

Envoy and External Services

• Why do we need external services?

- Global State
 - Rate limiting
- Time / Memory trade off
 - Users database with large memory footprint
- Operations: Telemetry / Observability / Control
 - Logs, metrics, traces, xDS ...

Trade-offs

- Increased latency - If the external service is in the request path.
- Network calls = point of failure
 - What's the behavior on failure?
 - Can the failure be observed?

Existing Services

Name	What it does	How it fails
Ext Authz	Checks a request is authorized. You can use this to integrate OPA and Envoy .	By default – request is rejected
Rate Limit	Checks that request rate does not exceed a rate limit	By default – request is allowed
Access Log	Streams access log to a gRPC service	Access log data is lost
Metrics Service	Streams metrics to a gRPC service	Metrics are flushed on an interval
HDS	Reports health to control plane	xDS style protocol
ECDS, LRS, CSDS ,WASM,...	Envoy has more external services available than we can cover here. In addition you can implement your own with WASM. See more at https://github.com/envoyproxy/envoy/blob/main/api/envoy/service/	

Demo

- Let's see a simple demo of ext_authz, rate_limit, access log, metrics.
- Code is available at:
<https://github.com/solo-io/hoot/tree/master/15-envoy-external-services>