Blazor on Azure 101 - Hosting & DevOps

Vivien FABING
Full Stack Developer & Developer Technologies MVP

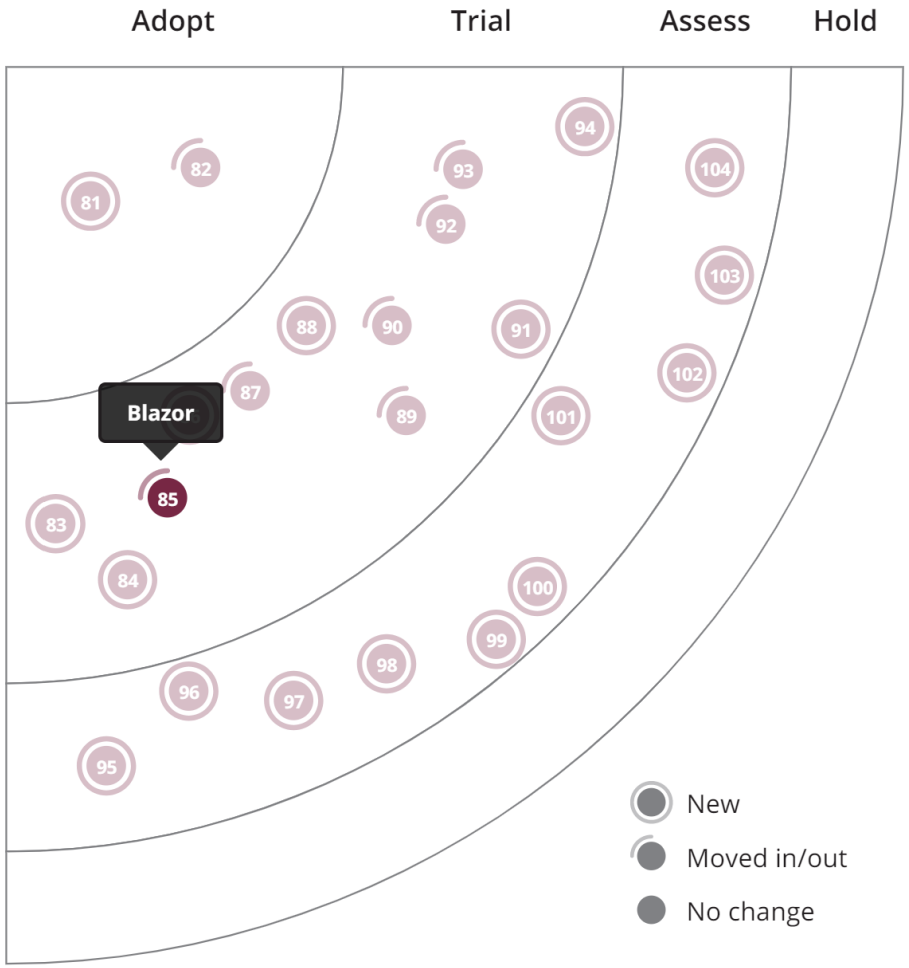
Languages & Frameworks

Adopt

81. Combine
82. LeakCanary

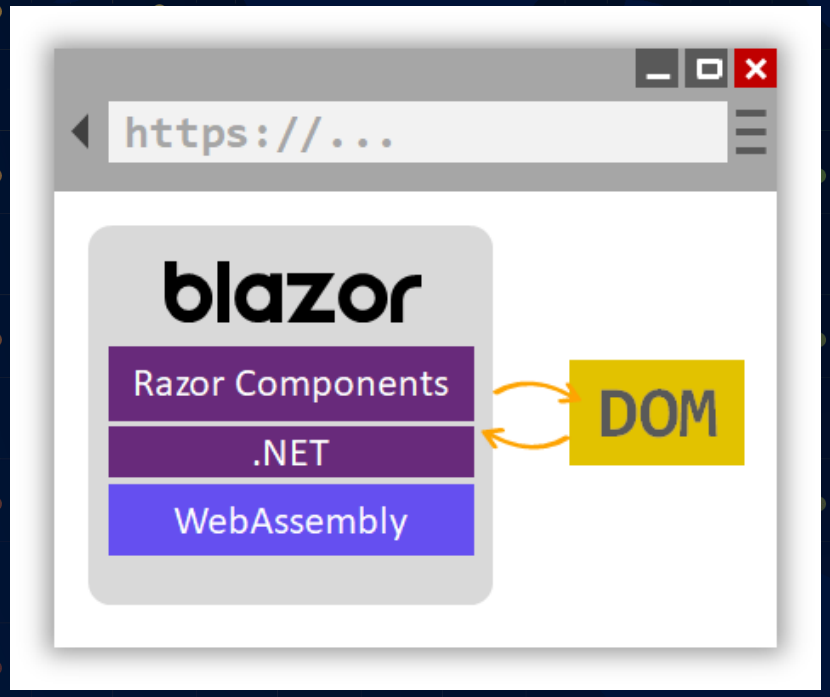
Trial

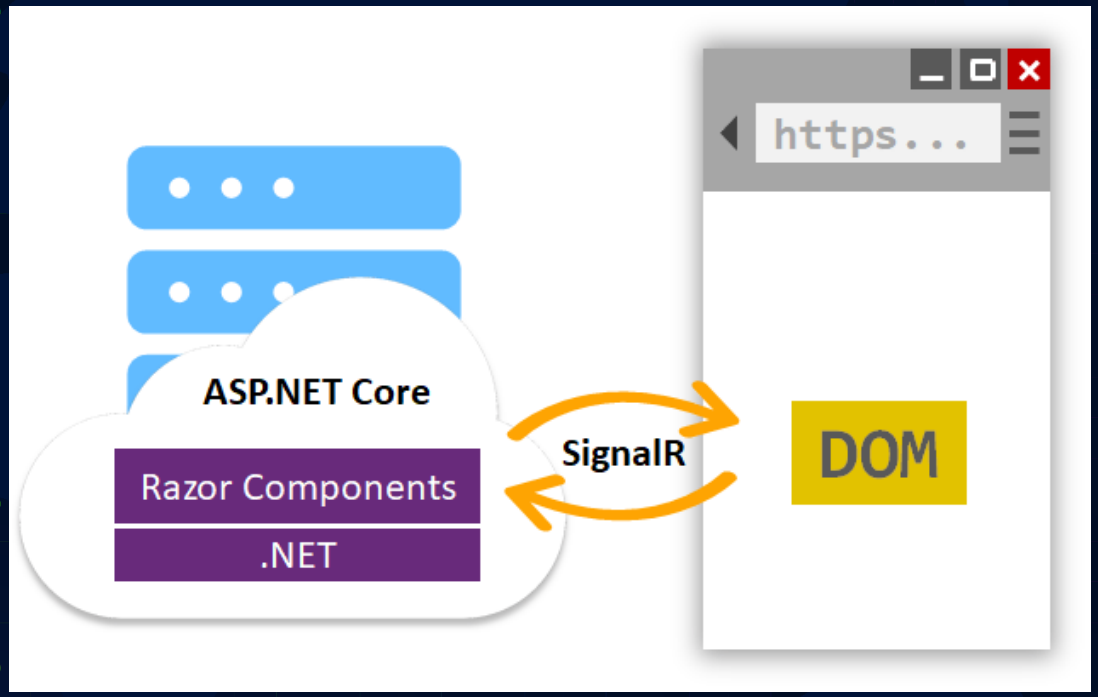
83. Angular Testing Library
84. AWS Data Wrangler
85. Blazor
86. FastAPI
87. io-ts
88. Kotlin Flow
89. LitElement
90. Next.js
91. On-demand modules
92. Streamlit
93. SWR
94. TrustKit



https://www.thoughtworks.com/radar

Blazor WebAssembly or Blazor Server?



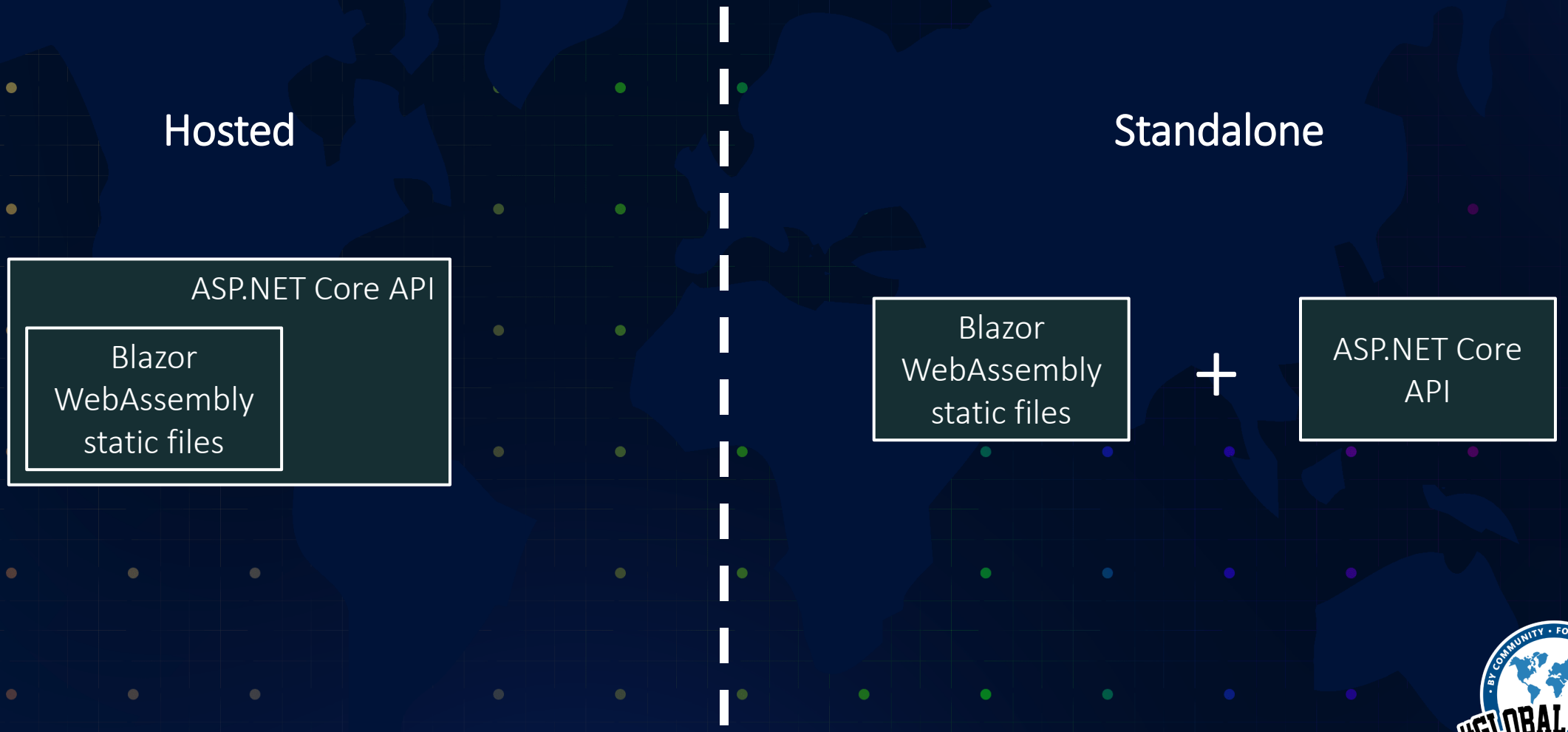


- SPA like problematics... in C# ♡

SPA like look & feel... but computed on the server!

#GLOBALAZURE 2021

Hosted deployment or standalone?



Other linked questions:

- **Website** only or **Mobile** app / **Micro-service** architecture targeted?
- **Cookie**-based or **Token**-based authentication?
- **Public**-facing website with a lot of **traffic** expected?

- “SEO friendly”?

Hosting & DevOps complexity Ranking

Super Easy

Easy

Advanced

All emojis designed by OpenMoji – the open-source emoji and icon project. License: CC BY-SA 4.0

Blazor Server

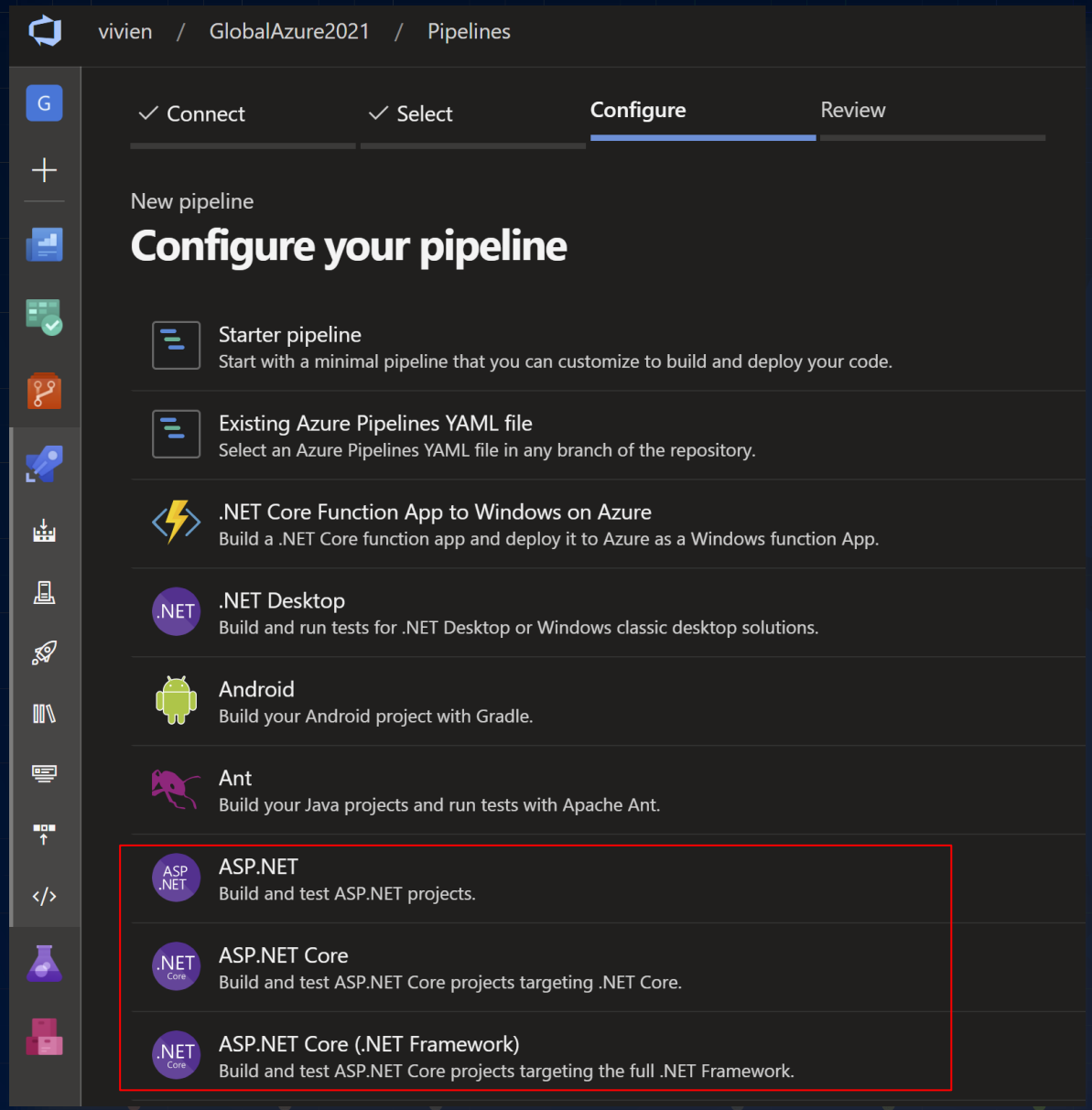
Blazor Server

Classic ASP.NET Core app deployment

- Super easy to **secure** (ASP.NET Core mechanism)
- Super easy to **deploy** (auto-generated templates are using this architecture)

Azure App Services

Azure SignalR Services*


vivien / GlobalAzure2021 / Pipelines
✓ Connect
✓ Select
Configure
Review
New pipeline
Configure your pipeline
Starter pipeline
Start with a minimal pipeline that you can customize to build and deploy your code.
Existing Azure Pipelines YAML file
Select an Azure Pipelines YAML file in any branch of the repository.
.NET Core Function App to Windows on Azure
Build a .NET Core function app and deploy it to Azure as a Windows function App.
.NET Desktop
Build and run tests for .NET Desktop or Windows classic desktop solutions.
Android
Build your Android project with Gradle.
Ant
Build your Java projects and run tests with Apache Ant.
ASP.NET
Build and test ASP.NET projects.
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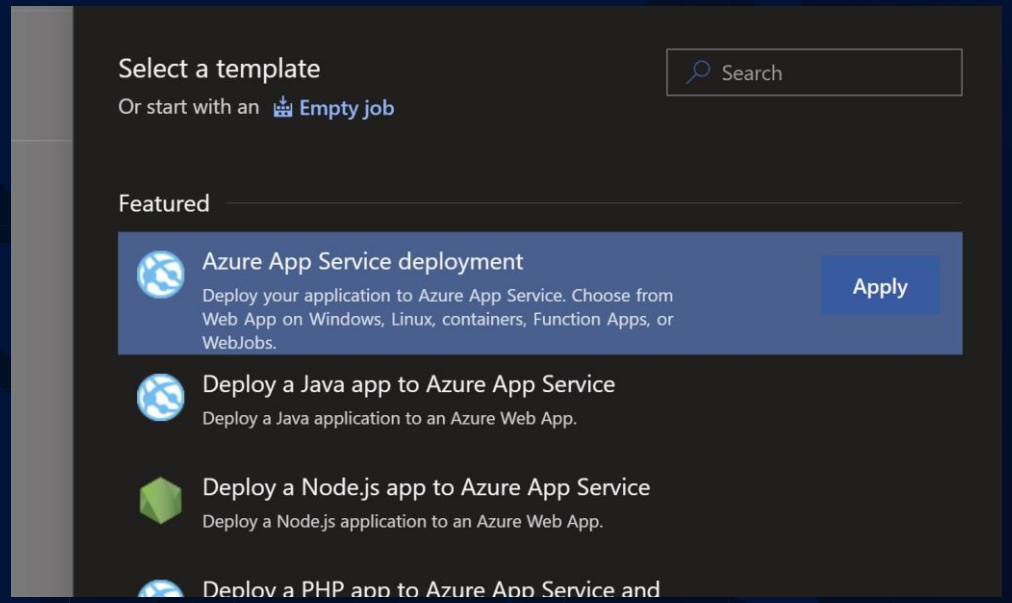
Select a template
Search
Or start with an Empty job
Featured
Azure App Service deployment
Deploy your application to Azure App Service. Choose from Web App on Windows, Linux, containers, Function Apps, or WebJobs.
Apply
Deploy a Java app to Azure App Service
Deploy a Java application to an Azure Web App.
Deploy a Node.js app to Azure App Service
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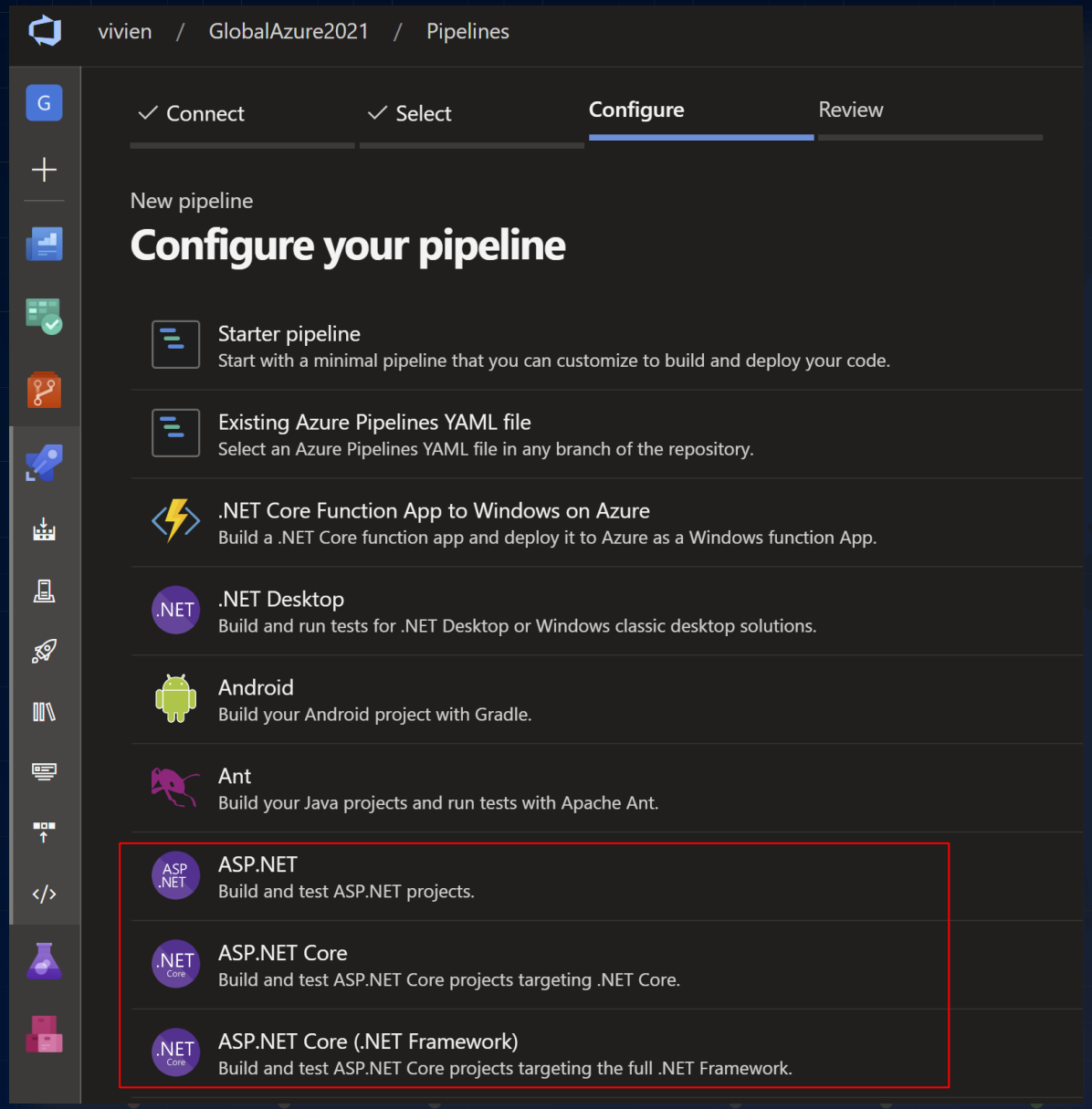
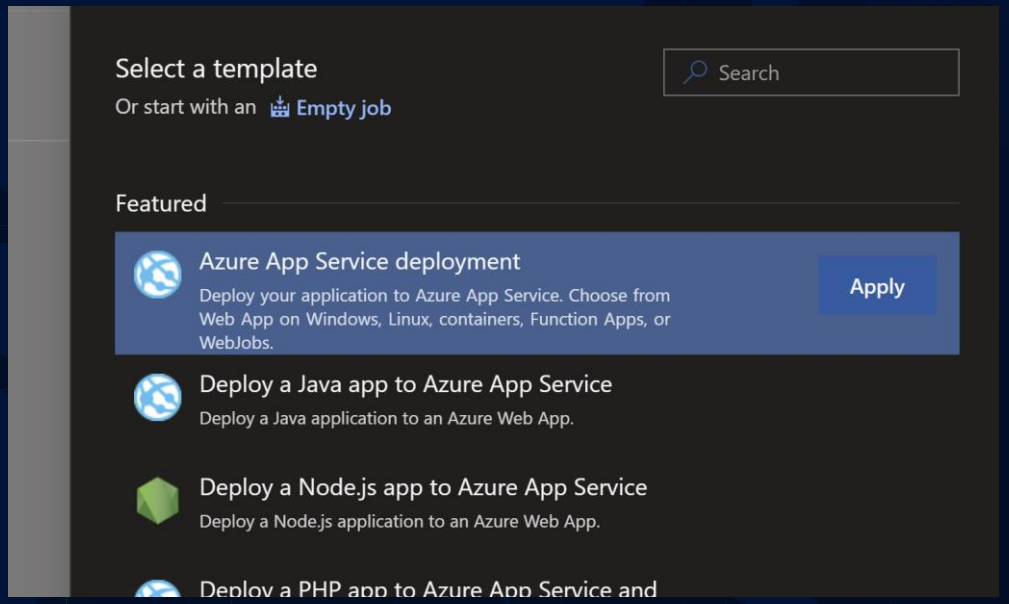
Blazor WebAssembly Hosted deployment

Azure App Service (hosted)

Classic ASP.NET Core app deployment

- Super easy to deploy (auto-generated templates are using this architecture)
- Well adapted for simple cookie-based authentication (but can still be enhanced / use default token-based authentication)
- Super easy to configure (use of current URI possible)
- Prerequisite for my one of my favorite feature: Server-side Prerendering ♡





*Same as Blazor Server

Blazor WebAssembly Standalone deployment

Standalone / Static files deployment

- Easy to deploy (no template but dotnet publish available)
- Allow to be managed independently (scale, be deployed (with caution... ☺)), as well as doing some optimizations
- Encourage token-based authentication (Mobile & Micro-services friendly)
- Need some “extra” configuration (CORS, API URL)

API

Azure App Services

Azure Functions

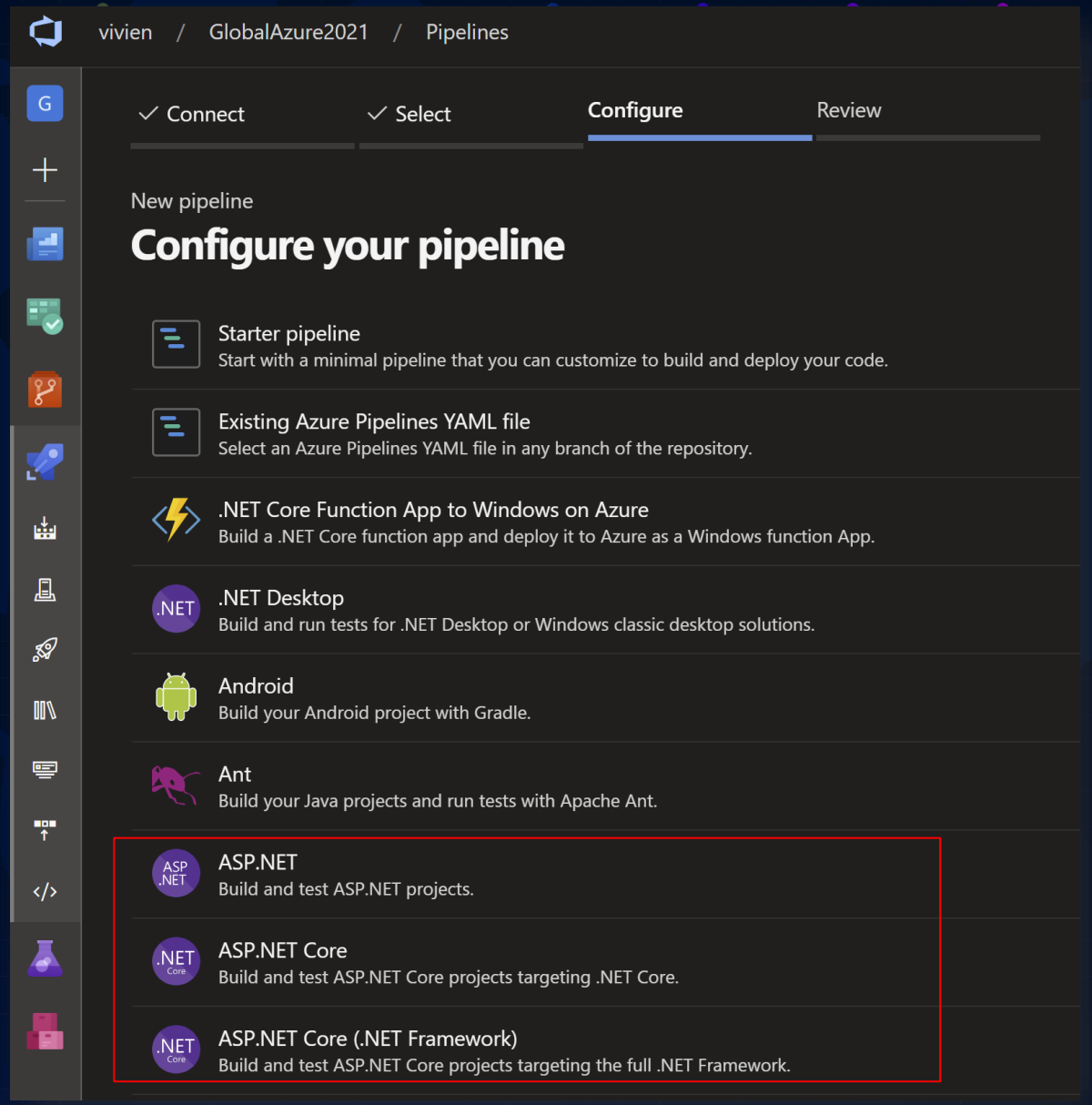
• • •

Blazor Static files

Azure App Services

Azure Storage + Azure CDN

Azure App Services Static Web Apps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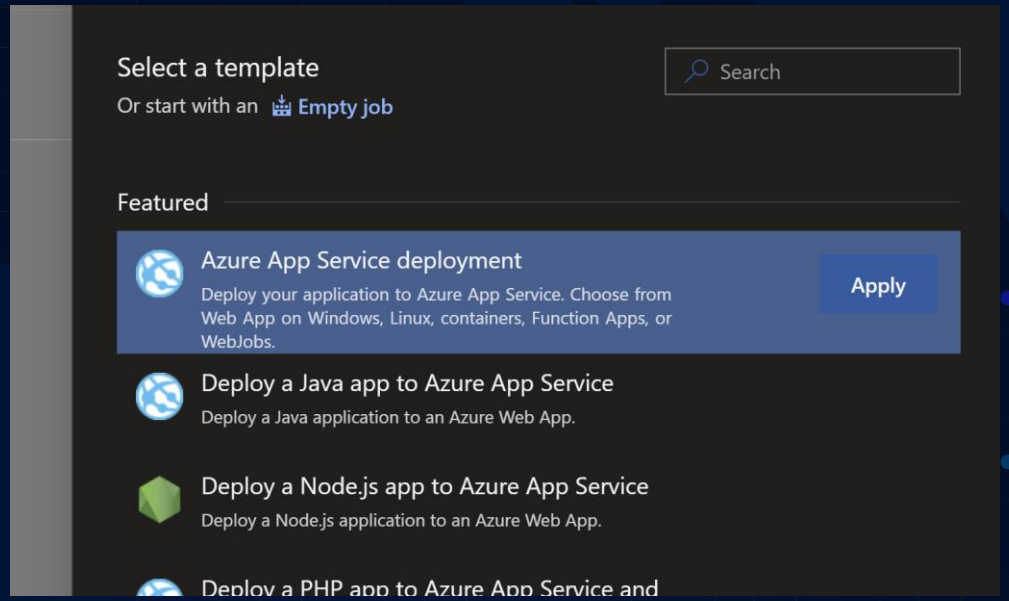
Azure App Services (Standalone)

Well known familiar platform

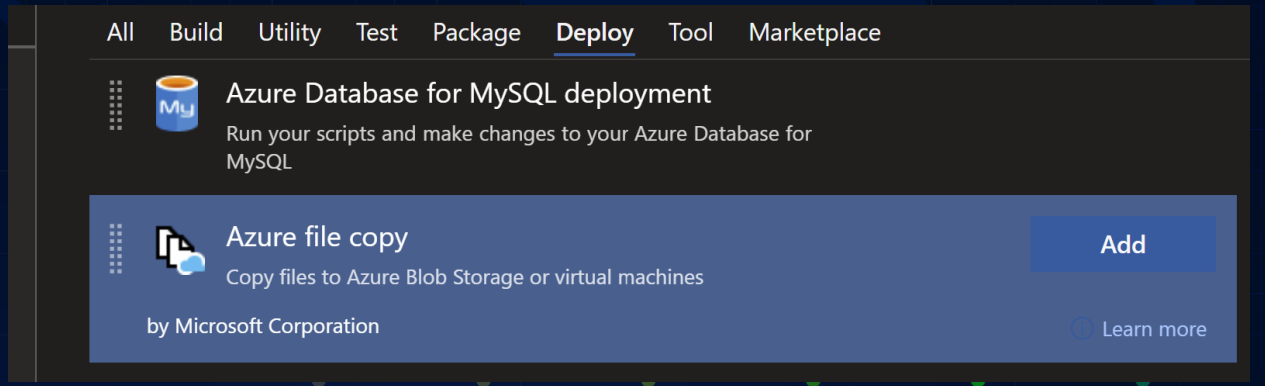


*Same as Blazor Server and Blazor WebAssembly Hosted

Azure Storage + Azure CDN

Highly scalable / Highly performant

Strongly cost effective



Azure App Service
Static Web Apps (Preview)

Github Actions

Azure DevOps

Globally distributed static content

Routing rules system

Authentication & Authorization (Azure AD, Github, Facebook, Google, Twitter)

Integrated serverless API (no CORS ♡)

Free SSL certificates automatically renewed

New environment on Pull Request workflow integrated

Demo

Bonus: GitHub pages

41 lines (38 sloc) | 1.81 KB — Raw | Blame

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Single Page Apps for GitHub Pages</title>
    <script type="text/javascript">
      // Single Page Apps for GitHub Pages
      // https://github.com/rafrex/spa-github-pages
      // Copyright (c) 2016 Rafael Pedicini, licensed under the MIT Li
      // ----------------------------------------------------------------
      // This script takes the current url and converts the path and q
      // string into just a query string, and then redirects the brows
      // to the new url with only a query string and hash fragment,
      // e.g. http://www.foo.tld/one/two?a=b&c=d#qwe, becomes
      // http://www.foo.tld/?p=/one/two&q=a=b~and~c=d#qwe
      // Note: this 404.html file must be at least 512 bytes for it to
      // with Internet Explorer (it is currently > 512 bytes)

      // If you're creating a Project Pages site and NOT using a custo
      // then set segmentCount to 1 (enterprise users may need to set
      // This way the code will only replace the route part of the pat
      // the real directory in which the app resides, for example:
      // https://username.github.io/repo-name/one/two?a=b&c=d#qwe becc
      // https://username.github.io/repo-name/?p=/one/two&q=a=b~and~c=
      // Otherwise, leave segmentCount as 0.
      var segmentCount = 1;

      var l = window.location;
      l.replace(
        l.protocol + '//' + l.hostname + (l.port ? ':' + l.port : '') +
        l.pathname.split('/').slice(0, 1 + segmentCount).join('/') + '/?p=/' +
        l.pathname.slice(1).split('/').slice(segmentCount).join('/').replace(/&/g, '~and~') +
        (l.search ? '&q=' + l.search.slice(1).replace(/&/g, '~and~') : '') +
        l.hash
      );

    </script>
  </head>
  <body>
  </body>
</html>
```

```
// Otherwise, leave segmentCount as 0.
var segmentCount = 1;

var l = window.location;
l.replace(
  l.protocol + '//' + l.hostname + (l.port ? ':' + l.port : '') +
  l.pathname.split('/').slice(0, 1 + segmentCount).join('/') + '/?p=/' +
  l.pathname.slice(1).split('/').slice(segmentCount).join('/').replace(/&/g, '~and~') +
  (l.search ? '&q=' + l.search.slice(1).replace(/&/g, '~and~') : '') +
  l.hash
);
```

https://docs.microsoft.com/en-us/aspnet/core/blazor/host-and-deploy/webassembly?view=aspnetcore-5.0#github-pages

Container hosting

Container hosting

Portability (platform agnostic, Twelve-Factor App)

“It works on my machine” syndrome

Environment per Pull Request?

- Azure App Services for Containers
- Azure Kubernetes Services
- Azure Service Fabric
- Azure Container Instance

Closing

Static files served by the ASP.NET Core app

Azure App Services

Azure Storage + Azure CDN

Static web app (*with reverse proxy to an Azure Function*)

Azure App Services Static Web Apps

Static files only

GitHub Pages

Static files and ASP.NET Core app separated

In a container

Azure App Services for Containers

Azure Kubernetes Services

Azure Container Instance

Blazor Server Goodies

Azure SignalR Services

Azure Virtual Machine

Swag and more

- Claim your attendee Learner Badge here:
- 30 Days to learn it: aka.ms/global-azure/30D2L
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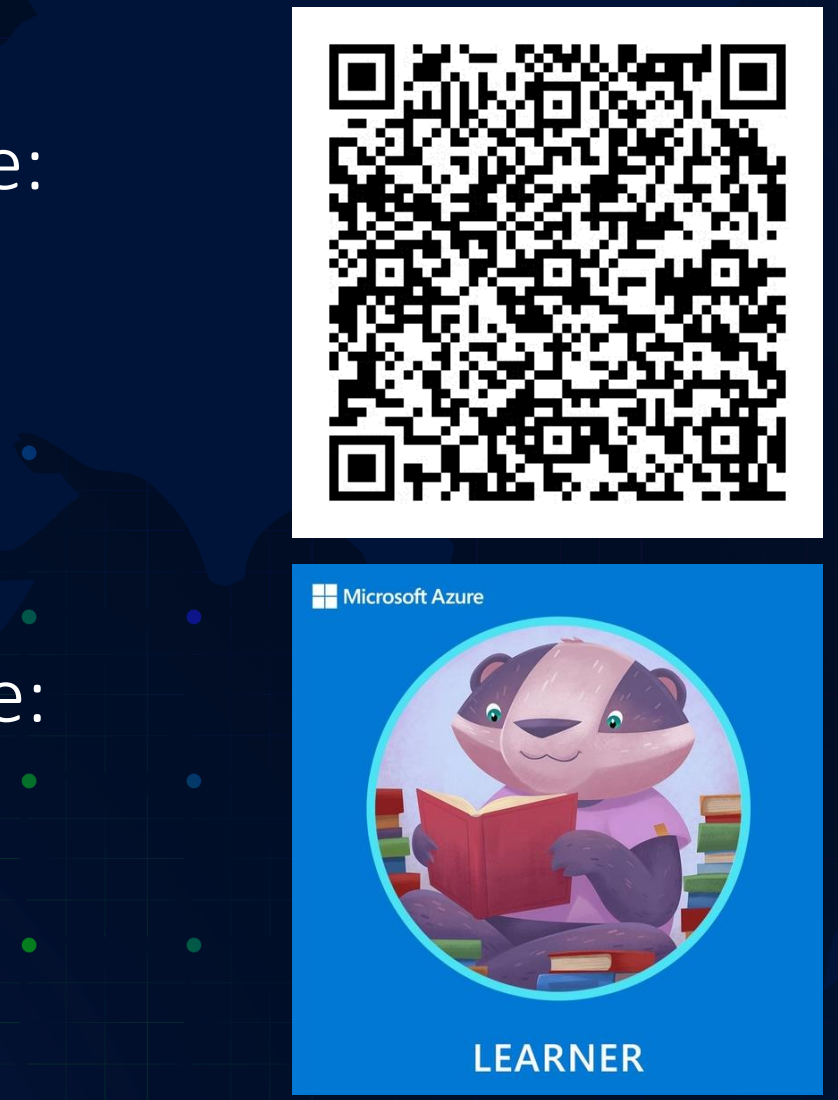

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