

Multi IVR

Case Study

September, 2024

Overview:

The Multi-IVR system was developed to automate the handling of Technical Assistance Center (TAC) calls for both Huawei ONT users and other device configurations. Built using Node.js, the system efficiently manages user identification, account status, and call routing through a fast and responsive Interactive Voice Response (IVR) platform, providing near-instant responses to callers. This not only enhances the customer experience by reducing wait times but also improves overall operational efficiency. The solution integrates a centralized database, ensuring seamless management of user accounts, service issues, and troubleshooting requests across various user types.



Automate TAC calls

Automate TAC calls for users



Centralized Database

Efficient management of users.



Caller Scenarios

Service maintenance alerts

■ Technology Stack:

Node.js

■ Main Purpose:

Automate TAC calls for users with Huawei ONT and other device configurations based on account status and service issues

■ Centralized Database:

Ensures efficient management of multiple user IDs, account details, and service logs across different devices

■ Caller Scenarios:

- Calls from registered or unregistered numbers
- Multiple mappings or multiple AIDs (Authorized IDs)
- Account status checks for payment issues or eligibility for auto bonuses
- Outages or service maintenance alerts

Main Modules:

■ Call from Registered Numbers:

- The system identifies users by their registered number and associated Huawei ONT or other supported devices.
- Single-user IDs on the ONT are managed automatically through the centralized database.

■ Call from Unregistered Numbers:

- For calls made from unregistered numbers, numbers without Huawei ONT, or users with multiple AIDs, the IVR handles the complexity by using the centralized database to provide additional routing options.

■ Account Status Module:

- The IVR instantly informs users if their account is locked due to non-payment, using data from the centralized database.
- Users are given options such as pressing 1 to avail Auto Bonus or pressing 2 to connect to the billing queue.

■ Outage Involvement:

- If the user's ID is part of an ongoing outage, the IVR notifies them and automatically ends the call after delivering the message, with data sourced in real-time from the centralized system.

■ Maintenance and Activity Module:

- If ongoing maintenance is affecting the user, the IVR alerts them within seconds, allowing them to press 1 to speak with support.

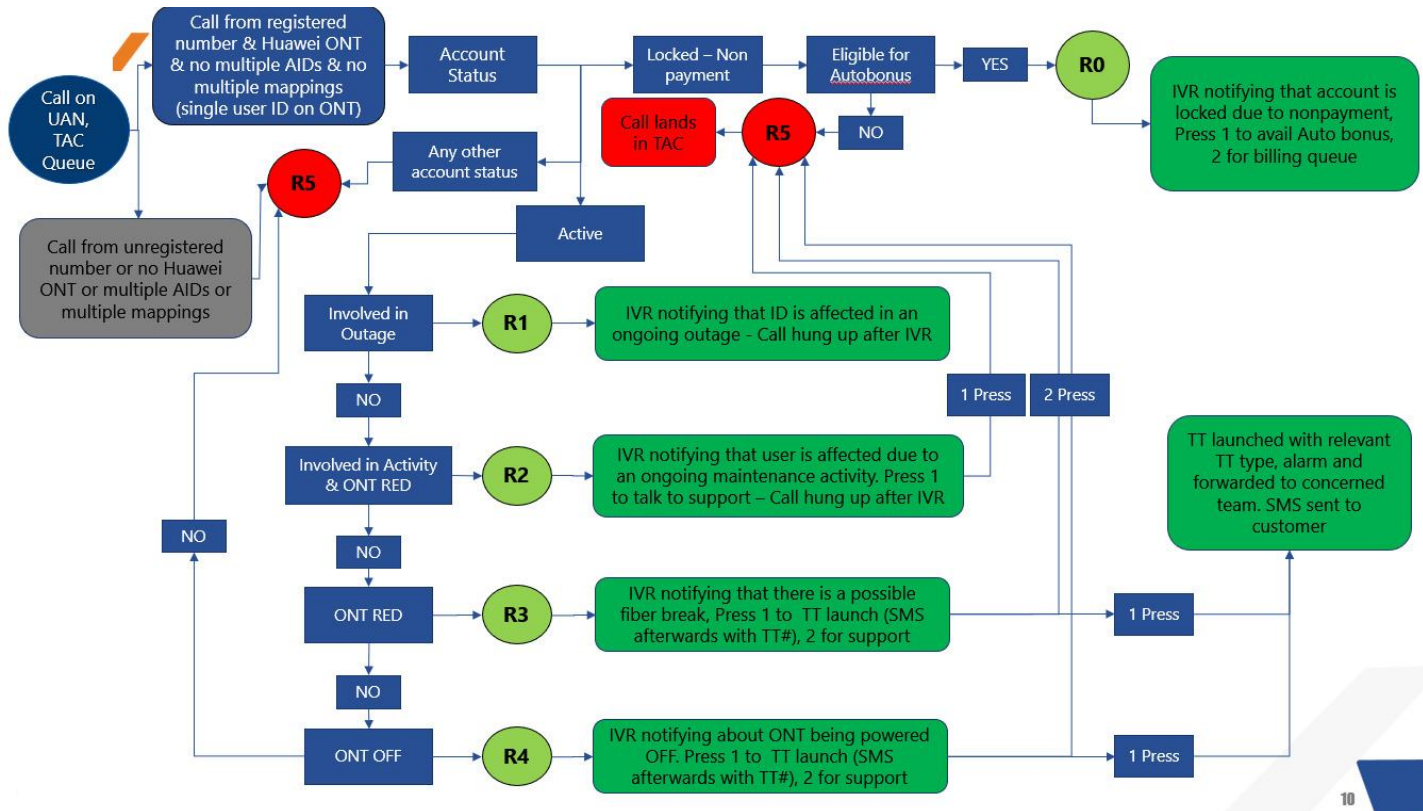
■ Technical Troubleshooting:

- In case of issues like a fiber break or ONT power-off, the IVR instantly provides options to launch a Trouble Ticket (TT) and sends the user an SMS with the TT number, or to connect them with support.

■ TT Launch:

- The system automatically launches relevant TT types with alarms, forwards them to the concerned team, and notifies the customer via SMS. The centralized database ensures TT details are accurately logged and tracked.

Work Flow:



■ Caller Identification:

- The IVR checks whether the call is from a registered or unregistered number and identifies the presence of Huawei ONT or other devices, instantly pulling data from the centralized database.

■ Account Status Check:

- The system assesses the account status for non-payment or eligibility for an Auto Bonus and routes the call accordingly, enhancing user experience with quick, automated responses.

■ Handling Outages or Maintenance:

- If the user is affected by outages or maintenance, the IVR delivers appropriate messages sourced from the centralized database and terminates the call if needed.

■ Troubleshooting Options:

- For technical issues like fiber breaks or power-off ONT, the IVR instantly gives the user options to either create a Trouble Ticket or connect to support, again leveraging the centralized system for accurate real-time tracking.

Work Flow:

■ Post-Call Notifications:

- After a TT is launched, the system sends an SMS to the user with relevant information, automatically logged and tracked in the database.

Challenges:

■ Multiple AID Management:

- Handling users with multiple authorized IDs across different devices required a robust centralized database and precise routing to ensure smooth user experiences.

■ Dynamic Call Routing:

- Ensuring that the IVR system could handle various user scenarios such as account locking, outages, and technical issues in real time required highly flexible and reliable workflows.

■ Centralized Data Integration:

- Implementing a centralized database that could handle real-time data updates and provide immediate responses to the IVR system posed significant challenges in terms of performance optimization.

Technology:

■ Node.js:

- The core technology used for developing the Multi-IVR system, ensuring high performance, scalability, and real-time processing.

■ Centralized Database:

- A key component that stores and manages user accounts, TT information, and service logs, allowing for real-time data access and updates across all call scenarios.

