स्वरबोधिनी – An AI-enabled IVRS that recognizes speech and automates intelligent call routing

📄 Introduction

This document outlines the configuration, server specifications, and call flow for the AI-powered Exchange Automation using Alliance Infotech's UC-2000 platform. The solution enables intelligent inbound call handling using speech recognition, automated authentication, and voice-based call routing. It is configured with 10 SIP channels for handling simultaneous calls.

🔁 Demo Call Flow

1. Customer initiates a call to a dedicated demo DID.
2. IVR system prompts: 'Please speak your customer code after the beep.'
3. The system uses AI-based speech recognition to extract the code.
4. Upon successful validation, a personalized greeting is played.
5. IVR asks: 'Who do you want to book a call with?'
6. The customer responds with the recipient's name.
7. The system confirms: 'This call is for <Name>. Let me connect you.'
8. Call is routed to the intended recipient over the SIP trunk.
9. If the call is not answered at the intended extension, the system automatically routes it to the next available agent.

🖥 Server and System Specifications

Component	Specification
Platform	Alliance UC-2000
CPU	Intel Xeon 8-Core or higher
RAM	16 GB DDR4 or higher
Storage	Minimum 500 GB SSD
Operating System	Linux (Ubuntu)
Speech Recognition	OpenAI whisper(live kit)
IVR Engine	UC-2000 IVR with OpenAI TTS and API integration
Backend Engine	Python (handles logic, API calls, routing)
SIP Trunking	Provisioned with 10 SIP channels for concurrent calls
Connectivity	SIP trunk access, secured API endpoint

📂 Architecture Flow (Logical Layout)

Customer Call
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UC-2000 Inbound Routing (DID/SIP)
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IVR: 'Speak Code'
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[Speech Recognition API]
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Code Verified → Greeting: 'Welcome <Name>'
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IVR: 'Who do you want to book a call with?'
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[Speech Recognition API]
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Name Recognized → 'Connecting you to <Name>'
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Call routed via SIP Trunk (10 Channels)
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If no answer → Forward to next available agent