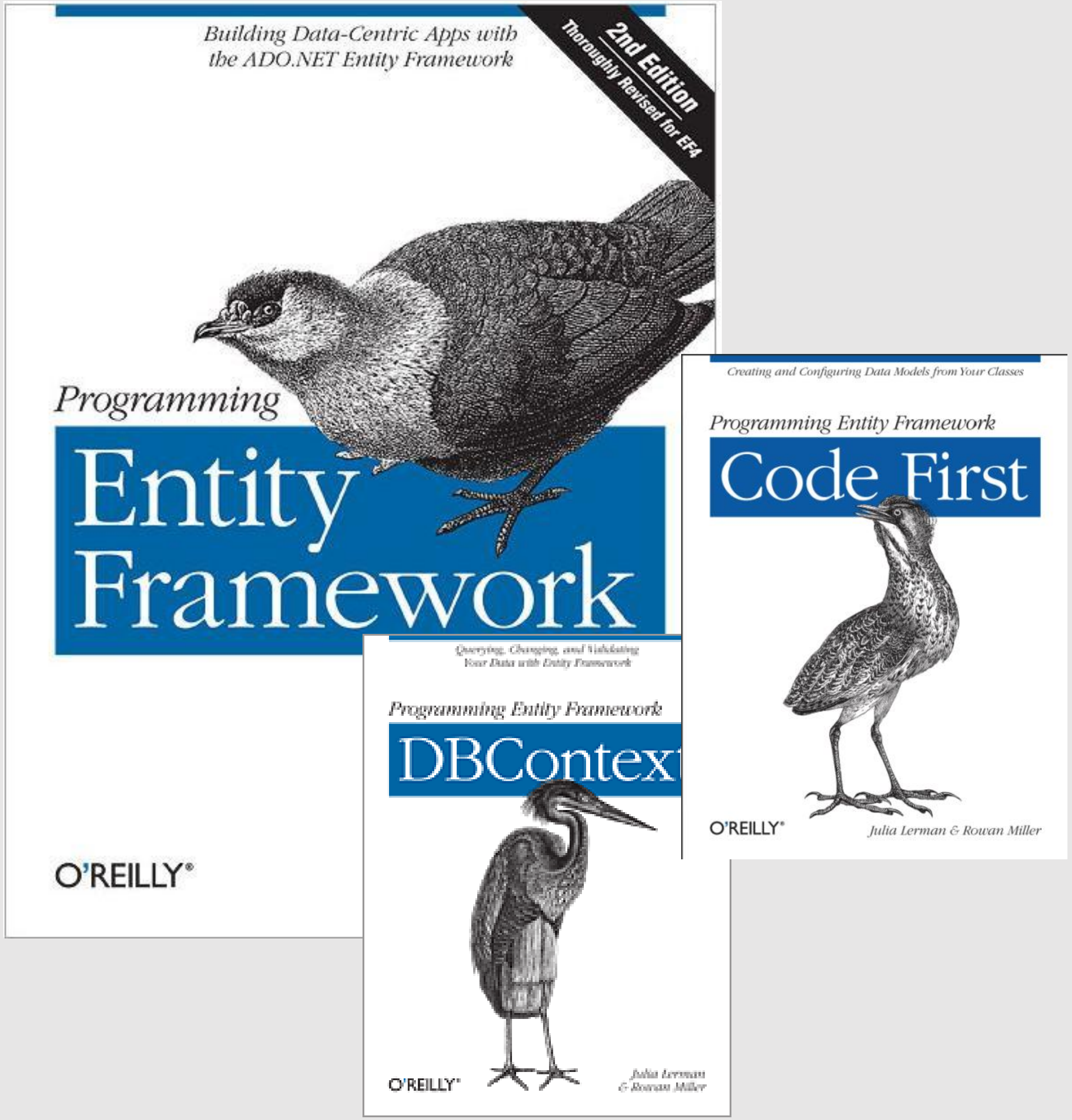
# Entity Framework 7

## Who Are You & What Have You Done to my ORM?

Julie Lerman @julielerman thedatafarm.com

#devsum15

Cornerstone presenterar DevSum15


Building Data-Centric Apps with the ADO.NET Entity Framework
2nd Edition
Thoroughly Revised for EF4
Programming
Entity Framework
O'REILLY
Creating and Configuring Data Models from Your Classes
Programming Entity Framework
Code First
O'REILLY
Julia Lerman & Rowan Miller
Querying, Changing, and Validating Your Data with Entity Framework
Programming Entity Framework
DBContext
O'REILLY
Julia Lerman & Rowan Miller

# My Courses on pluralsight

- 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 in the Enterprise
- 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

EF

so much technical debt!

# EF7

A complete rewrite

Familiar APIs

Better APIs

*Not backwards compatible*

# ♥EF7

“New Platforms
New Data Stores”
Features We’ve Longed For

Object Context
EDMX

# Lighter Weight API

## Code Based Modeling Only

Reverse engineer database still supported

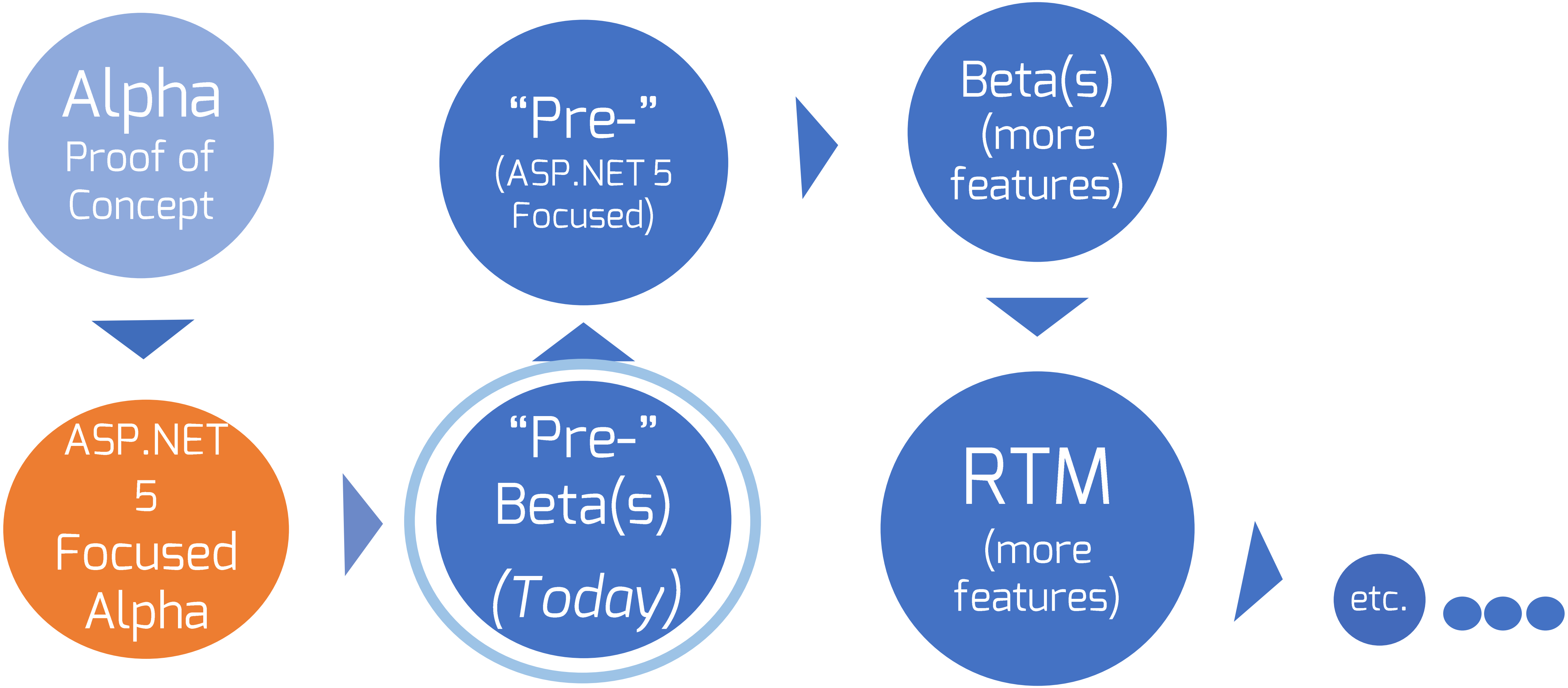
## DbContext API Only

Lower level functions from ObjectContext will be in DbContext

## Simpler Metadata API

Losing some edge case mapping capabilities

# Expected Progression of EF7



Alpha Proof of Concept

ASP.NET 5 Focused Alpha

"Pre-" Beta(s) *(Today)*

"Pre-" (ASP.NET 5 Focused)

Beta(s) (more features)

RTM (more features)

etc.

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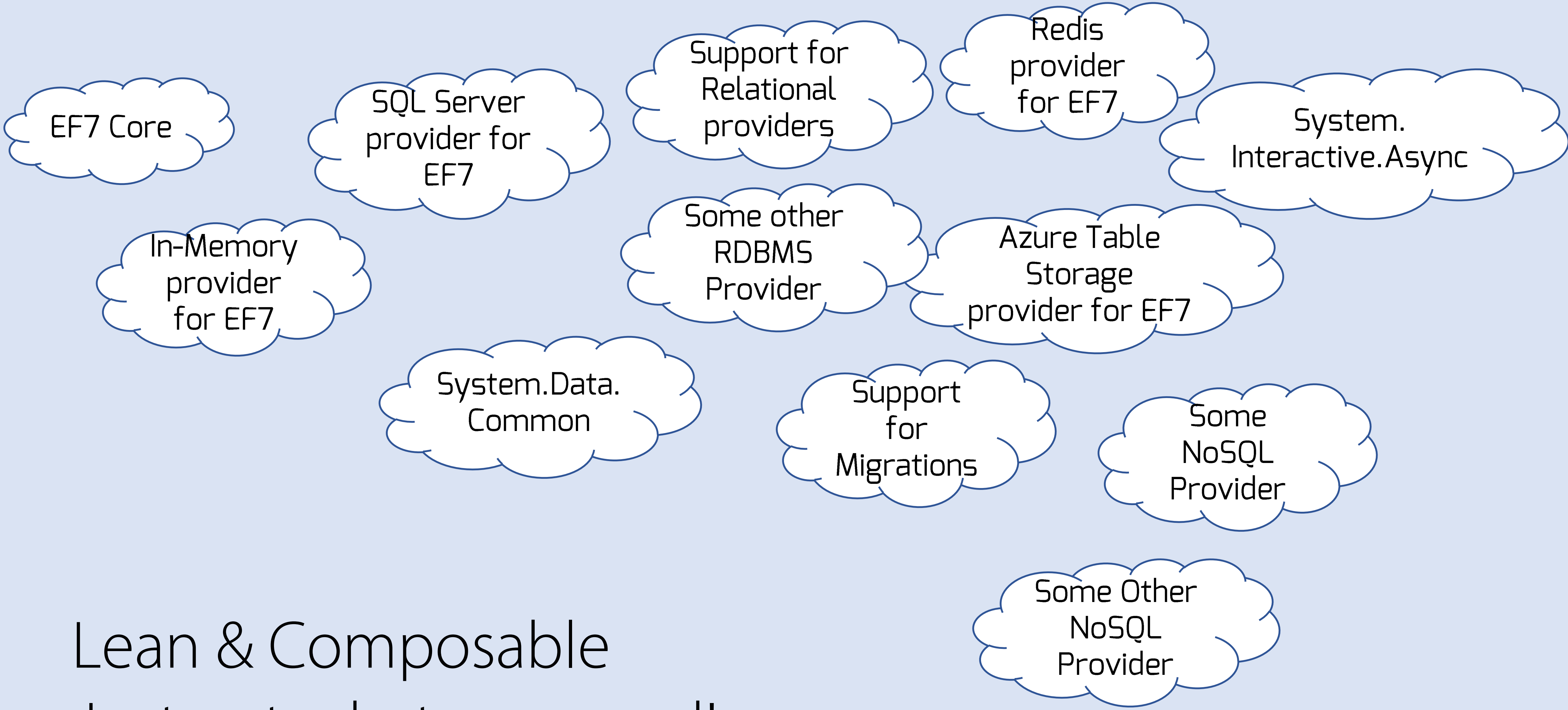

EF7 Core

SQL Server provider for EF7

Support for Relational providers

Redis provider for EF7

System. Interactive.Async

In-Memory provider for EF7

Some other RDBMS Provider

Azure Table Storage provider for EF7

System.Data. Common

Support for Migrations

Some NoSQL Provider

Some Other NoSQL Provider

# Lean & Composable
# Just get what you need!

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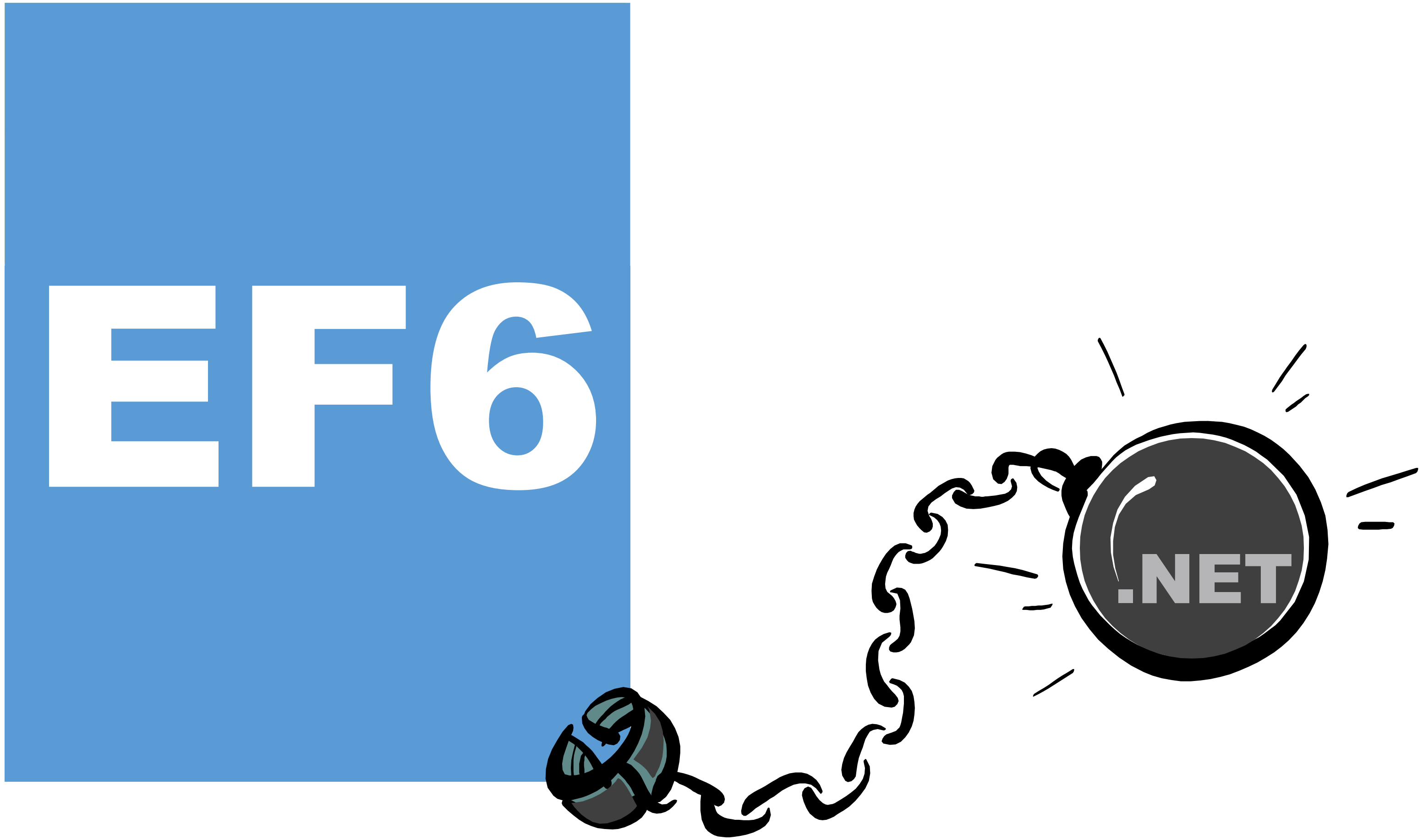
# How We Got Here

## Client Side

Console
WPF
Windows Form

## Server Side

ASP.NET Web Forms
ASP.NET MVC
ASP.NET WebAPI
WCF Data Services



# EF7 Won’t Require Full .NET Framework

Windows Phone

Windows Store

ASP.NET 5
W10 UAP

Core CLR

Cross Platform
CLR

& .NET Framework

# Data Stores

## Relational Databases

Adding SQLite for Device Support
Adding PostgreSQL for Mac & Linux Support

## Non-Relational Providers

NoSQL (proof of concept: Azure Table Storage)

In-Memory (for integration testing w EF, not DB)

Redis Cache (proof of concept)

More . . .

# ORM → Non-Relational Data

WUT?

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# Familiar APIs

Entity Model

DbContext API

Migrations

LINQ to Entities

Change Tracking

SaveChanges

# Familiar APIs & Behavior

Demo

# Long-Requested Features

- Batch CUD
- Unique Constraints*
- More Provider Control of Queries
- Shadow State for Entities
- In-Memory Provider for Fakes & Test Doubles
- IOC Friendly/ Extensible
- Type Conversions
- Default Database Values*

More @ data.uservoice.com

# MOAR Goodies

- Include(collection).ThenInclude(navigation property)
- Leverage ASPNET5 ILoggerFactory
- Combine SQL and LINQ for queries
- Range methods take multiple types
- Has/With Fluent API methods->Reference/InverseReference
- More concise Migrations commands (& in DNX runtime too)
- More ...

*Watch **Modern Data Applications with Entity Framework 7**
http://channel9.msdn.com/Events/Ignite/2015/BRK3727

# EF7 Coding Enhancements

Demo

# Disconnected Graphs in EF7

## Affect Root Only

Add, Attach, Update, Remove, etc.

DbContext.Entry(entity).State

Async counterparts

## Affect Full Graph

DbContext.ChangeTracker.TrackGraph(entity)

DbContext.ChangeTracker.AttachGraph(entity, Action)

# Biggest Feature Cuts

EDMX Support

ObjectContext API

Code First DbInitializer Magic

Automatic Code First Migrations

Entity SQL

Metadata (Replaced with simpler Metadata & API)

Overly Complex Mappings

MEST (Multiple Entities for Single Type) Mapping

# What About EF6?

- EF6 will be around for a long time
- Supported & maintained by EF Team
- Open Source so Community Contribs invited
- I'm investing in EF6 w a new Pluralsight course
- EF6 & EF7 will continue in parallel although most innovation will happen in EF7

# What About My Existing EF5/EF6 Projects?

- You are not required to upgrade
- Moving existing code may take some effort
- Only move if you have a compelling reason
- Consider moving only a subset if possible
  - Move that into separate project(s)
  - Might mean breaking a model apart

# What if We Are Starting a New Project Soon?

- (Soon == while EF7 is still an alpha*)
- Use EF6
- Use DbContext
- Use Code First
- Keep logic as close to EF7 patterns as possible
- Build it with transition to EF7 in mind

*This guidance was written in May 2015

Github.com/aspnet/entityframework

My Pluralsight course on EF7:
bit.ly/PS-EF7Alpha

# Entity Framework 7

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