Mindtree
Welcome to possible

Effective testing for a critical component of Government of India's unique identification project.

The Unique Identification Authority of India (UIDAI), established by the Government of India, is mandated to issue a unique identification number (called Aadhaar or UID) with associated biometric data to all residents to allow them to identify themselves anywhere in India, and to access a host of benefits and services.

Here is how Mindtree helped the UIDAI test a critical solution component that validated demographic and biometric data to ensure that a single ID is generated for each resident.

The challenge

The customer wanted a product to validate resident demographic and biometric data. The team also wanted to implement continuous feature enhancement. This involved multiple releases per month and therefore multiple rounds of regression testing.

For each resident, data had to be verified for various functional flows, demographic details such as age groups and PIN codes; and biometric information. This verification needed to take place after decrypting encrypted source data. The customer also required a partner that could ensure accuracy and security of data transfer; and data integrity across multiple data stores.

Mindtree was tasked with providing testing services to ensure a robust end product, and streamline testing of its frequently updated feature set.

Our solution

Mindtree put in place the JSystem open source framework to customize, develop and build an automation suite leveraging its centralization, scalability, user management and other advantages. We developed scripts to ensure master data is available and environment setup is completed for processing data packets and for smoother automation.

Business impact

- Speeded up the regression test cycle
- Enhanced ease of configuration and development for future feature testing
- Reduced manual test effort by 70%
- Instituted exhaustive test data coverage
- Reduced production defect count

Automation was executed in multiple environments with minimal manual intervention.

Reusable utilities were derived out of commonly used functionalities and the testing suite modularized to increase its performance. The suite covered functional workflows with validation of varied data combinations. In all, there were over 500 field-level validations spread across 31 different modules. In addition, the automation suite was configured to ensure data integrity is maintained across different six distinct data stores.

The JSystem framework was also customized to better meet the project requirements. It's reporting functionality was modified for better analysis and debugging of success and failure test cases. Reporting functionality was activated to provide detailed information on automation suite execution test statistics such as number of test cases passed per module. Additionally, the team assessed server stability by processing resident data in bulk, simulating the production environment.

Along the way, Mindtree met several technical challenges, including the need to verify integration between servers and to ensure there was no functional breakage in the existing modules. We also automated a majority of server features anticipating frequent releases with shorter release times.

About Mindtree

Mindtree is a global information technology solutions company with revenues of over USD 400 million. Our team of 11,500+ experts engineer meaningful technology solutions to help businesses and societies flourish. We enable our customers achieve competitive advantage through flexible and global delivery models, agile methodologies and expert frameworks.