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CONTENT

PRODUCT PORTFOLIO

Invicta is an excellence-driven R&D company specializing in **Virtual Air Gap, data labeling, authentication,** and **e-signature technologies**.

VAG

It is a system solution, approved at Common Criteria EAL4+ security level, that enables secure information exchange between networks with different security levels for the execution of 'Mission Critical' operations.

MiniVAG

MiniVAG offers the "Virtual Air Gap" technology, which is dual-patented by the USA and Turkey and ensures secure information exchange between networks with different security levels, in a single box.

VEGS

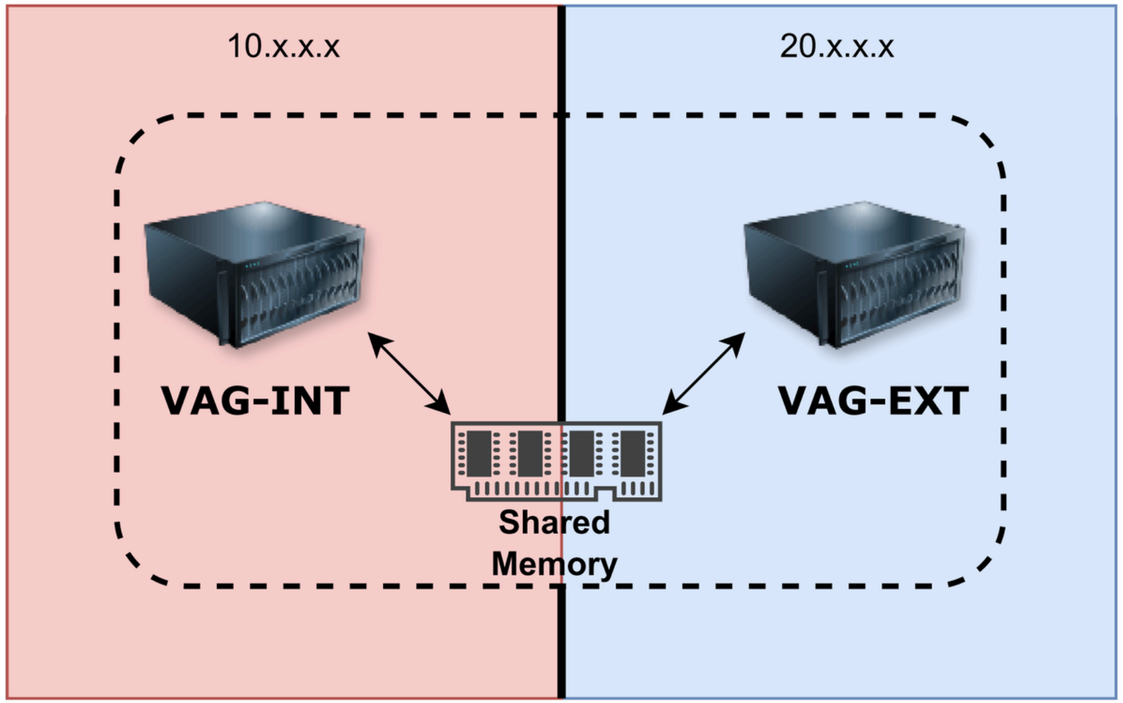
VEGS is a NATO-compliant security solution designed for the secure processing and circulation of electronic documents (txt, pdf, etc.) across different internal and inter-organizational classification level networks.

e-SBSL

e-SBSL is a next-generation security ecosystem built on the power of the e-signature

VAG/SAHAB

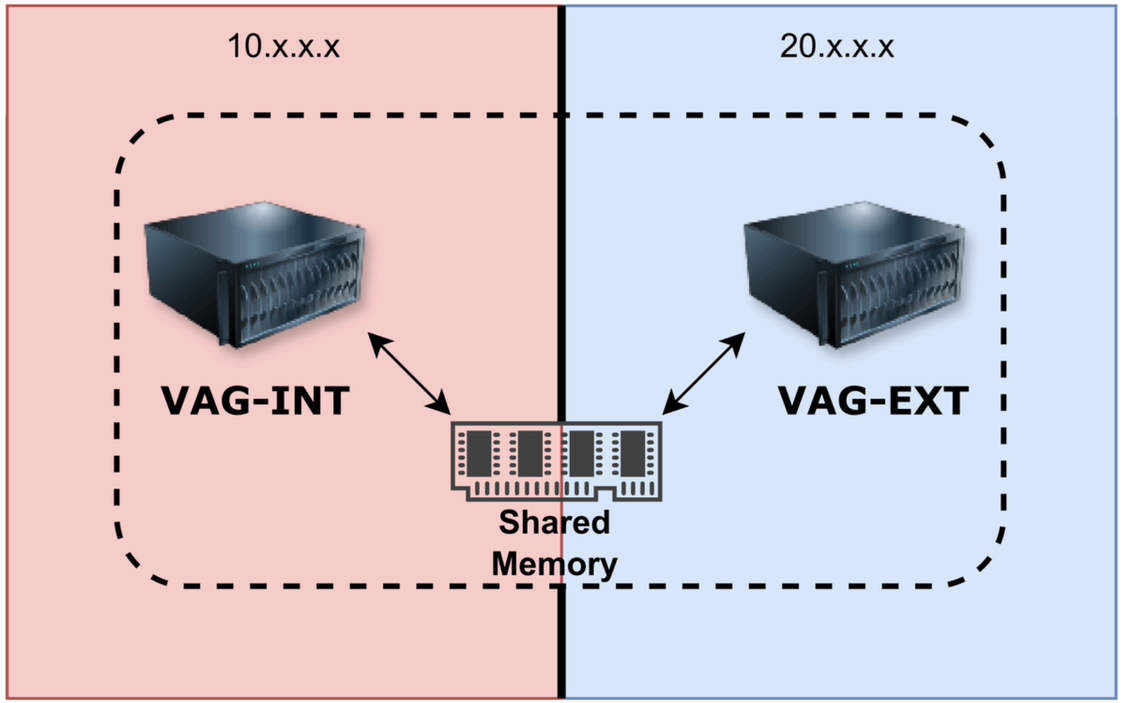
(Information Exchange Gateway)



- Features two servers **(2x1U)** connected to internal and external networks
- Communication via **shared memory (PCIe)**
- End-to-end **real-time** communication
- Traffic passes through shared common memory via an **encrypted, signed,** and proprietary protocol
- **Patented** in the USA and Turkey
- Comprehensive **CC EAL4+**
- End-to-end bandwidth: **+7 Gbps**
- Latency: **<0.1 ms**
- **HTTP, HTTPS, SMTP, FTP, FTPS, TLS, VoIP, TCP, and UDP** support
- **High Availability** support (Active-Active / Active-Passive)

VAG/SAHAB

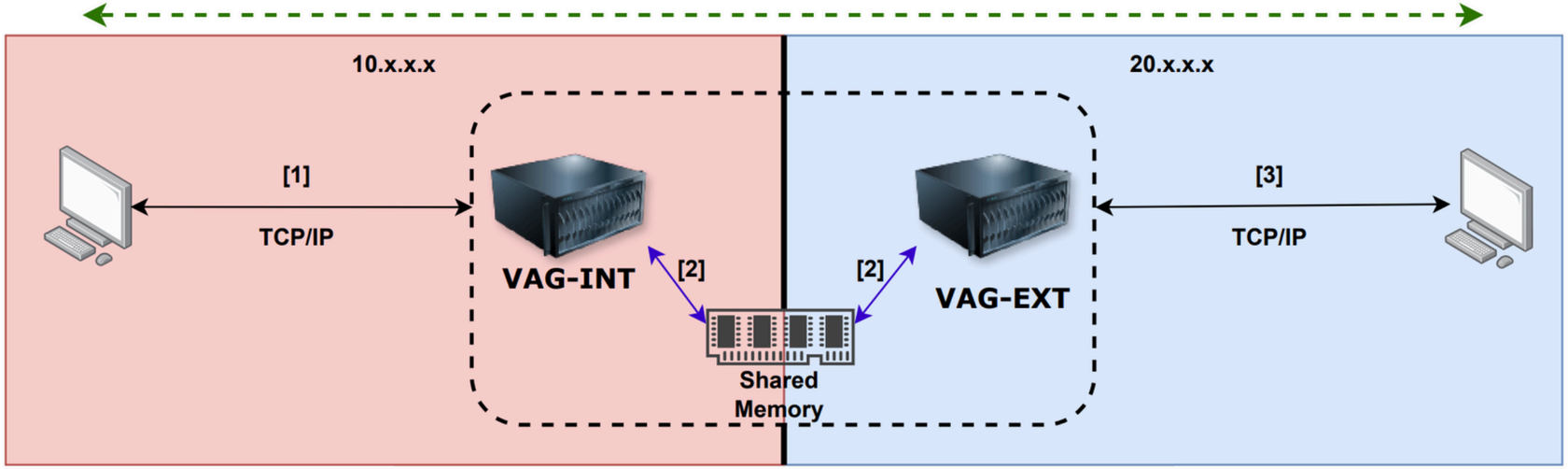
(Information Exchange Gateway)



- L7 attack protection (OWASP - Modsecurity)
- DoS ve DDoS protection
- Hardened Linux (Debian) Kernel
- Firewall (iptables)
- NIDS (Suricata)
- HIDS (Samhain)
- Malware check (ClamAV)
- Content filter (Amavis)
- Real-time log transfer to external servers via Rsyslog

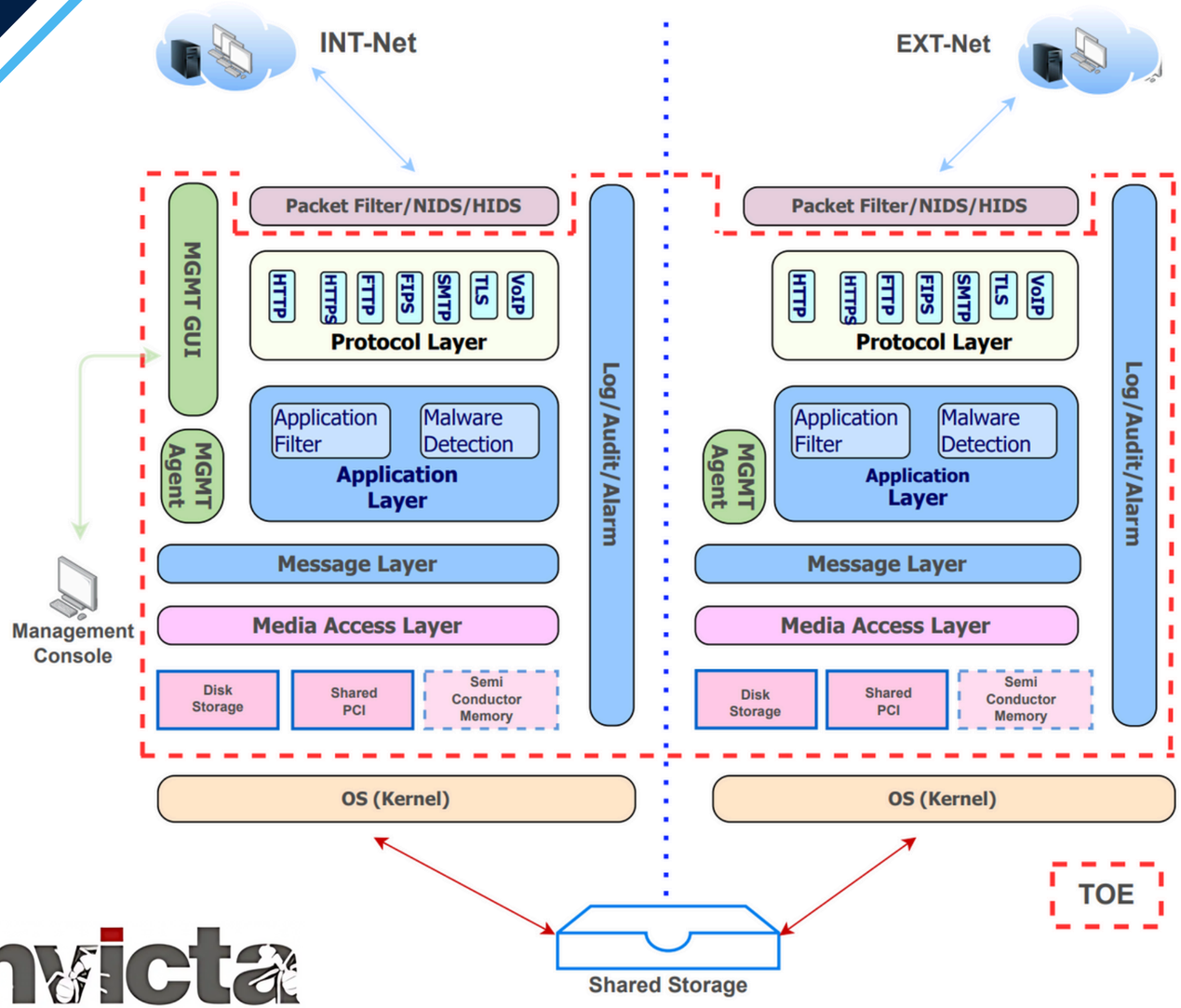
VAG/SAHAB

Communication Model



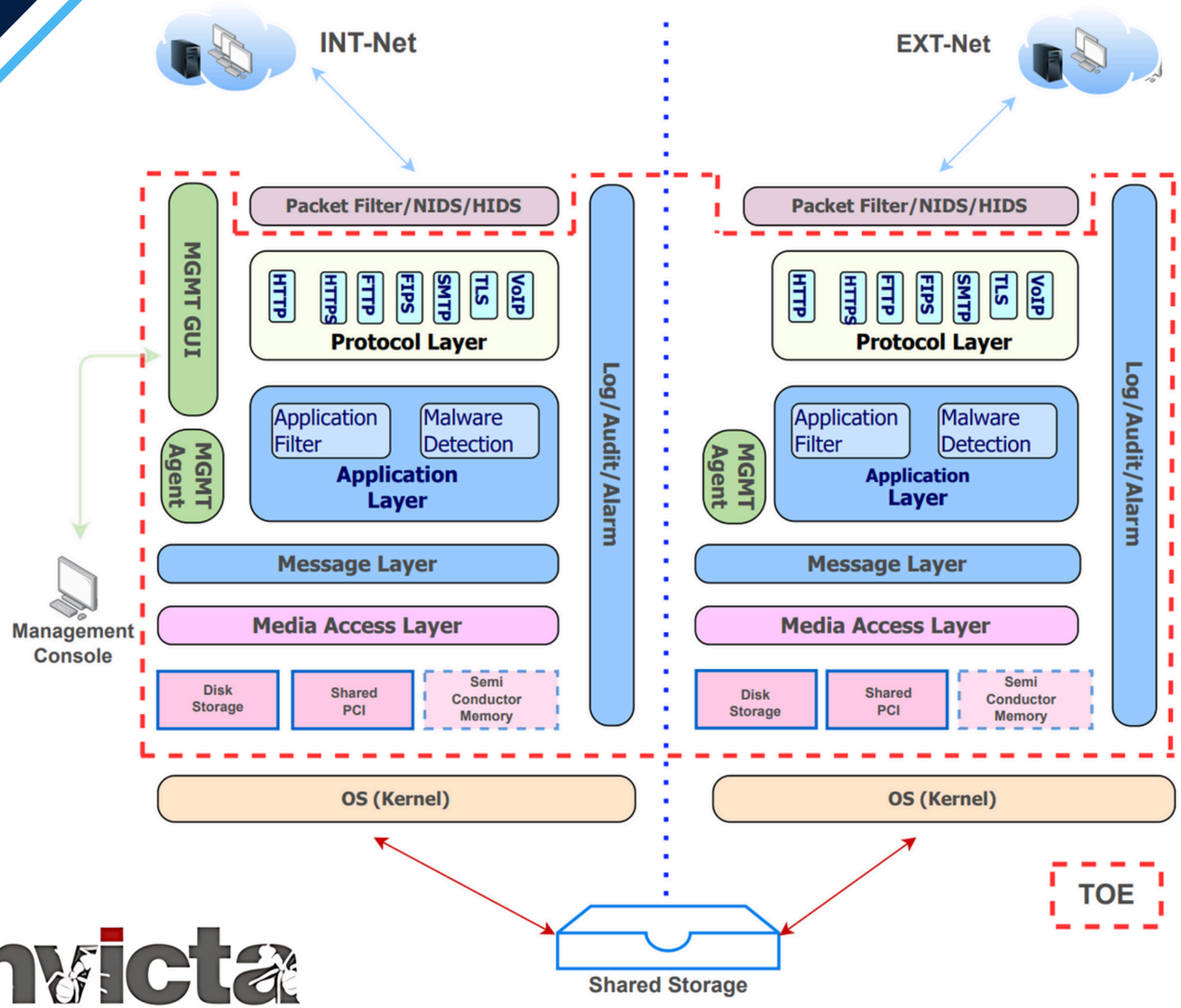
- Technically, 3 separate sessions are perceived as a single session by the user
- The incoming TCP/IP connection from the network [1][3] is terminated at the receiving VAG server
- The receiving VAG writes the traffic onto shared storage in an encrypted and signed format using its proprietary algorithm for the opposing VAG server to read [2]; the opposing VAG server reads the encrypted and signed data from the shared storage [2]
- Packets are stripped of header information; only the payload is utilized during write and read operations
- A TCP/IP connection is re-established at the destination point [1][3]
- The communication model, perceived as a single session by the user, is thus achieved alongside Air Gap Technology

VAG/SAHAB



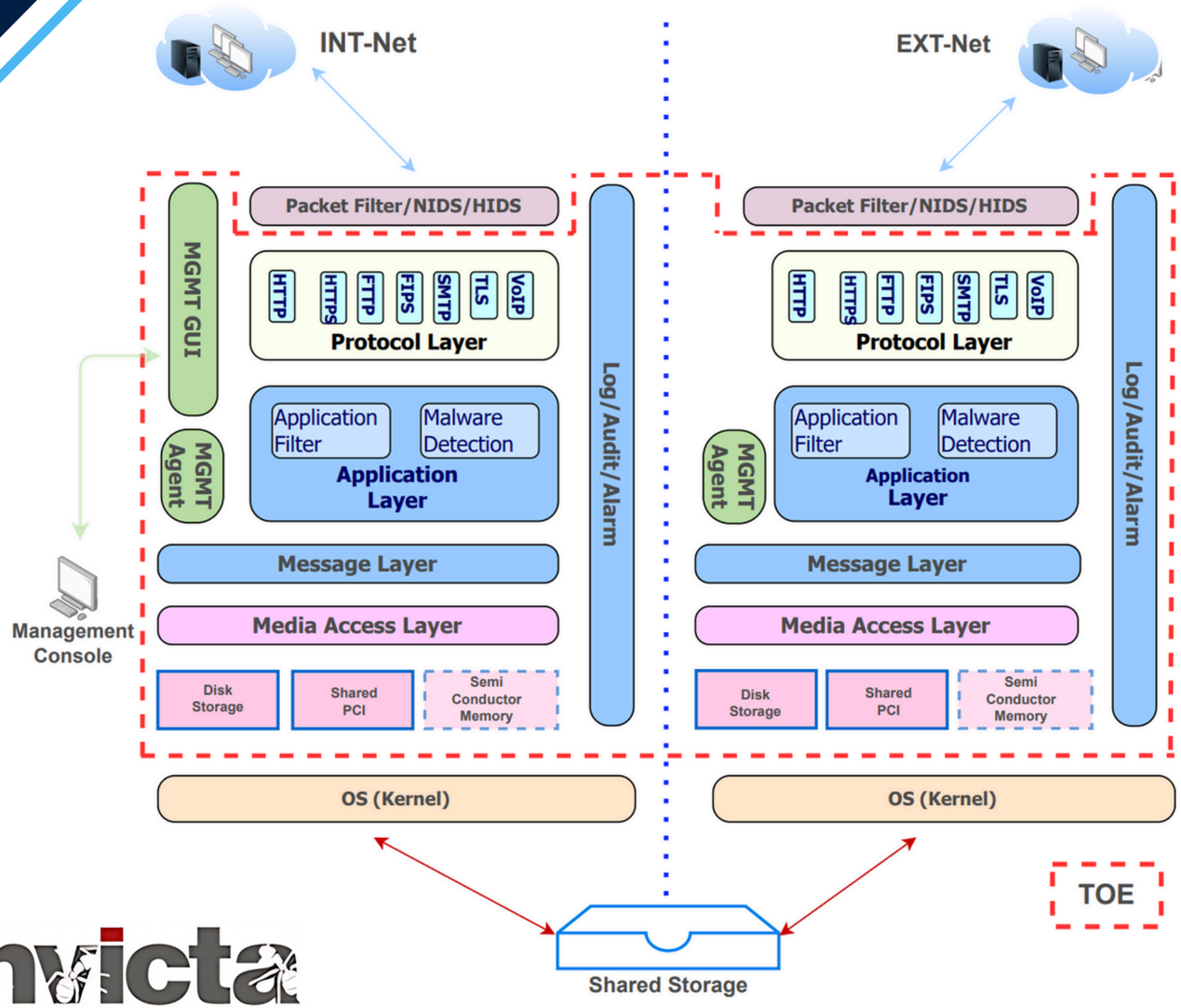
- Data passing through the protocol layer is inspected upon reaching the application layer if customized rules or software exist within the application filter.
- Proprietary development and rule-writing are possible at the application layer **(Application Filter).**

VAG/SAHAB



- The Message and Media Access layer is responsible for securely maintaining encrypted and signed communication.
- **OpenSSL** is utilized for cryptographic operations.

VAG/SAHAB



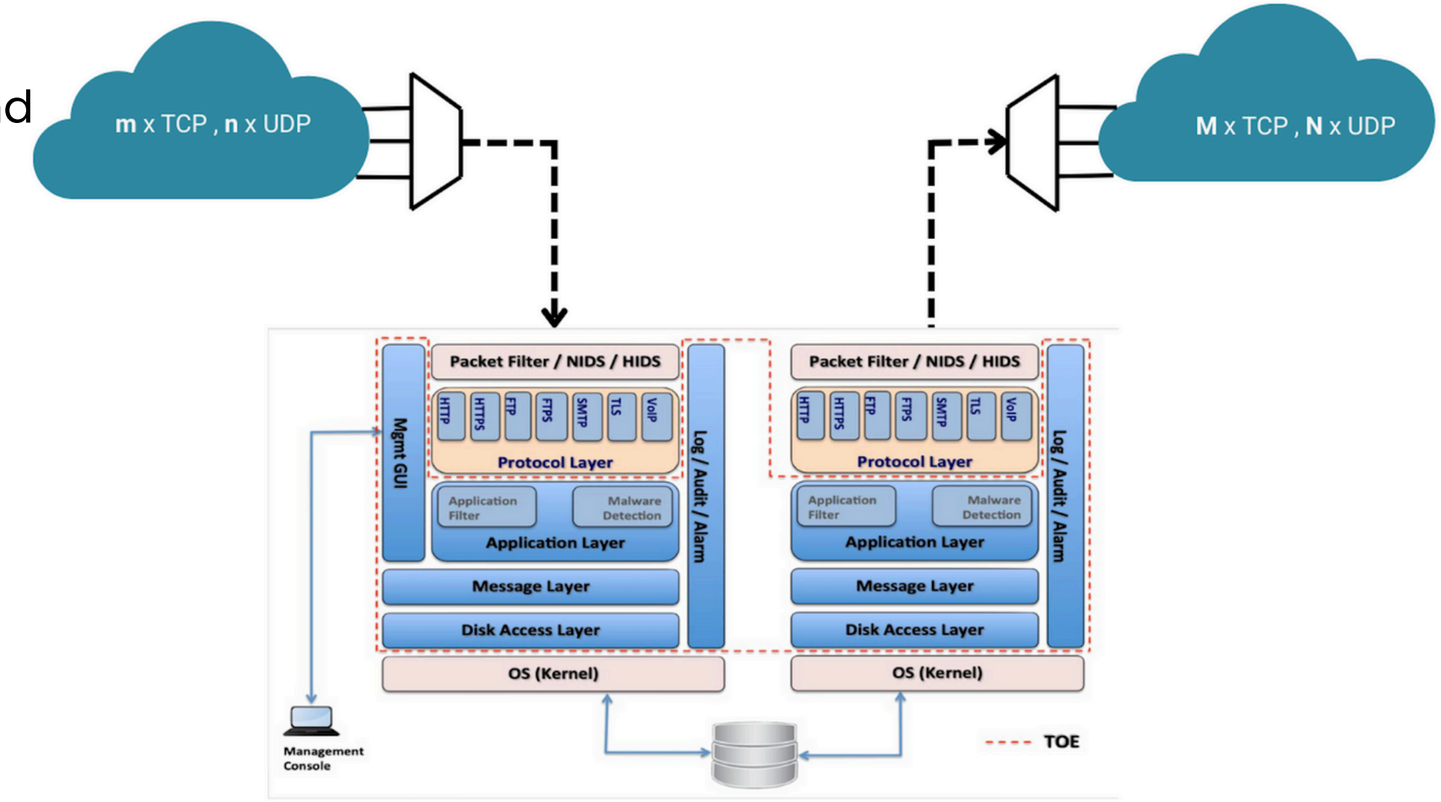
- **Logs, audits, and alarms** are generated at every layer; the system switches to passive mode when a risk is detected.

- TCP/UDP and lower-level protocols (IP, ICMP, ARP, etc.) cannot pass to the other network. Consequently, **accessing or compromising the other network/server becomes impossible.**

VAG INTEGRATED MODULES

MUXDEMUX

- Enables the transmission of numerous TCP and UDP sessions over VAG.
- **Client: m x TCP/UDP | Server: n x TCP/UDP.**
- Operates bi-directionally.
- Custom content/pattern inspection can be performed for each flow type.
- Actively utilized in the field.



VAG INTEGRATED MODULES

AUTHENTICATION

E-SBSL HTTP/S Authorization Mechanism

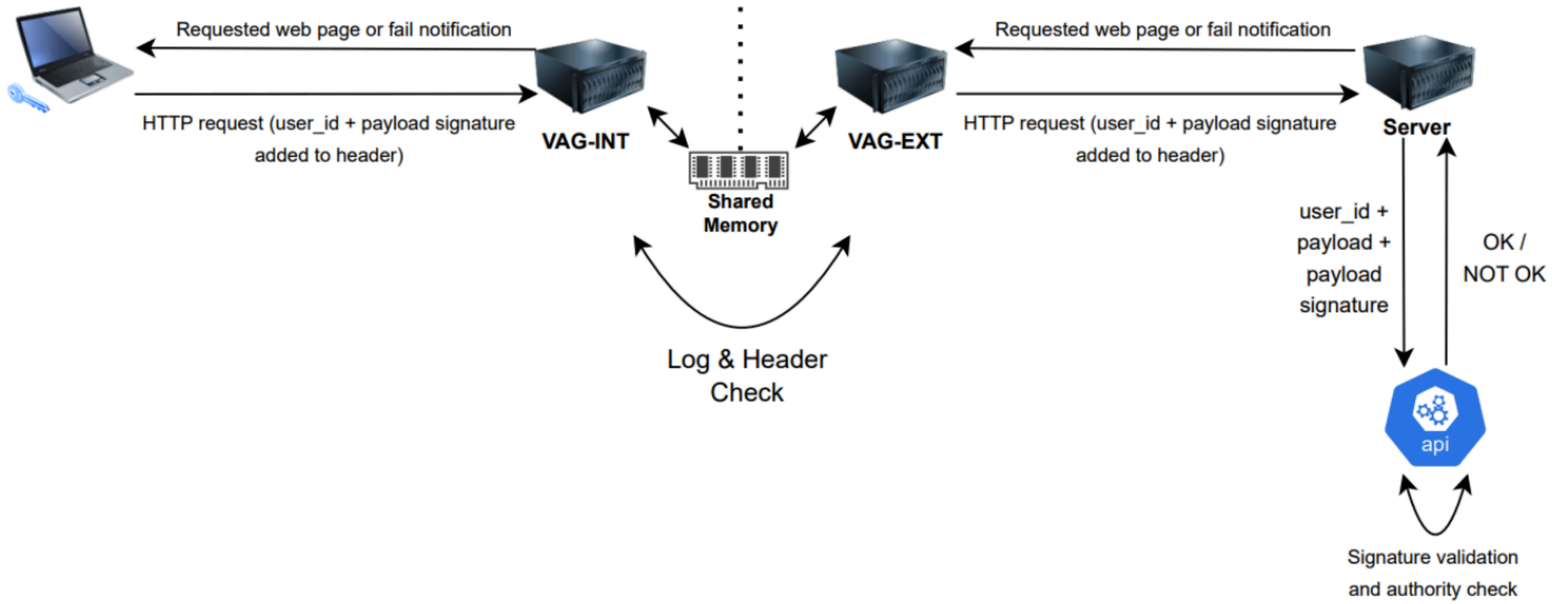
- Using an e-signature device, user identity (**user-id**) and **payload signatures** are added to the headers of requests made to designated URLs.

Authentication and Authorization

- The destination party verifies this information via **API** to validate the identity of the request and issues an **authorization decision.**

VAG Integration

- **Who** requested access,
- **When** the request was made,
- **Which** URL access was requested for.



MINIVAG

- **Compact Design (Small Form Factor):** Portable and space-saving hardware built on dual **Raspberry Pi 5** units with "Set-top-box" dimensions.
- **Proven Architecture:** Identical software and security architecture to the standard VAG.
- **Communication:** Communication between internal and external (INT/EXT) networks via **FPGA-based shared memory**.
- **Performance: Up to 1 Gbps** end-to-end bandwidth.
- **Strategic Use:** Cost-effective, high-security solution for remote locations, branches, and mobile units.

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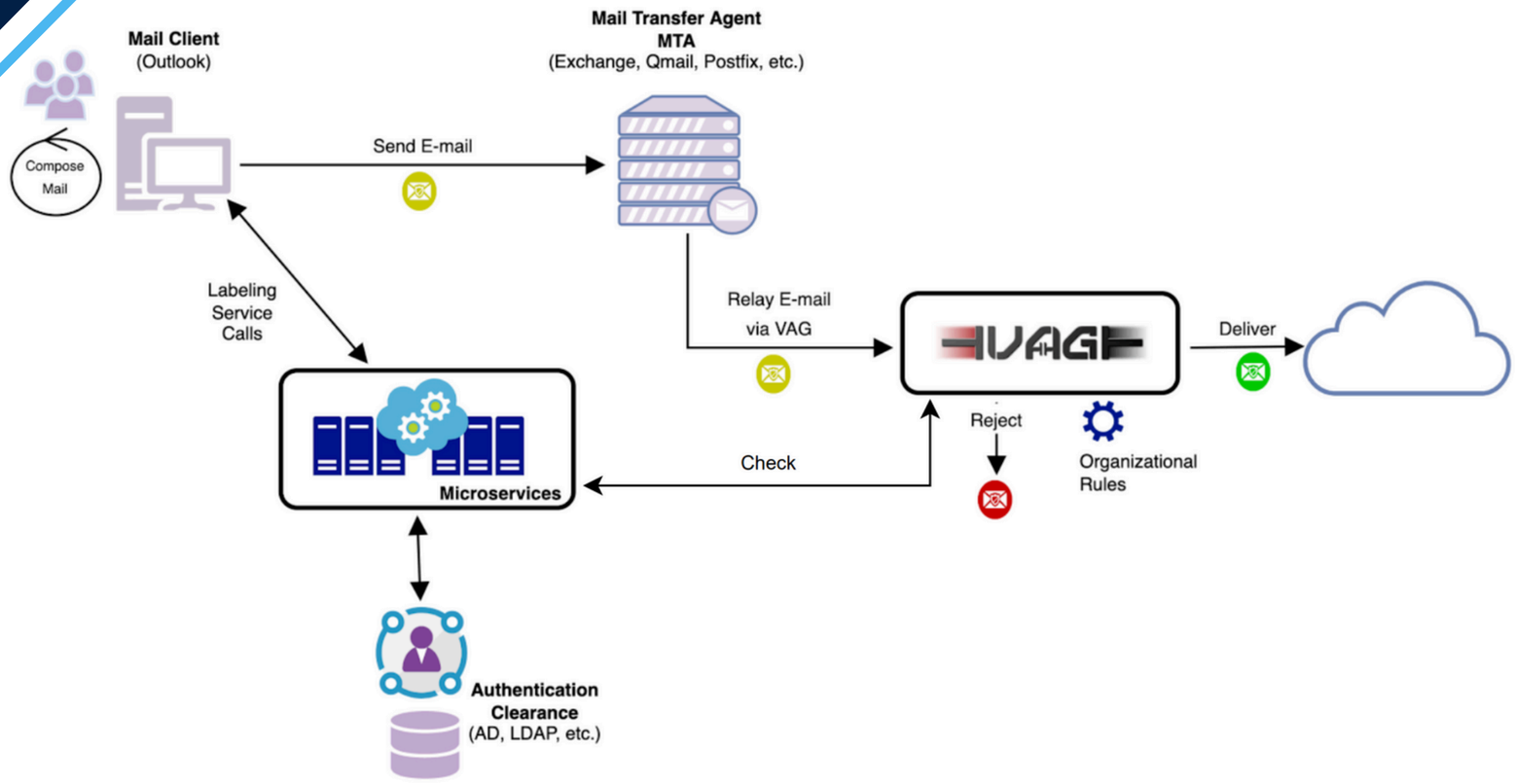
VAG MINI

VEGS



Key Features

- Microservices architecture
- Trust-enhancing mechanisms for cross-network information and document transfer
- **NATO ADAT-P 4774, 4778**
- Integration for **Email, MS Office Word, MS Office Excel, JPG, and PDF**
- Image redaction capability
- VAG integration

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VEGS

E-SBSL

Core Features

- Browser extension on the user side and backend library
- Server integration specifically for enterprise use
- VAG integration

- **File Signing:** Signing any file type and signature verification with cryptographic proof.
- **File Encryption:** High-security encryption and decryption for all file types.
- **Gmail Integration:** Entire email flow encrypted and signed via e-signature device or PGP key pair.
- **PGP Key Management:** Effortlessly create, manage, and protect your PGP key pairs with hardware-backed security.
- **Password Manager:** Secure vault for your credentials, protected by your e-signature device.
- **Authentication API:** Passwordless authentication API for third-party websites.
- **HTTP/S Authorization API:** HTTP/S header-based authorization mechanism for restricted URLs.

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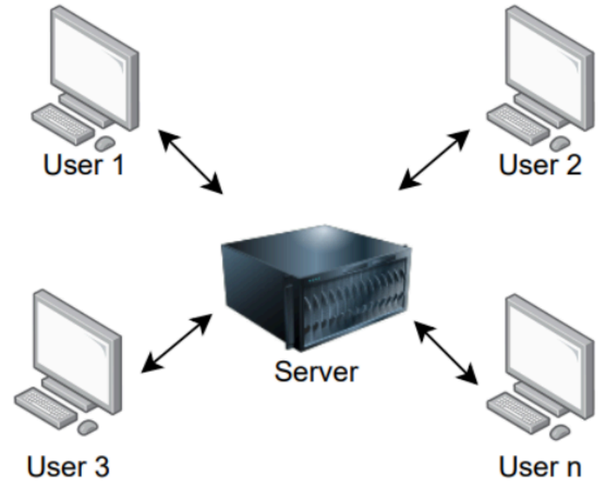
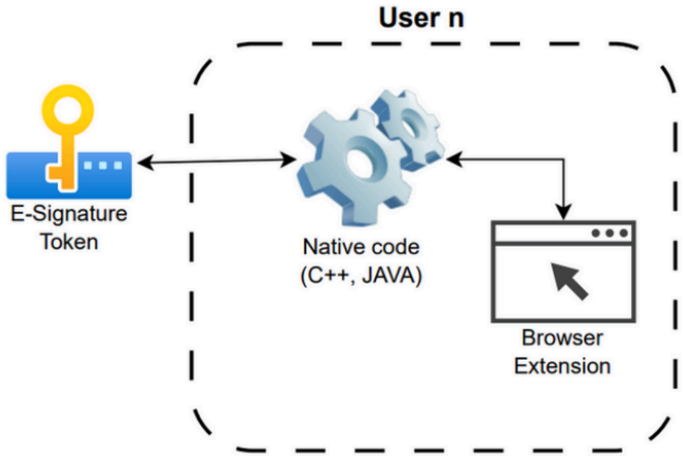
E-SBSL

E-SBSL

- Public keys and user data stored on the on-premise server are utilized to enhance usability and functionality.
- Native code running on the user's computer and the browser extension provide the primary functionality to the user.
- Users can access the full range of features using only the browser extension.
- Fully compatible with e-signatures issued by authorized certificate service providers in Turkey.





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E-SBSL

REFERENCES

aselsan

ODTÜ METU

HAVELSAN

TEI

TAI

STM 25 YIL
MÜHENDİSLİK | TEKNOLOJİ | DANIŞMANLIK

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