

CNS425

# Building production-ready Agentic AI architectures with AWS Serverless



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# Enterprises are doubling down on agents

33%

of enterprise software apps will include agentic AI by 2028, up from less than 1% in 2024.

15%

of day-to-day work decisions will be made autonomously through agentic AI by 2028.

Gartner, "Top strategic Technology Trends for 2025," October 2024.

Gartner, "Top Strategic Technology Trends: agentic AI – The evolution of Experience" February 2025

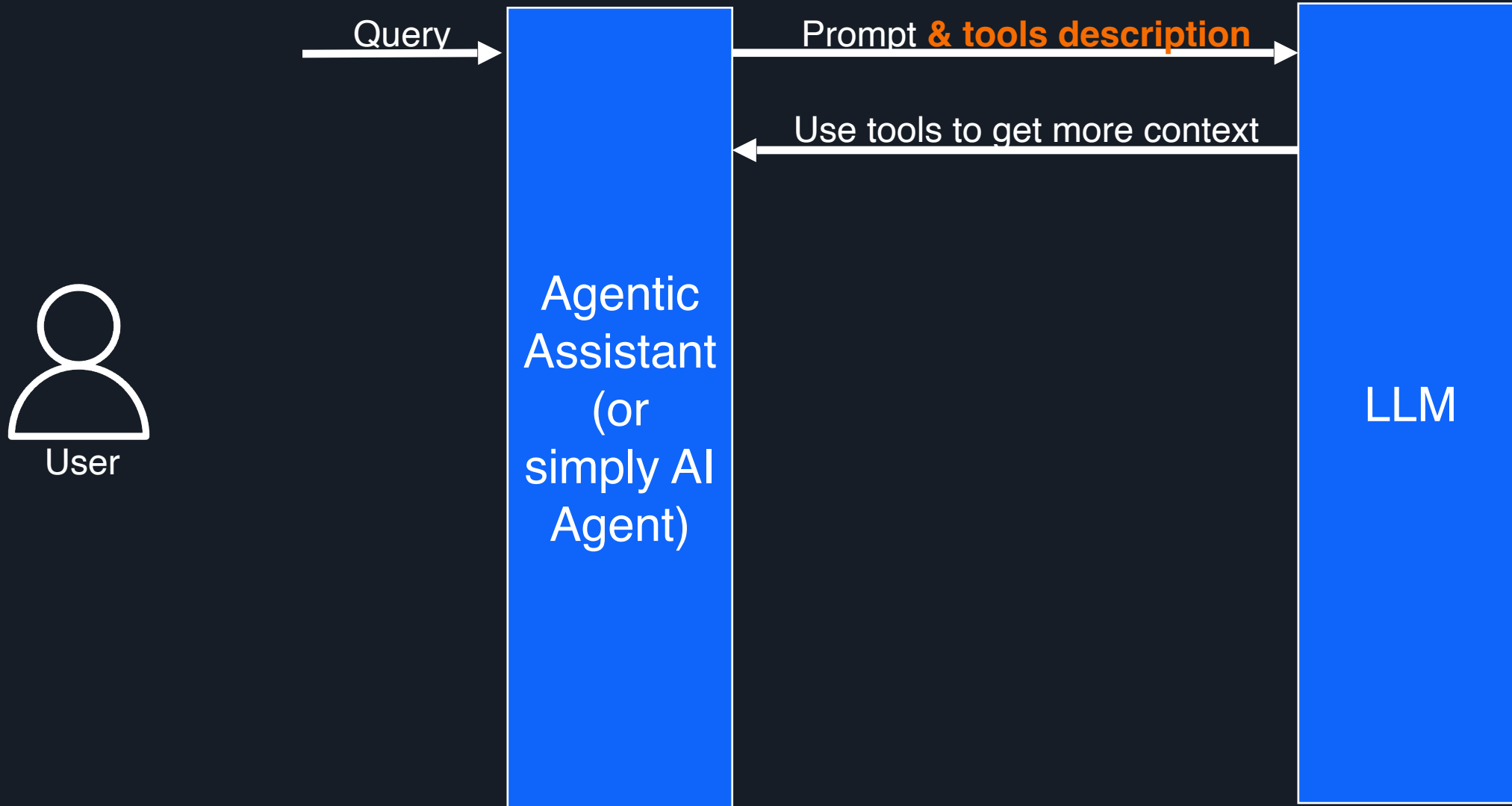




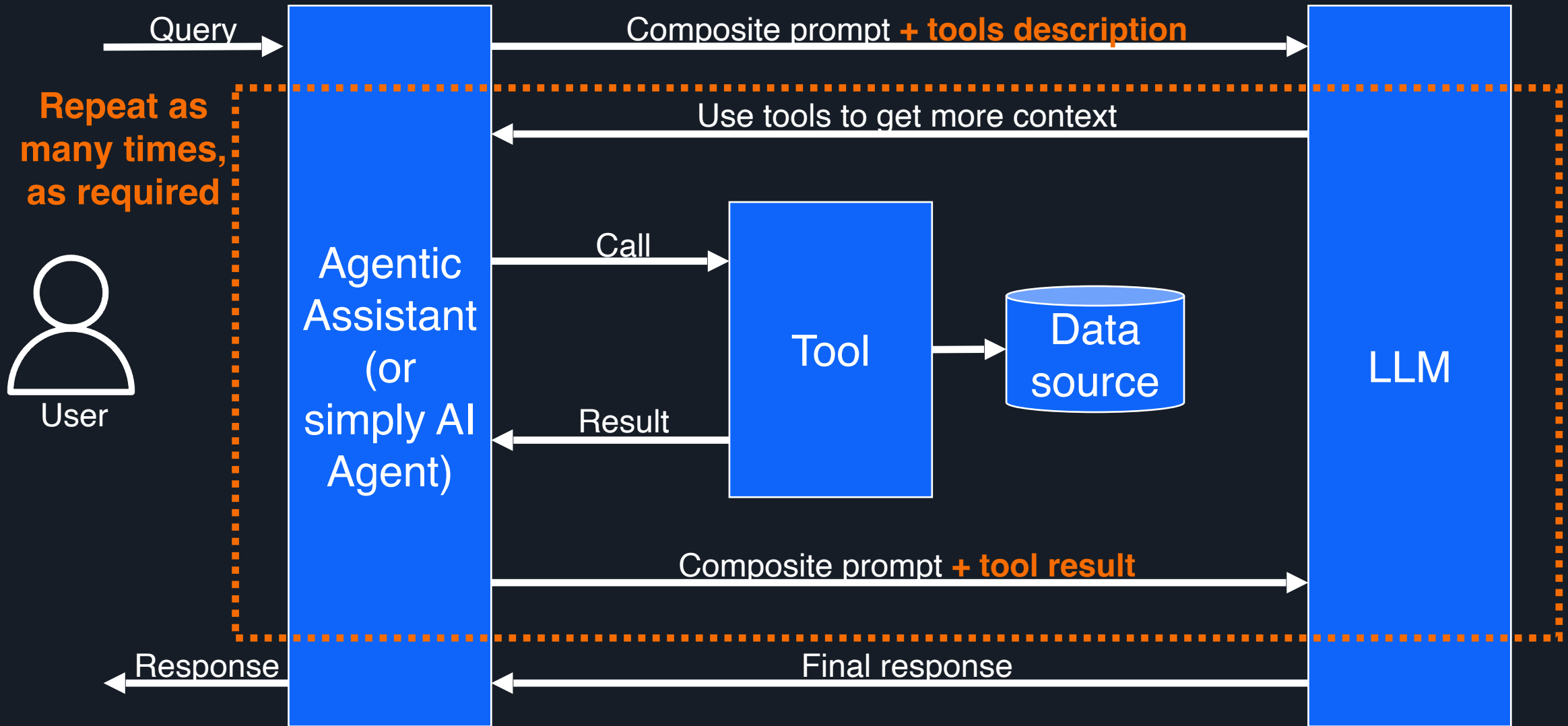
# What are AI Agents?

Autonomous software systems that leverage AI to reason, plan, and complete tasks on behalf of humans or systems

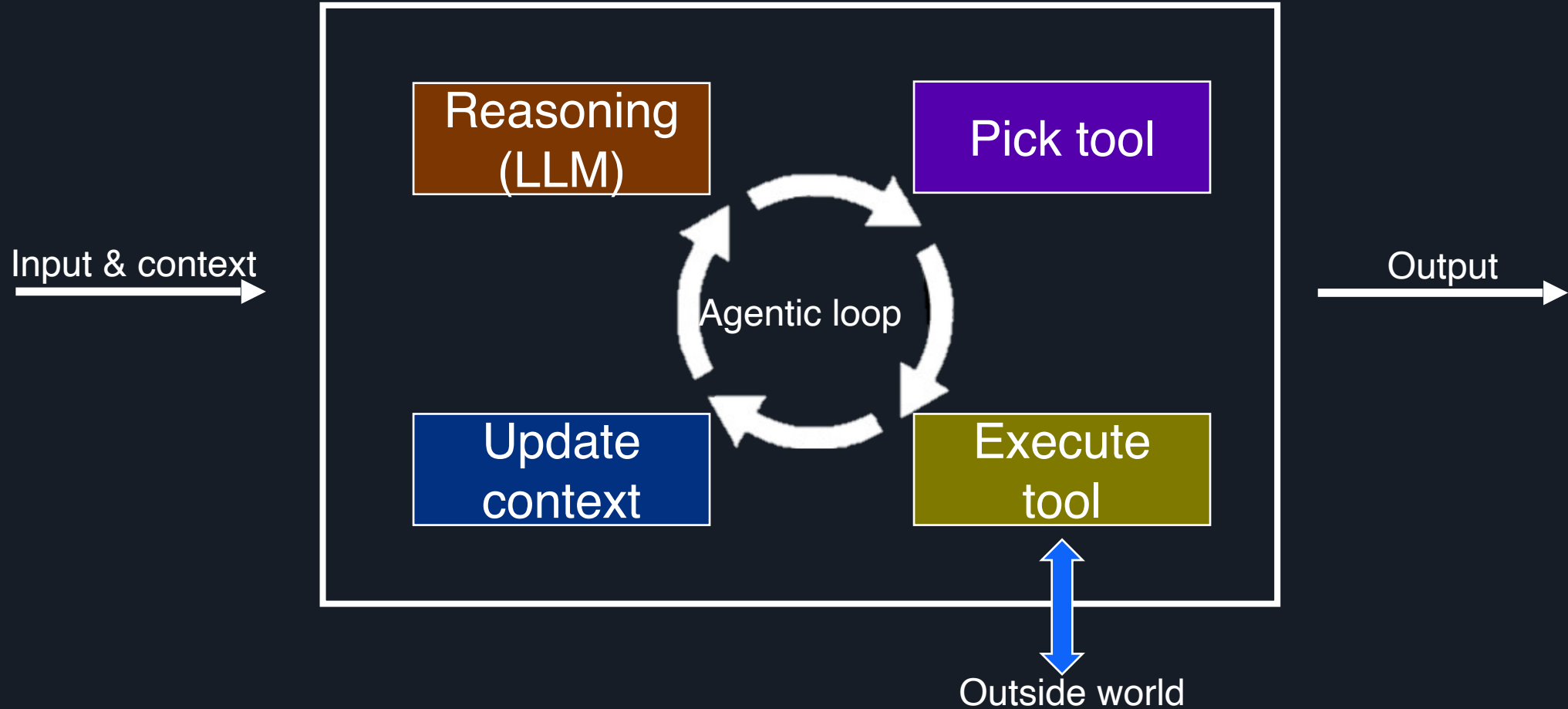
# A simple agentic workflow



# A simple agentic workflow



# Agentic AI system in a nutshell



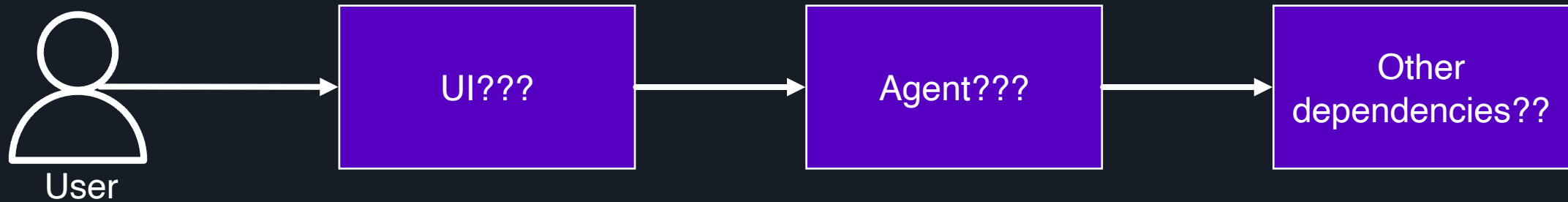
# Let's build an agentic chatbot



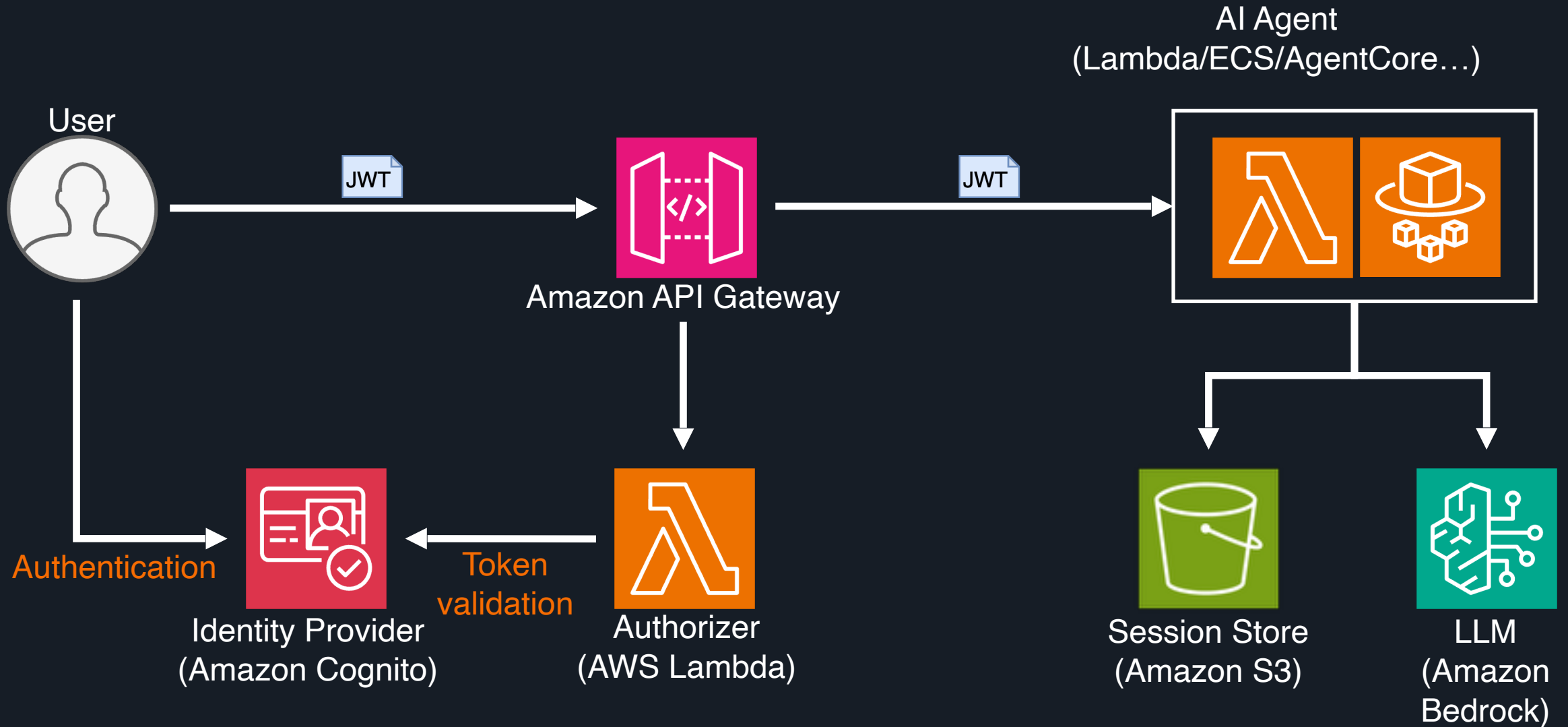
**I want to build a Travel Agent that helps my employees to book business travel while enforcing corporate travel policies.**



# Use-case 1: Agentic Chatbot

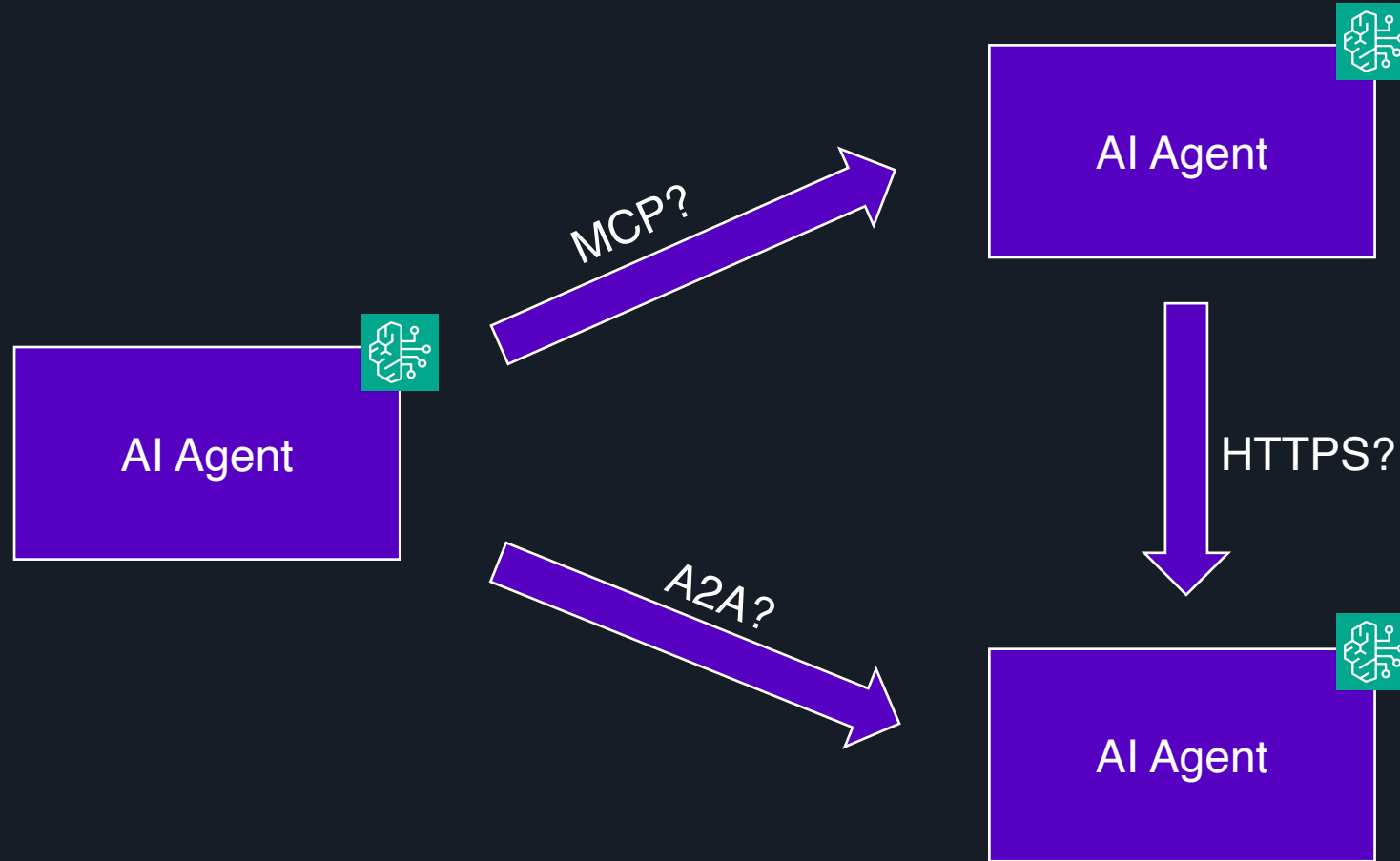


# Use-case 1: Agentic Chatbot

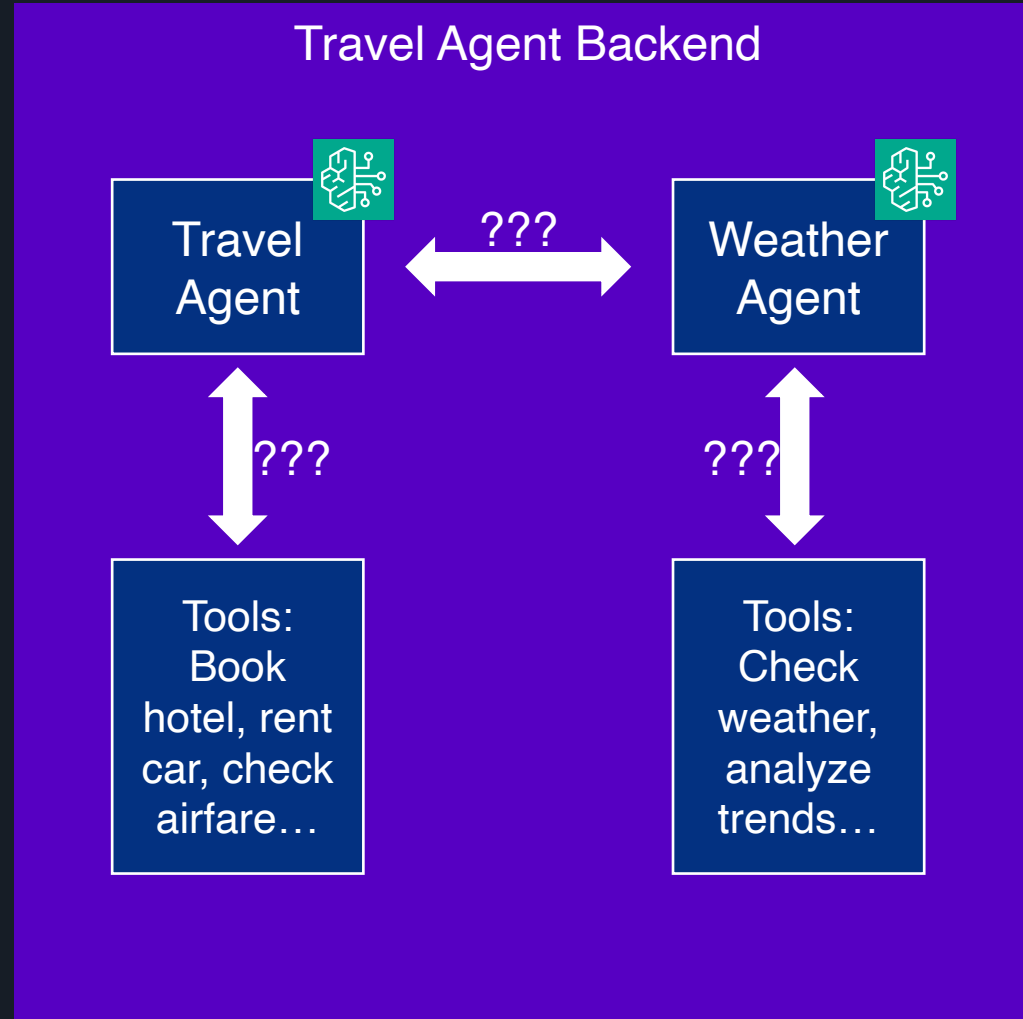




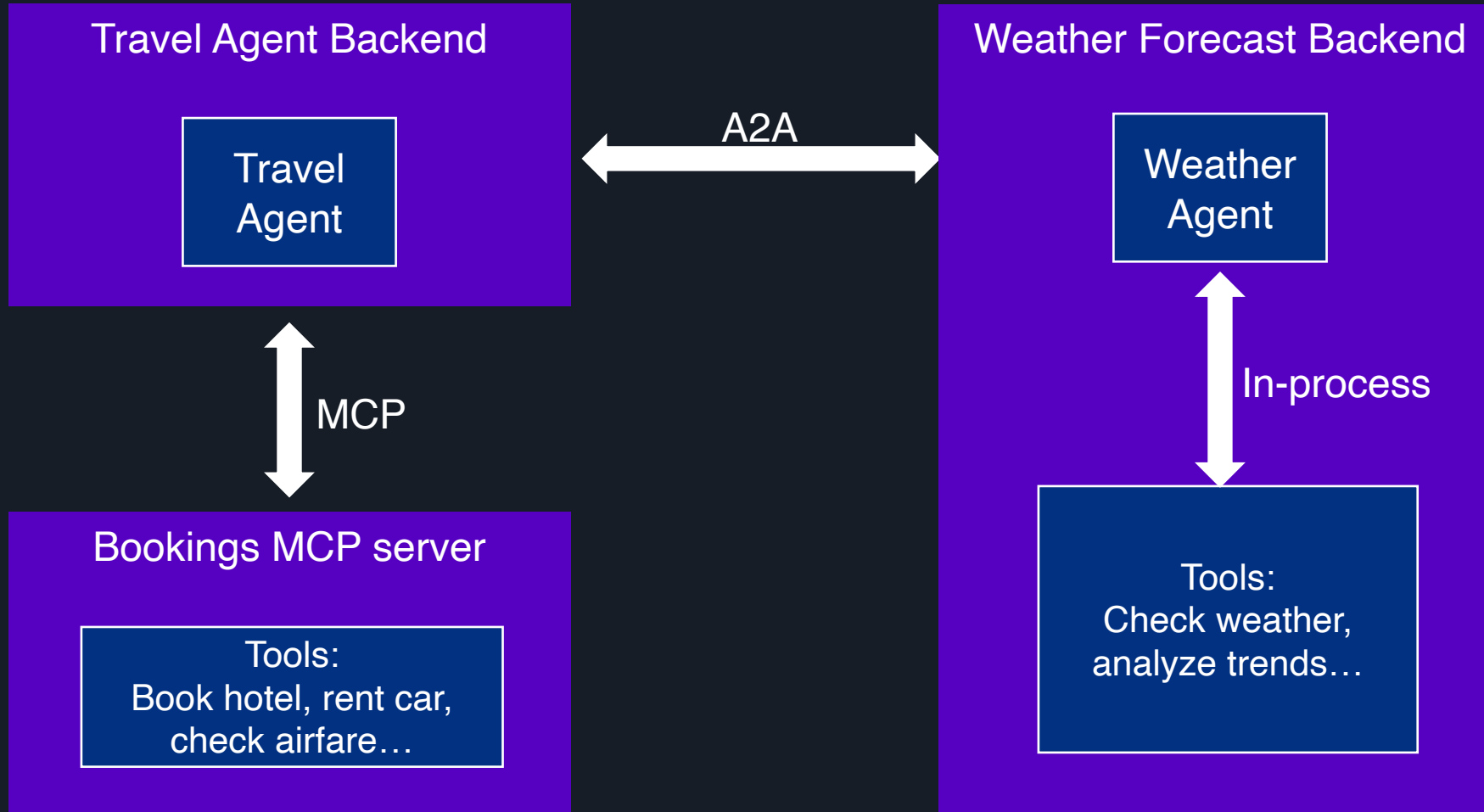
# Use-case 2: Multi-agent system



# Use-case 2: Multi-agent system



# Use-case 2: Multi-agent system





# Use-case 3: Security, Operations, Governance



AWS IAM



AWS Certificate Manager



AWS KMS



Amazon CloudWatch



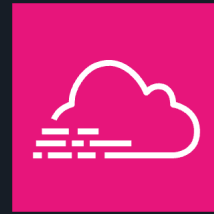
Amazon GuardDuty



Amazon Inspector



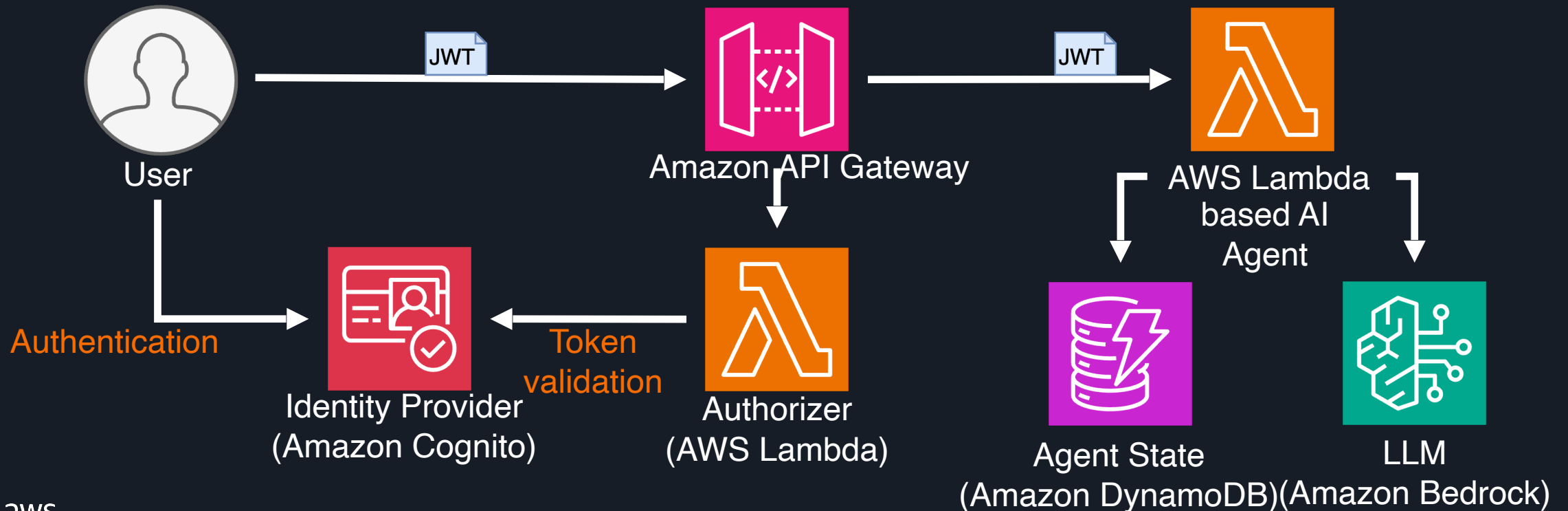
AWS Web Application Firewall



AWS CloudTrail



Amazon VPC

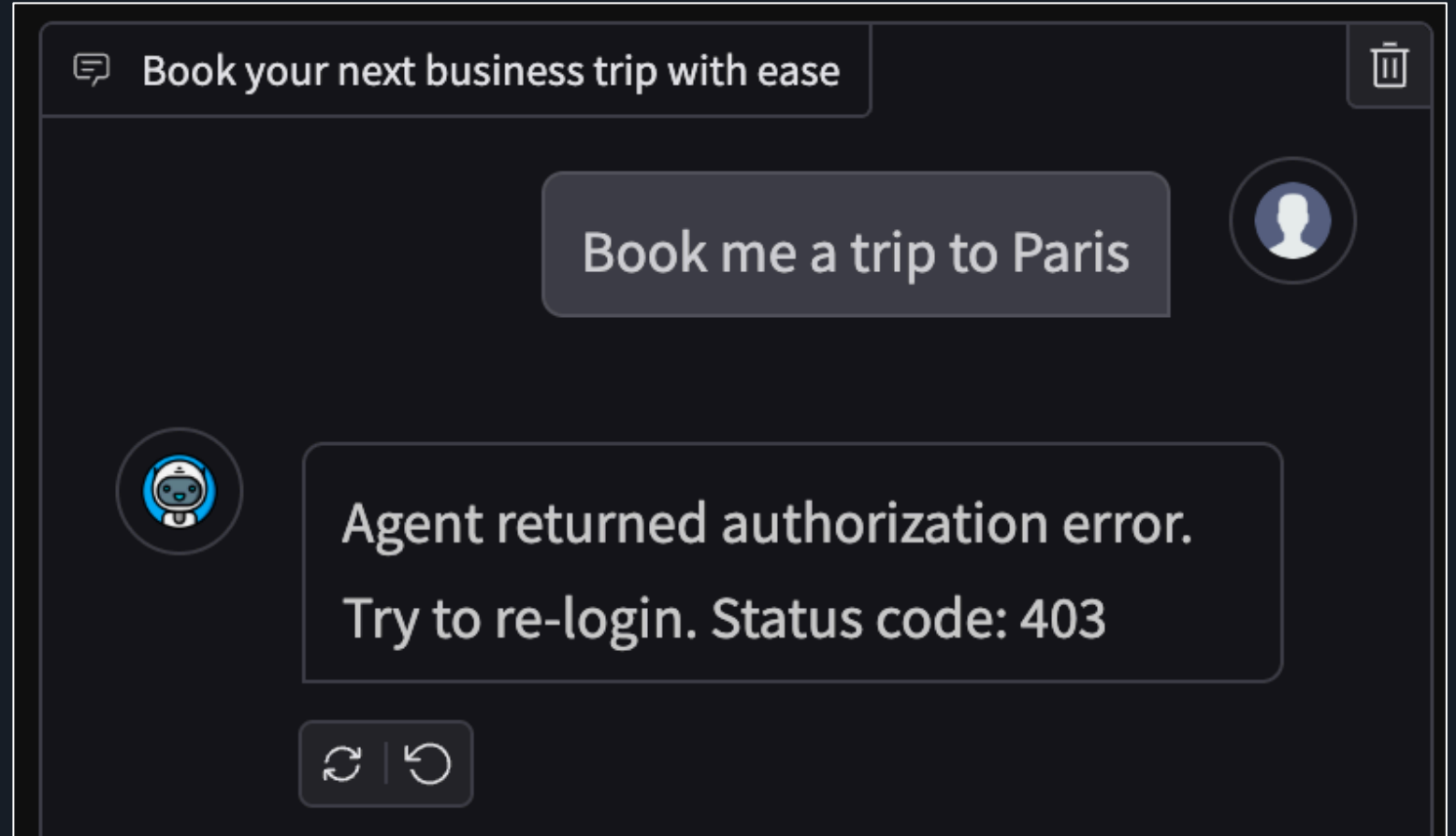
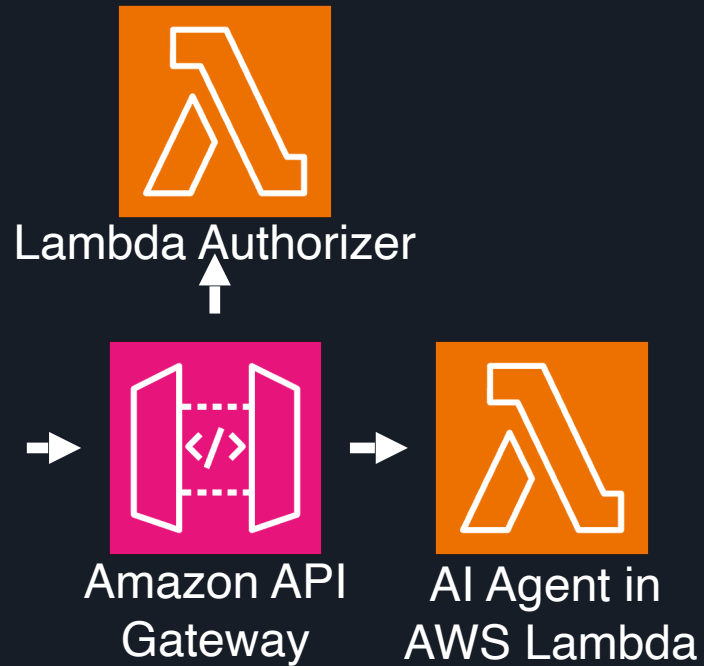


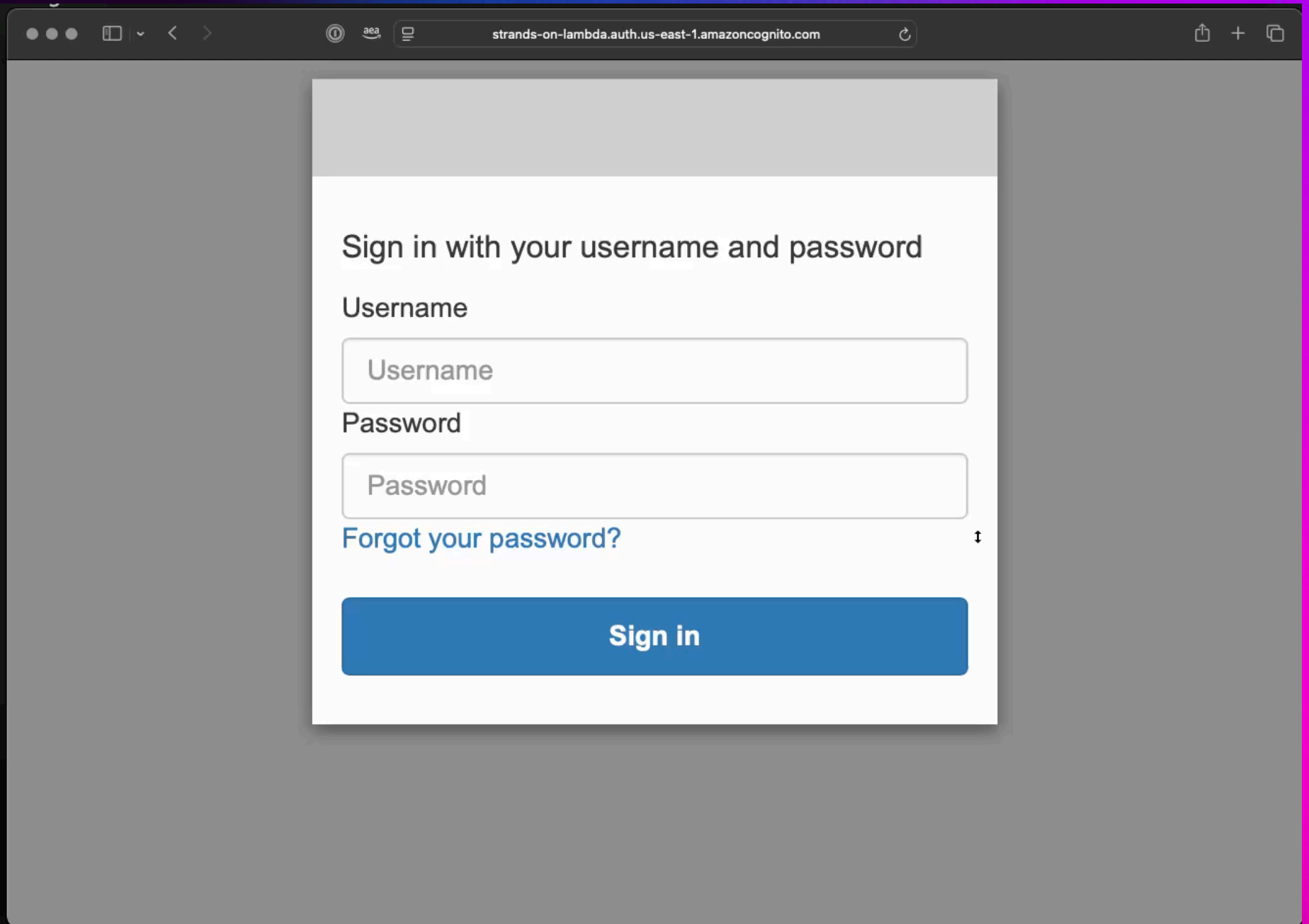
# Observability



```
2025-06-20 18:05:10,757 INFO app.py:29 :: jwt parsed. user.id=74c8a428-7001-70db-d017-5725bd9efc91 user.name=Alice
2025-06-20 18:05:10,757 INFO app.py:43 :: composite_prompt=User name: Alice
User IP: 70.113.53.201
User prompt: Book me a trip to Paris
2025-06-20 18:05:10,757 INFO agent.py:10 :: user.id=74c8a428-7001-70db-d017-5725bd9efc91, user.name=Alice
2025-06-20 18:05:10,757 INFO agent_state_manager.py:22 :: restoring agent state for user.id=74c8a428-7001-70db-d017-5725bd9efc91
```

# Authorization







# Conclusion

# 1

**Agents are applications calling LLMs in loops. Your existing knowledge is your accelerator.**

# 2

**Use the right tool for the job. Decouple when needed, use proper protocols.**

# 3

**AWS services provide built-in enterprise-grade capabilities for building AI agents.**

# Check out these other sessions

## **CNS206: Building agentic AI architectures with Serverless**

**Monday (Dec 1) @ 10:00am – MGM 304 – Builders Session**

**Tuesday (Dec 2) @ 11:30am – Ceasars Forum – Summit 212 – Builders Session**

**Tuesday (Dec 2) @ 5:30pm – MGM 104 – Builders Session**

## **CNS359: Build, deploy, and operate serverless agentic architectures**

**Monday (Dec 1) @ 9:00am – MGM – Grand 119 – Breakout**

## **CNS211: The future of AWS Serverless in 2025 and beyond**

**Thursday (Dec 4) @ 11:00am – MGM – Grand 123 – Breakout**



# Serverless & Applnt Resources

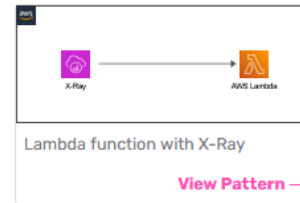
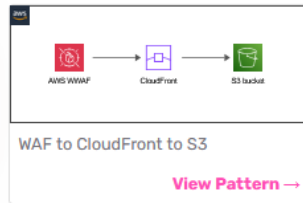


<https://s12d.com/RIV2025>

- Continue your AWS serverless learning
- Powertools for AWS Lambda
- Serverless Land patterns

## Serverless **Patterns** Collection

Build integrations using infrastructure as code with **serverless patterns**





# Thank You!

**Anton Aleksandrov**

 antonal80

 [aal80.github.io/whoami](https://github.com/aal80/whoami)

**Uma Ramadoss**

 uma-ramadoss



This session's content  
and much more

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