

Invoking Services



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Module Overview



Service invocation building block

Benefits

- Service discovery, encryption, tracing, retries

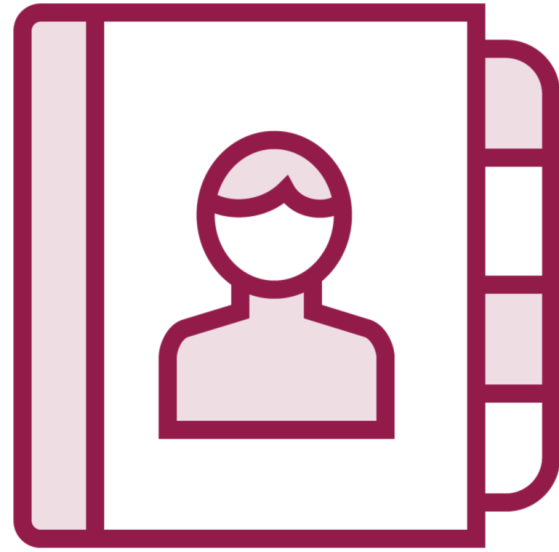
How it works

- URL formatting

GloboTicket



Challenges of Service Invocation



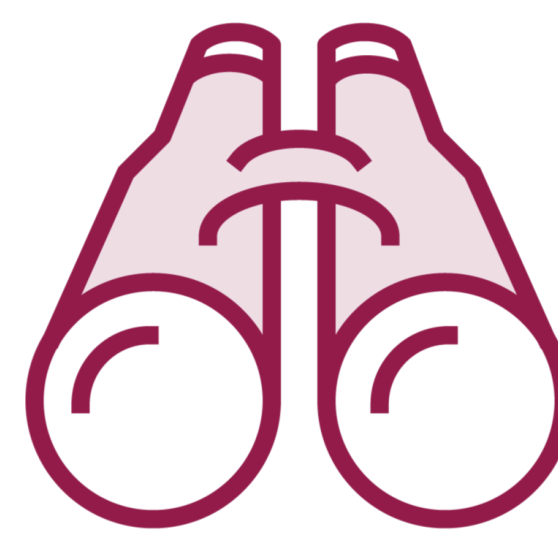
Service discovery

“Where is the catalog service?”



Security

Defense in depth



Observability

Open telemetry tracing



Retries

Handle transient errors

Encrypt traffic between microservices

Concepts

Getting started

Developing applications

Building blocks

Service invocation

Overview

How-To: Invoke with HTTP

How-To: Invoke with gRPC

State management

Publish & subscribe

Bindings

Actors

Observability

Secrets management

Configuration

Integrations

SDKs

IDE support

Middleware

Debugging

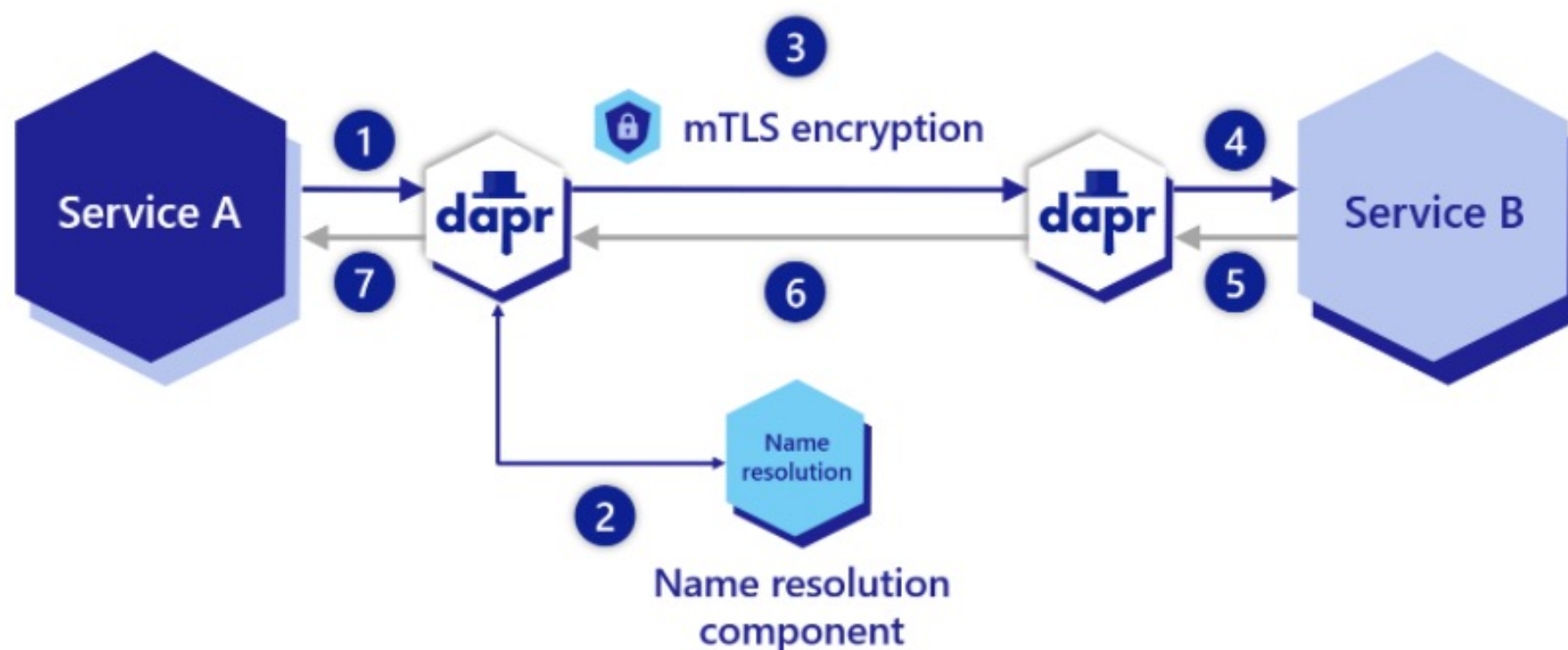
Operations

Reference

Contributing

Service invocation

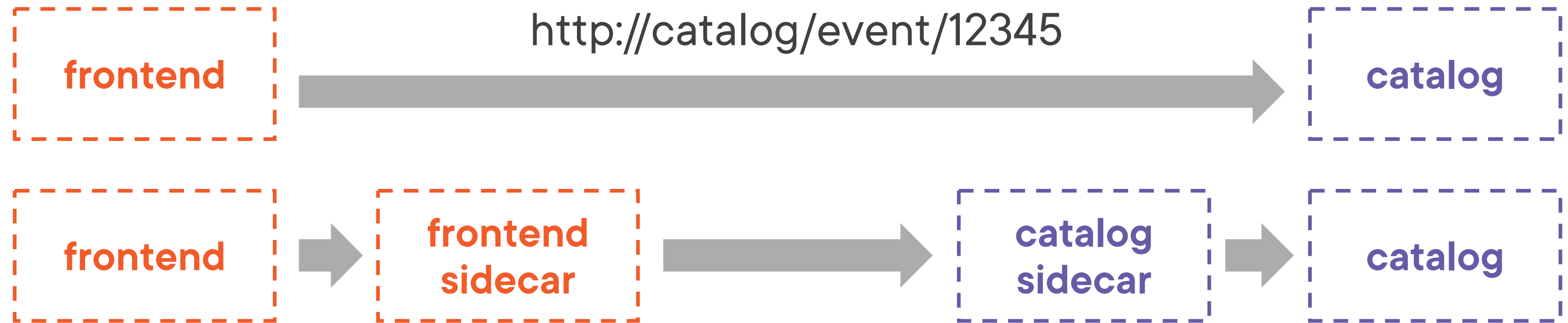
The diagram below is an overview of how Dapr's service invocation works.



1. Service A makes an HTTP or gRPC call targeting Service B. The call goes to the local Dapr sidecar.
2. Dapr discovers Service B's location using the [name resolution component](#) which is running on the given [hosting platform](#).
3. Dapr forwards the message to Service B's Dapr sidecar
 - **Note:** All calls between Dapr sidecars go over gRPC for performance. Only calls between services and Dapr sidecars can be either HTTP or gRPC
4. Service B's Dapr sidecar forwards the request to the specified endpoint (or method) on Service B. Service B then runs its business logic code.
5. Service B sends a response to Service A. The response goes to Service B's sidecar.
6. Dapr forwards the response to Service A's Dapr sidecar.
7. Service A receives the response.



Dapr Service Invocation URLs



`http://localhost:3500/v1.0/invoke/catalog/method/event/12345`

“base address”

Alternative URL syntax: `http://localhost:3500/event/12345`

Set target service in the **dapr-app-id** header



Demo



**Invoking a service by calling the Dapr
sidecar directly**



Demo



Update GloboTicket to use Dapr service invocation



Demo



Service invocation using the Dapr SDK



Additional Service Invocation Capabilities

gRPC proxying

- Currently in preview

Access control lists

- Restrict access to service invocation
- Principle of least privilege



Summary



Dapr service invocation building block

Benefits

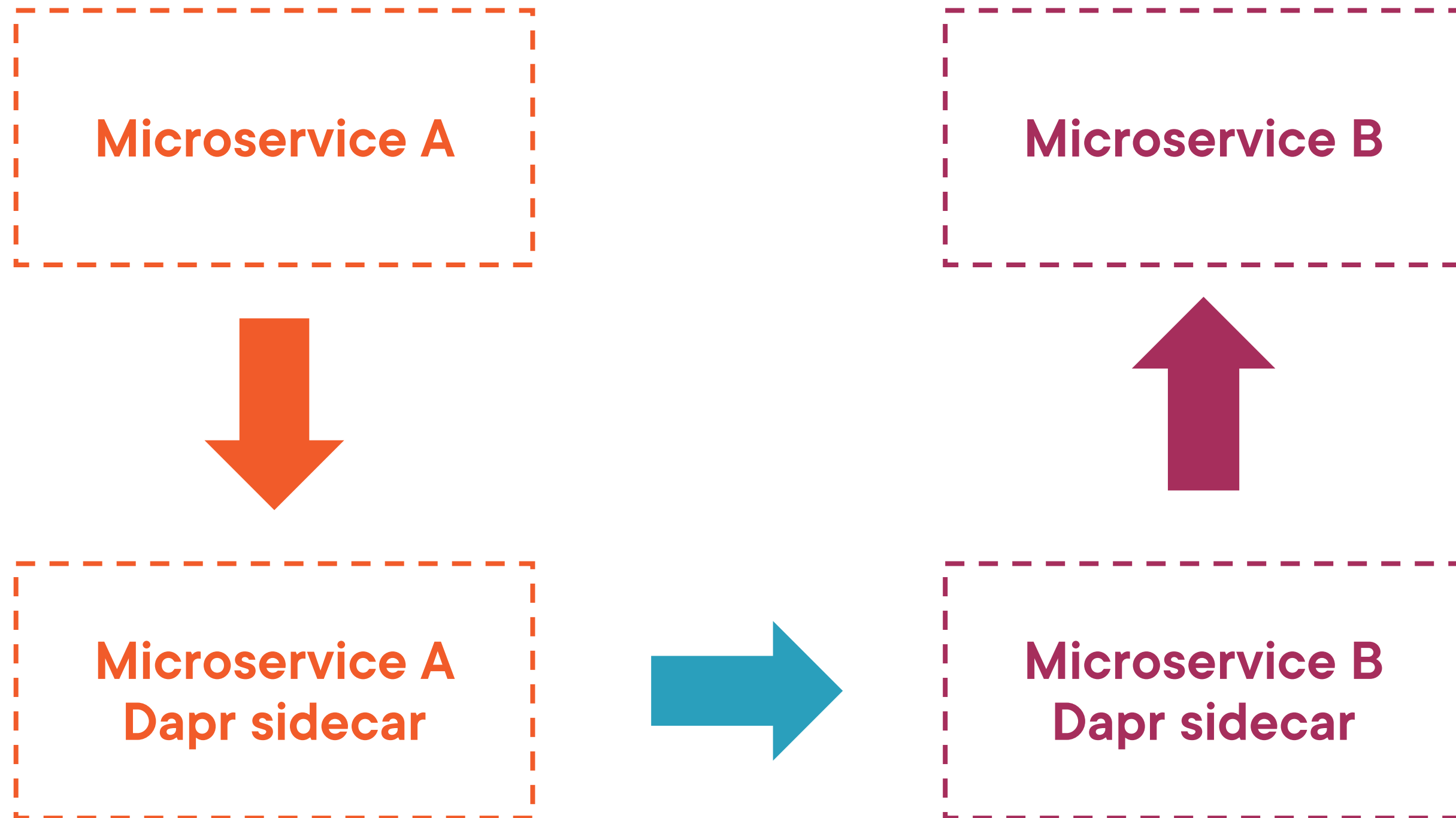
- Service discovery, retries, tracing, encryption

Service invocation URL structure

Using the Dapr SDK



Dapr Service Invocation Building Block



Up Next:
Communicating with Pub Sub Messaging

