

A Tour of EF Core's Most Interesting & Important Features

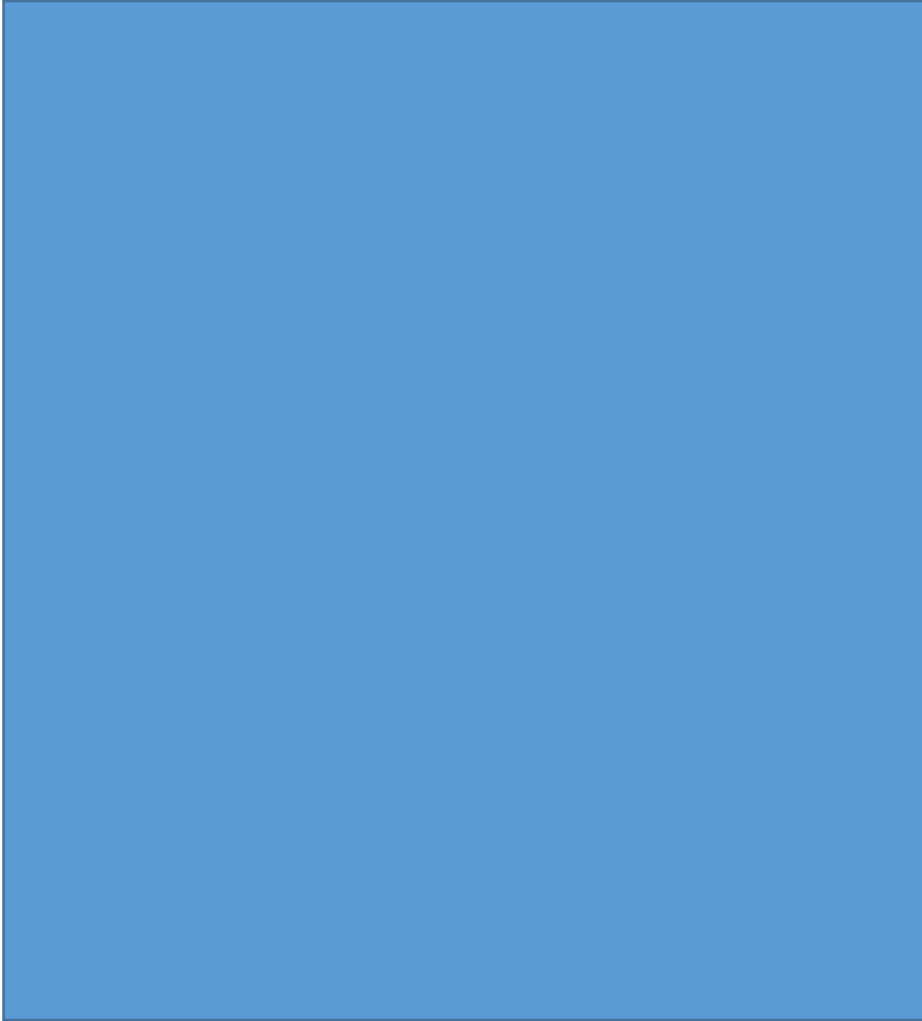


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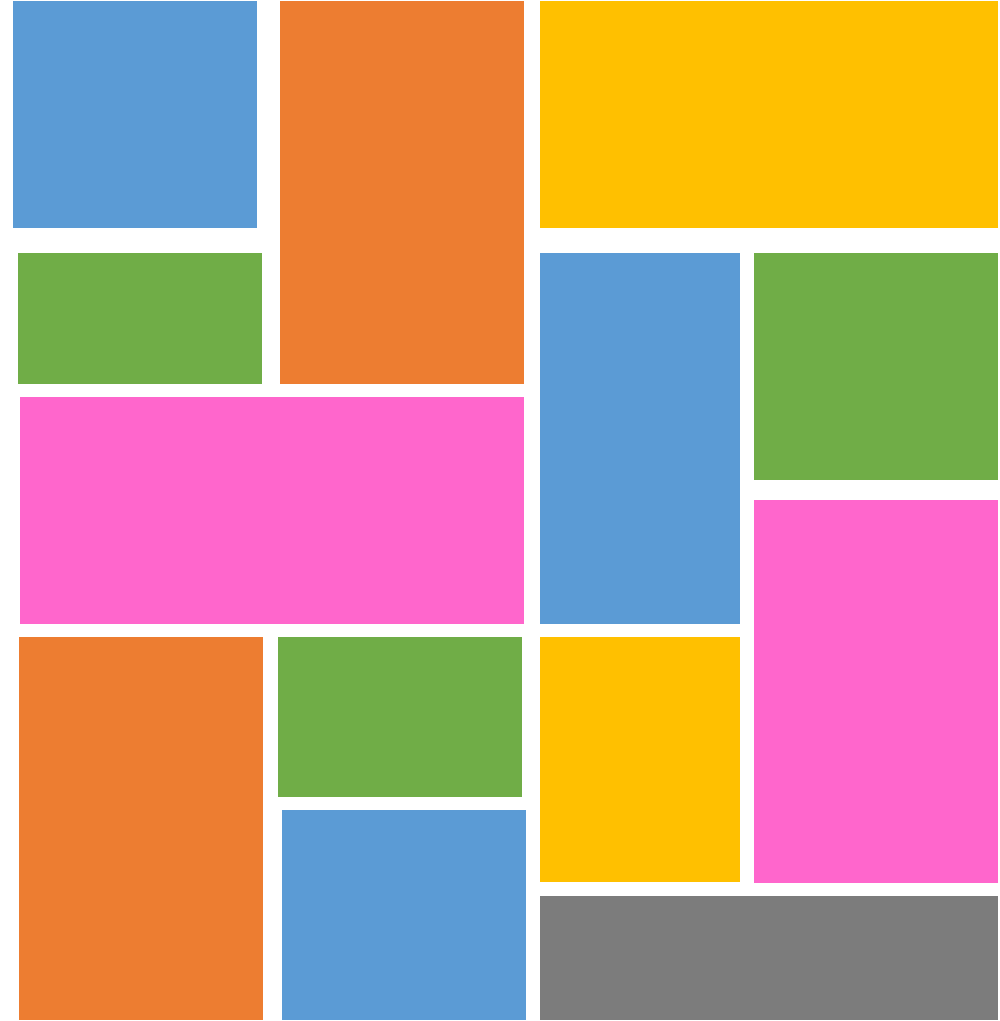
“Entity Framework (EF) Core is a lightweight and extensible version of the popular Entity Framework data access technology.”

EF Core Documentation

EF 6.x



EF Core



github.com/aspnet/entityframework

docs.efproject.net

.NET Core Themes



Composable APIs



Cross-Platform



Modern
Software Practices

Highlights of EF Core

Began life as “EF7”

1.0 RTM June 27, 2016

Lightweight, Composable version of EF

Performance, generated SQL, runtime model building & etc

More flexible logging (ILoggerProvider)

Integrates with ASP.NET Core

Windows, X-Plat with .NET Core, UWP, Xamarin

Lots of new features

Coming from EF6?

Not replacing, nor an update to, EF6.x

Total re-write, not backwards compatible

Drops EDMX,ObjectContext

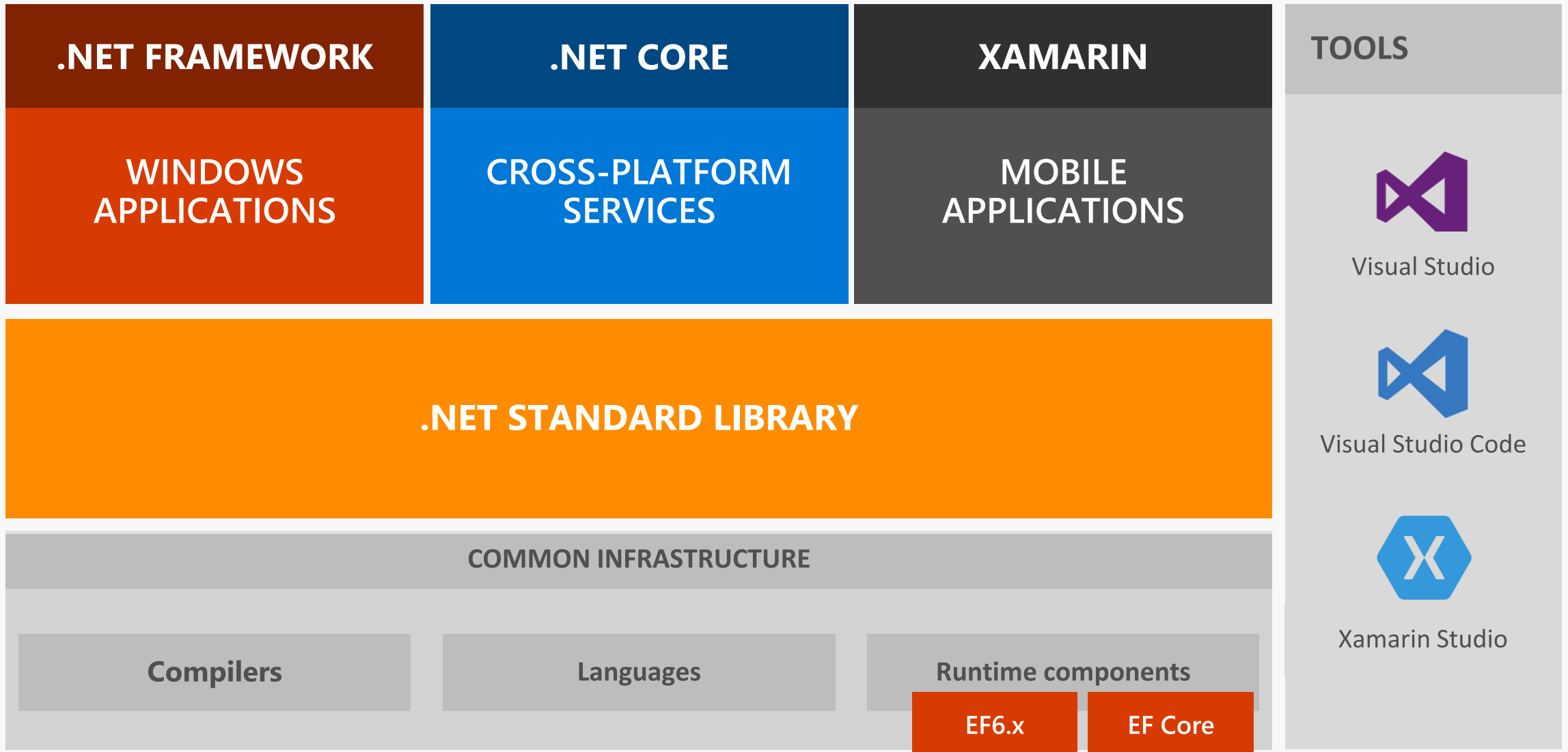
Many familiar APIs: DbContext, Change Tracker, Migrations, LINQ

You do not
have to re-learn
everything

But...

it's still new
& different

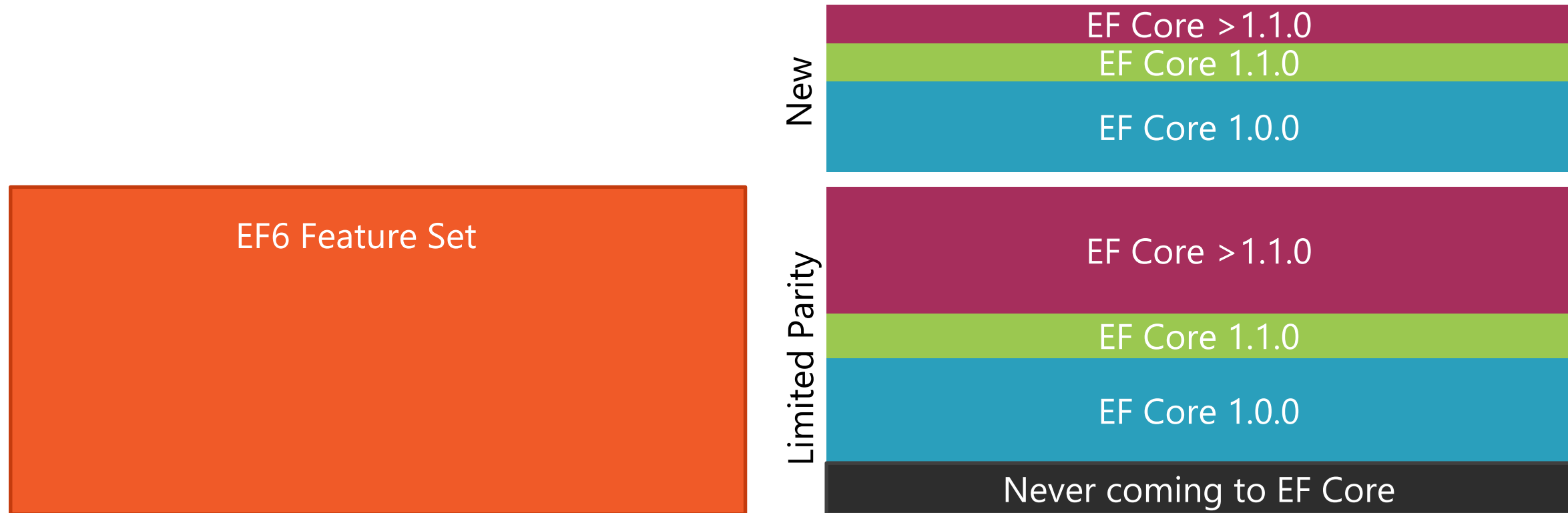
Unified platform



Where Can You Use EF Core?

		.NET 4.5.1+	.NET Core	UWP
OS		Windows	Windows, macOS, Linux	Windows 10
App Types		<i>Any .NET 4.5.1+</i> Console WinForms WPF ASP.NET 4 etc..	ASP.NET Core Web Apps & APIs Libraries Services Console Apps	Mobile PC HoloLens Xbox Surface Hub IoT Devices

EF6 Features vs EF Core Features



bit.ly/efcoreroadmap

"EF6.x continues to be the best version of EF for a number of applications until these features are implemented"

Implemented (1.0)

In Progress (1.1)

Backlog

Critical O/RM

The things we think we need before we say
EF Core is the recommended version of EF.

High priority features

Many features on our backlog
High priority but we think EF Core would be a compelling release
for the vast majority of applications without them

EF Core 1.1

(Preview is Here! RTM Late Q4 2016)

Removing adoption blockers

Bug fixing to improve stability
Critical O/RM features

Improved LINQ translation

DbSet.Find

Explicit Loading

More EntityEntry APIs:

Reload, GetModifiedProperties, GetDatabaseValues etc.

Connection resiliency

Parity with EF6.x

New Capabilities

Mapping to fields for scalar properties*

SQL Server memory-optimized table support

Simplified service replacement

EF Core Enables Long-Requested Features

Batch Insert,
Update, Delete

Unique
Constraints

Smarter
Queries

Smarter
Disconnected
Patterns

In-Memory
Provider for
Testing

Extensible & IoC
Friendly

Model-Only
Properties
("Shadow State")

Smarter & Simpler
Mapping

EF Core 1.1

Mapping to
Backing
Fields

Opt out of
DB Transactions
at SaveChanges

Temporary
Properties for
run time, not DB

Simple Service
Replacement

Next After EF Core 1.1

Parity with EF6.x

Complex/value types
Visual Studio wizard for reverse engineering

New Capabilities

Mapping to fields for navigation properties
Simple type conversions

Composable is not just about Nuget packages

EF is made up of 100's of services

Service i.e. class that has a single responsibility

- Detecting changes to an object since it was pulled from the database

- Taking a particular part of a linq query and translating it to sql

Reuse a piece of EF

- Rowan uses type mapper as an example: `var mapper=_context.GetService<IRelationalTypeMapper>`

Replace/tweak a piece of EF (1.1)

```
protected internal override void OnConfiguring(DbContextOptionsBuilder optionsBuilder)
=> optionsBuilder
    .ReplaceService<IModelCustomizer, CustomModelCustomizer>()
    .UseInMemoryDatabase();
```

My Picks To Share

Change Tracker
Familiar/Different

In Memory
Provider

Migrations
Enhancements

Cross-
Platform
via
.NET Core

Logging

Seed from JSON

ASP.NET Core
Integration

Demos of field mapping, use EF services directly, replacing services, SQL Server Memory optimized table in Rowan M OnDotNet
Demos of improved SQL generation, performance improvements,, targeting multiple databases in Rowan Miller Ignite video

Resources

Demos are at <https://github.com/julielerman/DevIntersection2016EFCore>

Rowan Miller (EF Program Mgr) - Entity Framework Core 1.1

<https://channel9.msdn.com/Shows/On-NET/Rowan-Miller-Entity-Framework-Core-11>

Rowan Miller - Access data in .NET Core 1.0 with Entity Framework

<https://channel9.msdn.com/Events/Ignite/2016/BRK2184>

Pluralsight:

Play by Play : EF Core First Look (bit.ly/PS_EFCoreLook)

Coming soon: Getting Started with EF Core

EF Docs: docs.efproject.net

EFCore: github.com/aspnet/entityframework

Arthur Vickers (team) blog: blog.oneunicorn.com

Roadmap: bit.ly/efcoreroadmap

MSDN Mag Data Points articles: bit.ly/datapointscolumn

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