

# Azure Voice Live Setup Guide

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## Overview

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This guide will help you set up Azure Voice Live for real-time voice conversations in your Invoice Management System.

## Prerequisites

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1. **Azure Subscription** with access to Azure AI services
2. **Azure Voice Live Service** deployed and configured
3. **Microphone and speakers** for voice interaction

## Step 1: Create Azure Voice Live Resource

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1. Go to the [Azure Portal](#)
2. Create a new **Azure AI Services** resource
3. Enable **Voice Live** capabilities
4. Note down the following information:
  - **Endpoint URL** (e.g., `https://your-voice-endpoint.cognitiveservices.azure.com/` )
  - **API Key**
  - **Deployment Name** (the model deployment you want to use)

## Step 2: Configure Environment Variables

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Add the following variables to your `.env` file:

```
# Azure Voice Live Configuration
AZURE_VOICE_LIVE_ENDPOINT=https://your-voice-endpoint.cognitiveservices.azure.com
AZURE_VOICE_LIVE_API_KEY=your_api_key_here
AZURE_VOICE_LIVE_DEPLOYMENT=your_deployment_name
```

## Step 3: Install Audio Dependencies

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The system requires audio processing libraries. Install them with:

```
# On Ubuntu/Debian
sudo apt-get update
sudo apt-get install portaudio19-dev python3-pyaudio

# On macOS
brew install portaudio

# On Windows
# Usually works out of the box with pip install
```

Then install Python dependencies:


```
<span id="instant-markdown-cursor"></span>pip install sounddevice numpy
```

## Step 4: Test Your Setup

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1. Start the application:



```
streamlit run app.py
```

2. Navigate to the **AI Chat** page
3. Look for the  **Start Voice Chat** button
4. If configured correctly, the button should be enabled

## Step 5: Using Voice Chat

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### Starting a Voice Session

1. Click  **Start Voice Chat**
2. Click  **Start Recording** when ready
3. Speak naturally about your invoice requirements

### Example Voice Commands

- *"I need to create an invoice for Acme Corporation"*
- *"The client's email is [john@acme.com](mailto:john@acme.com)"*
- *"I provided web development services for 40 hours at \$125 per hour"*
- *"The payment terms are Net 30"*
- *"Add a note that this includes responsive design"*

## Voice Conversation Flow

1. **Speak your request** - The AI will transcribe and understand your speech
2. **Listen to AI response** - The AI will speak back through your speakers
3. **Continue conversation** - Provide additional details as requested
4. **Generate invoice** - When all details are collected, create the invoice

## Troubleshooting

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### Common Issues

#### Button shows "Voice Unavailable"

- Check that all environment variables are set correctly
- Verify your Azure Voice Live service is running
- Ensure your API key has the correct permissions

#### Audio not working

- Check microphone permissions in your browser/system
- Verify speakers are working and volume is up
- Try refreshing the page

#### Connection errors

- Verify your endpoint URL is correct
- Check that your API key is valid
- Ensure your Azure subscription is active

### Debug Mode

To enable debug logging, add to your `.env` :

```
LOG_LEVEL=DEBUG
```

This will show detailed information about voice processing in the console.

## Advanced Configuration

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### Custom Voice Settings

You can customize the voice agent by modifying the session configuration in `components/azure_voice_live.py`:

```
def get_invoice_voice_session_config() -> Dict:
    return {
        "voice": {
            "name": "en-US-Aria:DragonHDLatestNeural", # Change voice
            "temperature": 0.7, # Adjust creativity (0.0-1.0)
        },
        "turn_detection": {
            "silence_duration_ms": 500, # Adjust silence detection
            "threshold": 0.3, # Adjust sensitivity
        }
    }
```

### Supported Voice Models

- `en-US-Aria:DragonHDLatestNeural` - Professional female voice
- `en-US-Davis:DragonHDLatestNeural` - Professional male voice
- `en-US-Jenny:DragonHDLatestNeural` - Friendly female voice
- `en-US-Guy:DragonHDLatestNeural` - Friendly male voice

## Security Considerations

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1. **Never commit API keys** to version control
2. **Use environment variables** for all credentials
3. **Rotate API keys** regularly
4. **Monitor usage** to detect unauthorized access

## Support

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If you encounter issues:

1. Check the [Azure Voice Live documentation](#)
2. Review the application logs for error messages
3. Verify your Azure service status
4. Contact Azure support if needed

## Cost Considerations

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Azure Voice Live charges based on:

- **Audio processing time** (per minute)
- **API calls** (per request)
- **Data transfer** (per GB)

Monitor your usage in the Azure portal to avoid unexpected charges.