



REIMAGINING SECURITY

Eclipz

Eclipz is on-demand encryption technology that authenticates and protects communication between endpoints—devices, containers, and services—as embeddable OEM security components for new or existing solutions.

What Does Eclipz Provide?

Eclipz automates and simplifies the encryption of traffic between untrusted endpoints across insecure networks, which previously was impossible or difficult and too expensive to secure at scale. Use cases include communications with and between remote endpoints as well as the microsegmentation of communication between resources, such as container-to-container or cloud-to-cloud.

Eclipz leverages the computational power of public and private clouds and changes the economics and utility of network layer encryption. You can embed Eclipz to secure data in transit within existing offerings or in new standalone offerings.

Eclipz makes communications go dark by:

- Authenticating endpoints prior to establishing connections or exposing resources.
- Generating new keys each time a connection is established.
- Encrypting all data before entering the enclave and while in transit.
- Obfuscating the identification of the endpoints from others.

Why Was Eclipz Created?

Eclipz's technology stems from a request made to one of our founders by a US government agency in 2013 to help secure their most sensitive communications. Chief among the requirements were that it must:



Be lightweight and software-based, so that it could be downloaded to any device anywhere in the world.



Be transparent to the end user, so that they did not need training for use or operation.



Be able to operate over any network of opportunity that could support Internet Protocol (IP) traffic.



Operate at a lower level than the Application layer (layer 7) of the OSI model, so that it is harder to manipulate or otherwise hack.



Prevent third parties from inserting themselves into the middle of the communication.



Stick to standards, including crypto standards.

Thanks to a tech transfer arrangement, our founders were able to take this government-grade technology and begin the transformation in 2018 for use by the public, through our partners.



Eclipz Features

- **Improves network encryption** of data in transit.
- Leverages today's cloud environments to **enable key distribution at scale**.
- Creates **point-to-point private networks** on the fly, terminating at a virtual network kernel adapter.
- Derives new ephemeral encryption keys for each connection, which **greatly reduces the risk of "break once, run everywhere"** and replay attacks.
- **Authenticates endpoints** prior to establishing any connections or exposing any resources.
- Moves traffic entirely **within enclaves** without the additional creation of externally accessible endpoints.
- Changes the economics and utility of point-to-point encryption and authentication.
- Transforms encryption from an edge-to-device solution to a **device-to-device solution**.
- **Enables encrypted, secure data communications** in scenarios where it is currently impossible, difficult, or too expensive to scale.

Eclipz Value Proposition

Easy to deploy, manage, use, and support

- Automated certificate and session management eliminates administrative overhead, configuration errors, or the circulation of revoked certificates.
- Transparency to the user and to applications eliminates misconfiguration and user friction.
- Easily integrates with existing enablement services like Active Directory, PKI/KMS, and Endpoint Security.
- No IP changes are required on servers with existing routes between subnets.

Benefits your business

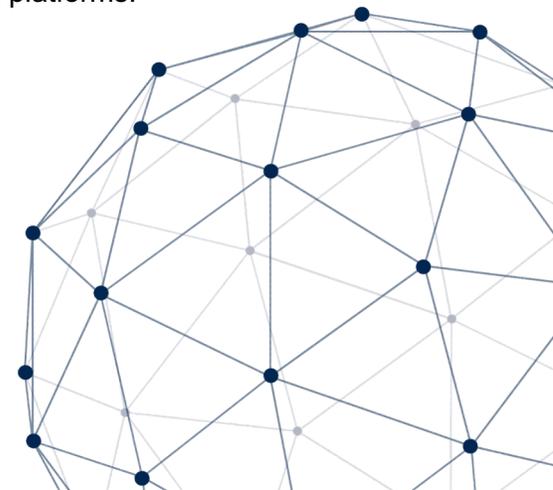
- Drives growth, margins, and client loyalty by eliminating barriers to digital transformation.
- Enhances Internet of Things (IoT) solutions by embedding Eclipz, which uniquely preserves the integrity and confidentiality of digital communications.
- Reduces the risk, cost, and complexity of digital transformation at scale and speed.
- Increases profit margins and cost savings through the ease of deployment, simplified certificate management, and lower network overhead.
- Increases new and existing revenue by extending the value of existing offerings and introducing enhanced security offerings.
- Accelerates portfolio and platform transformation.
- Delivers differentiated client value.
- Increases client loyalty by reducing losses due to unsecure data movement.

Reduces enterprise risk by providing superior security

- Session-unique ephemeral certificates protect previous, current, and future sessions against replay attacks.
- Requires endpoint authentication (certificate) and validation (KeyID), so unknown requests are ignored and unacknowledged.
- Point-to-point encrypted tunnels protect all IP traffic with one of the most trusted protocols.
- Is a proven technology with active deployment by the U.S. government.

Lowers cost

- Software-based capability eliminates the need for additional expensive network appliances such as routers and VPN concentrators, and associated operational costs.
- Simplified key and certificate management reduces administrative costs.
- Comprehensive set of APIs leverages existing services and platforms.
- Pluggable encryption facilitates transformation and consolidation of services and platforms.



How Does Eclipz Work?

Broadly speaking, Eclipz works by registering and authorizing endpoint clients with the Eclipz Management Cloud Platform. After registration and authorization, clients then securely communicate directly with one another using protected sessions called enclaves.

Architecture Overview

The Eclipz architecture consists of the following:

Eclipz Management Cloud Platform (EMCP) provides API-addressable modules to coordinate microservices that control session management, certificate management, policy management, endpoint identity management, and endpoint registration.

EMCP can be quickly and easily deployed and integrated, does not interfere with any pre-existing security systems, and works in both multi-tenant and dedicated modes as well as in any cloud or on-prem environment.

Eclipz endpoint clients provide a lightweight adapter that is uniquely registered to each endpoint via one-time-pad and loads the software-defined policy parameters as configured in EMCP. The policies enforce at all times as to what, when, where, and with whom an endpoint can communicate.

The Eclipz endpoint client supports most operating systems, is agnostic to the client's hypervisor, host, cloud provider, and network, and is transparent to the user and to applications.

Superior Data Technology

In a nutshell, Eclipz's technology is a three-way handshake. When two endpoints want to communicate, Eclipz acts as the intermediary that makes sure it's okay to do so. Eclipz uses policies to verify that each endpoint is allowed to connect. If they are, then Eclipz sets up a secure tunnel so that they can communicate with confidence.



Eclipz Solutions

Reimagining Data Security

Proven Success

Eclipz is a fundamental building block to help solution providers—the big players in applications and services—to better secure the transmission of data so that it can't be interfered with, snooped, or watched. Your data is made confidential and is protected.

Eclipz is a strong player in the market, adding value to these solution providers and filling that security need. **The US government chartered the creation of this technology and has been using it for years—and now it's available to a broader market.**

Eclipz Solutions: Key Takeaways

Enhances Security

Eclipz's security is top-notch and can change and adapt as new protocols emerge in the future. Eclipz filters out unauthorized connection attempts before they reach the destination. Eclipz validates endpoints and encrypts all data within a secure tunnel that use a new key for every new connection, which makes it harder to hack and protects previous data streams.

Lowers User Friction

Eclipz's technology is totally transparent to end users; they don't need to install or configure a thing. Applications don't know Eclipz is there. People don't have to spend time managing and administering app interactions; you don't have to touch or change your apps. Eclipz is embedded and part of the infrastructure. Eclipz is also extremely scalable—you don't have to scramble to adjust everything if you add a bunch of new containers.

Lowers Cost

You don't have to buy expensive hardware or install any special software in your data center, so you don't have to budget for those associated operational or administrative costs. You can remotely deploy and centrally manage Eclipz, which integrates with existing deployment, certificate, and identity and access management systems.

Get in touch

20 S. Santa Cruz, Suite 300
Los Gatos, CA 95030

Tel: +1-650-796-2116

Email: sales@eclipzit.com