



INTRODUCTION TO

ISTIO

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WHAT IS ISTIO?

**ISTIO IS AN OPEN PLATFORM-INDEPENDENT
SERVICE MESH DESIGNED TO MANAGE
COMMUNICATIONS BETWEEN MICROSERVICES AND
APPLICATIONS IN A TRANSPARENT WAY.**

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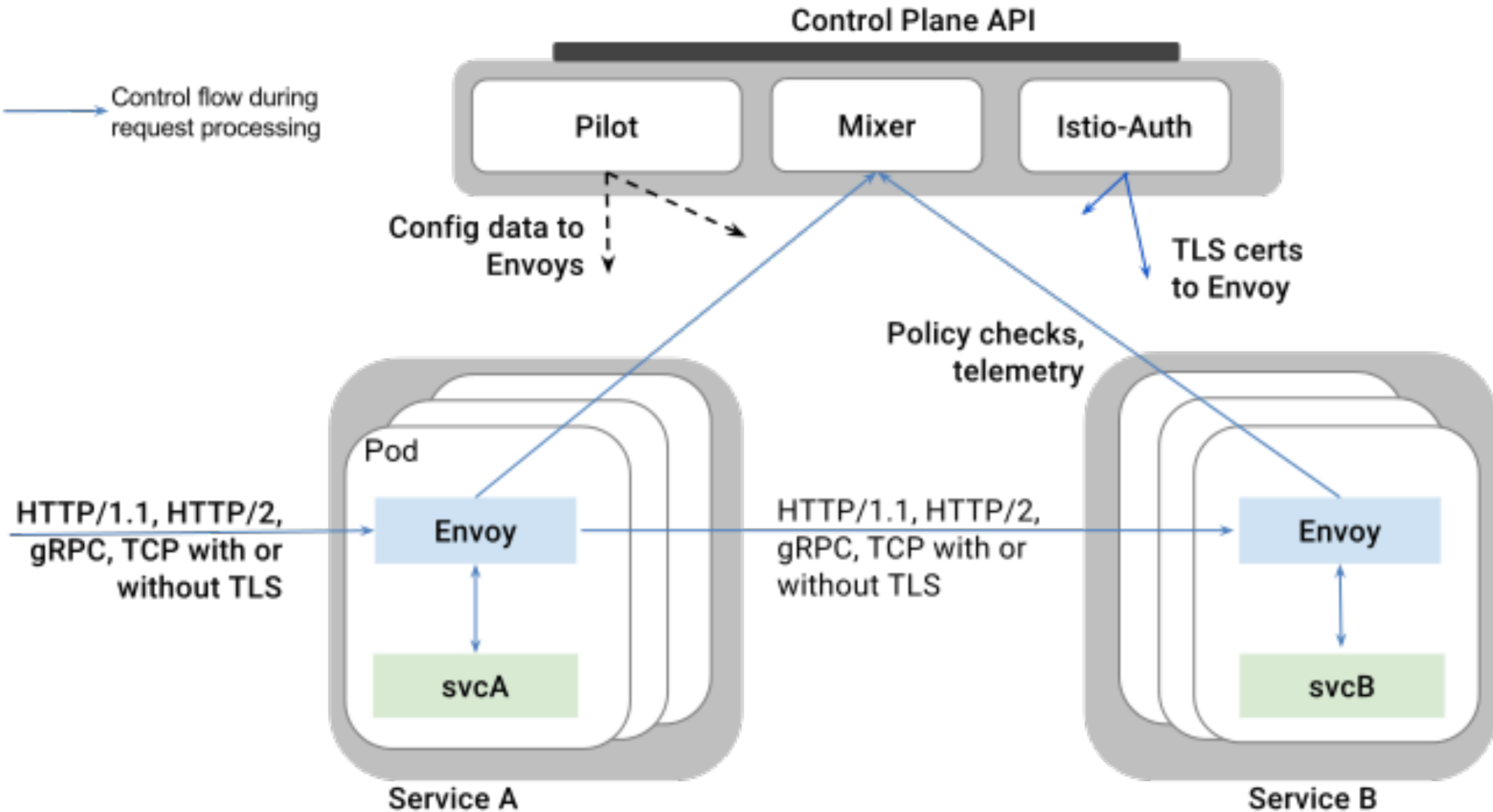
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WHAT DOES ISTIO PROVIDE?

- ▶ Authentication
- ▶ Secure communication
- ▶ Load balancing
- ▶ Traffic routing
- ▶ Metrics
- ▶ Polyglot
- ▶ Quotas
- ▶ Rate limiting
- ▶ Circuit breakers
- ▶ Automatic retries
- ▶ Tracing
- ▶ Transparent integration

ISTIO DIAGRAM



ISTIO COMPONENTS

- ▶ Istioctl
- ▶ Envoy
- ▶ Mixer
- ▶ Pilot
- ▶ Istio-Auth

ISTIO COMPONENTS

- ▶ **Istioctl** Istio configuration command line utility
- ▶ Envoy Allows to create, modify and delete istio configurations.
- ▶ Mixer
- ▶ Pilot
- ▶ Istio-Auth

ISTIO COMPONENTS

- ▶ Istioctl Envoy proxy, a high-performance proxy.
- ▶ **Envoy** Dynamic service discovery, load balancing, TLS termination, HTTP/2 & gRPC proxying, circuit breakers, health checks ...
- ▶ Mixer
- ▶ Pilot
- ▶ Istio-Auth

ISTIO COMPONENTS

- ▶ Istioctl

- ▶ Envoy

- ▶ **Mixer**

- ▶ Pilot

- ▶ Istio-Auth

Mixer enforces access control and usage policies, collects telemetry data.

ISTIO COMPONENTS

- ▶ Istioctl
 - ▶ Envoy
 - ▶ Mixer
 - ▶ **Pilot**
 - ▶ Istio-Auth
- Pilot collects and validates configuration, and propagates it to the envoy proxy

ISTIO COMPONENTS

▶ Istioctl

▶ Envoy

▶ Mixer

▶ Pilot

▶ **Istio-Auth**

Istio-Auth provides service-to-service and end-user authentication using mutual TLS.

ISTIO “ADDONS”

- ▶ Prometheus
- ▶ Zipkin
- ▶ Grafana
- ▶ ServiceGraph

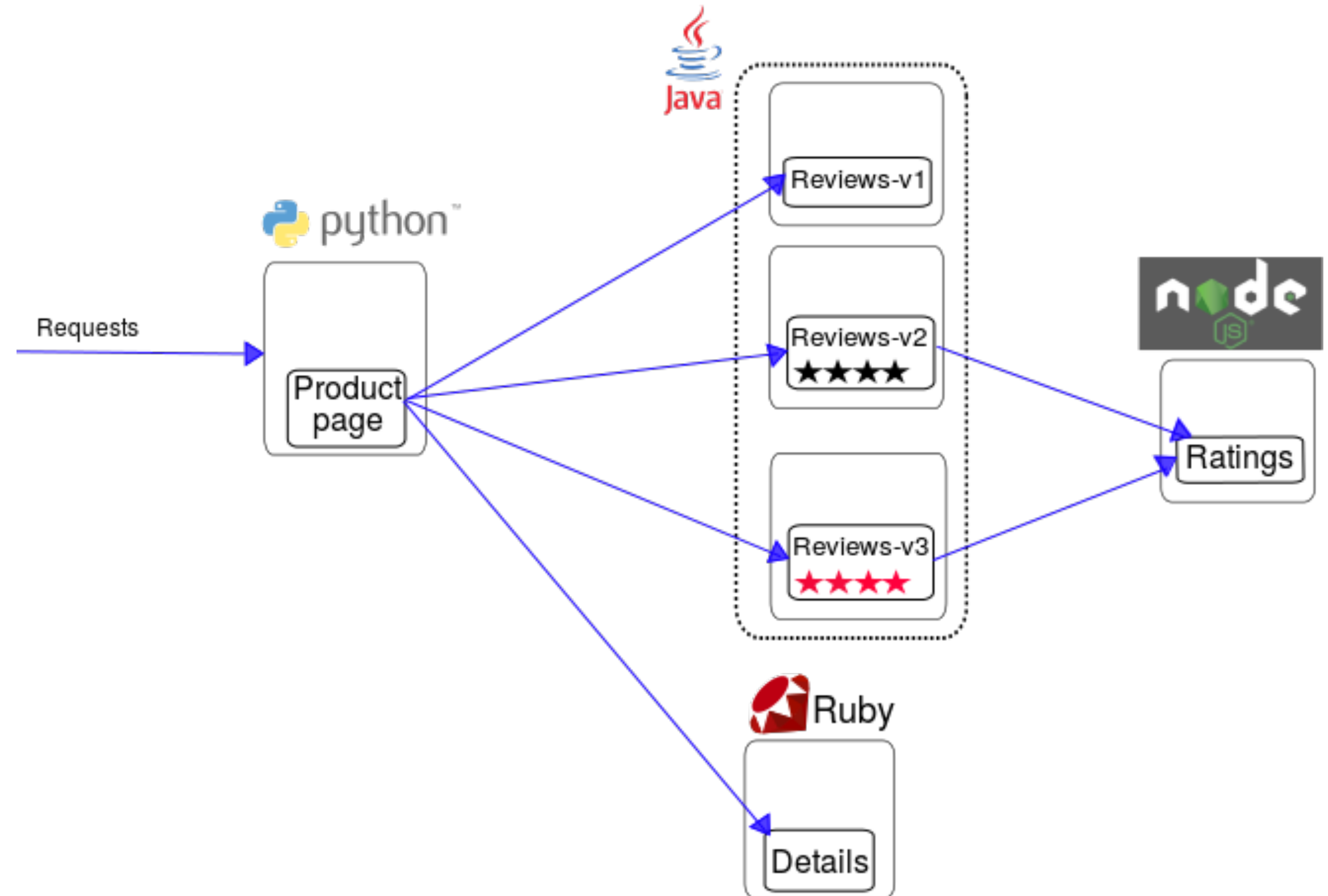


DEMO

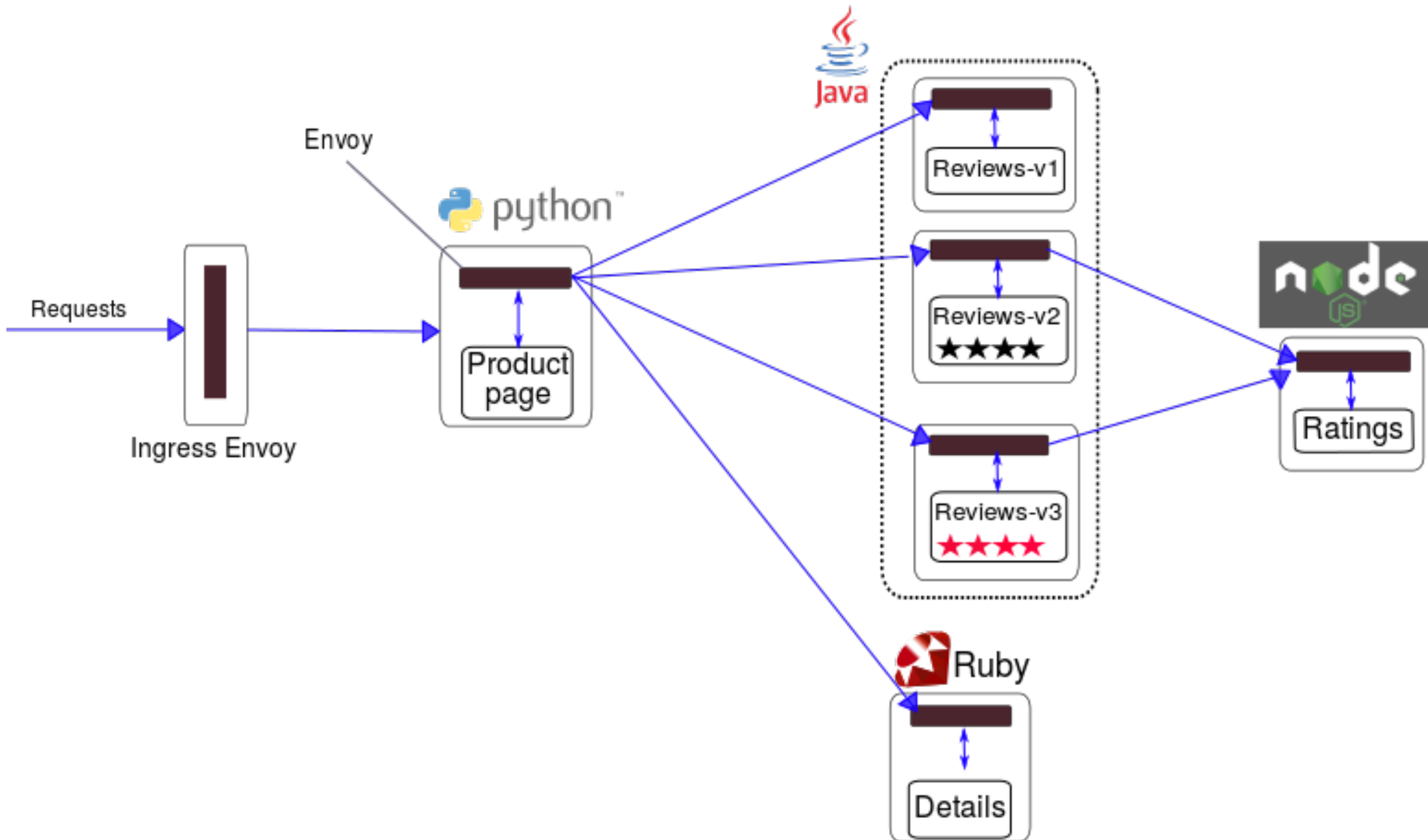
DEMO ENVIRONMENT

- ▶ Openshift v1.5.1
- ▶ Kubernetes v1.5.2
- ▶ Istio 1.6
- ▶ Docker 17.03.1-ce

BOOKINFO APP *NO ISTIO*



BOOKINFO APP *ISTIO*



THANKS!



Most of the content has been extracted from <https://istio.io/docs>

Some specific commands for openshift have been extracted from <https://github.com/debianmaster/openshift-examples/tree/master/istio>