ASP.NET Core 2

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What is .NET Core?

Cross-platform

- Windows
- Linux
- macOS

Modular

- Only packages you need
- Lightweight deployment

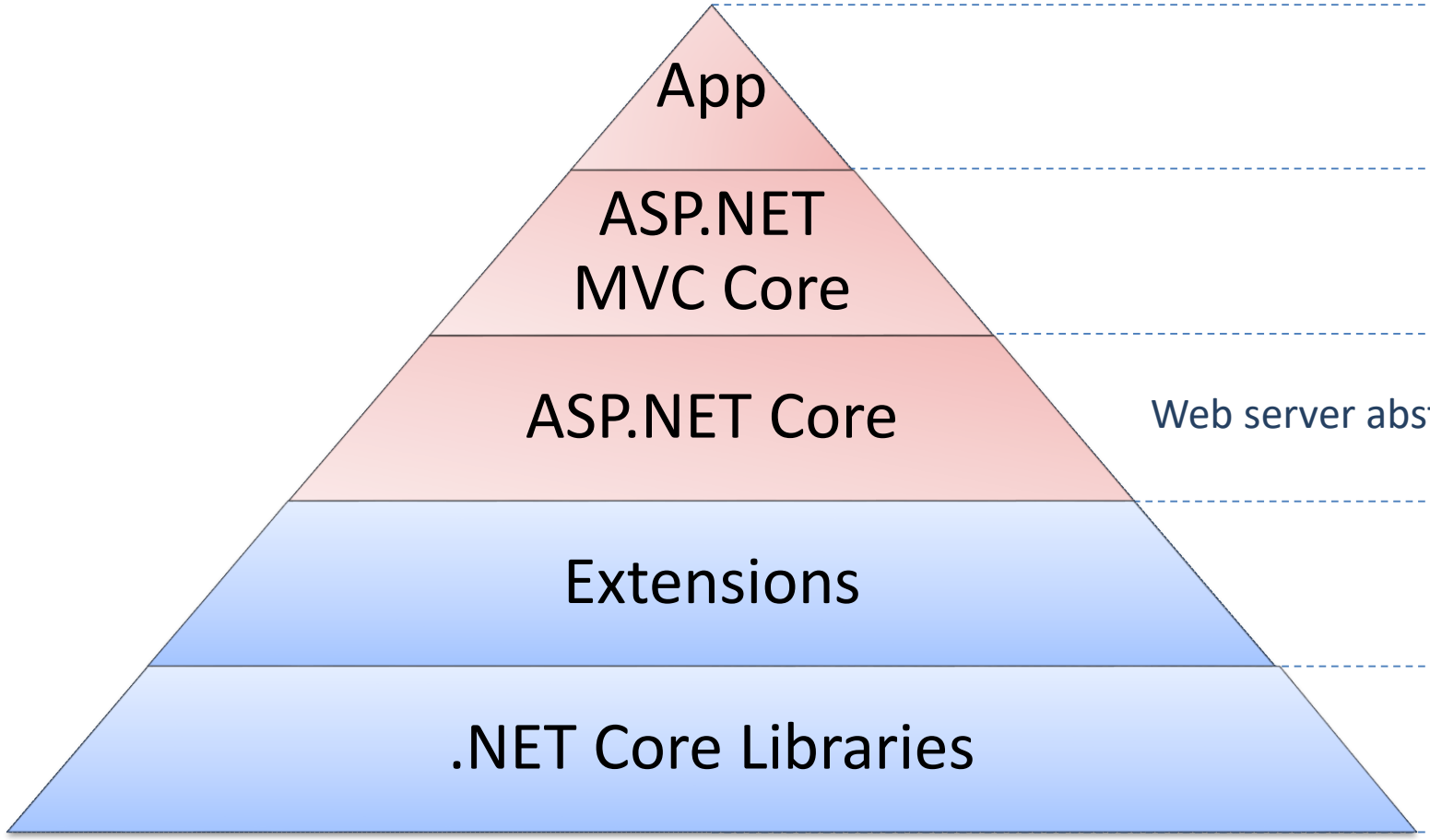
Modern

- C#
- LINQ
- Async support
- Much more!

Open Source

- Runtime, libraries, compiler, languages and tools – on GitHub
- Contributions are reviewed and accepted

.NET Core Web App Stack



Your application & 3rd party libraries

MVC Framework

Web server abstraction, Authentication, WebSockets…

Logging, DI, Caching, Configuration…

Collections, IO, LINQ, XML, ADO.NET…
Implements .NET Standard

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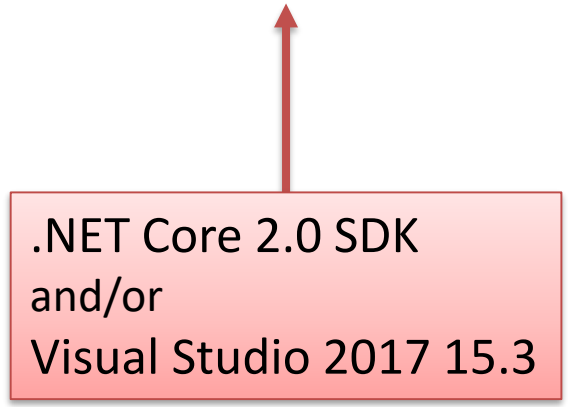
Current .NET Core Versions

.NET Core
1.0

.NET Core
1.1

.NET Core
2.0



https://github.com/dotnet/core/blob/master/roadmap.md

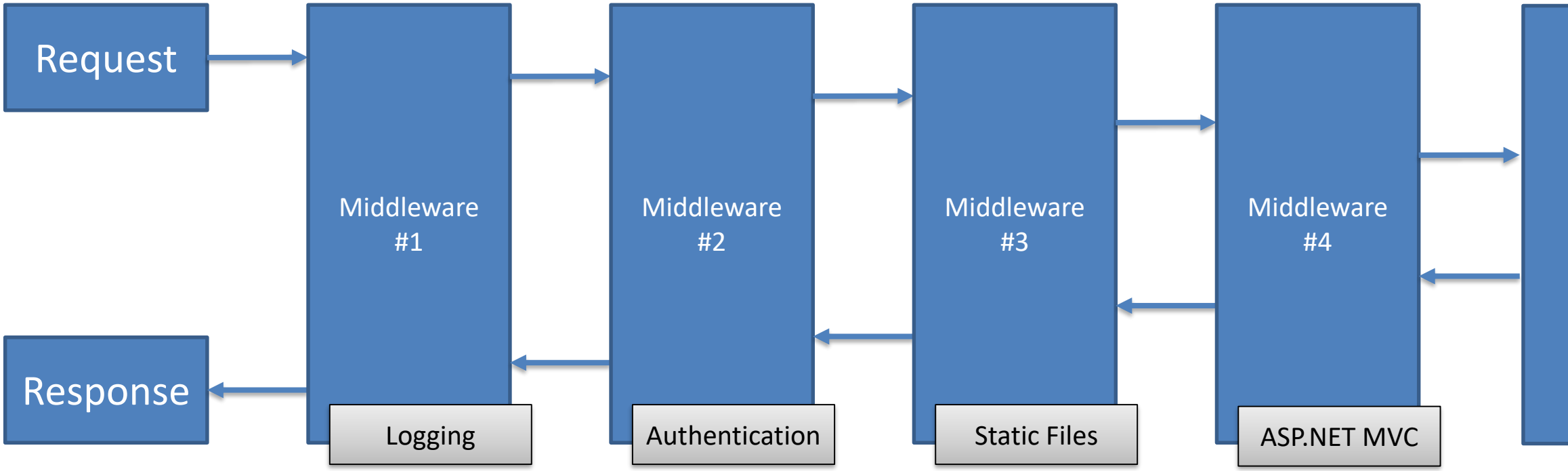
.NET Core App

demo

ASP.NET Core

- .NET Core App project type
- Set of packages **`Microsoft.AspNetCore.All`**
- Not based on IIS – starting with clean HTTP pipeline
- HTTP pipeline is configured via Startup class
- ASP.NET MVC Core is optional part of ASP.NET Core

ASP.NET Core HTTP pipeline: Middlewares Chain



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ASP.NET Core App

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Microsoft Extensions

- Namespace Microsoft.Extensions.*
- Used by ASP.NET Core
- Important parts:

Configuration

- No static configuration accessors
- Configuration is optional
- Build-in sources:
  - JSON
  - XML
  - INI
  - Command line
  - Environment vars
  - Custom

Configuration & Options

demo

Logging

demo

Caching, file providers, default documents

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Front-end features

- Visual Studio Bower intergration (bower.json)
- Visual Studio NPM integration (packages.json)
- Task runner integrations (gulp, WebPack)
- Templates with CSPROJ integrations
- Bundling and minification
- NodeServices
- WebPackMiddleware
- SPA integrations for Angular and React

Front-end features

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Cross-platform .NET Standard Deployment

.NET Core Runtime vs .NET Core SDK

.NET Core SDK

- Allows you to compile
- Installation package or binaries
- Supports side-by-side SDK versions and runtimes

.NET Core Runtime

- Allows to run compiled code
- Delivered with SDK or with application
- Identified by:
  - Version (1.0, 1.1, 2.0)
  - And Runtime Identifier (`win10-x64`, `centos.7-x64`...)
- Some runtimes have prerequisites (`libunwind` & `libicu` on CentOS 7 etc.)

SDK installation and versions

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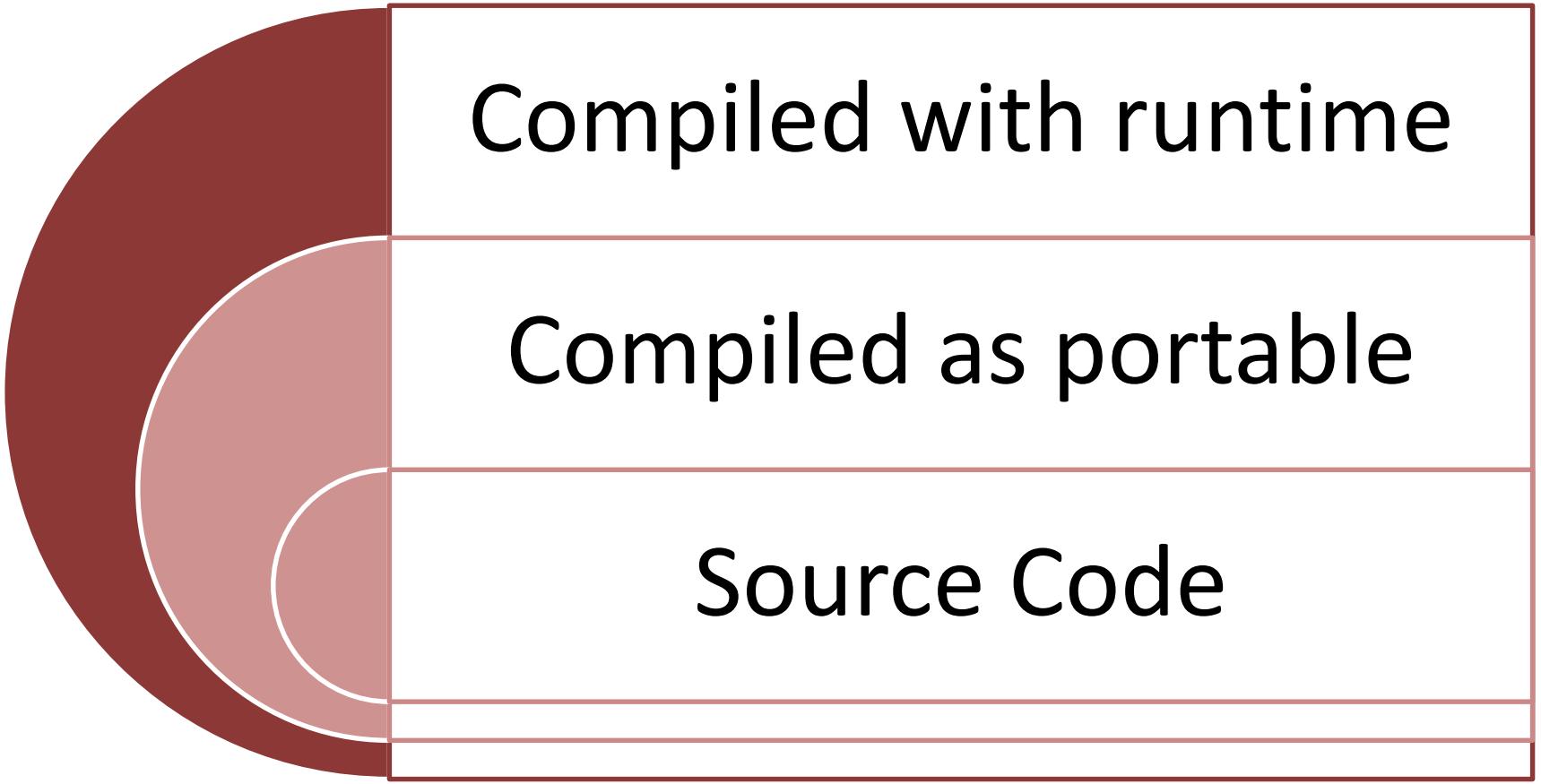
Deployment Strategies



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Publishing

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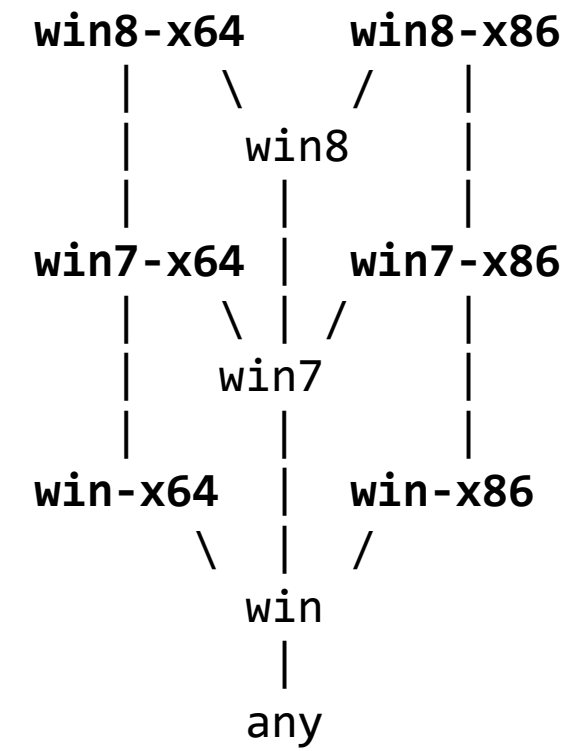
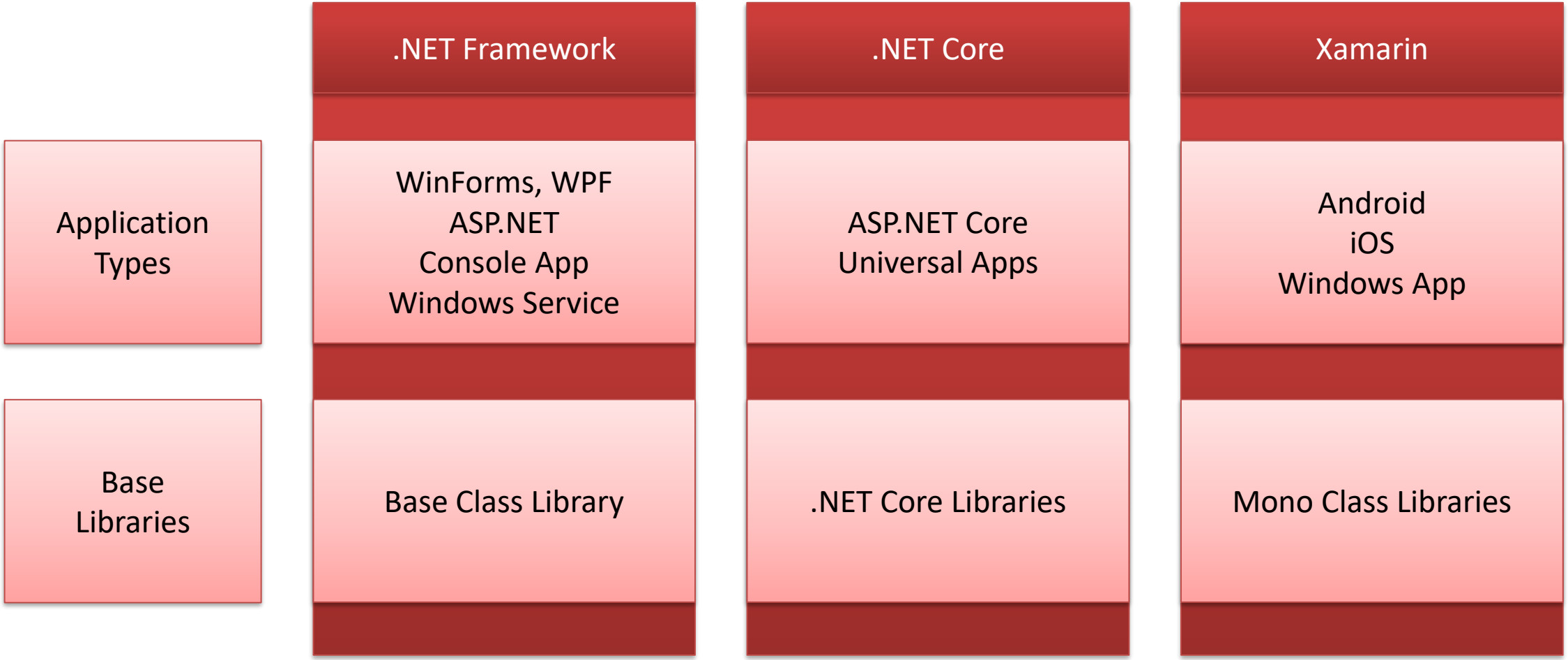
.NET Core Runtime IDentifier (RID)

- RIDs are used to identify target operating systems
- [os].[version]-[architecture]
- Examples:
  - `win10-x64`
  - `win10-arm`
  - `win7-x86`
  - `centos.7-x64`
  - `ubuntu.16.10-x64`
  - `osx.10.12-x64`



- Full catalog: https://docs.microsoft.com/en-us/dotnet/core/rid-catalog

.NET platforms



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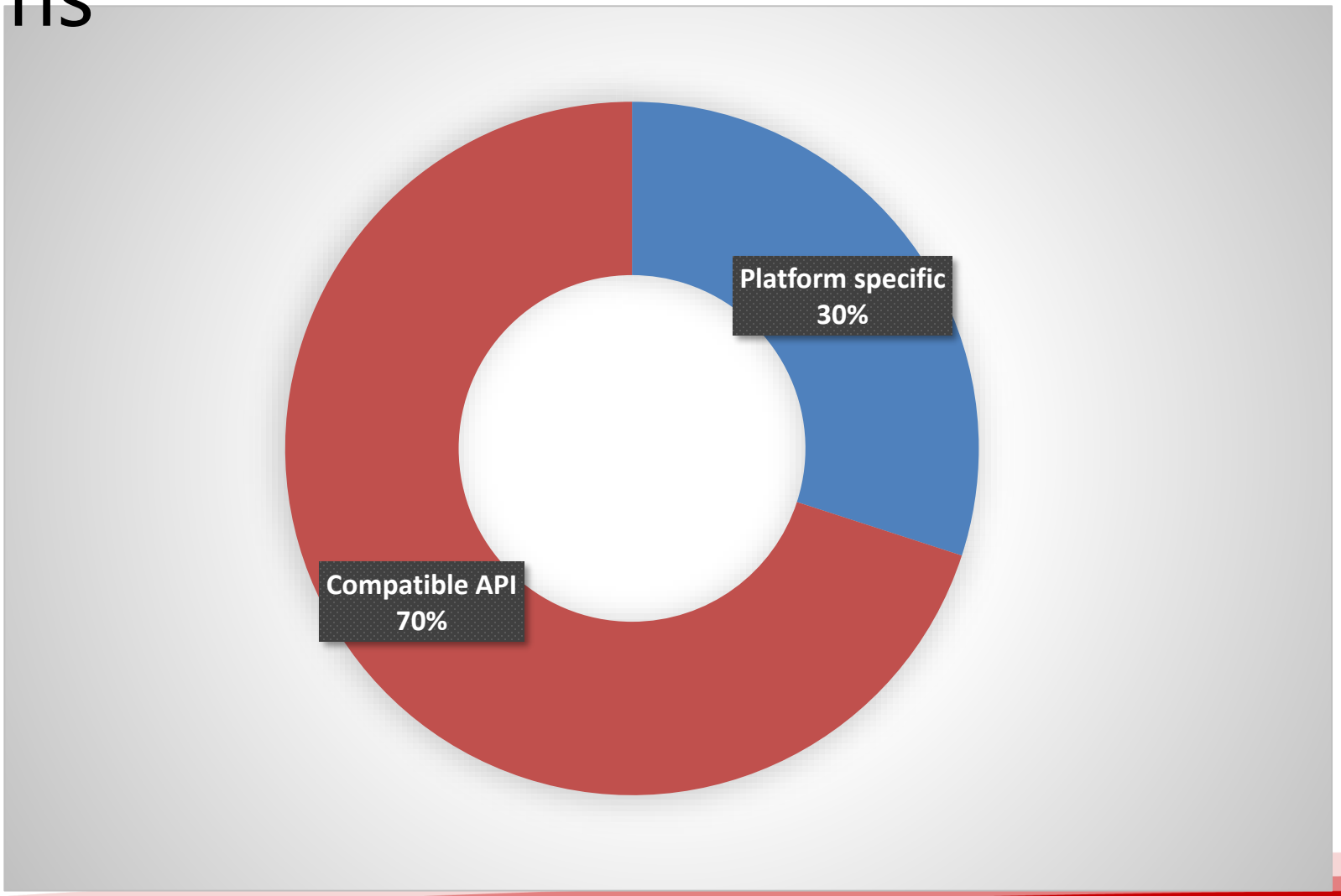
NuGet packages using API available on all platforms



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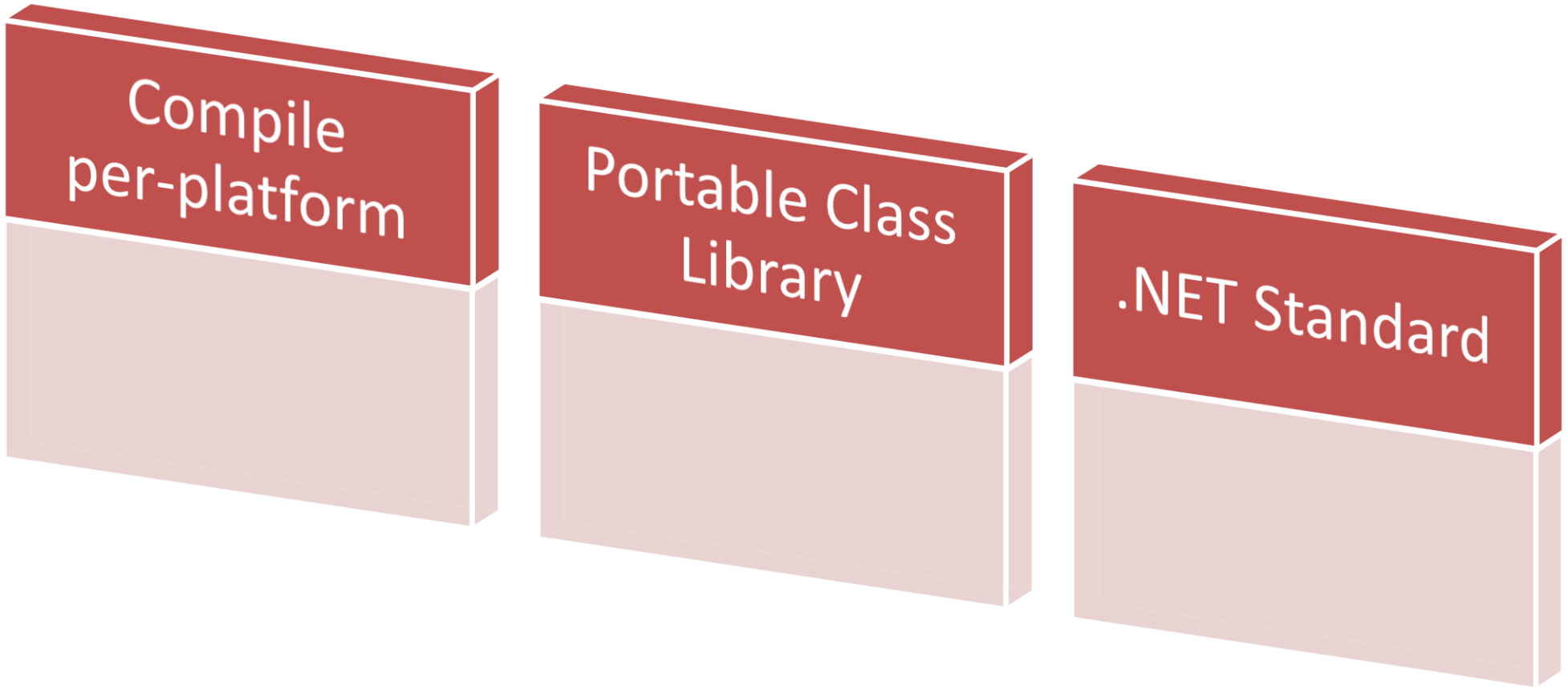
Sharing code with multiple runtimes?



What is .NET Standard?

- Set of APIs that all .NET platforms have to implement
- Unifies the .NET platforms and prevents future fragmentation
- .NET Standard 2.0 is implemented by .NET Framework, .NET Core, and Xamarin

- Use .NET Standard to write and share universal libraries.

- https://github.com/dotnet/standard
- Easy to use!

.NET Standard Libraries

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.NET Standard Versioning

.NET Standard	1.0	1.1	1.2	1.3	1.4	1.5	1.6	2.0
.NET Core	**1.0**	1.0	1.0	1.0	1.0	1.0	1.0	**2.0**
.NET Framework	**4.5**	**4.5**	**4.5.1**	**4.6**	**4.6.1**	4.6.1 4.6.2	4.6.1	4.6.1
Mono	**4.6**	4.6	4.6	4.6	4.6	4.6	4.6	**vNext**
Xamarin.iOS	**10.0**	10.0	10.0	10.0	10.0	10.0	10.0	**vNext**
Xamarin.Mac	**3.0**	3.0	3.0	3.0	3.0	3.0	3.0	**vNext**
Xamarin.Android	**7.0**	7.0	7.0	7.0	7.0	7.0	7.0	**vNext**
Universal Windows Platform	**10.0**	10.0	10.0	10.0	10.0	**vNext**	vNext	vNext

Full compatibility matrix: https://github.com/dotnet/standard/blob/master/docs/versions.md

Compatibility

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What's next?

- Learn .NET Core 2 & ASP.NET Core 2 when released
- Consider using .NET Standard as target for your libraries
- Install Visual Studio 2017 Preview (side-by-side)

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