

DEVELOPING WEB SERVICES

Web Services

Basics

“

A Web Service is a standards-based, language-agnostic software entity, that accepts specially formatted requests from other software entities on remote machines via vendor and transport neutral communication protocols, producing application specific responses.

— *CERN School of Computing*

”

# WEB SERVICES BASICS

## What is it?

- A service that is available over the internet
- Enables communications between 2 applications.
- These 2 application can use different platforms and programming languages and still express complex messages and functions to each other.
- The HTTP protocol is the most used Internet protocol
- Primarily meant to interact with other machines

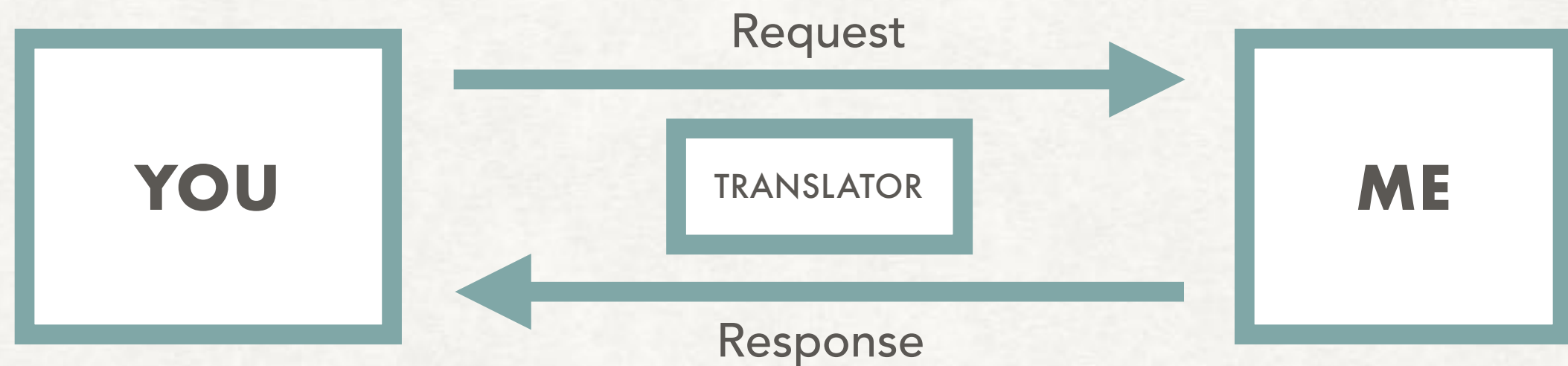


# WEB SERVICES BASICS

What is it?

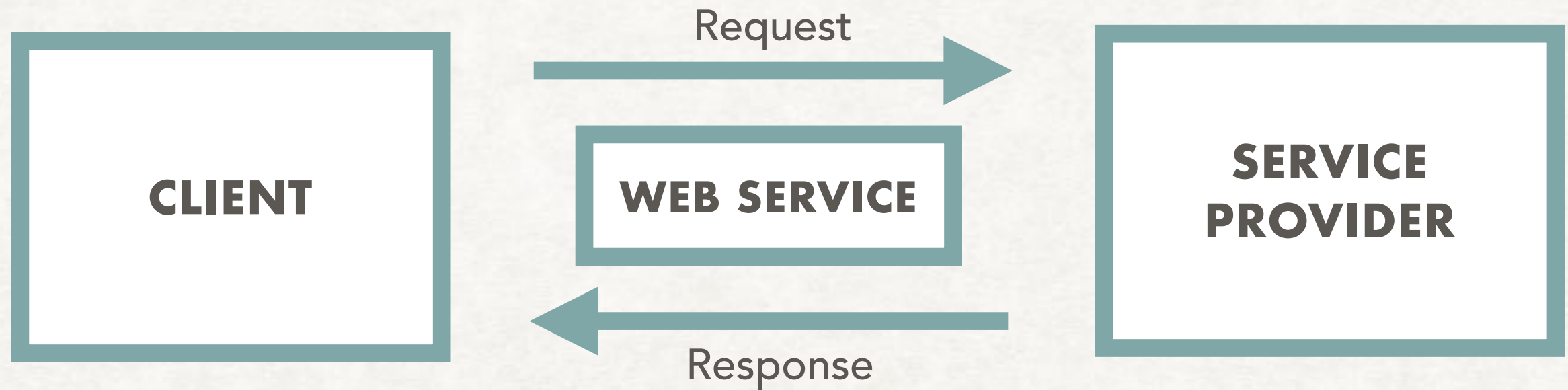
We don't speak the same language so we need a translator to make sure that both sides understand each other.

The translator is the web service.



# WEB SERVICES BASICS

What is it?



Intermediaries - will handle cached request to ease the load on the service provider. Requests that are handled by the intermediary will not reach the service provider.

# WEB SERVICES BASICS

## Types of Web Services

- ReST - Representational State Transfer
- SOAP - Simple Object Access Protocol
- XML-RPC - XML Remote Procedure Call
  - eXtensible Markup Language Remote Procedure Call
- JSON-RPC - JSON Remote Procedure Call
  - Javascript Object Notation Remote Procedure Call



# WEB SERVICES BASICS

## Advantages

- Loose Coupling
  - Each service exists independently of the other services that make up the application. Individual pieces of the application can be modified without impacting unrelated areas.
- Interoperability
  - Your applications/system/service is not specific to any language and any platforms.
  - Developers can use their preferred programming languages
- Ease of Integration
  - Data is isolated between applications. Web Services act as glue between these and enable easier communications within and across organizations.
- Reuse of a Service
  - A specific function within the domain is only ever coded once and used over and over again by consuming applications.

# WEB SERVICES BASICS

## Disadvantages

- Quality of Service (QoS)
  - Reliability and performance of your service
- Security
  - As the provider, careful what you open to third parties
- Matching requirements
  - A service provider built their service for many people