



Revolutionizing Customer Service: Integrating Computer Telephony (CTI) with Amazon Connect in the PEGA Platform

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Abstract The integration of Computer Telephony Integration (CTI) systems with Customer Relationship Management (CRM) platforms has revolutionized customer service operations, enhancing efficiency and user experience. This research paper delves into the integration of PEGA's CTI capabilities with Amazon Connect, a cloud-based contact center service. The paper explores the technical architecture, implementation process, benefits, and challenges of this integration, providing a comprehensive guide for organizations looking to leverage these technologies for optimized customer service operations.

Keywords PEGA, Computer Telephony Integration (CTI), Amazon Connect, Customer Service, Business Process Management, PEGA Call, User Efficiency, Customer Experience

Introduction

A. Background

Computer Telephony Integration (CTI) is a crucial technology in modern contact centers, enabling seamless interaction between telephone and computer systems. PEGA Systems, a leader in CRM and Business Process Management (BPM), offers robust CTI capabilities that can be enhanced by integrating with Amazon Connect, Amazon Web Services' (AWS) cloud-based contact center platform. This integration aims to leverage the scalability and flexibility of cloud solutions to improve customer service efficiency and effectiveness.

Amazon Connect is a contemporary Contact Center-as-aService (CCaaS) solution designed to effortlessly support remote agents while offering the flexibility to scale operations as required. It supports traditional service channels like phone and chat, alongside chatbots and Interactive Voice Response (IVR) systems. This can be integrated with Pega Customer Service using CTI to provide seamless, cost-effective service at any scale. [1]

B. Research Objective/Scope

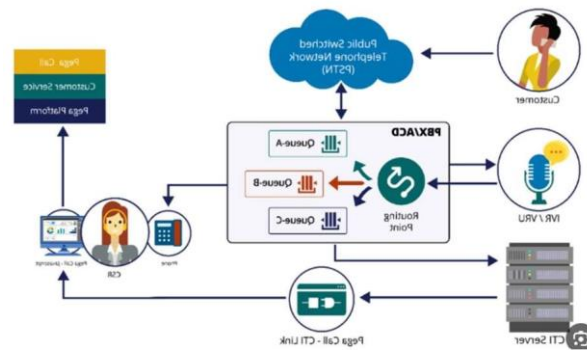
The objective of this research paper is to explore and analyze the transformative impact of integrating Computer Telephony Integration (CTI) with Amazon Connect in the PEGA Platform on customer service operations. The scope of this study encompasses a detailed examination of the technical architecture, implementation processes, and the synergistic functionalities that result from this integration. By evaluating the benefits, challenges, and practical applications, this research aims to provide a comprehensive understanding of how this integration enhances customer service efficiency, agent productivity, and overall operational effectiveness. Additionally, the paper seeks to offer actionable insights and best practices for organizations considering this integration to revolutionize their customer service strategies, leveraging the combined strengths of PEGA's robust CRM capabilities and Amazon Connect's scalable, cloud-based contact center solutions.

Key Features of Pega CTI Integration with Amazon Connect

- A. Pega's Intelligent Virtual Assistant provides preemptive service, capable of resolving customer inquiries or offering Pega cases as self-service options through chat and IVR.
- B. Telephony request processing, including call control and agent state management, is facilitated using Amazon Connect web call controls, which can be swiftly embedded within the Pega Customer Service Interaction Portal.
- C. Pega Call processes CTI events from Amazon



- D. Connect, triggering actions such as screen pops in the Customer Service application, which can be customized with relevant caller data from Amazon Connect.
- E. Agent state management features include handling availability status, quick connects for contacts, and functions like hold, mute, or transfer.
- F. Outbound calls through Amazon Connect can be initiated using click-to-call enabled hyperlinks within the Pega Customer Service application.
- G. There is seamless interoperability between Pega and Amazon Connect during Customer Service Representative (CSR) interactions with customers.
- H. In Version 8.8, Pega supports Amazon Connect Chat, allowing CSRs to manage multiple interactions in Pega while keeping both applications synchronized.



Implementation Process

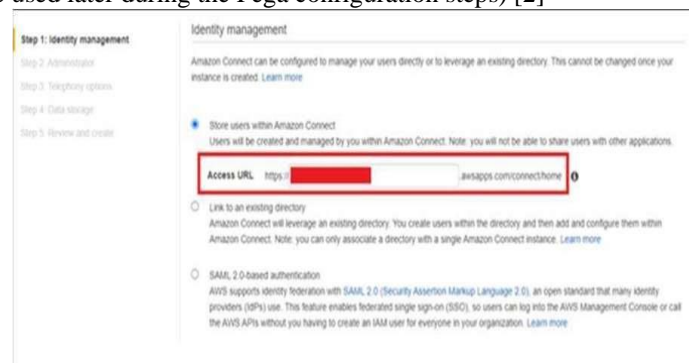
A. Prerequisites

- [1]. Pega instance which has Pega CRM and Pega Call frameworks installed.
- [2]. AWS Developer account.

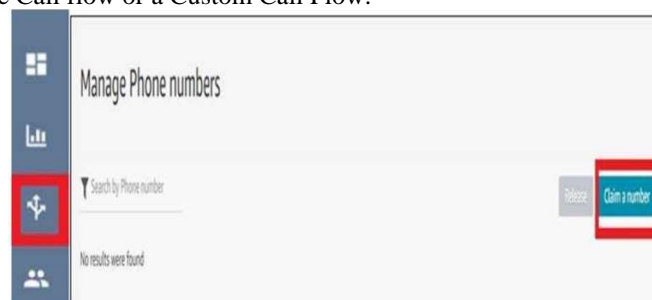
B. Configuration Steps

AWS Configuration:

- [1]. Log into AWS Developer Account and Set up the Access URL in the Identity Management section (This will be used later during the Pega configuration steps) [2]



- [2]. Fill in the other required details, review and create the AWS Connect instance.
- [3]. Once the account is created, login in to the Amazon Connect portal using the Access URL and Admin Credentials that were set up during the previous steps.
- [4]. Once logged in from the Amazon Connect Dashboard, claim a phone number and set up the call flow, either a sample Call flow or a Custom Call Flow.



- [5]. From the AWS Connect Control, click on the Add Origin link to add in the domain name of the Pega application which will be integrated with Amazon Connect.

PEGA Configuration:

- [1]. Log into the Pega developer portal. The logged in user's access group should point to an application which is built on Pega Customer Service application and Pega Call should already be installed in the Pega instance.
- [2]. From the DEV studio header, click on Configure > Channel Services > Pega Call > Administration & Configuration option. This should open up the following screen

Description	Link type	Status
No items		

- [3]. Click on Add CTI Link and select the Embedded UI option as shown below
- [4]. Once the Embedded UI option is selected, the CTI link instance creation form will open up. In this case, instance has been named AWS Connect DEV
- [5]. Javascript is used by Pega to embed the Amazon Connect Screen Pop within the Pega portal. The server URL needs to be filled up with the Amazon Connect instance URL that was set up during the Amazon Connect instance creation. The format of the Server URL should be in the below format: [https://%3cYourInstanceAliasOnAWSConnect%3e.awsapps.com/connect]



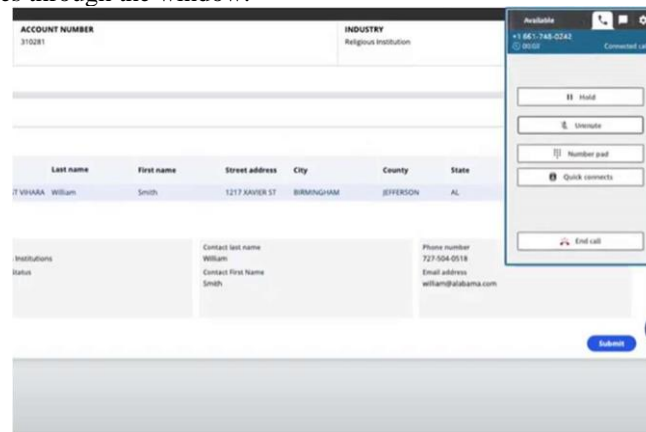


C. Execution:

Login to the PEGA CTI using the phone icon and selecting AWS Connect Dev from the dropdown.



When a call comes in, the agent can accept the call in the embedded window and can perform transfer, on hold or other call functionalities through the window.



Outbound calls can also be placed from within the embedded window using quick connects

Understanding E-Trading Platforms

Enhanced Customer Experience - The integration provides a unified interface for agents, reducing the need to switch between systems and enabling quicker, more efficient customer interactions.

Improved Efficiency - Automated data synchronization and event handling streamline workflows, reducing manual data entry and the risk of errors.

Scalability and Flexibility - Leveraging Amazon Connect's cloud capabilities ensures that the contact center can easily scale to handle increased call volumes without significant infrastructure changes.

Cost-Effectiveness - Using a cloud-based contact center like Amazon Connect can significantly reduce operational costs compared to traditional on-premises solutions.

Real-Time Analytics - The integration allows for realtime monitoring and analytics, providing valuable insights into call center performance and customer service metrics.

Conclusion

Integrating PEGA's CTI capabilities with Amazon Connect offers numerous benefits, including enhanced customer experience, improved operational efficiency, and scalability. While the integration presents several challenges, careful planning, robust implementation strategies, and continuous monitoring can mitigate these issues, ensuring a successful deployment. Organizations adopting this integration can significantly enhance their contact center operations, driving better business outcomes and customer satisfaction.

References

- [1]. PEGA, "Amazon Connect Intelligent CTI and IVR for Pega Customer Service," [Online]. Available: [https://community.pega.com/marketplace/integrati on-connector/amazon-connect-intelligent-cti-andivr-pega-customer-service](https://community.pega.com/marketplace/integrati-on-connector/amazon-connect-intelligent-cti-andivr-pega-customer-service). [Accessed January 2023].



- [2]. chatwithdeb9, "Amazon Connect Intelligent CTI For PEGA Customer Service," [Online]. Available: <https://mypegapoc.com/2022/08/pega-call-using-amazon-connect/>. [Accessed January 2023].

