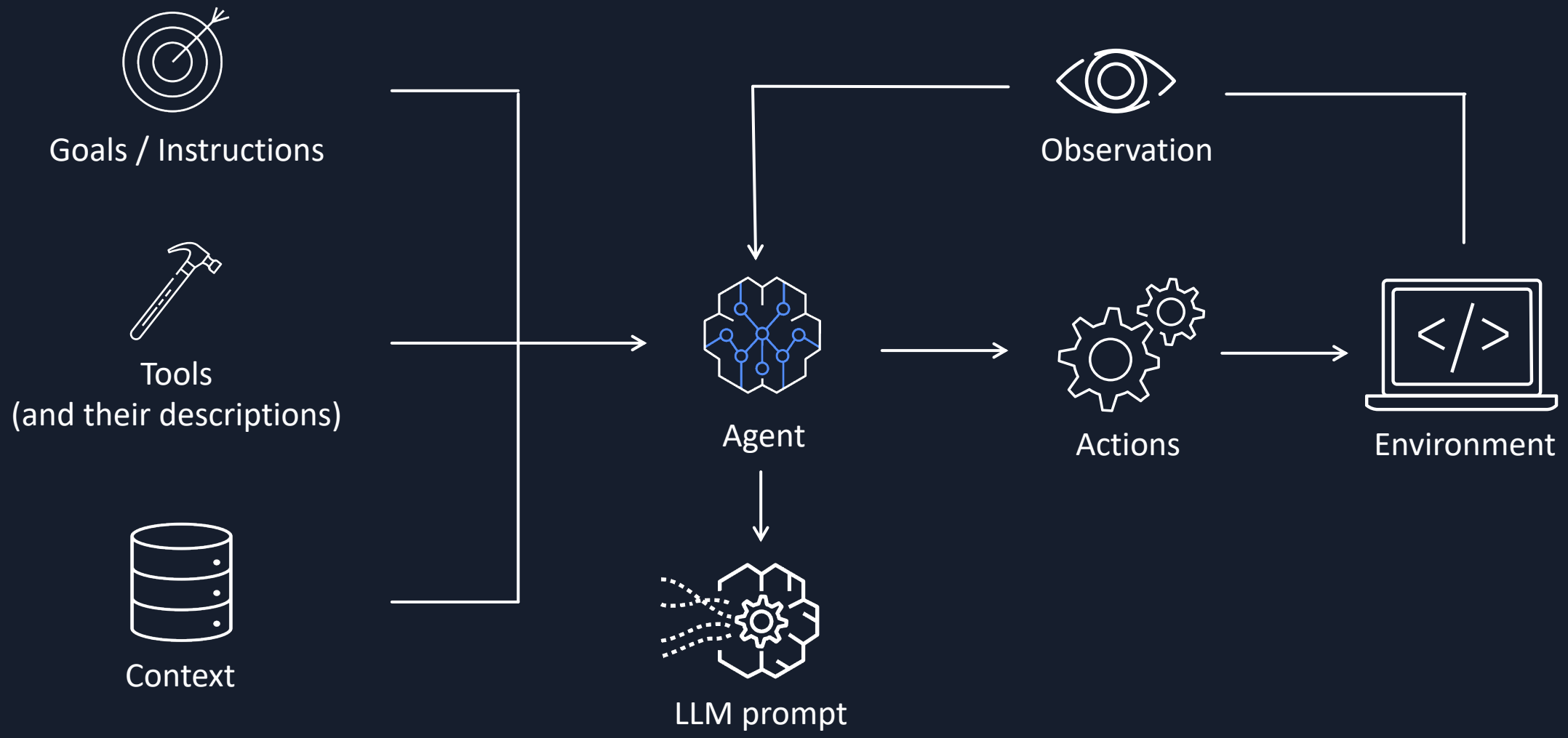
# From Dev to Prod: Building AI Agents That Scale Beyond Your Laptop

**Du'An S. Lightfoot**

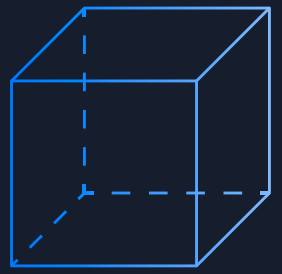
Sr. AI Engineer

AWS

# AI Agents



# GETTING AGENTS TO PRODUCTION IS STILL TOO HARD



**Securely execute and scale** agent code

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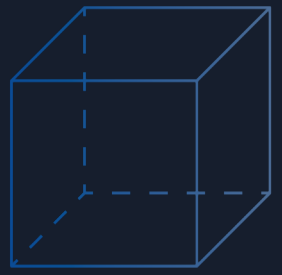

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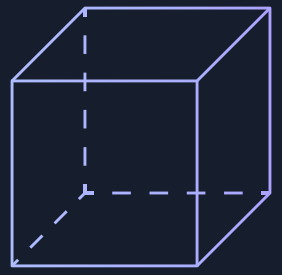

**Remember** past interactions & learning

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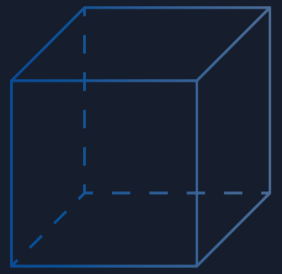

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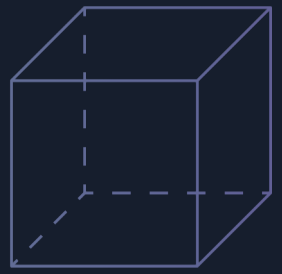

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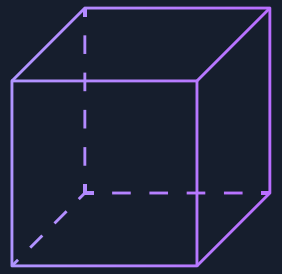

**Identity and access controls** for all agents and tools

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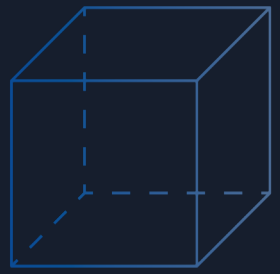

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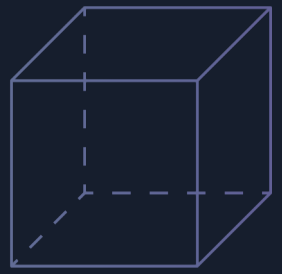

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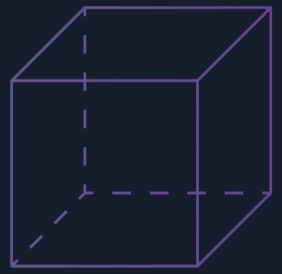

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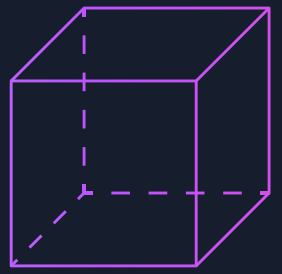

**Agentic tool use** for executing complex workflows

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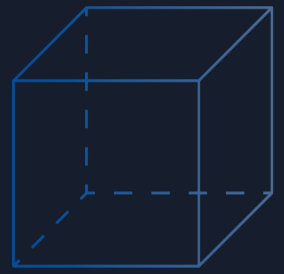

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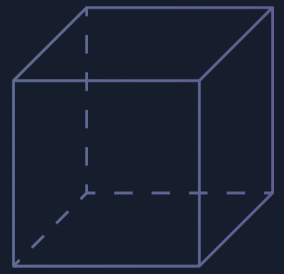

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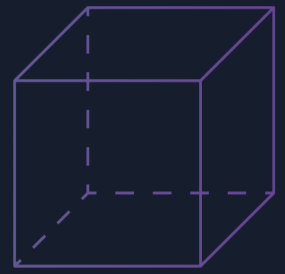

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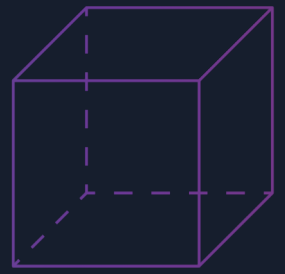
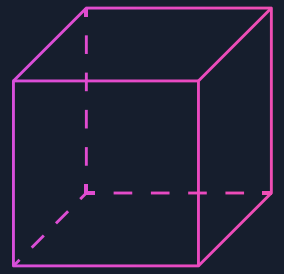
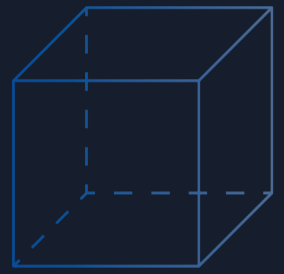


**Agentic tool use** for executing complex workflows



**Discover and connect** with custom tools and resources

# GETTING AGENTS TO PRODUCTION IS STILL TOO HARD



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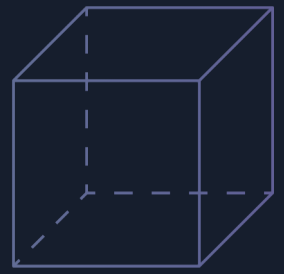

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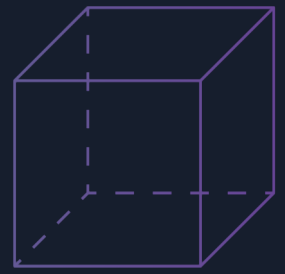
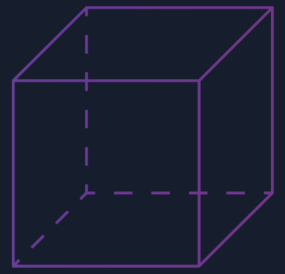
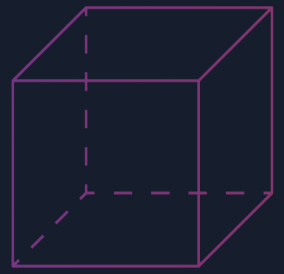


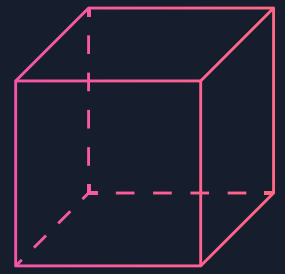
**Identity and access controls** for all agents and tools



**Agentic tool use** for executing complex workflows



**Discover and connect** with custom tools and resources



**Understand and audit** every interaction

GETTING AGENTS TO PRODUCTION IS STILL TOO HARD

# Undifferentiated heavy lifting

**Securely execute and scale** agent code

**Remember** past interactions & learning

**Identity and access controls** for all agents and tools

**Agentic tool use** for executing complex workflows

**Discover and connect** with custom tools and resources

**Understand and audit** every interaction

# Building scalable production-ready agents with Amazon Bedrock AgentCore

NEW

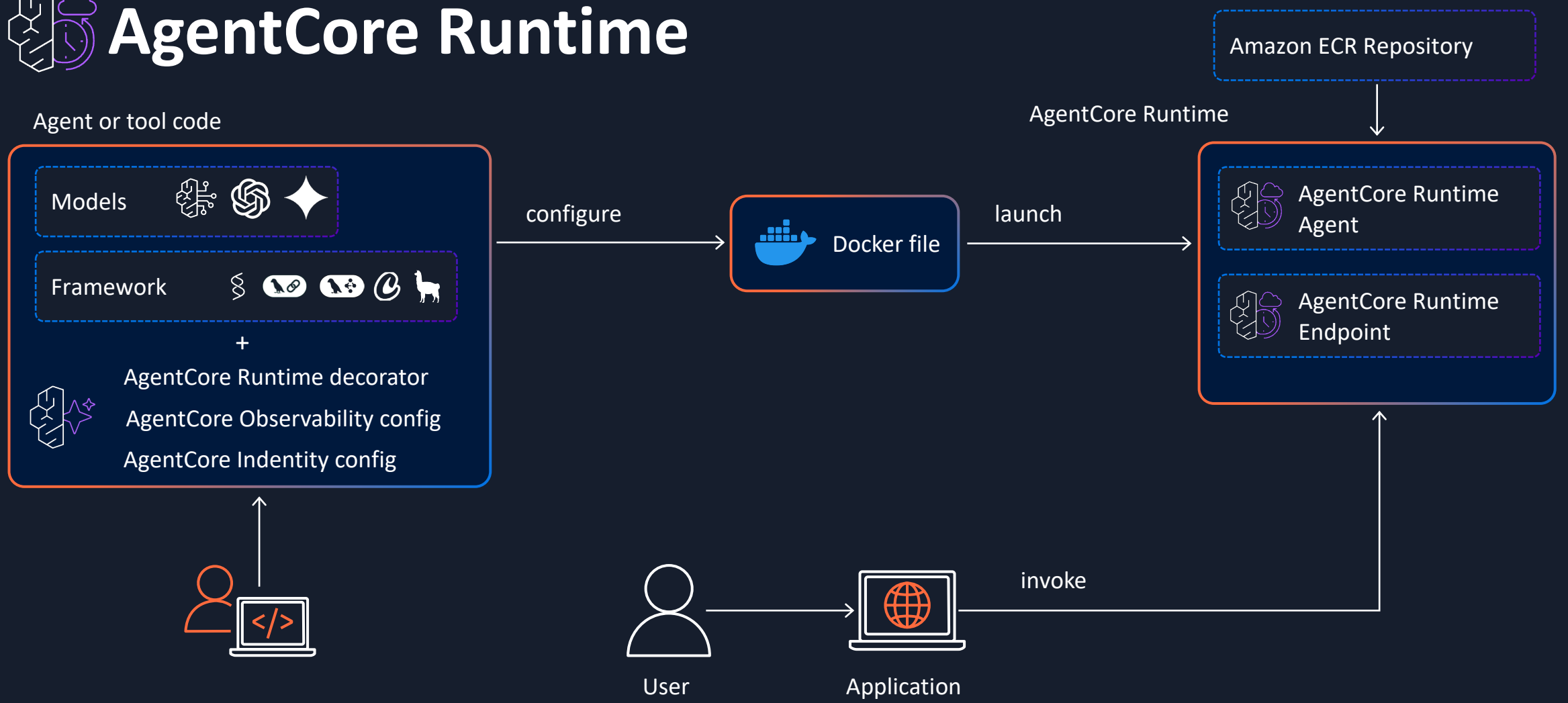
# Amazon Bedrock AgentCore

EVERYTHING YOU NEED FOR GETTING AGENTS TO PRODUCTION

## Runtime

Build, configure, and scale an agent compute layer

# AgentCore Runtime



# AgentCore Runtime

```
from framework import Agent




agent=Agent(
        name="my-agent",
        system_prompt="You are…",
        tools=[tools]
)


def invoke(payload):
        return agent(payload)
```

# AgentCore Runtime

```
from framework import Agent

from bedrock_agentcore.runtime import BedrockAgentCoreApp
app = BedrockAgentCoreApp()

agent=Agent(
        name="my-agent",
        system_prompt="You are…",
        tools=[tools]
)

@app.entrypoint
def invoke(payload):
        return agent(payload)
```

# AgentCore Runtime

my-agent.py

```python
from framework import Agent

from bedrock_agentcore.runtime import BedrockAgentCoreApp
app = BedrockAgentCoreApp()

agent=Agent(
        name="my-agent",
        system_prompt="You are…",
        tools=[tools]
)

@app.entrypoint
def invoke(payload):
        return agent(payload)
```

CLI

```
> agentcore configure --entrypoint "my-agent.py"

> agentcore launch --local

> agentcore launch
```

NEW

# Amazon Bedrock AgentCore

EVERYTHING YOU NEED FOR GETTING AGENTS TO PRODUCTION

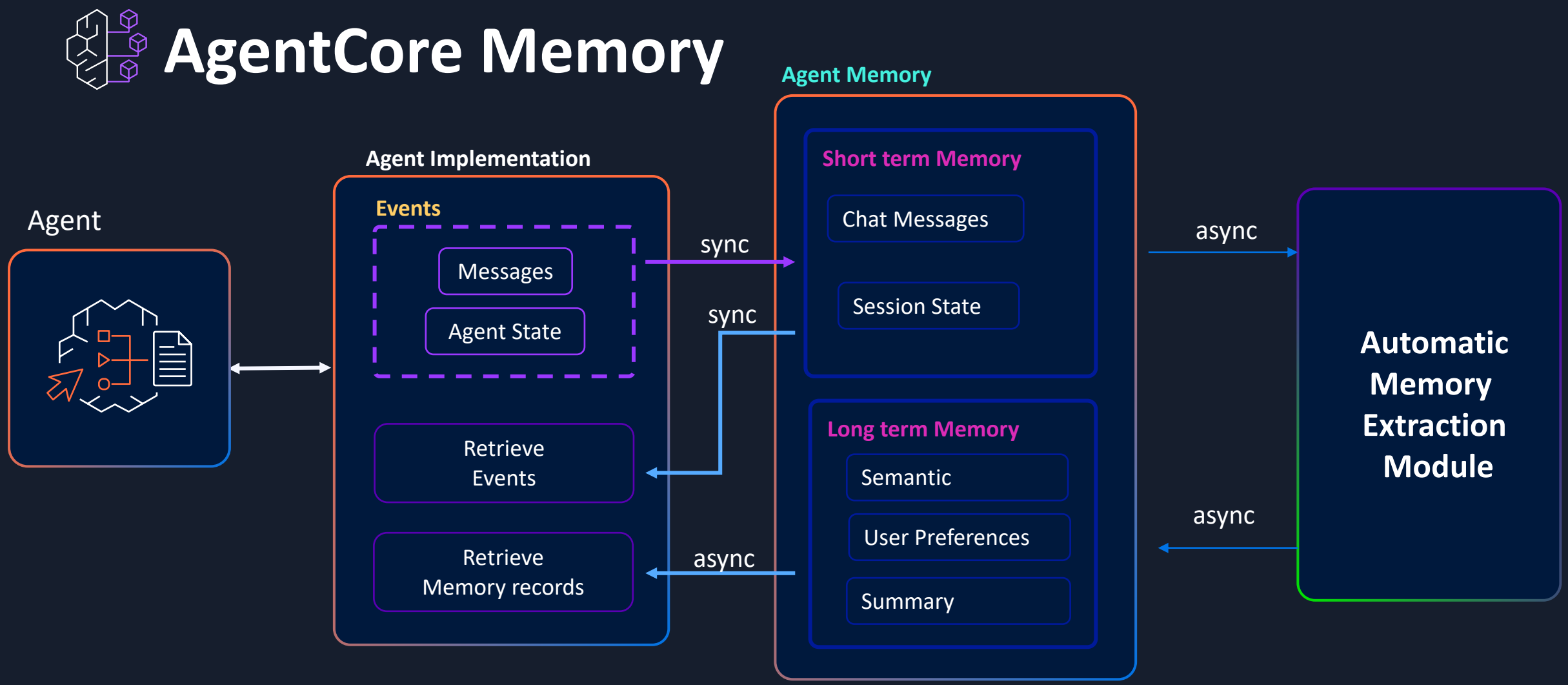
## Runtime

Build, configure, and scale an agent compute layer

## Memory

Remember past interactions + learning

# AgentCore Memory



# AgentCore Memory

Python

```python
from bedrock_agentcore.memory import MemoryClient

memory_client = MemoryClient()

memory = memory_client.create_memory(
    name="MyAgentMemory"
)

memory_id = memory['id']
```

# AgentCore Memory

Python

```python
from bedrock_agentcore.memory import MemoryClient

memory_client = MemoryClient()

memory = memory_client.create_memory(
    name="MyAgentMemory"
)

memory_id = memory['id']
```

Python

```python
memory_client.create_event(
    memory_id=memory_id,
    actor_id="USER",
    session_id="12345",
    messages=[("Hello", "USER"), ("Hi", "ASSISTANT")]
)
```

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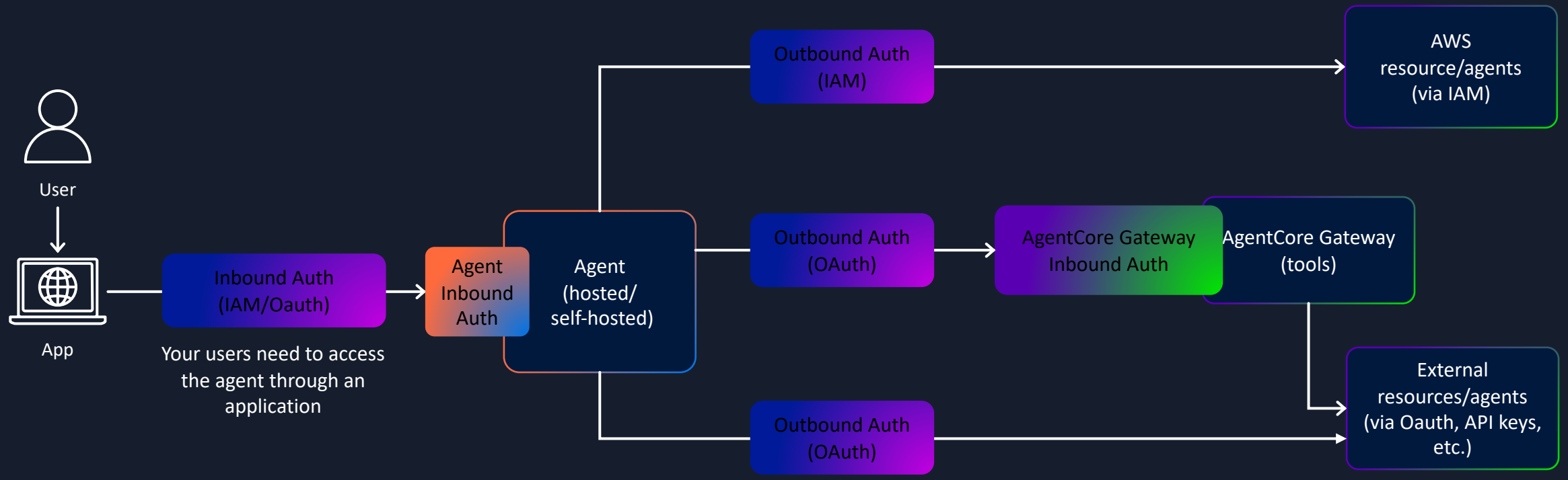
# AgentCore Identity



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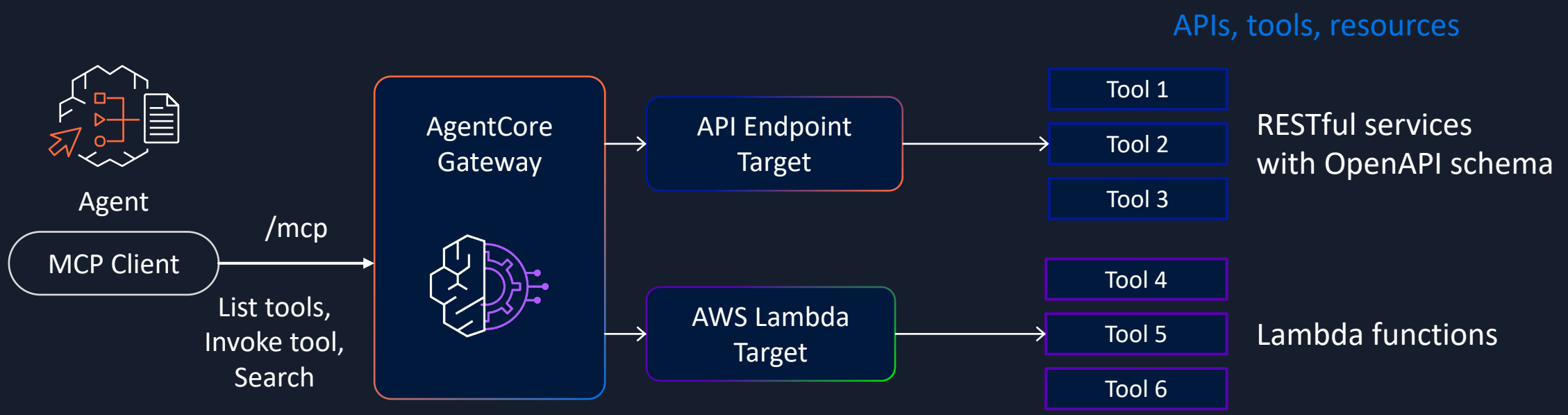
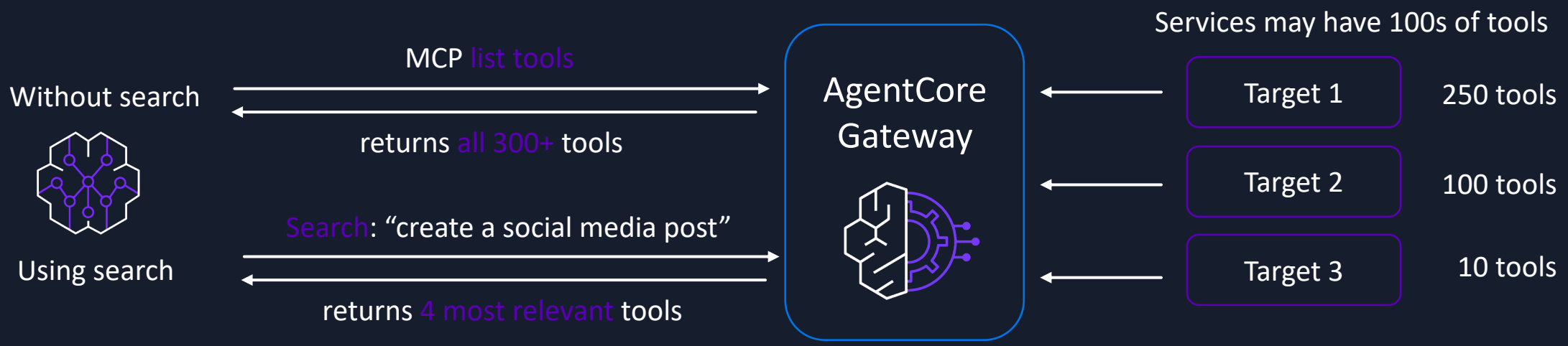
## Gateway

Gateway for accessing and exposing custom tools and resources

# AgentCore Gateway



# AgentCore Gateway semantic search




## Benefits

- AgentCore Gateway automatically indexes tools, and gives serverless semantic search
- Reduces context passed to the agent’s LLM, improving accuracy, speed, and cost
- Lets agent focus on tools relevant for a given task

# AgentCore Gateway

Python

```
auth_config = {
    "customJWTAuthorizer": {
        "discoveryUrl": discovery_url,
        "allowedClients": [client_id]
    }
}

# Create the gateway
create_response = gateway_client.create_gateway(
    name="demo-gateway-1",
    roleArn=RoleArn,
    protocolType="MCP",
    authorizerType="CUSTOM_JWT",
    authorizerConfiguration=auth_config,
    description="…"
)
```

# AgentCore Gateway

Python

```
auth_config = {
    "customJWTAuthorizer": {
        "discoveryUrl": discovery_url,
        "allowedClients": [client_id]
    }
}

# Create the gateway
create_response = gateway
    name="demo-gateway-1"
    roleArn=RoleArn,
    protocolType="MCP",
    authorizerType="CUSTO
    authorizerConfigurati
    description="..."
)
```

Python

```
response = gateway_client.create_gateway_target(
    gatewayIdentifier=gatewayId,
    name="LambdaTarget",
    description="Lambda target for MCP",
    targetConfiguration=target_config,
    credentialProviderConfigurations=credential_config
)
```

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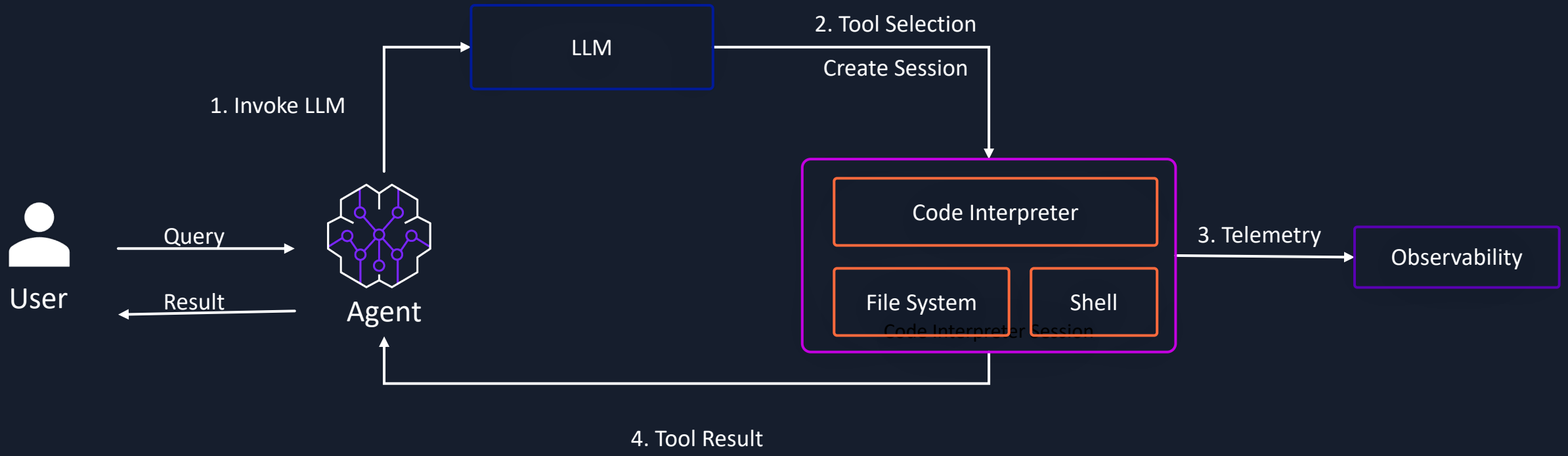
## Gateway

Gateway for accessing and exposing custom tools and resources

## Code Interpreter

Use tools like agent-generated code securely

# Securely write and execute code in an isolated environment



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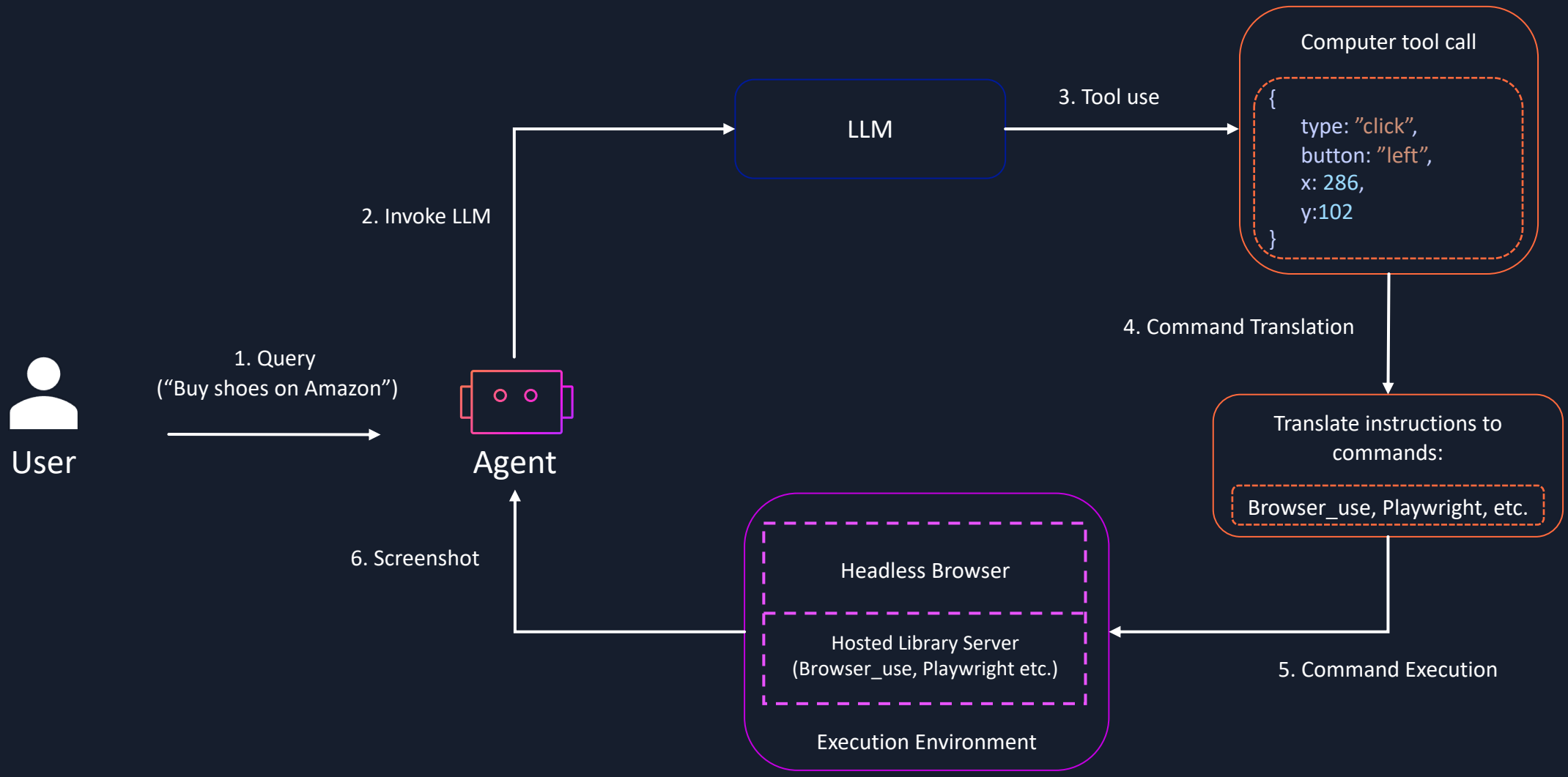
## Browser

Read and interact with a web browser

# Web navigation and workflow automation



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Read and interact with a web browser

## Observability

Telemetry for every interaction

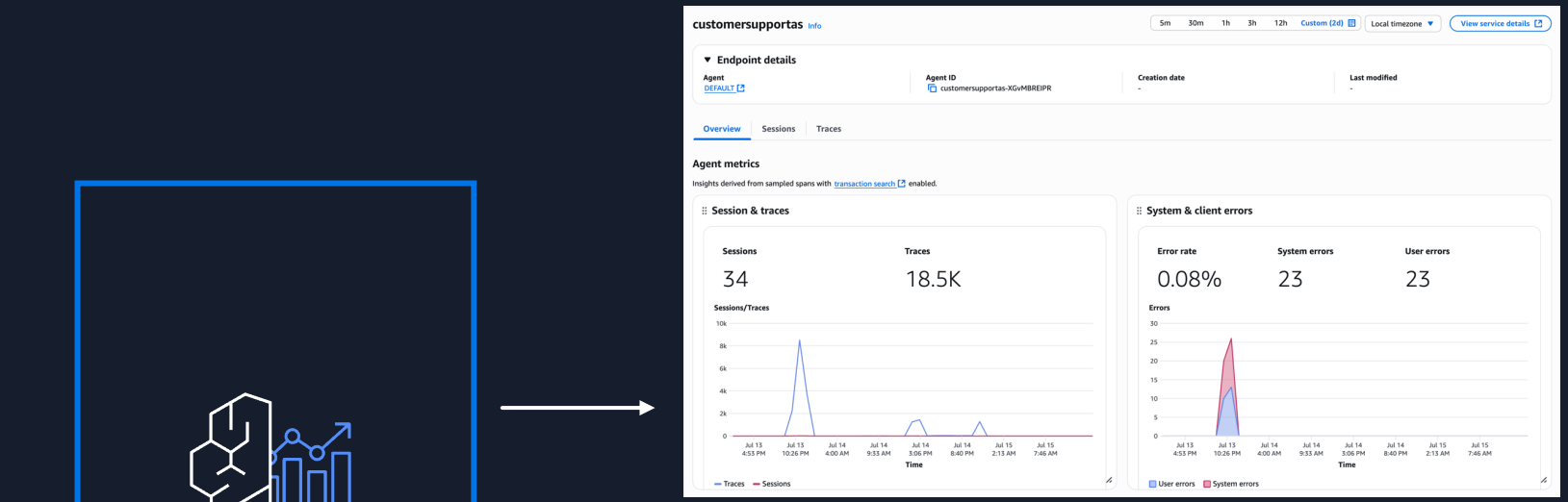
# Amazon Bedrock AgentCore Observability

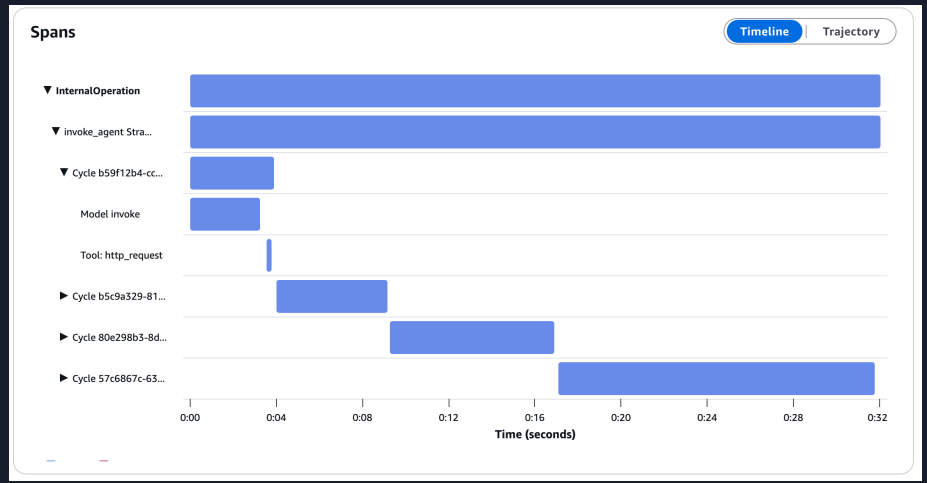
Agent deployed on AgentCore Runtime

Agent running outside AgentCore Runtime

AgentCore Observability

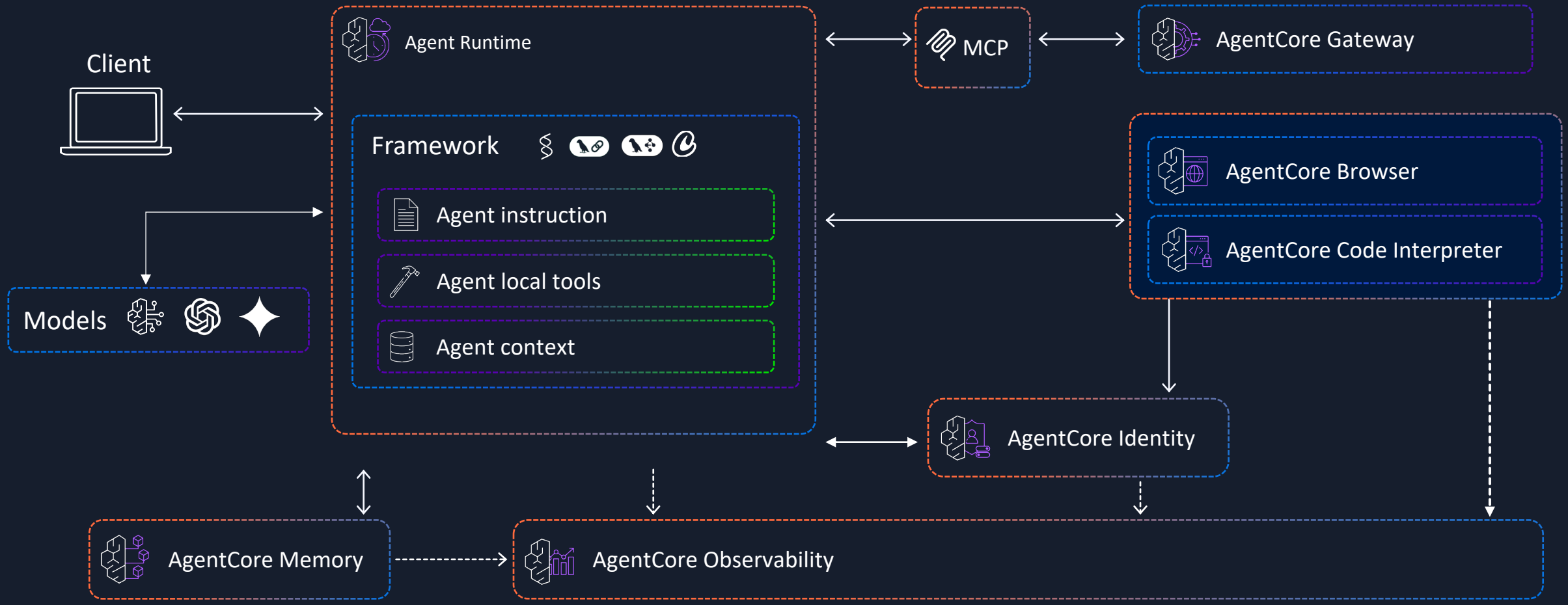
AgentCore Observability dashboards



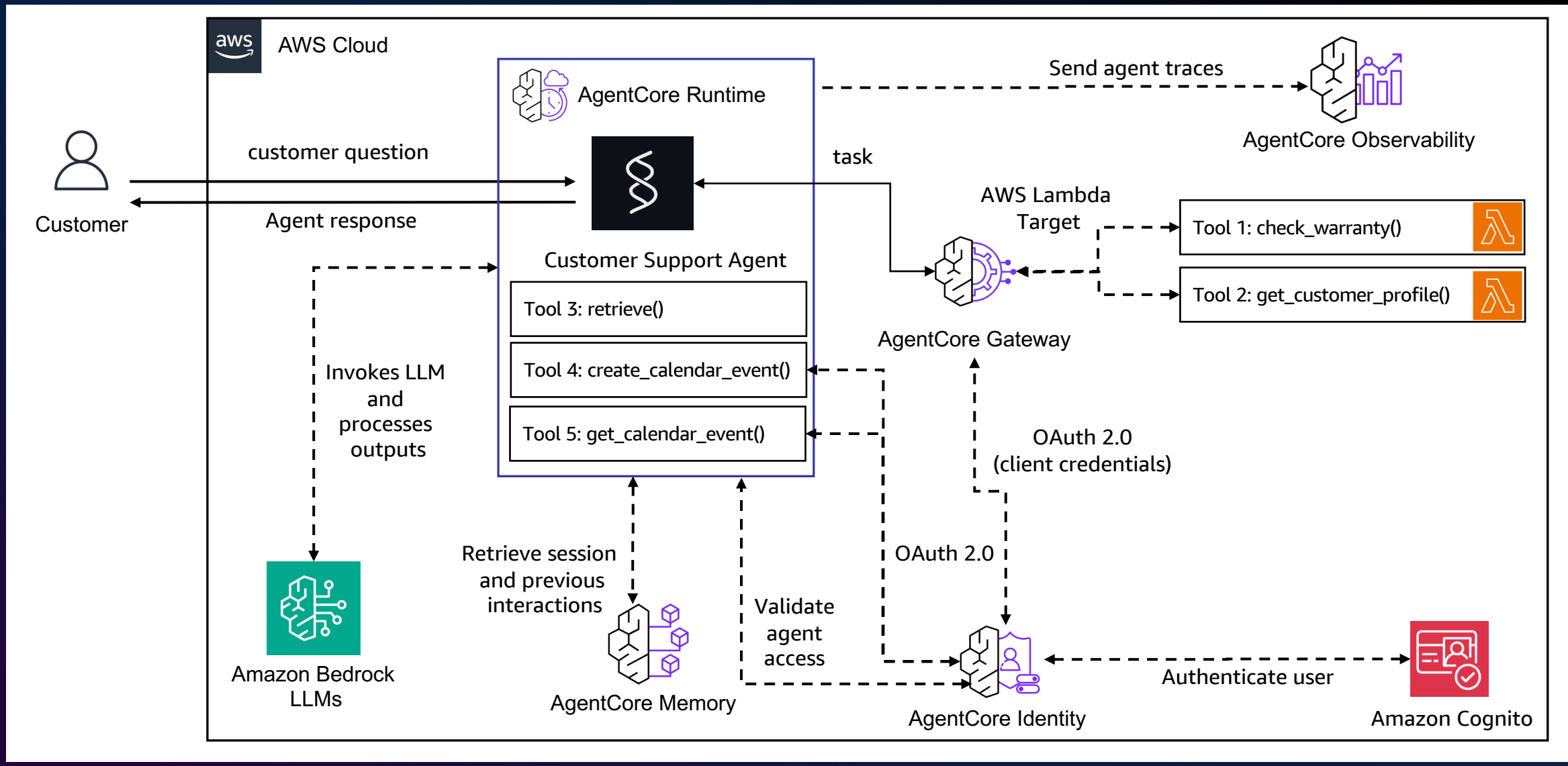



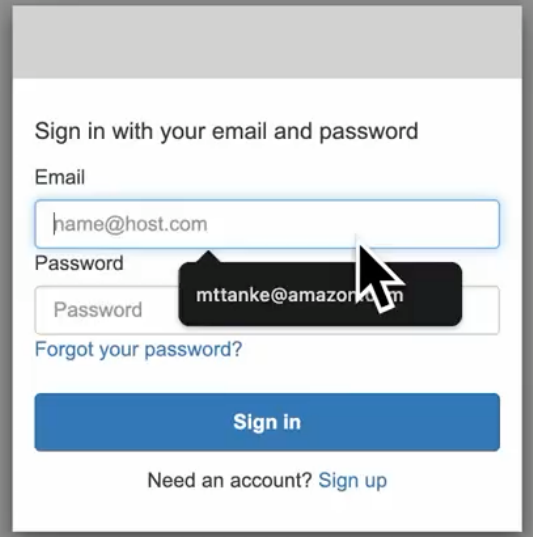
# AgentCore All Together

# Combine AgentCore capabilities to create agents at scale



# Customer support agent with Amazon Bedrock AgentCore




Sign in with your email and password
Email
name@host.com
Password
mttanke@amazon.com
Password
Forgot your password?
Sign in
Need an account? Sign up

# Resources

# Get started now!

AgentCore
Overview

AgentCore
Samples

AgentCore
Documentation

AgentCore
blog post

# Thank you!

**Du’An S. Lightfoot**

@labeveryday