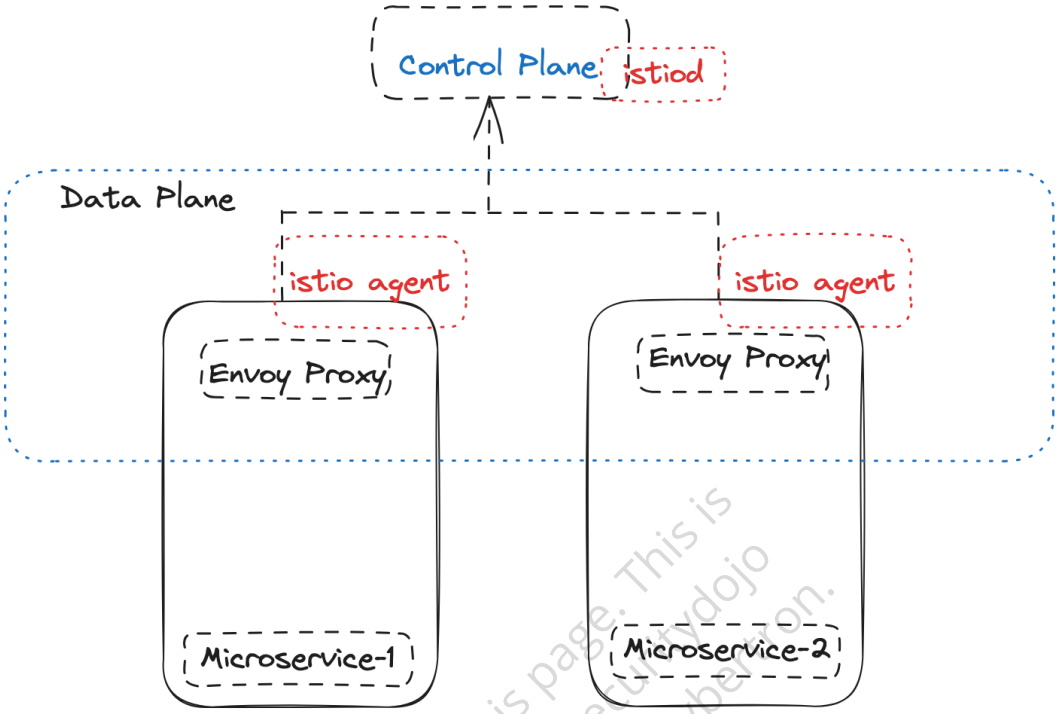
Istio Service Mesh



Service Mesh

- In the world of microservices, there are multiple requirements such as authentication, tracing, monitoring, logging, and authorization. Rather than integrating these requirements into every microservice, a more efficient approach is to utilize a single proxy in the form of a sidecar container. These proxies, known as the data plane, handle the inter-service communication, while also interacting with a server-side component known as the control plane.
- Control plane manages all of the traffic entering and leaving your services via these proxies. Consequently, the networking logic is separated from the business logic, allowing each to evolve independently.
- Service mesh is a dedicated & configurable infrastructre layer that handles the communication between services without having to change the code in the miscorservice architecture.
- A service mesh facilitates dynamic configuration of service interactions, providing

security through mutual TLS when services communicate with each other.

- For instance, a service mesh can offer insights into the end-to-end operations of an application, including issues and bottlenecks, as well as aiding in service discovery.
- In a dynamic cluster, it's crucial to understand which IP addresses and ports services are using, so they can locate and communicate with each other.
- Health checks incorporated within a service mesh help to maintain connectivity with functioning services, while excluding those that are non-operational.
- Moreover, the service mesh includes load balancing capabilities, ensuring traffic is efficiently distributed to healthy instances and diverted away from failing ones.