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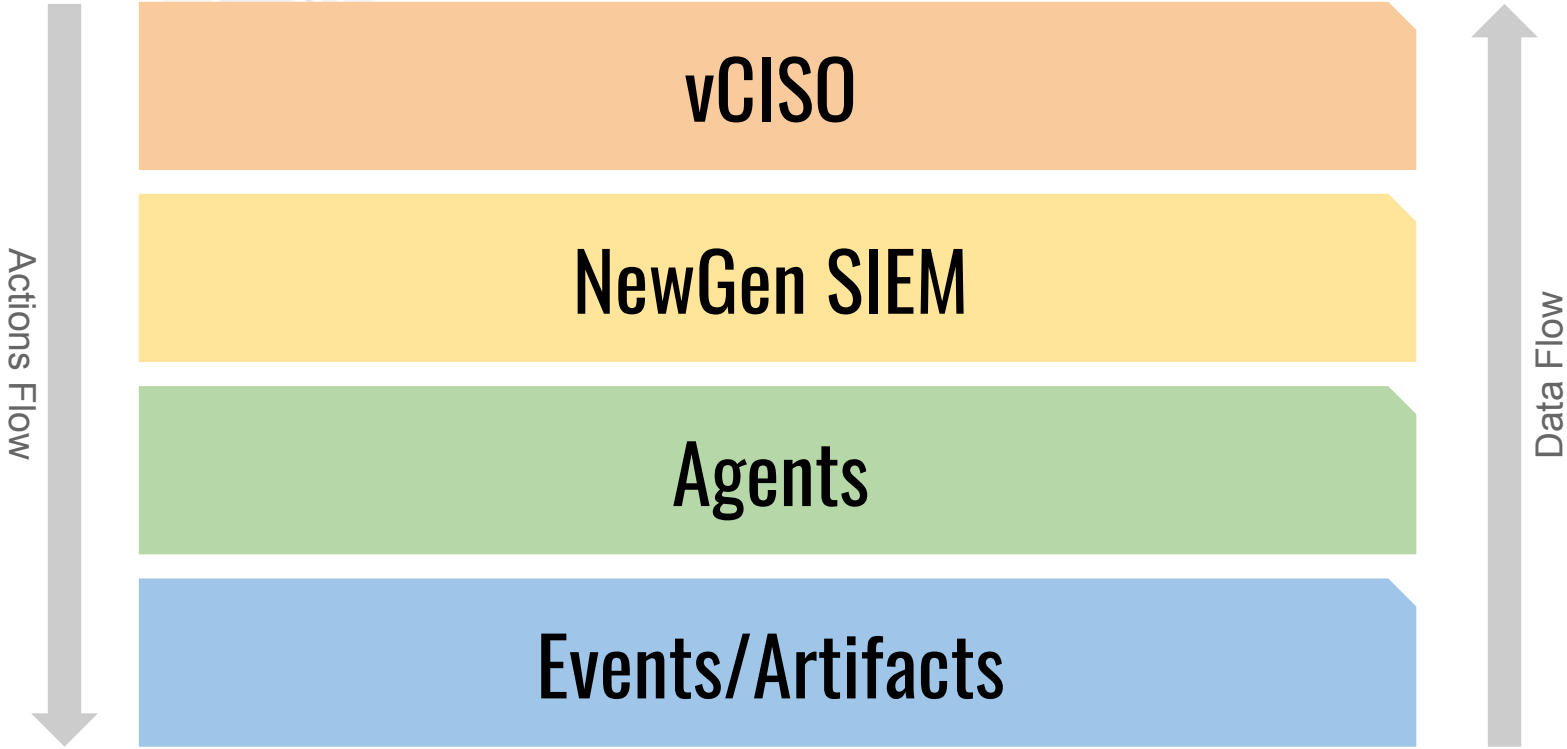
New Generation SIEM

Solution Development

Big Picture of Solution



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Indicator of Compromise Collector

Solution/Service Title	Indicator of Compromise Collector
Client Industry	Information System Security
Client Challenge	Providing their service on monitoring end-client infrastructure, it's needed to have fast, reliable and easy-to-use solution which helps to collect, pre-process and forward logs for further analysis
Scope	Scripts for collecting various indicators of compromise for Windows, Linux, MacOS
Key Benefits	Automation of manual check for indicators of compromise, assessment of various systems. Unified data model, to further processing in ELK
Results	Fast, portable, crossversion scripts for 3 most widespread systems (Linux, MacOS, Windows). Full coverage for most compromised attack surfaces, accordingly to mitre att&ck

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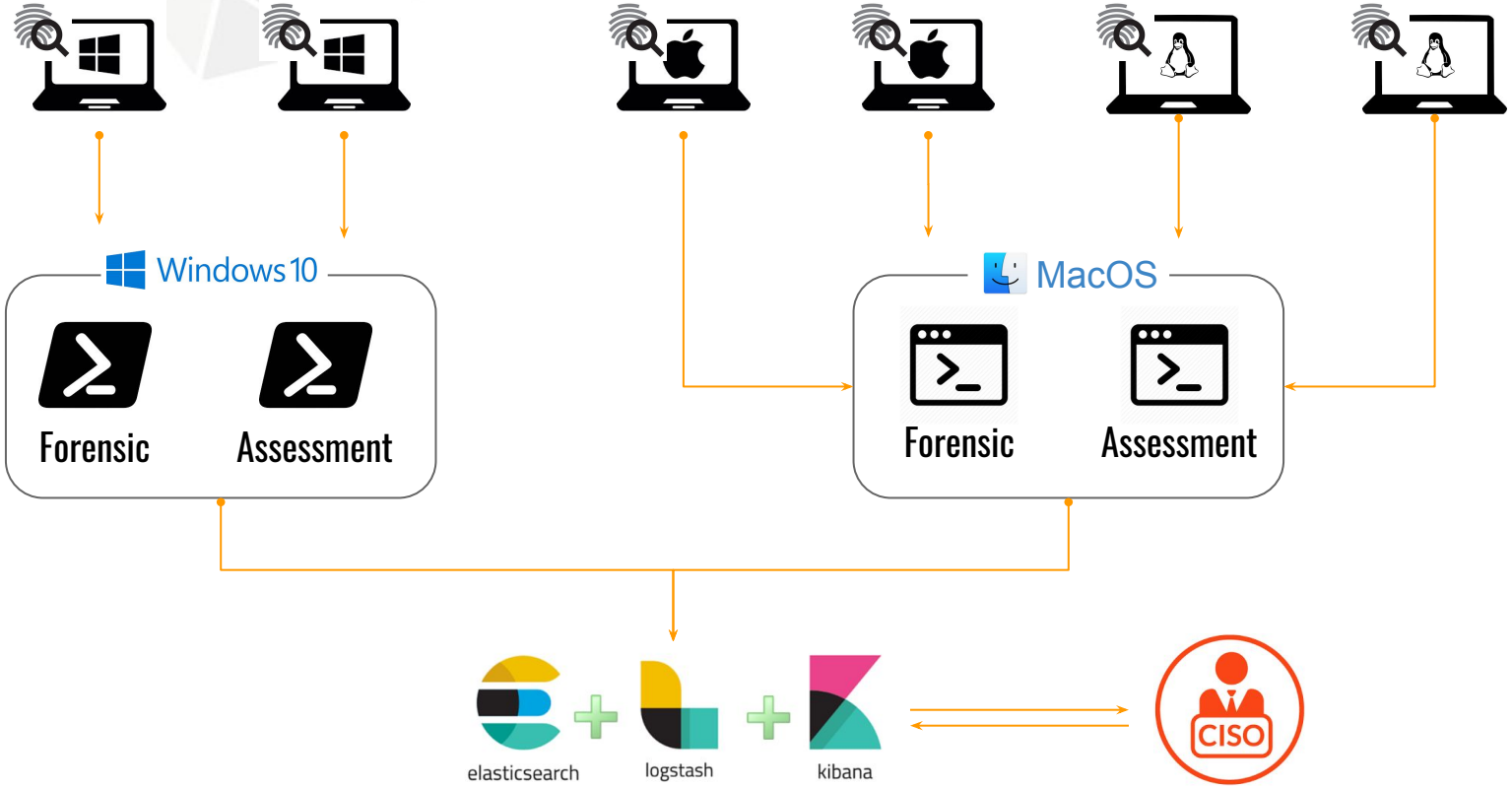
IoC Collector Architecture



IoC Collector Technologies

Workload time distribution

25%

Configuration assessment

Assessment of various mostly misconfigured system services. Creating of widespread system-view for subsequent analyse and improve of system security

- Microsoft Windows
- PowerShell
- Linux
- MacOS
- Bash

65%

Forensic assessment

Indicators of compromise collection automation. Used in system that are suspected to be compromised. Build on top of common security knowledge model ATT&CK Matrix.

- Microsoft Windows
- PowerShell
- Linux
- MacOS
- Bash

10%

Logs analysis on ELK

Automation and visualization of various data sources. Processing and anomaly detection.

- ElasticSearch
- Logstash
- Kibana

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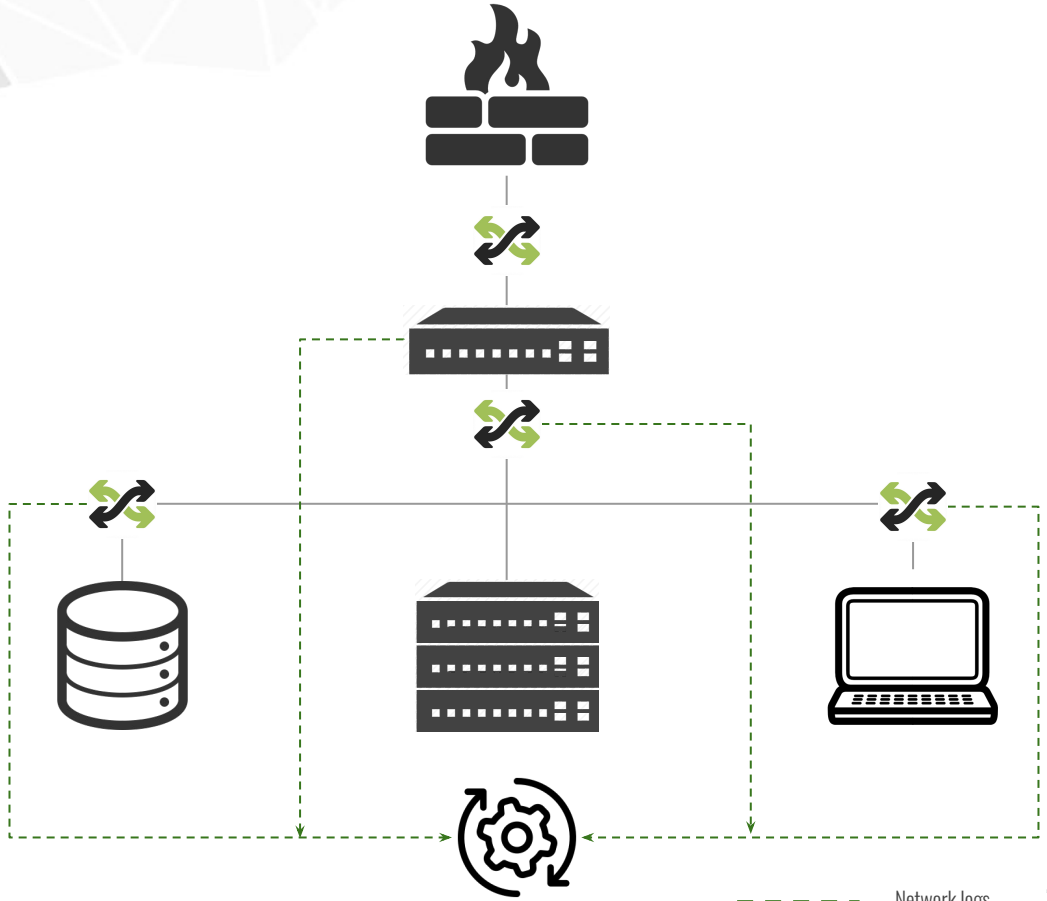
IDS Forwarder

IDS Forwarder Architecture

IDS Forwarder solution is supposed to preprocess and forward network-based intrusion detection systems logs

It's a **custom** solution designed for company's clients needs, instead of using 3d-party product, developed for different purposes and platforms.



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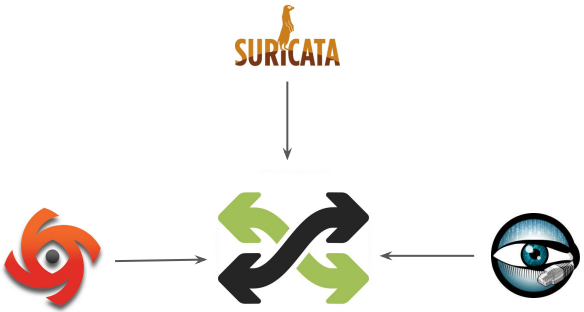
IDS Forwarder Solution

Preprocessing:

1. Pull network logs from installed IDS: Suricata, Bro, Ossec
2. Transform logs into unified data model
3. Export unified data into json format

Fault-tolerance:

1. Sys-v daemon on system start-up
2. Custom watchdog
3. Broad, multiple level rotatable logging system



Assessment:

1. Create taxonomy for rules using statistical natural language processing
2. Evaluate group threat level using internal security knowledge model
3. Create general assessment model for all IDS

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IDS Forwarder Technologies

Event Tracking System

Solution/Service Title	Event Tracking System
Client Industry	Information System Security
Client Overview	US MSSP, a cyber security advisory and operations concern comprised of some of the world's most knowledgeable cyber experts.
Client Challenge	Event Tracking System is a event management solution for tracking and acting upon different system incidents. The current state of the system was first built as a proof of concept and has outgrown its limited shell. It was decided to transfer ETS into a set of frameworks that will ensure ease of collaborative development in the system's future.
Scope	SIEM, Events Tracking, CISO, API
Key Benefits	Same technology stack, easy 3d party integration, collaborative development, designed "by the analyst for the analyst"
Results	Redesigned and delivered main parts of MVP with using new technologies stack. New UI/UX implemented from the scratch.

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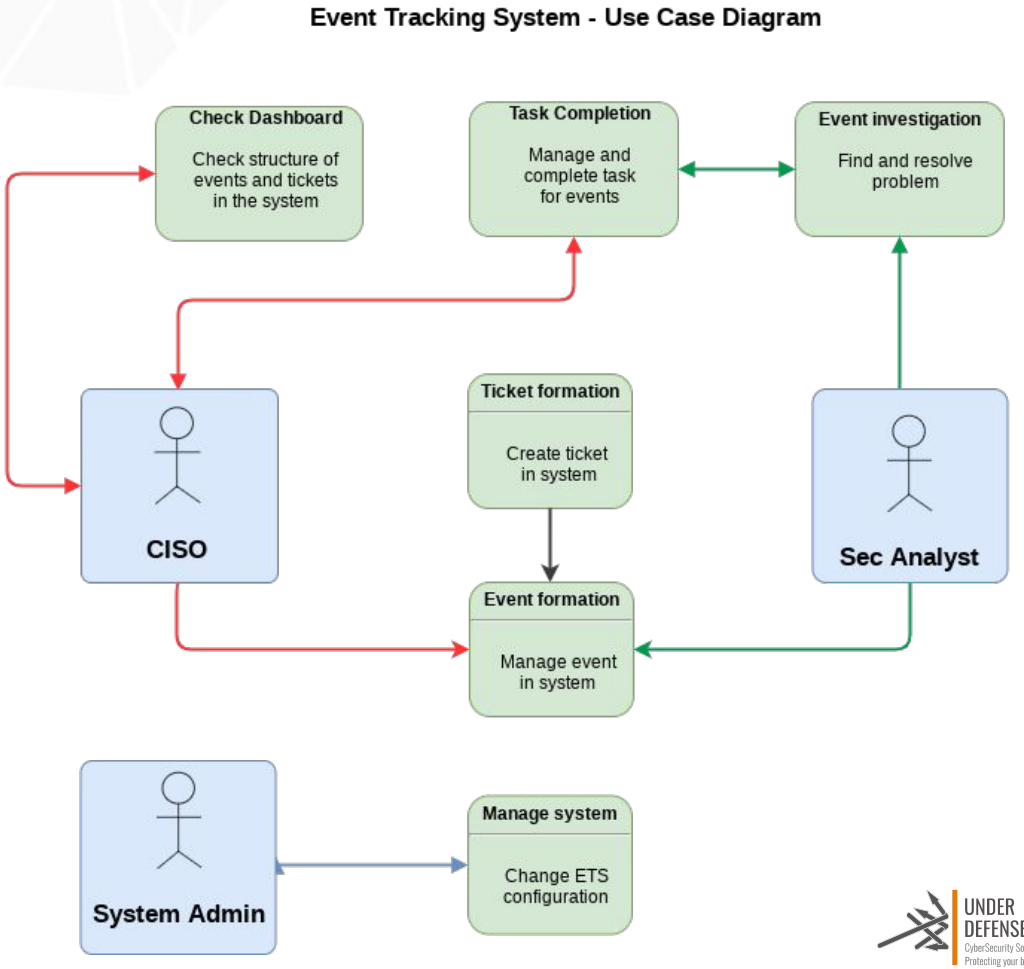
ETS general workflow

Event Tracking System is a customly designed security incidents and event management system which helps to gather, process, analyze and forward to response team security incidents happened within host network.

ETS is used by CISO, Security Analyst and System Administrator as a main tool for managing security events within the company.



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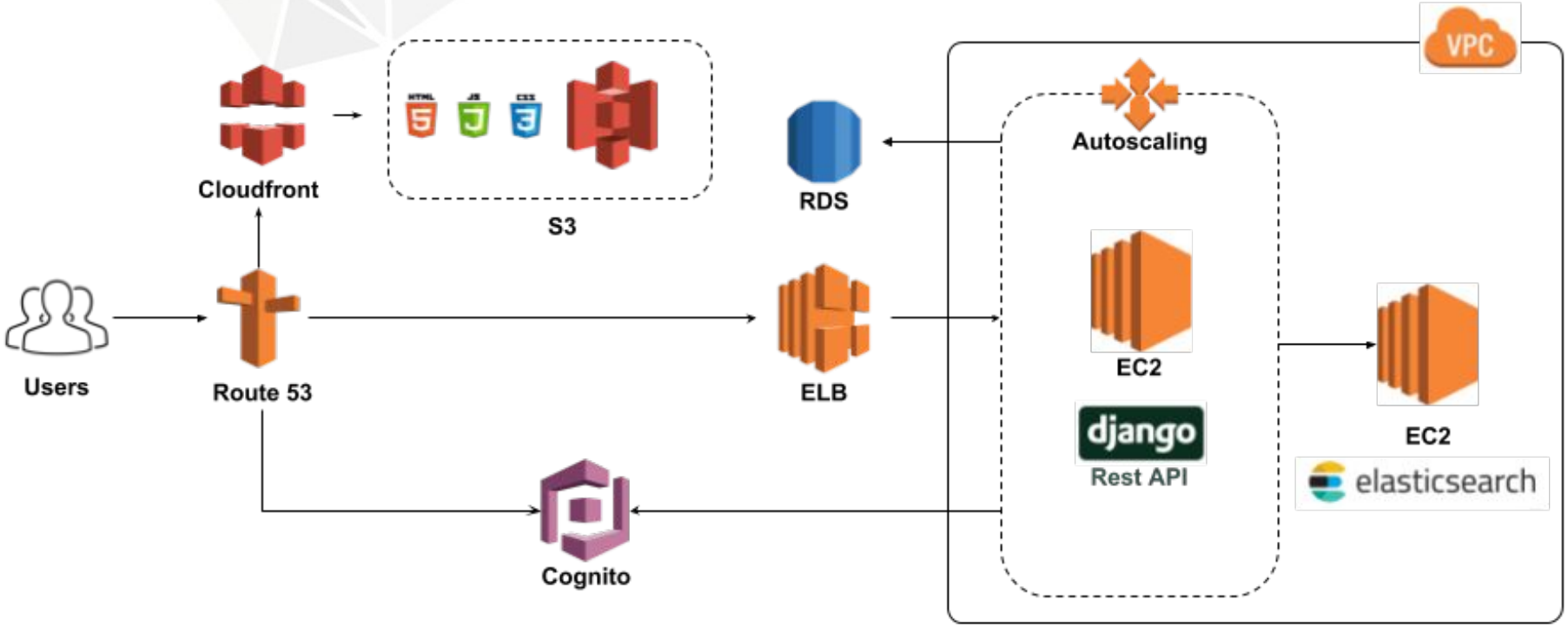
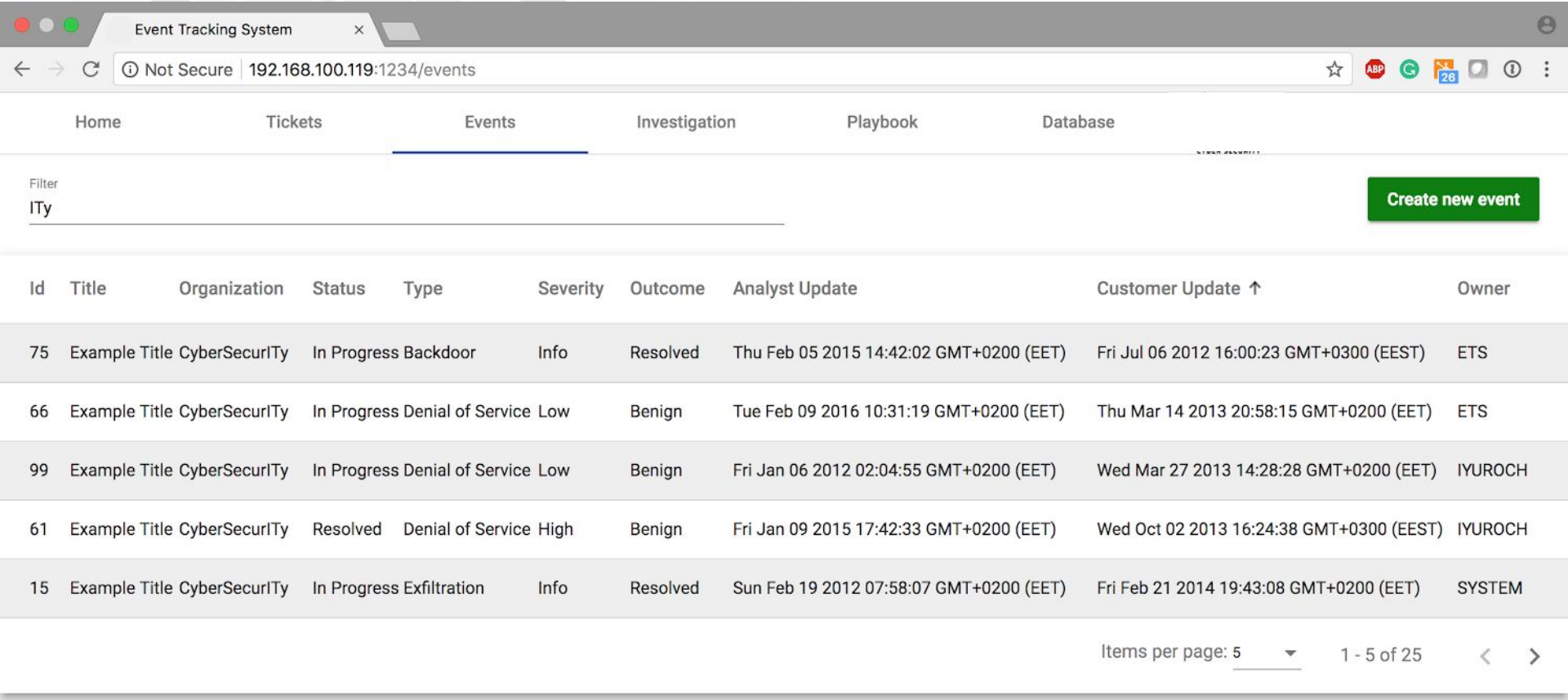
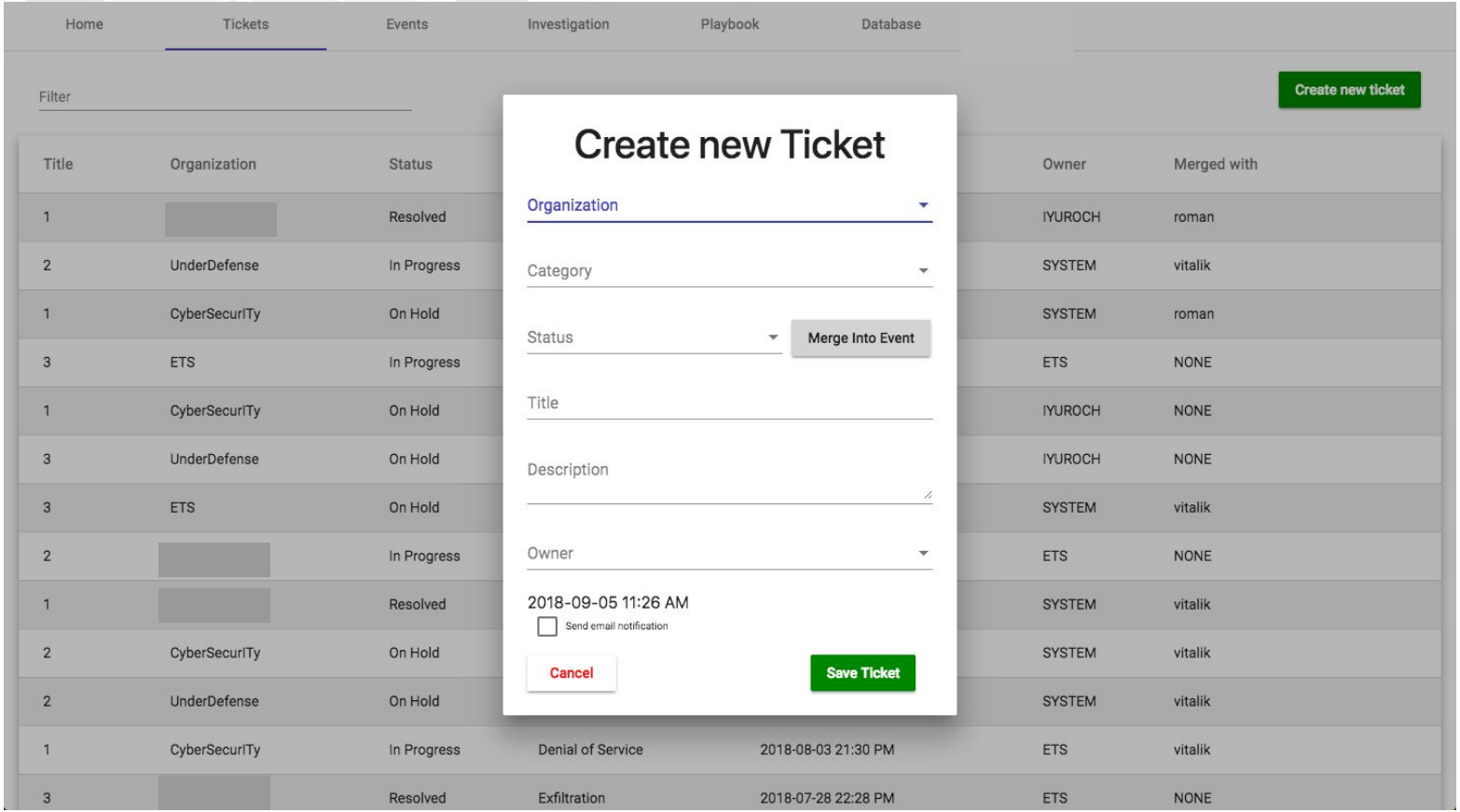
ETS redesigned infrastructure



ETS redesigned interface



ETS redesigned interface



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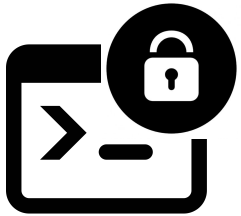
ETS Technologies



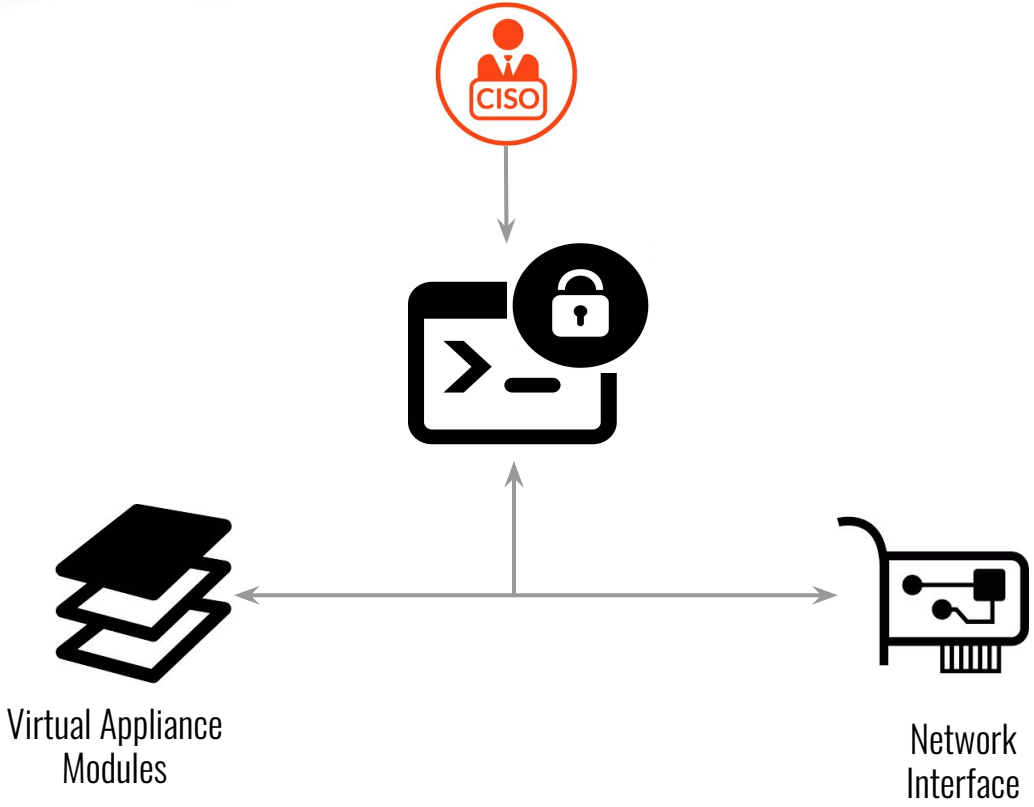
Restricted Shell

Restricted Shell Architecture

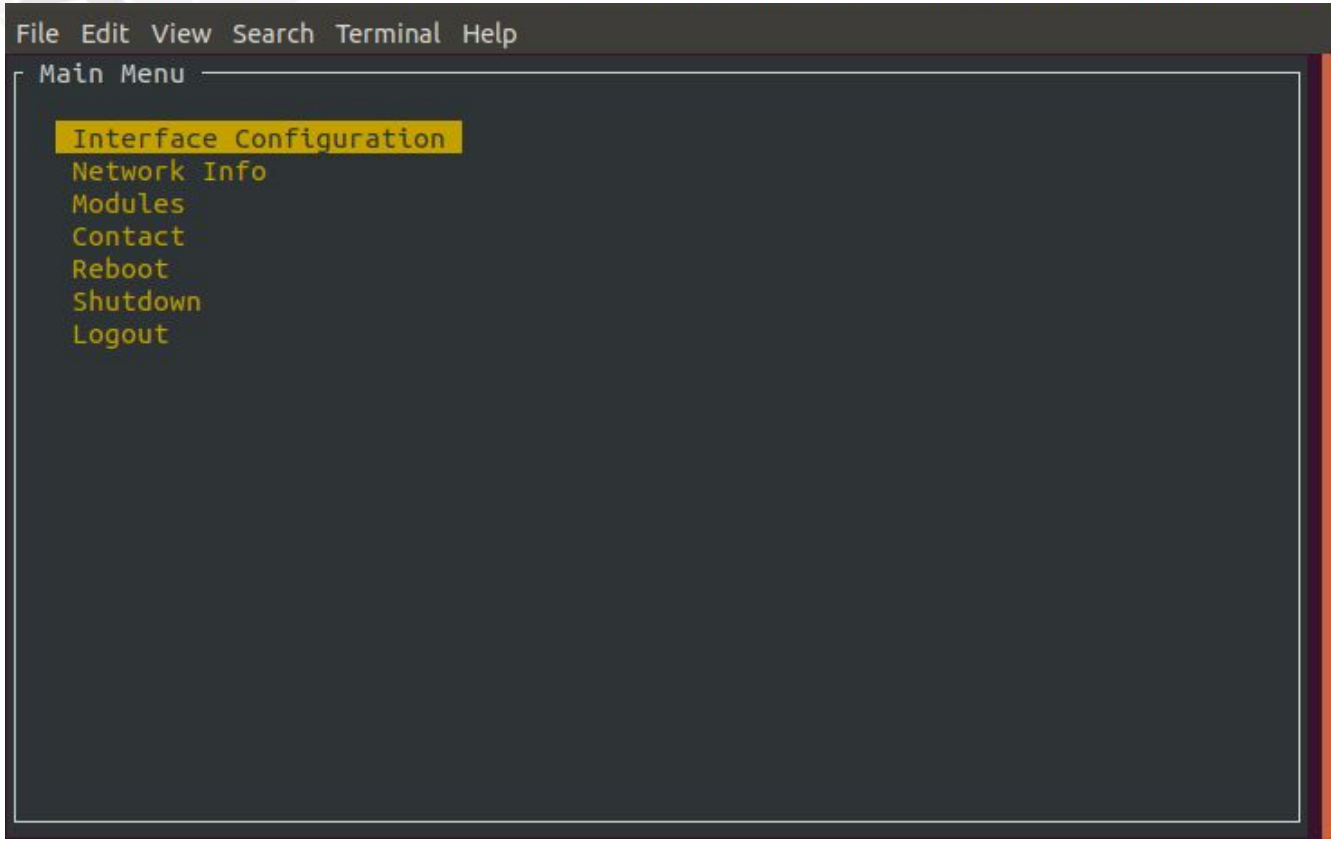
Restricted Shell is a terminal user interface for setting up, controlling and auditing system tools (networking) and installed modules.

CISO as well as security analyst will use restricted shell for running modules on-demand and testing correctness of system setup.

Virtual Appliance comes with **Restricted Shell** decreasing mental load for system administrators to make their life easier and more effective



Restricted Shell UI



Restricted Shell Technologies

Virtual Appliance

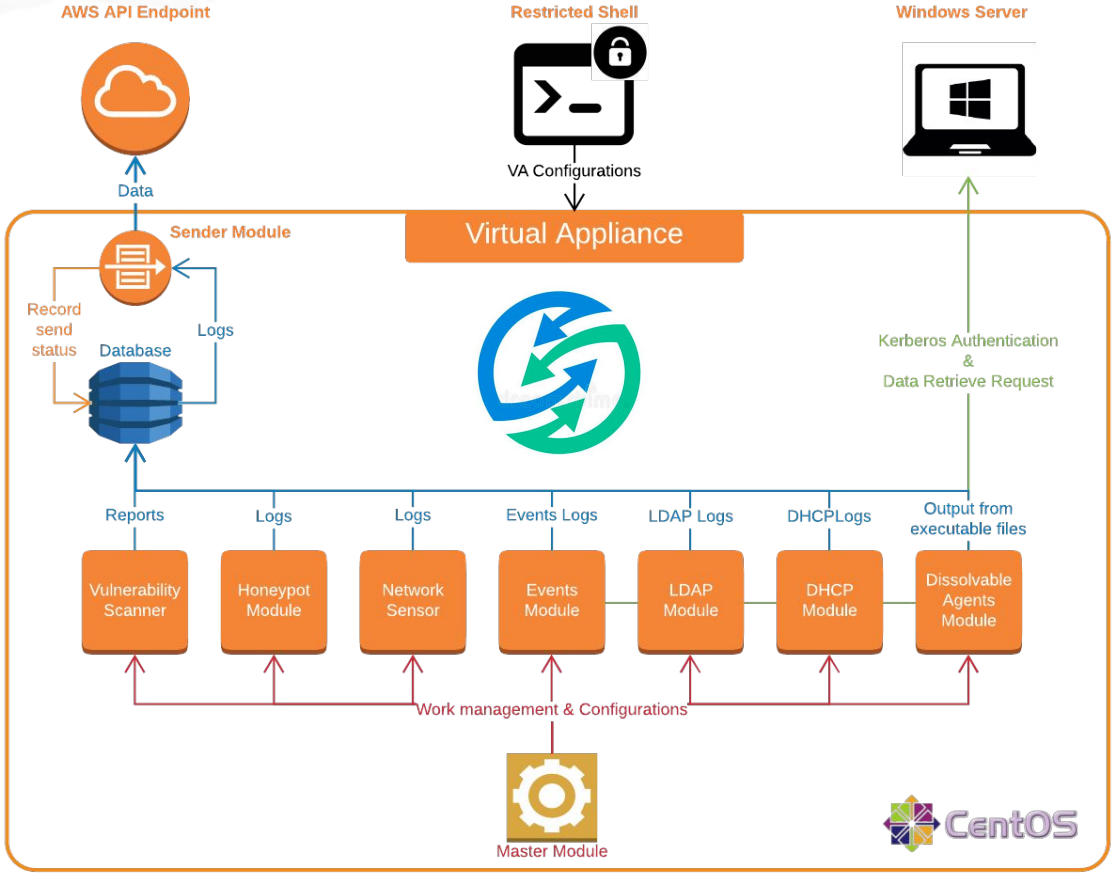
Virtual Appliance architecture

Virtual Appliance is a toolset of a modules build upon **Linux CentOS** distro which might be deployed in any part of the client's network.

Configuration management is performed remotely using **Restricted Shell** app.

Connection to Windows Server established via authentication protocol **Kerberos**.

Collected network data is stored on **AWS** for further analysis by client CISOs.



Virtual Appliance Modules

Vulnerability Scanner	Scan network for known vulnerabilities using custom signature database
Honeypot Module	Collect high-value data about intruders through the detection of their attempt of network recon
Network Sensor Module	Analyze network traffic for anomalies using rule-based IDS mechanism
Events Module	Scheduled query of specific Windows Events on Windows Server
LDAP Module	Collect data from Active Directory related to User, User Group and PC.
DHCP Module	Pull DHCP log from the Windows Server, convert it to JSON and save to DB
Dissolvable Agents Module	Run agents on remote host to retrieve data available only for privileged users
●●●	Possibility to add any other modules “on the fly” for extra functionality

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Virtual Appliance technologies

Business goals reached

Cost efficiency

Customer satisfaction

Brand awareness

Automatization

- Reduced operating costs using custom build SIEM
- Delivered constant excellence to clients
- Automatized CISO daily routine tasks
- Developed brand awareness contributing in Open Source

Strategic recommendations

Thank you!

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