TCS Aadhaar Data Vault
Data security has become a major point of concern ever since the Aadhaar Act was introduced by the Indian government, requiring citizens to share their personal information in order to establish the country’s first ever unique identification system. Since most business processes today require Aadhaar data to leverage India’s digital infrastructure and meet regulatory mandates, there is a need for a stronger data encryption and protection system.

Tata Consultancy Services (TCS) has therefore purpose-built a platform-agnostic centralized repository for storing Aadhaar numbers in compliance with the Aadhaar Act and Unique Identification Authority of India (UIDAI) guidelines. With TCS’s Aadhaar Data Vault, authorized entities can securely store/retrieve and update Aadhaar numbers while ensuring stricter control over data access.

Overview

As per the amendments to the Aadhaar and the UIDAI circulars dated July 25, 2017, and May 16, 2018, there was a need to enhance the level of encryption of the Aadhaar number repository. Thereafter, UIDAI mandated that all authorized entities collecting and storing Aadhaar numbers for specific purposes under the Act should start using vault reference keys or UID tokens mapped to Aadhaar numbers across all systems in adherence to a strict timeline. TCS developed the Aadhaar Data Vault Solution, which can not only integrate with third-party systems and business processes, but also provide enterprises enhanced data access control.

Our Solution

The TCS Aadhaar Data Vault is built on the Java/J2EE framework, making it suitable for seamless implementation on any OS platform, application server software, hardware security module (HSM), and relational database. The Aadhaar numbers are stored in an encrypted format with a unique vault reference key and UID token mapped to each one. Reference keys are randomly generated based on defined custom lengths or UUID RFC 4122, making it impossible for someone to reverse engineer their way to an Aadhaar number given a set of reference keys.

This solution offers APIs that support both XML and JSON formats, as well as payload encryption to ensure data integrity and confidentiality. With a web-based configuration module in place, system administrators can easily configure channels, services, and channel authentication parameters, offering users greater control over API access by other systems.

Additionally, the Aadhaar Data Vault also supports batch mode processing, which is built on the Spring Batch framework and allows entities to perform bulk migration of existing Aadhaar numbers. The solution also supports multi-tenancy, ensuring that a single deployment can be leveraged by multiple sub-entities of the same organization.

Aadhaar Data Vault’s inbuilt security controls allow only authenticated and authorized systems to consume exposed services, and the solution also ensures non-repudiation by maintaining an audit trail of all transactions. We have benchmarked this solution to ensure optimal performance and high availability through clustered deployment.
Benefits

With TCS’ Aadhaar Data Vault, a platform-agnostic solution, authorized entities can:

- Comply with the latest regulatory guidelines
- Integrate with multiple makes and models of HSMs
- Configure reference key length
- Easily integrate business applications with a rich set of available APIs. Additionally, they can also block/delete Aadhaar numbers in the vault
- Migrate Aadhaar numbers from existing systems through bulk file-based approach
- Maintain audit trails and control access to the Vault

The TCS Advantage

**Domain knowledge:** TCS has a deep understanding of the Aadhaar Act, as well as the UIDAI guidelines that govern data security standards.

**Extensive collaborations:** Our engagements with ecosystem partners such as UIDAI, National Payments Corporation of India, and National Securities Depository Limited help us seamlessly deploy industry-ready solutions.

**Accelerated solution delivery:** Our readily available Aadhaar Vault Solution features the necessary APIs and interfaces for easy integration with the core systems of our clients.

**Associated solutions:** Apart from the Aadhaar Data Vault, TCS has an entire suite of Aadhaar-based solutions called the TCS Aadhaar Stack, which clients can leverage. This stack is comprised of:

- e-KYC engine (using fingerprint, iris, OTP, and face recognition)
- Demographic authentication (online and bulk)
- Biometric authentication
- eSign
- Aadhaar-based Payment Solutions such as Aadhaar-enabled Payment System, Aadhaar Payment Bridge System, and Aadhaar Pay
Awards & Recognition

To know more
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About Tata Consultancy Services Ltd (TCS)
Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India’s largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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