2450 Using OpenWhisk with IBM Bluemix

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IBM Bluemix Garage Enablement

InterConnect
2017

IBM

What is serverless?

a cloud-native platform

for

short-running, stateless computation

and

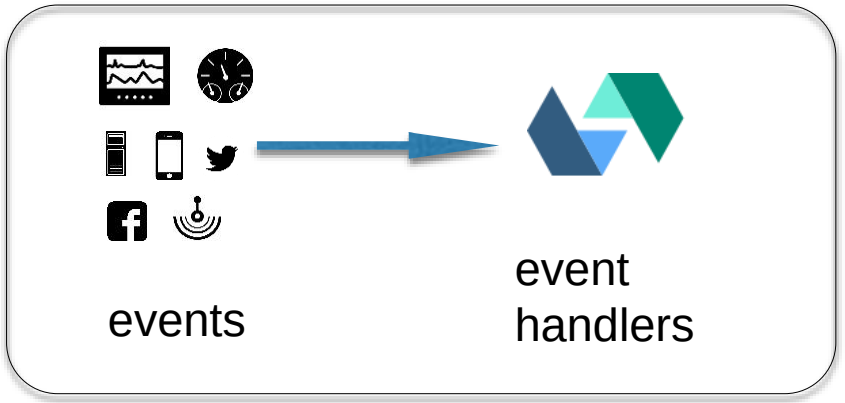
event-driven applications

which

scales up and down instantly, automatically, and transparently

and

charges at a millisecond granularity



What is serverless good for?

Serverless is **good** for

short-running
stateless
event-driven

- Microservices
- Mobile Backends
- Bots, ML Inferencing
- IoT
- Modest Stream Processing
- Service integration
  (e.g. Cognitive: ObjectStore + Watson)

Serverless is not good for

long-running
stateful
number crunching

- Databases
- Deep Learning Training
- Heavy-Duty Stream Analytics
- Spark/Hadoop Analytics
- Numerical Simulation
- Video Streaming

Serverless benefits

The short answer

It makes development and operations

faster, cheaper, easier.

	On-prem	VMs	Containers	Serverless
Time to provision	Weeks-months	Minutes	Seconds-Minutes	Milliseconds
Utilization	Low	High	Higher	Highest
Charging granularity	CapEx	Hours	Minutes	Blocks of milliseconds

Target Personas

- Developers, Developers, Developers!
  - Code-based vs GUI-based
- Service Integrators, Partners
  - Familiarity with Adobe products & services
  - Significant portion of time spent on Adobe products
- Independent Software Vendors
  - Built on top of a Serverless Runtime

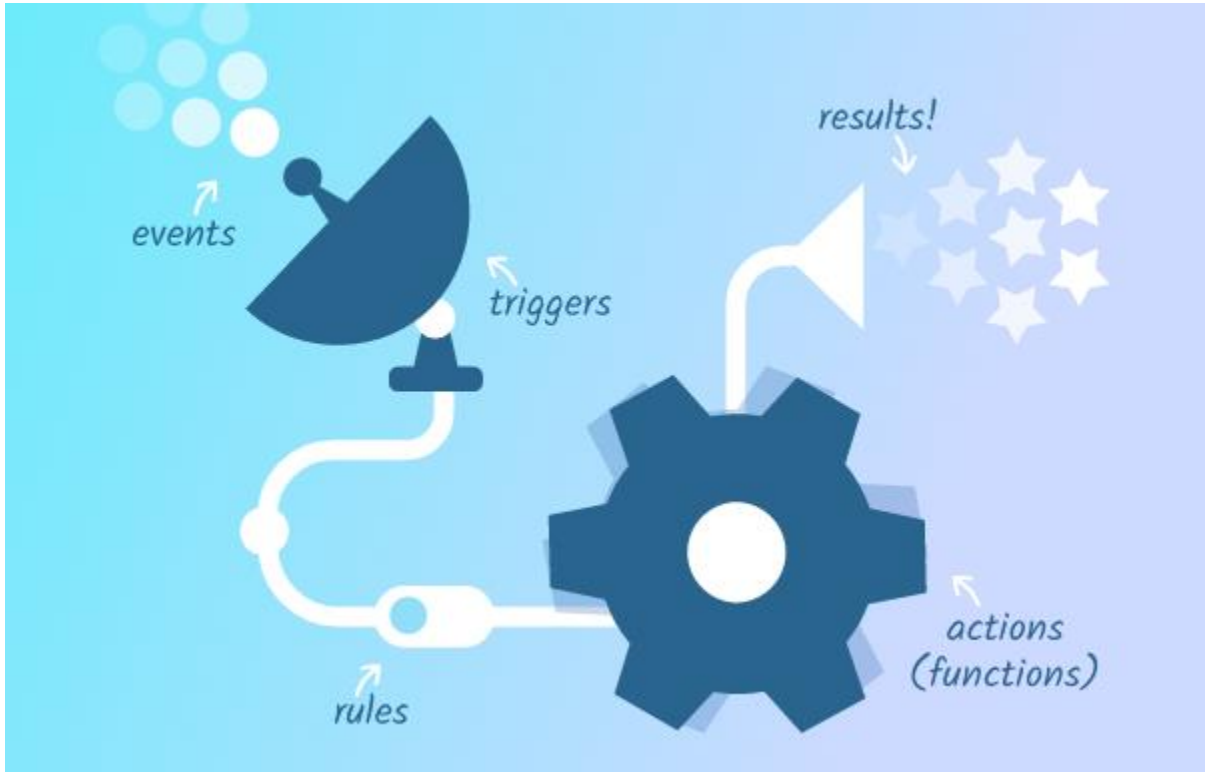
Four key concepts

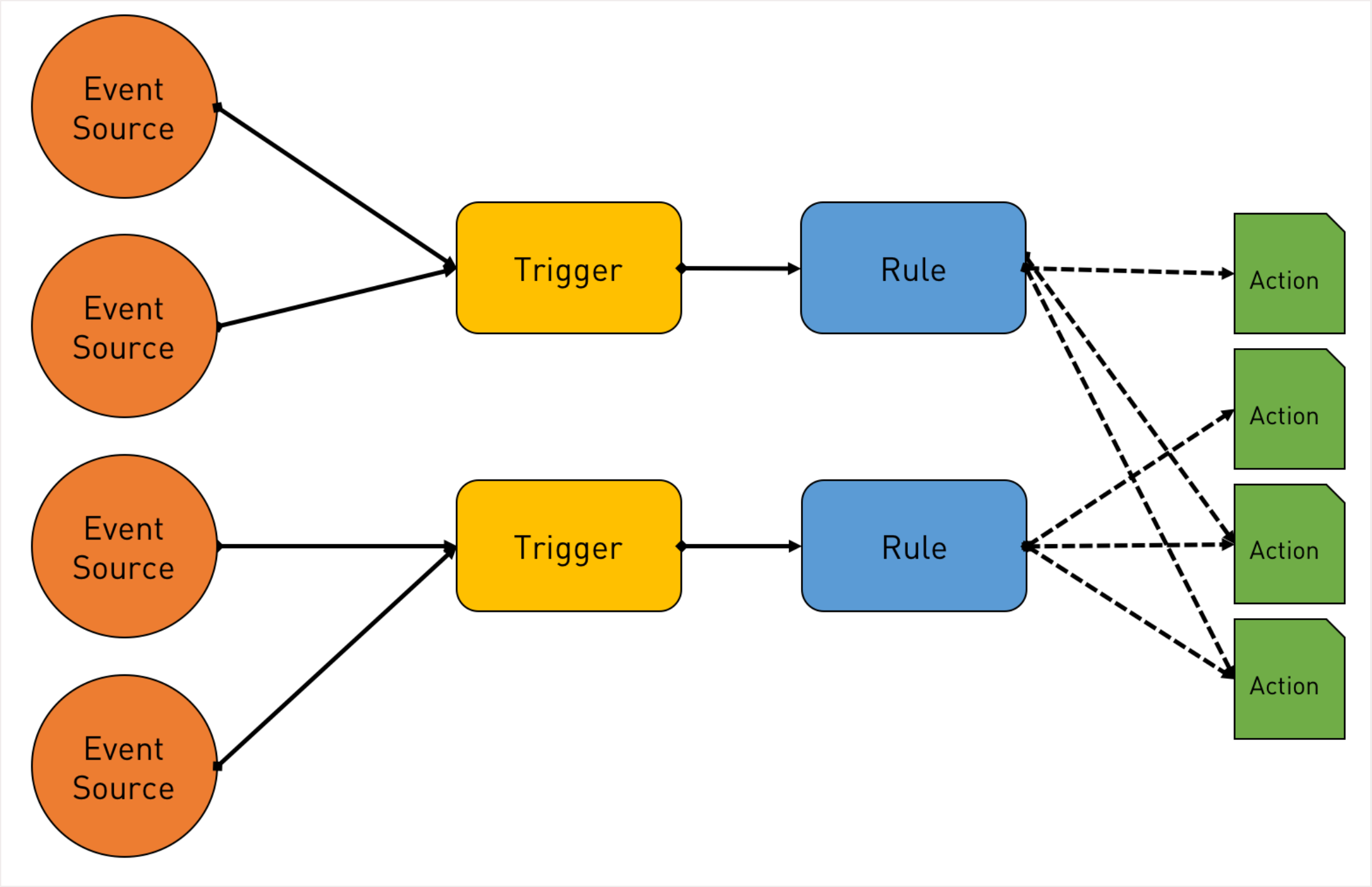
Triggers A trigger is a name for a class of events.

Rules Map triggers to actions. A rule basically says that when an event comes in which belongs to a trigger, fire an event handler, which is an action.

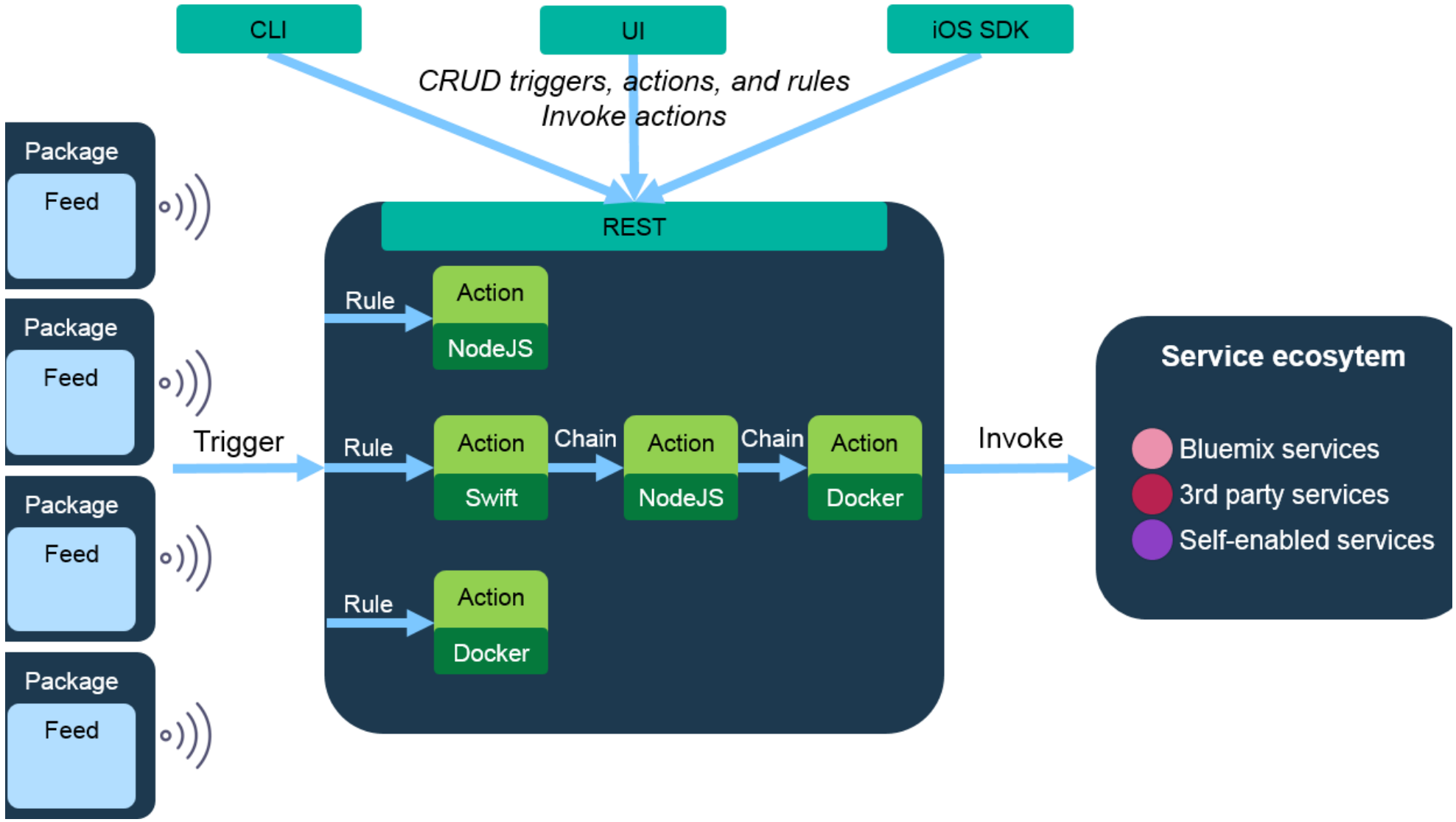
Actions An action in OpenWhisk is simply a stateless function that is run in response to an event. Actions can be written in a number of different languages.

Packages A package is a collection of actions and feeds which can be shared in an ecosystem.




Event Source
Event Source
Event Source
Event Source
Trigger
Trigger
Rule
Rule
Action
Action
Action
Action

The big picture



API Gateway

New experimental feature

Enables easily exposing OpenWhisk actions as RESTful endpoints

- actions can be assigned to specific endpoints
- can have verbs (get, put, post delete) from the same endpoint assigned to different actions

Two approaches for exposing actions

- assigning API endpoint/verb combinations to specific actions individually
- Using a Swagger config file to map API endpoints to actions (currently still in development)

OpenWhisk Benefits

OpenWhisk lets you...
Concentrate on the logic that adds value to your application
Easily consume services from vendors, open-source, and third party providers
Pay only for resources you use
Deploy RESTful services without managing servers with new API gateway
Multi-language support and Swift for iOS means a gentle migration path from your existing applications to cloud native applications

Where can you get OpenWhisk

Bluemix under Apps

Github – the core technologies have been open sourced and you can find it on github. Go to github.com and search for OpenWhisk.

Try it: ibm.biz/openwhisk

Fork it: github.com/openwhisk

Contribute: openwhisk.org