



A Hyper Scalable and Secure **Media Server** for VoiceAI Applications

IraVoice is a bidirectional media server comprising a Dialer, a Call Recording module, and the BotStream Streaming module, enabling telephony services for both legacy CX systems and conversational voice AI applications. It delivers key capabilities including an API-driven Dialer, call recording, conferencing, media streaming, trunk management, load balancing, and real-time QoS monitoring.

Supporting both inbound and outbound traffic, IraVoice integrates seamlessly with PSTN or any PBX over E1 or SIP protocols while connecting to conversational AI applications through secure Websocket interfaces. Deployed on Kubernetes, with high-speed, low-latency communication facilitated by the **NATS messaging platform**, it scales horizontally to manage varying workloads with high availability and can distribute traffic across VM instances or geographically dispersed data centers using its proprietary **load balancer**.

At its core, IraVoice is built on the proven **Freeswitch** telephony platform, recognized for its robustness, flexibility, and enterprise-grade reliability. Extending this foundation, IraVoice combines three key modules into a unified media server: the **Dialer** for call initiation and advanced telephony control, the **Recorder** for enterprise-grade call capture and compliance, and **BotStream** for real-time streaming between telephony systems and VoiceBot applications. Together, these modules deliver a versatile, future-ready platform designed to power mission-critical communication environments.

HIGHLIGHTS

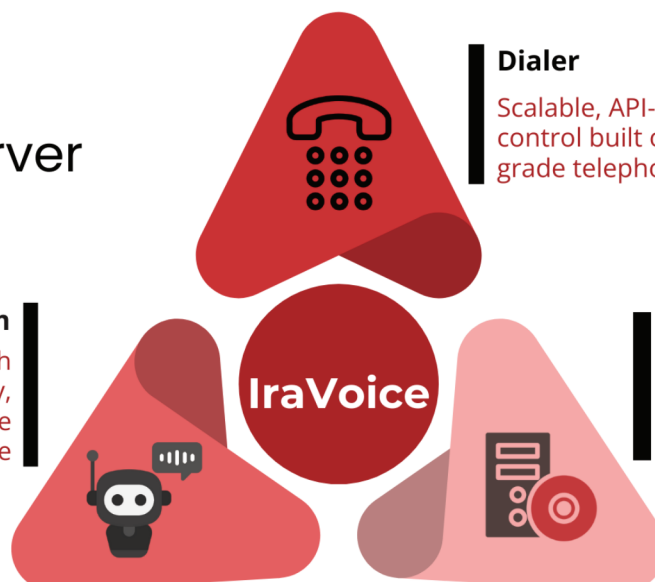
- The Telephony stack for Voice AI application vendors
- Easy Integration with VoiceBots
- Deploy anywhere
- A Scalable & Secure System
- Low Resource Footprint
- Reduce Overall Costs
- Real time monitoring

USE CASES

- Telephony Media Server for Agent Desktops and Call Centres
- API Dialer for Outbound Campaigns
- Telephony Stack for VoiceBot Applications
- Adding AI Capabilities to Legacy PBX and Contact Centre Systems.

IraVoice Media Server

BotStream
Powering AI bots with full-stack telephony, enabling real-time intelligence



Dialer

Scalable, API-driven call control built on carrier-grade telephony.

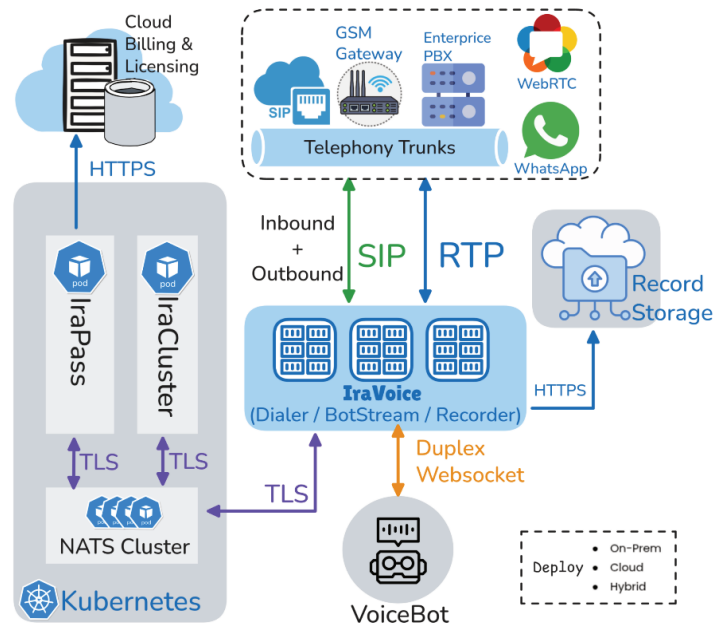
Recorder

Reliable recording, anytime, whether it's in house or across any SBC or PBX.

IraVoice - Auto Dialer

The **IraVoice Dialer Module** is the core component for initiating and managing call sessions across both PSTN and VoIP channels. It offers a comprehensive set of APIs that allow developers and applications to embed telephony without requiring specialized expertise.

Beyond call initiation, the Dialer supports advanced controls such as bridging parties into a conference, merging sessions, transferring calls, dropping calls, and monitoring interactions through snoop functionality. These capabilities make it suitable for outbound campaigns, conferencing, and contact centre automation.



IraVoice Recorder

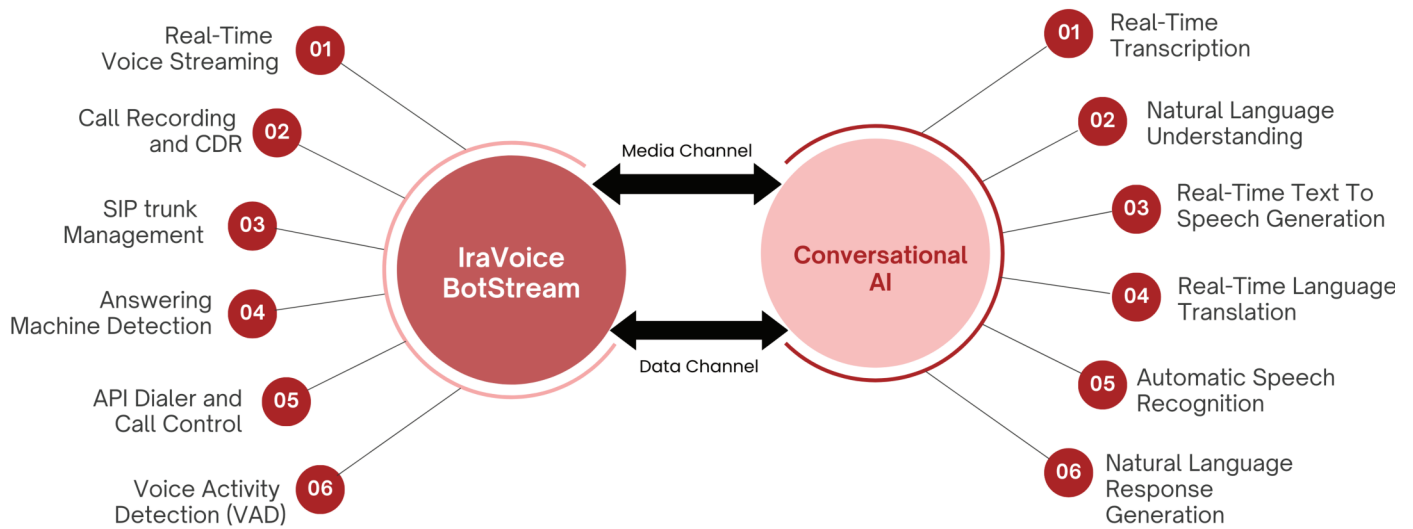
The **IraVoice Recorder Module** supports quality assurance, compliance, and training by enabling calls to be recorded and securely stored for further processing. Recordings are saved in standard audio formats such as MP3 or WAV, ensuring compatibility with a wide range of platforms and analysis tools. These recordings can be archived in secure cloud environments such as Amazon S3, Google Cloud Storage, or Microsoft Azure for remote access, or stored on network-attached storage devices for on-premise deployments.

The IraVoice Recorder Module is an enterprise grade call recording software within the IraVoice media server. It can also be integrated seamlessly with third party PBX systems, functioning as a full-fledged Call Recording Server for both legacy telephony and modern VoiceAI CX environments. Designed for the purposes of training, compliance and post call analytics, it provides a reliable and flexible foundation for organizations looking to capture and leverage conversations effectively.

IraVoice BotStream - Easy Integration with VoiceBots

BotStream is a hyper-scalable media streaming module purpose-built for VoiceAI solutions. Its streaming APIs allow developers to extend PBX-grade functionality to AI bots without requiring specialized telephony expertise. Through a well-defined API set, Voice Bot applications can gain inbound and outbound calling capabilities, enabling seamless communication with customers over PSTN networks or WebRTC endpoints.

The module uses a Websocket-based interface for low-latency, bidirectional communication, allowing bot endpoints to interact with telephony servers in real time. With live media streams available to VoiceAI engines, customer experiences can be enriched through features such as call barge-in, sentiment analysis, transcription, analytics, and recording, delivered either by third-party services or by the AI engines themselves.



■ Voice Activity Detection(VAD)

In addition to real-time streaming, IraVoice also supports streaming based on **Voice Activity Detection**, wherein the customer audio will be buffered until the customer pauses and then sent to the bot at one shot.

■ Deploy Anywhere

IraVoice supports deployment either on-premise or in the cloud, allowing customers to choose the model that best suits their infrastructure, security, and scalability needs.

■ Real time monitoring

Comes bundled with a real time dashboard to monitor the number of calls that are being dialed, answered, streamed etc. Also highlights errors like the number of streaming requests that failed in the last 30 seconds for each campaign with the break-down of reason for failure.

The dashboard also highlights bottlenecks in bot performance for each campaign by considering a silence of over 4 seconds by bot as a bot error and displaying the number of bot errors for each campaign in the last 30 seconds.

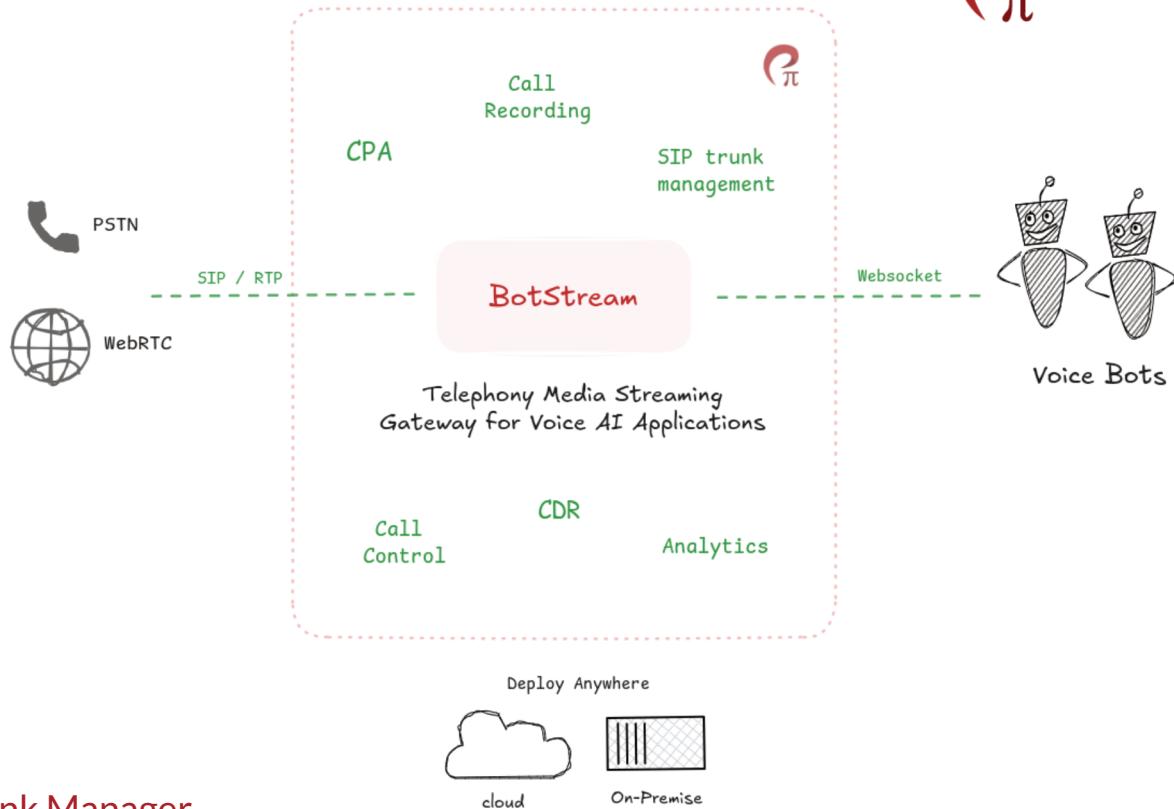
■ Business Hour Restrictions

Some campaigns require restricting customer contact to business hours only. IraVoice offers this feature at the campaign level, allowing you to set specific open hours for each campaign.

■ A Scalable & Secure System

The platform is designed for 99.999% availability and can automatically scale to meet the variable traffic load in real time. This ability to auto-scale as and when required is a powerful feature that can help you to handle large volumes of calls within as and when needed.

To comply with Industry Security Standards, IraVoice APIs do not require any called party or calling parties information apart from phone number to be shared with it. It supports end-to-end encryption using TLS and secure RTP for media.



■ Trunk Manager

The trunk manager keeps track of the capacity and health of each trunk. It ensures that if a trunk is busy or unavailable (due to network issues, maintenance, or system failures), it reroutes calls to other available trunks, minimizing downtime and improving call success rates. Other features include:

Call Routing: This determines how outbound calls are routed. It assigns the most appropriate trunk to each call based on the factors like availability, CPS(calls per second).

Pool Management: When there are multiple sip trunks available for dialing, the trunk manager helps to balance the load across multiple trunks to avoid overloading any single trunk.

Call Failure and Redundancy: If one trunk becomes unavailable, the trunk manager can automatically fail-over to dial through the other available trunks providing redundancy and reduce the disruptions due to network issues.

Typical Use Cases

IraVoice is an API-based telephony middleware used by CX application vendors and system integrators to address diverse use cases in the voice communications space.

■ Telephony Media Server for Agent Desktop and Call Centre Applications

IraVoice can be deployed as a telephony media server for agent desktop and call centre platforms. It allows new age CX platform companies to add essential services including SIP registrar, call routing, bridging, conferencing, recording, SIP trunk management, and QoS monitoring.

With its API-driven design, IraVoice integrates directly into agent desktop environments, enabling seamless call control and CRM/WFM integration. Its Kubernetes-based architecture ensures scalability and high availability for large-scale enterprise contact centres.

■ API Dialer for Outbound Campaign Manager Applications

IraVoice powers outbound campaign managers with its carrier-grade API Dialer. Enterprises can automate large-scale outbound campaigns while maintaining fine control through APIs that support initiation, monitoring, bridging, transferring, dropping, and merging calls.

With features like Call Progress Analysis (CPA), retry logic, and business-hour restrictions, campaign performance is maximized while agent idle time is minimized. Real-time dashboards and trunk management provide visibility and reliability at scale.

■ Telephony Stack for VoiceBot Applications

VoiceBot providers integrate IraVoice as their telephony backbone. Through the BotStream module, IraVoice enables real-time bidirectional media streaming between telephony networks and conversational AI engines. This allows VoiceBots to handle inbound and outbound calls

over PSTN or SIP trunks, while exposing real-time audio streams for transcription, analytics, sentiment detection, and barge-in. With sub-200 millisecond latency and auto-scaling infrastructure, IraVoice ensures a natural, responsive, and scalable conversational experience.

■ Adding AI Capabilities to Legacy PBX and Contact Centre Systems

Enterprises running Cisco and Avaya-based platforms can leverage BotStream to integrate AI-driven VoiceBots into their existing PBX and contact centre environments. By establishing a SIP trunk between the legacy PBX and BotStream, call audio can be streamed in real time to an AI VoiceBot application over WebSockets.

BotStream functions as a secure media streaming gateway between the PBX and the VoiceBot, enabling seamless AI-powered interactions. When required, calls can be transferred back to the PBX and routed to a human agent, ensuring smooth handoff and alignment with business workflows.

■ Conclusion

IraVoice is a hyper-scalable, secure, and future-ready telephony stack purpose-built for VoiceAI and CX applications. By combining the Dialer, Recorder, and BotStream modules into a unified platform, it empowers partners to deliver end-to-end communication solutions that seamlessly integrate with both legacy PBX systems and modern AI-driven environments. Its Kubernetes-based architecture, auto-scaling capabilities, and carrier-grade reliability ensure performance even under the heaviest workloads, while features such as real-time monitoring and trunk management provide the operational intelligence enterprises need.

For partners and system integrators, IraVoice not only reduces costs and improves resource efficiency but also enhances data security by minimizing multi-vendor dependencies. Most importantly, it enables VoiceAI providers to offer a complete solution to their customers, strengthening competitive advantage and creating new opportunities for growth.

■ About Us

Epicode is a telephony middleware products company established in the year 2020. We work with ISV's to develop real-time voice applications in the AI driven customer experience domain. Our business model is tailored to the below mentioned attributes.

- Develop API based backend software products with a primary focus on system engineering.
- Expertise in developing real time voice applications with distributed architecture.
- The "Go to Market Strategy" would be "OEM partnerships" with a B2B approach, selling only to systems integrators, technology partners, and business application developers.
- Adopt proven and field-tested best-of-breed open source platforms as part of our product stack.

As a consciously chosen design strategy, our OEM products are designed based on the partner's business requirements or use cases. The Epicode solution architects make sure that the products are optimised for specific deployment environments as prescribed by our business application partners, be it on-premise or pure cloud environments like AWS, Google or Azure cloud.



8-94-E2, Hotel Bhavani Building, Eshwar Nagar
NH169A, Manipal, Karnataka - 576 104

Phone: +918203542260
Email: enquire@epicode.in

Sales office : Bangalore
Phone: +91 80495 10729