

# FaaS


Serverless（无服务器架构）指的是由开发者实现的服务端逻辑运行在无状态的计算容器中，它由事件触发，完全被第三方管理，其业务层面的状态则被开发者使用的数据库和存储资源所记录。

Serverless Cloud Native Landscape  
2018-11-08T02:39:47Z 3a3d845


See the serverless interactive display at [s.cncf.io](https://s.cncf.io)

Greyed logos are not open source


Tools



Security

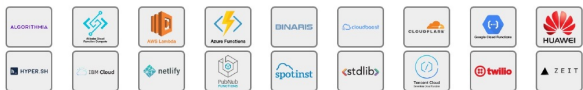


Framework





Platform

Hosted




Installable






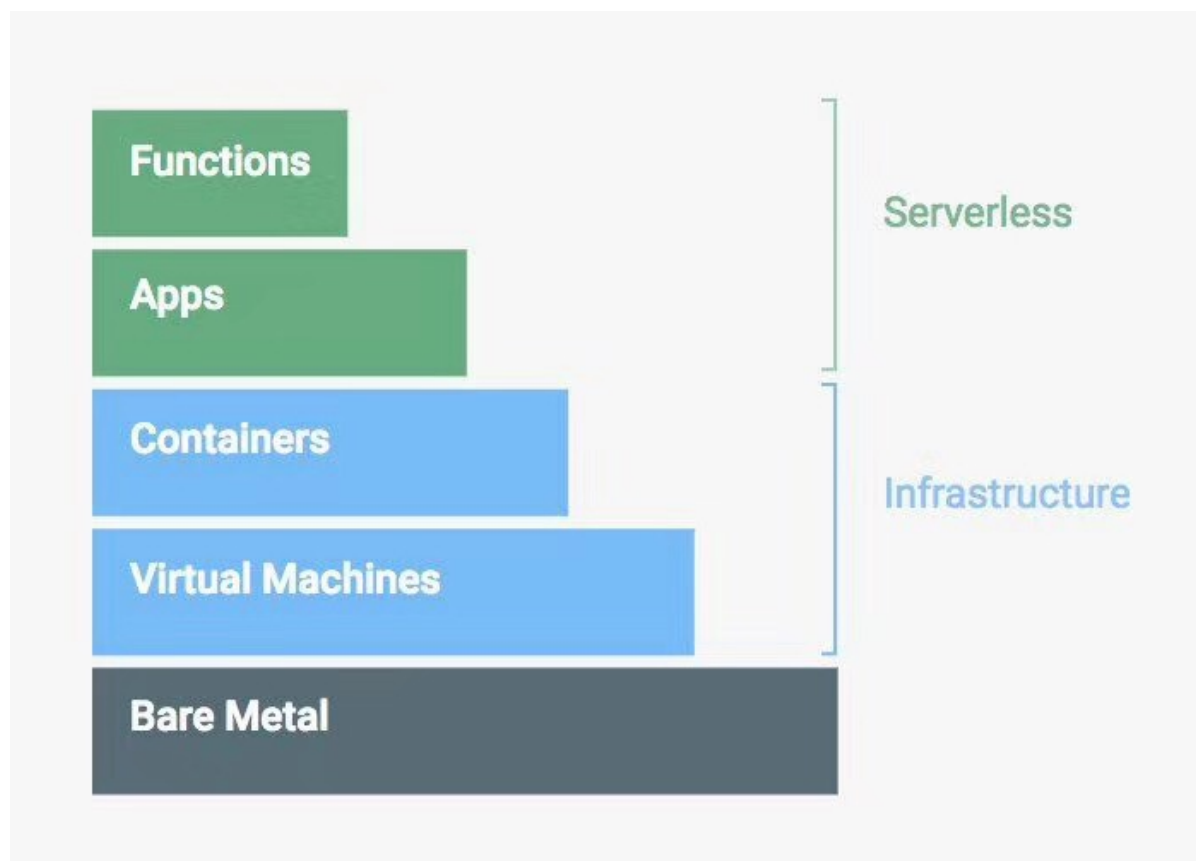
s.cncf.io

Serverless computing refers to a new model of cloud native computing, enabled by architectures that do not require server management to build and run applications. This landscape illustrates a finer-grained deployment model where applications, bundled as one or more functions, are uploaded to a platform and then executed, scaled, and billed in response to the exact demand needed at the moment



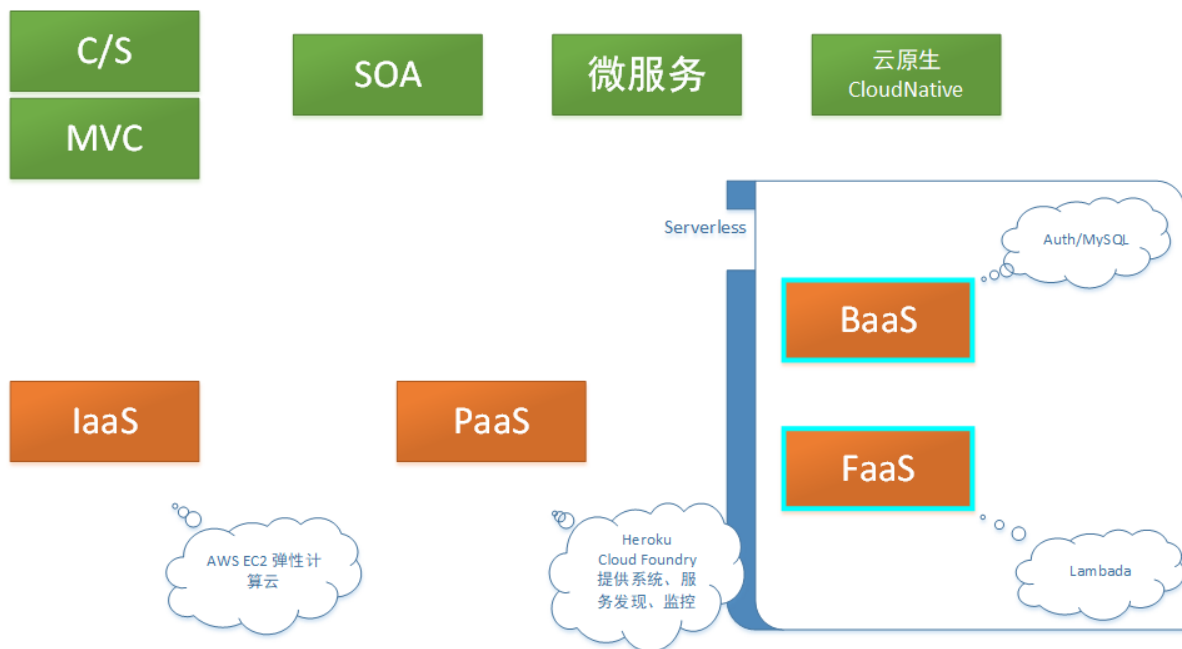


serverless与容器虚拟机分层概念：



NO SILVER BULLET! NO SILVER BULLET! NO SILVER BULLET!

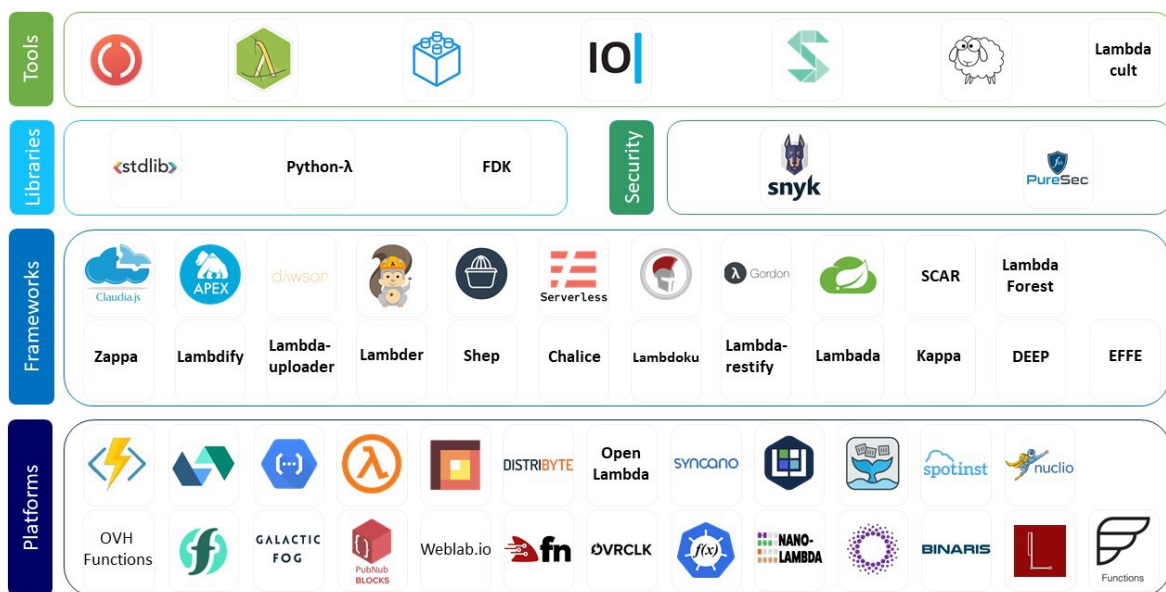
云计算的发展过程



Function-as-a-Service景观图 (图片来自

<https://github.com/amyers1793/FunctionasaServiceLandscape>)

## Function-as-a-Service Landscape



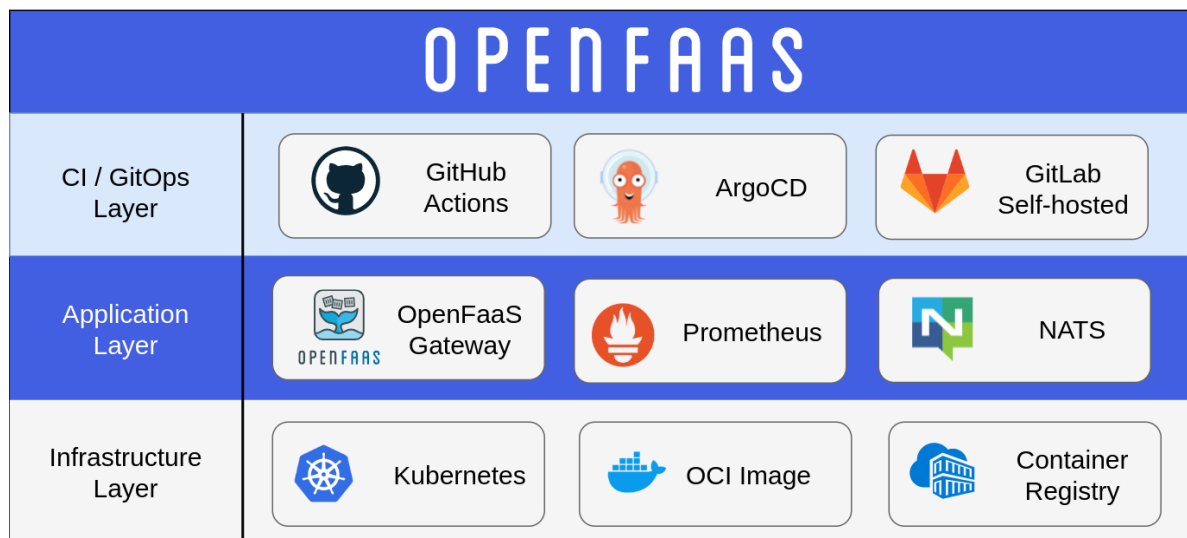
FaaS本质上是一种事件驱动的由消息触发的服务，FaaS供应商一般会集成各种同步和异步的事件源，通过订阅这些事件源，可以突发或者定期的触发函数运行。

基于K8S的无服务FaaS框架有：

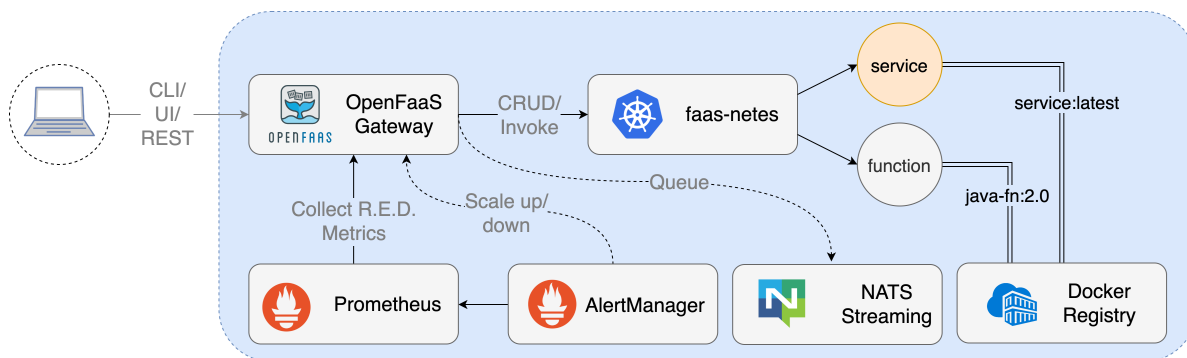
- [faas-netes](https://github.com/alexellis/faas) - Enable Kubernetes as a backend for Functions as a Service (OpenFaaS) <https://github.com/alexellis/faas>
- [fn](http://fnproject.io) - The container native, cloud agnostic serverless platform. <http://fnproject.io>
- [funktion](https://funktion.fabric8.io/) - a CLI tool for working with funktion <https://funktion.fabric8.io/>
- [fx](https://fxproject.io/) - Poor man's serverless framework based on Docker, Function as a Service with painless.
- [IronFunctions](http://iron.io) - IronFunctions - the serverless microservices platform. <http://iron.io>
- [kubeless](http://kubeless.io) - Kubernetes Native Serverless Framework <http://kubeless.io>
- [nuclio](https://nuclio.io) - High-Performance Serverless event and data processing platform
- [✱ OpenFaaS](http://blog.alexellis.io/introducing-functions-as-a-service/) - OpenFaaS - Serverless Functions Made Simple for Docker & Kubernetes <http://blog.alexellis.io/introducing-functions-as-a-service/>

- [OpenWhisk](#) - Apache OpenWhisk (Incubating) is a serverless, open source cloud platform that executes functions in response to events at any scale.
- [Knative](#) - Kubernetes-based platform to deploy and manage modern serverless workloads.

## OpenFaaS



- 持续集成层 CI / GitOps layer
- 应用层们(<https://docs.openfaas.com/architecture/stack/#application-layer>)
  - [The OpenFaaS gateway](#) 提供管理函数的RESTAPI.
  - [NATS](#) 异步函数队列
  - [Prometheus](#) 提供指标
- 基础设施层: Kubernetes、Pod、Container Registry

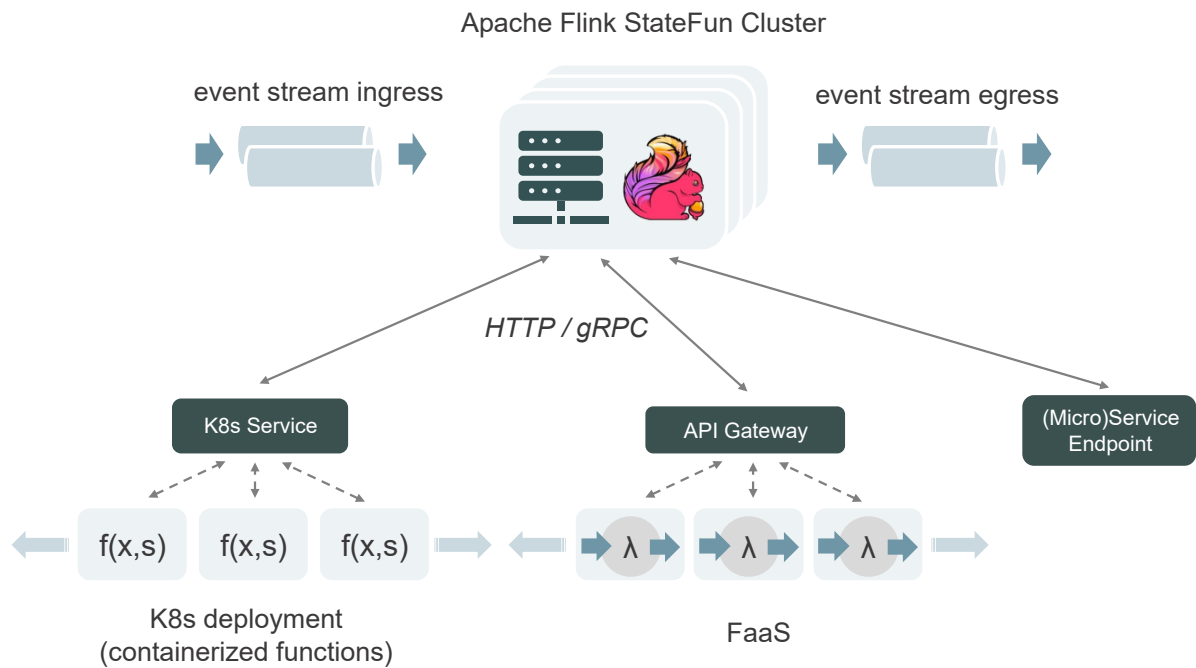


[faas-netes](#) 是OpenFaaS最受欢迎的编排提供者。 [<https://github.com/openfaas/faas-netes>]

自动伸缩:

-	-
com.openfaas.scale.max	最大副本数
com.openfaas.scale.min	最小副本数
com.openfaas.scale.zero	是否运行副本数为0
com.openfaas.scale.zero-duration	空闲多久后将副本置为0
com.openfaas.scale.target	每个副本调节的目标负载 50
com.openfaas.scale.target-proportion	目标副本占比 0.90
com.openfaas.scale.type	调节模式 rps , capacity , cpu rps: 函数每秒处理完成的请求数 capacity: inflight requests的个数

## Flink Stateful Functions



- Ingress
- Egress

## References

jimmysong <https://jimmysong.io/kubernetes-handbook/usecases/openfaas-quick-start.html>  
 Official <https://docs.openfaas.com/architecture/stack/>