the following analysis function(s) on all IDS data received **by SIEM OE**:

a) statistical, signature and

b) *no other analytical functions*.

IDS_ANL.1.2(1) The TSF shall record within each analytical result **on SIEM OE** at least the following information:

a) Date and time of the result, type of result, identification of data source; and

b) *associated Events*.

IDS_ANL.1.1(2) The TSF shall perform the following analysis function(s) on all IDS data received **by SIEM LP Software instances**:

a) statistical, signature and

b) *no other analytical functions*.

IDS_ANL.1.2(2) The TSF shall record within each analytical result **on SIEM LP Software instances** at least the following information:

a) Date and time of the result, type of result, identification of data source; and

b) *No other information*.

6.1.5.2 IDS_RCT.1 Analyser React

Refinement Rationale: The reactions provided by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

IDS_RCT.1.1(1) The TSF shall send an alarm to *the configured notification destinations for an Alert* and take *the action to generate an Alert* when an intrusion is detected **by SIEM OE**.

IDS_RCT.1.1(2) The TSF shall send an alarm to *the configured notification destinations* and take *no other action* when an intrusion is detected **by SIEM LP Software instances**.

6.1.5.3 IDS_RDR.1 Restricted Data Review

Refinement Rationale: The data review capabilities provided by SIEM OE and SIEM LP Software are different. This SFR is iterated and refined to clearly define the specifics for each of the products that comprise the TOE.

IDS_RDR.1.1(1) The Analyser shall provide *authorised users* with the capability to read *Alert and Event information for the Zones and Assets they are authorized to view* from the Analyser data **on SIEM OE**.

IDS_RDR.1.2(1) The Analyser shall provide the Analyser data **on SIEM OE** in a manner suitable for the user to interpret the information.

IDS_RDR.1.3(1) The Analyser shall prohibit all users read access to the Analyser data **on SIEM OE**, except those users that have been granted explicit read-access.

IDS_RDR.1.1(2) The Analyser shall provide *authorised users* with the capability to read *Alert and Event information for the Zones and Assets they are authorized to view* from the Analyser data **on SIEM LP Software instances**.

IDS_RDR.1.2(2) The Analyser shall provide the Analyser data **on SIEM LP Software instances** in a manner suitable for the user to interpret the information.

IDS_RDR.1.3(2) The Analyser shall prohibit all users read access to the Analyser data **on SIEM LP Software instances**, except those users that have been granted explicit read-access.

6.1.5.4 IDS_STG.1 Guarantee of Analyser Data Availability

IDS_STG.1.1 The Analyser shall protect the stored Analyser data from unauthorised deletion.

IDS_ STG.1.2 The Analyser shall protect the stored Analyser data from modification.

IDS_ STG.1.3 The Analyser shall ensure that *the most recent data* Analyser data will be maintained when the following conditions occur: Analyser data storage exhaustion.

6.1.5.5 IDS_STG.2 Prevention of Analyser data loss

IDS_STG.2.1 The Analyser shall overwrite the oldest stored Analyser data and send an alarm if the storage capacity has been reached.

6.2 TOE Security Assurance Requirements

The TOE meets the assurance requirements for EAL3 augmented by ALC_FLR.2. These requirements are summarised in the following table.

Table 15 - EAL3+ Assurance Requirements

Assurance Class	Component ID	Component Title
Development	ADV_ARC.1	Security architecture description
	ADV_FSP.3	Functional specification with complete summary
	ADV_TDS.2	Architectural design
Guidance Documents	AGD_OPE.1	Operational user guidance
	AGD_PRE.1	Preparative procedures
Life-Cycle Support	ALC_CMC.3	Authorisation controls
	ALC_CMS.3	Implementation representation CM coverage
	ALC_DEL.1	Delivery procedures
	ALC_DVS.1	Identification of security measures
	ALC_FLR.2	Flaw reporting procedures
	ALC_LCD.1	Developer defined life-cycle model
Tests	ATE_COV.2	Analysis of coverage
	ATE_DPT.1	Testing: basic design
	ATE_FUN.1	Functional testing
	ATE_IND.2	Independent testing - sample
Vulnerability Assessment	AVA_VAN.2	Vulnerability analysis

6.3 CC Component Hierarchies and Dependencies

This section of the ST demonstrates that the identified SFRs include the appropriate hierarchy and dependencies. The following table lists the TOE SFRs and the SFRs each are hierarchical to, dependent upon and any necessary rationale.

Table 16 - TOE SFR Dependency Rationale

SFR	Hierarchical To	Dependency	Rationale
FAU_GEN.1	No other components.	FPT_STM.1	Satisfied by the operational environment (OE.TIME).
FAU_SAR.1	No other components.	FAU_GEN.1	Satisfied
FAU_SAR.2	No other components.	FAU_SAR.1	Satisfied
FAU_SAR.3	No other components.	FAU_SAR.1	Satisfied
FAU_SEL.1	No other components.	FAU_GEN.1, FMT_MTD.1	Satisfied Satisfied
FAU_STG.2	FAU_STG.1	FAU_GEN.1	Satisfied
FAU_STG.4	FAU_STG.3	FAU_STG.1	Satisfied by FAU_STG.2
FIA_AFL.1	No other components.	FIA_UAU.1	Satisfied
FIA_ATD.1	No other components.	None	n/a
FIA_UAU.1	No other components.	FIA_UID.1	Satisfied
FIA_UID.1	No other components.	None	n/a

SFR	Hierarchical To	Dependency	Rationale
FMT_MOF.1	No other components.	FMT_SMF.1, FMT_SMR.1	Satisfied Satisfied
FMT_MTD.1	No other components.	FMT_SMF.1, FMT_SMR.1	Satisfied Satisfied
FMT_SMF.1	No other components.	None	n/a
FMT_SMR.1	No other components.	FIA_UID.1	Satisfied
FPT_ITT.1	No other components.	None	n/a
IDS_ANL.1	No other components.	None	n/a
IDS_RCT.1	No other components.	IDS_ANL.1	Satisfied
IDS_RDR.1	No other components.	IDS_ANL.1	Satisfied
IDS_STG.1	No other components.	IDS_ANL.1	Satisfied
IDS_STG.2	No other components.	IDS_ANL.1	Satisfied

7. TOE Summary Specification

7.1 FAU_GEN.1

SIEM OE and SIEM LP Software generate different sets of audit records.

SIEM OE generates audits for the events specified in the table included with the FAU_GEN.1(1). Startup and shutdown of the audit function is equivalent to startup and shutdown of the TOE server components. The following information is included in all audit records:

- Data and time of the event,
- Type of event,
- Subject identity (if applicable),
- Outcome (success or failure) of the event (if it is not apparent from the Event type),
- Associated TOE server component,
- IP address of the associated Administration or Operations Console, and
- Additional information specified in the Details column of the table included with the SFR.

SIEM LP Software generates audits for the events specified in the table included with the FAU_GEN.1(2). Startup and shutdown of the audit function is equivalent to startup and shutdown of the SIEM LP Software. The following information is included in all audit records:

- Data and time of the event,
- Type of event,
- Subject identity (if applicable),
- Outcome (success or failure) of the event (if it is not apparent from the Event type),
- Additional information specified in the Details column of the table included with the SFR.

7.2 FAU_SAR.1, FAU_SAR.2

SIEM OE and SIEM LP Software provide different audit review capabilities.

SIEM OE provides authorized users that are members of the administrators group with the ability to review audit records in a human readable form via the Administrator Console or Reports Server. Users that are not members of that group do not have access to any sudit record information. The Administration Console provides access to the most recent 100 records and the following information:

- Timestamp,
- TOE server component generating the audit,

- User,
- Event,
- Associated URL (indicating the object accessed, if applicable), and
- IP address of the associated Administration or Operations Console.

The information available via the SIEM OE Reports Server may include any of records in the audit trail. The information displayed may include any information from those audit records.

SIEM LP Software provides all authorized users with the ability to review audit records in a human readable form by invoking SIEM User Activity reports from remote browser sessions. The audit trail on each SIEM LP Software instance is separate. The information available may include any of records in the audit trail. The information displayed may include any information from those audit records.

7.3 FAU_SAR.3

The SIEM OE Administration Console enables the user to sort the display by date and time (Timestamp), subject identity (User), and type of event. Success or failure is implied by the type of event. SIEM OE also provides Reports that enable the user to sort the audit events by data and time (All SM Activity), subject identity (Security Manager Activity Grouped by Account), and type of event (Security Manager Activity Grouped by Type).

SIEM LP Software provides distinct SIEM User Activity reports that sort the display by date and time (Timestamp), subject identity (User), or type of event. Success or failure is implied by the type of event.

7.4 FAU_SEL.1

SIEM OE may be configured with the assistance of Trustwave personnel to selectively generate audit events based upon the event type, the TOE Server component generating the audit event, and/or the IP address of the associated Console.

SIEM LP Software instances may be configured with the assistance of Trustwave personnel to selectively generate audit events based upon the event type.

7.5 FAU_STG.2, FAU_STG.4

Separate audit trails are maintained for SIEM OE and each SIEM LP Software instance.

The user access functionality of the TOE does not provide any mechanism to modify audit records. Audit records may be indirectly deleted by authorized users configuring audit retention parameters. If no space is available in the database when the TOE attempts to insert a new audit record, the oldest audit record is deleted and the new record is inserted. When this occurs, an alarm is generated.

SIEM OE permits members of the administrators group to delete audit records. A new audit record is generated when audit records are deleted.

7.6 FIA_AFL.1

Both SIEM OE and SIEM LP Software track consecutive login failures for each defined user account. If three consecutive failures occur for any user account (for any user access TSFI), the user account is automatically disabled. After 10 minutes the account is automatically re-enabled.

7.7 FIA_ATD.1

SIEM OE maintains the following information for each user account:

- User identity;
- Authentication data (Password, number of consecutive authentication failures);
- Authorisations (User Groups, Zone associations, Asset permissions); and
- Status (enabled or disabled).

SIEM LP Software maintains the following information for each user account:

- User identity;
- Authentication data (Password, number of consecutive authentication failures);
- Authorisations (Role, Zone permissions, Device permissions); and
- Status (enabled or disabled).

7.8 FIA_UAU.1, FIA_UID.1

SIEM OE requires all users of the Consoles to successfully identify and authenticate themselves before access is granted to any TSF data or functions. For the Report Server, the initial web page displayed upon connecting permits the user to select a function to be accessed before I&A. Upon selection, the user must successfully complete I&A before the access is granted.

SIEM LP Software requires all users to successfully identify and authenticate themselves before access is granted to any TSF data or functions.

7.9 FMT_MOF.1

SIEM OE Administration Consoles permit users that are members of the administrators, analysts, and/or security_admins Group Accounts to configure Rules, which determine what analysis is performed and what reactions are taken upon detection of configured conditions.

SIEM LP Software permits both Administrator and Public users to configure Notifications, which specify what analysis is performed and what notifications are sent when configured conditions are detected.

7.10 FMT_MTD.1

SIEM OE Consoles and/or the Report Server grant access to TSF data according to the roles and permissions specified in the table included with FMT_MTD.1(1). Administration Consoles may only be used by authorized users that are members of the administrators or security_admins groups. Access to TSF data other than that specified in the table is prevented.

SIEM LP Software grants access to TSF data according to the roles and permissions specified in the table included with FMT_MTD.1(2). The GUI presented to authorized users includes an Admin tab which is only accessible to Administrators. Access to TSF data other than that specified in the table is prevented.

7.11 FMT_SMF.1

SIEM OE Consoles provide functionality for authorized users to manage the following items:

- Users;
- Groups;
- Graphs (including permissions);
- Assets (including Asset Groups, Zones, Networks, and Contacts); and
- Alerts (including Rules).

SIEM LP Software provides functionality for authorized users to manage the following items:

- Users;
- Devices;
- Assets (including Asset Groups, Zones, Networks, and Contacts); and
- Alarms (including setups).

7.12 FMT_SMR.1

All interactive users of SIEM OE are required to successfully complete I&A, at which time the role configured for the user account is associated with the user session. Per the evaluated configuration of the TOE, the default Group Accounts (administrators, analysts, everyone, operators, and security_admins) are used as the supported roles.

All interactive users of SIEM LP Software are required to successfully complete I&A, at which time the role configured for the user account is associated with the user session. Two roles are supported: Administrator and Public.

7.13 FPT_ITT.1

Per the evaluated configuration, systems hosting TOE components are interconnected via a segregated management network that has restricted access. The SIEM LP appliances may be connected to both the management network and the Enterprise LAN, but all intra-TOE communication is performed via the management network only.

7.14 IDS_ANL.1, IDS_RCT.1

As security information is received from third party security devices, the TOE normalizes the information into Events and performs statistical and signature analysis against the Events to detect configured conditions.

On SIEM OE, the analysis is performed in real time. Rules specify the analysis to be performed and Alerts are generated as the result of the analysis. Each Alert includes references to the Events that triggered the Alert. The Alert may specify that a Notification be sent to a configured destination.

On SIEM LP Software instances, the analysis is performed every 30 minutes. Notifications specify both the analysis to be performed and notifications to be sent when specific conditions are detected. Notifications are configured on a per-user basis and analysis is performed relative to the Zone and Device access permissions configured for the associated user.

7.15 IDS_RDR.1

SIEM OE provides authorized users with the ability to read Alert and Event information in a human readable form via the Consoles or Reports Server. Access to information is limited to the Zones and Assets each user is authorized to access. In the Consoles, access to specific Graphs may also be restricted to further control the information available to users.

SIEM LP Software provides authorized users with the ability to read Notification and Event information in a human readable form via remote web browser sessions. Access to information is limited to the Zones and Devices each user is authorized to access.

7.16 IDS_STG.1, IDS_STG.2

The user access functionality of the TOE does not provide any mechanism to modify Event records in SIEM OE or SIEM LP Software instances. Events may only be indirectly deleted by authorized users configuring data retention parameters.

SIEM OE does not permit Alert types or associated Events to be modified, although the owner of the Alert may be assigned. Alerts may only be indirectly deleted by authorized users configuring data retention parameters.

SIEM LP Software does not provide any mechanism to modify Analyzer data. This information is only deleted via data retention policies configured for Devices.

Separate databases are maintained for SIEM OE and each SIEM LP Software instance. If no space is available in the database when the TOE attempts to insert new Event or Alert information, the oldest information is deleted and the new information is inserted. When this occurs, an alarm is generated.

8. Protection Profile Claims

This chapter provides detailed information in reference to the Protection Profile conformance identification that appears in Chapter 2.

8.1 TOE Type Consistency

Both the PP and the TOE describe IDS Analyzers.

8.2 Security Problem Definition Consistency

This ST claims demonstrable conformance to the referenced PP. All of the assumptions, threats, and organizational security policies of the PP are included in the ST.

A.MGMTNETWORK adds an additional assumption for a segregated management network interconnecting the TOE components, and limiting the traffic allowed to flow from the generic enterprise network into the management network.

With the additional assumption, the security problem definition is more restrictive than the PP requirements.

8.3 Security Objectives Consistency

This ST claims demonstrable conformance to the referenced PP as clarified by NIAP/CCEVS PD-0127. All of the security objectives for the TOE and the operational environment of the PP are included in the ST with the exception of O.EXPORT.

Although NIAP/CCEVS PD-0127 does not explicitly address O.EXPORT, the resolution states that several SFRs may be excluded because the TOE does not export data. If no data is exported, then O.EXPORT is not satisfied and should be excluded. This position is further supported by NIAP/CCEVS PD-0097, which addresses the same issue for the IDS System PP and does explicitly state that O.EXPORT is included by mistake.

OE.MGMTNETWORK adds an additional objective for the operational environment for a segregated management network interconnecting the TOE components, and limiting the traffic allowed to flow from the generic enterprise network into the management network.

Taking into consideration NIAP/CCEVS PD-0127, the set of objectives for the TOE in the ST is equivalent to the set of relevant objectives in the PP and the set of objectives for the operational environment is more restrictive than the set of objectives in the PP.

8.4 Security Functional Requirements Consistency

This ST claims demonstrable conformance to the referenced PP as clarified by NIAP/CCEVS PD-0127.

All of the SFRs from the PP are included in the ST, with the exception of FIA_AFL.1 (as specified in the PP), FPT_ITA.1, FPT_ITC.1, FPT_ITI.1, and FPT_STM.1. The first four requirements are not applicable per NIAP/CCEVS PD-0127 because the TOE does not export data to other trusted IT entities. FPT_STM.1 is not applicable per NIAP/CCEVS PD-0152, which addresses the same issue for the IDS System PP.

Any fully or partially completed operations from the PP are included in the ST. Any remaining operations have been completed. The following notes apply to conformance of the SFRs in the ST.

1. The auditable events listed in the table with FAU_GEN.1 have been enumerated to match the specific events generated by the TOE. All of the events required by the PP are represented.
2. FMT_SMF.1 has been added to the ST to address a dependency of FMT_MOF.1 and FMT_MTD.1.
3. Per NIAP/CCEVS PD-0127, FPT_ITT.1 has been added to the ST to address communication between distributed TOE components.
4. In FAU_STG.2, the "detect" assignment specified in the PP has been replaced with the "prevent" assignment available per CC Part 2. Preventing modifications of the audit records is more restrictive than detecting modifications after the fact.
5. An instance of FIA_AFL.1 has been added to the ST to address login failures of users attempting to access the TOE.

8.5 Security Assurance Requirements Consistency

The PP requires EAL2 augmented by ALC_FLR.2. The ST assurance claims are EAL3 augmented by ALC_FLR.2, which is more restrictive than the PP requirements.

9. Rationale

This chapter provides the rationale for the selection of the IT security requirements, objectives, assumptions and threats. It shows that the IT security requirements are suitable to meet the security objectives, Security Requirements, and TOE security functional.

9.1 Rationale for IT Security Objectives

This section of the ST demonstrates that the identified security objectives are covering all aspects of the security needs. This includes showing that each threat and assumption is addressed by a security objective.

The following table identifies for each organizational security policy, threat and assumption, the security objective(s) that address it.

Table 17 - Security Objectives Mapping

	O.ACCESS	O.AUDITS	O.E.ADMIN	O.IDACTS	O.IDAUTH	O.INTEGR	O.OFLOWS	O.PROTCT	O.RESPON	OE.AUDIT_PROTECTION	OE.AUDIT_SORT	OE.CREDEN	OE.INSTAL	OE.INTROP	OE.MGMTNETWORK	OE.PERSON	OE.PHYCAL	OE.TIME
A.ACCESS														X				
A.LOCATE																	X	
A.MANAGE																X		
A.MGMTNETWORK															X			
A.NOEVIL												X	X				X	
A.NOTRST												X					X	
A.PROTCT																	X	
T.COMDIS	X				X			X										
T.COMINT	X				X	X		X										
T.FALACT									X									
T.FALASC				X														
T.FALREC				X														
T.IMPCON	X		X		X								X					
T.INFLUX							X											
T.LOSSOF	X				X	X		X										
T.NOHALT	X			X	X													
T.PRIVIL	X				X			X										
P.ACCACT		X			X						X							X
P.ACCESS	X				X			X		X								
P.ANALYZ				X														
P.DETECT		X		X														X
P.INTGTY						X												
P.MANAGE	X		X		X			X				X	X			X		
P.PROTCT			X														X	

The following table describes the rationale for the security objectives mappings.

Table 18 - Rationale For Security Objectives Mappings

*.TYPE	Security Objectives Rationale
A.ACCESS	The OE.INTROP objective ensures the TOE has the needed access.
A.LOCATE	The OE.PHYCAL provides for the physical protection of the TOE.
A.MANAGE	The OE.PERSON objective ensures all authorized administrators are qualified and trained to manage the TOE.
A.MGMTNETWORK	The OE.MGMTNETWORK objective ensures that a segregated network will protect the intra-TOE traffic and limit the traffic entering the segregated network from the general enterprise network.
A.NOEVIL	The OE.INSTAL objective ensures that the TOE is properly installed and operated and the OE.PHYCAL objective provides for physical protection of the TOE by authorized administrators. The OE.CREDEN objective supports this assumption by requiring protection of all authentication data.
A.NOTRST	The OE.PHYCAL objective provides for physical protection of the TOE to protect against unauthorized access. The OE.CREDEN objective supports this assumption by requiring protection of all authentication data.
A.PROTCT	The OE.PHYCAL provides for the physical protection of the TOE hardware and software.
T.COMDIS	The O.IDAUTH objective provides for authentication of users prior to any TOE data access. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE data. The O.PROTCT objective addresses this threat by providing TOE self-protection.
T.COMINT	The O.IDAUTH objective provides for authentication of users prior to any TOE data access. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE data. The O.INTEGR objective ensures no TOE data will be modified. The O.PROTCT objective addresses this threat by providing TOE self-protection.
T.FALACT	The O.RESPON objective ensures the TOE reacts to analytical conclusions about suspected vulnerabilities or inappropriate activity.
T.FALASC	The O.IDACTS objective provides the function that the TOE will recognize vulnerabilities or inappropriate activity from multiple data sources.
T.FALREC	The O.IDACTS objective provides the function that the TOE will recognize vulnerabilities or inappropriate activity from a data source.
T.IMPCON	The OE.INSTAL objective states the authorized administrators will configure the TOE properly. The O.EADMIN objective ensures the TOE has all the necessary administrator functions to manage the product. The O.IDAUTH objective provides for authentication of users prior to any TOE function accesses. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE functions.
T.INFLUX	The O.OFLOWS objective counters this threat by requiring the TOE handle data storage overflows.
T.LOSSOF	The O.IDAUTH objective provides for authentication of users prior to any TOE data access. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE data. The O.INTEGR objective ensures no TOE data will be deleted. The O.PROTCT objective addresses this threat by providing TOE self-protection.
T.NOHALT	The O.IDAUTH objective provides for authentication of users prior to any TOE function accesses. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE functions. The O.IDACTS objective addresses this threat by requiring the TOE to collect all events, including those attempts to halt the TOE.

*.TYPE	Security Objectives Rationale
T.PRIVIL	The O.IDAUTH objective provides for authentication of users prior to any TOE function accesses. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE functions. The O.PROTCT objective addresses this threat by providing TOE self-protection.
P.ACCACT	The O.AUDITS objective implements this policy by requiring auditing of all data accesses and use of TOE functions. The O.IDAUTH objective supports this objective by ensuring each user is uniquely identified and authenticated. OE.TIME will provided a time stamp for each audit.
P.ACCESS	The O.IDAUTH objective provides for authentication of users prior to any TOE function accesses. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE functions. The O.PROTCT objective provides for TOE self-protection.
P.ANALYZ	The O.IDACTS objective requires analytical processes be applied to data collected from Sensors and Scanners.
P.DETECT	The O.AUDITS and O.IDACTS objectives address this policy by requiring collection of audit and Scanner data.
P.INTGTY	The O.INTEGR objective ensures the protection of data from modification.
P.MANAGE	The OE.PERSON objective ensures competent administrators will manage the TOE and the O.EADMIN objective ensures there is a set of functions for administrators to use. The OE.INSTAL objective supports the OE.PERSON objective by ensuring administrator follow all provided documentation and maintain the security policy. The O.IDAUTH objective provides for authentication of users prior to any TOE function accesses. The O.ACCESS objective builds upon the O.IDAUTH objective by only permitting authorized users to access TOE functions. The OE.CREDEN objective requires administrators to protect all authentication data. The O.PROTCT objective provides for TOE self-protection.
P.PROTCT	The O.OFLOWS objective requires the TOE handle disruptions. The OE.PHYCAL objective protects the TOE from unauthorized physical modifications.

9.2 Security Requirements Rationale

9.2.1 Rationale for Security Requirements of the TOE Objectives

This section provides rationale for the Security Functional Requirements and/or Security Assurance Requirements demonstrating that the SFRs/SARs are suitable to address the security objectives.

The following table identifies for each TOE security objective, the SFR(s) and/or SAR(s) that address it.

Table 19 - SFRs/SARs to Security Objectives Mapping

	O.ACCESS	O.AUDITS	O.EADMIN	O.IDACTS	O.IDAUTH	O.INTEGR	O.OFLOWS	O.PROTCT	O.RESPON
FAU_GEN.1		X							
FAU_SAR.1			X						
FAU_SAR.2	X				X				
FAU_SAR.3			X						
FAU_SEL.1		X	X						
FAU_STG.2	X				X	X	X	X	
FAU_STG.4		X					X		
FIA_AFL.1	X				X				
FIA_ATD.1					X				
FIA_UAU.1	X				X				
FIA_UID.1	X				X				
FMT_MOF.1	X				X			X	
FMT_MTD.1	X				X	X		X	
FMT_SMF.1			X						
FMT_SMR.1					X				
FPT_ITT.1						X			
IDS_ANL.1				X					
IDS_RCT.1									X
IDS_RDR.1	X		X		X				
IDS_STG.1	X				X	X	X	X	
IDS_STG.2							X		
ADV_ARC.1		X	X		X	X		X	

The following table provides the detail of TOE security objective(s).

Table 20 - Security Objectives to SFR/SAR Rationale

Security Objective	SFR/SAR and Rationale
O.ACCESS	The TOE is required to restrict the review of audit data to those granted with explicit read-access [FAU_SAR.2]. The Analyzer is required to restrict the review of Analyzer data to those granted with explicit read-access [IDS_RDR.1]. The TOE is required to protect the audit data from deletion as well as guarantee the availability of the audit data in the event of storage exhaustion, failure or attack [FAU_STG.2]. The Analyser is required to protect the Analyzer data from any modification and unauthorized deletion [IDS_STG.1]. Users authorized to access the TOE are defined using an identification and authentication process [FIA_UID.1, FIA_UAU.1]. This process is supported by defined actions when repeated invalid credentials are supplied [FIA_AFL.1]. The TOE is required to provide the ability to restrict managing the behavior of functions of the TOE to authorized users of the

Security Objective	SFR/SAR and Rationale
	TOE [FMT_MOF.1]. Only authorized administrators of the Analyzer may query and add Analyzer and audit data, and authorized administrators of the TOE may query and modify all other TOE data [FMT_MTD.1].
O.AUDITS	Security-relevant events must be defined and auditable for the TOE [FAU_GEN.1]. The TOE must provide the capability to select which security-relevant events to audit [FAU.SEL.1]. The TOE must prevent the loss of collected data in the event the its audit trail is full [FAU_STG.4]. The TOE must ensure that all functions are invoked and succeed before each function may proceed [ADV_ARC.1]. The TSF must be protected form interference that would prevent it from performing its functions [ADV_ARC.1].
O.EADMIN	The TOE must provide the ability to review and manage the audit trail of an Analyzer [FAU_SAR.1, FAU_SEL.1]. The Analyzer must provide the ability for authorized administrators to effectively manage the TOE [FMT_SMF.1]. The Analyzer must provide the ability for authorized administrators to view the Analyzer data [IDS_RDR.1]. The TOE must ensure that all functions are invoked and succeed before each function may proceed [ADV_ARC.1]. The TSF must be protected form interference that would prevent it from performing its functions [ADV_ARC.1].
O.IDACTS	The Analyzer is required to perform intrusion analysis and generate conclusions [IDS_ANL.1].
O.IDAUTH	The TOE is required to restrict the review of audit data to those granted with explicit read-access [FAU_SAR.2]. The Analyzer is required to restrict the review of collected Analyzer data to those granted with explicit read-access [IDS_RDR.1]. The TOE is required to protect the stored audit records from unauthorized deletion [FAU_STG.2]. The Analyzer is required to protect the Analyzer data from unauthorized deletion as well as guarantee the availability of the data in the event of storage exhaustion, failure or attack [IDS_STG.1]. Security attributes of subjects use to enforce the authentication policy of the TOE must be defined [FIA_ATD.1]. Users authorized to access the TOE are defined using an identification and authentication process [FIA_UID.1, FIA_UAU.1]. The process includes defined actions when repeated invalid credentials are supplied [FIA_AFL.1]. The TOE is required to provide the ability to restrict managing the behavior of functions of the TOE to authorized users of the TOE [FMT_MOF.1]. Only authorized administrators of the Analyzer may query and add Analyzer and audit data, and authorized administrators of the TOE may query and modify all other TOE data [FMT_MTD.1]. The TOE must be able to recognize the different administrative and user roles that exist for the TOE [FMT_SMR.1]. The TOE must ensure that all functions are invoked and succeed before each function may proceed [ADV_ARC.1]. The TSF must be protected form interference that would prevent it from performing its functions [ADV_ARC.1]
O.INTEGR	The TOE is required to protect the audit data from deletion as well as guarantee the availability of the audit data in the event of storage exhaustion, failure or attack [FAU_STG.2]. The Analyzer is required to protect the Analyzer data from any modification and unauthorized deletion [IDS_STG.1]. Only authorized administrators of the Analyzer may query or add audit and Analyzer data [FMT_MTD.1]. The Analyzer must protect the collected data from modification and ensure its integrity when the data is transmitted between TOE components [FPT_ITT.1]. The TOE must ensure that all functions to protect the data are not bypassed [ADV_ARC.1]. The TSF must be protected form interference that would prevent it from performing its functions [ADV_ARC.1].

Security Objective	SFR/SAR and Rationale
O.OFLOWS	The TOE is required to protect the audit data from deletion as well as guarantee the availability of the audit data in the event of storage exhaustion, failure or attack [FAU_STG.2]. The TOE must prevent the loss of audit data in the event the its audit trail is full [FAU_STG.4]. The Analyzer is required to protect the Analyzer data from any modification and unauthorized deletion, as well as guarantee the availability of the data in the event of storage exhaustion, failure or attack [IDS_STG.1]. The Analyzer must prevent the loss of audit data in the event the its audit trail is full [IDS_STG.2].
O.PROTCT	The TOE is required to protect the audit data from deletion as well as guarantee the availability of the audit data in the event of storage exhaustion, failure or attack [FAU_STG.2]. The Analyzer is required to protect the Analyzer data from any modification and unauthorized deletion, as well as guarantee the availability of the data in the event of storage exhaustion, failure or attack [IDS_STG.1]. The TOE is required to provide the ability to restrict managing the behavior of functions of the TOE to authorized users of the TOE [FMT_MOF.1]. Only authorized administrators of the Analyzer may query and Analyzer and audit data, and authorized administrators of the TOE may query and modify all other TOE data [FMT_MTD.1]. The TOE must ensure that all functions are invoked and succeed before each function may proceed [ADV_ARC.1]. The TSF must be protected form interference that would prevent it from performing its functions [ADV_ARC.1].
O.RESPON	The TOE is required to respond accordingly in the event an intrusion is detected [IDS_RCT.1].

9.2.2 Security Assurance Requirements Rationale

The TOE stresses assurance through vendor actions that are within the bounds of current best commercial practice. The TOE provides, primarily via review of vendor-supplied evidence, independent confirmation that these actions have been competently performed.

The general level of assurance for the TOE is:

A) Consistent with current best commercial practice for IT development and provides a product that is competitive against non-evaluated products with respect to functionality, performance, cost, and time-to-market.

B) The TOE assurance also meets current constraints on widespread acceptance, by expressing its claims against EAL3 augmented by ALC_FLR.2 from part 3 of the Common Criteria.