



Johnny Hooyberghs

What is new in .NET 6 and the future of .NET

Here's Johnny!



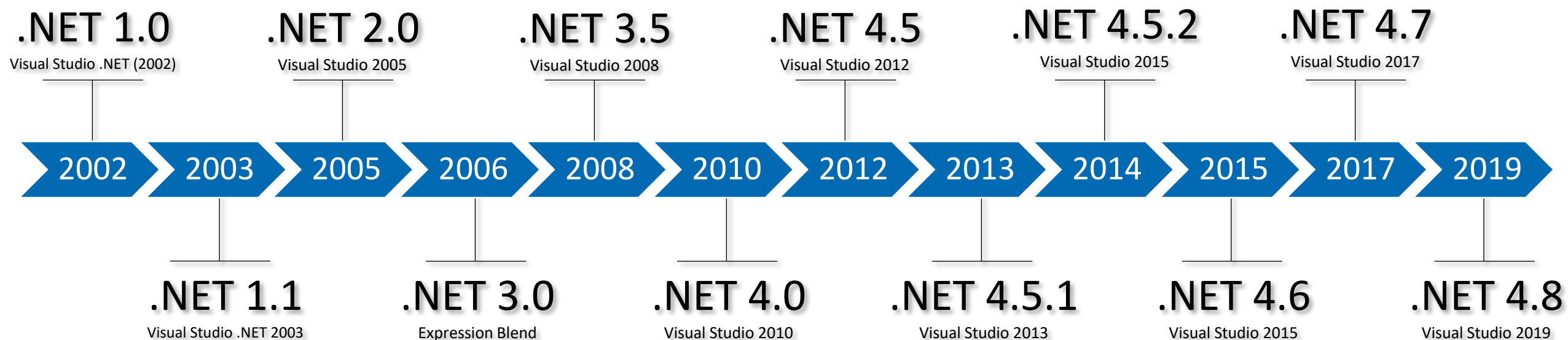
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involved

.NET Framework: a quick history



.NET Framework: support

.NET Framework 4.8	...
.NET Framework 4.7/4.7.1/4.7.2	...
.NET Framework 4.6.2	...
.NET Framework 4.5.2/4.6/4.6.1	April 26, 2022
.NET Framework 4.0/4.5/4.5.1	January 12, 2016
.NET Framework 3.5 SP1	January 9, 2029
.NET Framework 2.0/3.0	July 12, 2011

.NET Core: a quick history

.NET Core 1.0

Visual Studio 2015 Update 3

.NET Core 1.1

Visual Studio 2017 Version 15.0

.NET Core 2.0

Visual Studio 2017 Version 15.3

.NET Core 2.1

Visual Studio 2017 Version 15.7

.NET Core 2.2

Visual Studio 2019 Version 16.0

.NET Core 3.0

Visual Studio 2019 Version 16.3

.NET Core 3.1

Visual Studio 2019 Version 16.4

2016

2016

2017

2018

2018

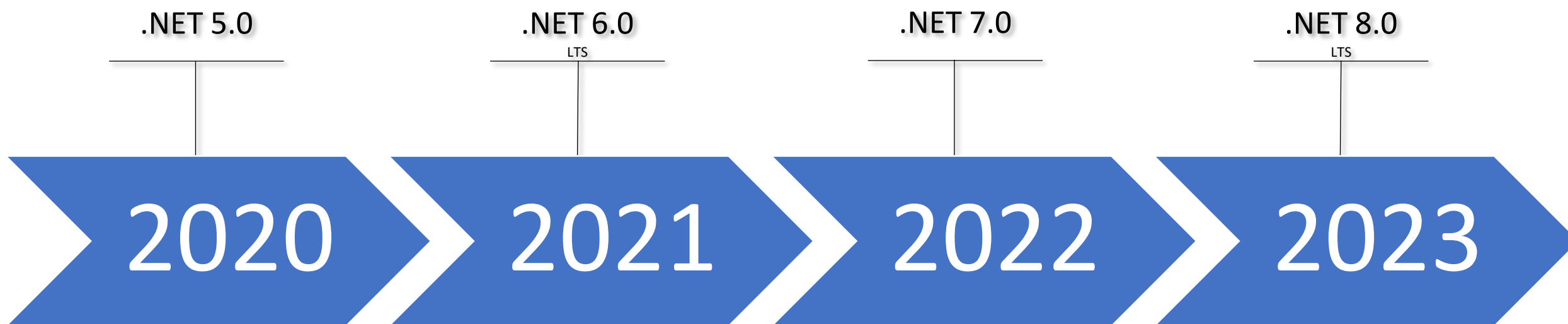
2019

2019

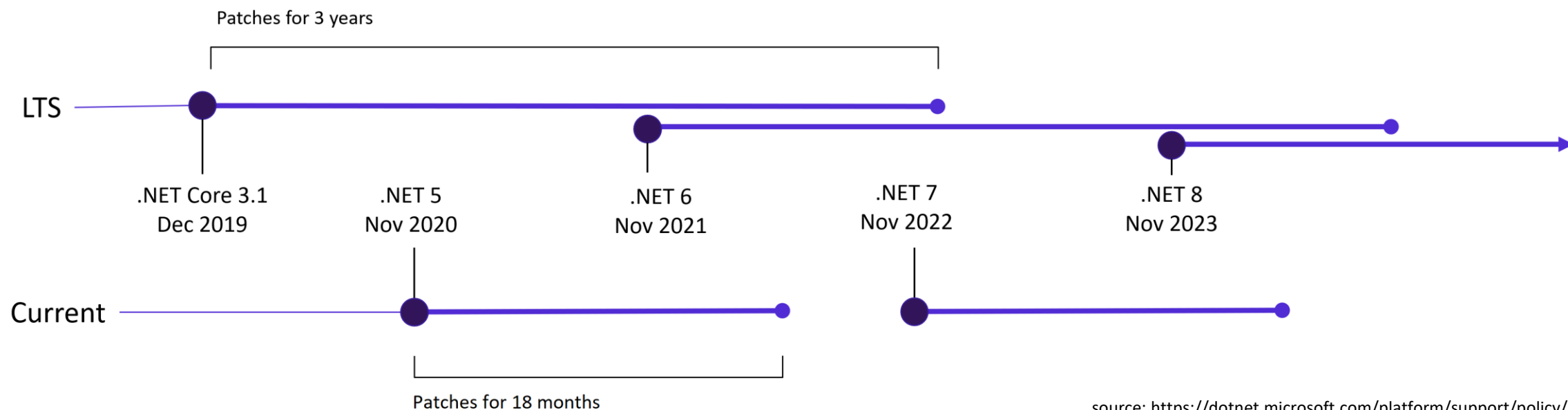
.NET Core: support

.NET Core 1.0	June 27, 2019
.NET Core 1.1	June 27, 2019
.NET Core 2.0	October 1, 2018
(LTS) .NET Core 2.1	August 21, 2021
.NET Core 2.2	December 23, 2019
.NET Core 3.0	March 3, 2020
(LTS) .NET Core 3.1	December 3, 2022

.NET: what about the future?



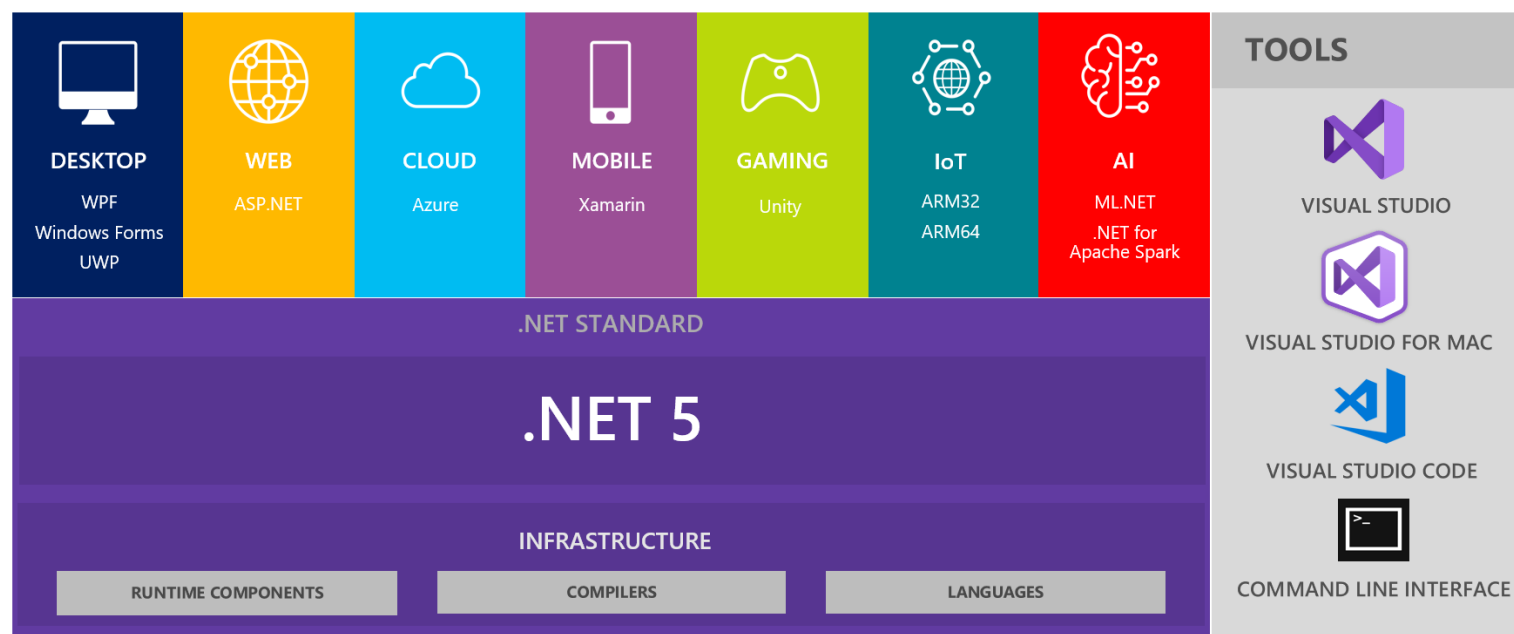
.NET: support



source: <https://dotnet.microsoft.com/platform/support/policy/dotnet-core>

.NET 6/7/8/... = .NET Core vNext

.NET – A unified platform



source: <https://devblogs.microsoft.com/dotnet/introducing-net-5/>

.NET 6/7/8/... = .NET Core vNext

Single runtime and BCL

Unified developer experience

Expand .NET with capabilities of .NET Core, .NET Framework, Xamarin and Mono

Expand .NET SDK dynamically using workloads

Single open-source code base



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What is new in .NET 6 and the future of .NET

0 – Performance and architecture

Runtime

JIT compiler

AoT compilation

Tiered compilation

Profile-guided optimization

Platform intrinsics

Source generators

1 – Single SDK Experience

Single CLI

`dotnet new` and workloads

Target framework names (TFM)

“net5.0” replaces and combines “netcoreapp” and “netstandard”

“net5.0-windows” is OS-specific and includes OS-specific bindings

“net6.0-android”, “net6.0-ios”, “net6.0-maccatalyst”

Hot reload using “dotnet watch”

2 – Deployment features

Default Executable

Runtime Identifiers

Single File Executable

Assembly Linking

3 – Modernized Templates

Console Application

ASP.NET Empty

ASP.NET MVC

Worker Service

gRPC Service

WinForms

WPF

4 – C# 10 features

record structs, readonly record structs (and record classes)

Global usings

File-scoped namespaces

const and interpolated strings

(.NET SDK) Implicit usings

(.NET SDK) Nullable

5 – New JSON features

System.Text.Json

Performance

Source Generators

IAsyncEnumerable

DOM

6 – Linq features

Support for Indices and Ranges

OrDefault with customizable defaults

MaxBy, MinBy

DistinctBy, UnionBy, IntersectBy, ExceptBy

Chunk

TryGetNonEnumeratedCount

7 – Async Dependency Injection

`IAsyncDisposable` and `DisposeAsync`

`CreateAsyncScope`

8 – Source Generators

ASP.NET

gRPC

System.Text.Json

Write your own...

9 – HW Intrinsic and NativeMemory



ASP.NET

gRPC

System.Text.Json

Write your own...

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