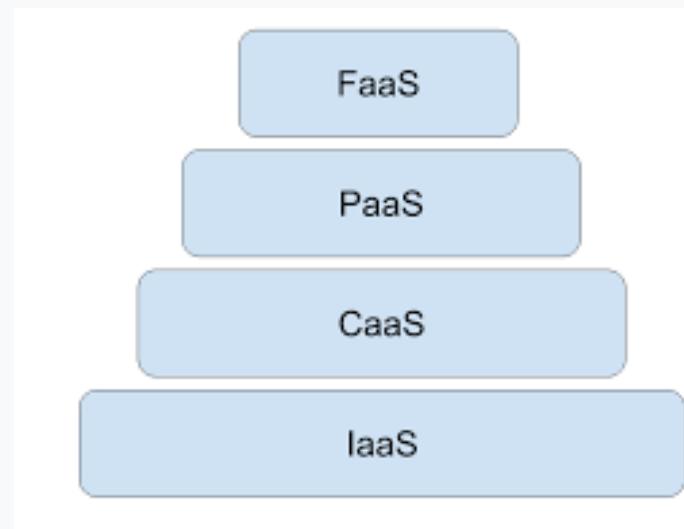


Serverless: Is it for your organization?

Michael Bright, 24 October 2017,
Open Source Summit Europe - Prague



Serverless Computing

- 1.** What is Serverless?
- 2.** Review of Cloud Provider Offerings.
- 3.** Serverless Platforms
- 4.** Serverless Tooling
- 5.** Serverless In Action - demos



No more servers ?!

Serverless - What is it? ...



MEANS NOT CARING ABOUT SERVERS

Developers can focus on their application logic



FAAS + BAAS

FaaS: Functions as a Service - your stateless logic

BaaS: Back-end as a Service - cloud services (DB, messaging, ...)



TODO

TODO



TODO

TODO



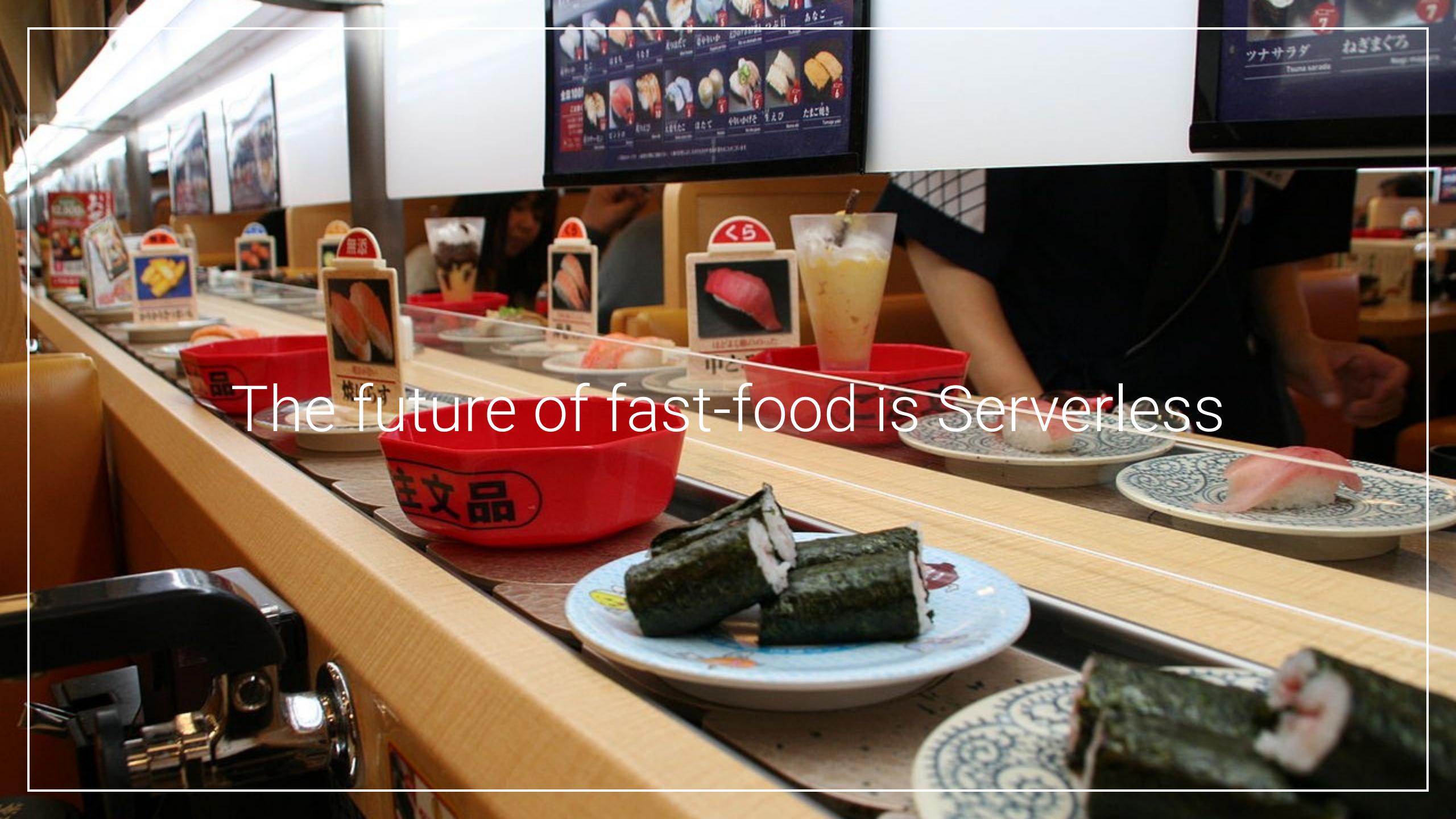
TODO

TODO

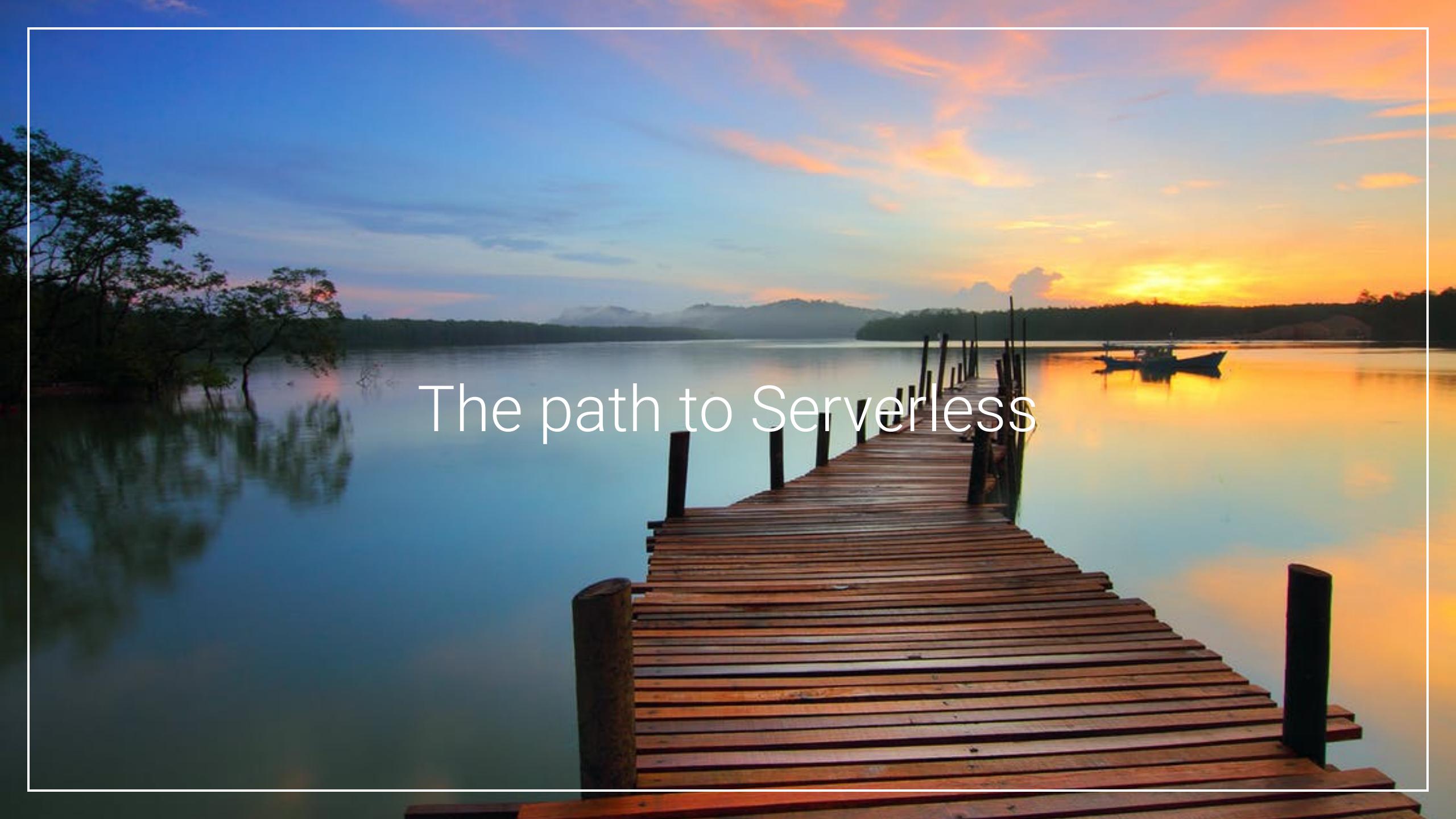


TODO

TODO

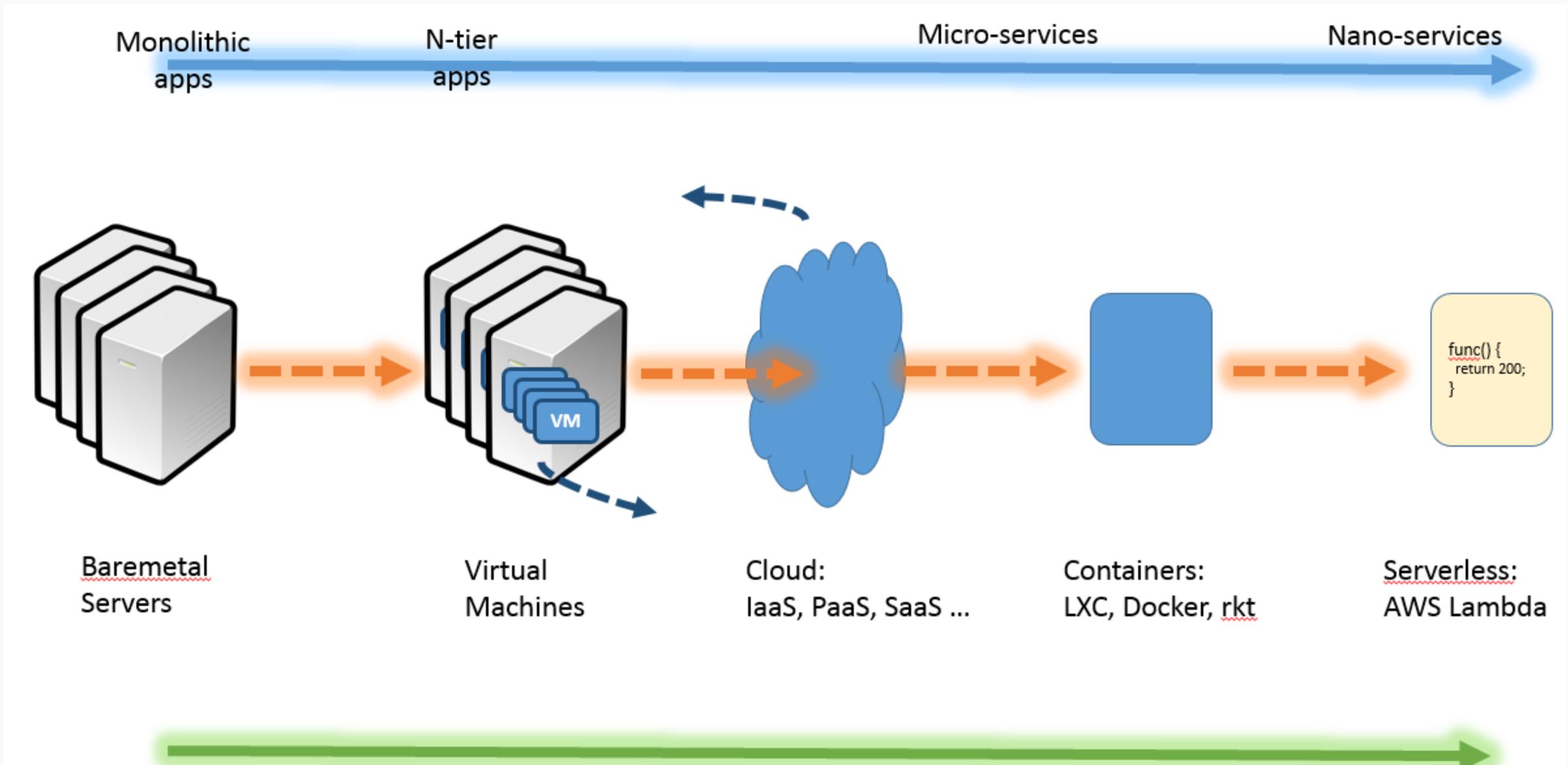


The future of fast-food is Serverless

A photograph of a wooden pier extending from the bottom right towards the center of the frame, set against a backdrop of a calm lake or river. The sky is filled with warm, orange and yellow hues of a setting sun, with some darker clouds on the left. In the distance, a small boat is visible on the water. The overall atmosphere is peaceful and contemplative.

The path to Serverless

Serverless - The making of ...



Serverless - Event Driven Architecture

Browser

Serverless - Characteristics ...



DEVELOPERS

DON'T NEED TO KNOW ABOUT

SERVERS

Provisioning, Scaling, Maintenance



FUNCTIONS

are auto-scaled, load-balanced



RESOURCES

are only allocated on function execution



EVENTS

Functions triggered by

- Browser requests

- Timer events

- File upload events, e.g. to S3



COSTS

are low, based on real resource usage



DURATION

Functions are expected to be short-lived.

Some platforms impose a time limit.



Serverless - Cloud Providers



Serverless: Use Cases



Serverless - Cloud Provider Offerings



AWS LAMBDA



AZURE FUNCTIONS



GOOGLE CLOUD FUNCTIONS





AWS Lambda

- *It all started here ... Introduced as a beta in Nov 2014, stable version by end of 2015. Still the leader.*

Language choices: Node.js (JS), Python, Java 8, C#



Azure Functions

— *Introduced in 2016*

Many language choices: JavaScript, C#,
F#, Python, PHP, Bash, PowerShell ...



Google Cloud Functions

- *Alpha release in Feb 2016.*

Language support:

JavaScript only.



IBM Cloud OpenWhisk

*– Experimental
release in Feb 2016*

*Open Sourced as
Apache OpenWhisk*

Language support: Any



Oracle Fn Project

– *Announced/Open-Sourced Oct 2017 ????*

Previously Iron.io code-base ????

Language support: ????



Spring Cloud Functions

— ????

????

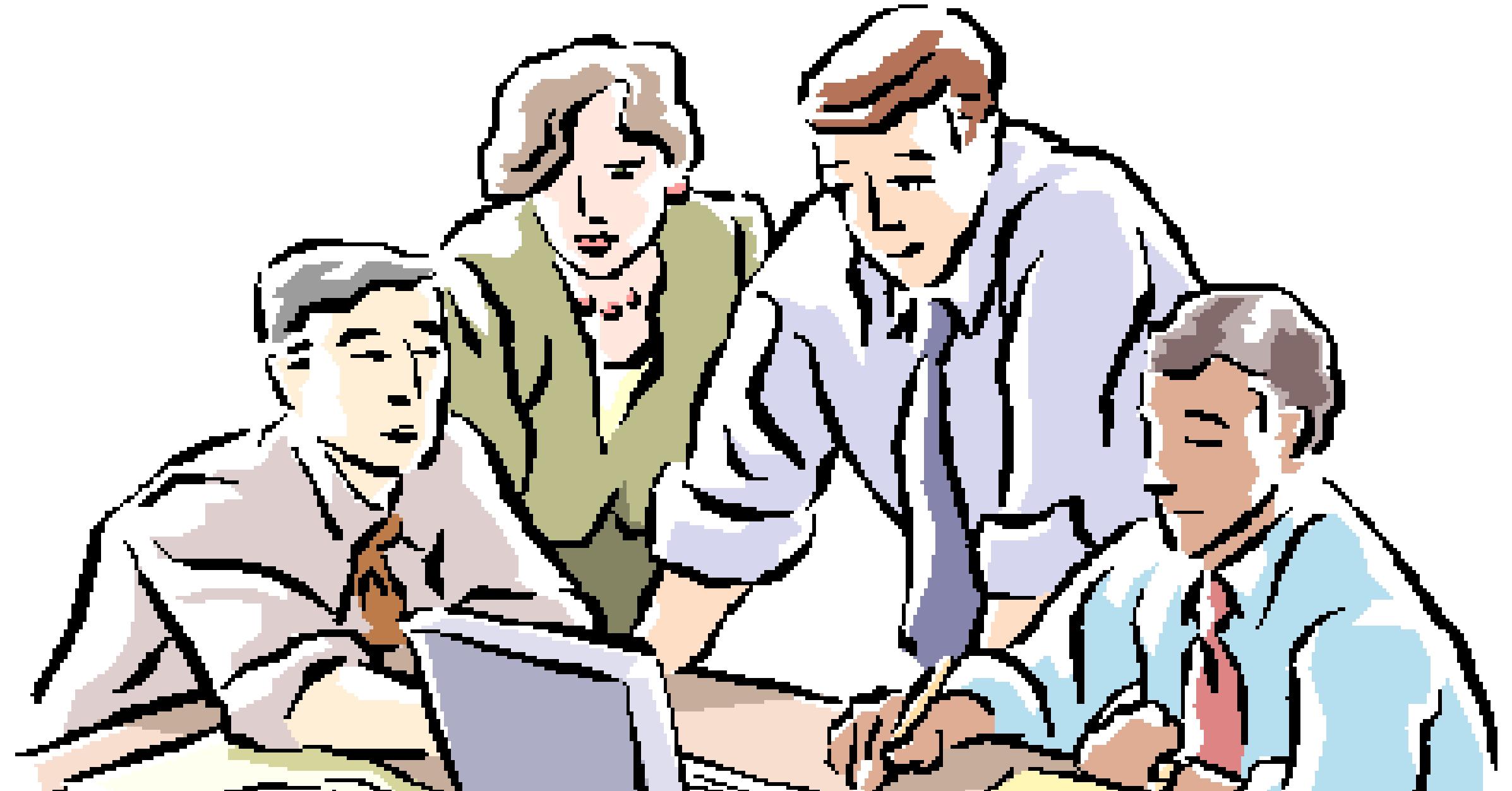
Language

support: ????

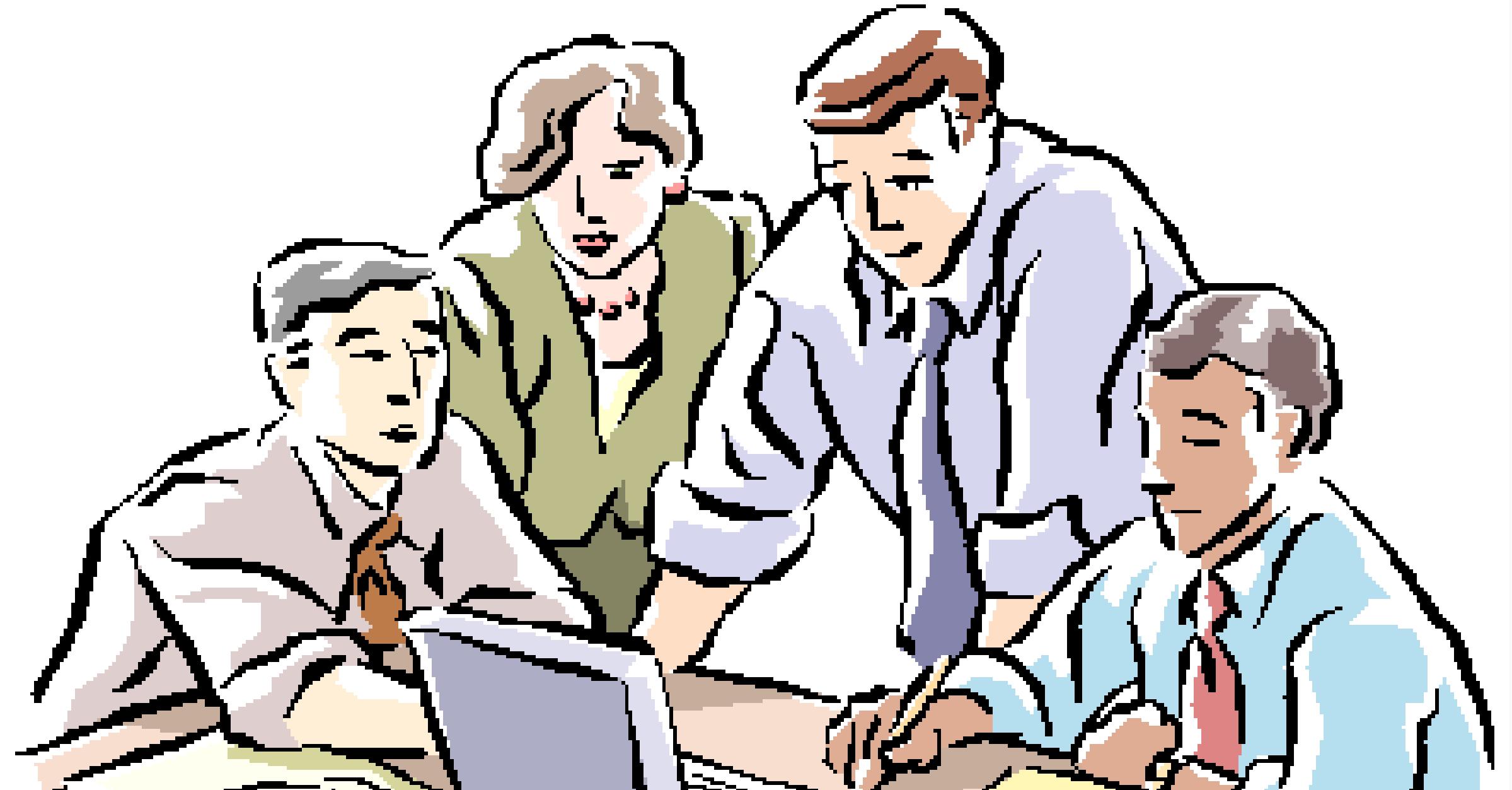
AWS Lambda: Use Case - Smart News



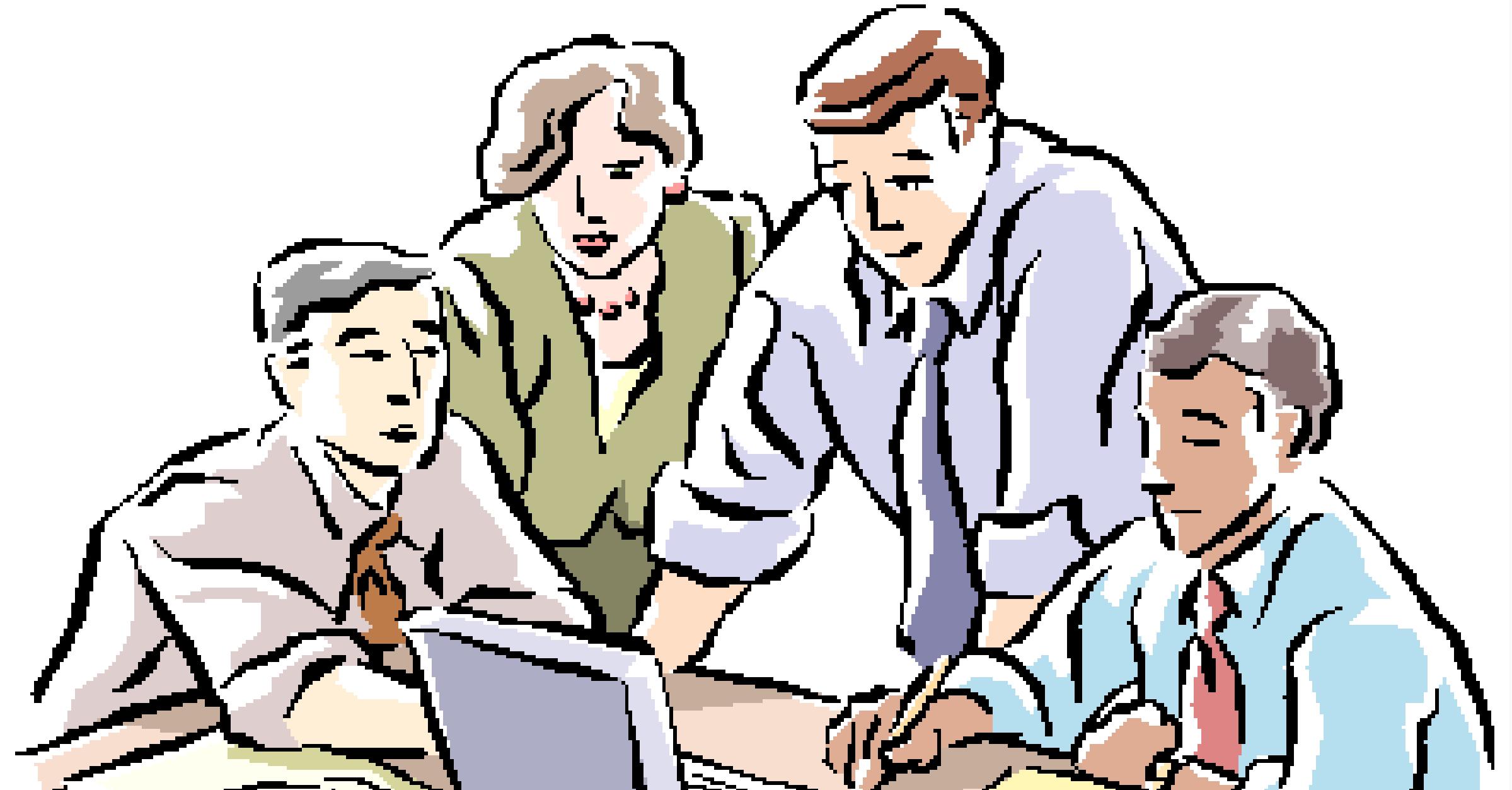
AWS Lambda: Demo - GUI



AWS Lambda: Demo - CLI



AWS Lambda: Demo - API



AWS Lambda: Demo - Chalice Python Wrapper



MS Azure Functions: Demo - ????





Serverless - Tools

Serverless - Open Source tooling ...



SERVERLESS(.COM)



APEX(.COM)



– Open Source project

Deploy to various Cloud Providers:

- - AWS Lambda
- - Azure
- - Google
- - OpenWhisk
- - Kubeless
- - SpotInst

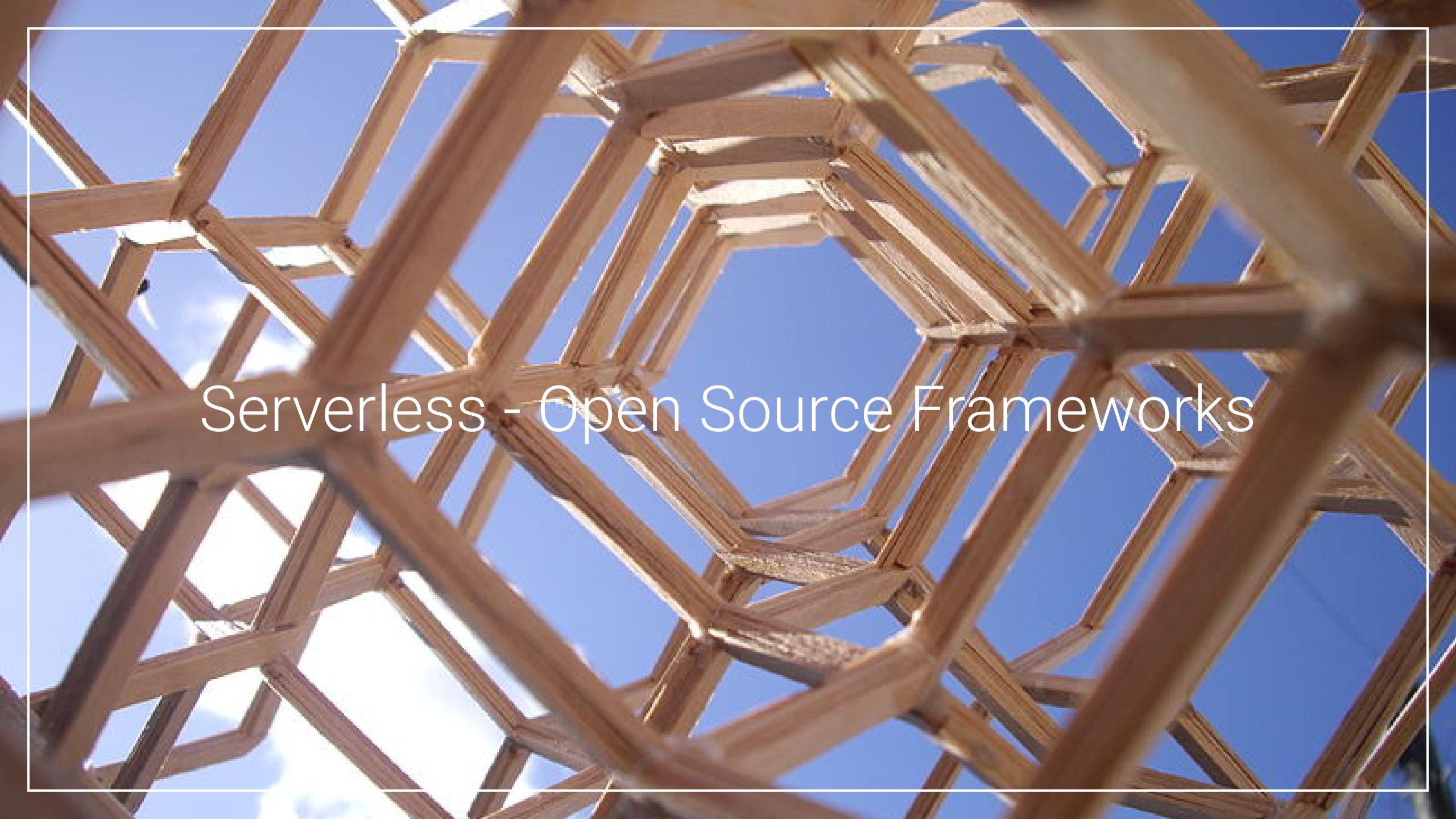


– Open Source project

Deploy to AWS Lambda

*Extend beyond Lambda's natively
supported languages*

- - Go

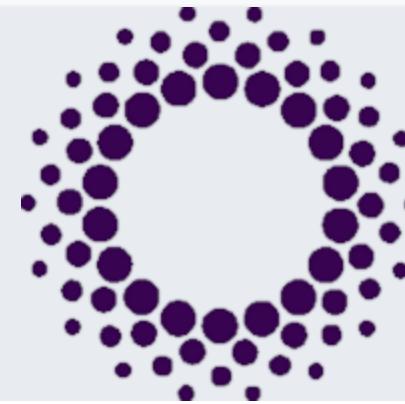
A photograph of a wooden lattice structure, likely a roof or porch, against a clear blue sky. The perspective is looking up through the gaps in the lattice, creating a pattern of hexagonal shapes.

Serverless - Open Source Frameworks

Serverless - Open Source Frameworks



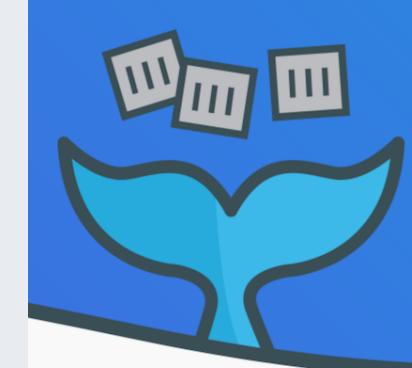
KUBELESS



FISSION



APACHE OPENWHISK



OPENFAAS



Kubeless

– *Bitnami*



Fission.io

—

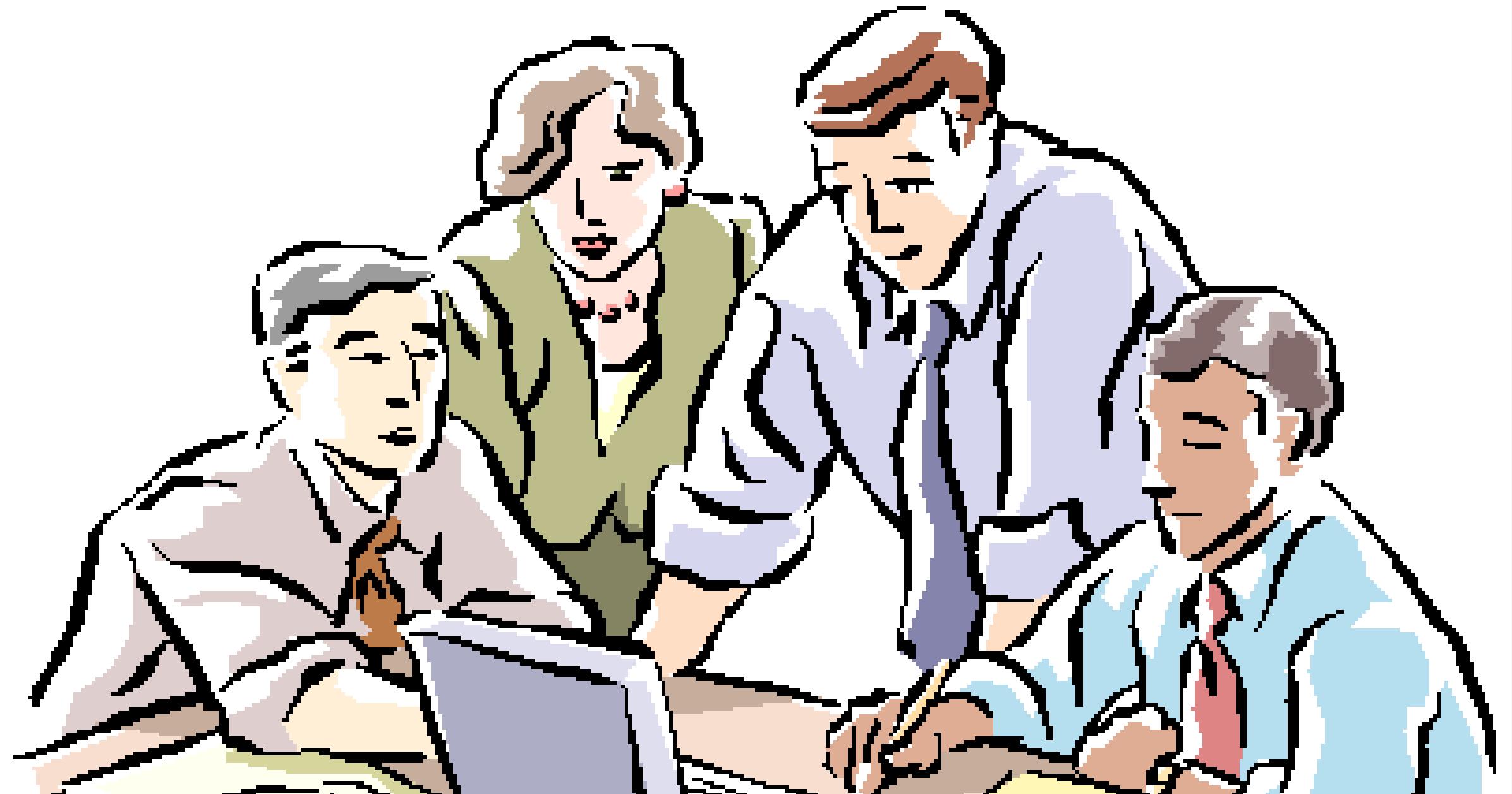
Platform 9



Apache OpenWhisk

— *Open Sourced by IBM*

Open Whisk: Demo - ????

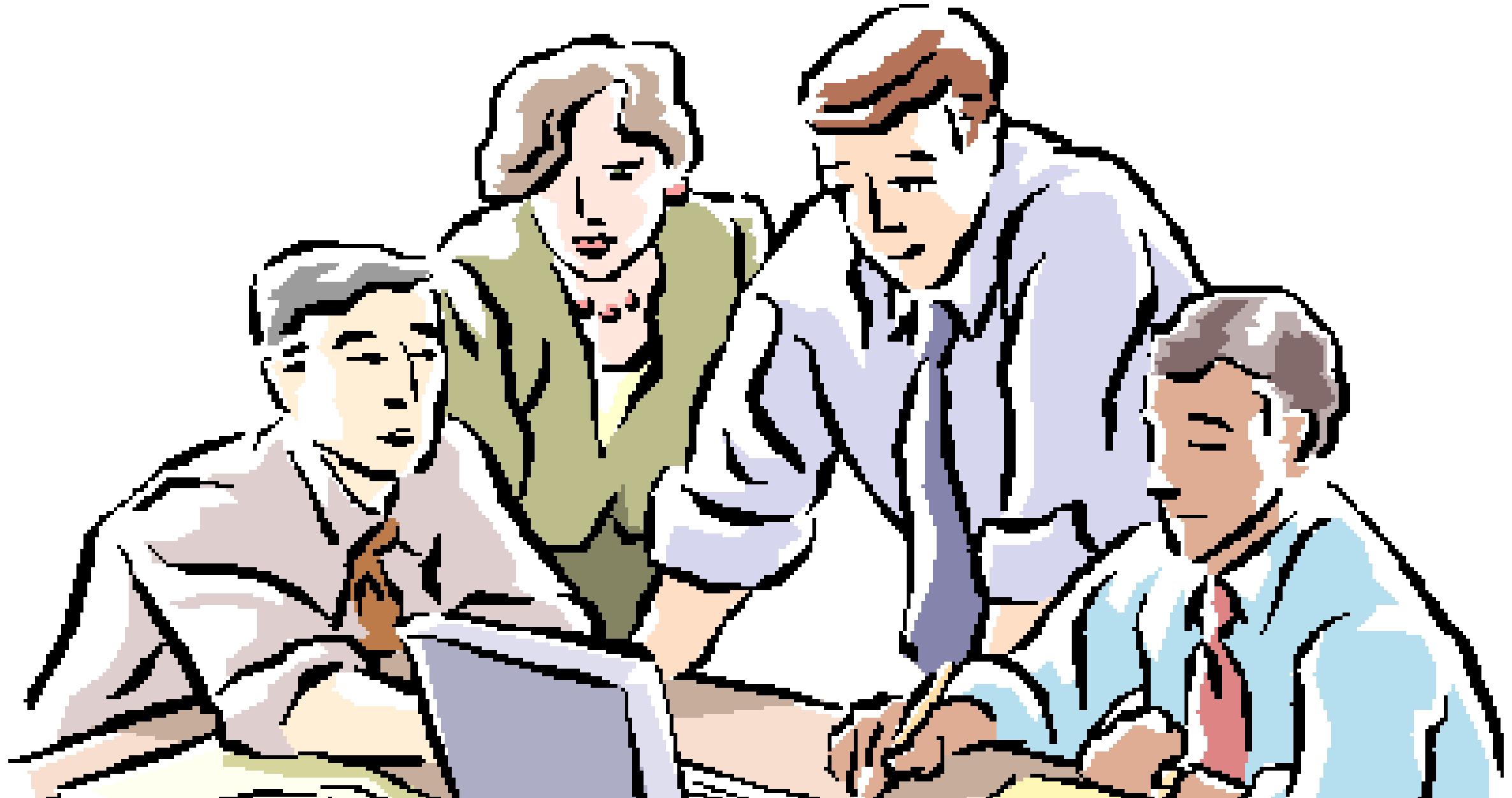




OpenFaaS

- - OpenFaaS based on Docker-Swarm/Compose
- - FaaS-Netes runs on Kubernetes
- - faas-cli: command-line tool
 - *Alex Ellis, Docker Captain*

OpenFaaS: Demo - ????





Serverless Python !!

Chalice

Chalice

- Open sourced by AWS
 - Python/AWS λ

*pip installable module,
command-line tool*

λambdify

Lambdify

—



Zappa.io

- Open sourced by Gun.io -
Python/AWS λ

*pip installable module,
command-line tool*

*Can run Django ... serverless
(?)*

Resources - 1

RESOURCE	DESCRIPTION	URL
Lists		
awesome-serverless	Curated list of awesome services, solutions and resources for serverless / nobackend applications.	[github] anaibol/awesome-serverless
awesome-Serverless(.com)	Curated list of resources related to serverless architectures and the Serverless Framework	[github] JustServerless/awesome-serverless
Tools		
Serverless	Tools for deploying to several Cloud Providers	[github] serverless/serverless
Apex	Tools for deploying to AWS Lambda	[github] apex/apex

Resources - 2

RESOURCE	DESCRIPTION	URL
Cloud Providers		
AWS Lambda	Amazon's Serverless Platform	https://aws.amazon.com/fr/lambda/
Azure Functions	Microsoft's Serverless Platform	https://azure.microsoft.com/en-us/services/functions/
Google Cloud Functions	Google's Serverless Platform	https://cloud.google.com/functions/
IBM BlueMix OpenWhisk	IBM's Serverless Platform	https://www.ibm.com/cloud-computing/bluemix/openwhisk

Resources - 3

RESOURCE	DESCRIPTION	URL
Open Source Serverless Platforms		
Kubeless	Serverless platform from Bitnami	url
Fission.io	Serverless platform from Platform9	url
Apache OpenWhisk	Serverless platform from IBM	url
OpenFaaS	Serverless platform from Alex Ellis, Docker Captain	url
Serverless Python Frameworks		
Apex	Serverless framework supporting Python and other languages	url
Chalice	Serverless framework supporting Python / Flask	url
Lambdify	Serverless framework supporting Python	url
Zappa	Serverless framework supporting Python / WSGI	url



Thanks !

@mjbright

