

Lab 3: Connecting Strands with AWS Services



Learning Objectives

- Set up secure AWS connections for your agents
- Use the ***use_aws*** tool to interact with AWS services
- Build practical examples of agents that use AWS services

AWS Credentials Setup

- **AWS Credentials:** Your agent needs AWS credentials to authenticate
- **IAM Permissions:** Grant only the minimum permissions needed
- **Environment Variables:** Store credentials securely for local development

AWS Credentials Setup (Cont.)

```
aws configure
```

Or set environment variables:

```
export AWS_ACCESS_KEY_ID=your_access_key  
export AWS_SECRET_ACCESS_KEY=your_secret_key  
export AWS_DEFAULT_REGION=us-east-1
```

AWS Credentials Setup (Cont.)

- **S3:** *s3:ListBucket, s3:ListAllMyBuckets*
- **DynamoDB:** *dynamodb:DescribeTable, dynamodb:Query, dynamodb:Scan*

use_aws Tool

```
agent.tool.use_aws(  
    service_name="s3",           # AWS service to interact with  
    operation_name="list_buckets", # Specific operation to perform  
    parameters={},             # Parameters for the operation  
    region="us-east-1",        # AWS region  
    label="List all S3 buckets" # Description for the agent  
)
```

Amazon DynamoDB Scenario

- Table called "UserProfiles" with:
 - Partition key: "userId" (String)
 - Sort key: "day" (String)
 - Attributes: "name", "email", "status"

Amazon DynamoDB Scenario (Cont.)

```
{  
  "Items": [  
    {  
      "userId": {"S": "user123"},  
      "name": {"S": "John Doe"},  
      "email": {"S": "john@example.com"},  
      "status": {"S": "active"}  
    }  
  ]  
}
```


Best Practices

- Resource Cleanup
 - Always consider resource lifecycle management
 - You can also try using the agent to clean up resources it creates
- Cost Considerations:
 - Monitor API calls - each tool use incurs AWS API charges
 - Set up CloudWatch alarms for unexpected usage
 - Consider implementing rate limiting for production agents

Key Takeaways

- ✓ Set up secure AWS connections for Strands agents
- ✓ Use the `use_aws` tool to interact with AWS services
- ✓ Build practical examples with S3 and DynamoDB