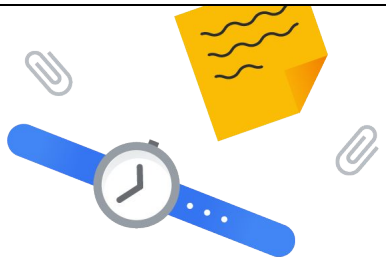


Today's agenda

01 Introduction to Anthos Service Mesh

02 Lab: Anthos Service Mesh Walkthrough

03 Lab review

04 Architecture

05 Installation

06 Life of a request in the mesh

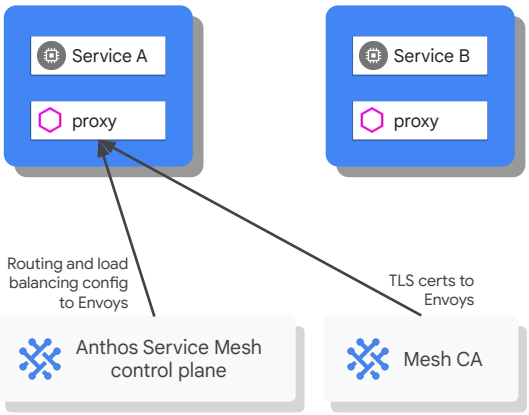
07 Mesh telemetry and instrumentation

08 Anthos Service Mesh dashboards

09 Anthos Service Mesh pricing and support

10 Lab: Observing Anthos Services

Life of a request in the mesh



1. Service A comes up.
2. Envoy sidecar container is injected in the pod.
3. Envoy fetches service information, routing, and configuration policy from the control plane.
4. Mesh CA securely distributes TLS certificates to the Envoy proxies.

Google Cloud

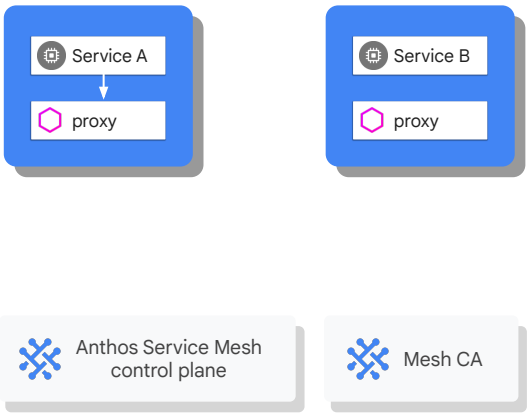
When a pod is created, your workload container comes up, which in this case it's called "Service A".

Then the Envoy sidecar container is injected in the pod and IP Tables are configured so that all requests are redirected to Envoy.

Envoy fetches service information, routing, and configuration policy from the control plane so that it knows where to send requests.

Finally, the service mesh CA, in this case Mesh CA, securely distributes TLS certificates to the Envoy proxies.

Life of a request in the mesh



1. Service A places a call to Service B.
2. Client-side Envoy proxy intercepts the call.
3. Envoy consults the local configuration to know how and where to route call to Service B. For example, Envoy might change the protocol to gRPC and establish a secure mTLS connection.

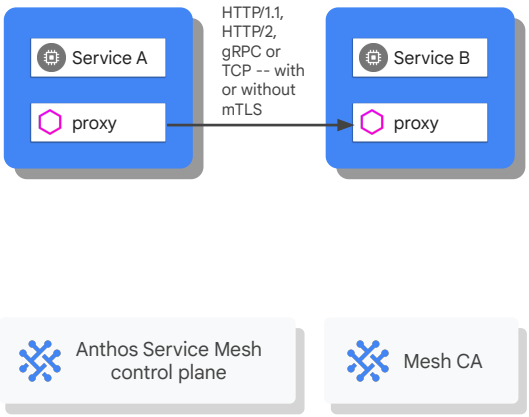
Google Cloud

When Service A places a call to service B, the client-side Envoy proxy intercepts the call.

Envoy consults the local configuration to know how and where to route call to service B.

For instance, Envoy might change the protocol to gRPC and establish a secure mTLS connection.

Life of a request in the mesh



1. Envoy forwards the request to the appropriate instance of Service B.
2. The Envoy proxy deployed with the service intercepts the call.
3. The receiving Envoy validates certificates and establishes the mTLS connection.

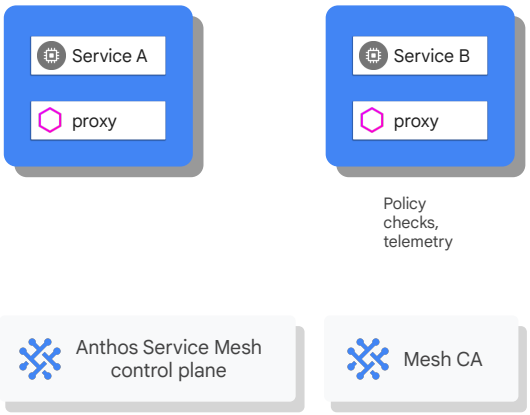
Google Cloud

Then Envoy forwards the request to the appropriate instance of service B.

There, the Envoy proxy deployed with the service intercepts the call.

The receiving Envoy validates certificates and establishes the mTLS connection.

Life of a request in the mesh



- Envoy uses Envoy Filters to validate that the call should be allowed.
- For example, Envoy can perform:
  - Access control list (ACL) checks, to verify that Service A can communicate with Service B.
  - Quota checks to verify that Service A does not surpass the entitled number of requests per second.

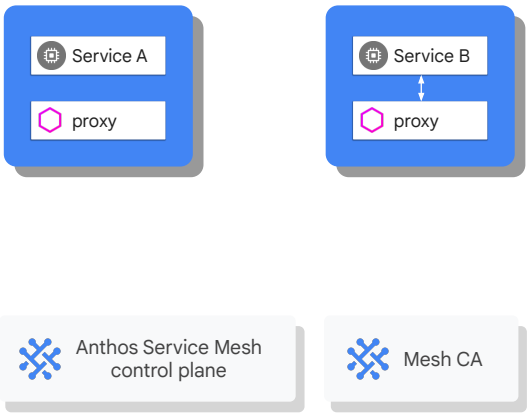
Google Cloud

The receiving Envoy checks the request using the Envoy Filters to validate that call should be allowed.

For instance, Envoy can perform:

- Access control list, or ACL, checks to verify service A can communicate with service B.
- Or quota checks to verify that service A does not surpass the entitled number of requests per second.

Life of a request in the mesh

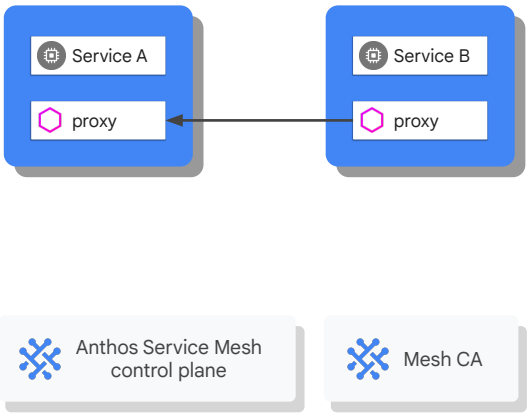


1. Server-side Envoy forwards request to Service B.
2. Service B processes the request and returns a response.

Google Cloud

Once those validations take place, the server-side Envoy forwards request to service B, which processes the request and returns a response.

Life of a request in the mesh

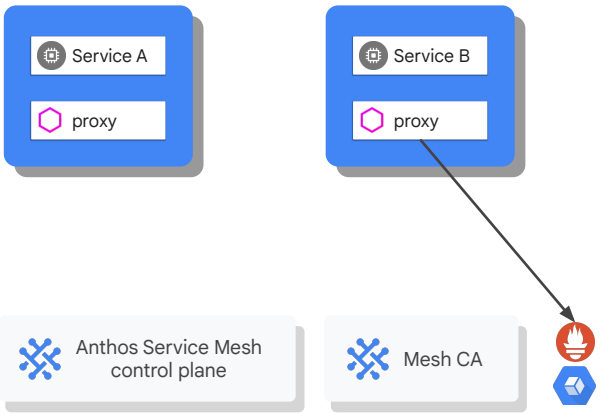


1. Envoy forwards response to the original caller.
2. The response is intercepted by Envoy on the caller side.

Google Cloud

Envoy forwards response to the original caller, where the response is then intercepted by Envoy on the caller side.

Life of a request in the mesh



1. Envoy reports telemetry to the wasm extensions.

   Wasm extensions are in-proxy extensions that allow developers to add custom networking functionality.

2. Wasm extensions in turn notify appropriate plugins.

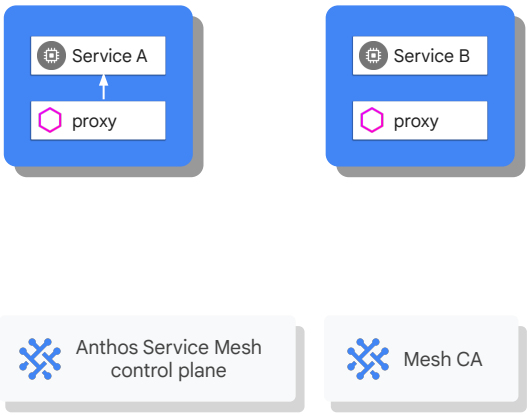
Google Cloud

The server-side Envoy is done with the request and it reports telemetry to the wasm extensions.

Wasm extensions are in-proxy extensions that allow developers to add custom networking functionality.

Wasm extensions in turn notify appropriate plugins.

Life of a request in the mesh

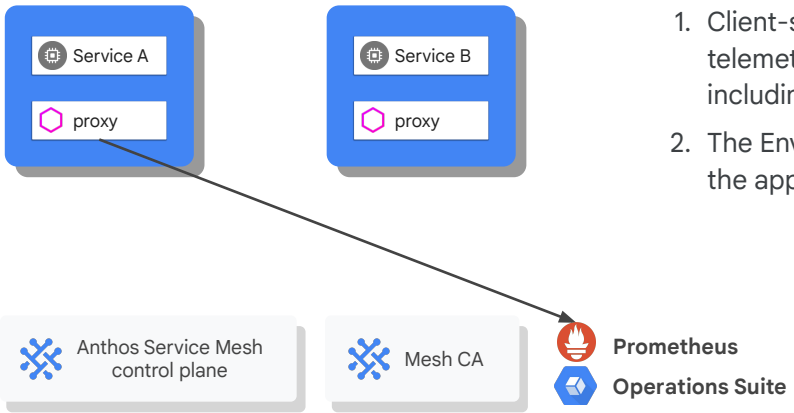


- Client-side Envoy forwards response to original caller.

Google Cloud

Client-side Envoy forwards response to original caller.

Life of a request in the mesh



1. Client-side Envoy reports telemetry to Envoy extensions, including client-perceived latency.
2. The Envoy extensions in turn notify the appropriate plugins.

Google Cloud

Once the client-side Envoy has processed the request, it reports telemetry to Envoy extensions, including client-perceived latency.

The Envoy extensions in turn notify the appropriate plugins.