

# Dapr in Action



Event-Driven **AI Agents** with Dapr

Dana Arsovska

Community Manager @Dapr

Marc Duiker

Community Manager @Dapr



# Agenda



- **What is Agentic AI?**
- **Challenges of productionizing Agentic AI**
- **Dapr & Dapr Agents**
- **Workshop**
- **Q&A**

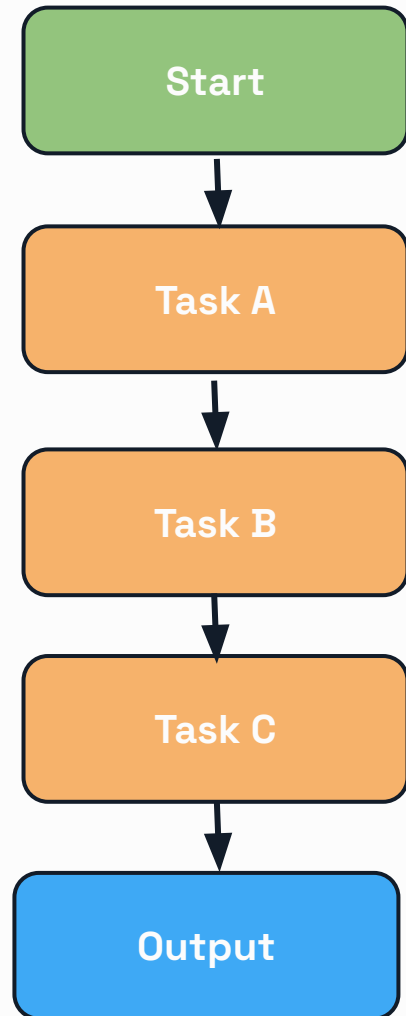


Agentic AI

# What are Agentic Systems?

Agentic systems are systems where Large Language Models (LLMs), with varying degrees of autonomy, maintain control over how they accomplish complex tasks.

# Rule-Based Automation

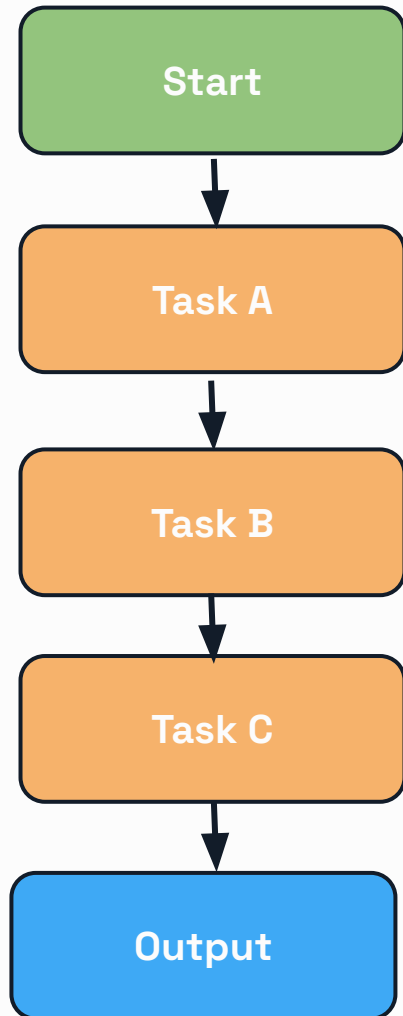


System that executes **predefined, rule-based** tasks automatically

✓ Highly deterministic

✗ Cannot adapt to new scenarios automatically

# Rule-Based Automation



## Document Parser

### INVOICE

Invoice #: 12345

Date: 03/15/2024

Amount: \$1,250.00

Due: 04/15/2024

### Fixed Rules

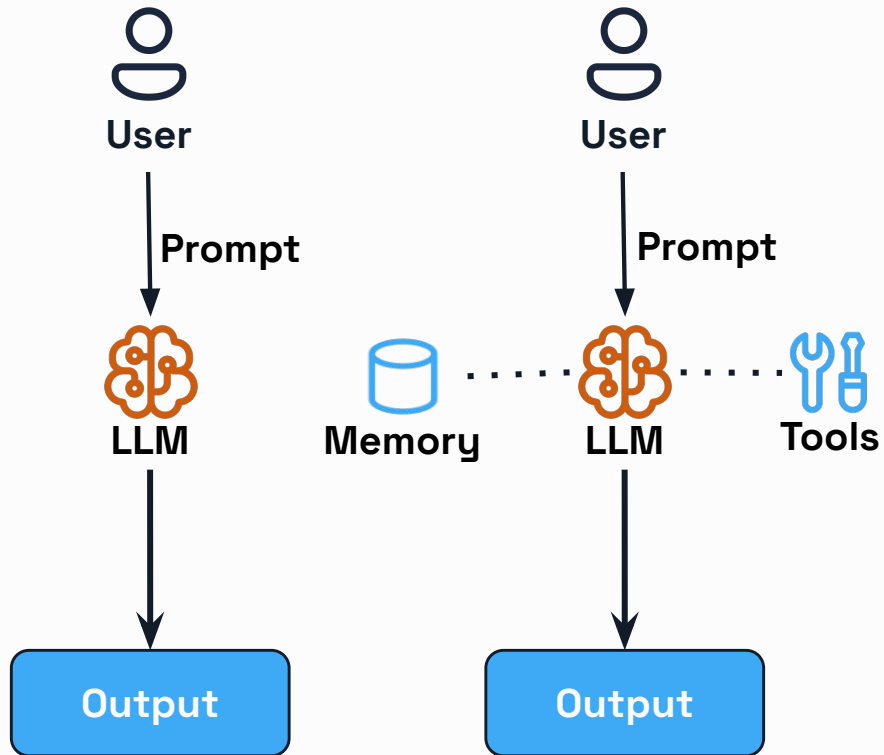
Invoice #:\s\*(\d+)

Date:\s\*(\d{2}/\d{2}/\d{4})

### Limitations

- Breaks if format changes
- Manual updates for new document types

# Evolution of Agentic AI: LLMs

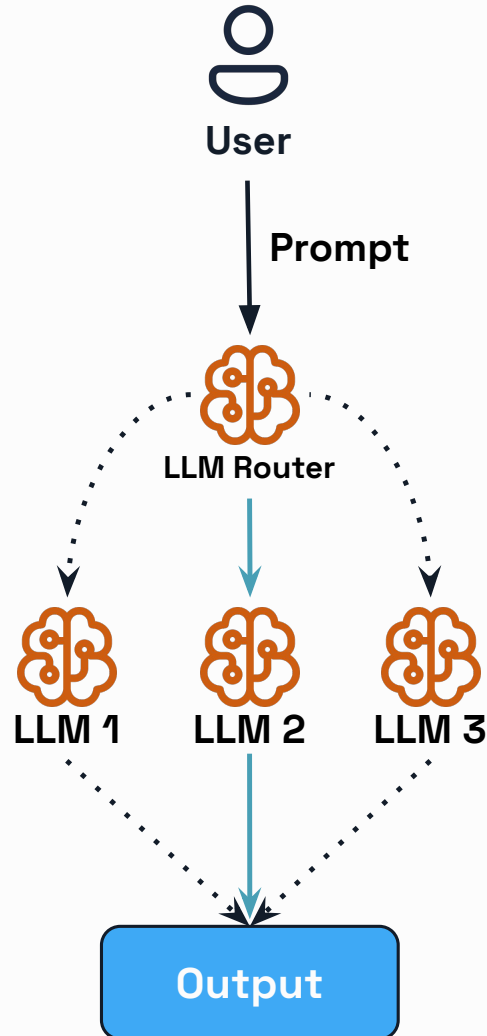


**LLMs:** Brain of the Agent (pretrained knowledge)

**Tools:** Real-time, proprietary, or specialized data

**Memory:** Use past data to improve decision making

# Evolution of Agentic AI: Workflows

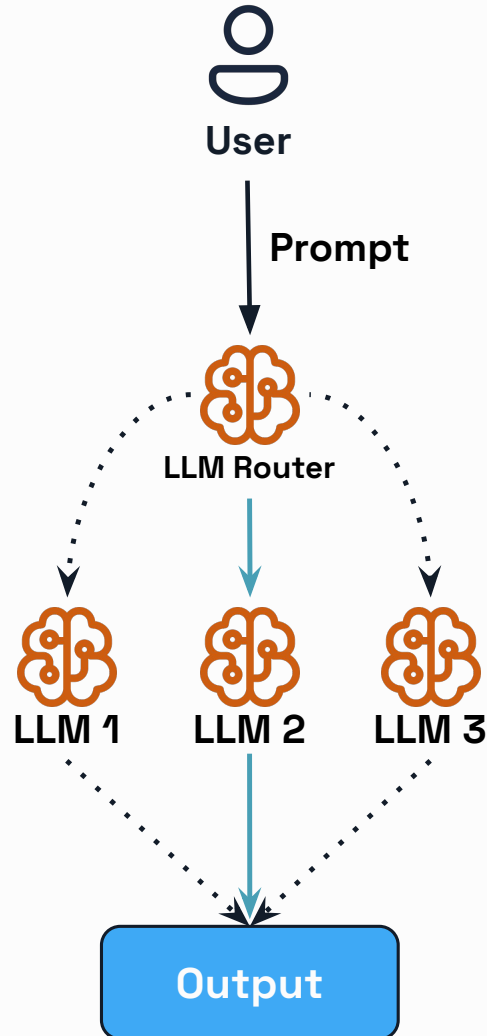


Systems where **LLMs and tools** are orchestrated through **predefined code paths**

- ✓ Deterministic tasks requiring flexibility
- ✓ They are goal-driven, not just rule-driven
- ✗ Not adaptive, cannot reason about unexpected situations



# Evolution of Agentic AI: Workflows



## Incoming Support Ticket

**Message:** "Hi, I keep getting error code 503 when trying to pay my invoice through your portal."

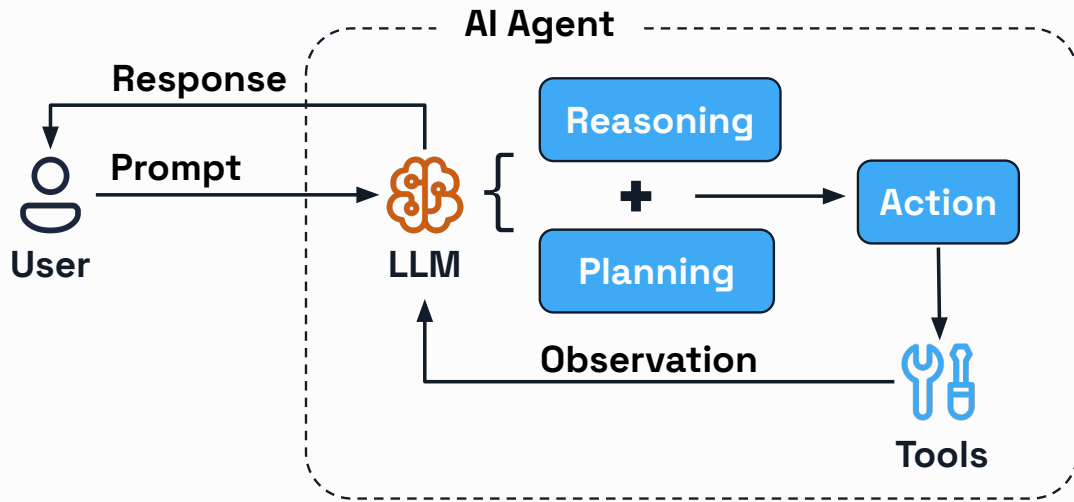
**Classification:** IT ISSUE

→ Routed to Account Support Team

## **Limitations**

- Predefined path: extract → classify → route

# Evolution of Agentic AI: AI Agents

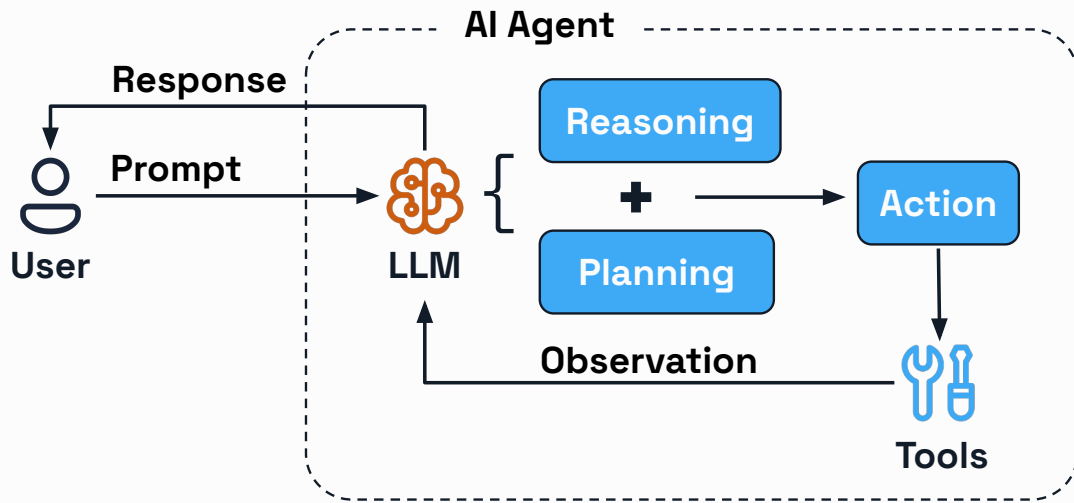


Systems where LLMs **dynamically direct their own processes** and tool usage, maintaining control over how they accomplish tasks\*

✓ Open-ended problems

✗ Less reliable

# Evolution of Agentic AI: AI Agents



## Incoming Support Ticket

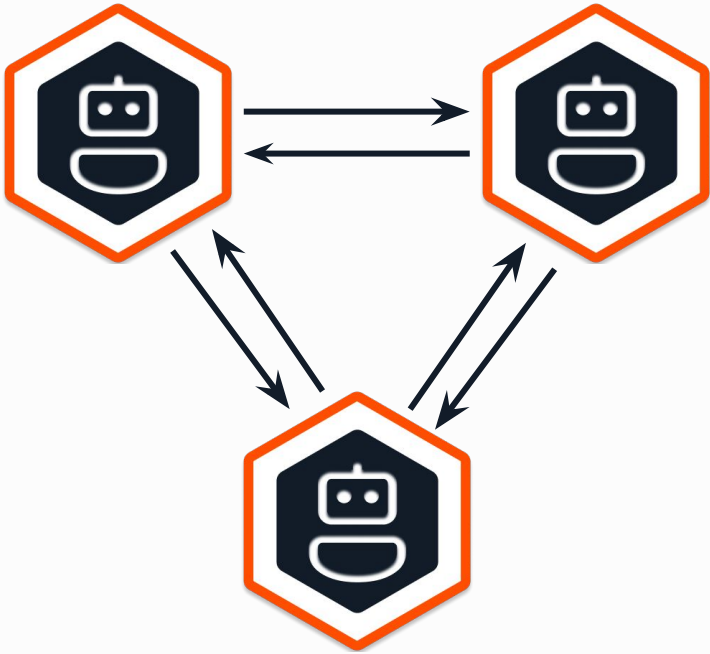
**Message:** "Hi, Your system charged my card 5,000 instead of 500, now my account is locked, and I can't access the reports."

→ Routed to multiple teams

## **Limitations**

- Possibility of cascading mistakes

# Evolution of Agentic AI: Agent Mesh



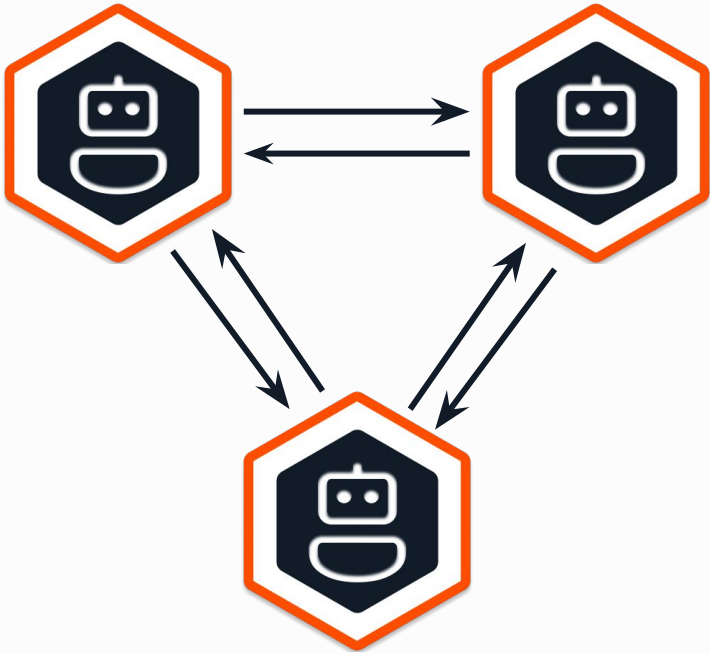
**Group of Agents with varying autonomy collaborating to achieve complex goals**

✓ Can solve complex, interdependent tasks

✗ Complexity in coordination

✗ Harder to debug and predict outcomes

# Evolution of Agentic AI: Agent Mesh



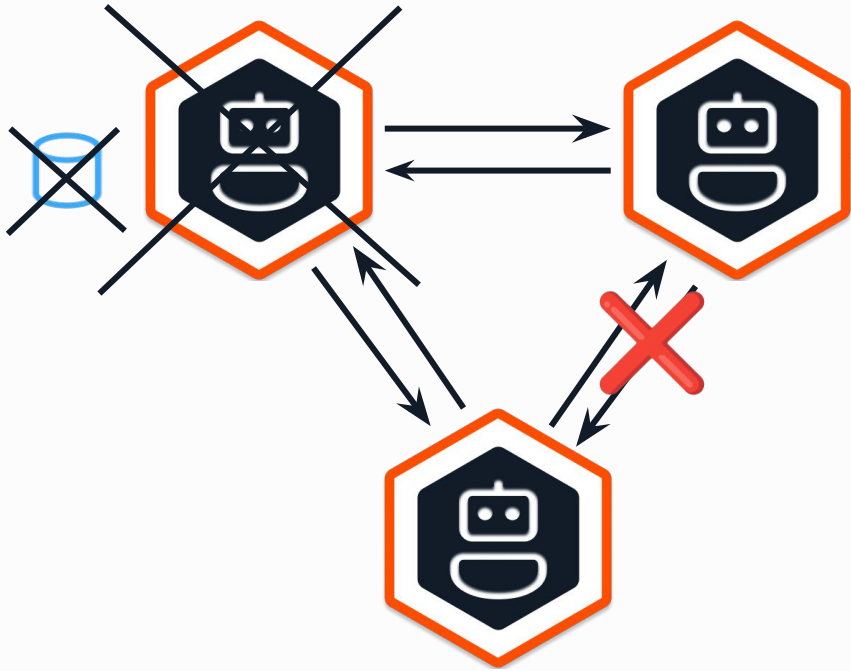
- Intake Agent gathers customer history, previous tickets, account status
- Technical Agent runs initial diagnostics, checks system logs
- Account Agent pulls billing history, subscription details
- Resolver agent suggests solution

→ Customer support gets: Complete customer profile + preliminary analysis instead of starting from scratch



# Productionizing Agentic AI

# Why Productionizing Agentic AI is Hard



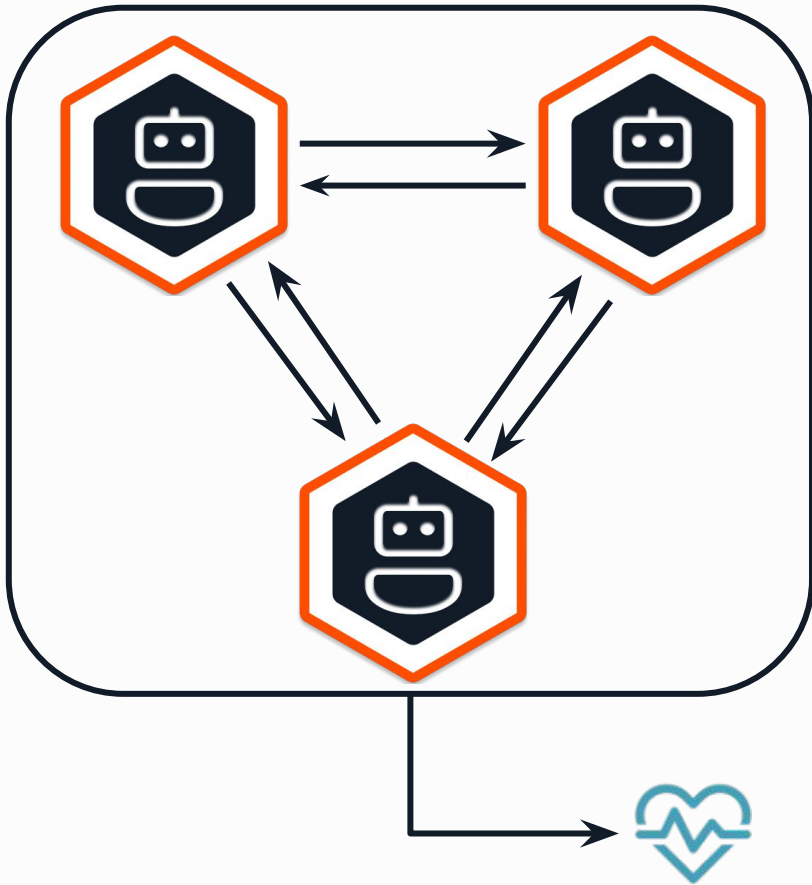
**Scalability:** run hundreds of agents reliably

**Fault tolerance:** recovering from network or task failures

**Collaboration:** asynchronous communication, agent discoverability

**State:** persist memory across conversations and sessions

# Why Productionizing Agentic AI is Hard



**Scalability:** run hundreds of agents reliably

**Fault tolerance:** recovering from network or task failures

**Collaboration:** asynchronous communication, agent discoverability

**State:** persist memory across conversations and sessions

**Observability:** understanding outcomes and performance

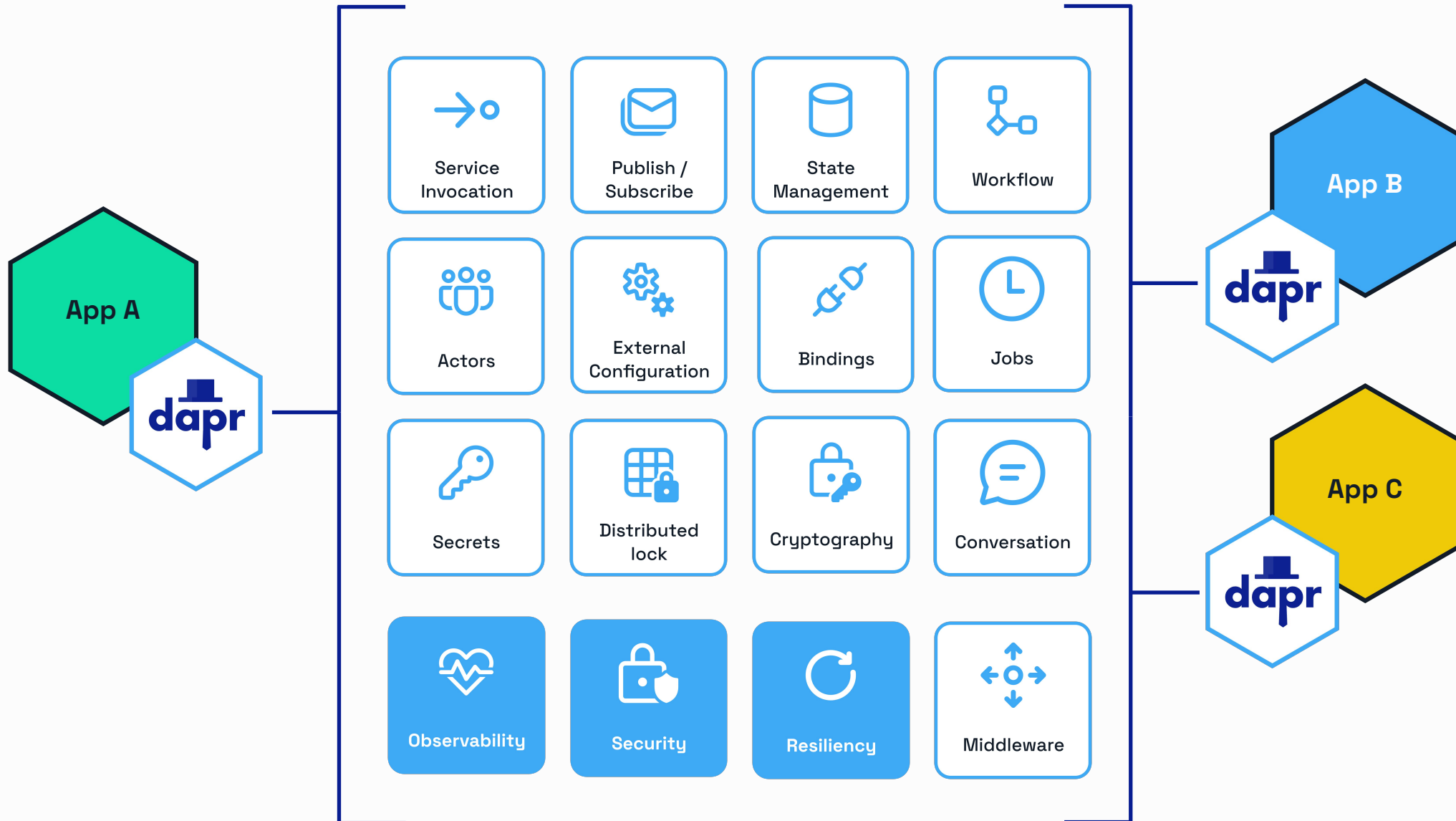




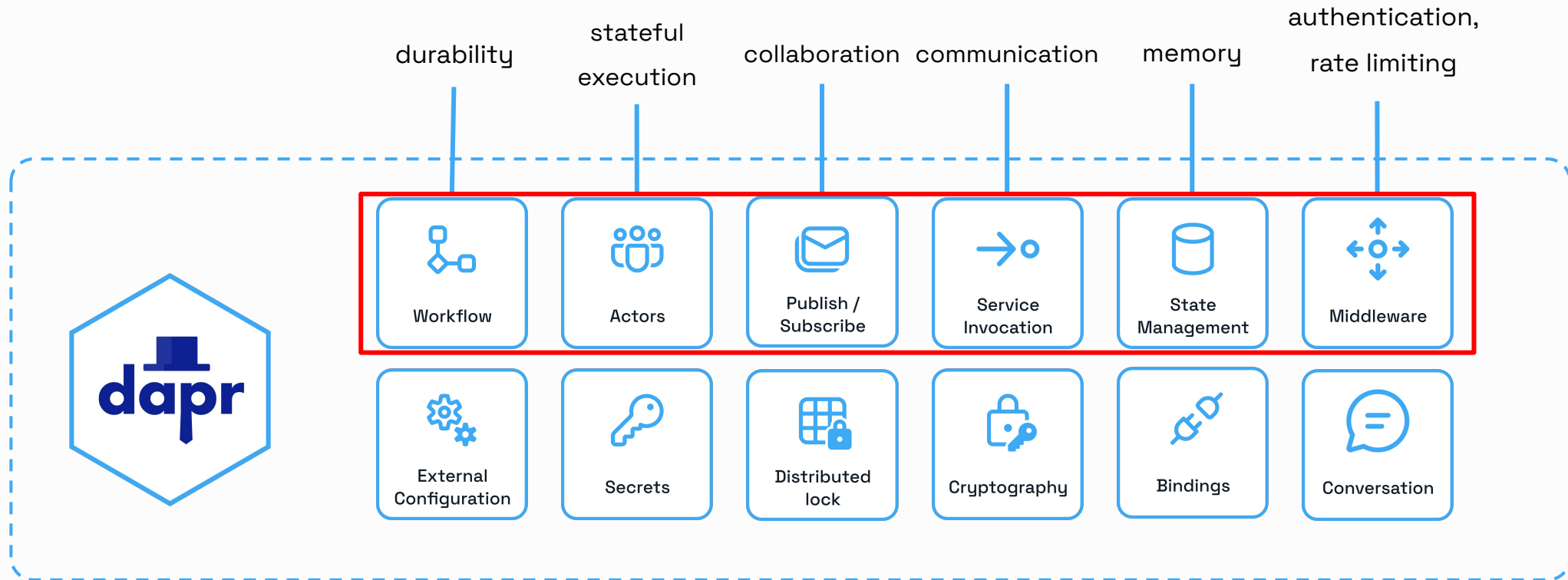
# Dapr Agents

<https://dapr.github.io/dapr-agents/>

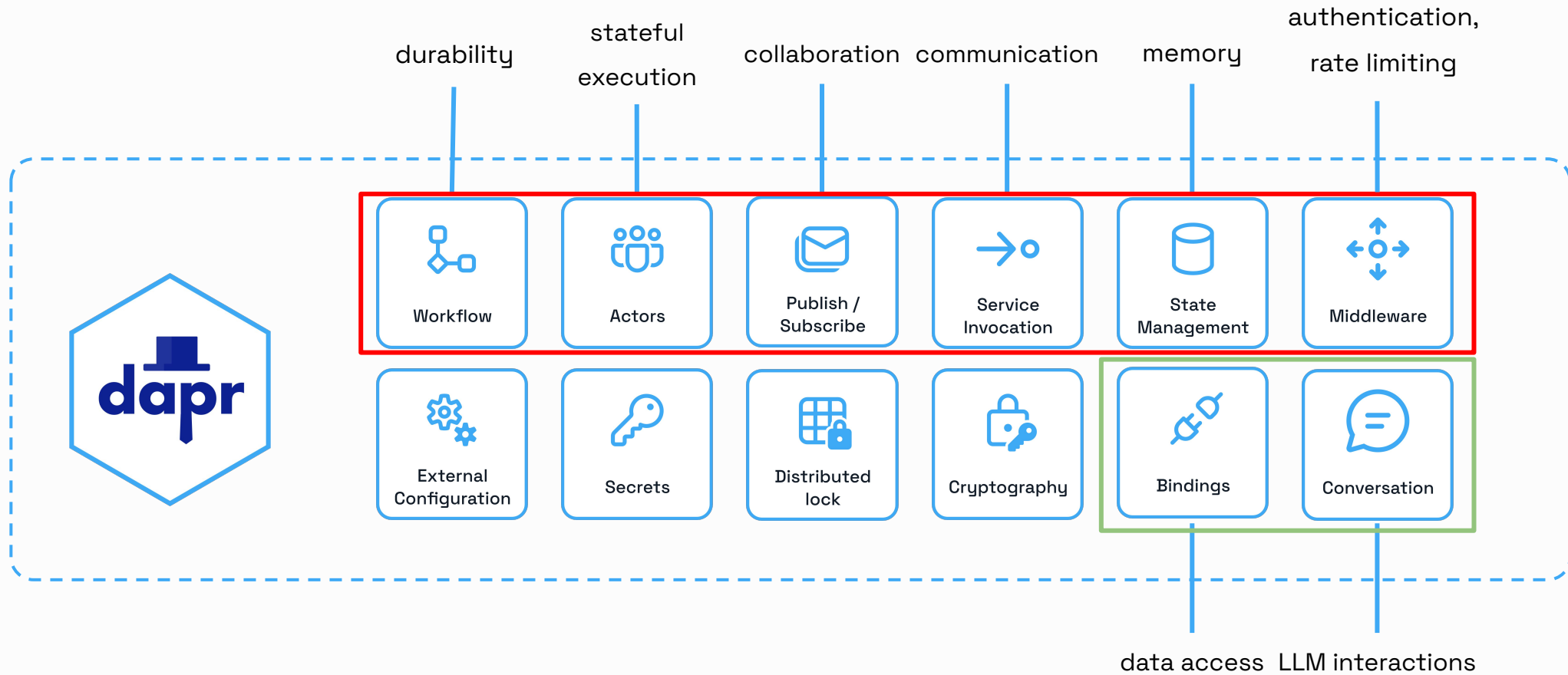
# Dapr – Application Developer Platform



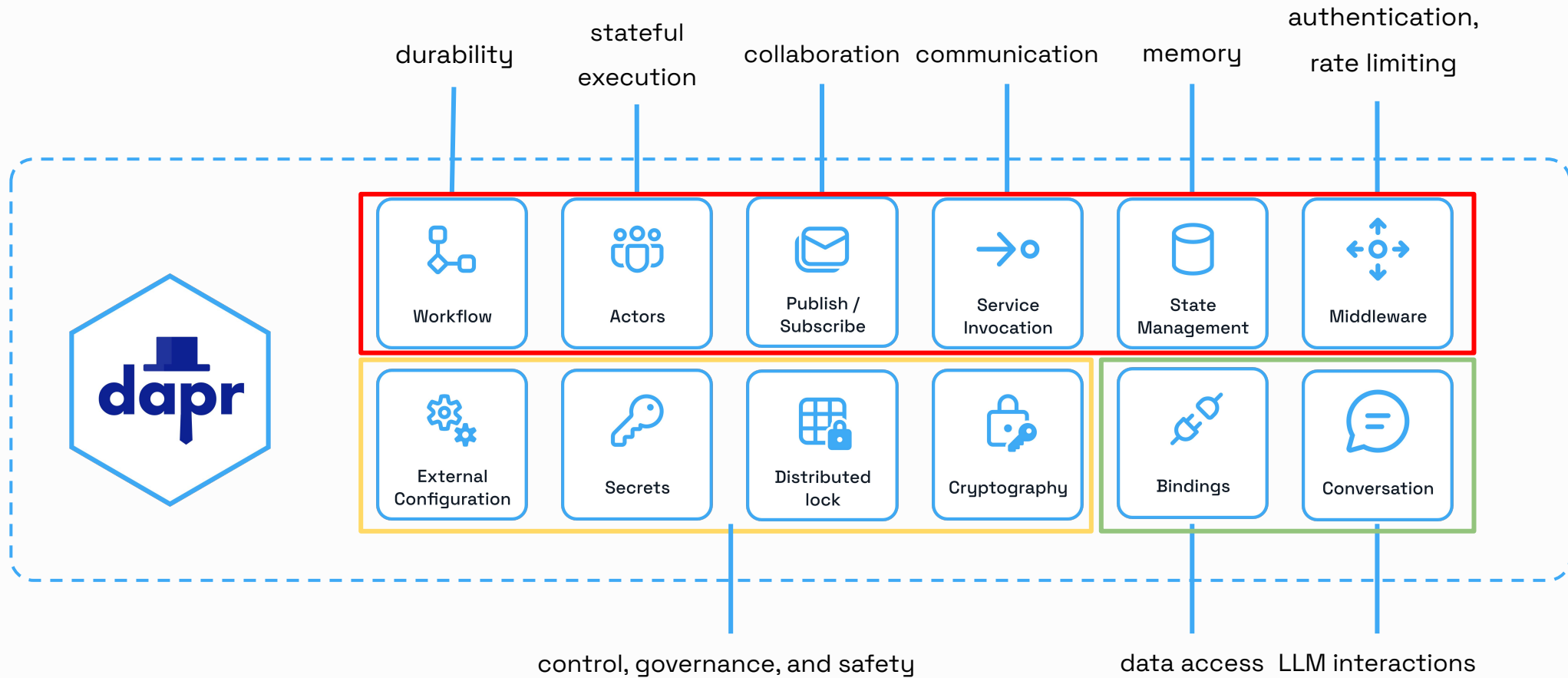
# Where does Dapr fit in?



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# Dapr Agents



**Dapr Agents is a developer framework designed to build production-grade resilient AI agent systems that operate at scale.**

- Run thousands of agents efficiently on a single core
- Automatic retries
- Direct databases integration
- Observable by default
- Vendor-neutral & open source
- Built-in RBAC and access scopes

```
import dapr.ext.workflow as wf
from openai import OpenAI
```

```
wfr = wf.WorkflowRuntime() # Initialize Workflow runtime
client = OpenAI() # Initialize OpenAI client

def call_openai(prompt: str, model: str = "gpt-4o") -> str:
    """Reusable function to call OpenAI's chat completion API."""
    response = client.chat.completions.create(
        messages=[{"role": "user", "content": prompt}],
        model=model,
    )
    return response.choices[0].message.content.strip()
```

---

Initializations

```
# Activity 1: Pick a random LOTR character
@wfr.activity(name="pick_character")
def pick_character(ctx):
    character = call_openai(
        "Return a random Lord of the Rings character's name." )
    return character
```

---

Create an activity

```
# Define Workflow logic
@wfr.workflow(name="lotr_workflow")
def task_chain_workflow(ctx: wf.DaprWorkflowContext):
    character = yield ctx.call_activity(pick_character())
    return quote
```

---

Create a durable  
workflow

```

import dapr.ext.workflow as wf
from openai import OpenAI

client = OpenAI() # Initialize OpenAI client
wfr = wf.WorkflowRuntime() # Initialize Workflow runtime

def call_openai(prompt: str, model: str = "gpt-4o") -> str:
    """Reusable function to call OpenAI's chat completion API."""
    response = client.chat.completions.create(
        messages=[{"role": "user", "content": prompt}],
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# Activity 1: Pick a random LOTR character
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```

```

# Define Workflow logic
@wfr.workflow(name="lotr_workflow")
def task_chain_workflow(ctx: wf.DaprWorkflowContext):
    character = yield ctx.call_activity(pick_character())
    return quote

```

```

from dapr_agents.workflow import WorkflowApp, workflow, task
from dapr.ext.workflow import DaprWorkflowContext

```

```

# Task 1: Pick a random LOTR character
@task(description="Return a random Lord of the Rings
character's name.")
def get_character() -> str:
    pass

```

```

# Define Workflow logic
@workflow(name='lotr_workflow')
def task_chain_workflow(ctx: DaprWorkflowContext):
    character = yield ctx.call_activity(get_character)
    return character

```



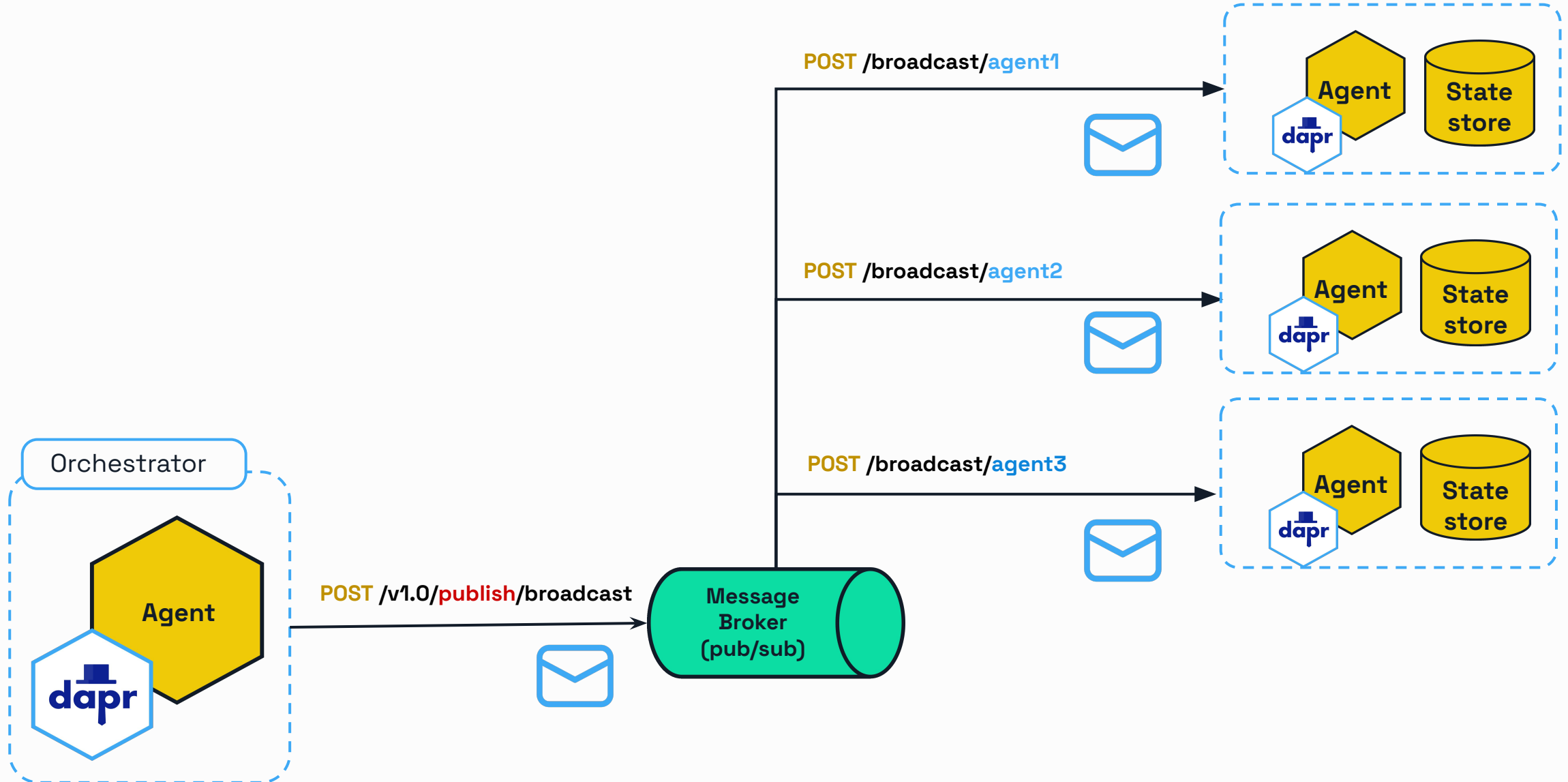
# Durable Agents

## Define a Durable Agent

```
from dapr_agents import DurableAgent

weather_agent = DurableAgent(
    role="Weather Assistant",
    name="Stevie",
    goal="Help humans get weather and location info using smart tools.",
    instructions=[
        "Respond clearly and helpfully to weather-related questions.",
        "Use tools when appropriate to fetch real-time weather data."],
    tools=tools
)
```

# Multi-Agent Collaboration

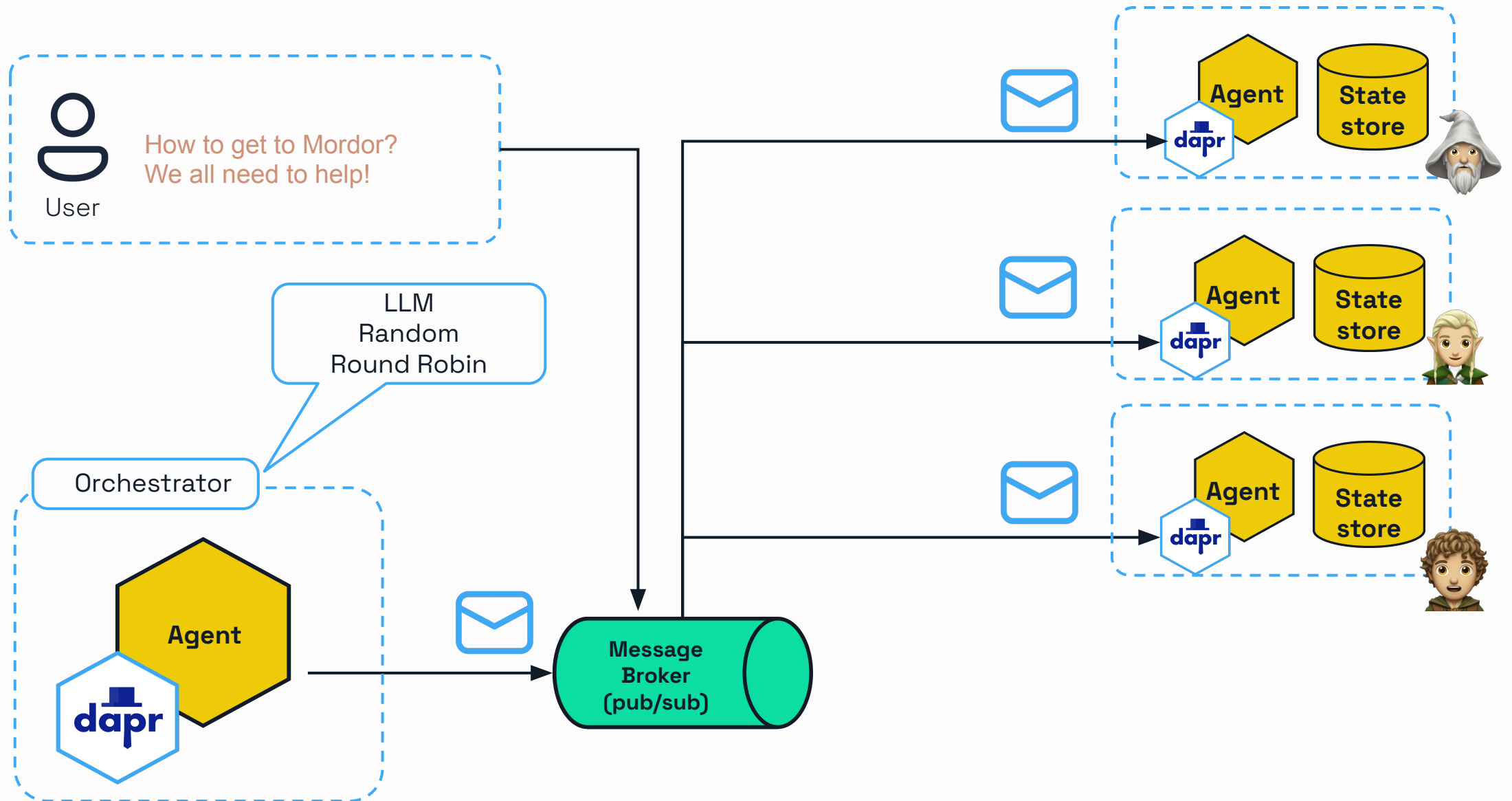




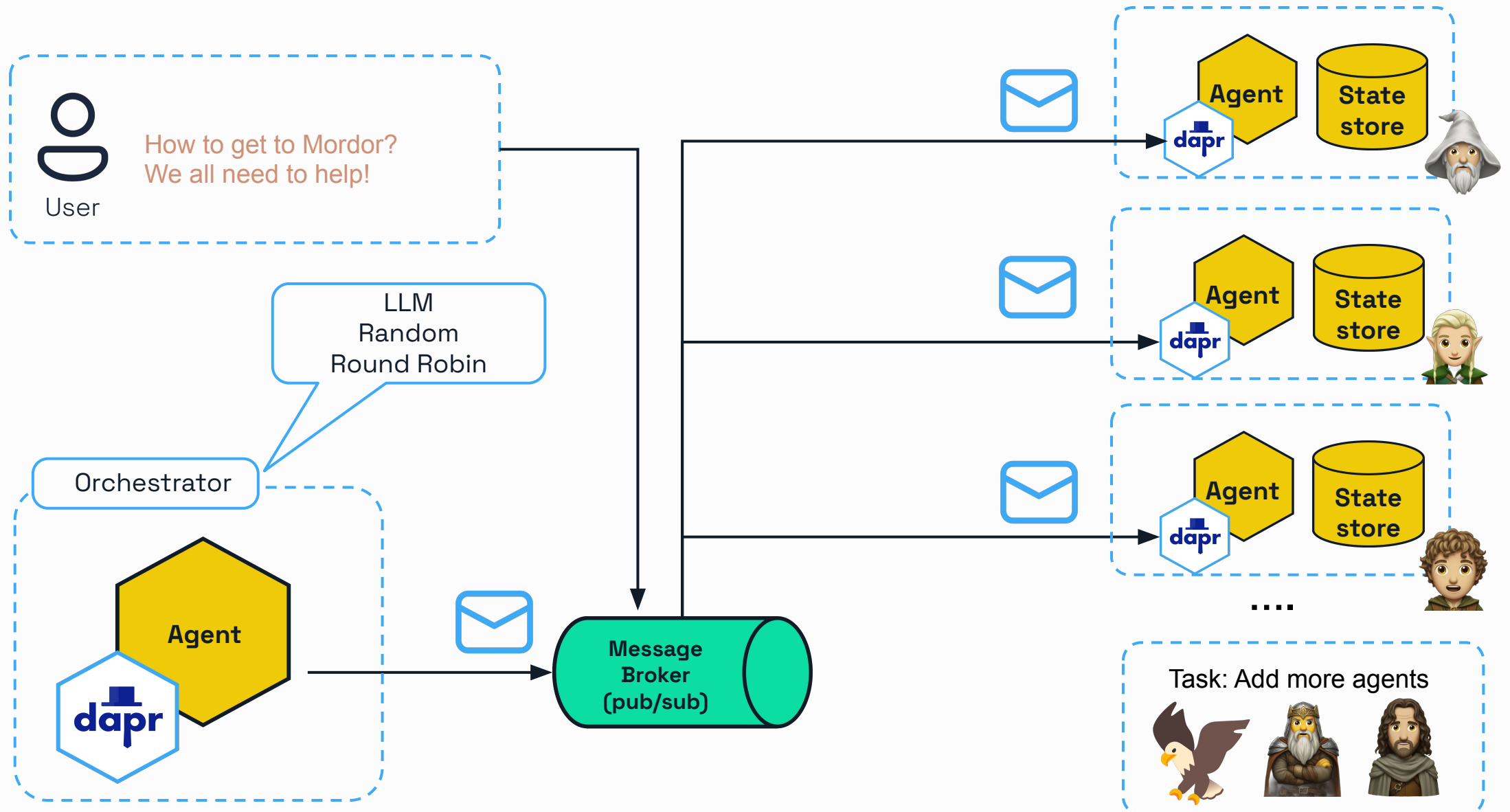
# Workshop Overview

[https://github.com/Dzvezdana/pydata\\_workshop\\_september2025](https://github.com/Dzvezdana/pydata_workshop_september2025)

# Collaborative Multi-Agent Workflow



# Collaborative Multi-Agent Workflow

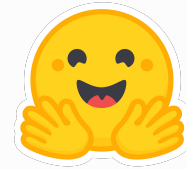


# Our Stack



## **Dapr Agents**

- Framework to build AI Agent Systems



## **HuggingFace API**

- API access to various LLMs

# Collaborative Multi-Agent Workflow

## Local setup

- Clone [this git repo](#)
- Follow the instructions in the README.
- You are ready to start!

Github repo



Slides



Privatebin password:

TODO

# Dapr Resources



dapr.io



[bit.ly/dapr-youtube](https://bit.ly/dapr-youtube)



[bit.ly/dapr-quickstarts](https://bit.ly/dapr-quickstarts)



[bit.ly/dapr-discord](https://bit.ly/dapr-discord)



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