IoT Security Platform for trusted communication

In a connected world, where devices increasingly influence our life, security of IoT is as important as IoT itself.

It is safe to say that IT is undergoing a paradigm shift where dependability on devices is increasing drastically and we, as people are increasingly relying on 'things' directly or indirectly in our daily lives. IoT, can broadly be defined as the interconnectivity of 'smart' devices to share and execute data and commands based on specific parameters.

Sounds easy enough. There is no question that this already does and will continue to add immense value to humanity. From Smart Cities to Smart Cars, it already does. However, IoT ecosystems in the wrong hands can be equally detrimental to its stakeholders.

emSecure is eMudhra's answer to address this very problem in an effective and scalable manner. Attacks are getting more sophisticated day by day. Most of them capitalize on inadequate identification standards and loops in the authentication layer to penetrate the entire IoT ecosystem through a single rogue device. The Marai Botnet attack used factory default and reset passwords to penetrate millions of devices.

'Trusted' communication is an important element in a secure IoT network. PKI is the global standard of 'trust' in the digital world

PKI and Encryption Technology

emSecure uses Public Key Crytography to digitally sign and encrypt all communication in the IoT network. By issuing device certificates and user certificates, it ensures that all data trasmitted is secure and un-hackable.

Digital Signature Authentication is required and used in emSecure to protect and confirm sensor data and enforce any specific automated actions based on this data. Key provisioning, deployment and management is also part of the solution. penetrate millions of devices.

Hardware that supports scalability

eMudhra is working with leading manufacturers of chips, TPM's, and LoRA devices globally to really go the extra mile and ensure that our offering is complete and capable regardless of the scale of our customers' requirements.

emSecure uses trusted platform modules for the PKI, and LoRA (Wifi/4G also supported) for connectivity of devices.

Product Benefits

Botnet Attacks, No more!
We've all heard of botnet attacks causing a havoc across various IoT ecosystems with standard manufacturer passwords. With emSecure, this is no longer a worry!

Security at its best!
emSecure uses PKI to issue device certificates and user certificates across an IoT ecosystem. This brings full accountability and mitigates risk of penetration since only the corresponding key of the asymmetric key pair will authenticate a request.

Protect your financial risk
The cost of a breach can be compounded significantly in an IoT ecosystem. All it takes is one device to infiltrate the network and the losses subsequently, can be catastrophic on your business.

R&D to make life better
eMudhra labs works with leading chip manufacturers (Infineon, etc) to solve the IoT gap at the manufacturing level itself. Everyday, we try to reduce the size of TPM's, explore long range LoRA devices, and more to ensure that our tech gets better everyday..

Technical Details

Standard Computer with Window Server 2008+ OS Compatibility
DB Compatibility
    Oracle, MySQL & Postgre 9+
App Server
    Apache Tomcat 7+, jBoss 7+, Web Sphere 8+, Web Logic 12+
Algorithms and Standards
    SHA-1, SHA-2 Family, MAC, HMAC, AES 256, RSA Signing, ECDSA, PKIX, X.509 v3
Web Services/API
    SOAP, REST
Protocols
    SMPP, WSS
Java
    Oracle JDK 1.7+
Key Modules
    Registration Module
    Certificate Life Cycle Management Module
    Auto Enrollment
    Digital signature generation Module
    Authentication Module
    Tamper proof logging
    Key Generation system
    Ability to generate key pair on Trusted Platform Module
    Encrypted Communication
    Secure Key pair storage

Use Cases

Smart Cities:
Usage of Information and Communication Technology to meet public needs and foster development in a multistakeholder environment

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

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

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

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

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

About eMudhra

eMudhra, a global provider of digital identity and cybersecurity solutions, specializes in digital signature certificates, Public Key Infrastructure (PKI) services, and robust authentication protocols. Our impactful presence in India and international presence have allowed us to support governments and enterprises in safeguarding their digital transactions and vital information.

eMudhra offers digital certificates, PKI-based solutions, authentication and identity governance services. With a strong presence in India and a global footprint, eMudhra helps organizations securely manage their digital transactions and protect sensitive information. Being a leading digital identity and cybersecurity solutions provider, eMudhra is now focused on futureproofing cybersecurity using Post Quantum Ready Cryptography and Zero-Trust Identity Governance model.