nurun
services conseils

Microsoft et le Développement Web Moderne

ASP.NET Core 1.0 - MVC 6 - Entity Framework 7 – Linux - Azure

Ahmed Chaabouni et Mathieu Benoit

Sommaire

Introduction

1 2 3 4 5 6 7 8

Objectifs

- Faire découvrir des concepts autour de :
  - Microsoft
  - ASP.NET MVC
  - Azure
- Exploration autour des nouvelles tendances pour le développement Web de Microsoft avec ASP.NET Core 1.0
- Donner des astuces et références pour vos futurs projets et pas seulement qu'avec Microsoft.
- Montrer l'ouverture de Microsoft :
  - Open Source
  - Multiplatforme
  - API - Interopérabilité

Contexte

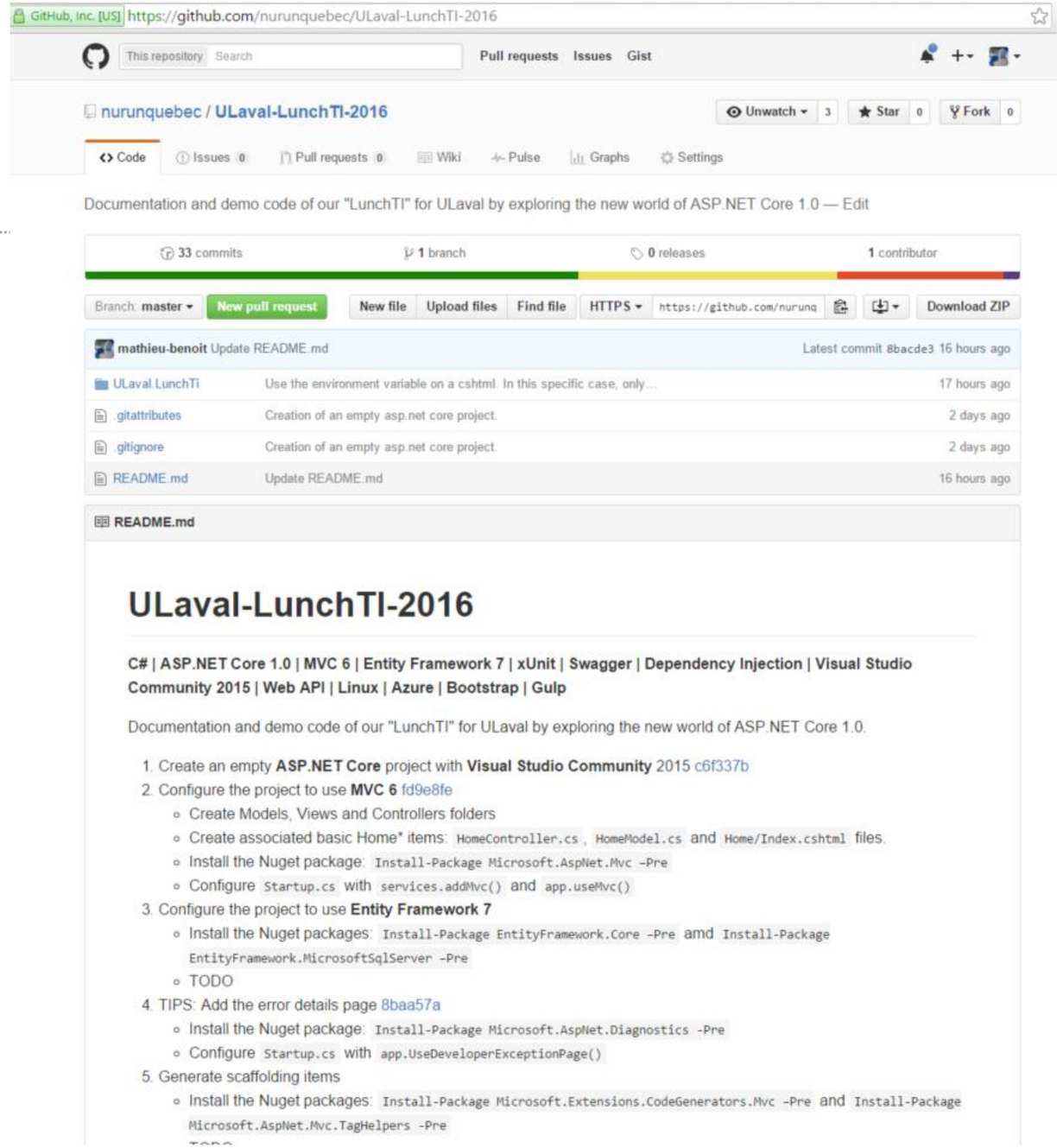
- Nurun Services conseils
  - Services
  - Stratégie
  - Design
  - Technologie
- Centre d'Excellence Microsoft
  - Support, veille et présentations
  - Formations et certifications
  - Renforcer l'offre de service
- Membre de la Chaire de l'Université Laval
  - Sensibiliser
  - Promouvoir
  - Partager
  - Échanger

Présentations des années précédentes

Sondage

- Présent(e) aux précédentes présentations ?
- Connaissance de :
  - .NET / C# ?
  - MVC ?
  - ASP.NET MVC ?
  - Entity Framework ?
  - Azure ?

github/nurunquebec



Microsoft, un écosystème ouvert ? Gratuit ? Open source ?

1 2 3 4 5 6 7 8

Visual Studio Community

Flexibilité

Créez des applications pour n'importe quelle plateforme

Productivité

Concepteurs, éditeurs, débogueurs, profileurs, dans un outil unique

Écosystème

Accès à des milliers d'extensions

Langues

Codez en C#, Visual Basic, F#, C++, HTML, JavaScript, Python et d'autres langages

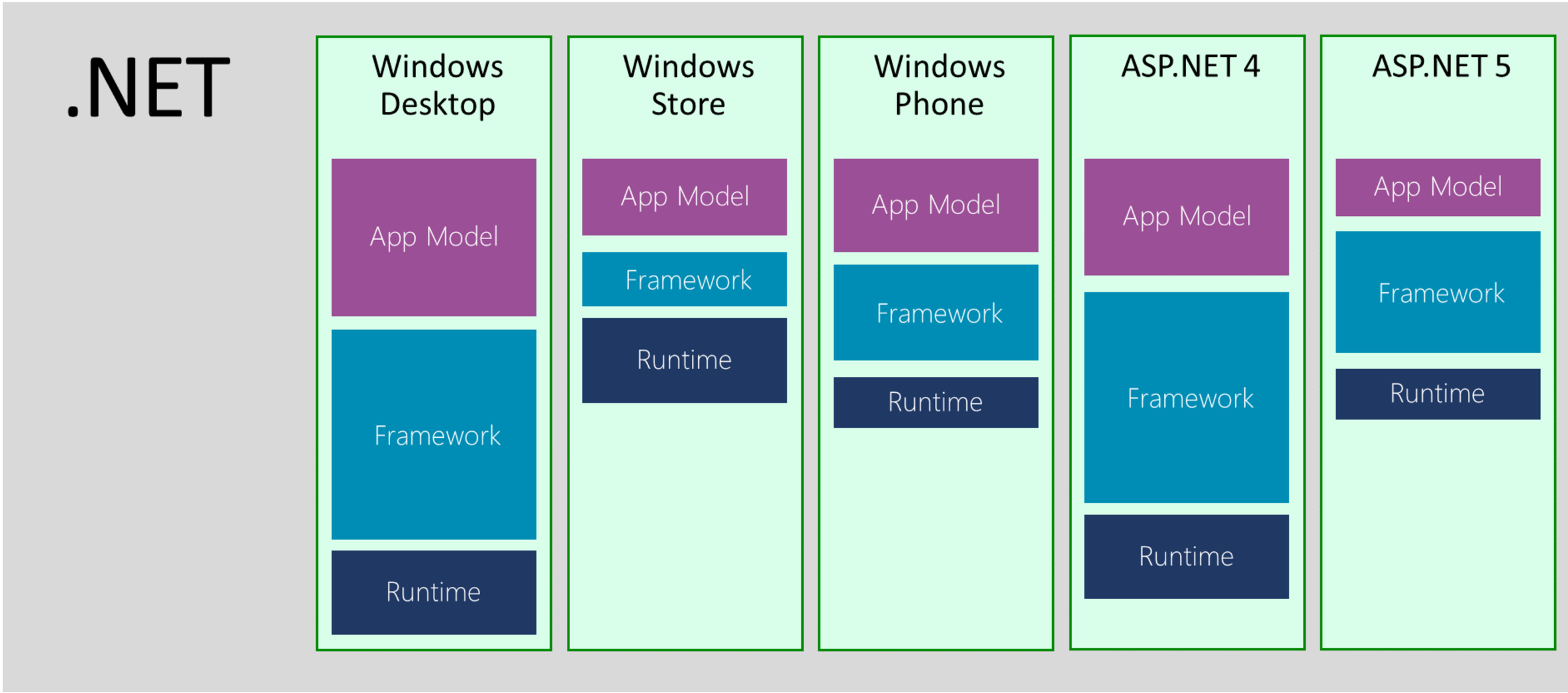
Visual Studio Code

ASP.NET Core node.js

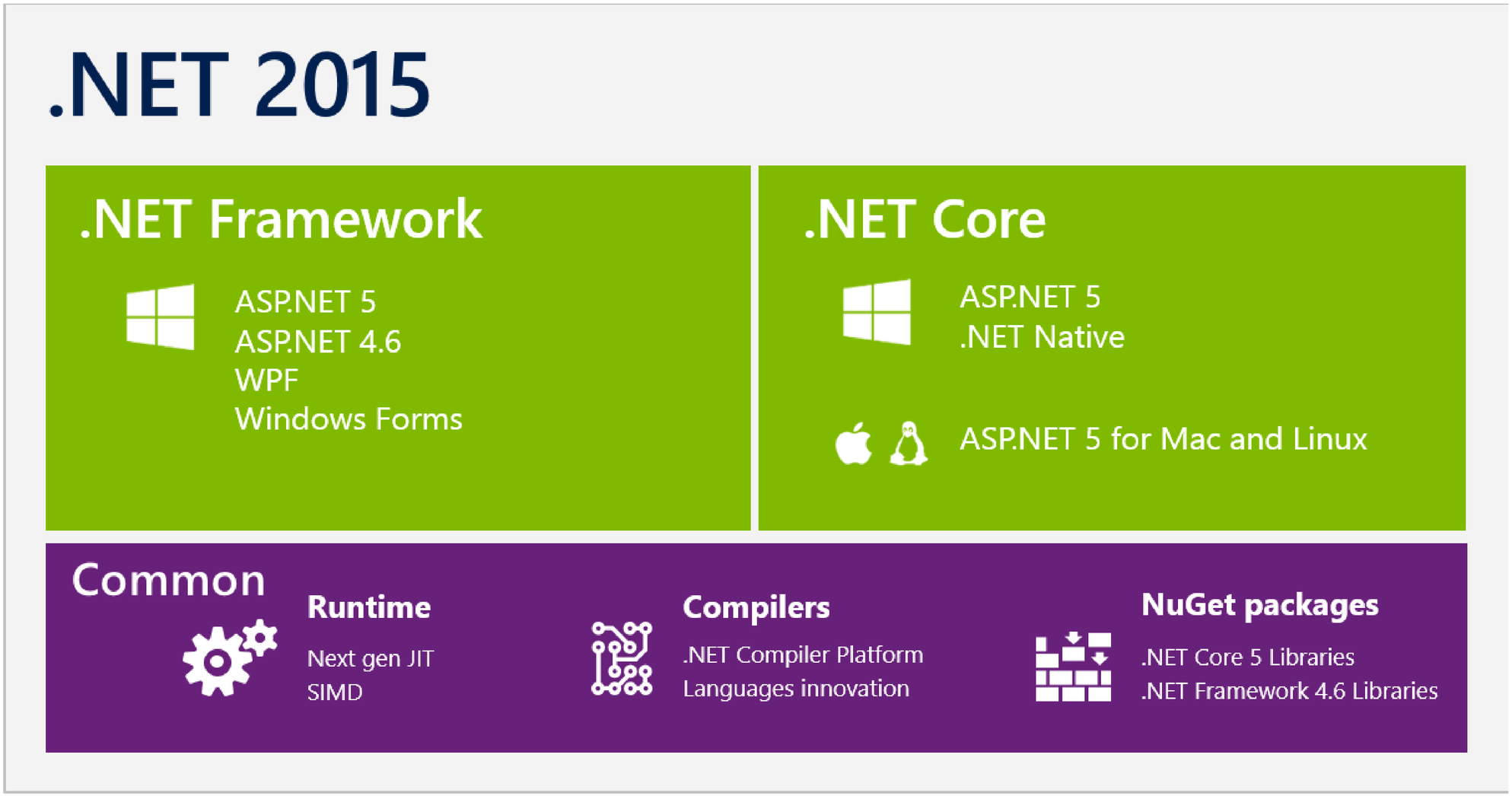
Develop ASP.NET and Node applications at lightning speed

Get started now

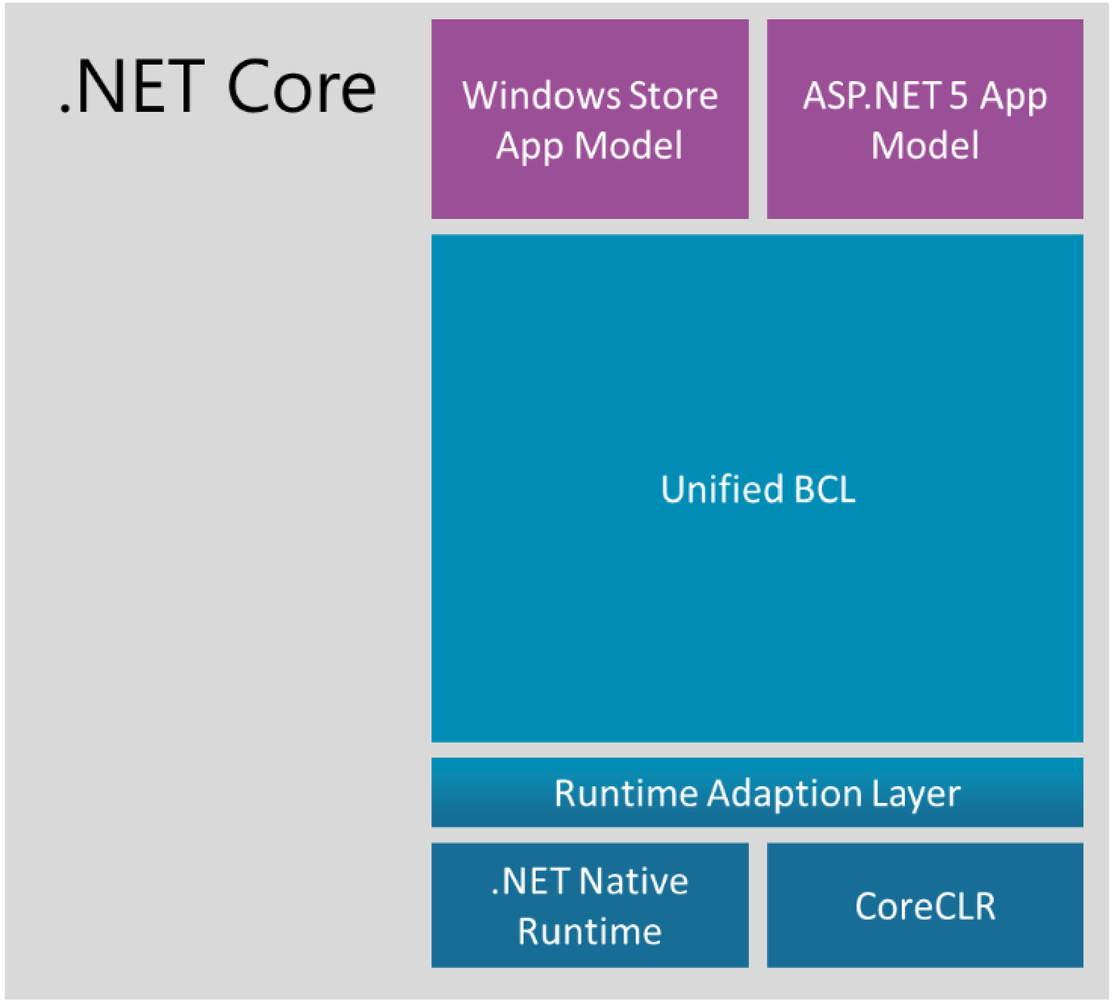
.NET

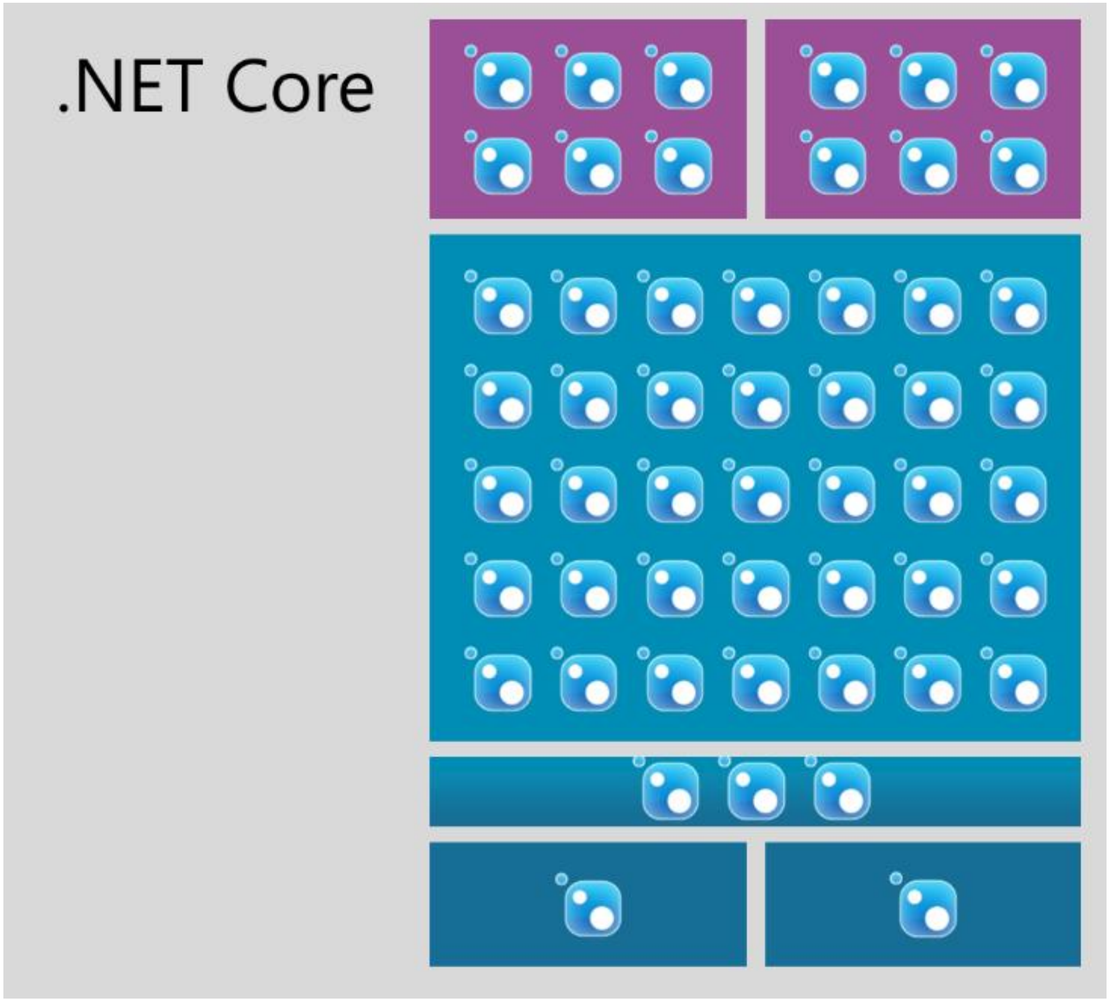

.NET
Windows Desktop
App Model
Framework
Runtime
Windows Store
App Model
Framework
Runtime
Windows Phone
App Model
Framework
Runtime
ASP.NET 4
App Model
Framework
Runtime
ASP.NET 5
App Model
Framework
Runtime

.NET 2015


.NET 2015
.NET Framework
ASP.NET 5
ASP.NET 4.6
WPF
Windows Forms
.NET Core
ASP.NET 5
.NET Native
ASP.NET 5 for Mac and Linux
Common
Runtime
Next gen JIT
SIMD
Compilers
.NET Compiler Platform
Languages innovation
NuGet packages
.NET Core 5 Libraries
.NET Framework 4.6 Libraries

.NET Core


.NET Core
Windows Store App Model
ASP.NET 5 App Model
Unified BCL
Runtime Adaption Layer
.NET Native Runtime
CoreCLR


.NET Core

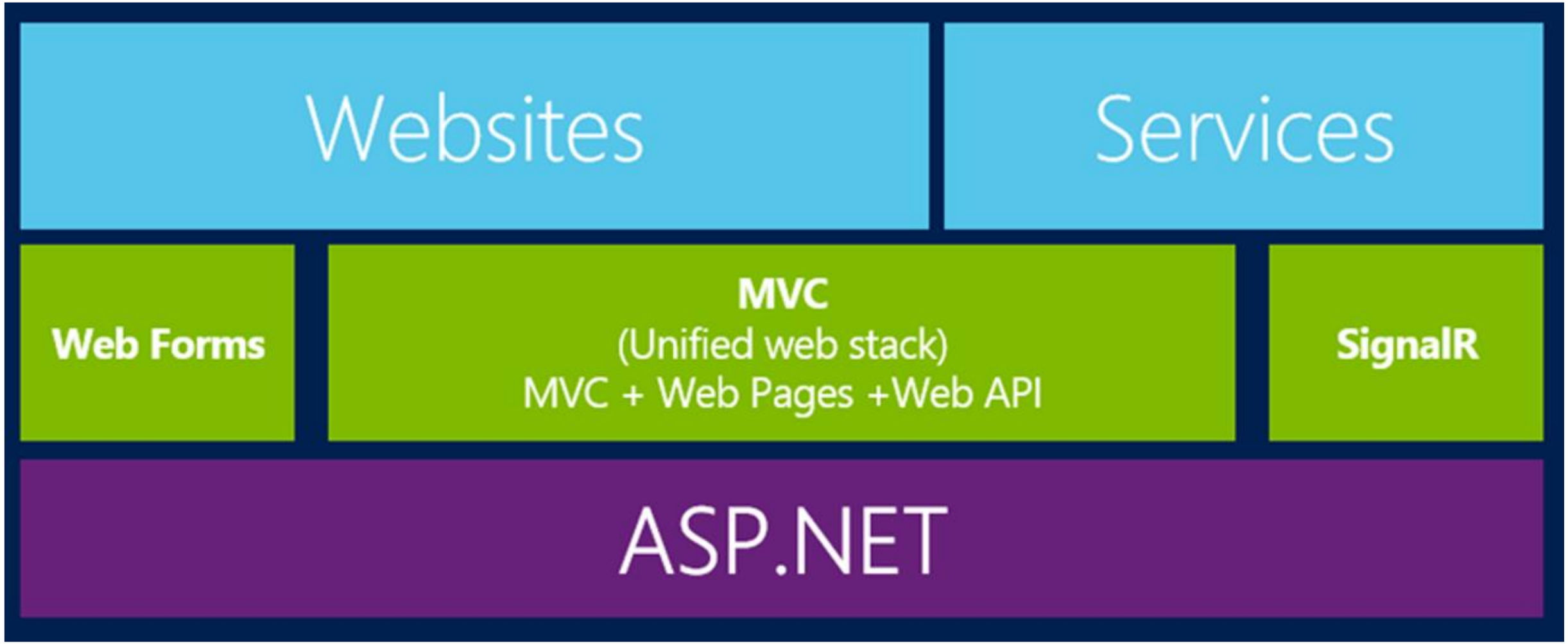
.NET Foundation

.NET Compiler Platform ("Roslyn")	.NET Core
.NET Micro Framework	.NET SDK For Hadoop
ASP.NET 5	ASP.NET Ajax Control Toolkit
ASP.NET MVC, Web API and Web Pages (Razor)	ASP.NET SignalR
Cecil	Couchbase Lite for .NET
Entity Framework	Kudu
LLILC	MailKit
Managed Extensibility Framework (MEF, MEF2)	Microsoft Azure SDK for .NET
Microsoft Azure WebJobs SDK	Microsoft Web Protection Library
MimeKit	MSBuild
MVVM Light Toolkit	NuGet
Open Live Writer	Open XML SDK
Orchard CMS	Orleans
OWIN Authentication Middleware (Katana Project)	Prism
Salesforce Toolkits for .NET	System.Drawing (Mono)
IdentityManager	IdentityServer
Umbraco	WCF
Windows Phone Toolkit	WorldWide Telescope
Xamarin.Auth	Xamarin.Mobile

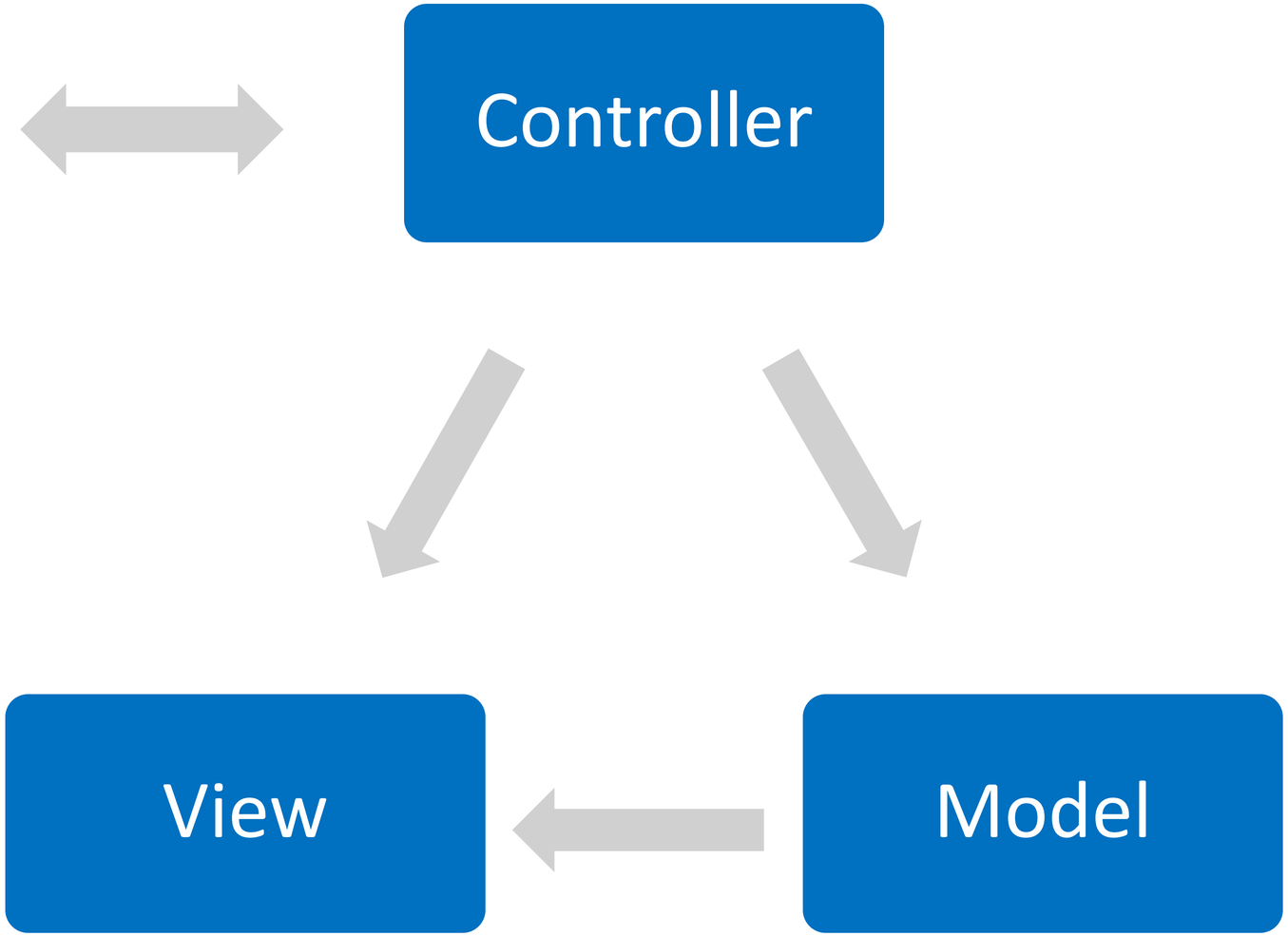
ASP .NET Core 1.0 et Entity Framework 7 en action !

1 2 **3** 4 5 6 7 8

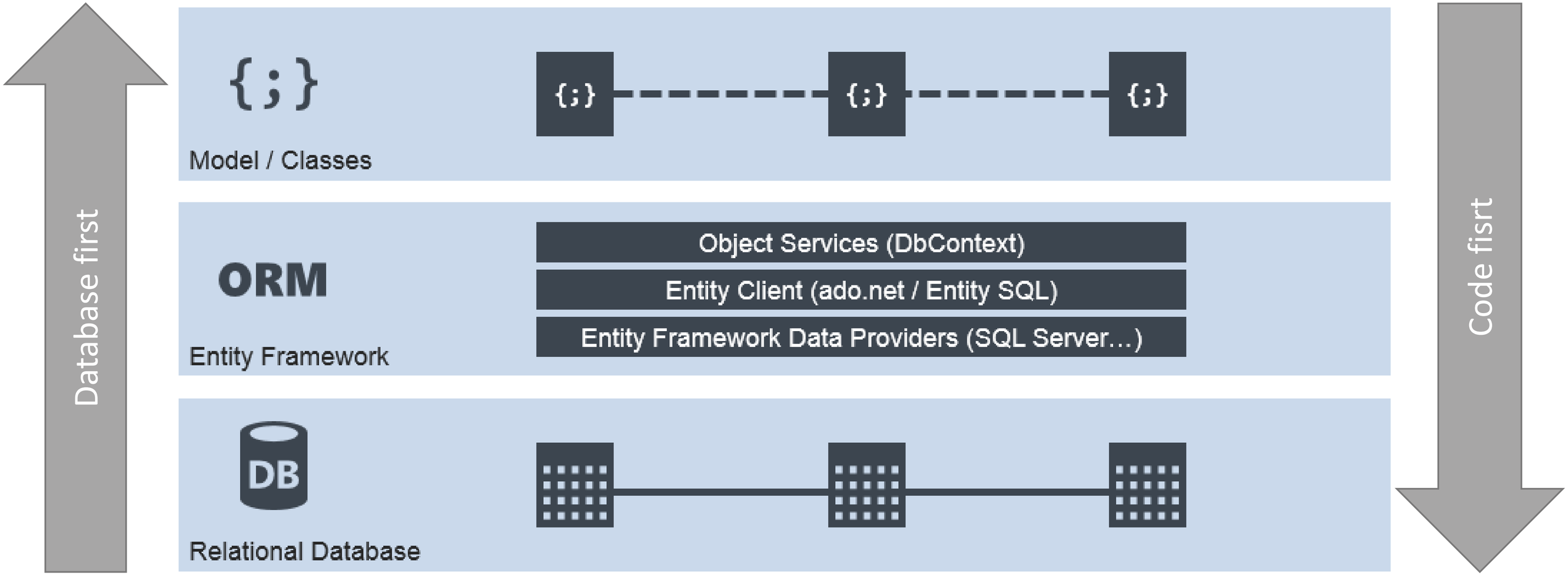
Projet ASP.NET



ASP.NET MVC



Entity Framework



Entity Framework 7

- Plus léger
- Plus rapide
- Plus portable
- InMemory
- Bases de données non relationnelles

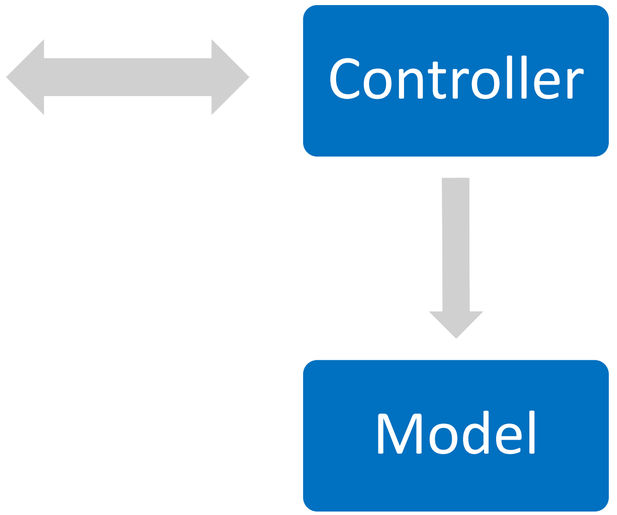
Tag Helper

```
@model MyProject.Models.Product


@using (Html.BeginForm())
{
    <div>
        @Html.LabelFor(m => p.Name, "Name:")
        @Html.TextBoxFor(m => p.Name)
    </div>
    <input type="submit" value="Create" />
}
```

```
@model MyProject.Models.Product
@addtaghelper "Microsoft.AspNet.Mvc.TagHelpers"

<form asp-controller="Products" asp-action="Create" method="post">
    <div>
        <label asp-for="Name">Name:</label>
        <input asp-for="Name" />
    </div>

    <input type="submit" value="Save" />
</form>
```

WebAPI

- Web API
  - Http Service
  - REST
  - Stateless
  - Interopérable
  - Léger
- ASP.NET MVC 6
  - Unification des Controllers et des ApiControllers
- Astuce
  - Exposez la definition de vos API avec Swagger !



Injection de dépendance

```
namespace WebApplication1
{
    public class TimeService
    {
        public TimeService()
        {
            Ticks = DateTime.Now.Ticks.ToString();
        }
        public String Ticks { get; set; }
    }
}
```

```
public void ConfigureServices(IServiceCollection services)
{
    services.AddMvc();
    services.AddTransient<TimeService>();
}
```

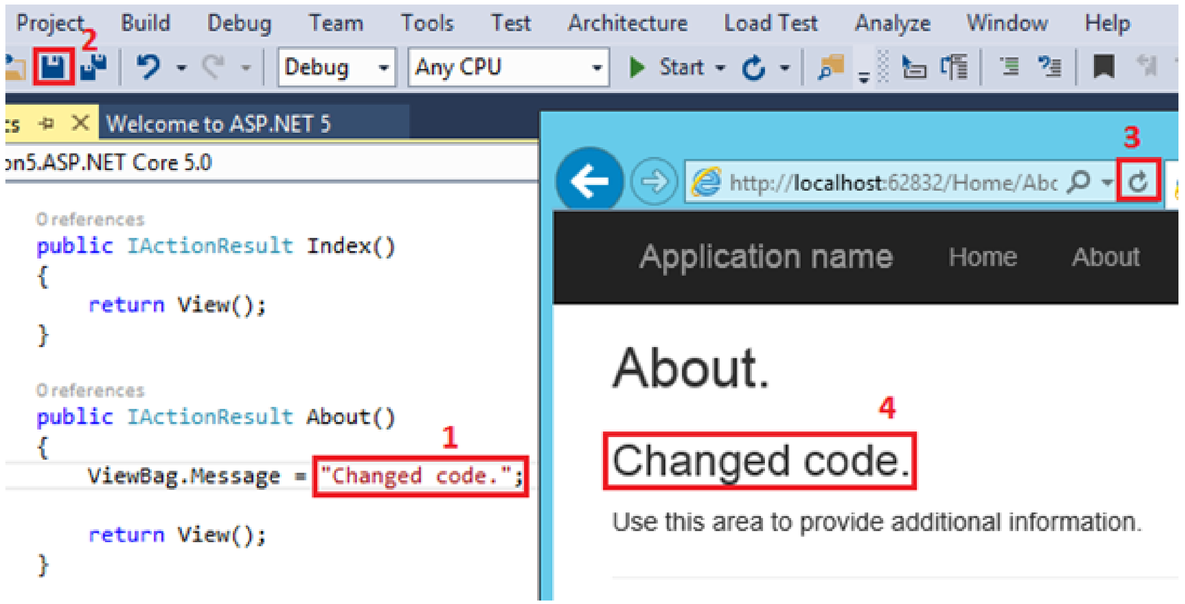
```
public class HomeController : Controller
{
    public TimeService TimeService { get; set; }

    public HomeController(TimeService timeService)
    {
        TimeService = timeService;
    }

    public IActionResult About()
    {
        ViewBag.Message = TimeService.Ticks + " From Controller";
        System.Threading.Thread.Sleep(1);
        return View();
    }

    // Code removed for brevity
}
```

```
@using WebApplication23
@inject TimeService TimeSvc

<h3>@ViewBag.Message</h3>

<h3>
    @TimeSvc.Ticks From Razor
</h3>
```

Développement dynamique

Dynamic Development

In Visual Studio 2015, we take advantage of dynamic compilation to provide a streamlined developer experience. You no longer have to compile your application every time you want to see a change. Instead, just (1) edit the code, (2) save your changes, (3) refresh the browser, and then (4) see your change automatically appear.



You enjoy a development experience that is similar to working with an interpreted language without sacrificing the benefits of a compiled language.

You can also optionally use other code editors to work on your ASP.NET 5 projects. Every function within the Visual Studio user interface is matched with cross-platform command-line operations.

Gulp, GruntJS, NPM et Bower

6. GruntJS, NPM, and Bower Support

Front-end development gets a lot of love in ASP.NET 5 through its support for GruntJS (and eventually Gulp).

GruntJS is a task runner that enables you to build front-end resources such as JavaScript and CSS files. For example, you can use GruntJS to concatenate and minify your JavaScript files whenever you perform a build in Visual Studio.

There are thousands of GruntJS plugins that enable you to do an amazing variety of different tasks (there are currently 4,334 plugins listed in the GruntJS plugin repository):

http://gruntjs.com/plugins

For example, there are plugins for running JavaScript unit tests, for validating the code quality of your JavaScript (jshint), compiling LESS and Sass files into CSS, compiling TypeScript into JavaScript, and minifying images.

In order to support GruntJS, Microsoft needed to support two new package managers (beyond NuGet). First, because GruntJS plugins are distributed as NPM packages, Microsoft added support for NPM packages.

Second, because many client-side resources – such as Twitter Bootstrap, jQuery, Polymer, and AngularJS – are distributed through Bower, Microsoft added support for Bower.

This means that you can run GruntJS using plugins from NPM and client resources from Bower.

Bootstrap

Designed for everyone, everywhere.

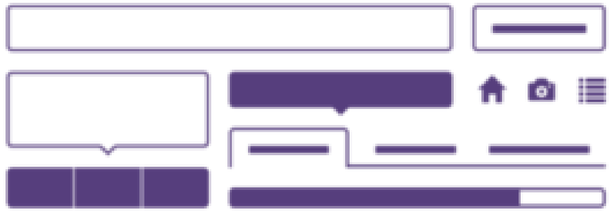
Bootstrap makes front-end web development faster and easier. It's made for folks of all skill levels, devices of all shapes, and projects of all sizes.

Preprocessors

Bootstrap ships with vanilla CSS, but its source code utilizes the two most popular CSS preprocessors, Less and Sass. Quickly get started with precompiled CSS or build on the source.

One framework, every device.

Bootstrap easily and efficiently scales your websites and applications with a single code base, from phones to tablets to desktops with CSS media queries.



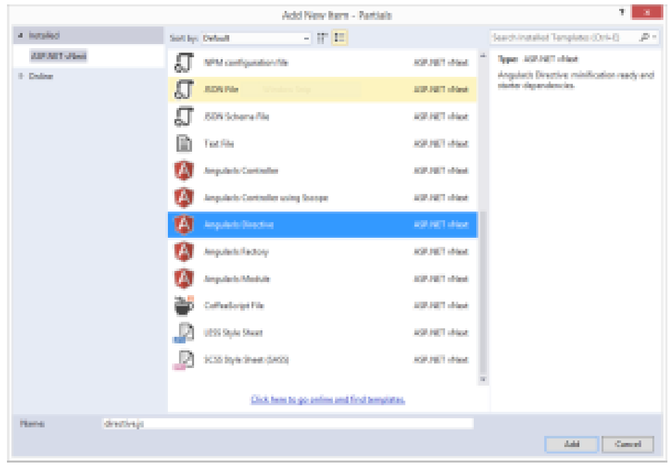
Full of features

With Bootstrap, you get extensive and beautiful documentation for common HTML elements, dozens of custom HTML and CSS components, and awesome jQuery plugins.

AngularJS

8. AngularJS

AngularJS is one of the most popular client-side frameworks for building Single Page Applications (SPAs). Visual Studio 2015 includes templates for creating AngularJS modules, controllers, directives, and factories.



The support in ASP.NET 5 for GruntJS makes ASP.NET an excellent server-side framework for building client-side AngularJS apps. You can combine and minify all of your AngularJS files automatically whenever you perform a build. You can interact with an MVC 6 controller from an AngularJS $resource using REST.

xUnit.net

```
[TestClass]
public class CalculatorTests {

    [TestMethod]
    public void TestAddNumbers() {
        // Arrange
        var calc = new Calculator();

        // Act
        var result = calc.AddNumbers(0, 0);

        // Assert
        Assert.AreEqual(0, result);

    }

}
```

```
public class CalculatorTests
{
    [Fact]
    public void AddNumbers()
    {
        // Arrange
        var calculator = new Calculator();

        // Act
        var result = calculator.AddNumbers(1, 1);

        // Assert
        Assert.Equal(result, 13);
    }
}
```

Déploiements dans Azure et sur Linux

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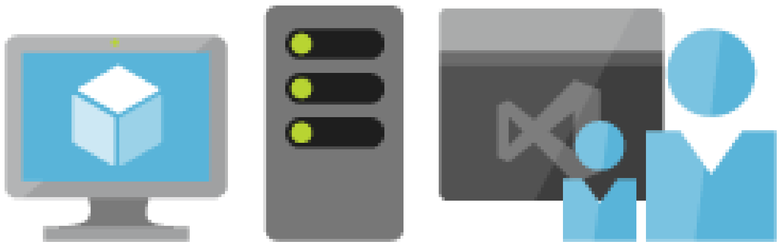
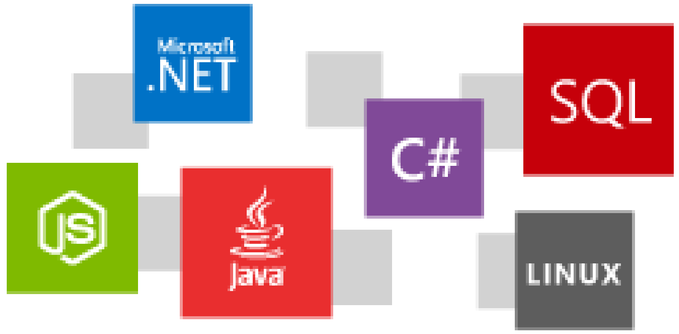
Introduction à Microsoft Azure

IaaS et PaaS

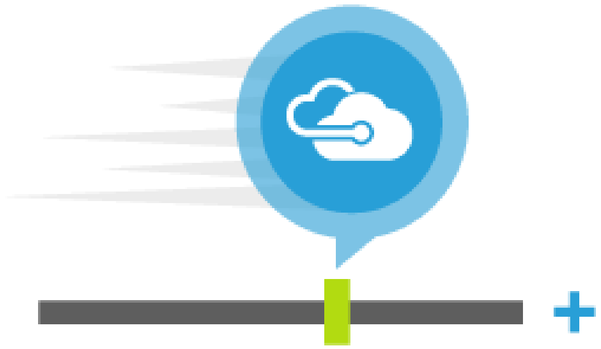


Configuration Hybride

Ouverture et flexibilité



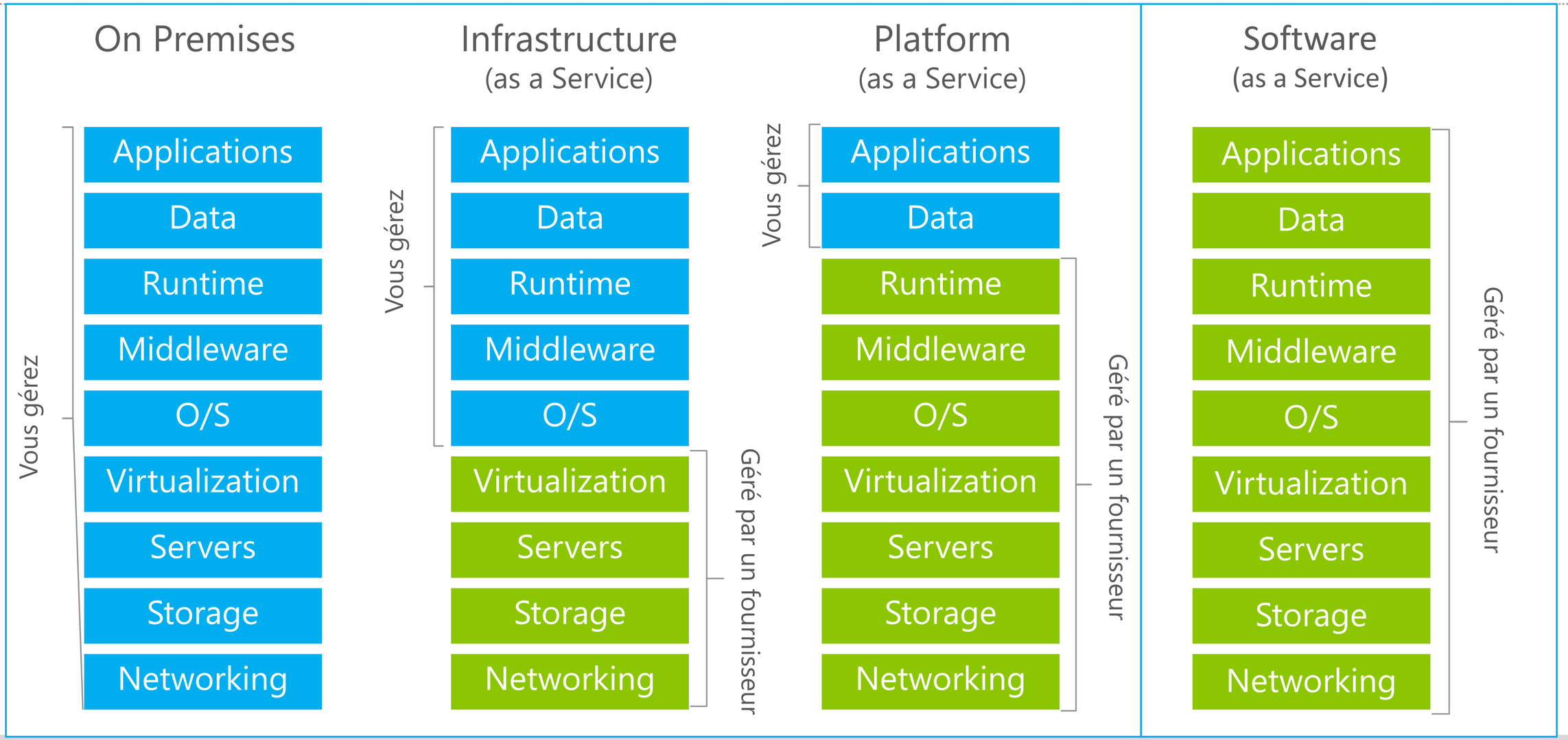
Disponibilité



Économique et élastique

Partout dans le monde

Microsoft Azure – Scénarios d'hébergement



Site Web dans Azure

- Conçu pour la sécurité des applications
  - Connections hybrides / VPN
  - Sauvegardes planifiées
  - Azure Active Directory
  - Web Jobs
  - Gestion de cache Redis
  - Restrictions d'IP / SSL
  - Web Sockets
  - SQL, MySQL, DocDB et Mongo
- Optimisé pour la disponibilité et l'ajustement
  - Déploiement automatisé
  - Échelonnage automatique
  - Répartition de charges
  - Surveillance des points de terminaison
  - Compression HTTP
  - Mise à disposition de contenu volumineux (CDN)
- Construit pour DevOps : Agilité par le déploiement continu
  - Débogage distant avec Visual Studio
  - Espaces de déploiement
  - Test en Production
  - Git, Visual Studio Online, GitHub, etc.
  - .NET, PHP, Python, Java, Node
  - Journalisation et Audit

Cloud ready

Cloud-ready configuration

In ASP.NET 5, we eliminated the need to use Web.config file for configuration values. We wanted to make it easier for you to deploy your app to the cloud and have the app automatically read the correct configuration values for that environment. The new system enables you to request named values from a variety of sources (such as JSON, XML, or environment variables). You can decide which formats work best in your situation.

In the Startup.cs file, you can now add or remove the sources for configuration values.

```
0 references
public Startup(IHostingEnvironment env)
{
    // Setup configuration sources.
    Configuration = new Configuration()
        .AddJsonFile("config.json")
        .AddEnvironmentVariables();
}
```

The above code snippet shows a project that is set up to retrieve configuration values from a JSON file and environmental variables. You can change this code if you need to specify other sources. In the specified config.json file, you could provide the values.

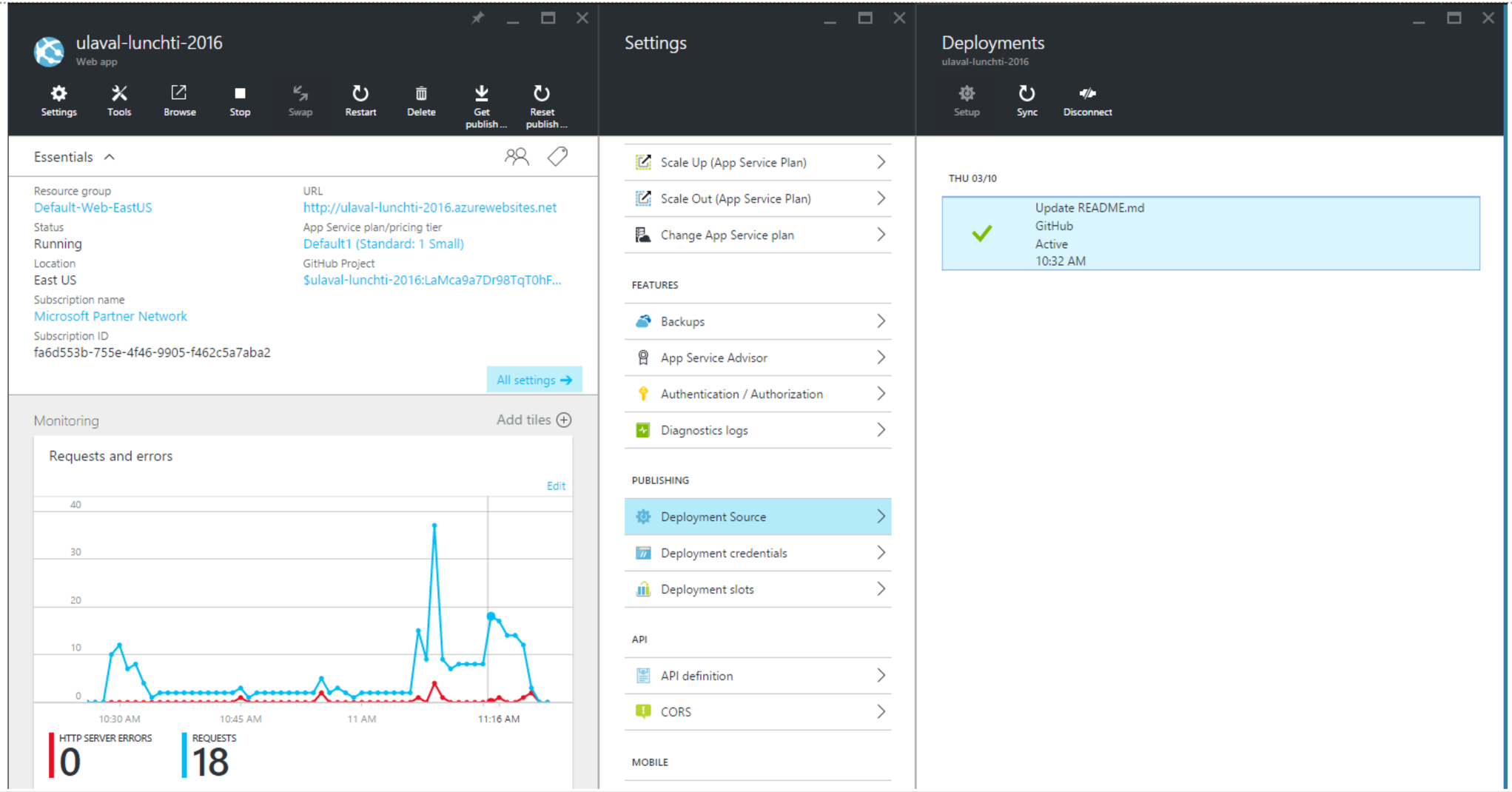
config.json | Startup.cs | Welcome to ASP.NET 5

<No Schema Selected>

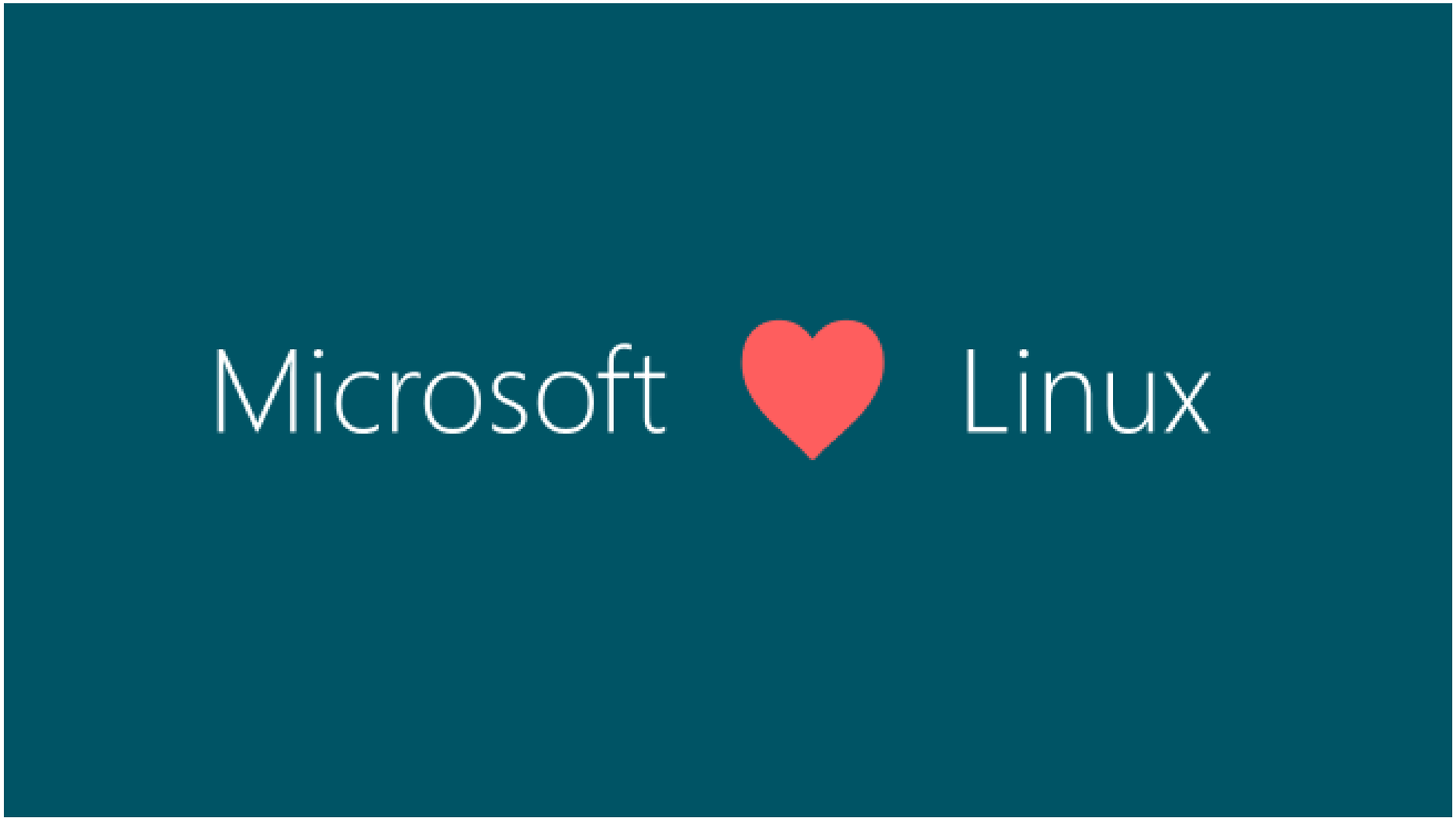
```
{
    "Data": {
        "DefaultConnection": {
            "ConnectionString": "Server=(localdb)\\mssqllocaldb;Database=aspne
        }
    },
    "EntityFramework": {
        "ApplicationDbContext": {
            "ConnectionStringKey": "Data:DefaultConnection:ConnectionString"
        }
    }
}
```

In your host environment, such as Azure, you can set the environmental variables and those values are automatically used instead of local configuration values after the application is deployed. You can deploy your application without worrying about publishing test values.

Déploiement Continu avec GitHub



La cerise sur le gâteau : Déploiement sur Linux



Conclusion

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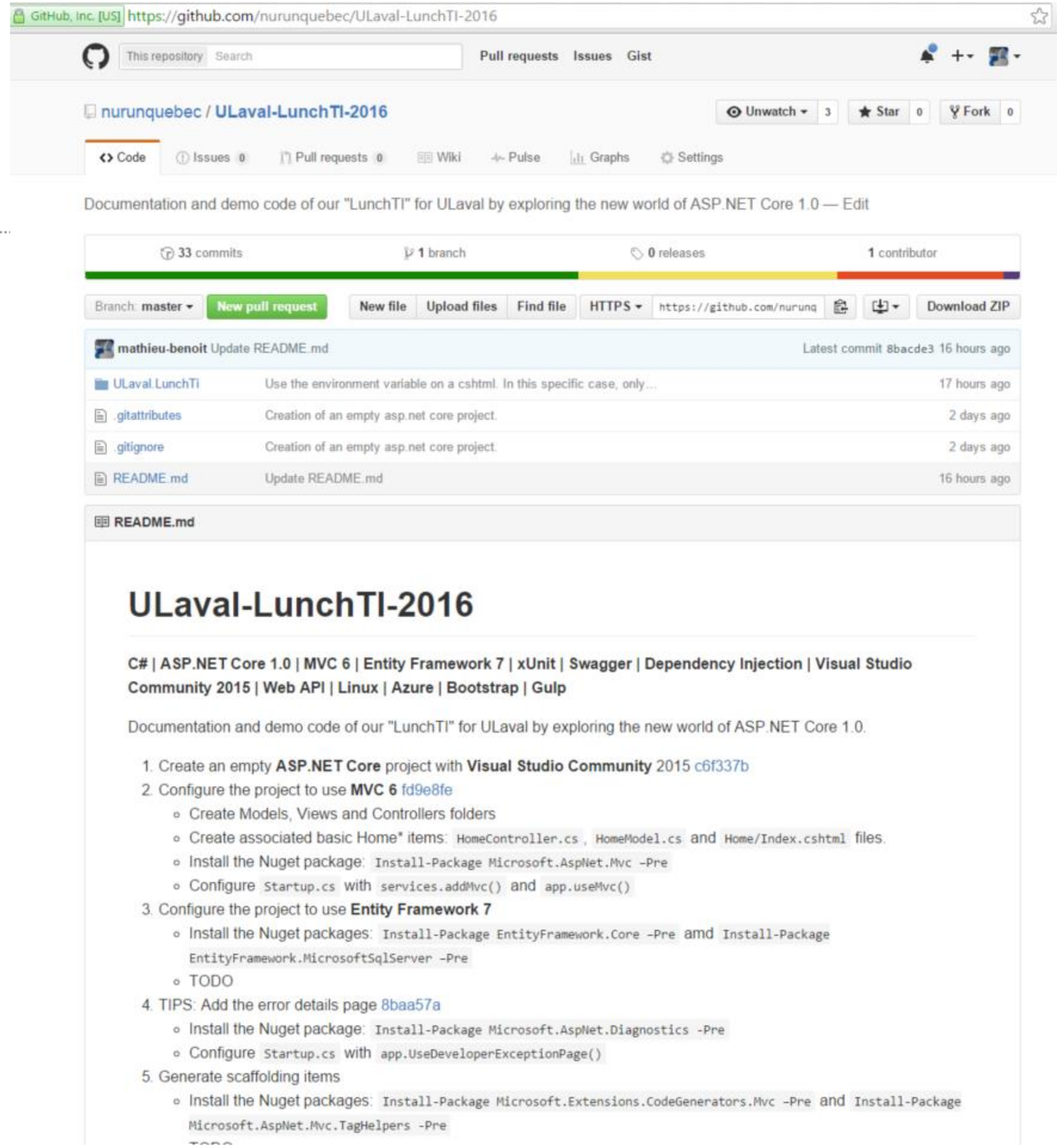
github/nurunquebec



Profitez-en, c’est gratuit !

- Visual Studio Team Services
  - 5 utilisateurs
  - Git
  - Backlog + Kanban
- Visual Studio Community
  - Gratuit et déjà puissant
- Microsoft Virtual Academy
  - Formations gratuites par Microsoft
- DreamSpark
  - Pour les étudiants et les startups : Outils de développement et de conception professionnels gratuits !

Par où commencer ?

- C#
  - Programming in C#
- HTML5 / CSS3 / Javascript
  - Developing in HTML5 with JavaScript and CSS3
- ASP.NET MVC
  - Introduction to ASP.NET MVC
  - Developing ASP.NET MVC 4 Web Applications
- Git
  - Using Git with Visual Studio
- Azure
  - Microsoft Azure

Nouveau dans le développement Microsoft ?

- Microsoft Technology Associate (MTA)
  - Certification Microsoft d'initiation pour les personnes qui souhaitent poursuivre une carrière dans la technologie. La certification MTA aborde un large spectre de concepts techniques fondamentaux, évalue et valide votre connaissance technique de base, et améliore votre crédibilité technique.
- Exemples de formation/certification
  - Software Development Fundamentals - 361
  - Web Development Fundamentals - 363
  - .NET Fundamentals - 372
  - HTML5 App Development Fundamentals - 375
  - Software Testing Fundamentals - 379

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Merci !

Ahmed Chaabouni et Mathieu Benoit