



COM204

Observability, Reliability, and Security with Service Mesh: Istio on Amazon EKS

Ananda Dwi Rahmawati (she/her)

Sr. Cloud Engineer

PT Boer Technology (Btech)

AWS Container Hero



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Key Takeaway

Gain greater observability and reliability, reduce complexity, and ensure high availability and fault tolerance communication between containerized application with service mesh using Istio on Amazon EKS

Today's Agenda

Challenges in Microservices

Service Mesh – What and Why?

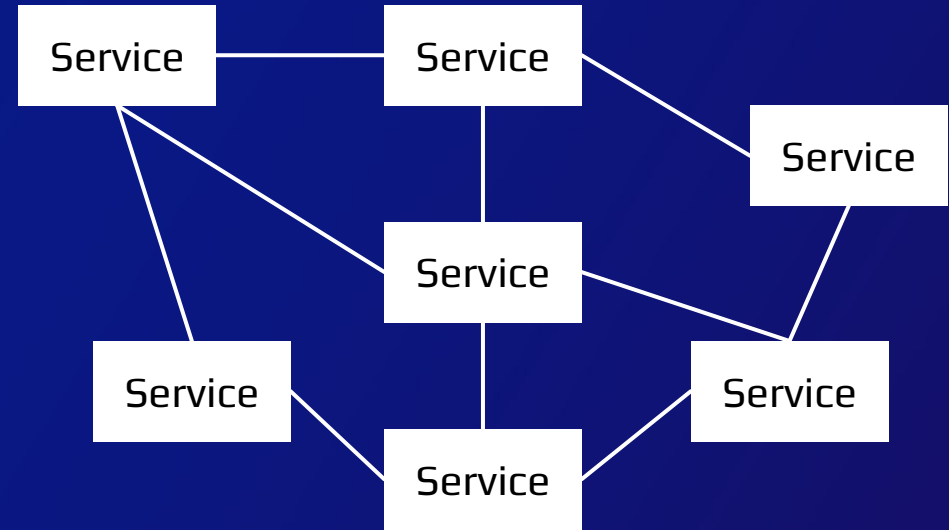
Istio on Amazon EKS

Demo

Challenges in Managing Microservices

Challenges in Microservices

- Interaction between services
- Traffic management at each service endpoint
- Communication security
- Timeout and communication failures



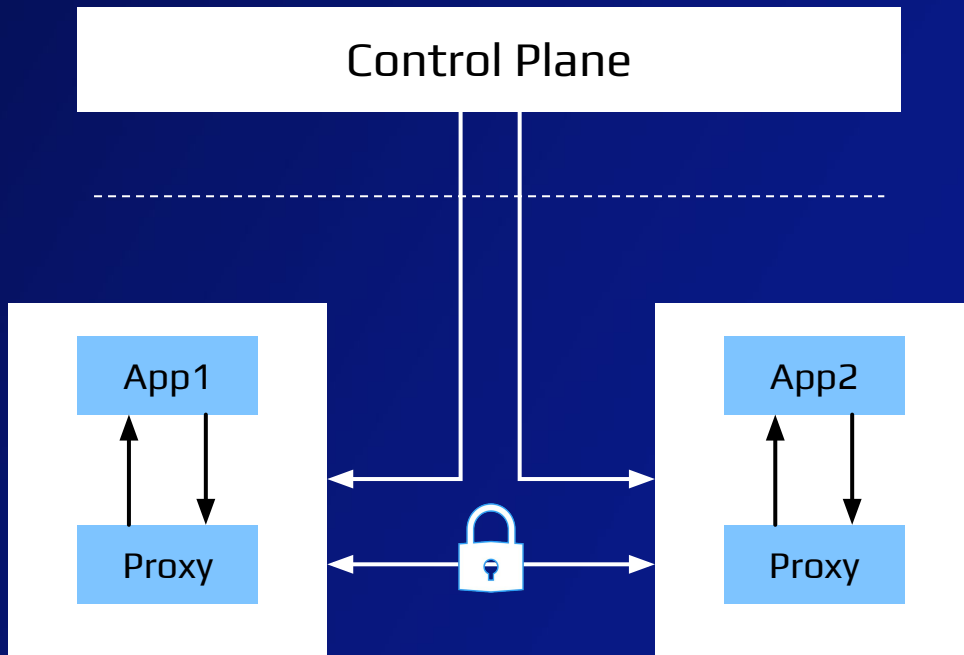
Services need to communicate with each other

Service Mesh



Service Mesh – What?

Agnostic programmable framework that has **policies** and **controls** to govern how microservices interact



Service Mesh Behaviors

- Traffic shaping with dynamic routing controls
- Resiliency support for service communication
- Observability of traffic
- Tracing of communication flows
- Secure communication

Service Mesh Implementations

	Istio	Linkerd	Consul	AWS App Mesh
Workloads	Kubernetes + VMs	Kubernetes	Kubernetes + VMs	AWS Fargate, Amazon EC2, Amazon ECS, Amazon EKS, Kubernetes
Supported Ingress Controller	Istio Ingress	Any	Envoy	AWS ALB Ingress Controller
Traffic Management Feature	Yes	Yes	Yes	Yes
Monitoring	Grafana + Prometheus	Grafana + Prometheus	Grafana + Prometheus	AWS X-Ray
Multicluster	Yes	No	Yes	Yes
Deployment	Helm and Operator	Helm	Helm	Helm
Complexity	High	Low	Medium	Medium



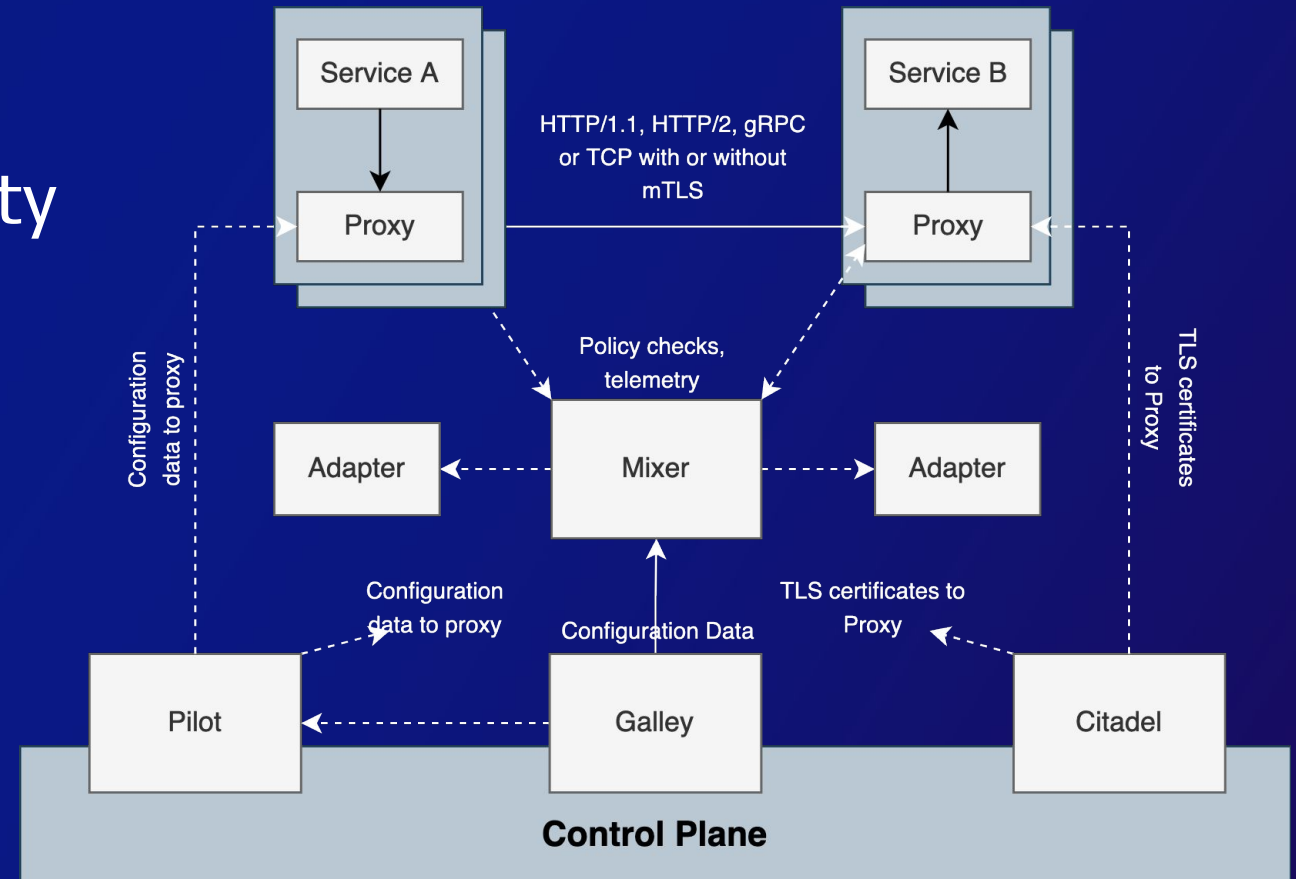
Istio



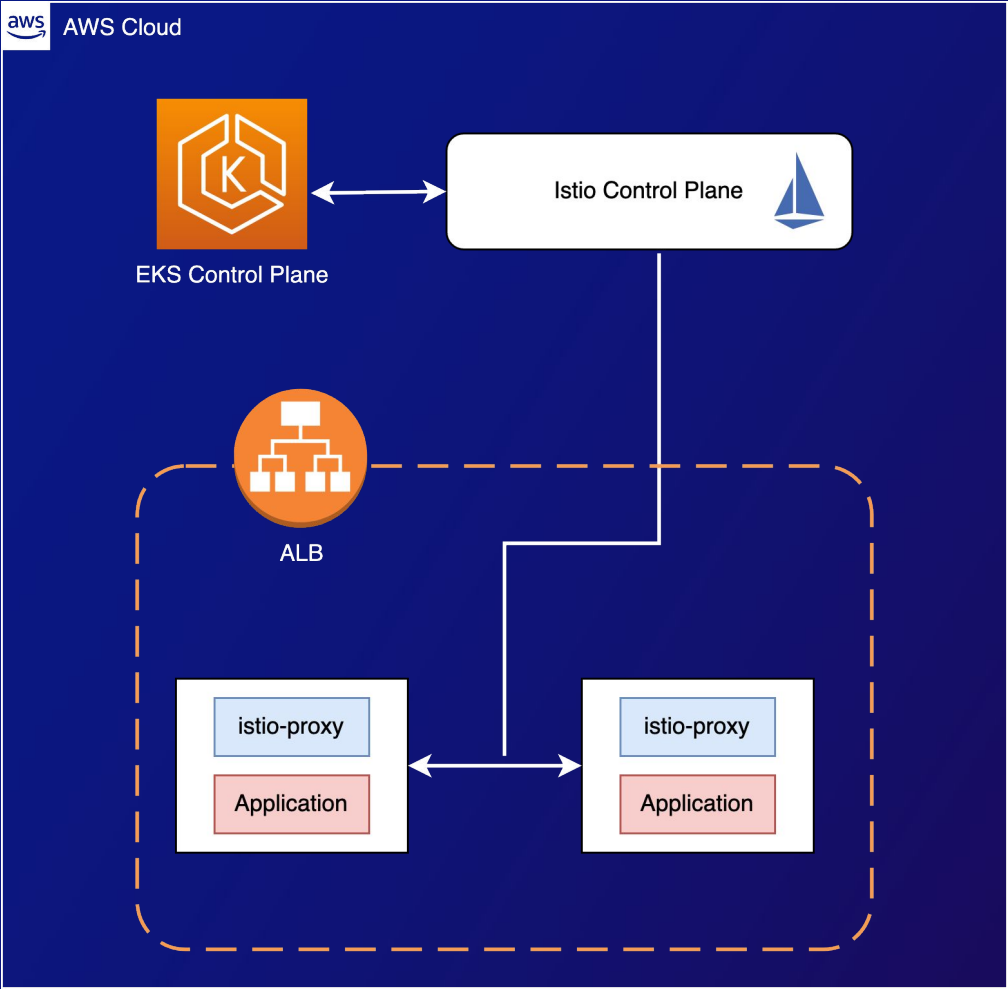
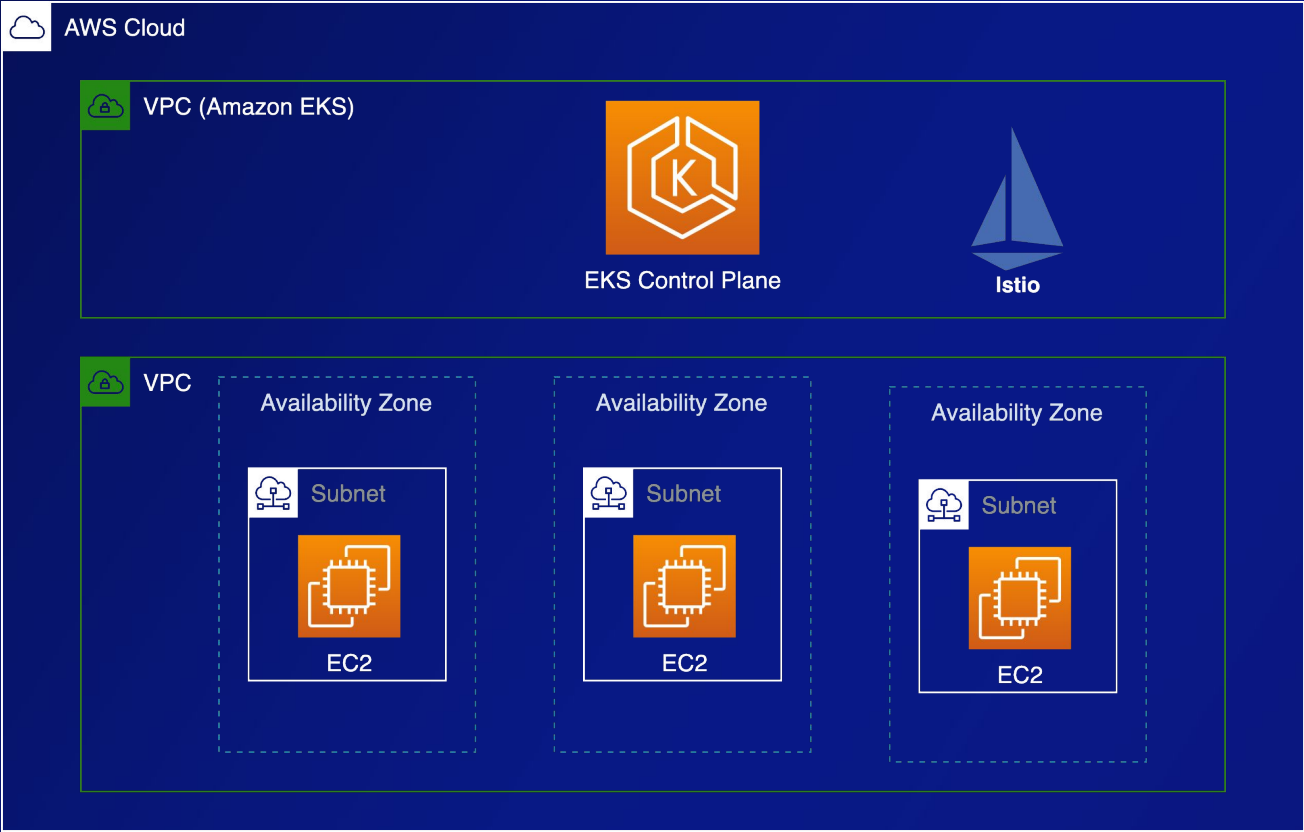
Istio

Istio will break down the complexity of distributed cloud native deployments

Features: **observability, traffic management, security**



Istio on Amazon EKS



DEMO



Demo

<https://s.id/1FtQ7>

References

References

- <https://aws.amazon.com/blogs/opensource/getting-started-istio-eks/>
- <https://github.com/aws-samples/istio-on-amazon-eks>
- <https://istio.io/latest/docs/setup/install/helm/>
- <https://istio.io/latest/docs/examples/bookinfo/>



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Thank you!

Ananda Dwi Rahmawati

 @misskecupbung

 [linkedin.com/in/anandadwir](https://www.linkedin.com/in/anandadwir)



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