Architecture Diagrams

Powering Multiple Contact Centers with GenAI Using Amazon Bedrock

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Many contact center operators have a hybrid setup of using multiple vendors, where each contact center has its own artificial intelligence and machine learning (AI/ML) support. This architecture is designed to consolidate this support to a single AI/ML stack for multiple contact center instances, powering multiple contact centers by a single large language model (LLM) using Amazon Bedrock, thus reducing cost and improving efficiency.

Powering Multiple Contact Centers with GenAI Using Amazon Bedrock Diagram
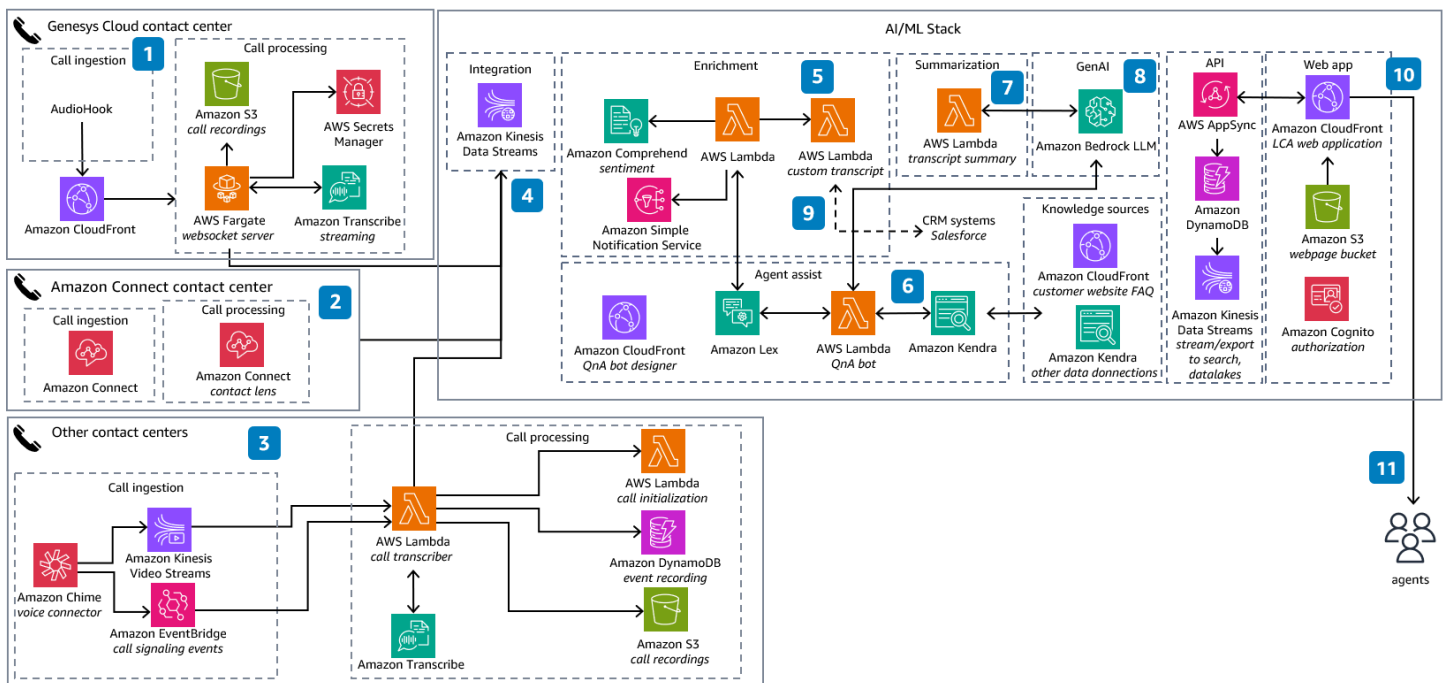
1. Call ingestion from a Genesys cloud contact center is achieved using an AudioHook websocket; call processing is handled using **Amazon Transcribe**.

2. **Amazon Connect** is an end-to-end cloud based contact center solution with built-in AI/ML capabilities. Call processing is done by using **Amazon Connect** Contact Lens.

3. Any other contact center based on session recording protocol (SIPREC) ingestion can be done by using **Amazon Chime** Voice Connector, with call processing by **Amazon Transcribe**.

4. **Amazon Kinesis Data Streams** streams all call transcripts simultaneously from all contact center instances.

5. **AWS Lambda** is used to initiate **Amazon Comprehend** sentiment analysis, which determines agent and caller sentiment. **Lambda** also initiates agent assist and transcript summarization.

6. Agent assist is based on **Amazon Lex** and **Amazon Kendra**. **Amazon Lex** is the conversational interface and uses **Lambda** to activate **Amazon Kendra** to provide intelligent search.

7. The event call processor **Lambda** function invokes the transcript summarization **Lambda** function when the call ends to generate a summary of the call from full transcript.

8. The LLM hosted in **Amazon Bedrock** leverages retrieval-augmented generation (RAG) with **Amazon Kendra** to securely ingest enterprise data into LLMs and fine tune it.

9. The post call summary **Lambda** hook that the LCA call event/transcript processor will invoke after the call summary is processed. This updates the call summary to a CRM system like Salesforce.

10. The web application establishes a secure GraphQL connection to the **AWS AppSync** API and subscribes to receive real-time events, such as new calls and call status changes for the calls list page, and new or updated transcription segments and computed analytics for the call details page.

11. **Amazon CloudFront** hosts a custom dashboard application for agents.

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Further reading

For additional information, refer to

- AWS Architecture Icons
- AWS Architecture Center
- AWS Well-Architected
- Amazon Bedrock
- AWS Contact Center Intelligence (CCI) Solutions
- Live call analytics and agent assist for your contact center with Amazon language AI services
- Amazon Transcribe Live Call Analytics (LCA) Sample Solution (GitHub repo)
- Salesforce Integration
- Agent Assist with Amazon Connect
- Agent Assist with Genesys Cloud CX
- Agent Assist using Chime SDK

Contributors

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Diagram history

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