

Using EF Core with ASP.NET Core



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MOST TRUSTED AUTHORITY ON ENTITY FRAMEWORK

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Overview



Project types you can target from
ASP.NET Core

EF Core integration with ASP.NET Core

Wiring up the SamuraiContext model

Designing EF logic for disconnected
access

EF Core's non-tracking context option

Cascade delete in EF and in the database






Build the controller and let 'er rip!



Your EF Core Projects and ASP.NET Core



Referencing Projects & Assemblies

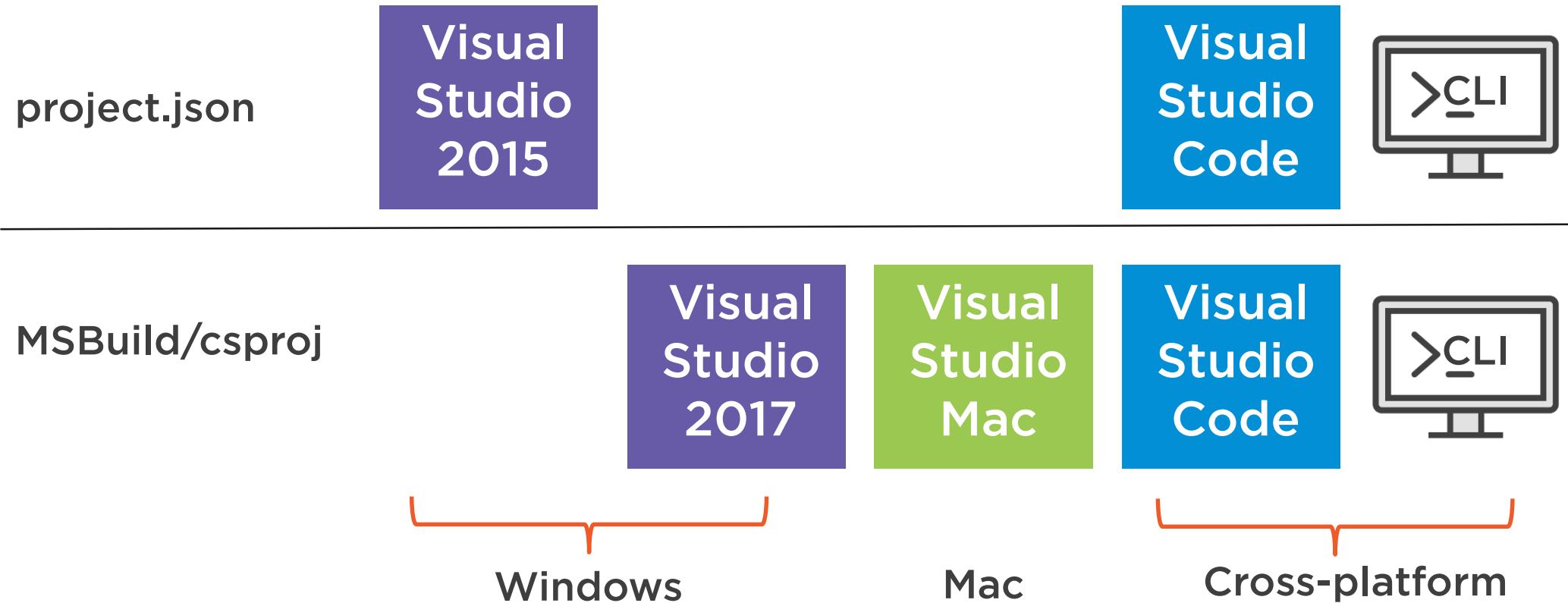
From	Full .NET	.NET Standard
Full .NET		
.NET Core		
Universal Windows Platform		
.NET Standard		



Understanding EF Core Integration with ASP.NET Core



Design Time Support



Wiring up SamuraiContext and Web API



Wiring up EF Core to ASP.NET Core

- ✓ Add references to Samurai Data and Domain projects
- ✓ Test that dotnet and dotnet ef can execute
- ✓ Connection string into appsettings.json file
- ✓ DbContext constructor to accept DbContextOptions
- ✓ Add DbContext to ASP.NET Core's D.I. services
- ✓ Run latest migration



ASP.NET Core Dependency Injection

```
public class SomeClass{  
    private SamuraiContext _context;  
  
    public SomeClass(SamuraiContext obj)  
    {  
        _context = contextInstance;  
    }  
}
```

```
public class Startup {  
  
    public void ConfigureServices  
        (IServiceCollection services) {  
  
        services  
            .AddDbContext<SamuraiContext>()  
    }  
}
```

◀ Constructor expects an instance of SamuraiContext

Migrations will use this too!

◀ Configure services to supply (instantiate & inject) the object



Designing EF Logic for Disconnected Access



Tracking or Non-tracking Queries

Track all query results (default)

Default behavior of EF since v1

EF tracks results of all queries

Disable per query:

```
context.Samurais.AsNoTracking().ToList()
```

Tracking per context instance

New to EF Core

ChangeTracker.QueryTrackingBehavior

QueryTrackingBehavior enum

.TrackAll (default)

.NoTracking

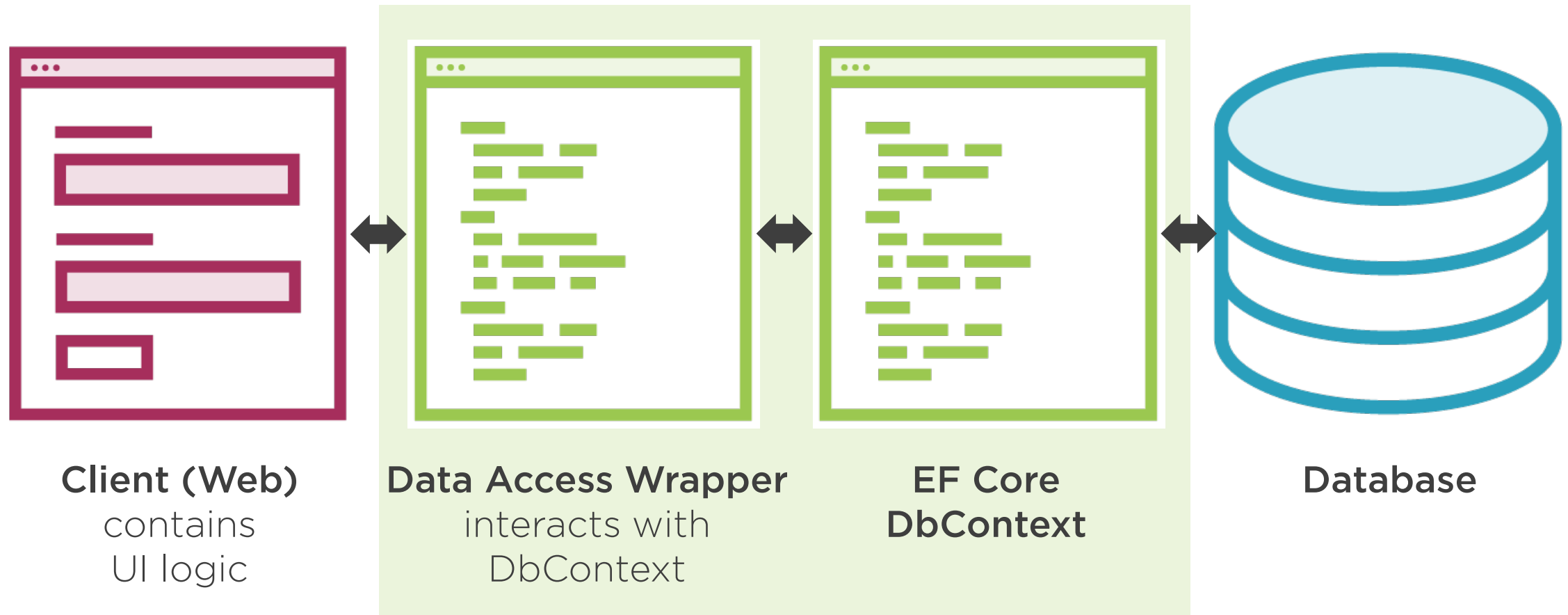
```
context.ChangeTracker.QueryTrackingBehavior  
= QueryTrackingBehavior.NoTracking
```

Enable tracking per query:

```
context.Samurais.AsTracking().ToList()
```



Disconnected: DbContext is Unaware of UI Edits



Deleting Objects with Dependent Data

Also marks objects in in-memory graph to be deleted

Watch out for reference data!

Migrations will define cascade delete in database also

This means you don't need the full graph in memory

EF guides to define both or neither

Alternatively: Manage graph deletes e.g. stored procs



Wiring up the Web API Controller



Watching the Web API in Action



Review

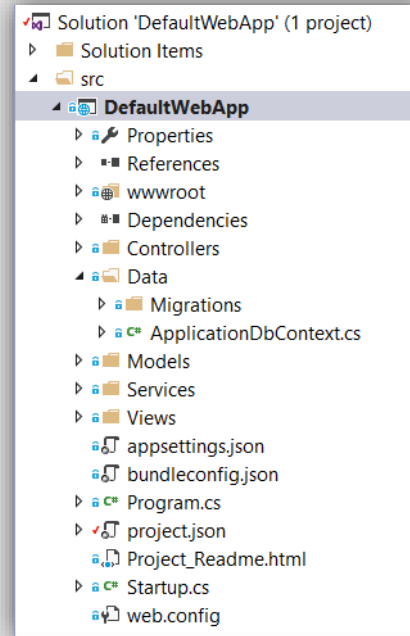
From	Full .NET	.NET Standard
Full .NET	✓	✓
.NET Core		✓
Universal Windows Platform		✓
.NET Standard		✓

```
public class DisconnectedData
{
    private SamuraiContext _context;

    public DisconnectedData(SamuraiContext context) {
        _context = context;
        _context.ChangeTracker.QueryTrackingBehavior
            = QueryTrackingBehavior.NoTracking;
    }

    public List<KeyValuePair<int, string>> GetSamuraiReferenceList() {
        var samurais = _context.Samurais.OrderBy(s => s.Name)
            .Select(s => new {s.Id, s.Name})
            .ToDictionary(t => t.Id, t => t.Name).ToList();
        return samurais;
    }

    public Samurai LoadSamuraiGraph(int id) {
        var samurai =
            _context.Samurai
                .Include(s => s.Battles)
                .Include(s => s.SecretIdentity)
                .FirstOrDefault(s => s.Id == id);
    }
}
```



ASP.NET Core Dependency Injection

```
public class SomeClass{
    private SamuraiContext _context;

    public SomeClass(SamuraiContext obj)
    {
        _context = contextInstance;
    }

    public class Startup {

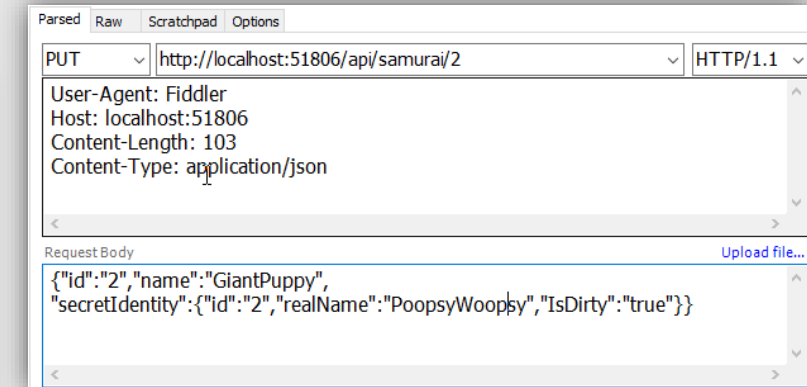
        public void ConfigureServices
            (IServiceCollection services) {

            services
                .AddDbContext<SamuraiContext>()
        }
    }
}
```

◀ Constructor expects an instance of SamuraiContext

◀ Configure services to supply (instantiate & inject) the object

```
{
  "id": 2,
  "name": "Giantpuppy",
  "quotes": [],
  "samuraiBattles": null,
  "secretIdentity": {
    "id": 2,
    "realName": "PoopsyWoopsy "
  }
}
```



Resources

Entity Framework Core on GitHub github.com/aspnet/entityframework

EF Core Documentation docs.microsoft.com/ef

Arthur Vickers Notification Entities Post

blog.oneunicorn.com/2016/11/16/notification-entities-in-ef-core-1-1

PowerShell function to trim prompt

quora.com/How-do-I-get-just-the-current-folder-name-in-my-Windows-Powershell-prompt-function

Introducing .NET Standard

blogs.msdn.microsoft.com/dotnet/2016/09/26/introducing-net-standard

Fiddler Web Debugging Proxy App fiddler2.com



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