Particular Software

Welcome

Async / Await

Chain of Responsibility

Particular Software

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particular.net/blog
planetgeek.ch


Pattern
Build it
WrapUp


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Build It
WrapUp

OWIN

```
appBuilder.Use(async (ctx, next) =>
{
  // do some things here
  await next();
  // or here
});
```

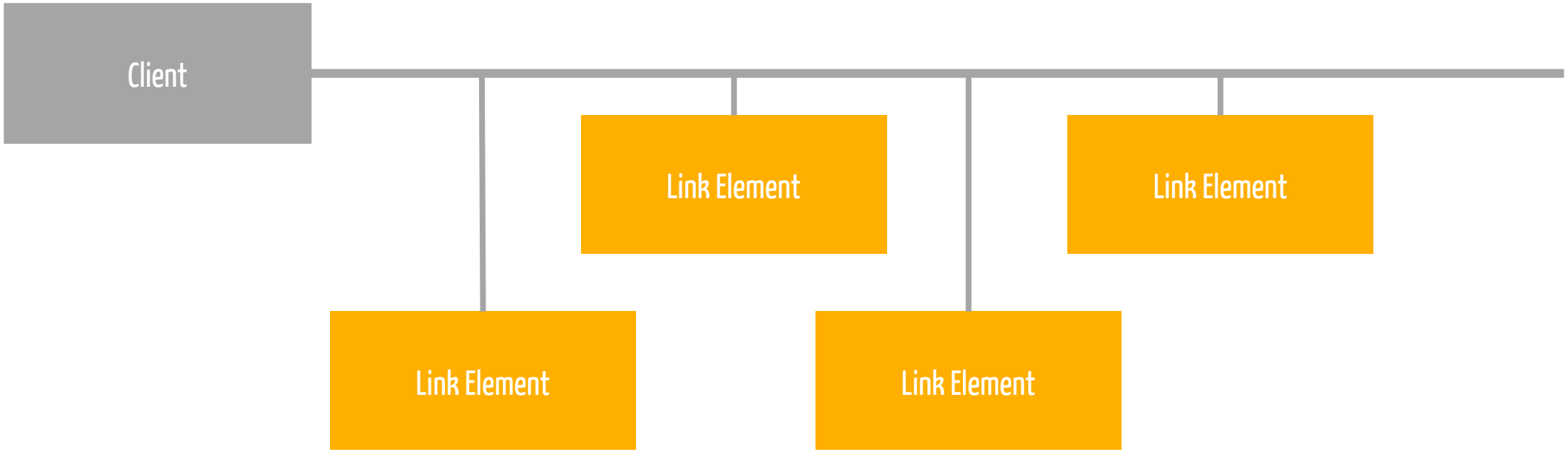
WebApi

```
class FilterOutInvalidOperationException : IActionFilter  {
    public bool AllowMultiple { get; }
    public async Task<HttpResponseMessage>
ExecuteActionFilterAsync(HttpActionContext actionContext,
CancellationToken cancellationToken,
Func<Task<HttpResponseMessage>> continuation) {
        try {
          var response = await continuation();
          return response;
        } catch (InvalidOperationException) {
        }
        return new HttpResponseMessage();
    }
}
```

Goals

target

Chain of Responsibility


Client
Link Element
Link Element
Link Element
Link Element

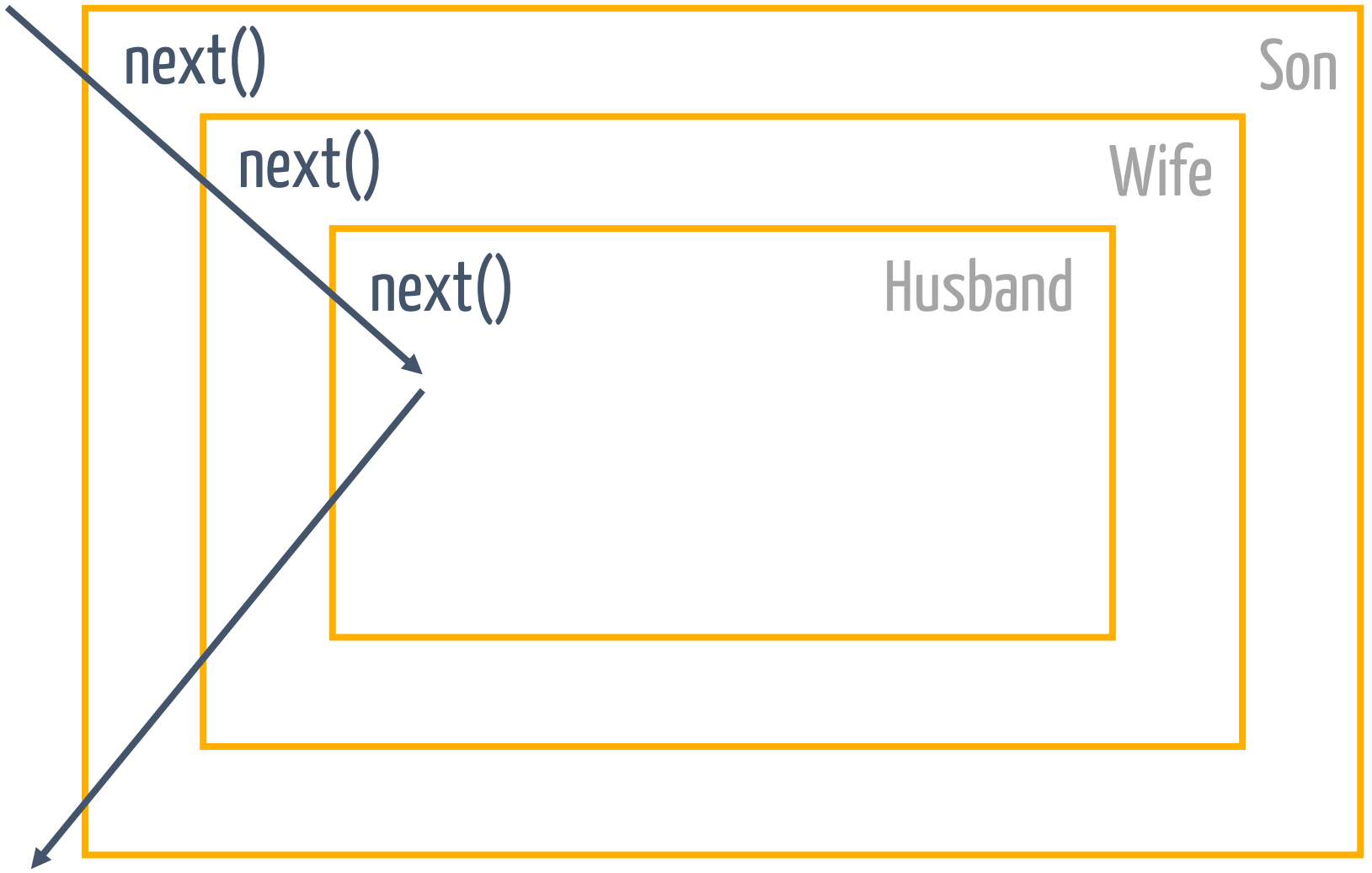
son wife husband

son wife husband

```
static void Person(Action next)
{
    // Implementation
    next();
}
```

```
public void ManualDishwasherUnloading()
{
    Son(() => Wife(() => Husband(() => Done())));
}
```

Demo


next()
Son
next()
Wife
next()
Husband

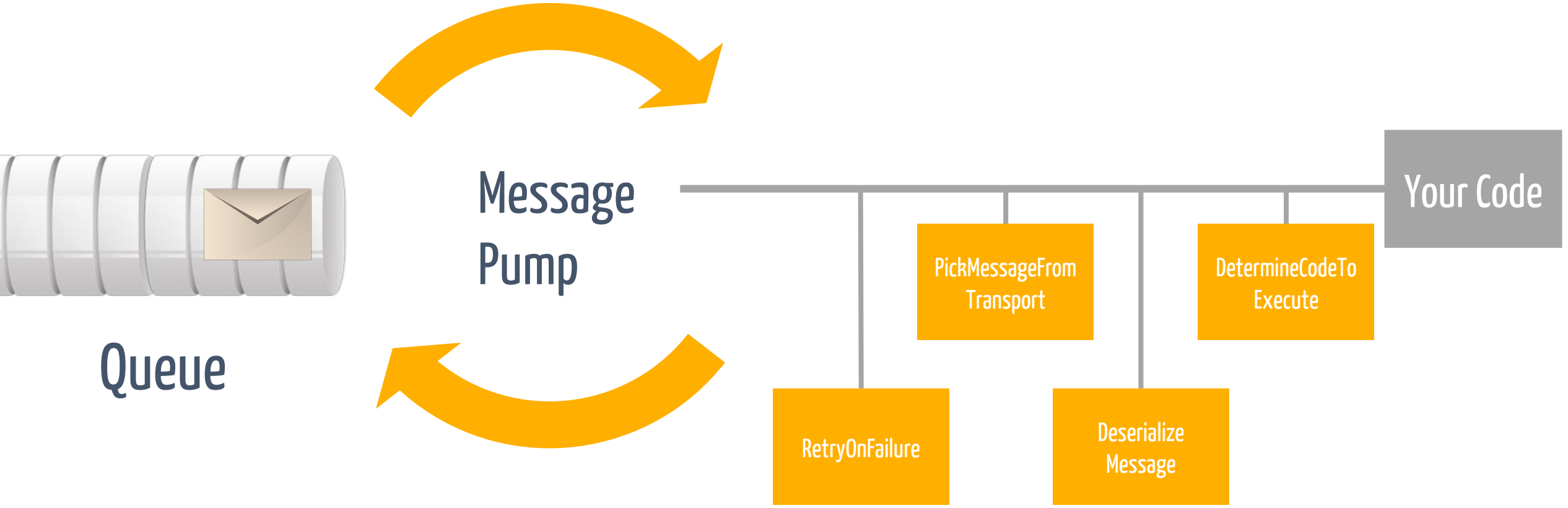
cumbersome

await Demo

missing ConfigureAwait(false) ;)

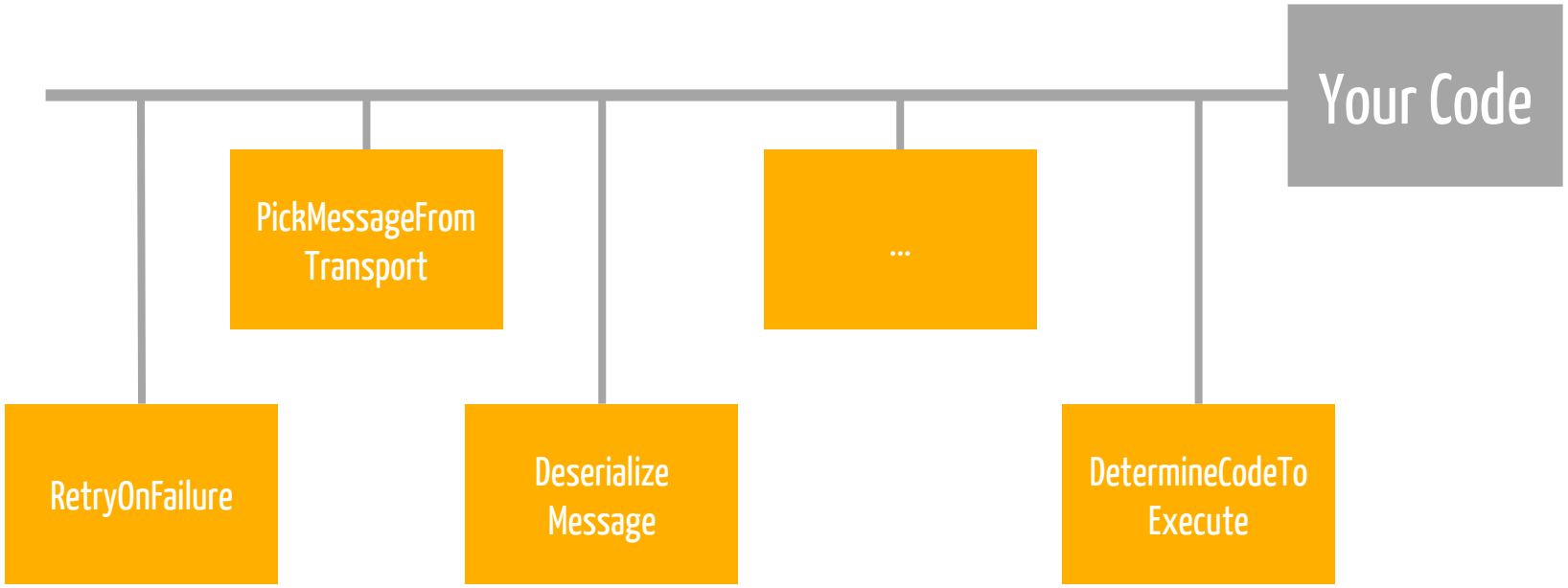
```
static void IgnoreDishStillWetException(Action next))
{
    try {
        next();
    }
    catch(DishStillWetException) { }
}
```

await Demo

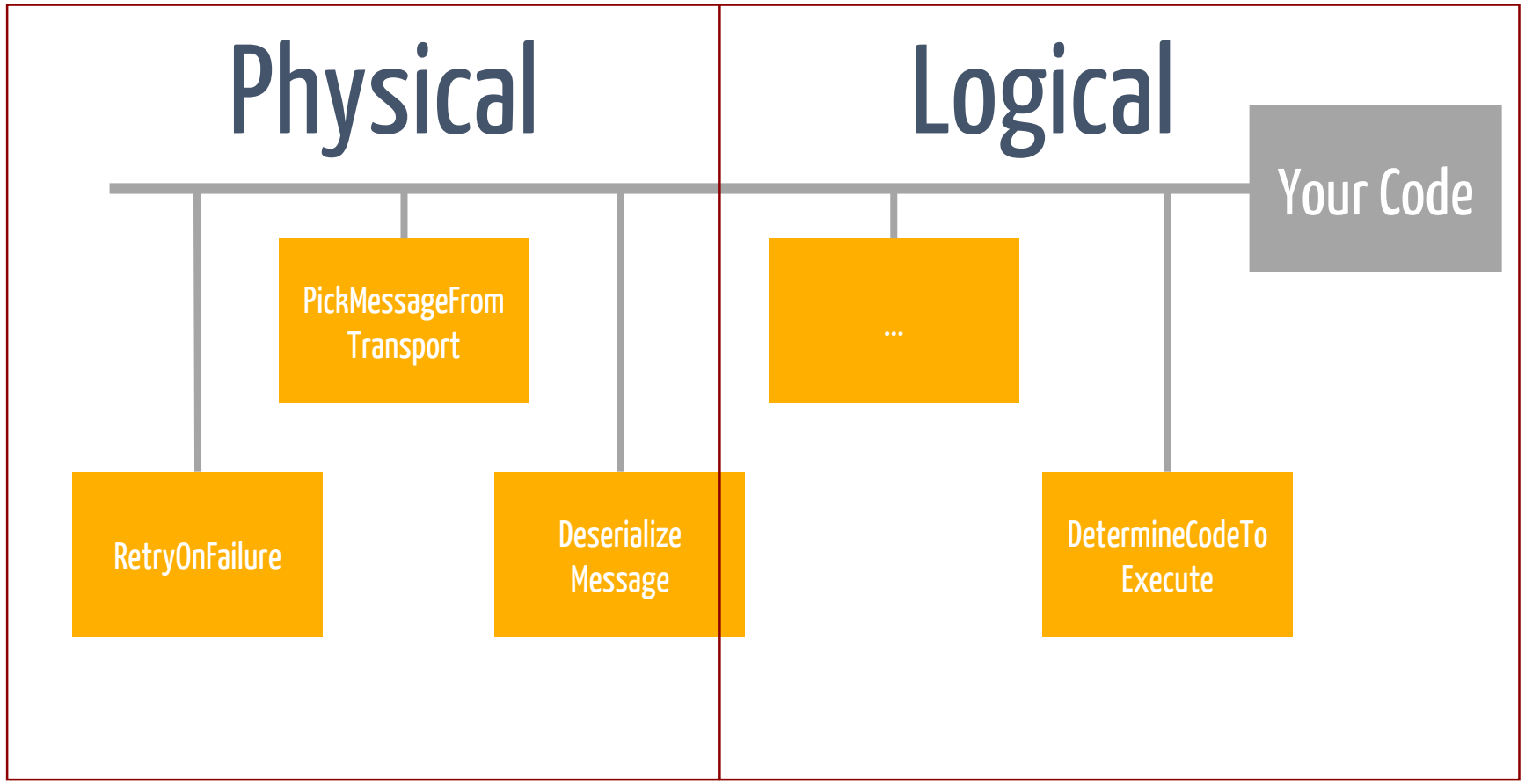

Message
Pump
Queue
Your Code
PickMessageFrom
Transport
DetermineCodeTo
Execute
RetryOnFailure
Deserialize
Message


Pattern
Build It
WrapUp

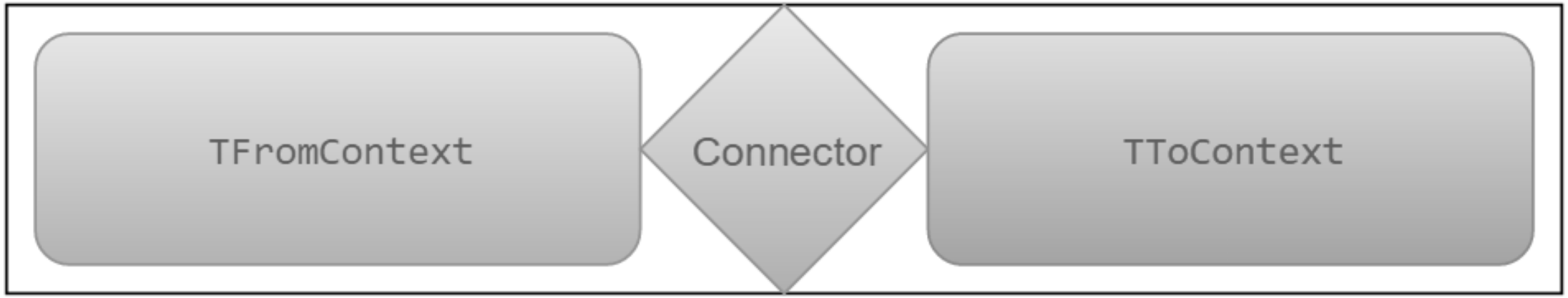
await Demo



Where to place links?

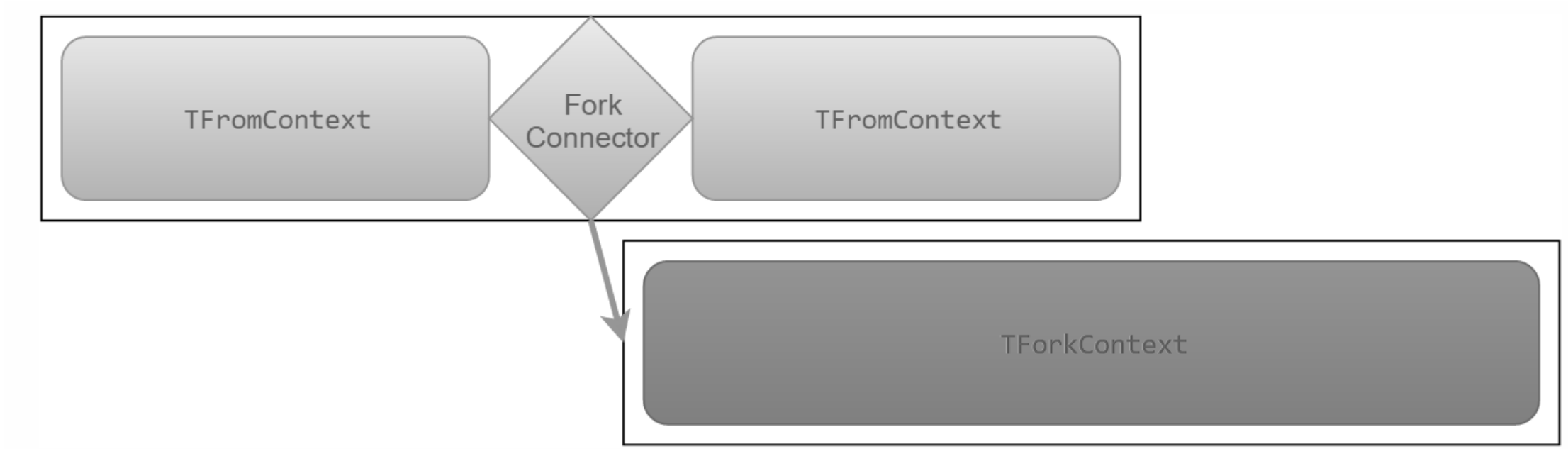

Physical
Logical
Your Code
PickMessageFrom Transport
...
RetryOnFailure
Deserialize Message
DetermineCodeTo Execute

Stages

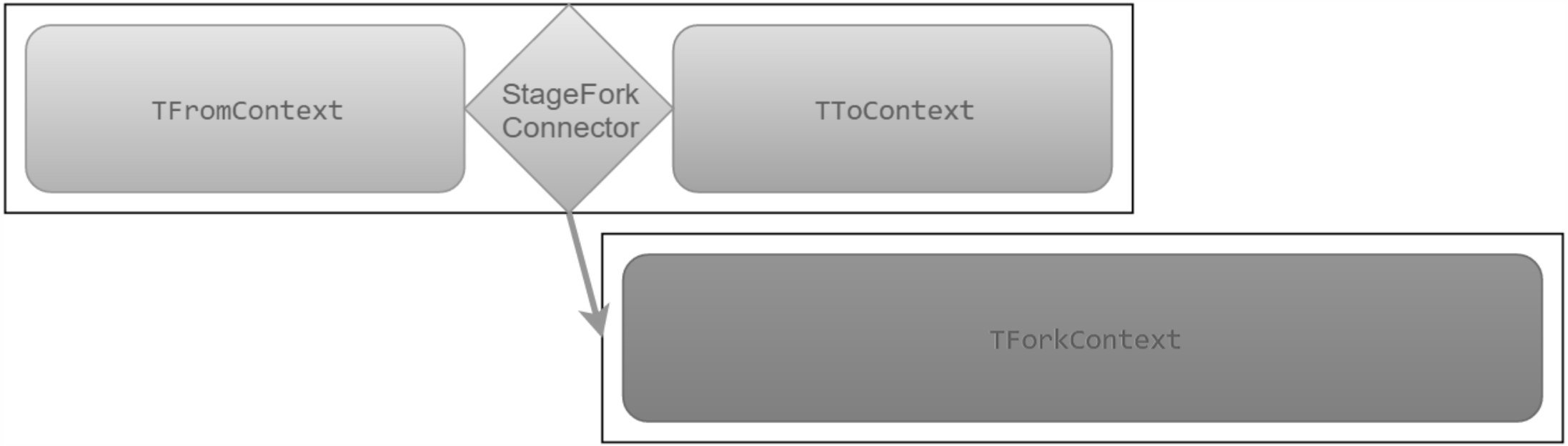


Stage Connector

await Demo



Fork Connector



Stage Fork Connector

Tree of Responsibility

Keep calm and let your head explode


Pattern
Build It
WrapUp

NSB v6

Will be Async all the way

Uses the chain of responsibility pattern heavily

particular.net/blog/async-await-its-time

docs.particular.net/nservicebus/pipeline/customizing-v6

Recap

reminder

Chain of Responsibility or Russian Dolls is a flextensible pattern ideally suited to build robust IO bound pipelines

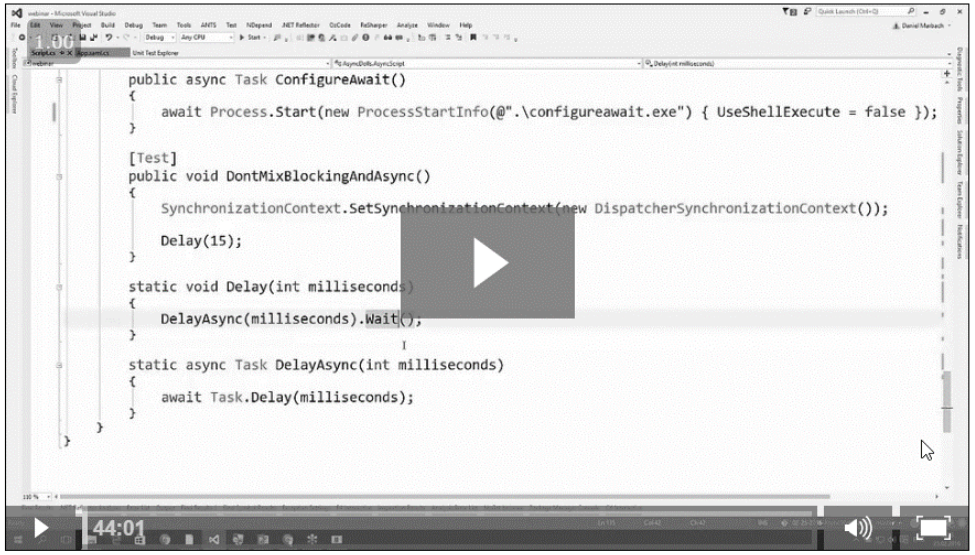
The pattern is used in many OSS projects

Know it, learn it, love it *

go.particular.net/ndc16.async

Async/Await Webinar Series: Best Practices

See how to avoid common pitfalls in asynchronous code bases



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▸ NServiceBus v6 API Update

Summary

Daniel Marbach shows how to avoid common pitfalls in asynchronous code bases.

Learn how to:

- Differentiate between IO-bound vs CPU-bound work and how this relates to Threads and Tasks
- Avoid serious production bugs as a result of asynchronous methods returning void
- Opt-out from context capturing when necessary
- Deal with synchronous code in the context of asynchronous code

Slides, Links...

github.com/danielmarbach/async-dolls

Particular Software

await Q & A

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Thanks