

# Deploying Machine Learning Models to Serverless Cloud Environments

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# Overview

**All major cloud platforms offer serverless compute**

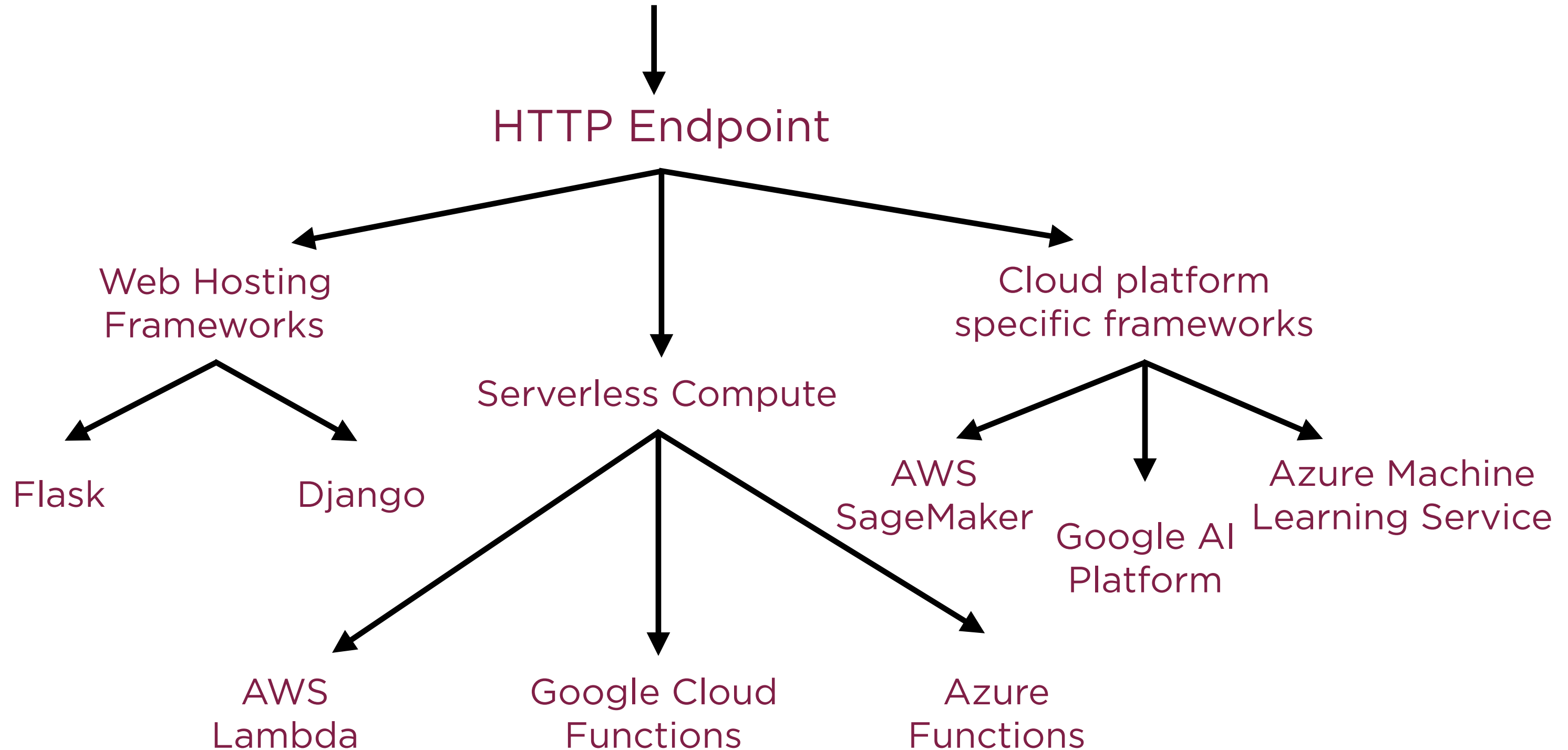
**Compute and hosting services without instantiating servers**

**Pay-per-use, automatically scalable**

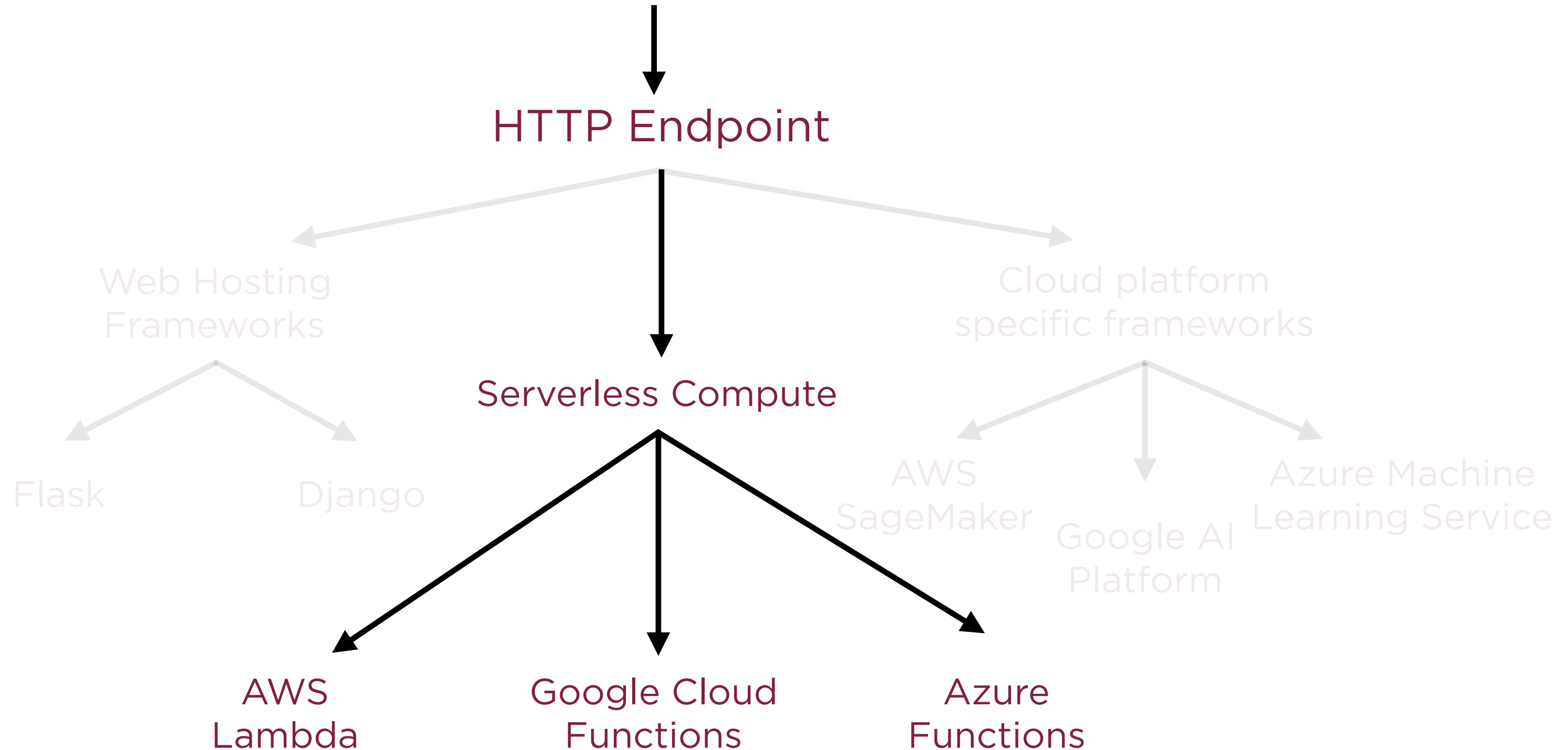
**AWS Lambda, Google Cloud Functions, Azure Functions**

**Emerging as preferred deployment option for ML models**

# Deploying Models for Prediction



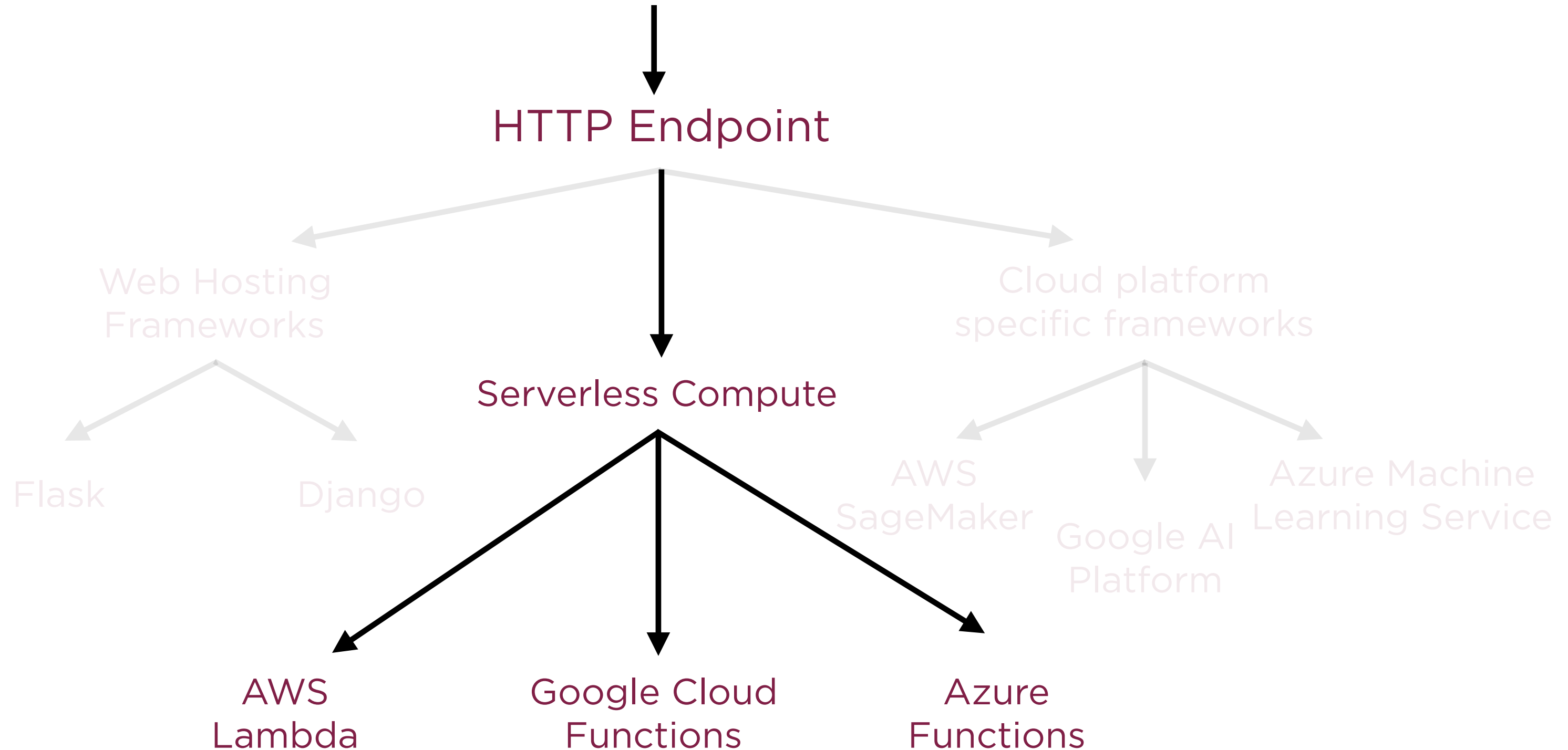
# Deploying Models for Prediction



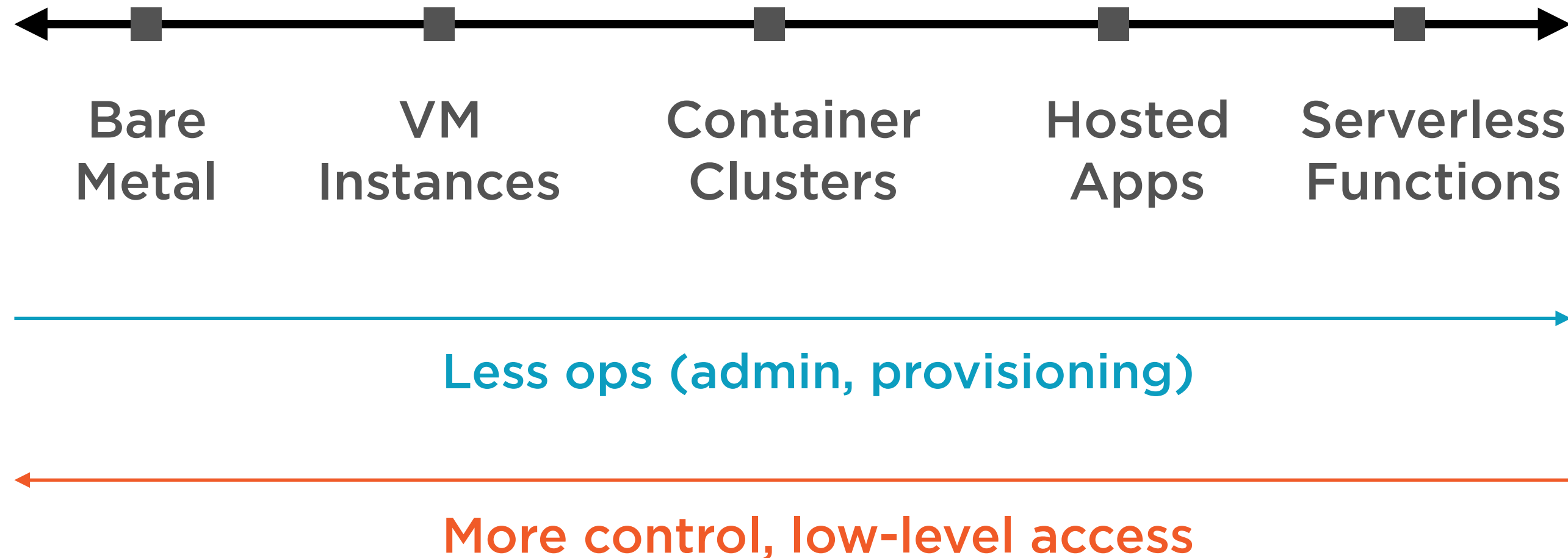
# Serverless Cloud Environments

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# Deploying Models for Prediction



# Compute Choices



# Serverless Computing



**AWS Lambda**

**Azure Functions**

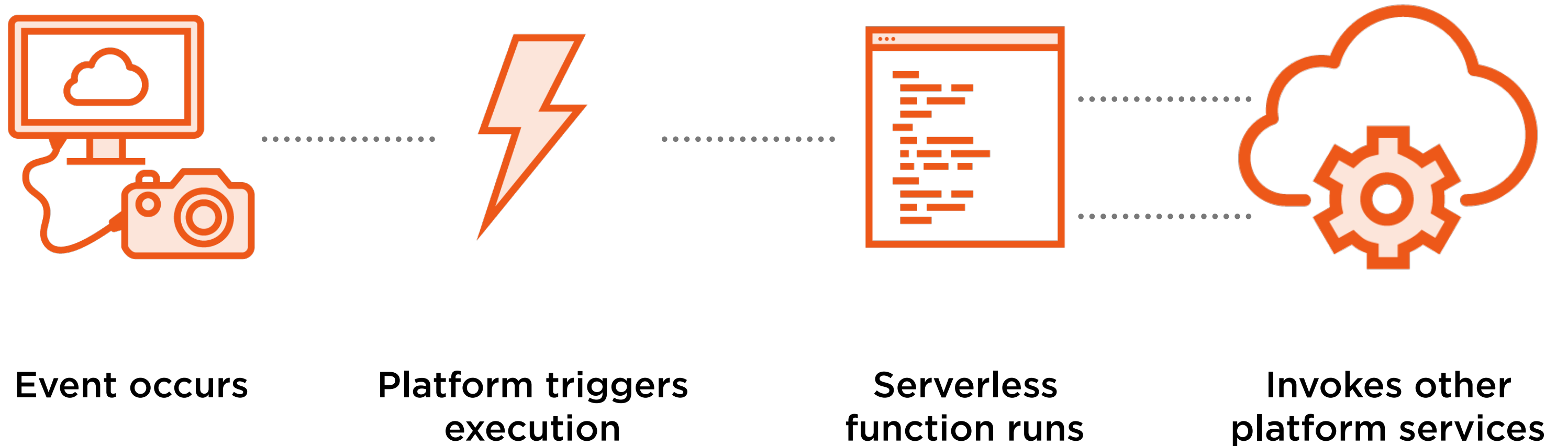
**Google Cloud Functions**





Serverless compute  
**abstracts away** provisioning,  
managing servers and  
configuring software

# Event-driven Serverless Compute



# Events



**Occurs in the external environment**

**Functions can choose to respond to an event**

**Events are wired up to trigger functions**

# Types of Events



## **HTTP requests**

## **Background events**

- Storage access
- Incoming streaming data
- Logging/monitoring events
- Chatbot interactions
- ...

# Triggers



**When event occurs, platform takes over**

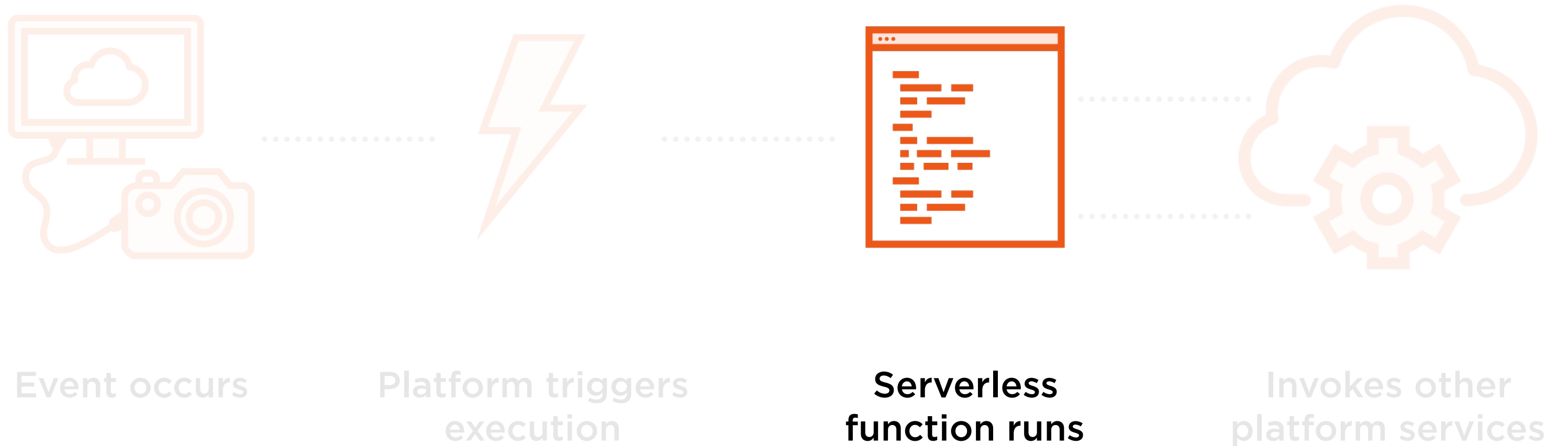
**Ensures that event information is passed to serverless function**

**Function parameters nicely packaged up**

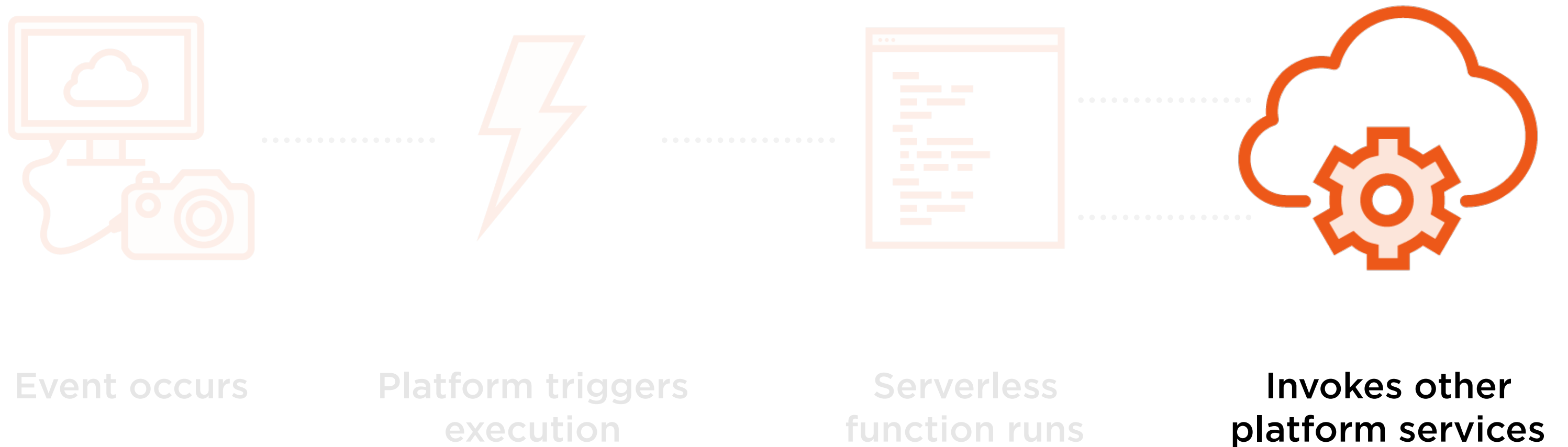
**Type of event determines parameters**

**Additional context also included**

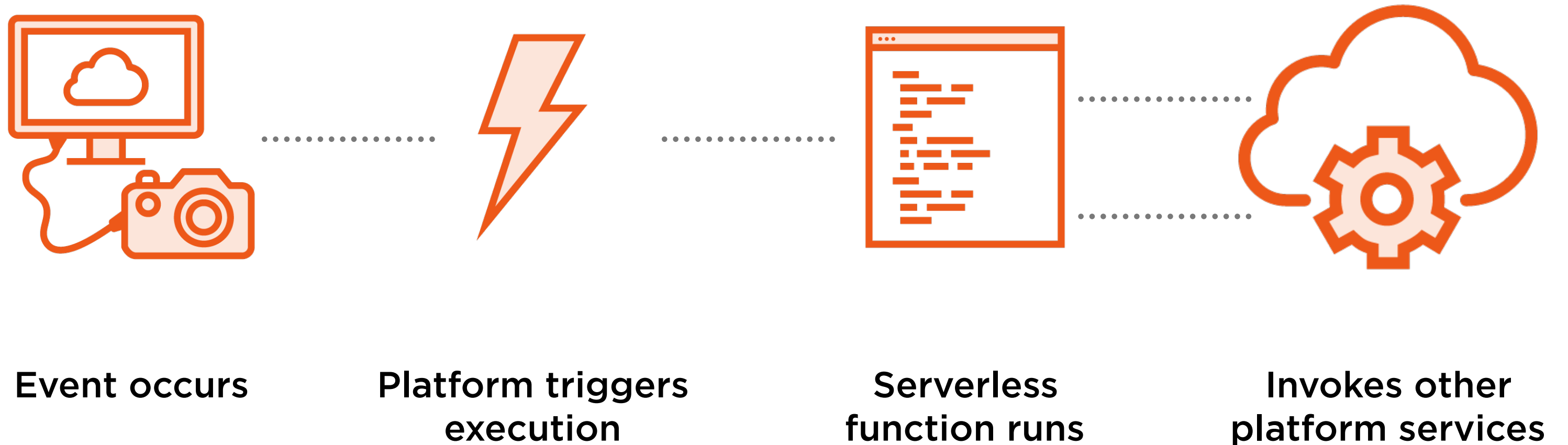
# Event-driven Serverless Compute



# Event-driven Serverless Compute

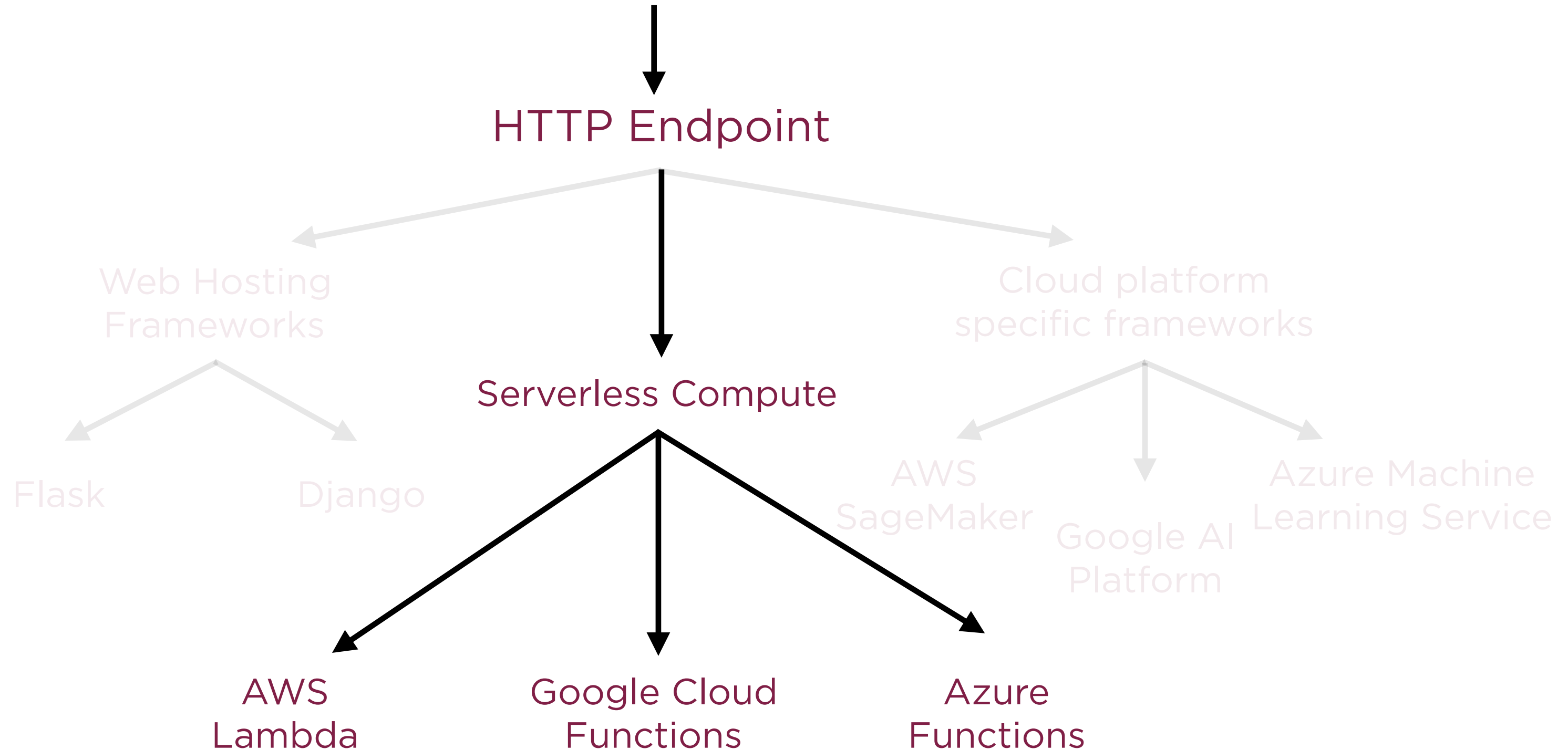


# Event-driven Serverless Compute





# Deploying Models for Prediction



# Choices in (Any) Computing



## Compute

Where and how does code  
run?

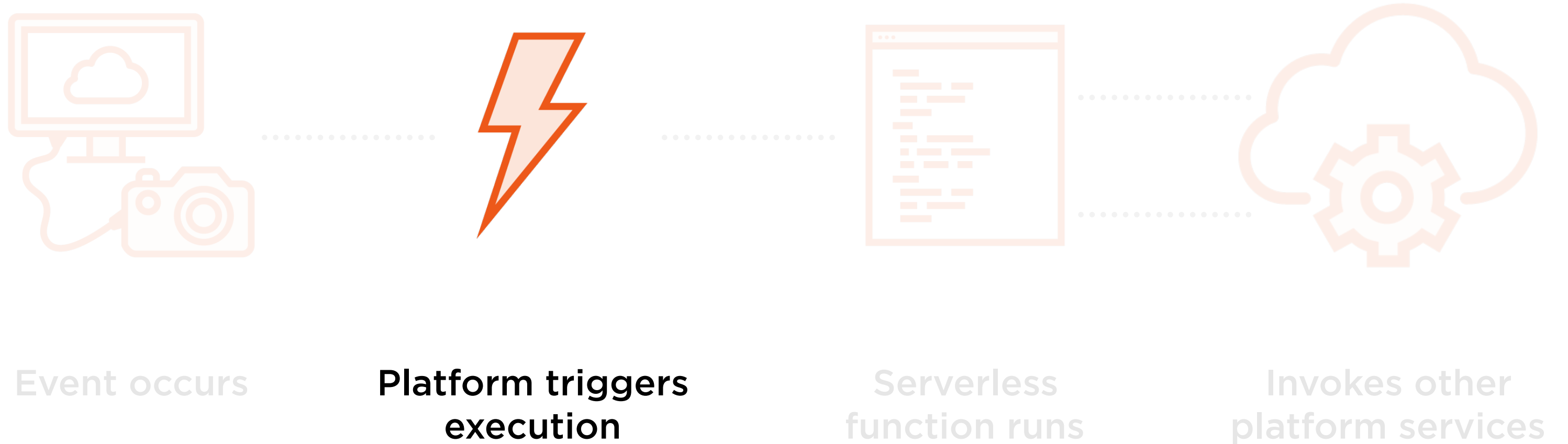


## Storage

Where and how is the data  
stored?

Other choices - networking, logging etc. - are  
less important

# Event-driven Serverless Compute



# Demo

**Building classification models to  
deploy on a serverless environment**

Demo

**Uploading models to Google Cloud  
Storage buckets**

Demo

**Deploying scikit-learn models to  
Google Cloud Functions**

# Summary

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