



Configuring Pega Computer Telephony Integration (CTI) with AWS Amazon Connect through Single Sign-On

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Abstract As businesses increasingly adopt cloud-based contact center solutions, integrating these platforms with existing BPM tools is crucial for maximizing operational efficiency and customer satisfaction. This paper explores the configuration of Pega CTI with Amazon Connect using Single Sign-On, detailing the technical steps and best practices for seamless integration. By leveraging Amazon Connect's robust capabilities and Pega's powerful BPM framework, organizations can enhance their telephony solutions, streamline user authentication, and ensure secure access management.

Keywords Amazon Connect, Single Sign-On, Pega Telephony, BPM, Cloud-based Contact Center, Integration, Authentication, AWS, Telephony Solutions.

1. Introduction

A. Amazon Connect

Amazon Connect is an Amazon Web Services (AWS) public cloud customer contact center service. It allows customer service representatives to handle phone calls and chat inquiries from end customers as if the contact center infrastructure were set up and managed on-premises. Amazon Connect can be deployed across multiple availability zones, ensuring fault tolerance and high availability through multiple telecom provider paths. According to Amazon, the service can scale to support tens of thousands of call center agents. AWS supplies the telecommunication infrastructure necessary for each company utilizing the service. Access to Amazon Connect requires users to have either an Amazon Connect account or an AWS Identity and Access Management (IAM) account. [1]

B. PEGA Computer Telephony Integration (CTI)

Pega Computer Telephony integrates with various telephony systems to enhance customer service processes within the Pega BPM framework. It enables features like call routing, screen pop-ups, and detailed call analytics, all while ensuring that customer interactions are managed efficiently within the Pega environment. [2]

C. Single Sign On

Single Sign-On (SSO) is an authentication process that allows a user to access multiple applications with one set of login credentials. SSO improves user experience by reducing password fatigue and enhances security by centralizing authentication.

D. Research Objective/Scope

This paper aims to provide a comprehensive guide on configuring Amazon Connect Single Sign-On (SSO) with Pega Telephony, highlighting the technical requirements, step-by-step procedures, and potential pitfalls. The scope includes:

- Understanding the fundamentals of Amazon Connect and Pega Telephony.
- Exploring the significance of SSO in modern telephony solutions.
- Detailing the configuration process for integrating Amazon Connect SSO with Pega Telephony.



- Discussing best practices and troubleshooting common issues.
- Evaluating the benefits of the integrated solution.

2. PEGA CTI and Amazon Connect

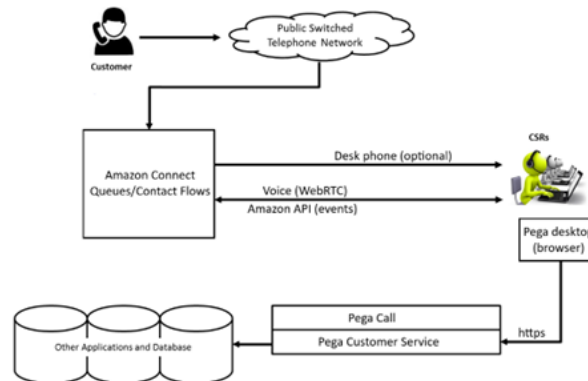


Figure 1: PEGA Call Architecture [3]

The provided diagram illustrates the integration of Amazon Connect with Pega Call and Pega Customer Service to handle customer service interactions. The flow begins with a customer initiating a call through the Public Switched Telephone Network (PSTN). The call is directed to Amazon Connect, where it is managed through various queues and contact flows.

Amazon Connect routes the call to customer service representatives (CSRs) through either desk phones (optional) or via Voice over WebRTC. The Amazon API handles events and interacts with the Pega desktop environment, which is accessed through a browser by CSRs.

CSRs use the Pega Call and Pega Customer Service applications to manage customer interactions. These applications are integrated with other enterprise applications and databases to provide comprehensive customer service solutions. The integration is secured via HTTPS, ensuring that all communications between the Pega desktop, Pega Call, and Amazon Connect are encrypted and secure.

3. Problem Statement

The current version of the PEGA CTI plugin for Amazon Connect lacks the capability to directly configure the Connect SSO URL within PEGA Call. This limitation poses significant challenges for seamless integration, as it prevents the agent from directly logging in into Amazon Connect from with PEGA CTI leading to potential inefficiencies and increased administrative and training overhead to guide the agents to login into two different systems.

4. Solution Approach

A. Update Link Configuration

To configure PEGA Call Link for Amazon Connect, begin by adding the Connect SSO URL to the "Server URL" field within the PEGA Call settings. This step ensures that the SSO functionality is properly integrated, allowing for seamless user authentication. Additionally, introduce a new property named "ccpUrl" to the configuration. Populate this property with the Connect CCP URL, which specifies the URL for the Amazon Connect Contact Control Panel (CCP). This setup not only enables efficient authentication but also ensures that the telephony interface is correctly linked to the Amazon Connect environment, facilitating smooth communication and operations for customer service representatives.



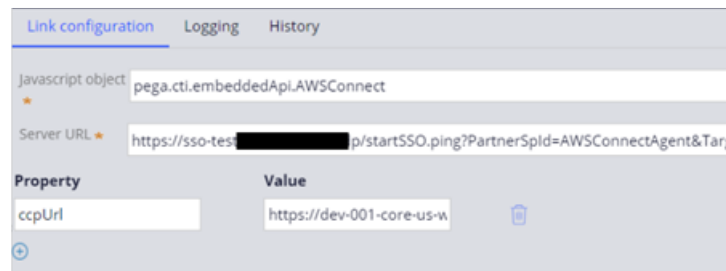


Figure 2: PEGA Call Link Configuration

B. Update the AWSConnect object

Update the AWSConnect JS file to modify the “loadMe” function to capture the “ccpUrl” parameter. This enhancement ensures that the Contact Control Panel (CCP) URL is dynamically loaded and utilized within the application, enabling seamless integration and functionality of the Amazon Connect telephony interface.

```
loadMe :function(url, onSuccess, onFailure) {
var ccp = document.getElementById('EmbeddedCCP');
if (ccp) {
  if (window.connect) {
    window.ccp = window.ccp || {};
  }

  if (this.initFlag) {
    //$('#EmbeddedCCP').empty();
    var embeddedPanel = $("#EmbeddedCCP");
    // : Added var awsscUrl to capture the ccp url from
    var awsscUrl = this.getValueFromLinkDefinition("AwsscUrl");
    var region = this.getValueFromLinkDefinition("region");
    embeddedPanel[0].className = "cti-embedded-div";
    alignCTIPosition();
    if($('#EmbeddedCCP > iframe')[0]!==undefined)
      $('#EmbeddedCCP > iframe')[0].remove();
    connect.core.initCCP(ccp, {
      //
      ccpUrl: Modified to map to the new awsscUrl
      loginUrl: New parameter to map the AWS SSO url from the AWS Connect
      loginPopup - false
      loginPopupAutoClose- New Parameter added and set to true.
      region - Set to us-west-2.
    })
  }
}

loginUrl: url,
ccpUrl: awsscUrl,
loginPopup: false,
loginPopupAutoClose: true,
region: region,
softphone: {
  allowFramedSoftphone: this.allowFramedSoftphone,
  disableRingtone: false
}
});
```

Figure 3: AWSConnect.js Code Snippet

5. Benefits of Integrated Solution

Enhanced User Experience

The integration offers a significantly enhanced user experience by simplifying the login process with a single set of credentials for both Amazon Connect and PEGA Call. This eliminates the need for users to remember multiple passwords, reducing login issues and saving time. The streamlined authentication process minimizes password fatigue, resulting in a more pleasant and productive user experience. Users are less likely to forget their credentials, leading to fewer password resets and related support requests, thereby increasing overall user satisfaction.

Improved Security

By centralizing authentication through Single Sign-On (SSO), the integrated solution significantly improves security. It reduces the number of potential entry points for cyberattacks, as users no longer need to manage multiple passwords, which are often weak or reused. Enhanced monitoring and auditing capabilities provide comprehensive oversight of user activities, allowing for quick identification and response to suspicious behaviors. This centralized approach not only strengthens security measures but also ensures compliance with regulatory requirements through detailed logging and tracking.



Operational Efficiency

The integrated solution streamlines user provisioning and management by allowing administrators to control access from a single point, ensuring consistent application of changes across both systems. This reduces the complexity and time required for managing user accounts, enabling IT staff to focus on strategic activities. Additionally, the reduction in manual intervention for user management and support lowers administrative overhead and support costs. Automated processes and simplified login procedures decrease the volume of support tickets, enhancing operational efficiency and allowing support teams to allocate resources more effectively.

6. Conclusion

Configuring Amazon Connect Single Sign-On with Pega Telephony offers significant benefits in terms of user experience, security, and operational efficiency. This integration leverages the strengths of both platforms, providing a robust, scalable, and secure telephony solution that meets modern business needs. By following the outlined steps and best practices, organizations can successfully implement this integration and achieve enhanced performance in their contact center operations.

References

- [1]. D. Carty, "Amazon Connect," [Online]. Available: <https://www.techtarget.com/searchaws/definition/Amazon-Connect>. [Accessed October 2022]
- [2]. PEGA SYstems, "PEGA Call and Telephony," [Online]. Available: [https://academy.pega.com/topic/pega-call-and-telephony/v1#:~:text=A%20computer%20telephony%20integration%20\(or,number%20and%20the%20number%20dialed](https://academy.pega.com/topic/pega-call-and-telephony/v1#:~:text=A%20computer%20telephony%20integration%20(or,number%20and%20the%20number%20dialed). [Accessed September 2022].
- [3]. Pega Systems, "High Level Architecture," [Online]. Available: <https://docs-previous.pega.com/pega-call-configuration-and-operations-guide/85/high-level-architecture-0>. [Accessed October 2022].

