Case Study

Mainframe Automation for a Leading Japan-based Global Distribution System Connectivity Provider

About the Client

- A leading GDS (Global Distribution System) and provider of travel related IT solutions across Japan
- Serves 260+ airlines, covers 3000+ travel agencies, capital of JPY 4+ billion

Business Challenges

The client offers a comprehensive range of travel distribution technology solutions to over 260 airlines. Its CRS (Central Reservation System) is built on IBM mainframe and is used by travel agents for PNR generation, ticket booking, booking of ancillaries, etc. for multiple airlines.

The airlines reservation provider had a need for:

- A thorough testing of a new product that an airline desired to implement
- Change of EDIFACT versions
- Migration of an airline's system from one system to another
- User Acceptance Testing and enhancements to the CRS system

Any change needed to be thoroughly validated and tested before deploying it to the production environment.

The Need

Hexaware's team was involved in carrying out User Acceptance Testing of the functions implemented, and enhancements to the CRS system. The same set of test cases that formed the regression suite were used for multiple airlines. The whole process was intensive, repetitive, and error-prone, with close to 25 rule-sets and validations to be performed manually.

To meet the growing business needs and enable faster deployments to production, the customer felt a need to automate this manual process.

The focus of the automation was to:

- Reduce the process turnaround time
- Expedite the release process
- Reduce the monotony, thereby minimizing the human processing errors

We evaluated the automation tools in the market before narrowing down on our proprietary automation platform **Tensai**. The constraints with some of the commercial tools were they were not able to pass through the terminal emulator configuration to access the mainframe system.
A plug-in had to be installed on the mainframe server to support these tools.

Hexaware's Tensai is an automation platform built to deliver smart solutions across an enterprise. The platform mimics human actions by using RPA and uses screen scraping techniques to work on the whole gamut of UAT process.

Hexaware's RPA solution helped the client in seamless automation of UAT process for PNR generation and ticketing. Tensai platform helped to deliver automation benefits while facilitating quicker release of enhancements and new features with zero upfront investment for licenses.

Mainframe Automation by Using RPA-based Smart Solution

Hexaware built the following two bots for facilitating answerback and ticketing & EMD booking process.

1. Answerback Bot

This bot gets flight details from MS Excel, creates booking entries, and runs them on the mainframe emulator screen. The bot performs validation of special service requests confirmed by the airline - like meals, wheelchairs, seat requests, etc.

The bot ensures that a locator from the airline gets returned in various scenarios like split PNR, addition of new segments, etc. For failed validations, the error messages are captured and recorded in the output file. The automation solution not only executes commands on mainframe, but also validates output for accuracy and correctness.

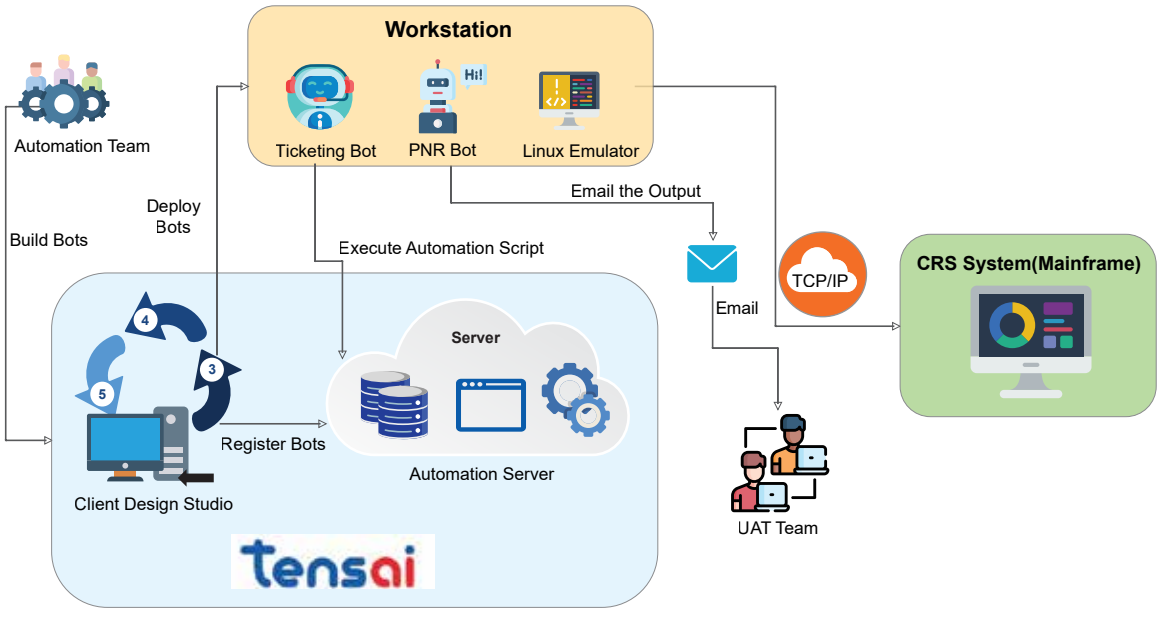
2. Ticketing and EMD

To facilitate the ticketing and EMD booking process, our ticketing bot reads the data from an input file which contains information about the ticket to be booked - like source airport, destination airport, fare rules, and ancillary to be booked.

Based on these data, the bot then opens the mainframe emulator and enters a series of commands/instructions and captures output from each of the instructions. The output response of all the instructions are validated against the rules/checks performed during manual testing. Some of the validations performed by the tool are to ensure that:

- EDIFACT and teletype messages are being sent correctly to the airline, and to check that the fares entered are as per the fare rules
- The results are logged in an output file in the same format followed during manual testing process

Customizable Reports: An audit report is generated for all the commands executed and the responses captured, both for PNR and ticketing process. A detailed report on the passed or failed validation is also generated.



Solution Benefits

100% accuracy achieved in reading data/screen scrape on the mainframe emulator screen

Ability to scale up and run test cases any number of times

50% effort reduction through automation potential

Improved accuracy lead to customer satisfaction

12% cost savings per year

About Tensai

Tensai is our end-to-end automation platform built using open source components. It is easy to deploy and comes with a library of 100s of reusable drag & drop components and ready-to-use scripts. Here are some of its key features:

Design Studio

Complete modularity & flexibility with simple-to-use interface

- *Modular design to extend via custom development or integrate with ready solutions using APIs*
- *Capability to leverage AI/ML services from cloud service providers*

Rapid Development

100s of reusable components, libraries, & scripts

- *Library of readily available bots for common application support use cases*
- *Connectors available for commonly used SaaS and COTS products*
- *Easy to build web and screen recorders for mirroring user actions*

Security

Role-based access and AES 256-bit encryption for credential storage

- *RBAC for running the bots on dev, test, UAT and production environments*
- *Central repository for version control – OOTB integration with GIT*
- *Secure storage and encryption of credentials*

Logging & Auditing

Easy audit compliance with detailed traces of bots

- *Modularized logging - ability to invoke APIs for logging/notification into Elastic DB*
- *Detailed audit logs for actions done via scheduled actions or executed by users*
- *Manage log retention & backup policies*

Insights Dashboard

Analytical dashboard to monitor the bots in real-time via web console

- *Centralized web console to monitor and control bots*
- *Analytical dashboard to get insights, check bot health and execution metrics*
- *Manage users and automation projects from the console*

Licenses & Deployment

Built using open source components

- *Built using open source components (thus no upfront license fee), used in outcome-based models for automation/services*
- *Available for on-premise and cloud versions*

About Hexaware

Hexaware is the fastest growing next-generation provider of IT, BPO and Consulting services. Our focus lies on taking a leadership position in helping our clients attain customer intimacy as their competitive advantage. Our digital offerings have helped our clients achieve operational excellence and customer delight. We are now on a journey of metamorphosing the experiences of our customer's customers by leveraging our industry-leading delivery and execution model, built around the strategy AUTOMATE EVERYTHING®, CLOUDIFY EVERYTHING®, TRANSFORM CUSTOMER EXPERIENCES®. Hexaware services customers in over two dozen languages, from every major time zone and every major regulatory zone. Our goal is to be the first IT services company in the world to have a 50% digital workforce.
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