



.NET Conf CO

v2017

And Now, EF Core 2!

Julie Lerman

thedatafarm.com



@julielerman

JULIE LERMAN

Software Coach

Microsoft Regional Dir. & MVP

about.me/julielerman



Cross-platform SQL Server Management
for Developers Using VS Code

EF Core: Getting Started

Entity Framework in the Enterprise

Getting Started with EF6

Domain-Driven Design Fundamentals

Looking Ahead to Entity Framework 7

EF6 Ninja Edition: What's New in EF6

Automated Testing for Fraidy Cats Like Me

Getting Started with Entity Framework 5

Entity Framework Code First Migrations

Data Layer Validation with Entity Framework 4.1+

Entity Framework 4.1 - DbContext Data Access

Entity Framework 4.1 - Code First

Querying the Entity Framework

Designer Supported EDM Customization

Entity Framework and Data Models

Entity Framework 4.0 By Example



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

- EF Core Documentation

First RTM
EF Core 1.0
June 2016

Latest RTM
EF Core 2.0
August 2017

In Progress
EF Core 2.1

Follows .NET Core Themes



Composable APIs



Cross-Platform



Modern
Software Practices

Highlights of EF Core

Began life as “EF7”

Lightweight, composable version of EF

Perf, generated SQL, runtime model building & etc

More flexible logging & diagnostics via ILoggerProvider

Windows, Cross-Platform with .NET Core

ASP.NET Core, .NET Framework UWP, Xamarin apps

Loads of new features

github.com/aspnet/entityframeworkcore

docs.microsoft.com/ef

Coming from EF6?

Not replacing, nor an update to, EF6.x

Total re-write, not backwards compatible

Many familiar APIs:

DbContext, Change Tracker, Migrations, LINQ

Drops EDMX,ObjectContext

EF 6.x



EF Core



You do not
have to re-learn
everything

But...

it's still new
& different

EF Core 1.1

bit.ly/PS_EFCoreStart

Entity Framework Core: Getting Started

★★★★☆ By Julie Lerman

This course will help those with experience in earlier versions of Entity Framework, and developers completely new to Entity Framework, learn how to build models with EF Core, how to use EF Core to interact with data, and more.

Start free trial now

▶ Play course overview

Get started

Log in

Course Overview	1m 46s	^
Course Overview	1m 46s	
Introducing a New, Lightweight Version of EF	36m 52s	^
Introduction	1m 16s	
Course Overview	1m 20s	
Module Overview	2m 40s	
What Is Entity Framework?	5m 50s	
What Is Entity Framework Core?	2m 32s	
Where Can You Use EF Core?	2m 2s	
EF6 Features Not Coming to EF Core	3m 6s	
How Entity Framework Works	6m 22s	

Course info

Rating ★★★★★ (107)

Level Beginner

Description

Most software - whether for business or entertainment - is driven by data that users need to interact with. In this course, Entity Framework Core: Getting Started, you will learn how to use Microsoft's modern data access platform, Entity Framework Core. You will learn how to build a model using EF Core, how to use EF Core to interact with data, and more.

Recommended

▶ FREE WEEKLY COURSE

Check out this week's free

EF Core 2.0 Depends on .NET Standard 2.0

.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 (with .NET Core 1.x SDK)	4.5	4.5	4.5.1	4.6	4.6.1	4.6.2		
.NET Framework (with .NET Core 2.0 SDK)	4.5	4.5	4.5.1	4.6	4.6.1	4.6.1	4.6.1	4.6.1
Mono	4.6	4.6	4.6	4.6	4.6	4.6	4.6	5.4
Xamarin.iOS	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.14
Xamarin.Mac	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.8
Xamarin.Android	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.5
Universal Windows Platform (VS2017 15.4)	10.0	10.0	10.0	10.0	10.0	vNext	vNext	vNext
Windows	8.0	8.0	8.1					
Windows Phone	8.1	8.1	8.1					
Windows Phone Silverlight	8.0							

Environment for Building with EF Core 2.0

Install .NET Core 2.0 SDK

microsoft.com/net/download/core

.NET Framework

on Windows only

VS2015*

VS2017 15.3+

*Install NuGet 3.6.0

Cross Platform

Windows

VS2017 15.3+

macOS

VS for Mac

Windows/macOS/Linux

Visual Studio Code

Where Can You Use EF Core 2.0?

	.NET 4.6.1+	.NET Core 2.x	Mono 5.x	UWP vNext
OS	Windows	Windows, macOS, Linux	iOS Android	Windows 10
App Types	Console WinForms WPF ASP.NET 4 etc..	ASP.NET Core Web Apps & APIs Libraries Services Console Apps Docker	Mobile Tablet	Mobile PC HoloLens Xbox Surface Hub IoT Devices

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

Mapping to
Backing
Fields

Opt out of
DB Transactions
at SaveChanges

Temporary
Properties for
run time, not DB

Simple Service
Replacement

Some personal favorites

IEnumerable Collections

Full encapsulation of
collection properties

MSDN Mag Sept & Oct 2017:
DDD Friendlier EF Core 2.0 Part 1 & 2

Read-Only DbContext

`DbContext.
ChangeTracker.
QueryTrackingBehavior=
NoTracking / TrackAll`

“EF Core Lets Us Finally Define
NoTracking DbContexts”
bit.ly/ReadOnlyDbContext

New in EF Core 2.0

Querying

GroupJoin fixup
Improved LINQ translation
EF.Functions.Like()
Global query filters (per type)
Manually compiled queries

Mapping

Type Configuration (ala EF6)
Complex type/
(value object) support
Table splitting

Etc.

Consolidate logging
& diagnostics
App Insights integration
Easier service replacement

EF Core 2.1 – Planned Features

- **GroupBy**
- **Seeding**
- **View types**
- **Include for derived types**
- **System.Transactions**
- **Cosmos DB provider**
- **Sample Oracle provider**
- **App insights integration**
- Lazy loading
- Value conversions
- Lifecycle events
- Non-default constructors
- Update model from database
- Column ordering
- Perf investigation
- UWP testing

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, 2.0)

In Progress (2.1)

Backlog

Critical O/RM

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

High priority features

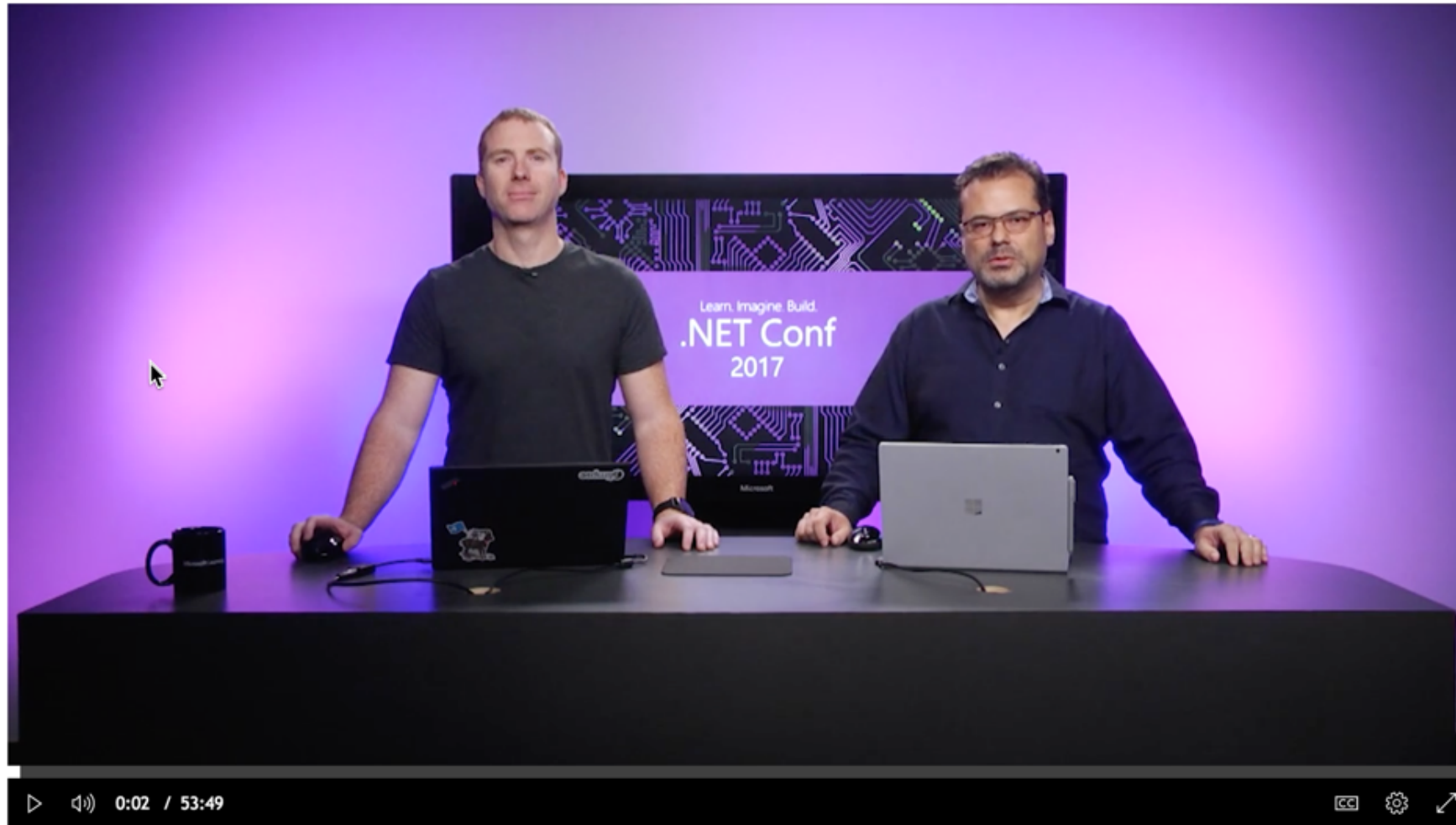
Many features on our backlog
High priority but we think EF Core would be a compelling release
for the vast majority of applications without them

.NET Conf 2017

What's New in Entity Framework Core 2.0

Sep 12, 2017 at 10:30AM by **Diego Vega**, **Andrew Peters**

★★★★★ 7 ratings 4,980 views 10 comments



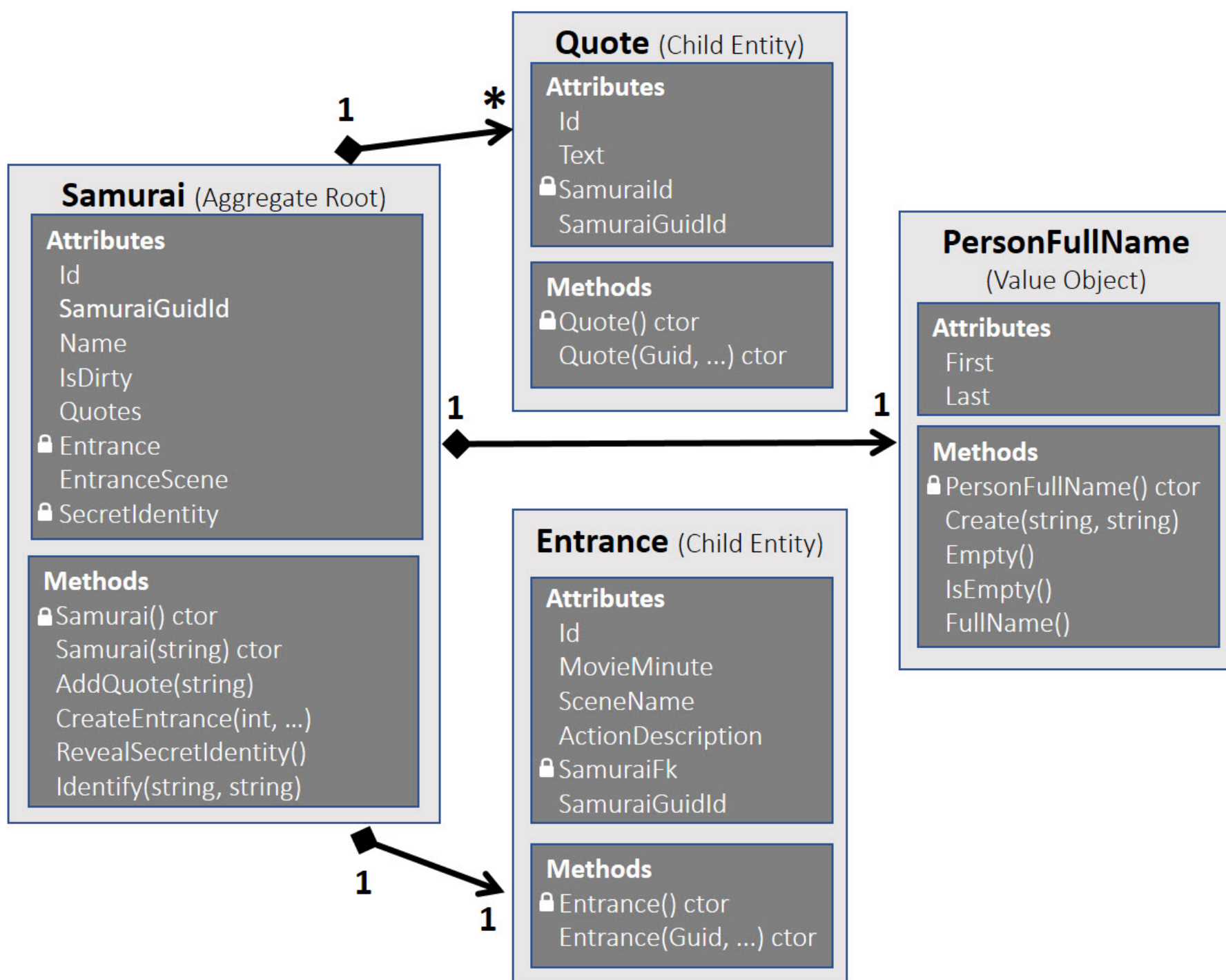
[channel9.msdn.com/
Events/
dotnetConf/
2017/T221](https://channel9.msdn.com/Events/dotnetConf/2017/T221)

DEMO TIME

Logging

Real world mappings

Backing Fields, Private Properties,
Encapsulated Collections, Value Objects (aka Complex types)





Resources

Demos will be at github.com/julielerman/DevInt2017EFCore

Pluralsight: Getting Started with EF Core bit.ly/PS_EFCoreStart

Team blog: blogs.msdn.microsoft.com/dotnet/tag/entity-framework/

EF Docs: docs.microsoft.com/ef

EF Core GitHub: github.com/aspnet/entityframeworkcore

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

Roadmap: bit.ly/EFCoreRoadmap

MSDN Mag Data Points articles: <http://bit.ly/DataPointsColumn>

Channel9 Videos: channel9.msdn.com/niners/julielerman

Rowan Miller EF Core 2.0 at Build: channel9.msdn.com/events/Build/2017/B8050

.NET Standard Docs: docs.microsoft.com/en-us/dotnet/standard/net-standard

Q & A

