

Debugging Istio Within the Department of Defense

Nick Nellis / Adam Toy



#IstioCon

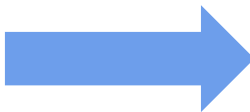




Istio Going Mainstream

Consumer Expectations

- Reliability
- Maintainability
- Usability



Highlights of 2020

- Better life cycle management
 - Istioctl install & Operator support
 - Re-introduced Helm v3
- Architectural simplification
 - Monolith control plane
 - Mixerless telemetry
- New extension capabilities
 - WebAssembly (Wasm) support
- Secure by default
 - Secret Discovery Service (SDS)
 - Auto mTLS
- API and feature promotion
 - Networking/Security APIs
 - Virtual Machine expansion/Multi cluster mesh
- Performance and scale improvements
 - Optimized config distribution
 - Reduced sidecar proxy latency



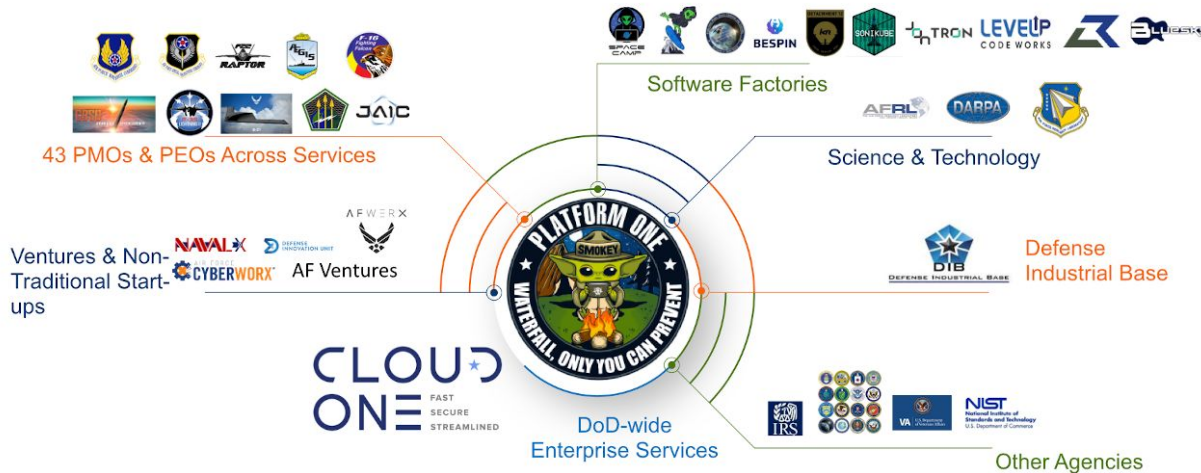
#IstioCon



Platform One



Software Ecosystem Multiple Innovation Hubs – One Platform



Integrity - Service - Excellence

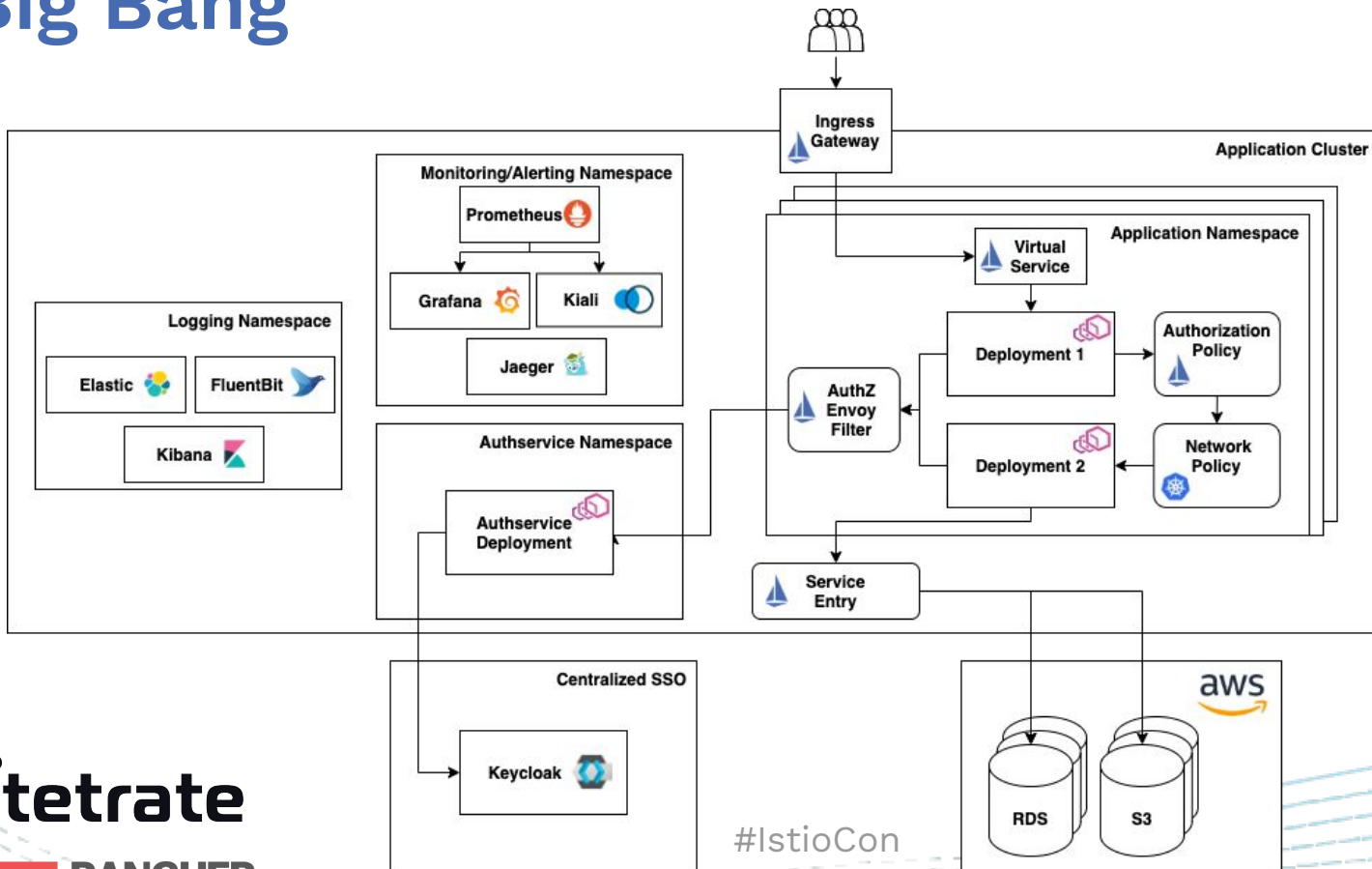
#IstioCon



Big Bang

<https://p1.dso.mil/#/products/big-bang>

<https://repo1.dso.mil/platform-one/big-bang/bigbang>



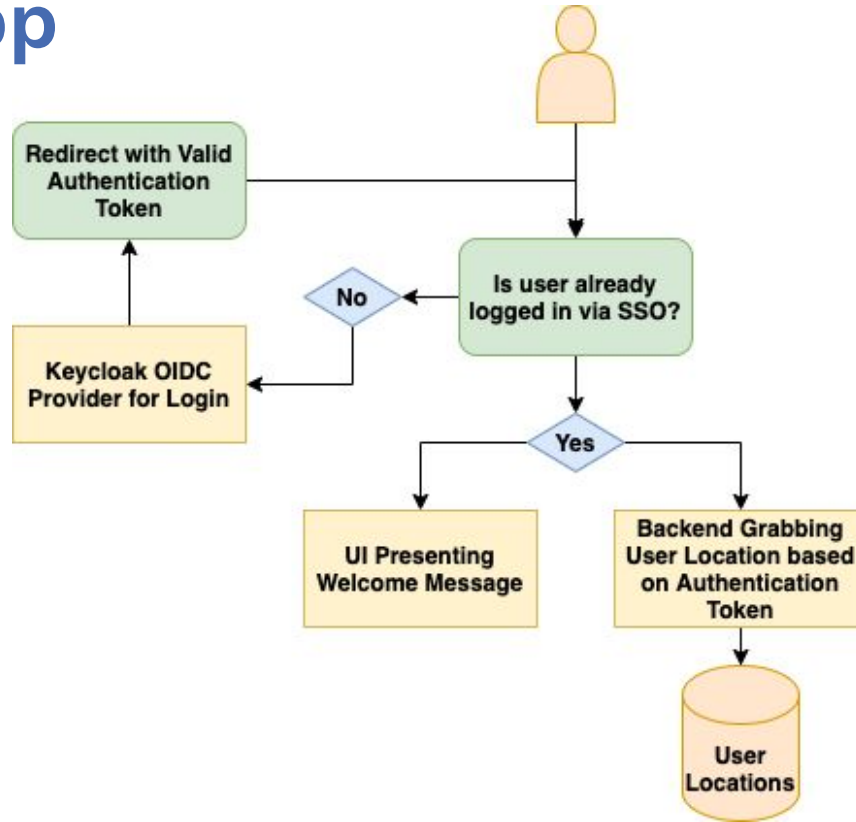
PLATFORM ONE
BIG BANG



#IstioCon



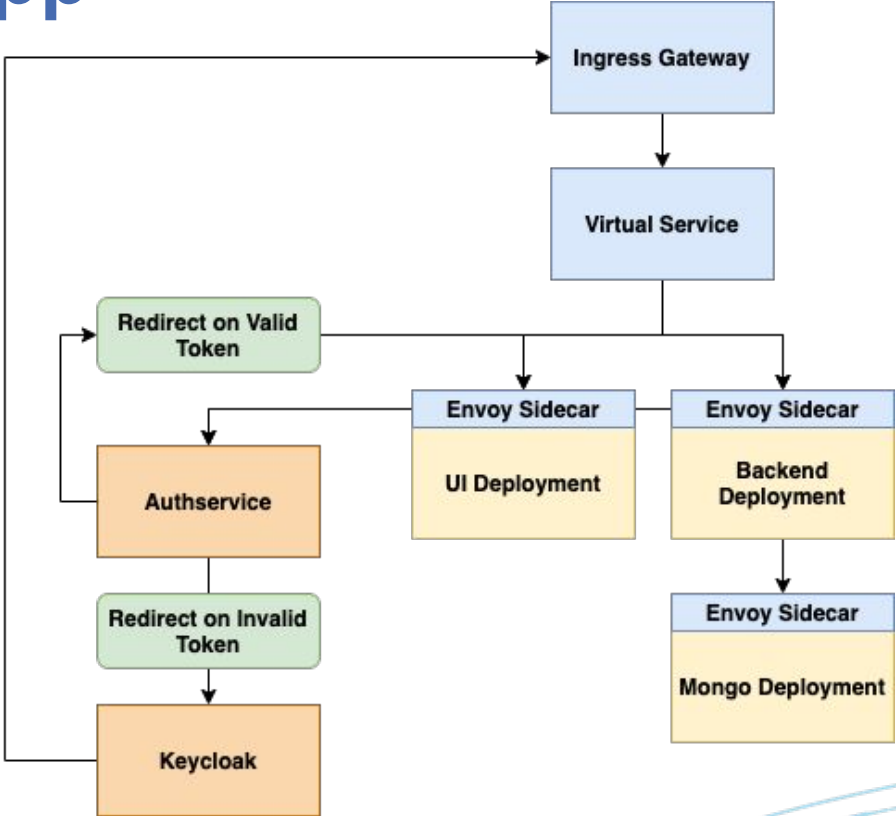
Welcome App



#IstioCon



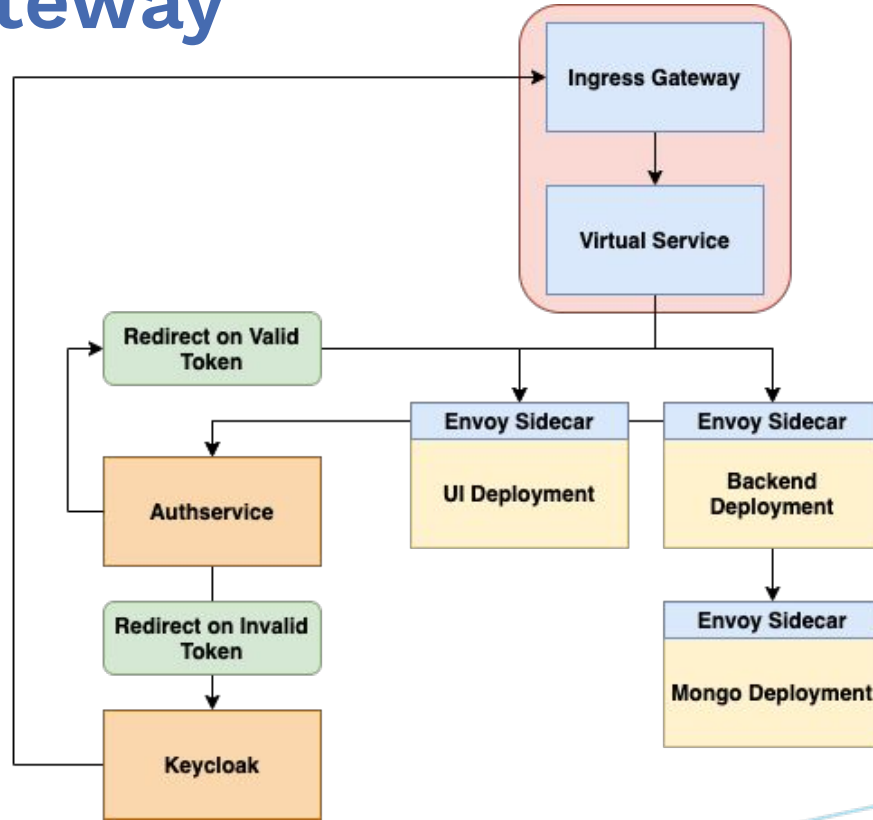
Welcome App



#IstioCon



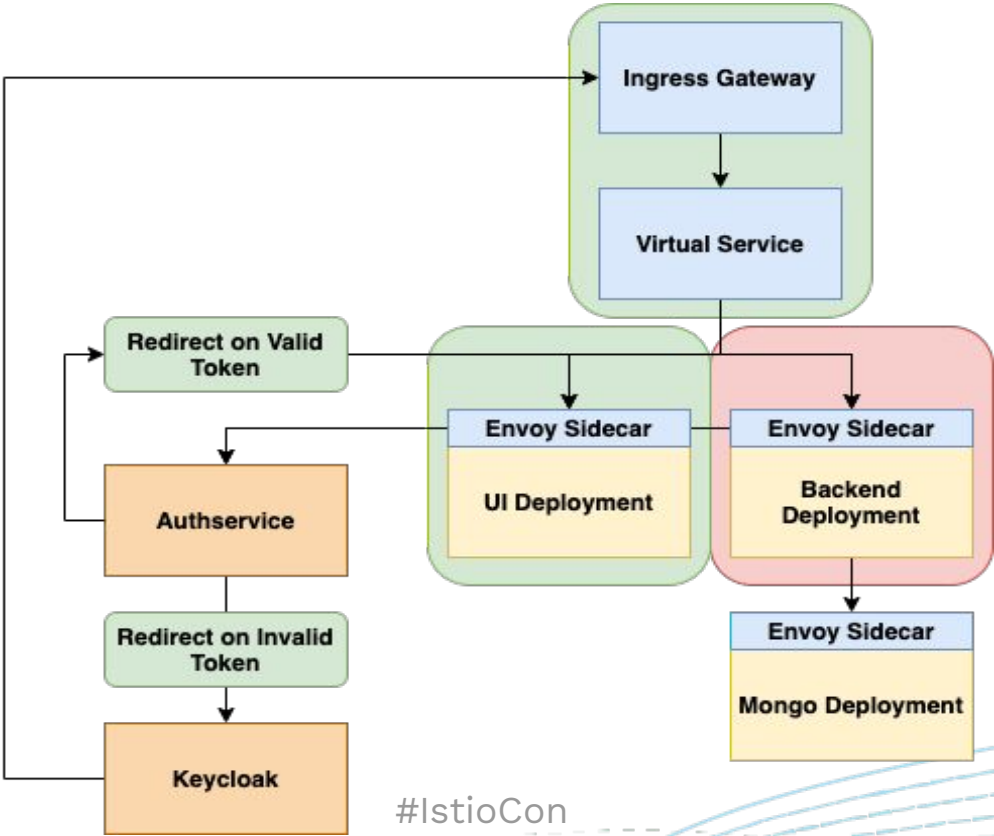
Issue 1 - Gateway



#IstioCon



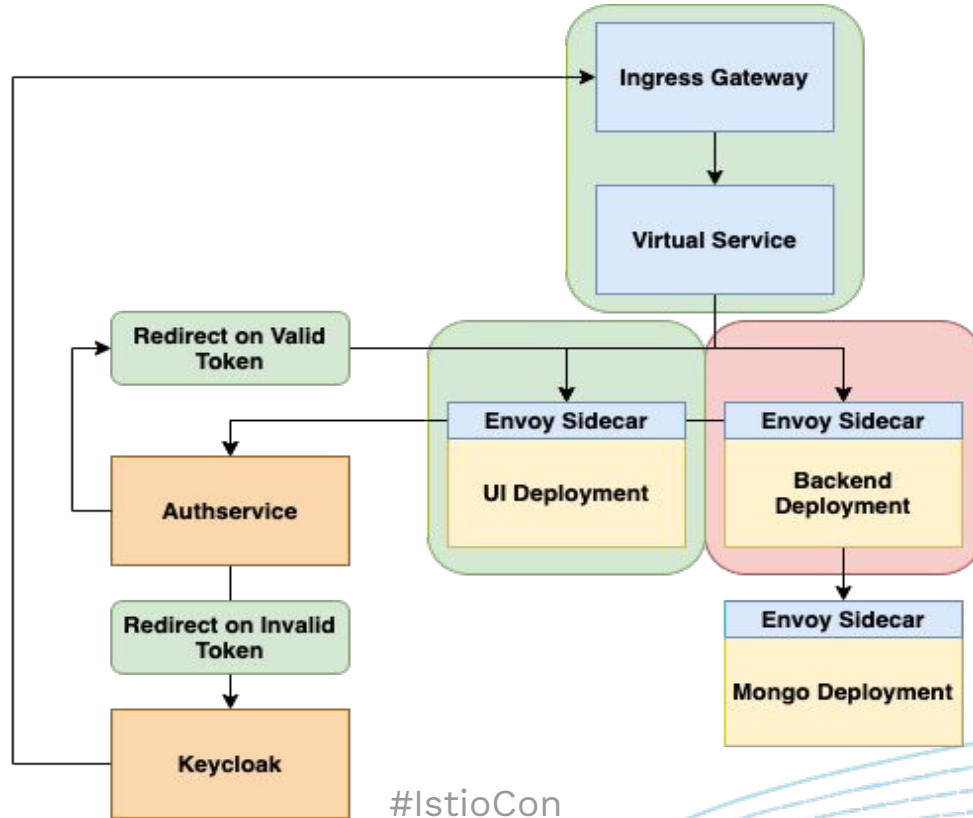
Issue 2 - Service



#IstioCon



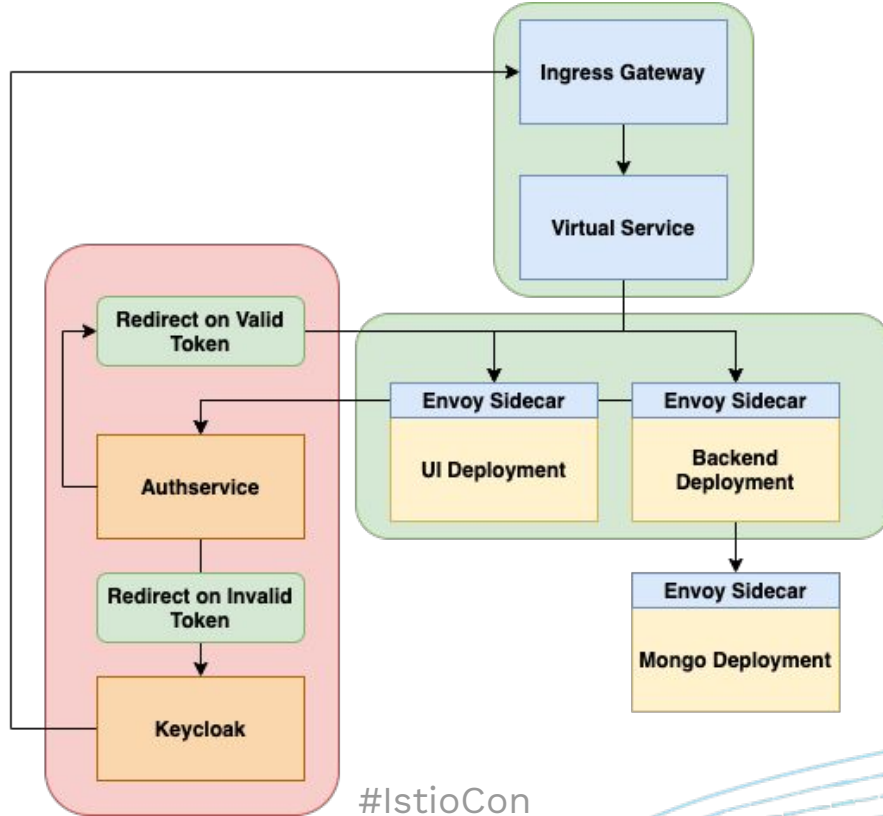
Issue 3 - AuthorizationPolicy



#IstioCon



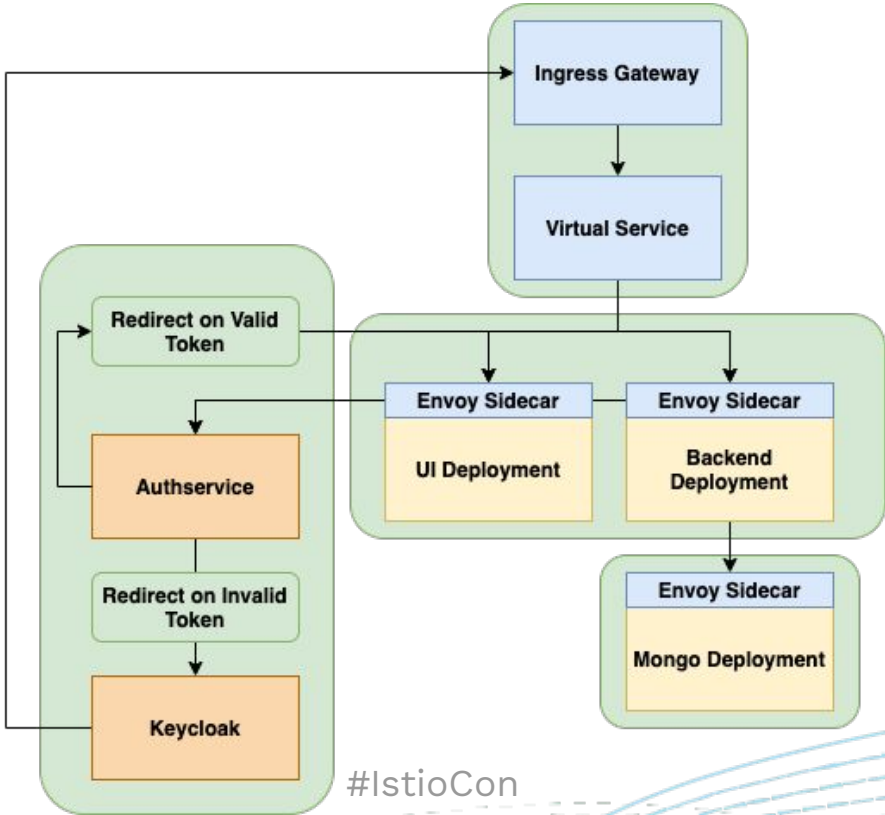
Issue 4 - Proxy Configuration



#IstioCon



Functioning Welcome App



#IstioCon



istioctl...



- analyze
- experimental
- proxy-config
- proxy-status
- upgrade (--dry-run)
- verify-install
- bug-report



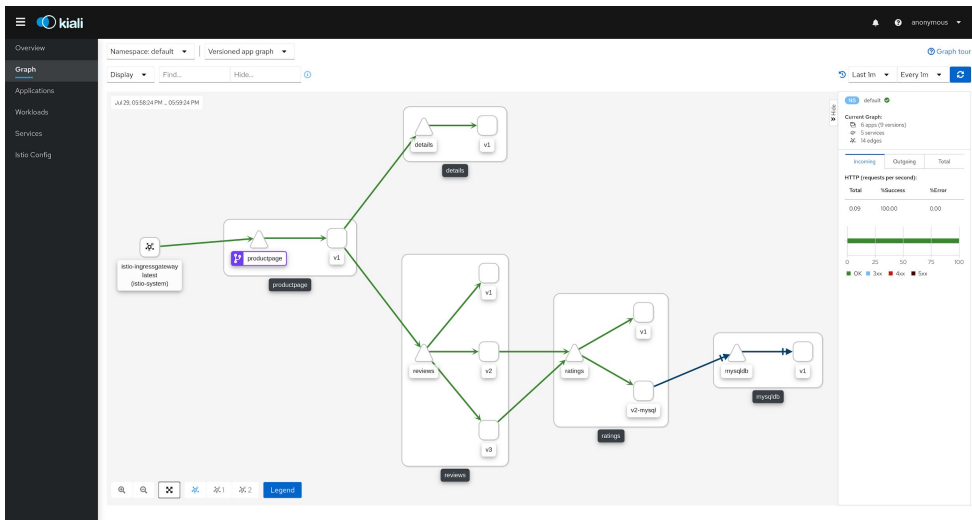
#IstioCon



Maintaining Istio



- Deployments
 - IstioOperator
- Monitoring
 - Prometheus
 - Grafana
 - Zipkin or Jaeger
 - Kiali



#IstioCon



GetIstio

[Docs](#)[Blog](#)[Community](#)[Training](#)[Partners](#)[GetEnvoy](#)[Istio.io](#)

Simple, safe enterprise-grade Istio distro

- Easiest way of installing, operating, and upgrading Istio
- Tested and hardened for your application and cloud platform
- Community hub for users, ecosystem, and partners

```
(jimmy@gke:default)+ ~ curl -sL https://tetrade.bintray.com/getistio/download.s
h | bash

Downloading GetIstio from https://tetrade.bintray.com/getistio/getistio_darwin_a
md64_v0.8.2.tar.gz ...
GetIstio Download Complete!

Downloading latest istio ...
1.8.2-tetrade-v0 already fetched: download skipped
For more information about 1.8.2-tetrade-v0, please refer to the release notes:
- https://istio.io/latest/news/releases/v1.8.2/announcing-1.8.2/

istioctl switched to 1.8.2-tetrade-v0
Finished installation. Open a new terminal to start using getistio!
(jimmy@gke:default)+ ~ export GETISTIO_HOME="$HOME/.getistio"
(jimmy@gke:default)+ ~ export PATH="$GETISTIO_HOME/bin:$PATH"
(jimmy@gke:default)+ ~ # Install Istio
(jimmy@gke:default)+ ~ getistio istioctl install --set profile=demo
Istio Revision "" already installed in namespace "istio-system"

This will install the Istio demo profile with ["Istio core" "Istiod" "Ingress ga
teways" "Egress gateways"] components into the cluster. Proceed? (y/N) y
✓ Istio core installed
```

Recorded with [asciinema](#)



#IstioCon



Community

discuss.istio.io



all categories ▾

Latest

New (4)

Unread (2)

Top

Categories

+ New Topic

Topic

Replies

Views

Activity

🚩 Welcome to Discourse

Welcome to the Istio community. Make yourself at home, learn about Istio, ask questions, post answers, and discuss the future.



0

1.7k

Jan '19

Multiple VirtualServices for the same host (fallback to wildcard) •

■ Networking



0

5

16m

Istio 1.9 Bookinfo - Incorrect response direction of ratings/details •



0

15

30m

How to install ingress gateway well using istio 1.9.0 in centos7



1

42

14h

Round robin load balancing issue when using mTLS port 15443 for cross clusters communication •

■ Networking



0

12

14h

Nginx Ingress Controller with Istio MTLS



7

1.6k

19h



#IstioCon



Community



Getting Involved

🕒 2 MINUTE READ

Istio is an open source project with an active community that supports its use and on-going development. We'd love for you to join us and get involved! There are quite a few ways to get plugged in:



Head for the [Istio discussion board](#) to ask questions, participate in discussions, and get help troubleshooting problems. You can use your GitHub ID (or Google, Twitter or Yahoo) to log in!



[Stack Overflow](#) is for practical questions and curated answers on deploying, configuring, and using Istio.



If you'd like to have live interactions with members of our community, you can join us on [Istio's Slack](#) workspace.



Attend events on our [Community calendar](#).



Follow us on [Twitter](#) to get the latest news.



[GitHub](#) is where development takes place on Istio code.



If you want to get into the nuts and bolts of Istio, check out our growing collection of design documents. To access these, simply join the [istio-team-drive-access@](#) group. Once you've done that, you can head straight to our [folder full of technical goodies](#).



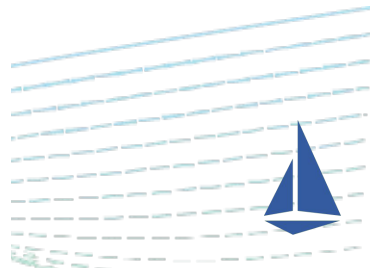
If you'd like to contribute to the Istio project, please read our [code of conduct](#) and [contribution guidelines](#), and consider participating in our [working groups](#).



If you would like to know more about Istio governance, please learn [how we do things](#) as a project, and read in more detail about the Istio [Steering Committee](#) and [Technical Oversight Committee](#).



Our Chinese-language documentation is maintained by the [ServiceMesh community](#), join us and get involved!





Thank you!

Nick Nellis
@nmnellis

<https://p1.dso.mil/#/products/big-bang>

Adam Toy
@adam_toy1
github.com/atoy3731

<https://repo1.dso.mil/platform-one/big-bang/bigbang>

<https://github.com/atoy3731/istiocon-demo> (WIP)



#IstioCon

