

Registering More Complex Services



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Overview



IServiceCollection extension methods

Complex registration requirements

**Improving the organization of your
ConfigureServices method**



Introducing the Tennis Booking Application



Service Descriptors



Service descriptors contain
information about
registered services.



Demo



Working with service descriptors



Add vs. TryAdd



Demo



Duplicated service registrations

Add vs. TryAdd behaviour



Configuration as Code

AddTransient

AddScoped

AddSingleton



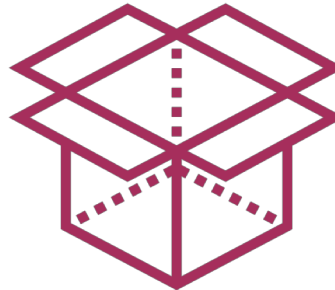
Registering an Interface Multiple Times



Multiple Registrations

```
services.AddSingleton<IWeatherForecaster, WeatherForecaster>();
```

⋮
Dependency
Injection Container



⋮

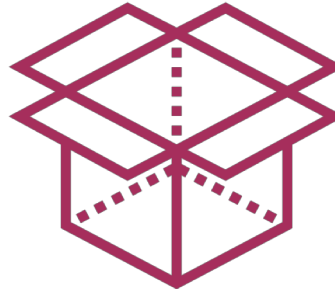
Lifetime	Service Type	Implementation Type
Singleton	IWeatherForecaster	WeatherForecaster



Multiple Registrations

```
services.AddSingleton<IWeatherForecaster, AmazingWeatherForecaster>();
```

⋮
Dependency
Injection Container



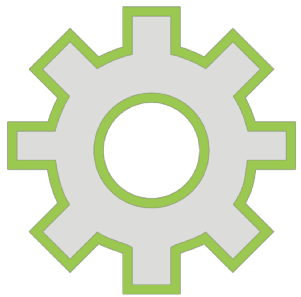
⋮

Lifetime	Service Type	Implementation Type
Singleton	IWeatherForecaster	WeatherForecaster
Singleton	IWeatherForecaster	AmazingWeatherForecaster

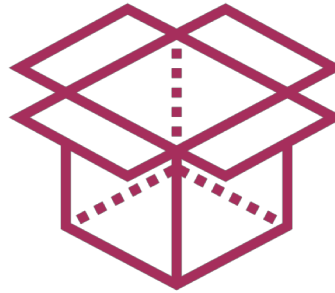


Multiple Registrations

```
public SomeService(IWeatherForecaster weatherForecaster)
```



Dependency
Injection Container



Lifetime	Service Type	Implementation Type
Singleton	IWeatherForecaster	WeatherForecaster
Singleton	IWeatherForecaster	AmazingWeatherForecaster



Multiple Registrations

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Lifetime	Service Type	Implementation Type
Singleton	IWeatherForecaster	WeatherForecaster
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Multiple Registrations

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public SomeService(IWeatherForecaster weatherForecaster)
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Lifetime	Service Type	Implementation Type
Singleton	IWeatherForecaster	WeatherForecaster
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Replacing and Removing Registrations



Demo



Replacing a service registration

Removing service registrations



Registering Multiple Implementations of an Interface



Demo



Why does the container allow multiple registrations?

Registering multiple implementations of an interface



Improving Multiple Implementations with TryAddEnumerable



Demo



What happens to
duplicated registrations?

Registering with TryAddEnumerable



Implementation Factories



Demo



Adding a registration using an
implementation factory

Scenarios for using
implementation factories



Implementation Factory Signature

```
public static void TryAddSingleton<TService>(
    this IServiceCollection services,
    Func<IServiceProvider, TService> implementationFactory)
    where TService : class;
```



Implementation Factory Signature

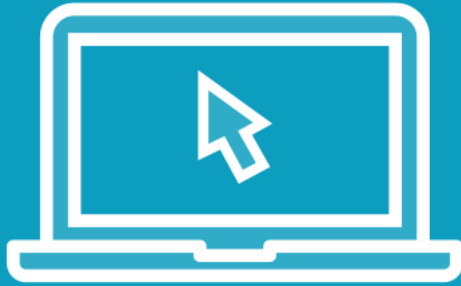
```
public static void TryAddSingleton<TService>(
    this IServiceCollection services,
    Func<IServiceProvider, TService> implementationFactory)
    where TService : class;
```



Registering an Implementation Against Multiple Interfaces



Demo



Why register an implementation against multiple service types?

How to register an implementation multiple times



Registering Open Generics



Demo



Registering open generic services



Clean Code Using Extension Methods



Demo



Improving the readability of the
`ConfigureServices` method



Review



Complex registration scenarios

Service descriptors

TryAdd extension methods

Multiple registrations

Registering open generics

Code cleanliness for service registrations

