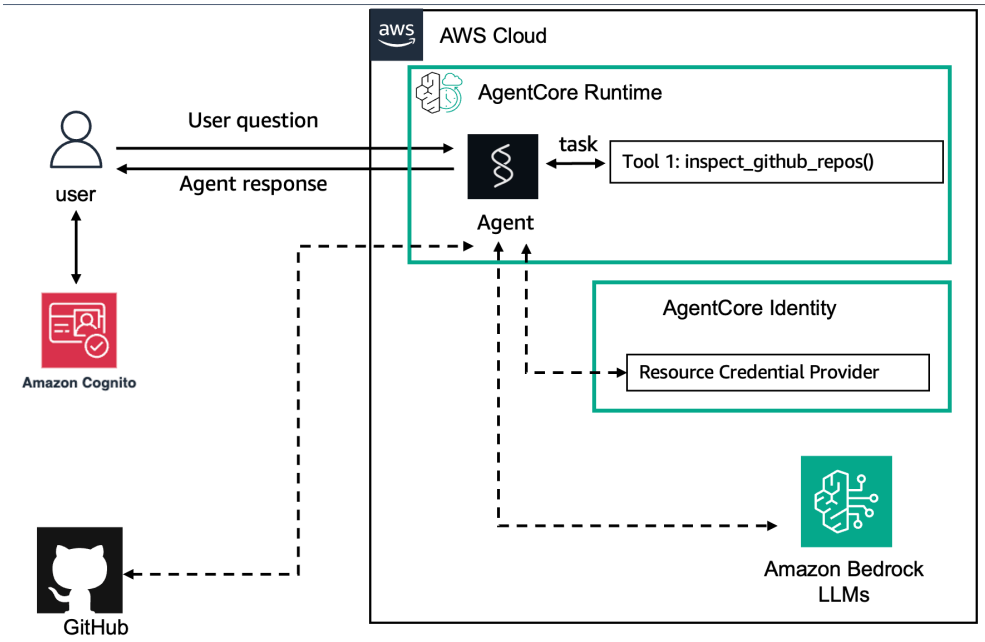
User-Delegated Access with Cognito and 3-Legged OAuth flow with GitHub

Introduction

In this Lab, we will focus on implementing Outbound Auth using 3-Legged OAuth (3LO) in AgentCore. We'll demonstrate this OAuth authorization code grant flow by configuring an agent to securely access user's private GitHub repositories through AgentCore's authentication system. You will learn how to set up 3-Legged OAuth to handle user consent and interaction, enabling your agent to access private repositories and GitHub resources that require explicit user permission.

High-Level Architecture



Architecture Flow:

1. **User Initiation**: User makes a request that requires access to a protected resource (private GitHub repositories, user data, etc.)
2. **Authorization Redirect**: The Agent/System redirects the user to the GitHub authorization server
3. **Authorization Code Return**: After successful authentication, GitHub returns an authorization code
4. **Token Exchange**: The application exchanges the authorization code for access and refresh tokens
5. **Resource Access**: Using the access token, the application can now access the user's private GitHub repositories
6. **Response Processing**: Data from GitHub is processed and results are returned to the user

Framework-Agnostic Implementation

AgentCore Outbound Auth works with multiple agentic frameworks

Try it out

At an AWS Event

If you are following the workshop via workshop studio, now go to JupyterLab in SageMaker Studio. In the JupyterLab UI navigate to `03-AgentCore-identity/06-Outbound_Auth_Github/runtime_with_strands_and_egress_github_3lo.ipynb`

Self-paced

Here's a notebook that lets you try out the above: Outbound Auth with GitHub 3LO Example.

Congratulations!

You have successfully implemented Outbound Auth for your AgentCore Runtime agent using user-delegated access with Cognito and 3-legged OAuth flow with GitHub. You learned how to:

- Create and configure resource credential providers
- Use decorators to retrieve credentials securely
- Deploy agents that can access external services
- Understand the security benefits of centralized credential management

Your completed implementation demonstrates how AgentCore Identity simplifies secure external service integration while maintaining the highest security standards.

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