

Technical Documentation for A Custom MCP Server

Project Name: Custom MCP Server

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GitHub link: <https://github.com/DakshAhuja10/MCP-Server.git>

Video Link:

<https://drive.google.com/file/d/1n5MS2qGuNoK2F6md4XS2Ni3agEZw1nke/view?usp=sharing>

1. Project Overview

Claude Voice Switch AI is a microservice-based communication tool that integrates Claude AI with WhatsApp and ElevenLabs Model Context Protocol (MCP) Servers. Claude serves as the central decision-making engine, connected at the backend with both WhatsApp (for message input/output) and ElevenLabs MCP Server (for voice synthesis). This enables users to create, send or receive text and voice messages intelligently.

Flow Summary:

- A user prompts Claude with a specific message and specifies if the reply should be sent to someone through WhatsApp or not, if yes which contact the message needs to be send.
 - Claude processes the prompt and determines the response and determines whether it needs to generate voice or not.
 - If voice is required, the response is sent to the Eleven Labs MCP server for synthesis.
 - If the voice needs to be sent as a voice message, the .mp3 file generated is converted to .ogg (Opus) using FFmpeg as the WhatsApp voice message are of .ogg format.
 - The Claude then sends the message (text or audio) to the recipient.
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2. Features Overview

- **Claude Integration:**
 - Backend AI logic handled by Claude.

- Full access to WhatsApp data via MCP tools.
 - Prompts to be sent to ElevenLabs MCP
 - **ElevenLabs Voice Generation:**
 - Converts responses to realistic speech as per user's need.
 - Supports cloning and custom voice synthesis.
 - **WhatsApp Integration via Go Bridge:**
 - Uses WhatsApp Web API.
 - Stores and indexes chat/message data using SQLite.
 - **Backend Workflow:**
 - Claude issues commands to the MCP servers.
 - MCP interacts with WhatsApp if needs.
 - Responses are sent back to Claude and optionally voiced through ElevenLabs.
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3. Tech Stack

- **Languages:** Go, Python 3.11
 - **AI Models:** Claude by Anthropic
 - **Messaging Platform:** WhatsApp Web API
 - **Database:** SQLite
 - **Voice Tools:** ffmpeg
 - **Libraries:** Fast API, httpx, uvicorn, dotenv
 - **Other:** VS Code, GitHub
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4. MCP Tools Available to Claude

- `search_contacts`: Search contacts by name or phone.
- `list_messages`: Filter and retrieve messages.

- `list_chats`, `get_chat`: View chats with metadata.
 - `get_direct_chat_by_contact`, `get_contact_chats`: Access contact-specific conversations.
 - `get_last_interaction`, `get_message_context`: Extract message history.
 - `send_message`: Send a message.
 - `send_file`: Share images, videos, docs.
 - `send_audio_message`: Send .ogg audio as WhatsApp voice message (FFmpeg used if needed).
 - `download_media`: Download and access media.
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5. ElevenLabs MCP Tools Available to Claude

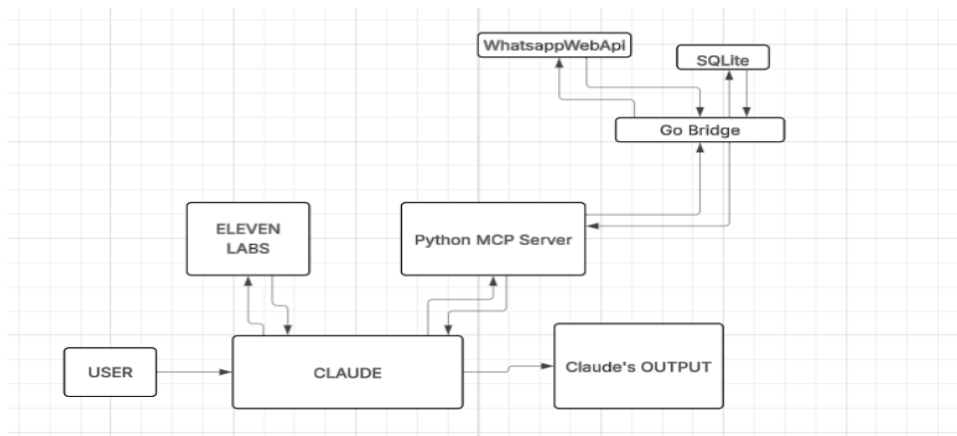
- Convert text to speech and vice versa.
- Clone a voice.
- Make a custom ai agent using ElevenLabs for particular tasks.
- Check you subscription status etc.

5. Media Handling

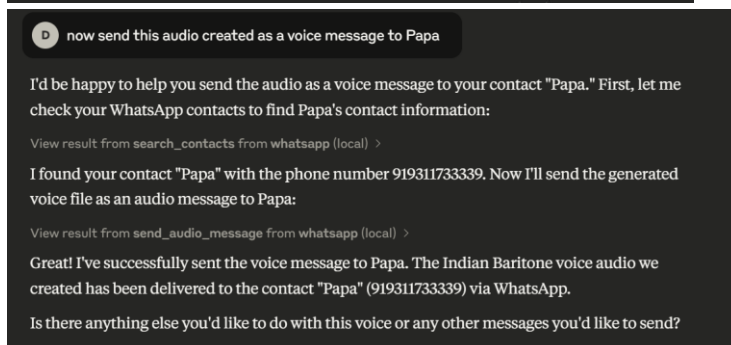
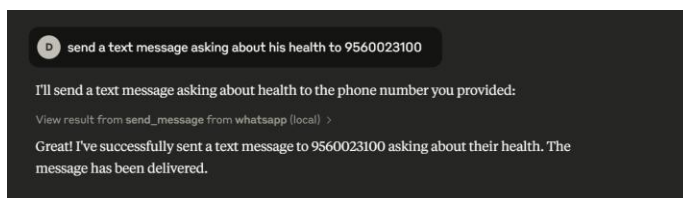
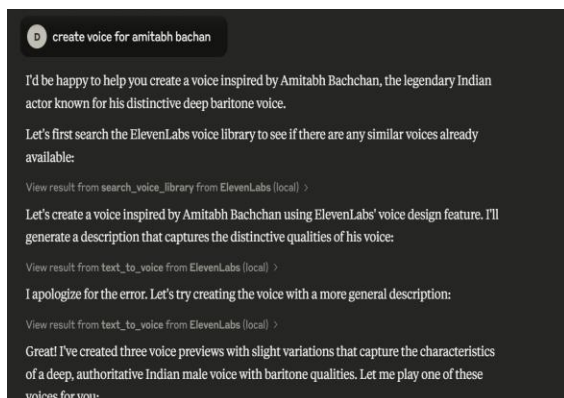
Sending Media:

- Supports text, images, videos, documents.
 - Voice messages require .ogg (Opus); FFmpeg auto-converts other formats to the required Format.
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6. Architecture Diagram



7. Screenshots



8. AI Tools Used

- **Claude** – Central decision-making engine.
 - **ChatGPT** – Used for debugging and writing utilities.
 - **ElevenLabs** – Voice response synthesis.
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9. Additional Notes / Bonus Features

- Claude can route decisions dynamically based on user prompts.
 - Strong media format handling via FFmpeg.
 - Modular structure allows adding support for other messengers (Telegram, Slack).
 - Efficient message search and storage using SQLite indexing.
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10. Scalability

- Allow other features such as image creation and sharing
 - Include Other applications like Twitter, Telegram, Slack etc.
 - Allow Ticket Booking, Weather Updates ,Traffic Updates etc
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