OpenShift Service Mesh on Multi - Cloud Environments

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Multi - Cloud

The Goal

- Deliver a Multi-Cloud web application architecture, using F5 BIG-IP, DNS, F5 BIG-IP Controller for OpenShift, and F5 Aspen Mesh – Istio.

- Deploy OpenShift Clusters and F5 Infrastructure with Ansible Tower running on premises, in Azure, and in AWS.

Space

Reality

Soul

BIG-IP

Mind

Time

RED HAT OPENSHIFT

ASPEN MESH

Power

The Gauntlet


ELIMINATE HALF OF
ALL MONOLITHIC APPS
WITH A SNAP
OF THE FINGERS
imgflip.com

BIG-IP DNS

Ansible Tower

RHEL Atomic Host

Microsoft Azure

On Premises Private Cloud

TMSH2iApp

BIG-IP

Multi-Cloud

OpenShift Container Platform

BIG-IP Controller for OpenShift

iRulesLX

AWS

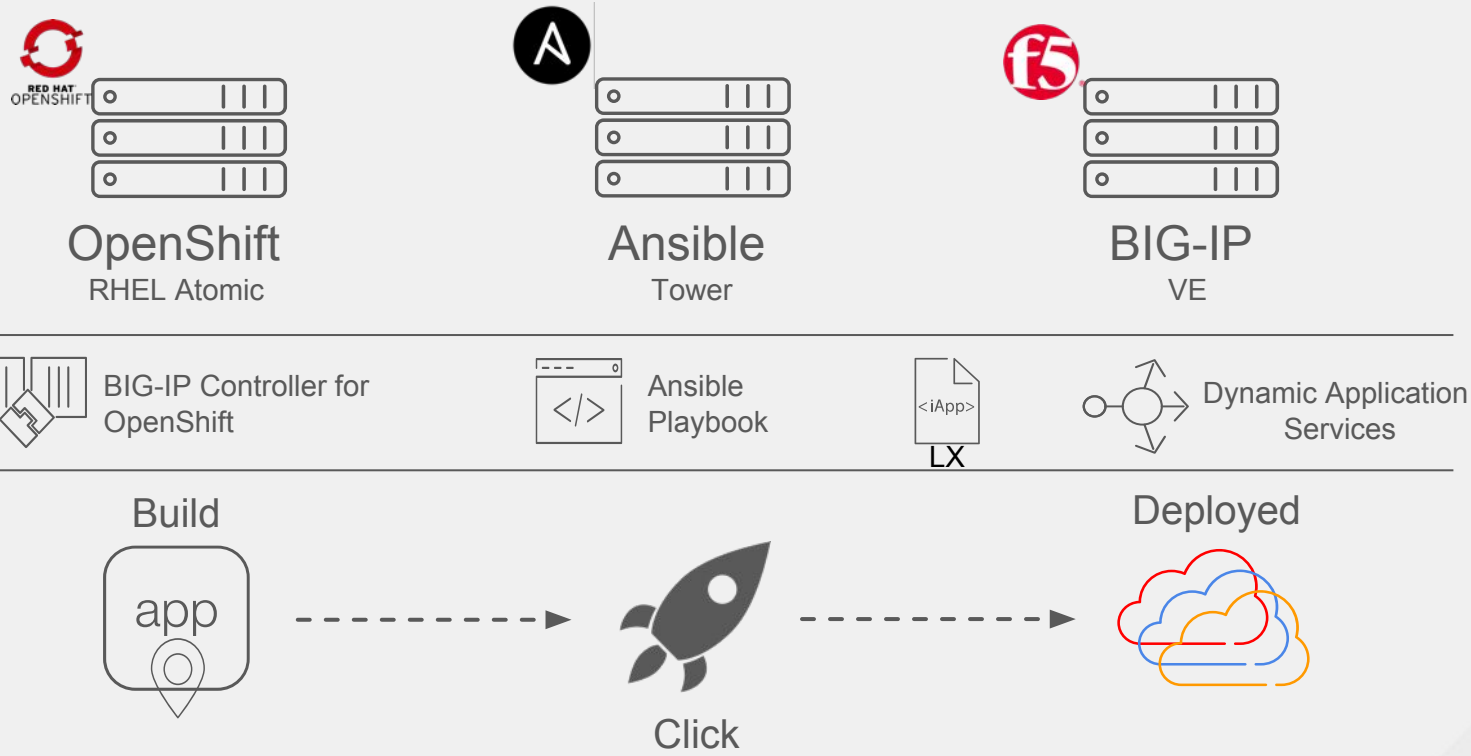
iApps

Enterprise eCommerce app

Aspen Mesh - F5 Incubation of an Istio Service Mesh

Head Start
(Ansible Demo)

Applications



Demo 1

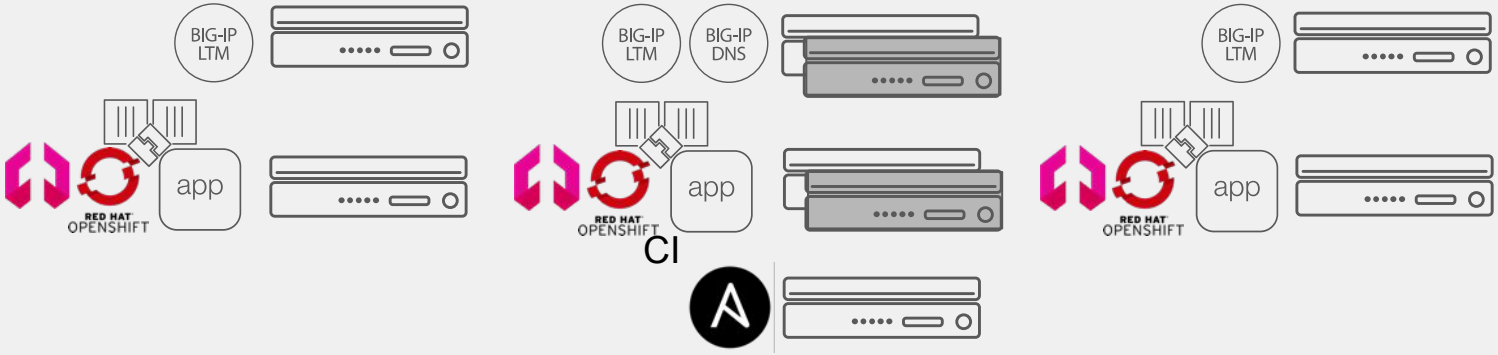
Architecture

Applications & Infrastructure

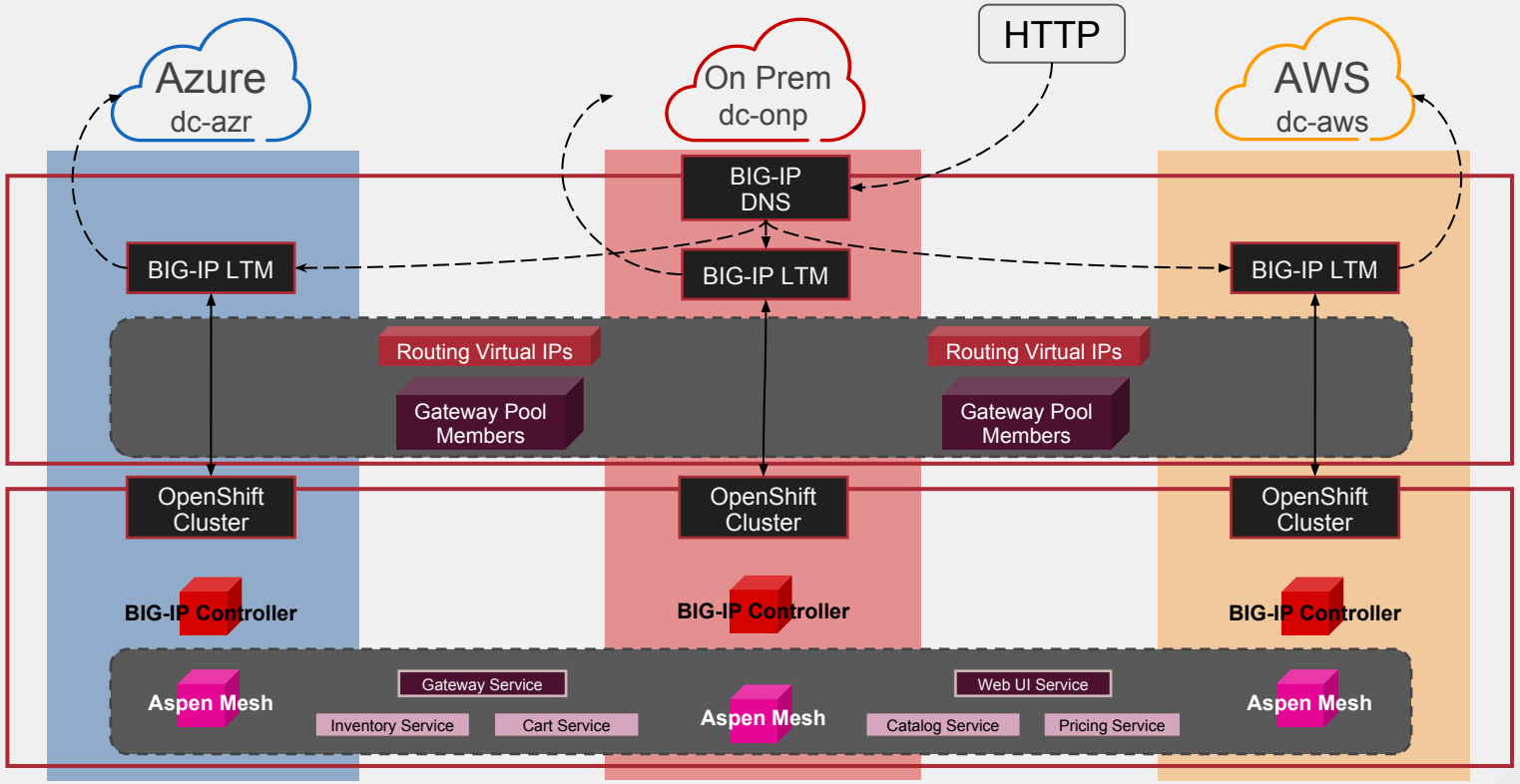
Azure
dc-azr

On Premises
dc-onp

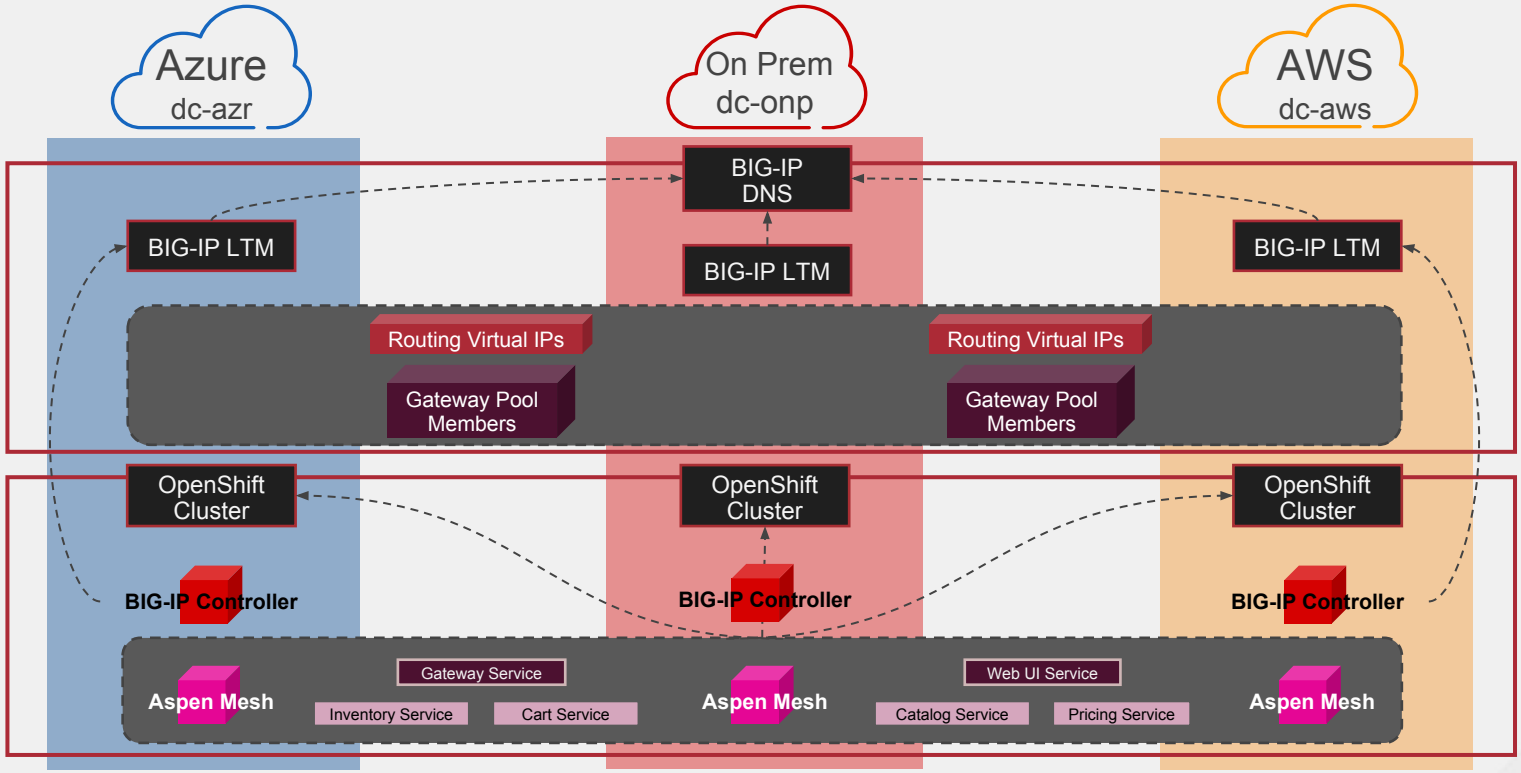
AWS
dc-aws



Ingress


Azure
dc-azr
On Prem
dc-onp
HTTP
AWS
dc-aws
BIG-IP DNS
BIG-IP LTM
BIG-IP LTM
BIG-IP LTM
Routing Virtual IPs
Gateway Pool Members
Routing Virtual IPs
Gateway Pool Members
OpenShift Cluster
OpenShift Cluster
OpenShift Cluster
BIG-IP Controller
BIG-IP Controller
BIG-IP Controller
Aspen Mesh
Gateway Service
Inventory Service
Cart Service
Aspen Mesh
Web UI Service
Catalog Service
Pricing Service
Aspen Mesh

Data Plane


Azure
dc-azr
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AWS
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Routing Virtual IPs
Gateway Pool Members
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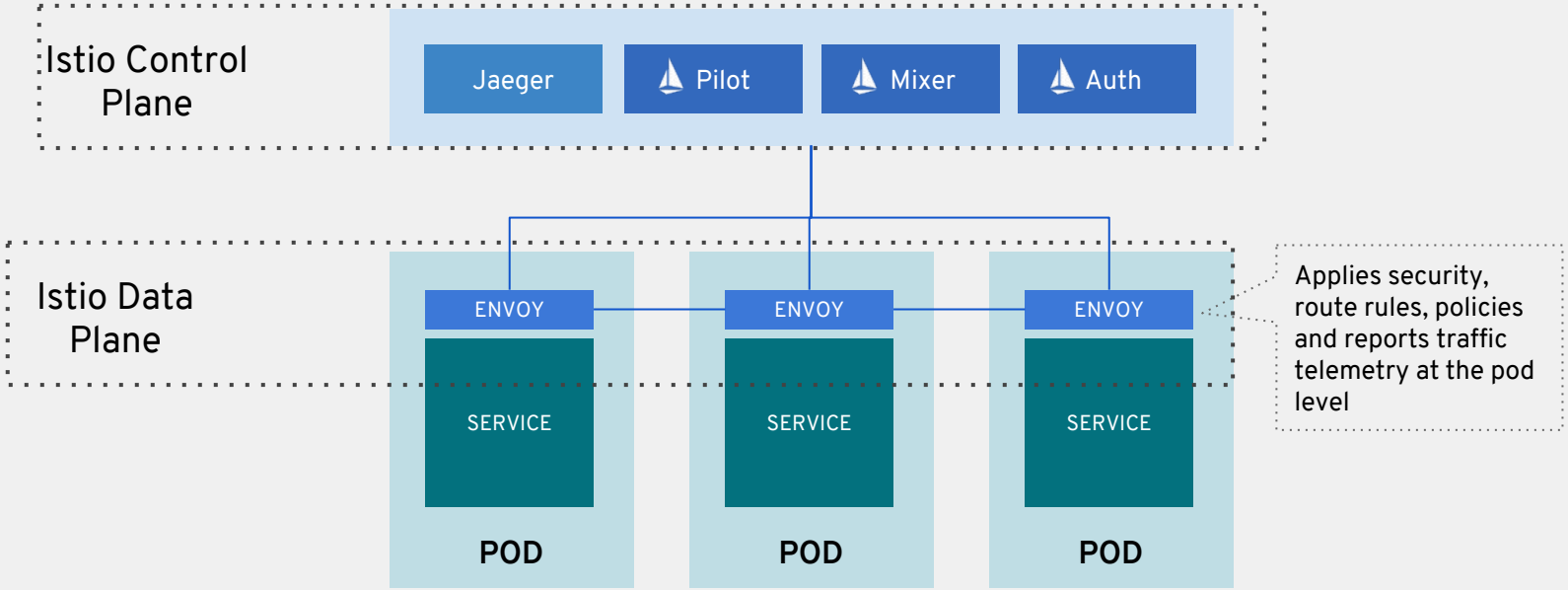
OpenShift Cluster
OpenShift Cluster
OpenShift Cluster
BIG-IP Controller
BIG-IP Controller
BIG-IP Controller
Aspen Mesh
Gateway Service
Inventory Service
Cart Service
Aspen Mesh
Web UI Service
Catalog Service
Pricing Service
Aspen Mesh

Failover
(BIG-IP Ingress Demo)

Demo 2

Istio & Service Mesh

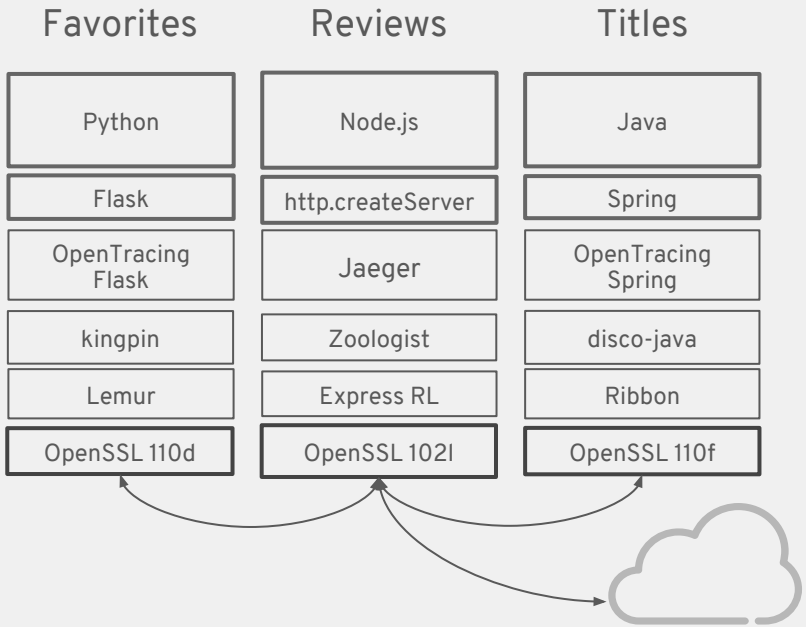
Istio


Istio Control Plane
Jaeger
Pilot
Mixer
Auth
Istio Data Plane
ENVOY
ENVOY
ENVOY
SERVICE
SERVICE
SERVICE
POD
POD
POD
Applies security, route rules, policies and reports traffic telemetry at the pod level

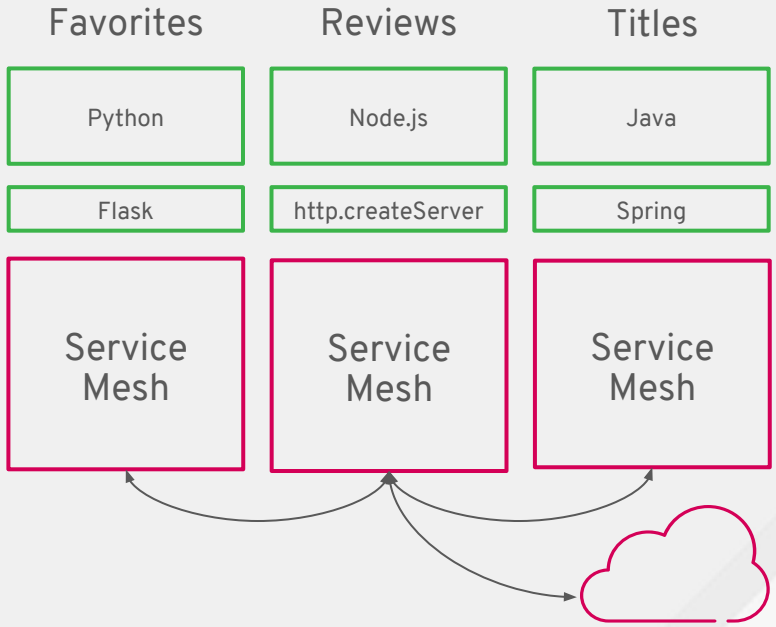
Aspen Mesh

Service Mesh

Before Service Mesh



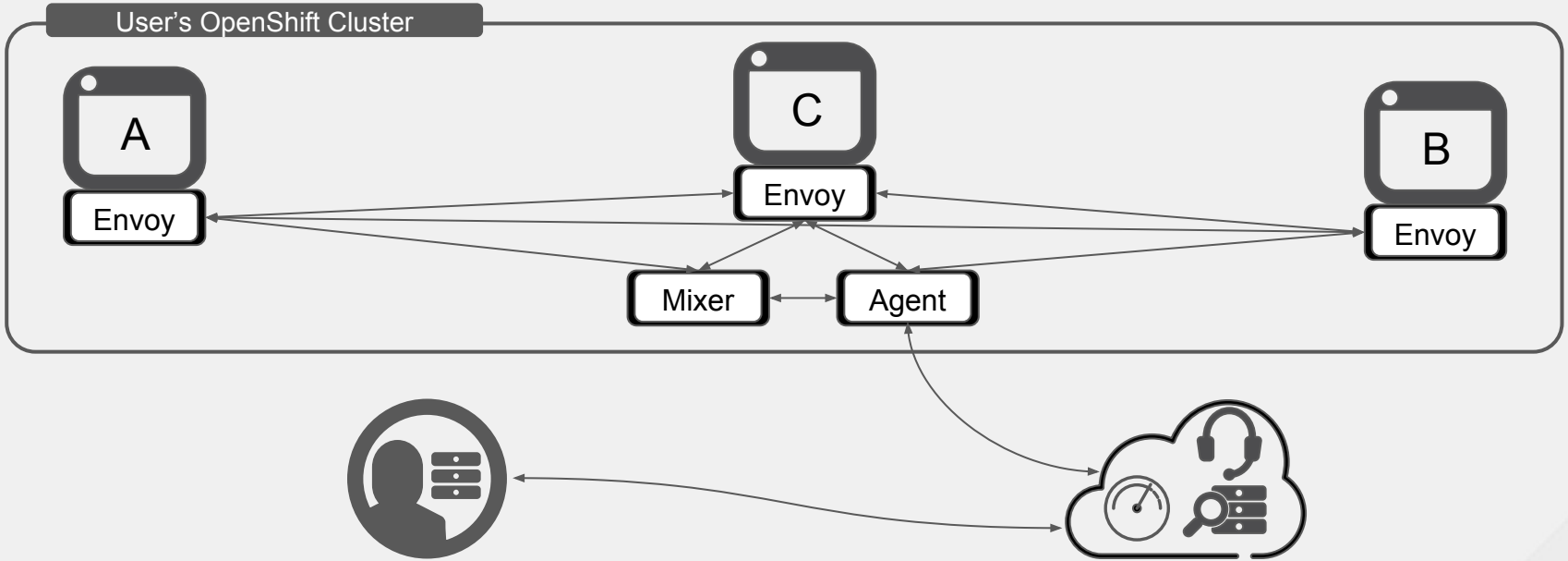
After Service Mesh



Service Mesh

Native Advanced L7 Policy

ASPEN MESH



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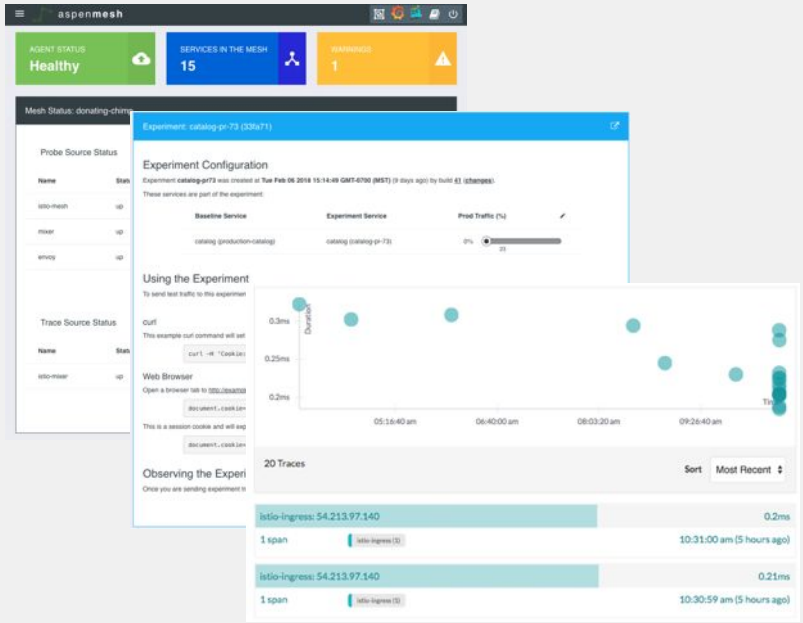
ASPEN MESH



Visual Insights Dashboard

Logging and Tracing

Hosted SaaS Platform

Customizable alerts and events

Security and Authentication

Service and Support

Istio
(Aspen Mesh Demo)

Demo 3

Partnership

Red Hat and F5

Red Hat is the leader in providing open source software for enterprises

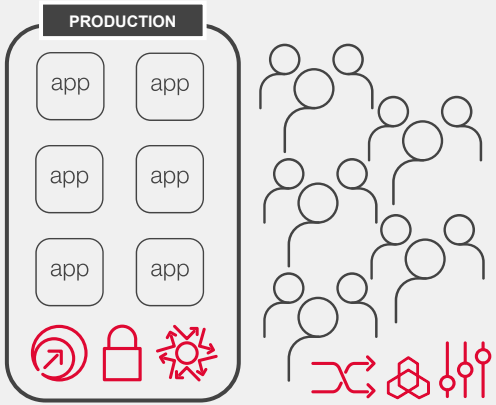
Technology
Secure. Stable. Reliable.

Assurance
Enterprise-grade certainty.

Expertise
Experience you can trust.

Innovation
Competitive advantage.

F5 helps customers scale, secure, and deploy apps on any private or cloud platform



F5 & Red Hat Partnership: Better Together

RED HAT® OPENSTACK® PLATFORM

Certified OpenStack Solutions

RED HAT® OPENSHIFT Container Platform

OpenShift Integration

RED HAT® ANSIBLE® Tower

Upstreamed Ansible Modules

redhat.

Partnering to drive customer satisfaction

Wrap Up

- Automation is table stakes
  - Always keep you automation lock step with your architecture and design
  - Write your roles to be versatile making good use of variables
- Multi-Cloud is here
  - Cost, failover, running services where best suited
  - Apps must be multi-cloud able.
- Istio based Aspen Mesh delivers consistency
  - Across cloud environments
  - Across multiple frameworks and languages

Q&A

- https://github.com/aspenmesh
- https://github.com/f5networks/k8s-bigip-ctlr
- https://github.com/f5devcentral/f5-tmsh2iapp
- http://clouddocs.f5.com/containers/v2/openshift/

F5 and Red Hat landing page: https://f5.com/redhat

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