# Writing Integration Tests for ASP.NET Core Web APIs: Part 2

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# Overview

**Creating a custom WebApplicationFactory**

**Testing POST endpoints**

- Testing input validation
- Asserting against POST responses

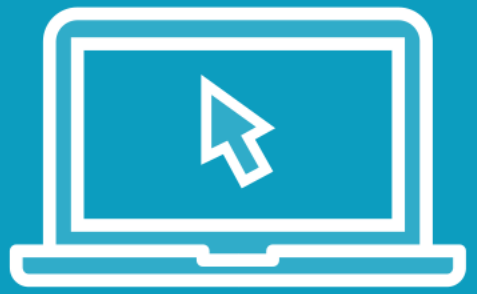
**Applying xUnit theory tests**

**Testing side-effects of API endpoints**

**Testing custom middleware**

**Testing exception handling**

# Demo

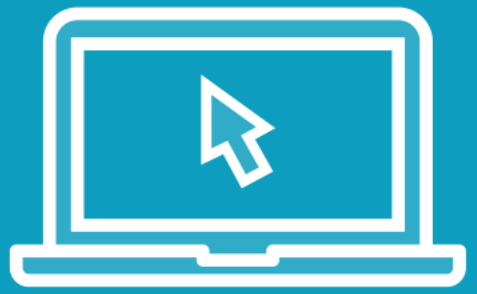


Creating a custom WebApplicationFactory

Registering fake services within a custom factory

Discussing considerations for sharing a test host

# Demo



**Testing POST requests**

**Testing that invalid data is rejected**

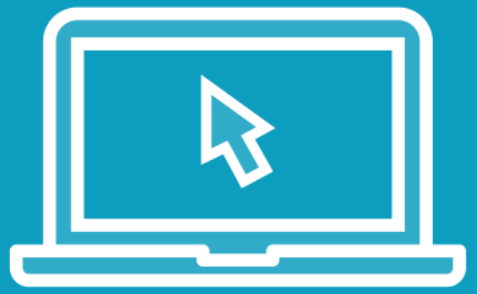
- This will prove that models include required validation attributes

# RFC 7807 - Problem Details

Defines a "problem detail" to carry machine-readable details of errors in a HTTP response.

https://tools.ietf.org/html/rfc7807

# Demo



**Refactoring tests to cover extra cases**

**Learn about xUnit theory tests**

- Parametrise our test methods
- Define member data for test cases

# xUnit Fact Tests

Test invariant conditions, with fixed assertions that we always expect to pass.

# xUnit Theory Tests

**A single test method is used to test multiple conditions and input values**

- Execute multiple logical tests
- Reduce repetitive test methods

**Methods accept one or more parameters**

**Parameters for each test are supplied inline or from an enumerable data source**

# Demo

**Adding tests to cover other requirements**

- Preventing duplicate products

# Demo

**Testing success responses**

- Write two tests which confirm that a new product is successfully created

# Demo

**Testing side-effects**

- Write tests to ensure a message is sent to a queue or event bus

# Demo

Testing middleware

Accessing host services within tests

# Implementing Custom Middleware Components in ASP.NET Core

by Gavin Lanata

ASP.NET Core is the low-overhead, high-performance counterpart to the .NET Framework's ASP.NET. In this course, you'll learn what middleware is and expand on that knowledge to create your own middleware components.

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## Course author

Gavin Lanata

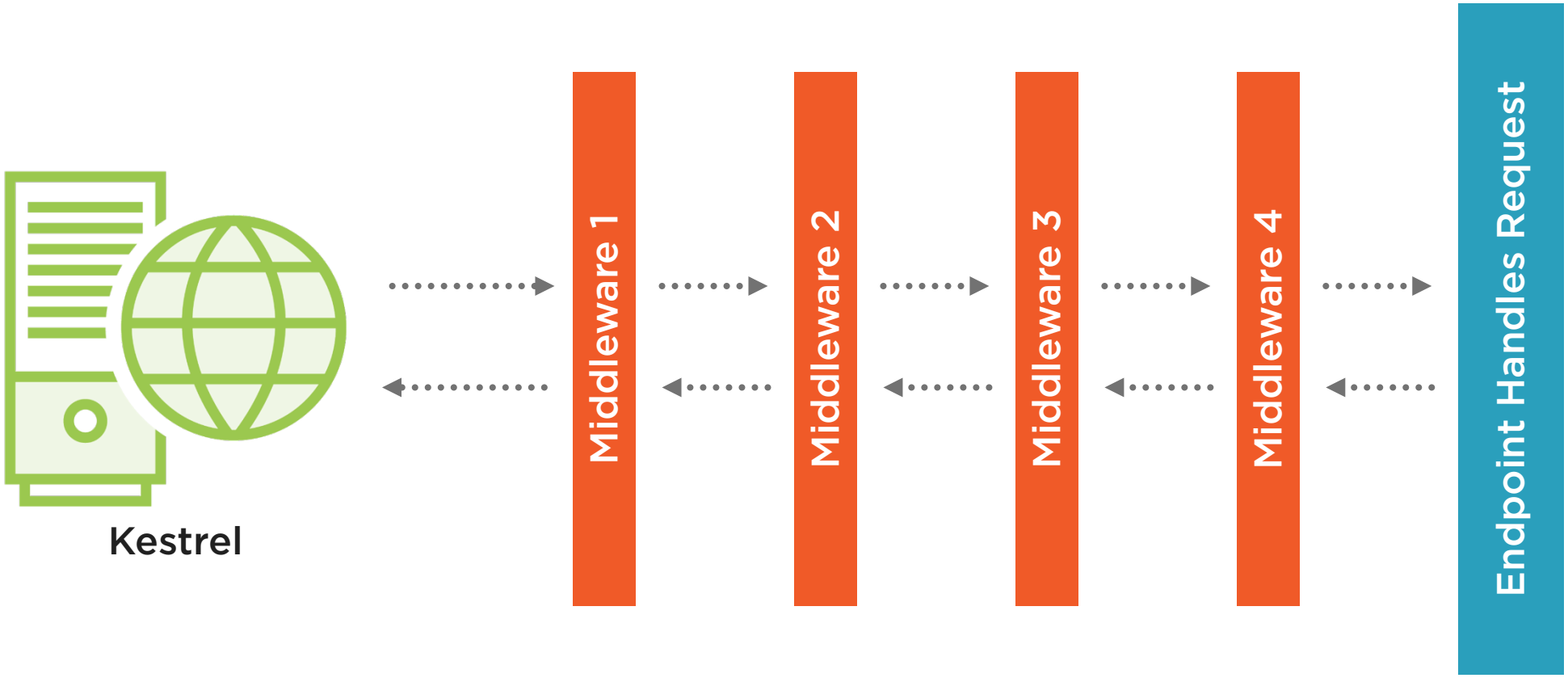
Gavin has been building front-ends to software applications using the .Net Framework for the last four years. Using C#/XAML for the majority of his work, he has carried those skills on to building...

## Course info

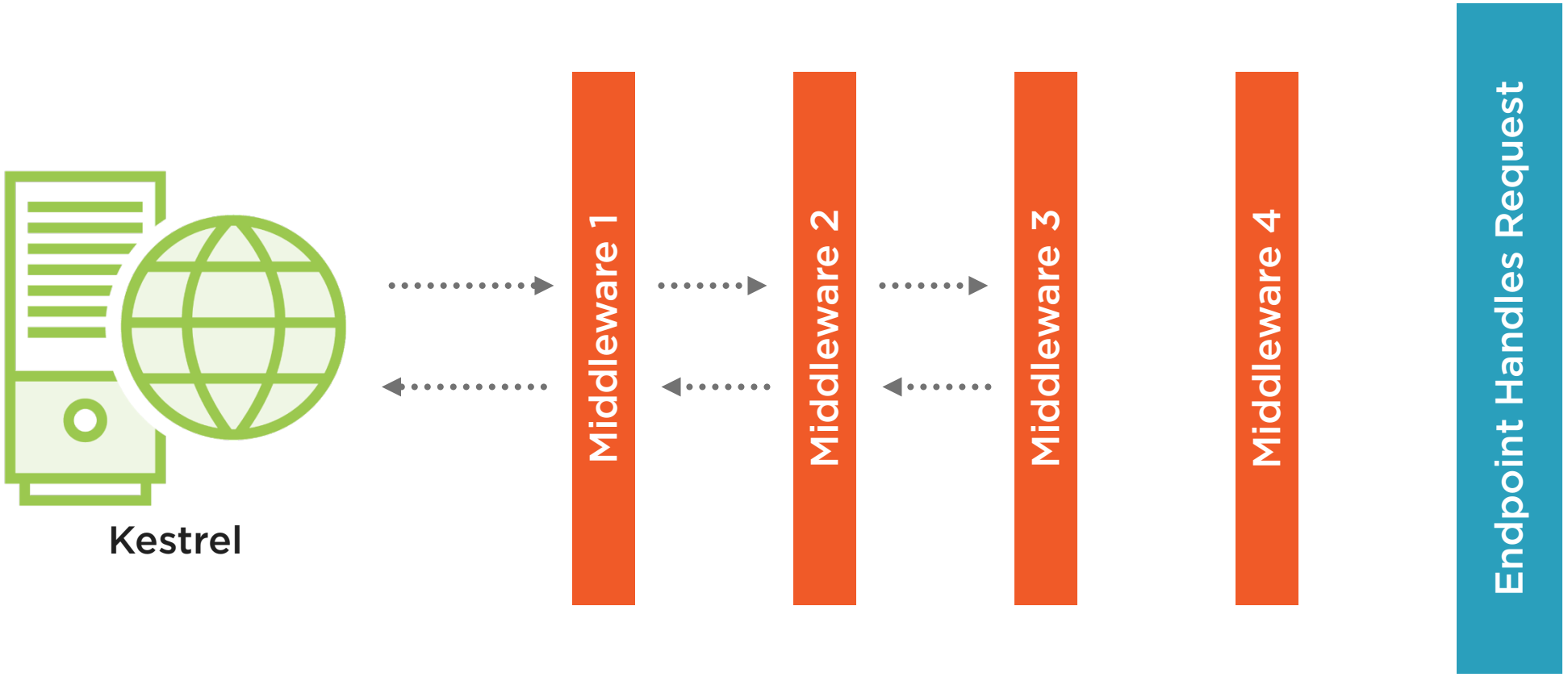
| | |
|---|---|
| Level | Intermediate |
| Rating | ★★★★½ (96) |
| My rating | ★★★★★ |
| Duration | 0h 48m |
| Released | 17 Oct 2016 |

## Share course

# ASP.NET Core Middleware



# ASP.NET Core Middleware



# Demo

**Testing exceptions**

**Learn to use the RequestBuilder**

- Build and send requests with headers

# Summary

**Created a custom WebApplicationFactory**

**Tested model binding and input validation**

- Utilised xUnit theory tests

**Tested POST endpoint responses**

**Tested custom middleware**

- Used the RequestBuilder

**Tested exception handling**

# Up Next:
# Writing Integration Tests for ASP.NET Core User Interface Applications