

emAS - eMudhra Authentication Solution

Create your own trusted enterprise network of users, devices, applications and things!

With malware, ransomware and other cyber threats constantly thrown at Enterprises, a holistic security platform is required to securely enable digital identity and transaction management. eMudhra's flagship product eMudhra Authentication Server has been empowering millions of users securely manage their online identity and authentication needs by offering a single holistic security perspective!

Trusted by several large Banks, emAS offers a host of strong authentication options that help Enterprises secure physical, mobile, logical access to applications.

emAS addresses the need of the hour - mitigating risk for enterprise and it's end users while keeping it simple

Threats are multi-channel

With customers, employees, suppliers accessing applications across web, desktop, mobile and cloud; Enterprises have to constantly worry about newer threat dimensions. emAS's behavioral analytics module runs machine learning algorithms to detect anomalies and put in place risk mitigation measures

Cloud applications add a new dimension

With the explosion of cloud offerings and hosting providers and sensitive data on cloud, security officers have to constantly think about how to protect authentication on the cloud. emAS's plug and play architecture allows quick addition of newer platforms and factors of authentication

Ensure integrity and legal-non-repudiation using PKI

Plain username/passwords & OTPs are today most vulnerable for cyber attack. emAS offers the ability to attach users to a risk profile to allow creation of trusted networks using Public Key Infrastructure offering strongest form of protection to Enterprises and its customers

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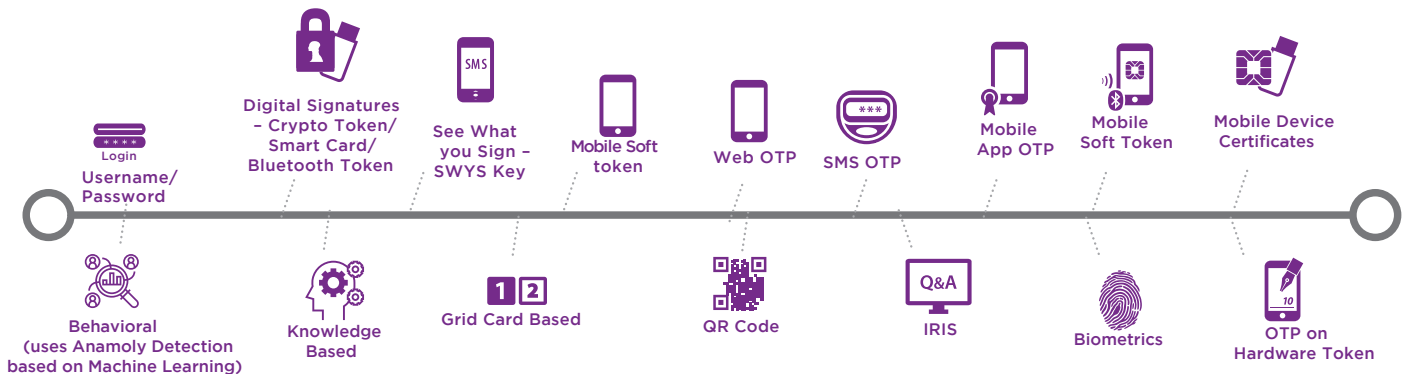
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Product Benefits

- Cost effective deployment of strong authentication across Enterprise
- Used by 25 Banks in India powering 10 million user authentication requests
- Mobility enabled for leveraging mobile authentication options
- Acceptance of local and global CA certificates for Digital Signature Certificate & Public Key Infrastructure based authentication
- Platform agnostic - deployed across Solaris/Windows Server/Red Hat Linux/IBM AIX
- Built for the future with FIDO Compliance measures

Authentication Types:



emAS supports a wide array of authentication options which are configurable based on user groups and roles. emAS is built for scale and allows rapid multi-factor authentication deployment across the Enterprise and its customers resulting in enhanced security while reducing cost

emAS offers a holistic deployment of a trusted network for your Enterprise

Single/Simple Platform Need of the hour

Instead of deploying multiple authentication systems, emAS comes with all features required to deploy strong authentication at an Enterprise level. This simplifies user and access management based on risk profiling

Integration of Physical/Logical/Cloud and Mobile Access

Ultra-fast processing of authentication requests

emAS processes millions of authentication requests within a timeframe of 6 milliseconds ensuring no delay for end users

Risk Mitigation through Analytics

Through proprietary Machine Learning algorithms, emAS powers the ability to run anomaly detection based on behavioral profiling

Multiple credentials under one single platform

A variety of strong authentication options allows users or administrators to ensure easy and seamless multifactor authentication based on risk profiling of users

Plug-n-Play

emAS is platform agnostic and can be deployed across a host of environments without complex integration or customization

Integrations with emCA

Certificate Lifecycle Management - emCA, Certification Manager product offers the deployment of trusted users, devices and things as part of a network which can be validated by emAS

Authentication backbone of emSigner

Secure digital transaction management - emSigner, the digital transaction management platform of eMudhra, authenticates end user digital signatures with emAS

Integrations with leading Banking Suites

emAS has out of the box integrations with Infosys Finacle, Oracle Flexcube, TCS Bancs therefore making it easy for Core internet & mobile Banking applications to quickly roll-out multifactor authentication for its customers

DATA SHEET

Technical Specs

- Plug and Play J2EE application with multiple authentication support
- Appserver Compatibility: Websphere, Weblogic, JBoss, Tomcat,
- RDBMS Compatibility: Oracle Server, SQL Server, DB2, MySQL, Postgre
- OS Compaibility: Windows Server, Linux, AIX, Solaris
- Client app works on almost all browsers with support of websockets
- Mobile client supported on Android, IOS, Windows
- User database compatibility: Microsoft Active Directory, Novel eDirectory.

Sample Hardware Requirements

Processor: 2 * Quad core Processors

RAM: 16GB

HDD: 500 GB SAS HDD

Authentication Core Module

emAS consist of the below mentioned core authentication modules for secure authentication

- **OTP Module:** Allows for OTP generation, regeneration, authentication, delivery, and 2FA (SMTP, SMPP, Voice)
- **DSC Module:** Allows for DSC (token based, smart card based, SWYS key) authentication & validation.
- **Biometric/IRIS Module:** Allows for biometric and IRIS based authentication. Includes user registration, validation, authentication, removal, etc in conjunction with below functional modules.

Functional Module includes

- **Configuration Module** - Assists in configuring the system parameters with regard to risk criteria, respective auth. Mechanism, etc.
- **Log Module:** logs all user activities with regard to auth. Generation, validation, regeneration, expiry, configuration, etc.
- **Presentation Module** - Ability to publish Certificate Revocation List
- **Report Module** - Helps the admin and select users generate reports of auth activity with all details.
- **Registration Module** - helps to register users for various forms of authentication. Self registration with or without back-office approval can be enabled.

Architecture diagram

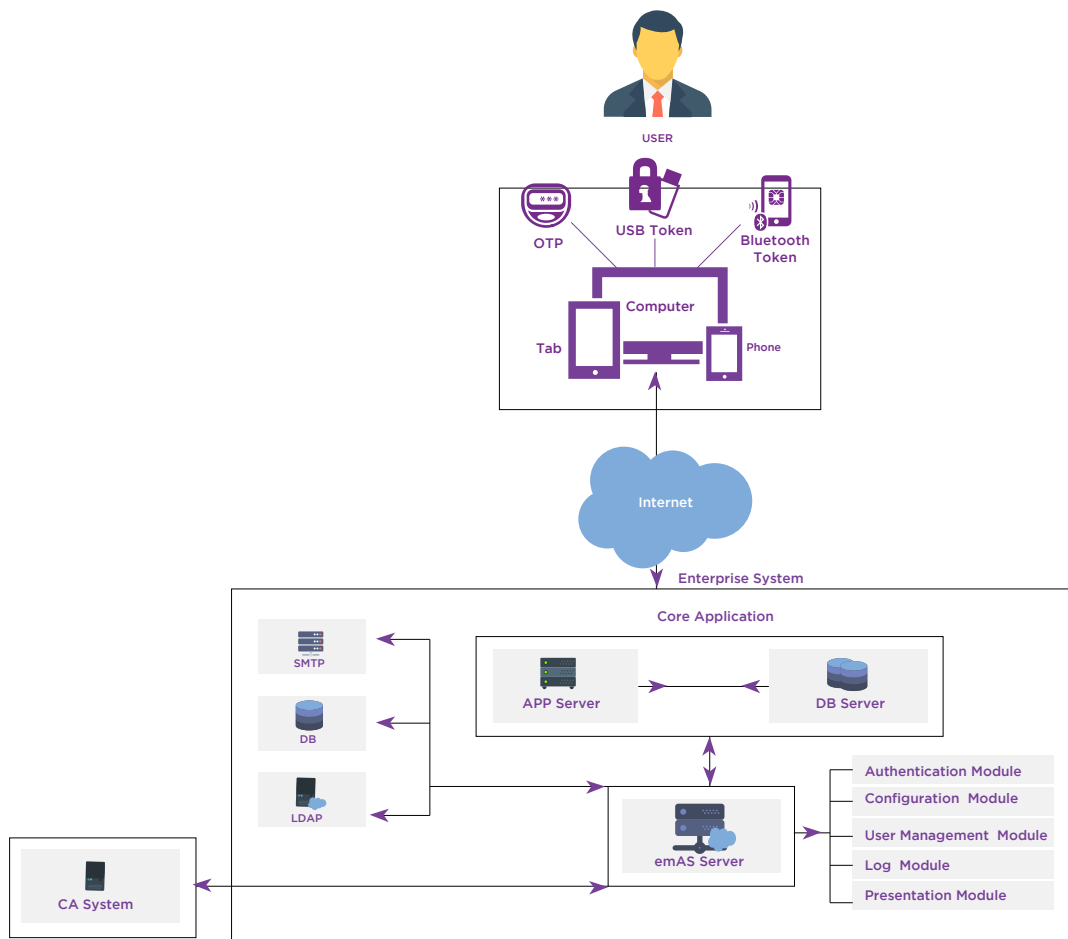


Fig: Sample Architecture diagram of emAS

emAS powers security for the next wave of Mobility & Internet of Things

FIDO Authentication Compliant

emAS supports devices that are FIDO compliant. FIDO uses public key cryptography to ensure strong authentication using FIDO compliant tokens

Device Certificates for even more security Deploy device certificates such as Document Signers for authentication of devices and signing of data for communication in a network and ensure no intrusion takes place

Certificate deployment on embedded devices

eMudhra's R&D efforts have resulted in the ability to issue/manage digital signature certificates to embedded devices ("Things") and ensure your IoT network is safe and secure

Comes with own authentication apps

emAS comes with its own authenticator app for OTP generator on Web/Mobile and Desktop.

Easy integration with existing mobile apps

SDK's are available for mobile developers to integrate authentication options to their existing apps make Single Sign On and authentication seamless

Protocols Supported

- LDAP, SMTP, SMPP, HTTP, HTTPS, SFTP, RADIUS, SAML, WSS
- Supports RESTful and SOAP web services

Applicable Industries

- Banks and Financial Services, Government Departments, Enterprise, Defence, and other Public/Private sectors

How it works?

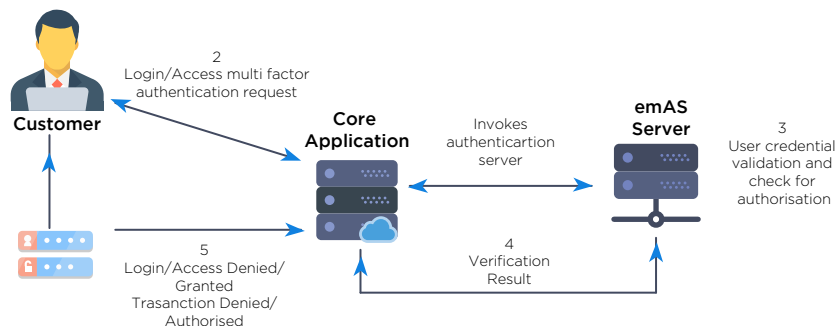


Fig 2: Illustration of 2 factor authentication process

About eMudhra:

eMudhra is a technology and digital identity and transaction management company providing solutions which ease financial and statutory needs of consumers. eMudhra was established in 2008 and is a Certifying Authority in India and Mauritius to issue Digital Signature Certificates. eMudhra's current enterprise and consumer solutions include Digital Signature Certificates, emSigner - Paperless Office Solution, emAS -secure multifactor authentication for banks, emCA for Digital Signature issuance and management and Prism - Voice of Customer Analytics using Semantics.

eMudhra is a market leader in India and issues over 15 million digital signature certificates yearly, serves over 10 million customers who use eMudhra's authentication platforms and has partnered with over 100 large Enterprises such as Banks, Financial Services companies and several Government agencies in India to implement digital security and analytics solutions.