



CYSEC

The new
standard in
cyber security

Introducing the ARCA^{ONE} by Cysec

Cysec Systems AG is a rebrand of ARCA Trust

ARCA^{ONE} leverages the best-in-class hardware and software components to offer a secure execution environment for protecting sensitive data and the integrity of applications. Our solutions shield data against unauthorized access, manipulation or even theft.

CYSEC.SYSTEMS

🛡️ Impenetrable

ARCA^{ONE} helps you secure your software and data when it is being deployed in potentially insecure environments. Our server is tamper-proof and includes an embedded Certified FIPS and PCI HSM.

Our secure execution Environment ensures that the content within is impossible to access, extract or modify by an unauthorized party.

🔧 Host Critical Applications

Our impenetrable ARCA^{ONE} platform allows you to host secure applications that allow clients to utilize their data while maintaining the highest security standards. This solution keeps data safe while ensuring a high level of functionality and permanent access to data.

A single virtualized server enabling multiple sensitive applications execution with guaranteed security and isolation between the different applications. Proved and strong separation of duties. Open Source (OpenBSD base).

🔒 Protect Sensitive Data

Plug&Play: Modern API's (Restful) to control, configure and operate the different applications and the trusted and secure execution environment.

Full support of distributed IT architectures. Synchronization & Backup at application level for system setting and at crypto-algorithmic level for keys management. Standard load balancing scheme.



Our Clients

-  **Finance:** Protecting digital assets and sensitive data.
-  **IoT:** Securing the end-to-end communication and infrastructure.

📁 The App Layer

The apps are software programs that consist of components based on micro Virtual Machines using Cysec Digital Locker technology. That apps and their lockers are running on the ARCA^{ONE} in an isolated scope.

The applications provide the business intelligence of the ARCA^{ONE}, they are written in a specific application programming language, most prominently Scala or Go, and are bundled with a tiny operating system kernel to run them as a VM.

📁 The Firmware Layer

The firmware is the software that provides the Open Source (OpenBSD base) operating system and runtime of the ARCA^{ONE} and its apps. The firmware consists of two parts: the host operating system and the operating system kernel of each Digital Locker.

Besides providing the runtime for the apps, the main duty of the firmware is to provide a broker between the apps, the API services, and the HSM module in the hardware layer.

📁 The Hardware Layer

The hardware of the ARCA^{ONE} is a 64bit x86_64 machine in a 19" 1U form factor. To securely store confidential information, the hardware is equipped with a PCI-Express based Hardware Security Module (HSM).

The appliance is built for reliable and secure operation including redundant reliable power supplies and optionally a tamper-proof chassis.

CPU	4 Core, 3.3GHz, 8MB Cache, 64 bit x86_64
Memory	8 GB RAM (base model)
Disc	240 GB SATA
Power	Redundant Hot- Swappable Power-Supply
Remote Access	IPMI 2.0 SSH 2 ARCA API
Cryptography (software)	EdDSA ED25519 XMSS (PQ-safe)

Network	2x Gigabit Ethernet
Operating System	ARCA 1.1.0 (OpenBSD 6.4/amd64)
Hardware Security Module (HSM)	PCI-DSS FIPS 140-2 Level 3
Cryptography (hardware)	ECDSA prime256v1 ECDSA secp256k1 ("bitcoin" curve) ECDSA secp384r1 ECDSA secp521r1 RSA
Multi-Factor Authentication Methods	JWT U2F OTP

A truly integrated cyber security solution

Trusted secure platform

Built by renowned and experienced software and security experts based on the trusted secure OpenBSD platform. No other product on the market provides such a comprehensive security model from API to app to firmware to hardware.

Strongest future-proof cryptography

Supports the latest and bleeding-edge cryptographic algorithms with crypto flexibility and post-quantum readiness. Hardware-accelerated crypto is provided by the HSM for most common cryptographic algorithms including blockchain-compatible ECDSA curves, selected crypto algorithms such as EdDSA or post-quantum-safe XMSS signatures.

Non-stop distributed technology

Protects digital assets with distributed clustering technology. If one **ARCA^{ONE}** fails, others will continue to operate. The **ARCA^{ONE}** is meant to be clustered and almost always deployed on couples of two systems per location. The software stack, including the apps and the clustering component, can build a distributed custody solution of two or more nodes.

App-ability and performance

Secure execution environment that provides an SDK, APIs, and a runtime that is more powerful than the competition.

Swiss Made

Developed, assembled, and made in Switzerland. Cysec has full control over the stack without any foreign technical debt.



Cyber Security with added Swissness

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