

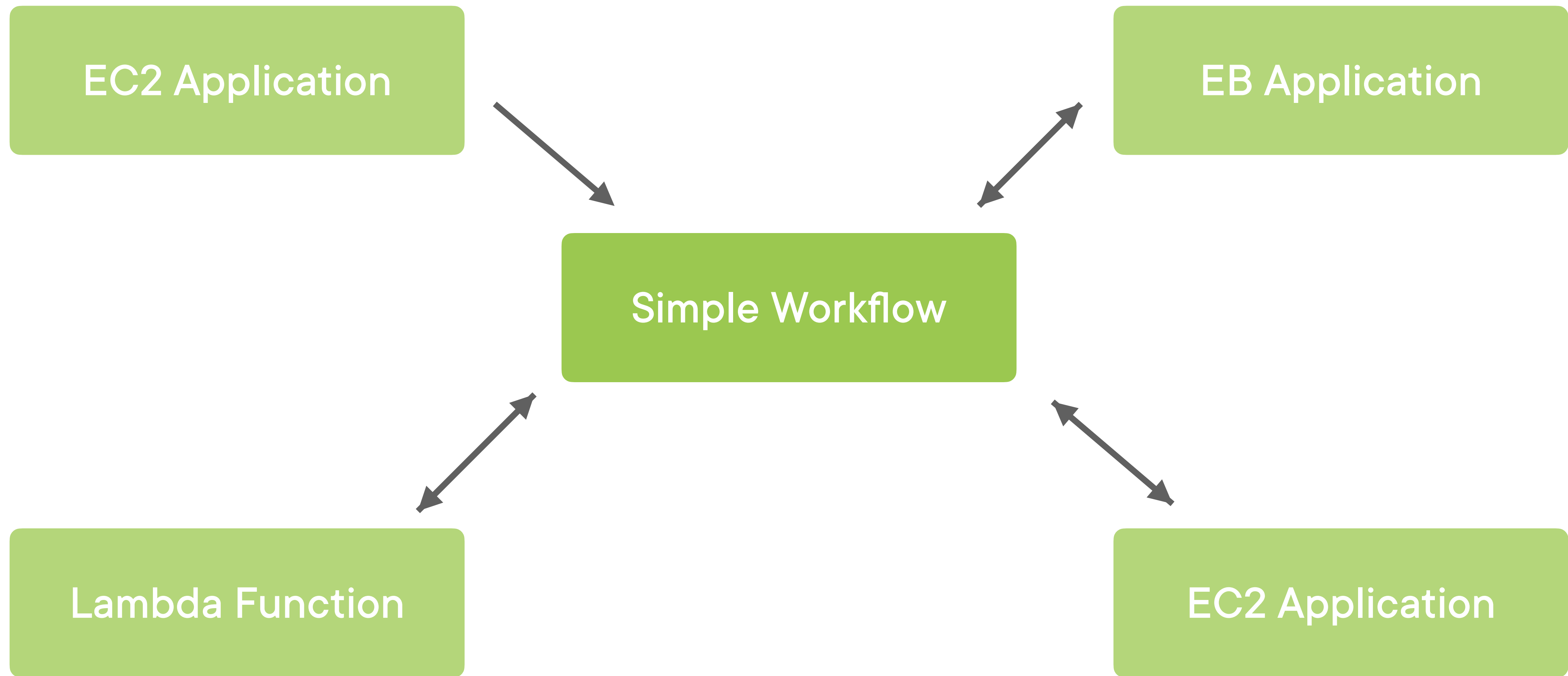
Coordinating Services in AWS



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Overview

When is Simple Workflow the answer?

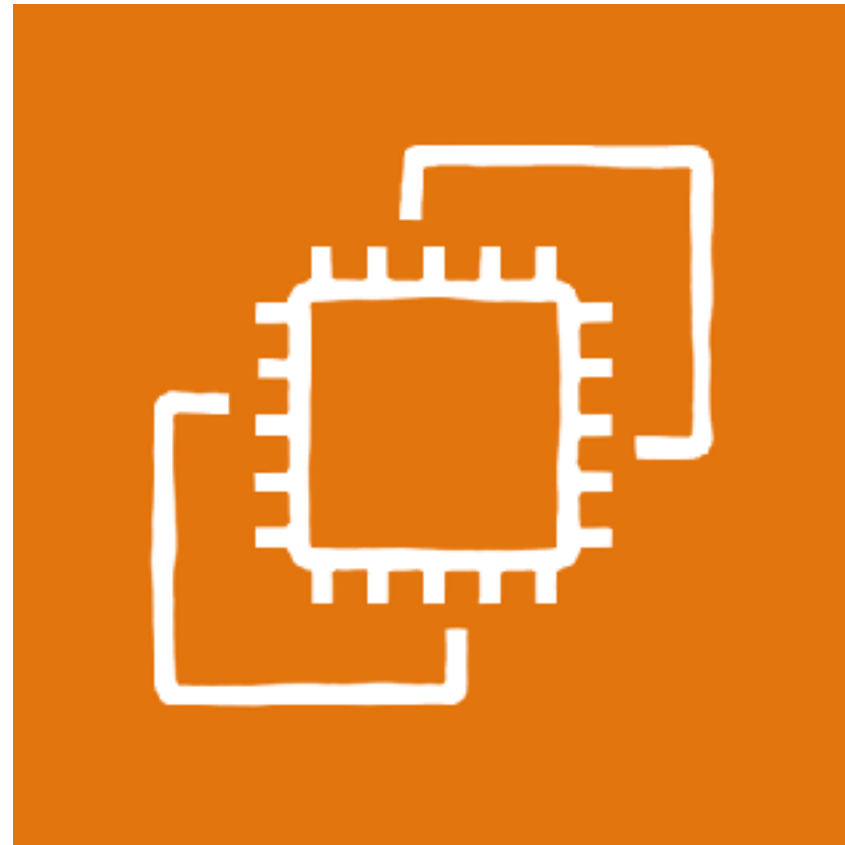
Workflows, deciders, and workers

Envision the complete flow

Cooking a workflow from scratch

How a workflow should behave

Understanding Simple Workflow



EC2

Virtual server
hosting



Elastic Beanstalk

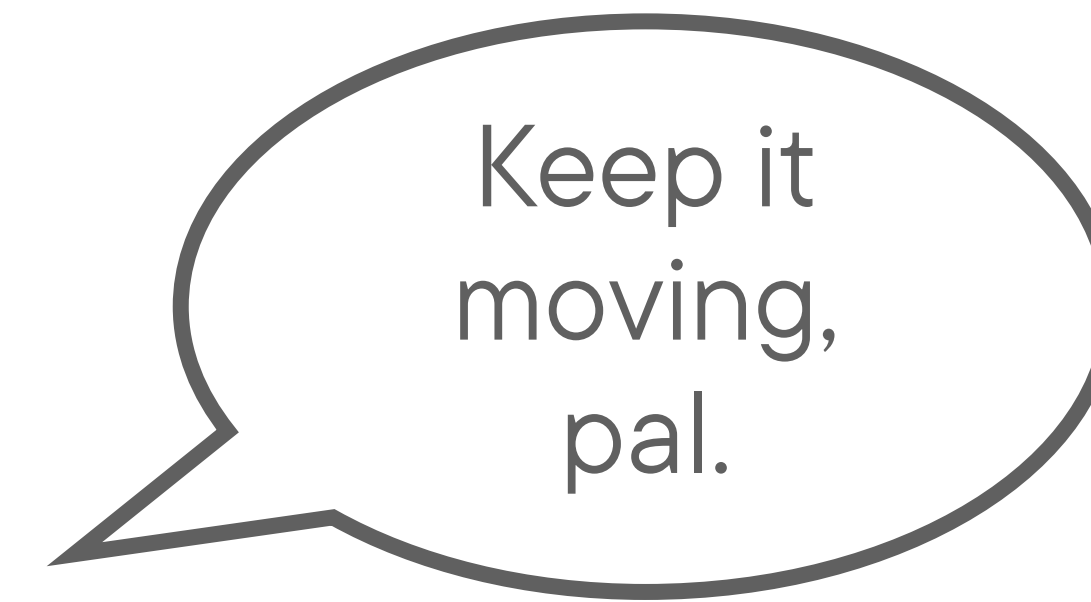
Simple application
deployment

Simple Workflow

Service that acts as an intermediary coordinator to disparate services and applications. Exposes an interface to connect to.

Simple Workflow confusing?

Let's break it down!



Workflow

Event

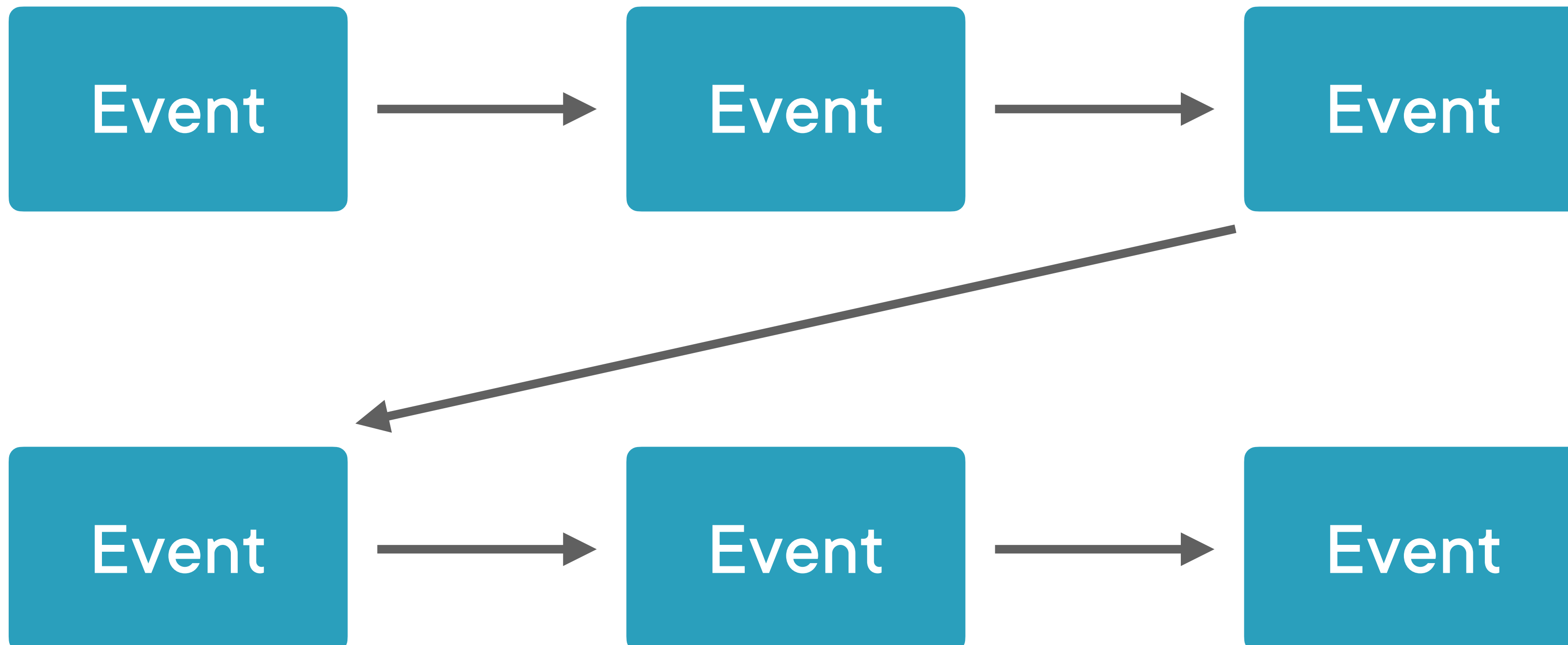
Event

Event

Event

Event

Event



WorkflowExecutionStarted

Event that starts the workflow

DecisionTaskScheduled

Event that indicates a decider needs
to make a decision

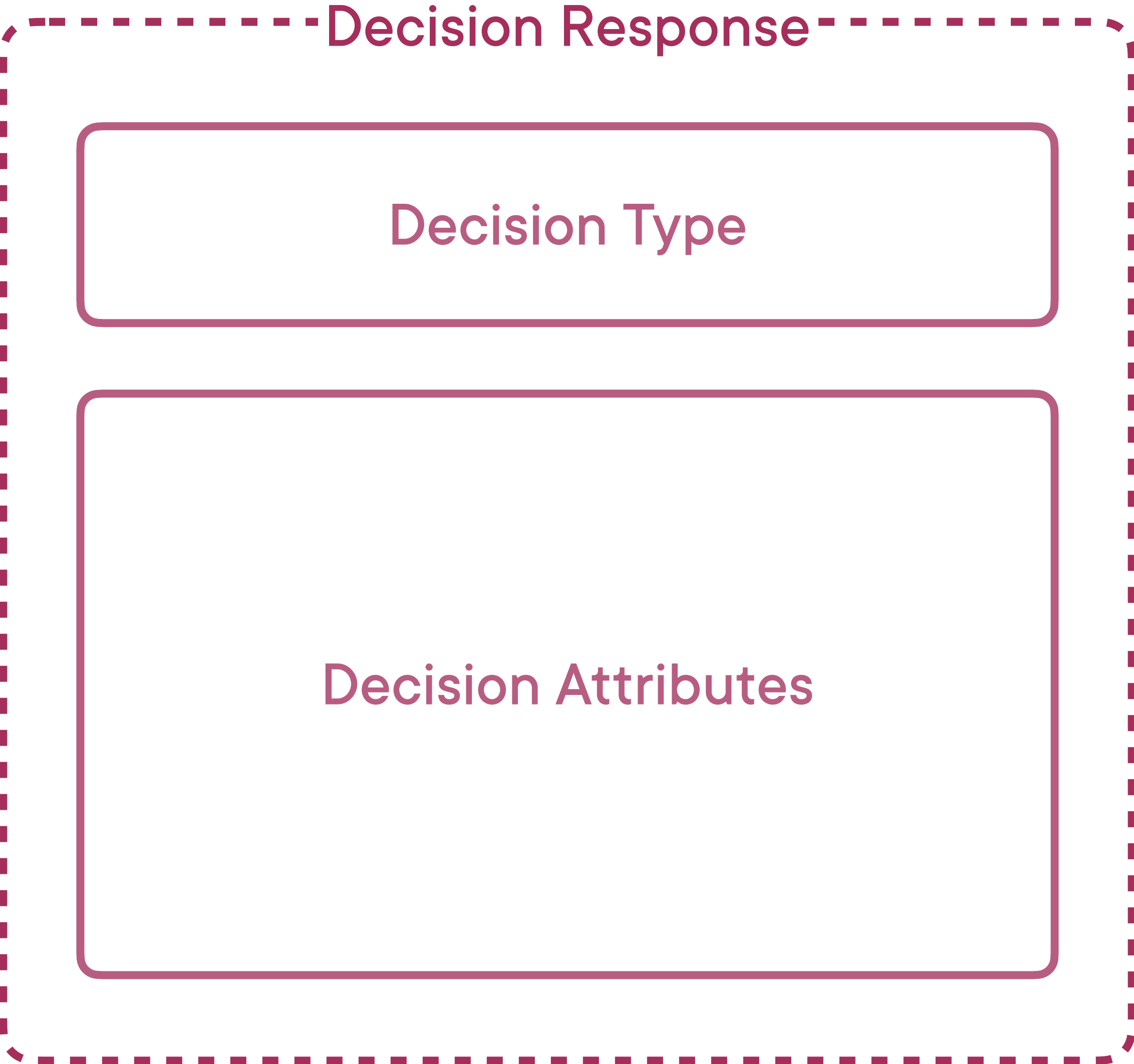
Polling



Task List

DecisionTaskCompleted

Event that indicates a decider
has responded with a decision



Activity Task Contents

Task List

Where to put the task

Activity Type

What type of task to run

Input

Input text for the task worker

Activity
Worker
Response



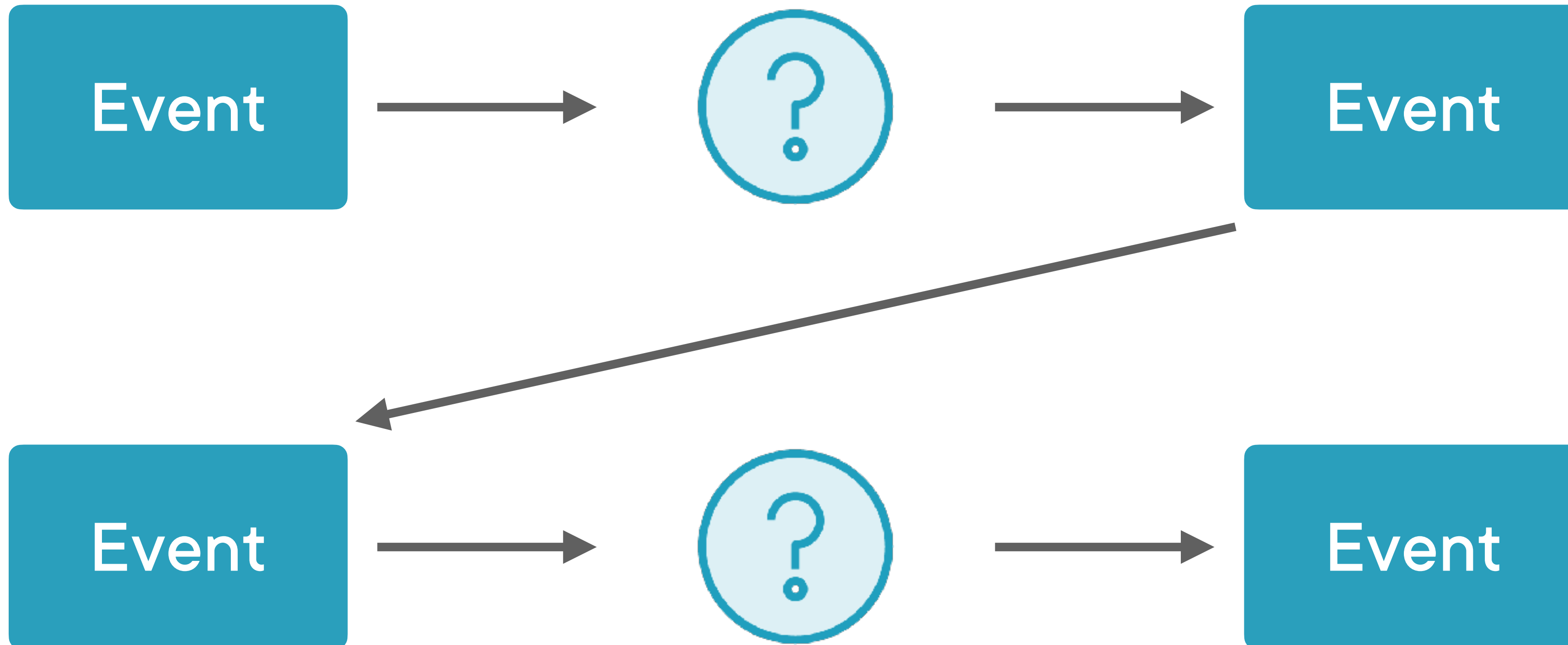
Workflow



Decision
Task



Workflow



Pros of Simple Workflow

Decouples workflow steps

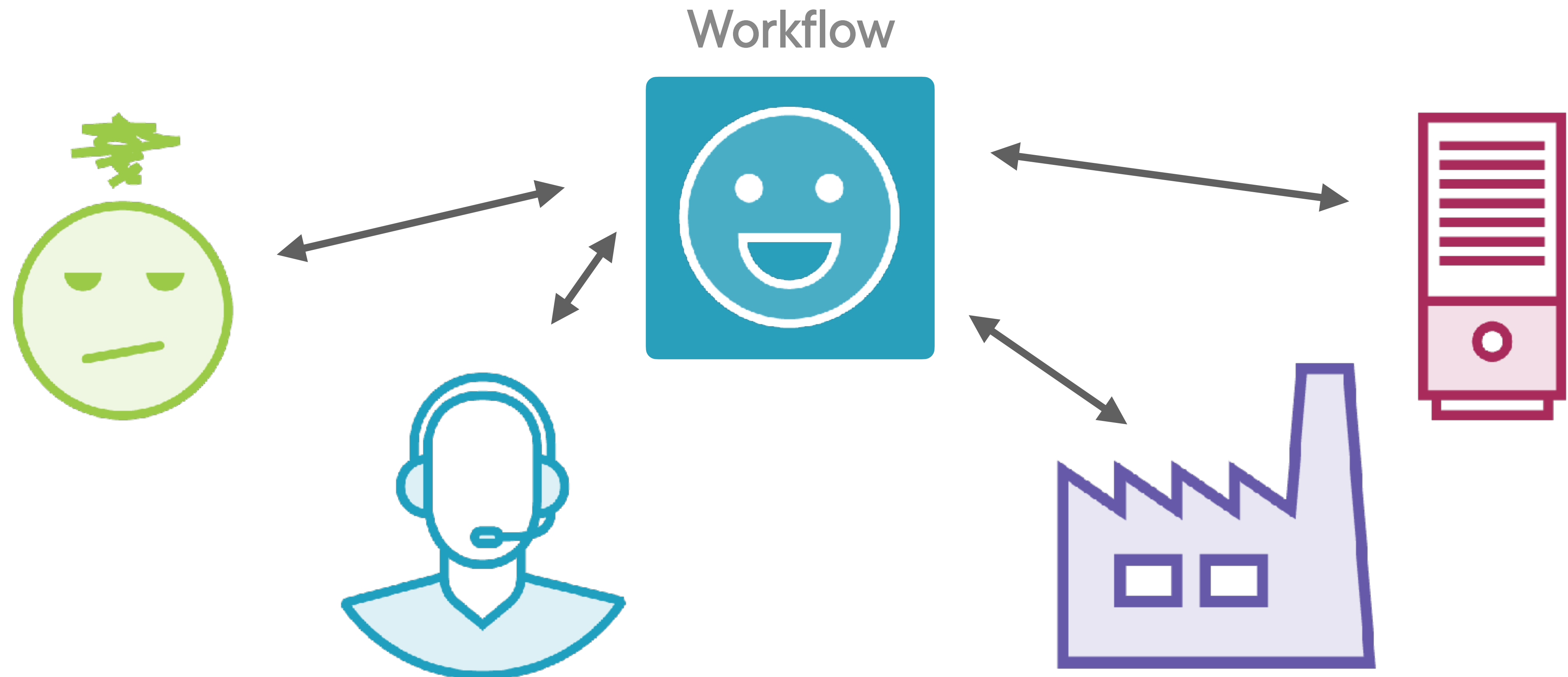
Handles failure and scaling

Works with almost anything

You can even use SWF when
you have IRL task workers

SWF Use Case Example

Online Store Return Process



Workflows, Deciders, and Workers

SWF Domain

Workflow Type

Workflow Type

Activity Type

Workflow Type

Workflow Type

Activity Type

Workflow Type

Activity Type

Activity Type

Workflow Properties

Name

Version

Default Task List

Timeouts



Most entities in SWF (workflow types, activity types) are versioned.

Workflow Properties

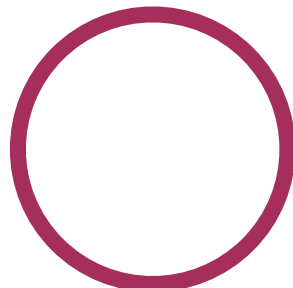
Name

Version

Default Task List *optional

Timeouts

Workflow
Execution



Workflow Start



Workflow Timeout

Workflow Failed



SWF Workflow API Functions

`swf.startWorkflowExecution()`

`swf.pollForDecisionTask()`

`swf.respondDecisionTaskCompleted()`

`swf.pollForActivityTask()`

`swf.respondActivityTaskCompleted()`

Decider



Domain

Poll

Task List



Workflow





Task List A



Task List B



Task List C

Actors will long poll for a
maximum of 60 seconds

Decision Task

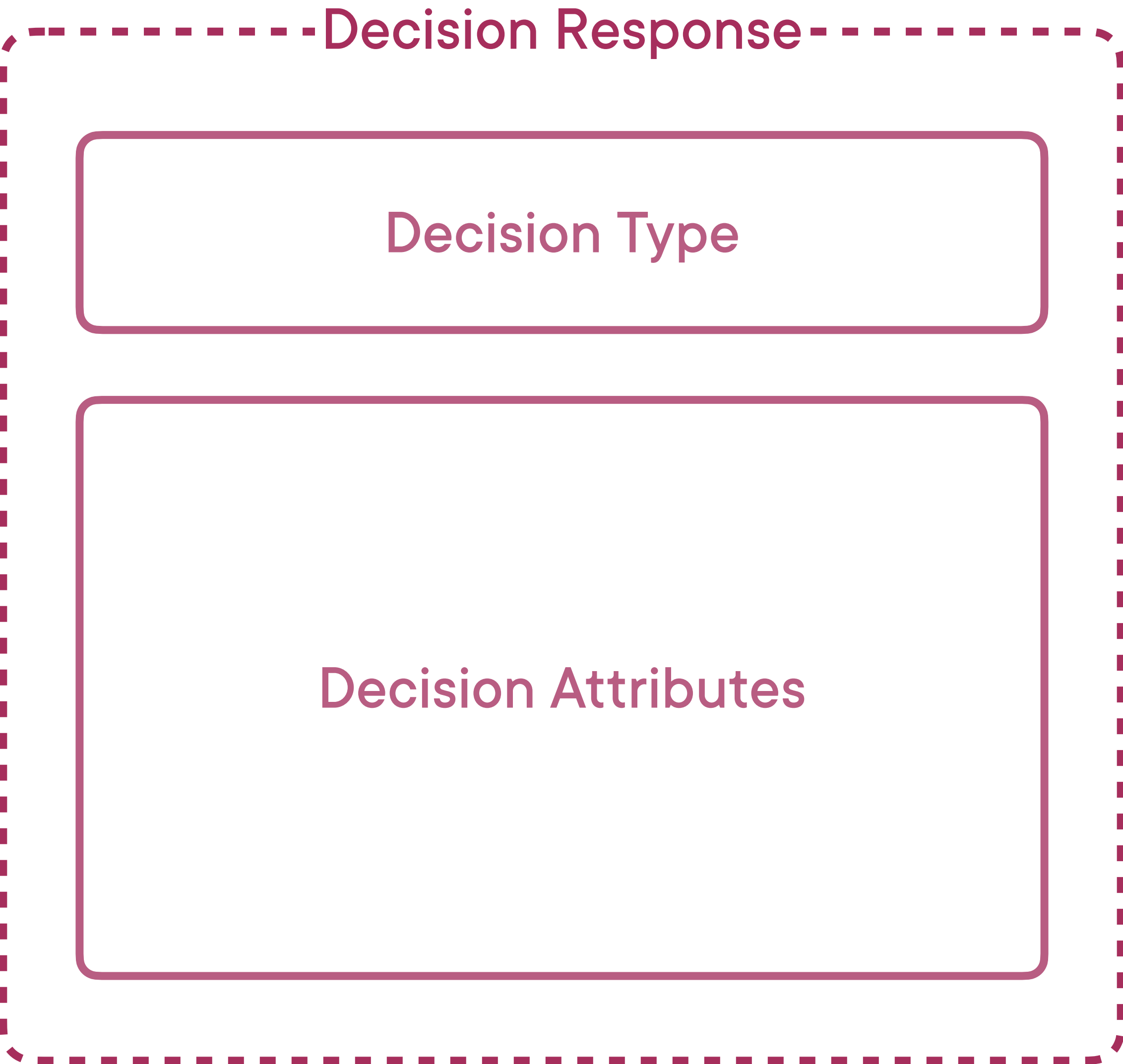
Workflow Event List

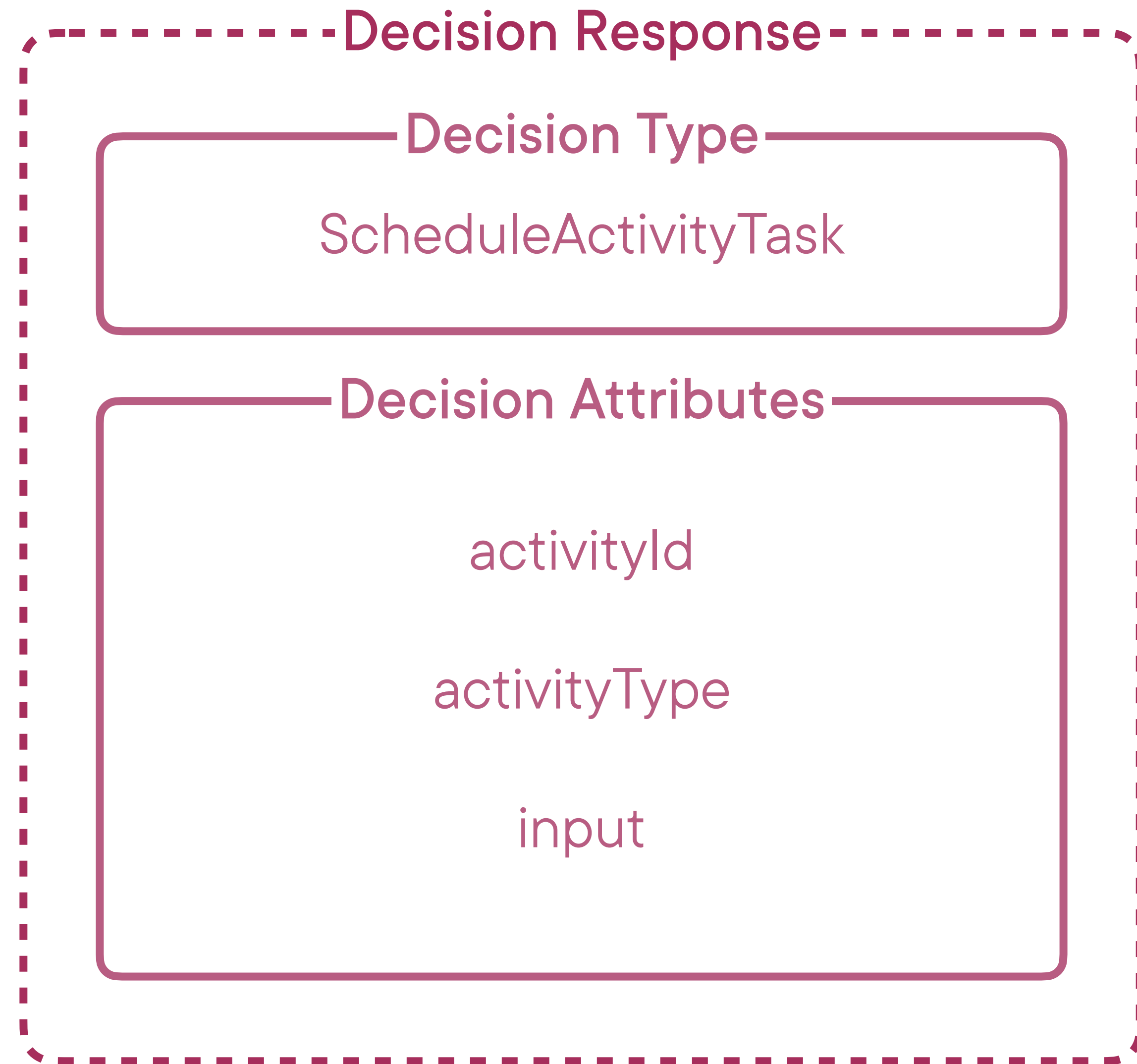
Event

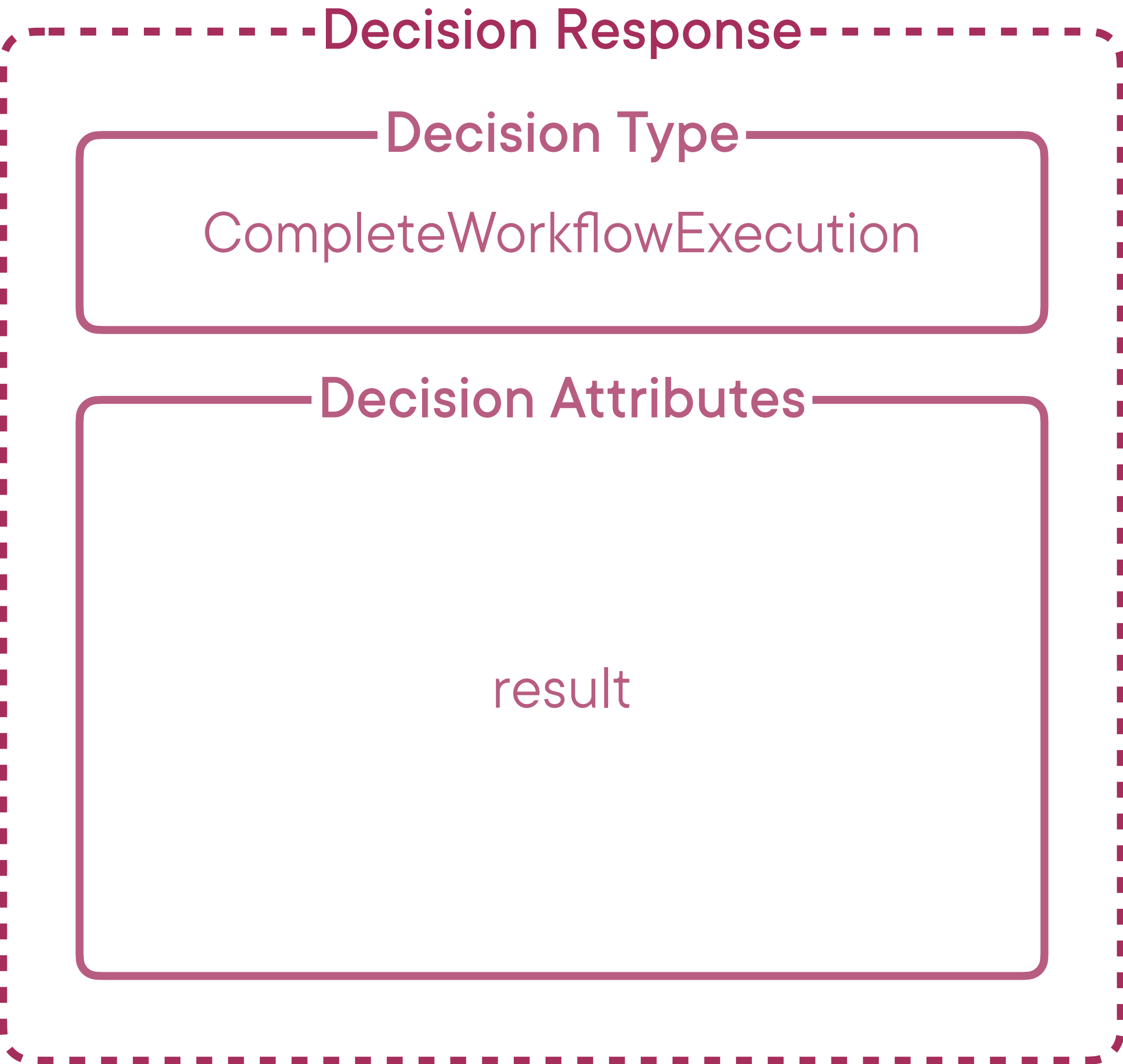
Event

Event

Event





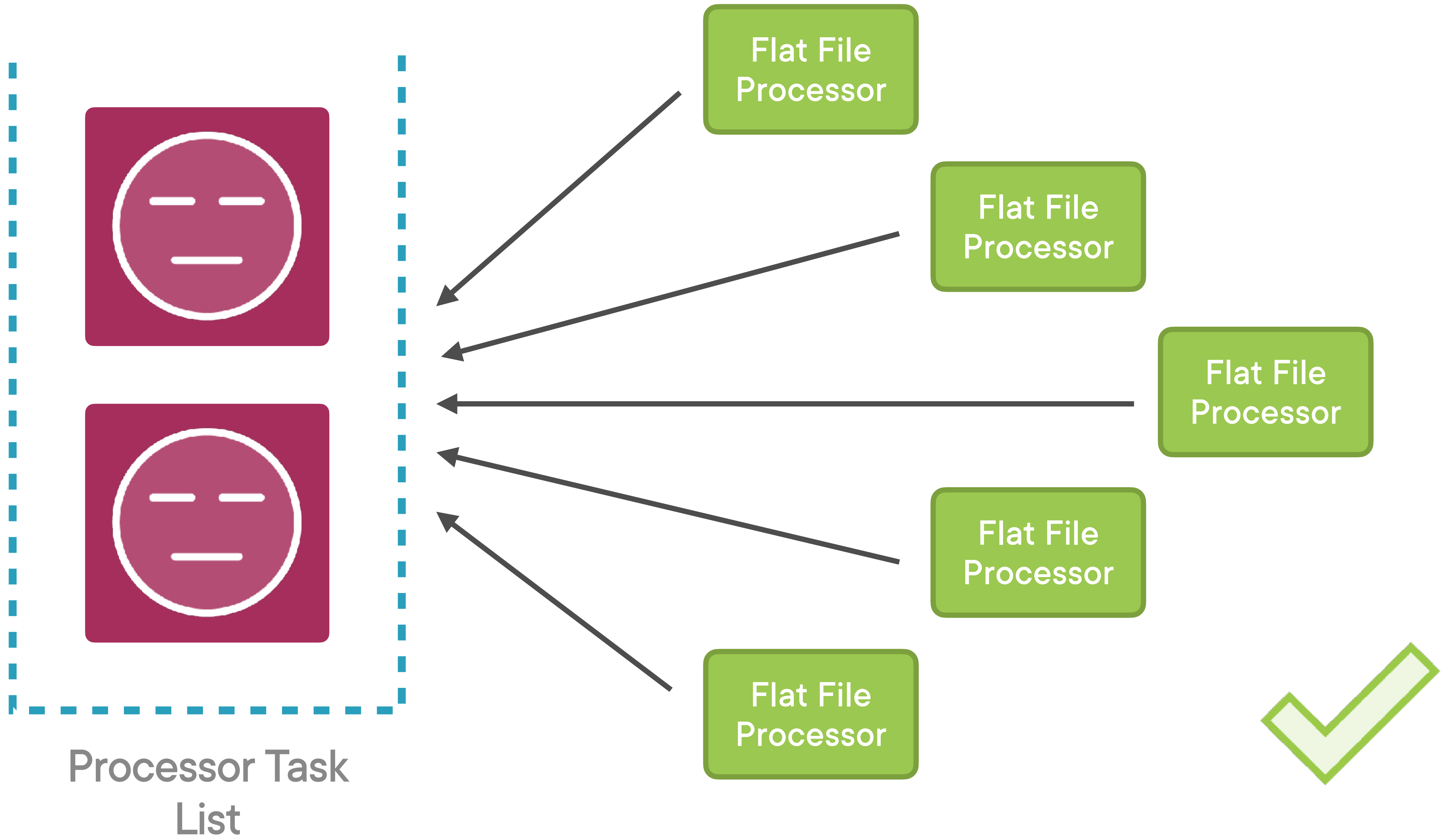


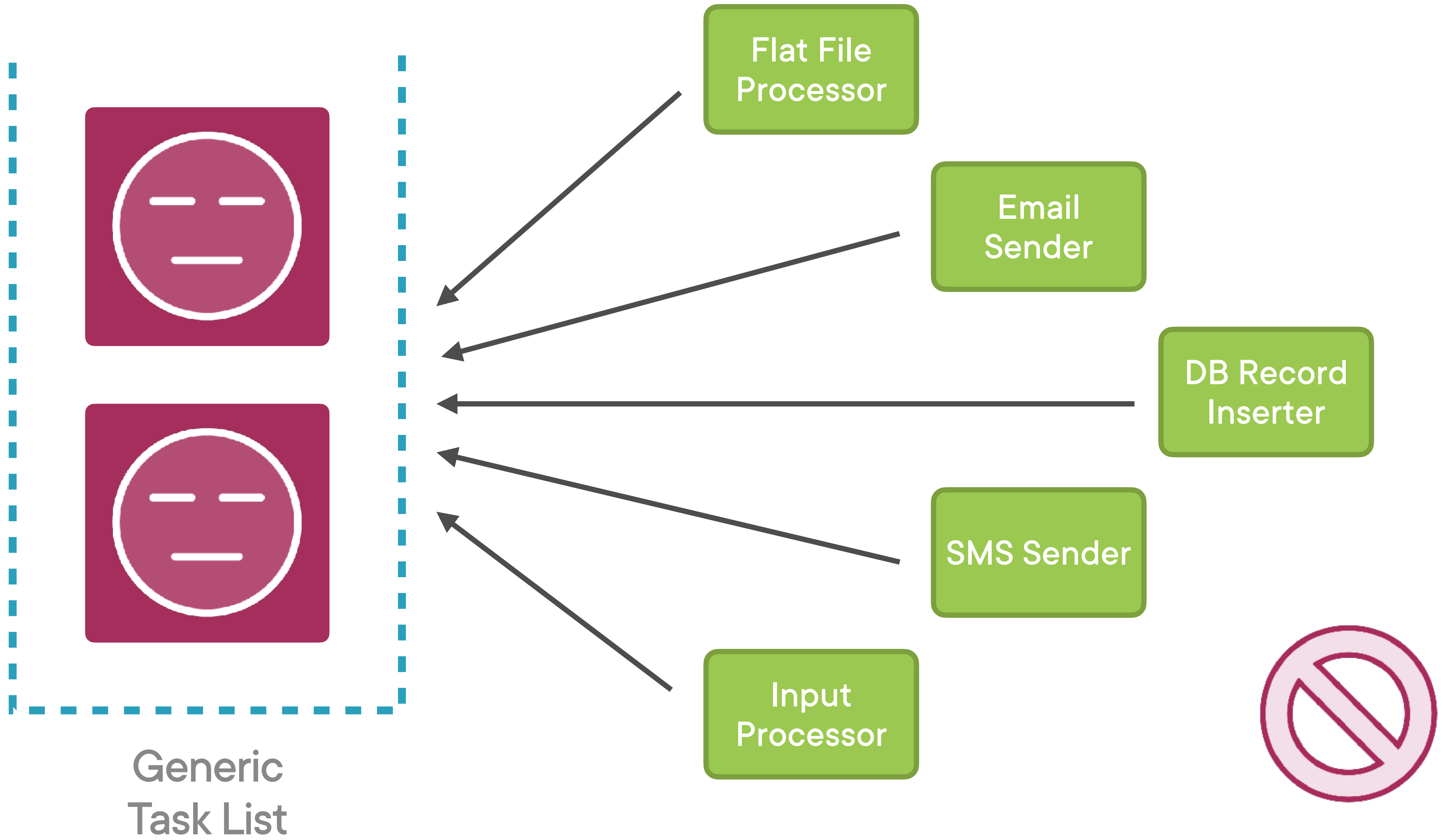
Worker

Processes activity tasks after polling a task list in a workflow.



Use one task list per activity type.
This keeps workers from retrieving
tasks that they can't process.





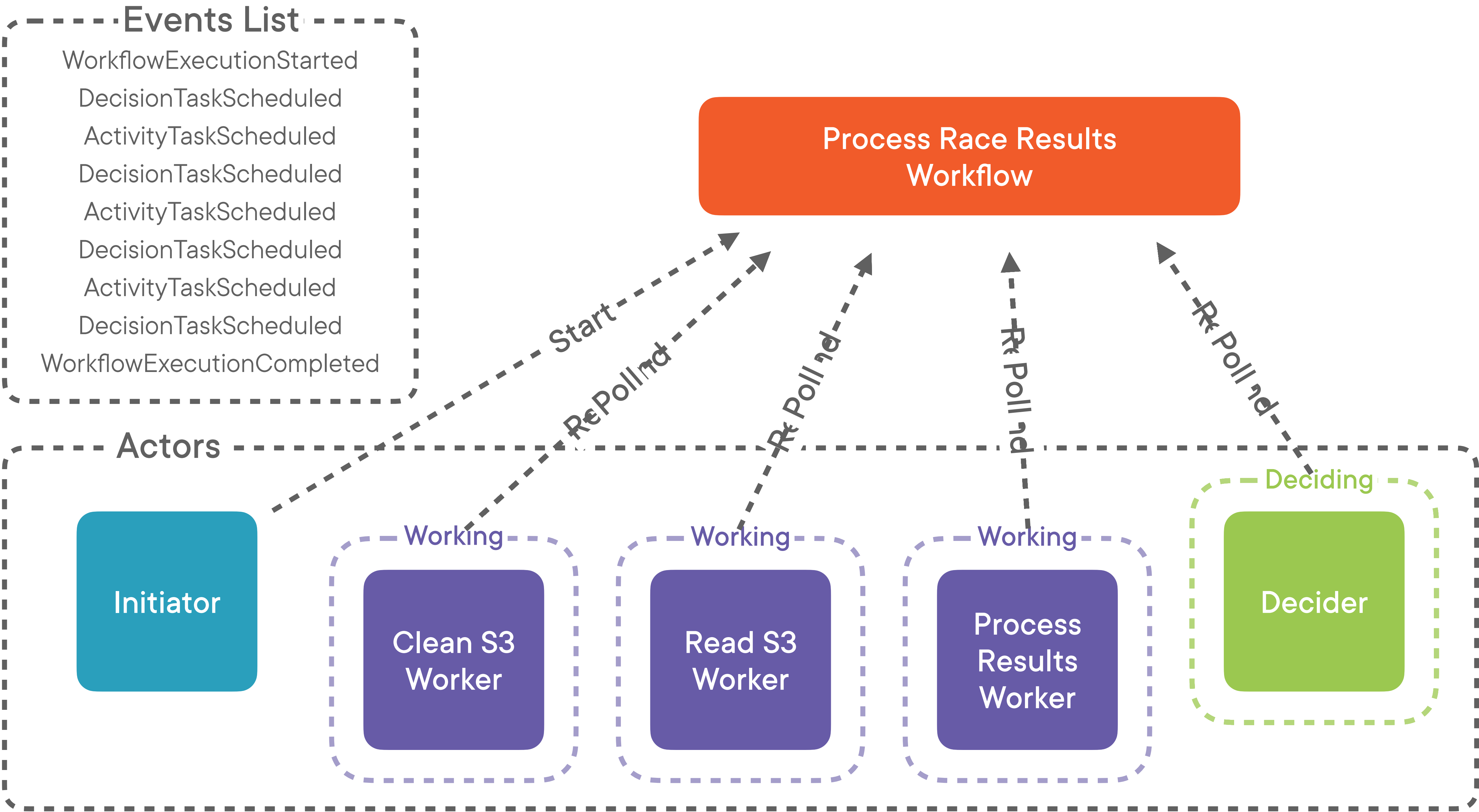




One more thing...

**Tasks are first come,
first served.**

A Day in the Life of a Workflow



Creating Workflows in SWF

Nothing in SWF can be deleted,
only deprecated.

This means that names are
one-time use per region.

Running a Workflow

Conclusion

Summary

“S” is for “Simple”

The nuts and bolts of SWF

Animated boxes pretending to be software

SWF + Serverless = Magic

Executed workflow returns positive result

Up Next

Infrastructure Security

with Virtual Private Cloud