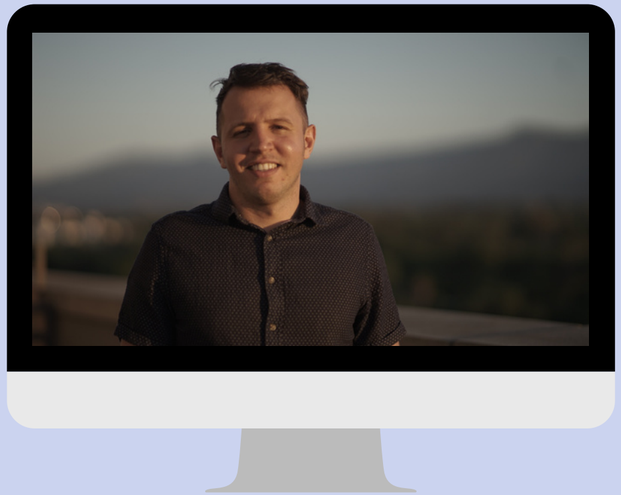
Intro to Service Mesh



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Contributor @ Meshery

OPENGOV

goup

JOBHAX

Metabob

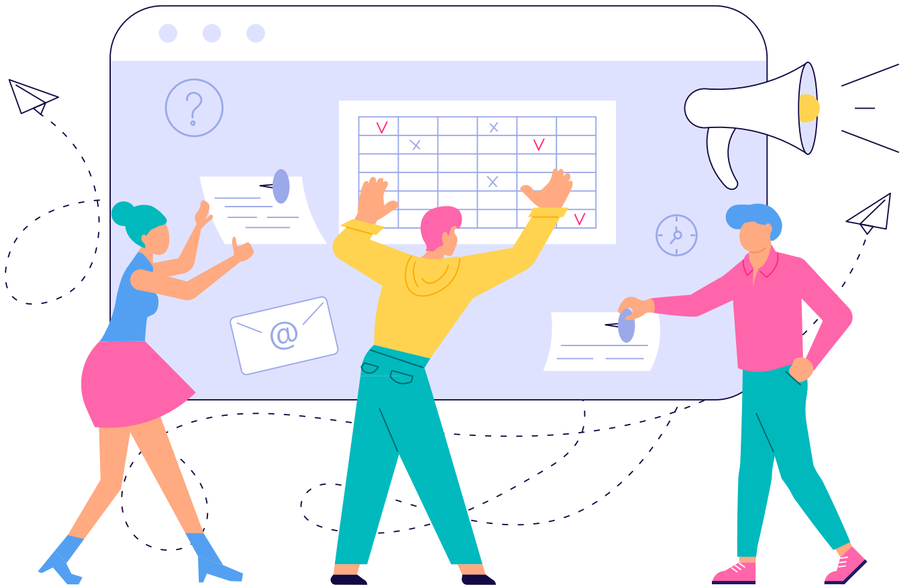
Host hero:
Kunal Kushwaha

June 25th 09AM PST

Hosted by

MLH
MAJOR LEAGUE HACKING

Agenda



QUOTE OF THE SESSION

By the time we finish, the content maybe obsolete.

- **09:00–09:10 | Kickoff**
  - Introduction
  - Chit Chat
- **09:10-09:40 | Presentation**
  - Speaker
- **09:40-09:45 | Break**
  - Pre Q&A
- **09:45-10:00 | Q&A**
  - Discussion
- **10:00-10:05 | Wrap Up**
  - Contact Speaker

Are you ready?

Let's Begin!

CHIT CHAT

Presentation

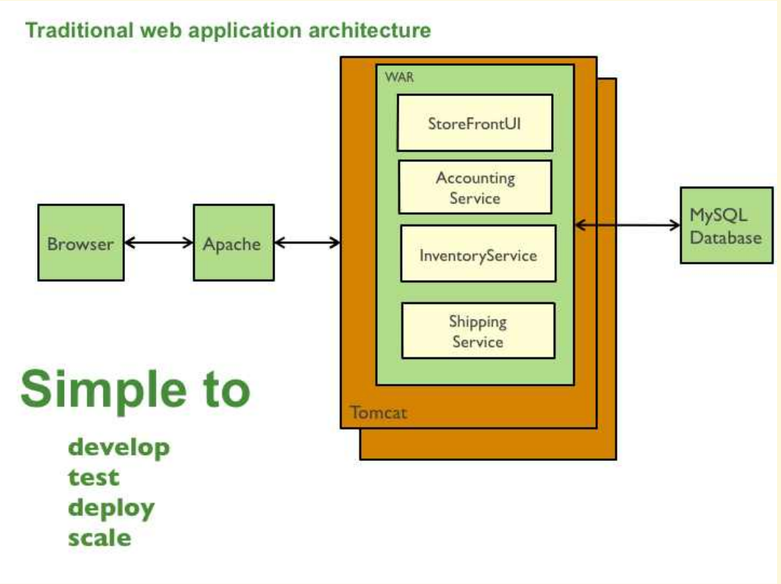
- **Codebase** - One codebase tracked in revision control, many deploys
- **Dependencies** - Explicitly declare and isolate dependencies
- **Config** - Store config in the environment
- **Backing services** - Treat backing services as attached resources
- **Build, release, run** - Strictly separate build and run stages
- **Processes** - Execute the app as one or more stateless processes
- **Port binding** - Export services via port binding
- **Concurrency** - Scale out via the process model
- **Disposability** - Maximize robustness with fast startup and graceful shutdown
- **Dev/prod parity** - Keep development, staging, and production as similar as possible
- **Logs** - Treat logs as event streams
- **Admin processes** - Run admin/management tasks as one-off processes

— 12 Factor App Development

LINK: HTTPS://12FACTOR.NET

Monolithic Architecture - a single-tiered application in which the user interface and data access code are combined into a single platform that are simple to:

- Develop
- Test
- Deploy
- Scale

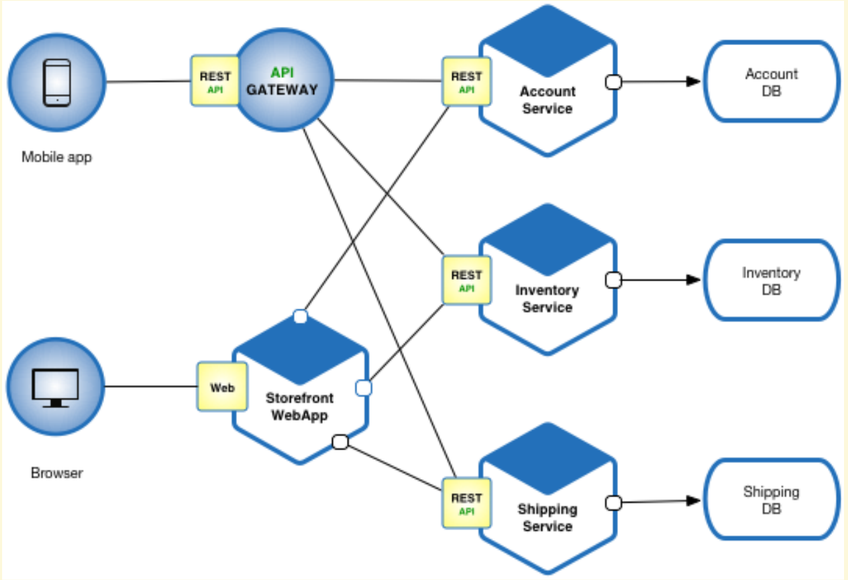


—What are monolithic apps?

LINK: HTTPS://MICROSERVICES.IO

Microservices architecture – is an architectural style that structures an application as a collection of services that are:

- Highly maintainable and testable
- Loosely coupled
- Independently deployable
- Organized around business capabilities
- Owned by a small team



—What are microservices?

LINK: HTTPS://MICROSERVICES.IO

Kubernetes - System for automating deployment, scaling, management of containerized apps.

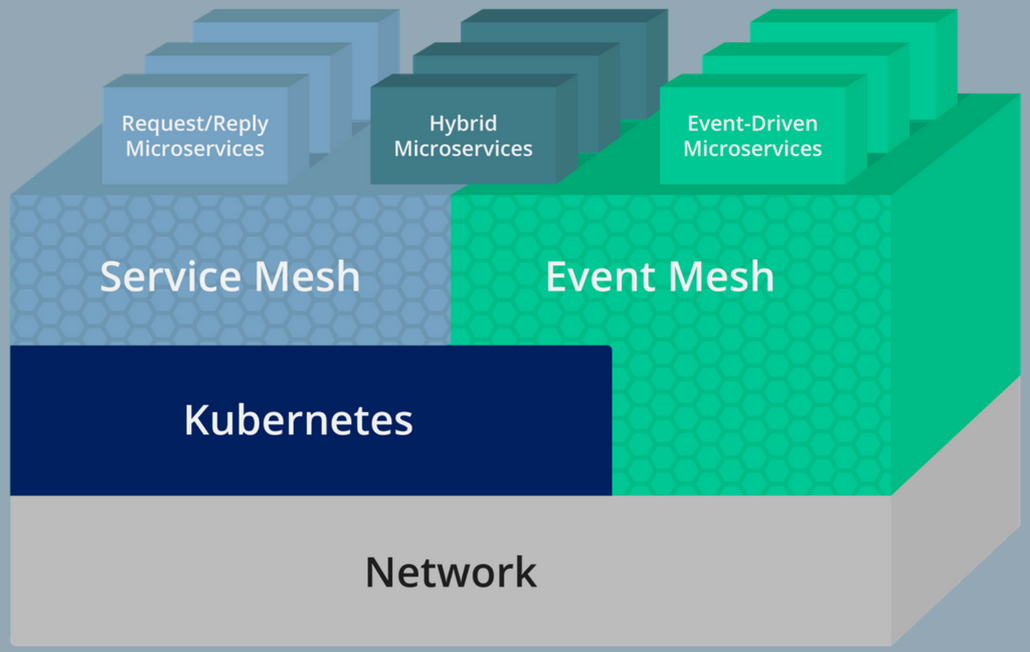
- Automated rollouts and rollbacks
- Storage orchestration
- Automatic bin packing
- IPv4/IPv6 dual-stack
- Self-healing
- Service discovery and load balancing
- Secret and configuration management
- Batch execution
- Horizontal scaling
- Designed for extensibility

—What is k8s?

LINK: HTTPS://KUBERNETES.IO

Service mesh – infrastructure layer for microservices that makes communication between services controlled, secure and visible.

- Service discovery
- Load balancing
- Encryption
- Authentication and authorization
- Circuit breakers and rate limiting
- Timeouts and retries
- Tracing
- Traffic mirroring
- Inject failure and delays

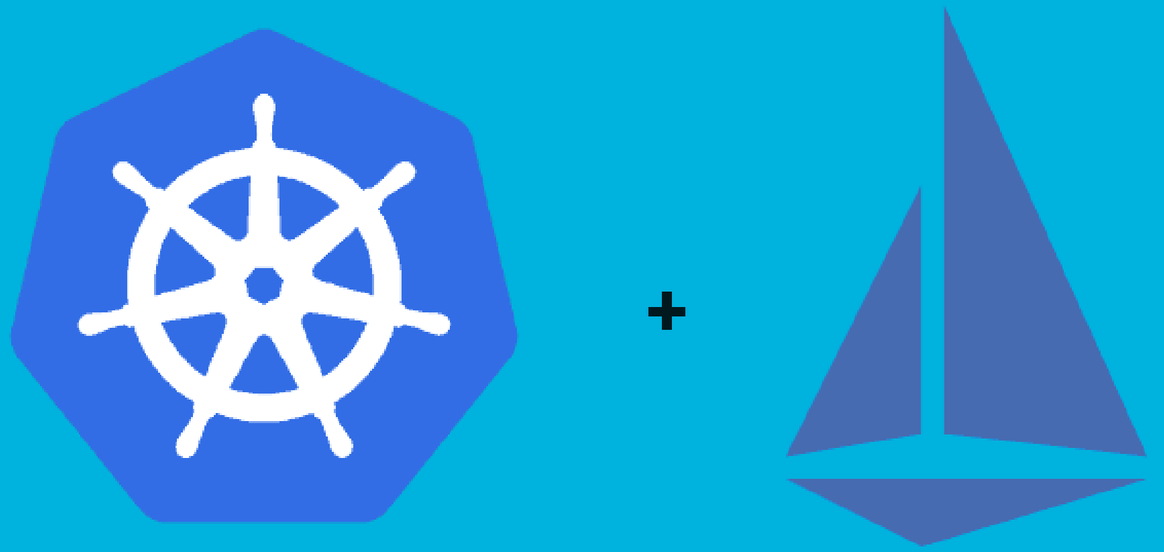


—What is service mesh?

LINK: HTTPS://LAYER5.IO

Istio - service mesh that extends Kubernetes to establish a programmable, application-aware network using the powerful Envoy service proxy.

- Traffic Management
- Security
- Observability
- Extensibility

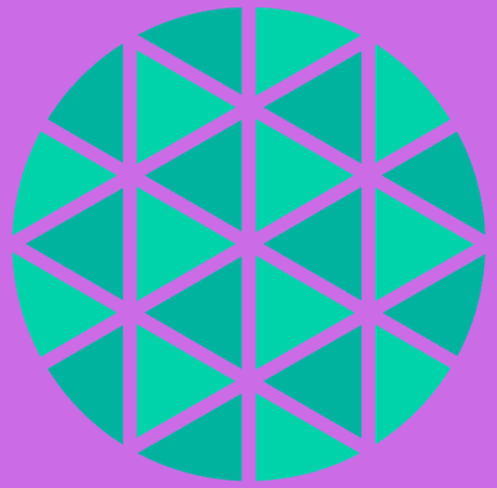


—What is Istio?

LINK: HTTPS://ISTIO.IO

Layer5 - represents the largest collection of service mesh projects and their maintainers.
Meshery - multi-service mesh management plane offering lifecycle, configuration, and performance management of service meshes and their workloads.

- Service Mesh Lifecycle Management
- Service Mesh Configuration Management
- Adhering to Service Mesh Standards



MESHERY

LAYER5
THE SERVICE MESH COMPANY

—What is Meshery?

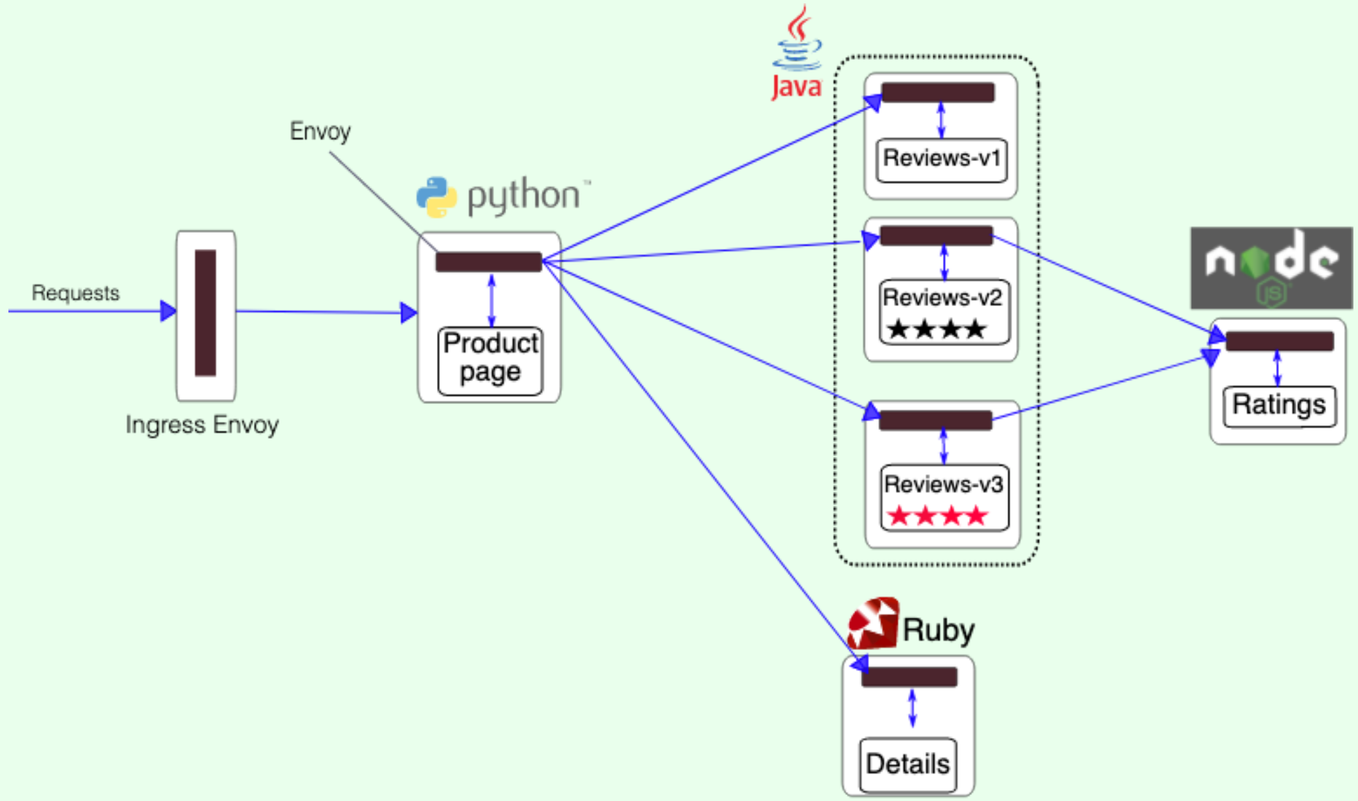
LINK: HTTPS://LAYER5.IO

Demo

Docker +
K8s +
Meshery+
Istio

Deploying the application

1. Install Meshery
2. Install Istio
3. Install Application



Wrap Up

Remember!

- Re-Search
- Be short and clear
- Re-mind
- Q&A over Slack

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Thank You