

Internet of Things - Securing your IoT network with PKI

eMudhra provides state-of-the-art PKI framework that helps enterprises deploy a secure IoT ecosystem.

IoT is transforming the world in which we live in. In IoT, network of physical objects such as networked devices can interact with other devices or platforms over the internet. The internet enabled systems and devices share sensitive information and perform actions based on manual user input or through automation. IoT is expected to offer advanced connectivity of devices, systems and services that goes beyond server to server communications and covers variety of protocols, standards and applications. The connection between these embedded devices will usher in automation for nearly all fields while also enabling advanced applications such as smart cities, smart grid, intelligent transport, water management etc.

Digital Signature and Encryption Technology

The Digital Signature Technology works on the Public Key Infrastructure framework which uses a Cryptographic Key Pair – Private and Public Key for secure access and transmission of Information.

Further, it supports efficient and unbreakable encryption algorithms that can handle voluminous data and mitigate the risk of unauthorized access to sensitive sensor data.

Use Digital Signature Certificates to secure your IoT network

emSecure is a IoT security platform designed to be deployed on any IoT platform that supports trusted platform modules. Using standard communication protocols, it powers provisioning, deployment and management of keys for embedded devices allowing secure identity, access and authorization management of devices and things.



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<http://www.emudhra.com/products/internet-of-things.html>

Use Cases

o Smart Cities:

Usage of Information and Communication Technology to meet public needs and foster development in a multi-stakeholder environment

o Smart Buildings:

Offers IoT building blocks that simplify how building systems talk to the cloud and exhaustively analyze building data to uncover new business insights capable of driving real value and greater performance

o Smart Logistics:

Combines real-time analysis of vendors, suppliers, environmental sensors, traffic, telematics, geopolitical risk etc. to optimize operations, customer expectations and protect margins

o Smart Parking:

Optimizes parking space usage, improves efficiency of parking operations and helps traffic flow more freely with the next generation parking

o Smart Lighting:

Saves energy in modern workspaces where every light point is connected to an intelligent system that delivers high-quality, reliable illumination

o Smart Energy:

Gives you the platform to control and optimize energy consumption, ensuring that energy is used only when needed

Encryption and Authentication in IoT ecosystem

eMudhra's solutions bring in Trust and control to devices connected in IoT. eMudhra's authentication solution i.e. emAS helps in securely establishing identity and authenticating one device to another with the help of digital certificates embedded in the devices. Thus ensuring that only trusted devices are allowed to connect to a nearby server and also enabling trusted communication between devices.

In short, eMudhra solution enables large-scale authorization and reliable encryption for ultimate trust and control. The solution makes it the right choice for securing connected devices. It ensures the integrity of data through the following:

- **Encryption:** Disguising of data in transit and at rest
- **Authentication:** Identifying trust amongst users/devices in network information exchange
- **Signing:** It helps in verification of untampered data and also making sure that device has received data from a trusted source

Taking IoT security to the next level



UI/API based provisioning

emSecure allows attachment of certificates using UI as well as API



Trusted Root

Allows you to deploy certificates from any trusted root



Easy Deployment

Secure your network at any point using plug and play architecture

Secure Smart-City focus at eMudhra Labs - IoT

eMudhra Labs, housed at eMudhra R&D center in Bangalore is gearing up for large scale Smart City projects. At emLabs, eMudhra is focusing on making PKI based IoT security a reality through:

- Partnering with global leaders like Infineon to work with nano TPM's and enable easy embedding in devices of all sizes and types
- Working with LoRA devices to enable long range connectivity and improve the network reach for more efficient and cost effective smart city networks
- Building a robust security platform with a PKI based identity and access management inclusive of People, Applications and devices