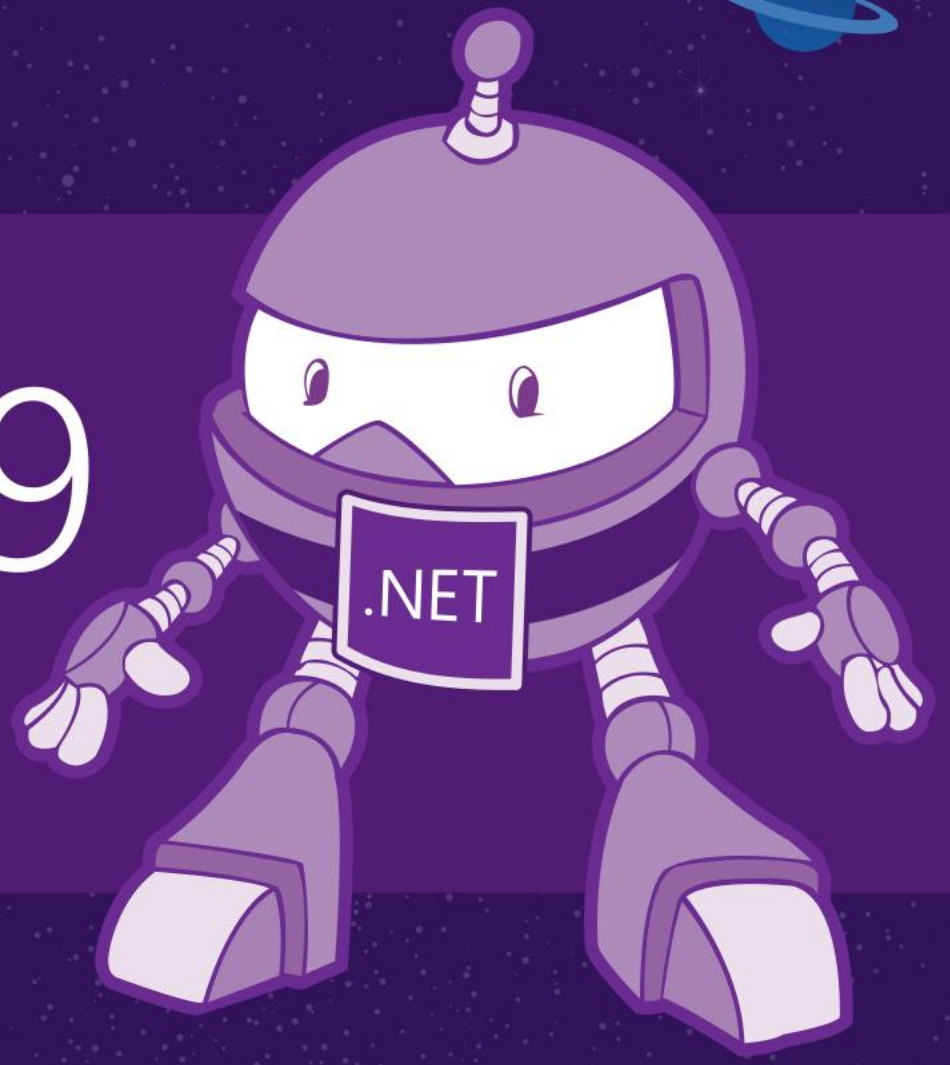
.NET Conf 2019

Discover the world of .NET

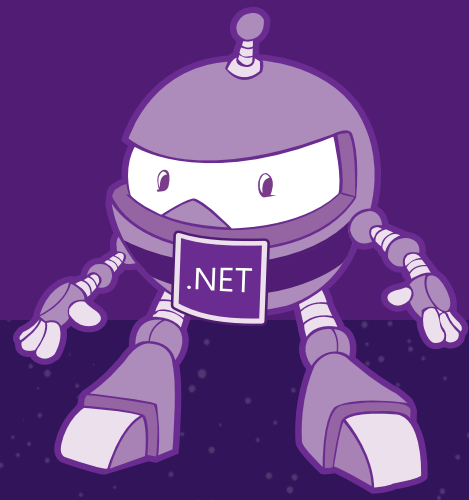




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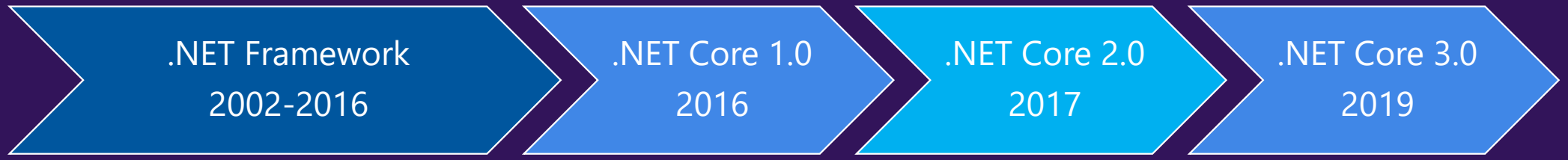
.NET Core 3

黃忠成



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The History


.NET Framework
2002-2016
.NET Core 1.0
2016
.NET Core 2.0
2017
.NET Core 3.0
2019

所以 .NET Core 是？？



重寫過的 .NET

.NET



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為什麼要重寫？？



因為要跨平台啊！

.NET



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跨平台的 .NET Core



Windows

.NET Framework

Mono

.NET Core





Linux

Mono

.NET Core





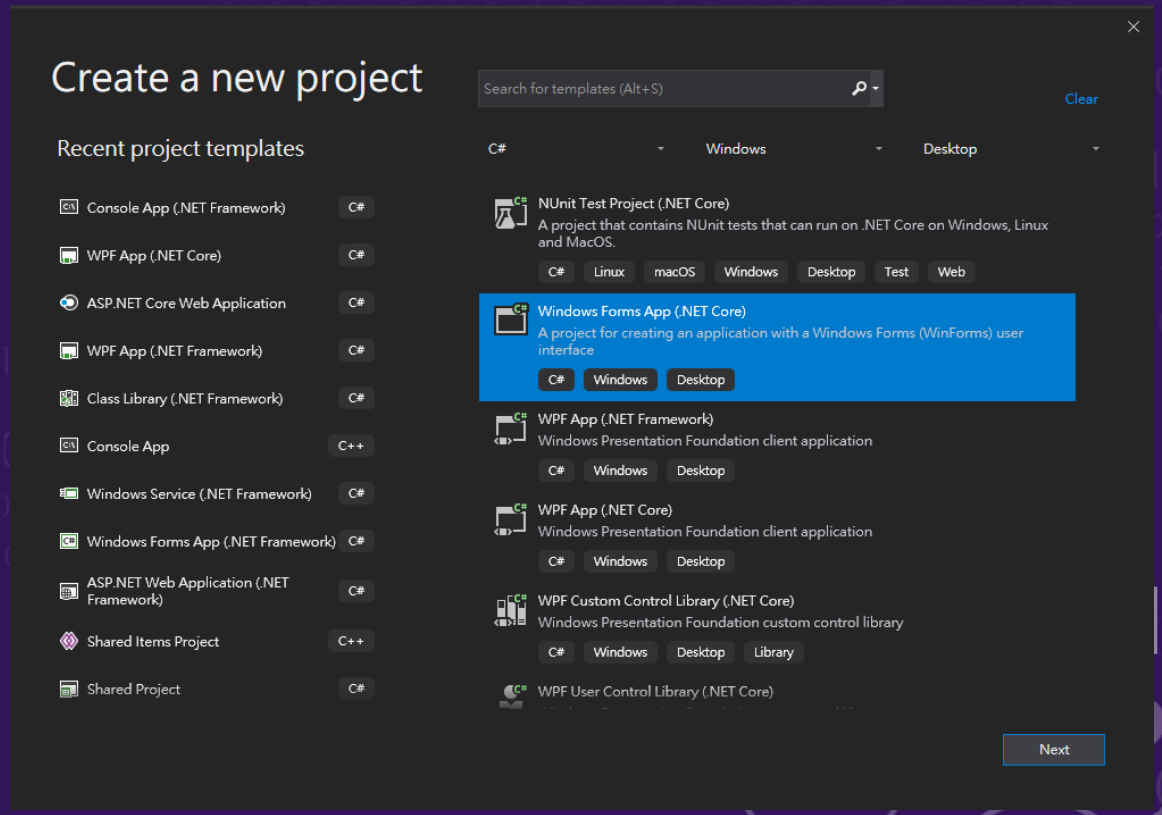
Mobile(iOS/Android)

Xamarin(Mono)

New Features in 3.0

- Desktop App Support
- Generics Hosting
- Publish Options
- Entity Framework Core 3.0
- Performance
- C# 8.0
- Plug-In Platform、gRPC and more more more....

Desktop App



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Generics Host



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Generics Host in .NET Core 2.2

Web App

```
namespace WebApplication10
{
    0 references
    public class Program
    {
        0 references | 0 exceptions
        public static void Main(string[] args)
        {
            CreateWebHostBuilder(args).Build().Run();
        }

        1 reference | 0 exceptions
        public static IWebHostBuilder CreateWebHostBuilder(string[] args) =>
            WebHost.CreateDefaultBuilder(args)
                .UseStartup<Startup>();
    }
}
```

Windows Service

```
private static async Task Main(string[] args)
{
    var isService = !(Debugger.IsAttached || args.Contains("--console"));

    var builder = new HostBuilder()
        .ConfigureServices((hostContext, services) =>
        {
            services.AddHostedService<FileWriterService>();
        });

    if (isService)
    {
        await builder.RunAsServiceAsync();
    }
    else
    {
        await builder.RunConsoleAsync();
    }
}
```

Generics Host in .NET Core 3.0

Web App

```
public class Program
{
    0 references
    public static void Main(string[] args)
    {
        CreateHostBuilder(args).Build().Run();
    }

    1 reference
    public static IHostBuilder CreateHostBuilder(string[] args) =>
        Host.CreateDefaultBuilder(args)
            .ConfigureWebHostDefaults(webBuilder =>
            {
                webBuilder.UseStartup<Startup>();
            });
}
```

Windows Service

```
public class Program
{
    0 references
    public static void Main(string[] args)
    {
        CreateHostBuilder(args).Build().Run();
    }

    1 reference
    public static IHostBuilder CreateHostBuilder(string[] args) =>
        Host.CreateDefaultBuilder(args)
            .ConfigureServices((hostContext, services) =>
            {
                services.AddHostedService<Worker>();
            });
}
```

然後呢？

- 統一的寫法，用 Extension 區隔
- Worker Services 可以安裝為 Windows Service
- 擁有 DI 能力

Publish



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三種佈署方式，兩種微調

- Shared Runtime
- Self-Package
- Single-File
  - Ready To Run
  - Trimming Mode

Entity Framework 3.0

.NET



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有什麼新玩意？

- 轉不過去的不再硬轉
  - 轉不過去的不再硬轉
  - 轉不過去的不再硬轉
  - 轉不過去的不再硬轉
- 支援 View 對應
- 支援 await foreach
- Interceptor 回來了
- 自定義函式轉換
- Entity Framework 6.3 可以跑在 .NET Core 3 了

EF 2.2

```
namespace EF2
{
    0 references
    class Program
    {
        1 reference
        static bool MyFilter(string s)
        {
            return s.StartsWith("c");
        }

        1 reference
        static void Test1()
        {
            var ctx = new MyDB2Context();
            ctx.Database.EnsureCreated();
            var r = ctx.Customers.FirstOrDefault(s => MyFilter(s.NAME));
        }
```

```
C:\Program Files\dotnet\dotnet.exe
info: Microsoft.EntityFrameworkCore.Infrastructure[10403]
      Entity Framework Core 2.2.6-servicing-10079 initialized 'MyDB2Context' using provider
re.SqlServer' with options: None
info: Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (49ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      IF EXISTS (SELECT * FROM INFORMATION_SCHEMA.TABLES WHERE TABLE_TYPE = 'BASE TABLE') SE
warn: Microsoft.EntityFrameworkCore.Query[20500]
      The LINQ expression 'where MyFilter([s].NAME)' could not be translated and will be eva
warn: Microsoft.EntityFrameworkCore.Query[20500]
      The LINQ expression 'FirstOrDefault()' could not be translated and will be evaluated l
info: Microsoft.EntityFrameworkCore.Database.Command[20101]
      Executed DbCommand (5ms) [Parameters=[], CommandType='Text', CommandTimeout='30']
      SELECT [s].[Id], [s].[ADDRESS], [s].[CREDIT_LEVEL], [s].[NAME]
      FROM [Customers] AS [s]
```

EF 3.0

```
1 reference
static bool MyFilter(string s)
{
    return s.StartsWith("c");
}

1 reference
static void Test1()
{
    var ctx = new MyDB2Context();
    ctx.Database.EnsureCreated();
    var r = ctx.Customers.FirstOrDefault(s => MyFilter(s.NAME));
}


0 references
static void Main(string[] args)
{
    Test1();
    Console.ReadLine();
}
```

```
Microsoft Visual Studio Debug Console
info: Microsoft.EntityFrameworkCore.Infrastructure[10403]
      Entity Framework Core 3.0.0 initialized 'MyDB2Context' using provider 'Microsoft.EntityFrame
th options: None
info: Microsoft.EntityFrameworkCore.Database.Command[20100]
      Executing DbCommand [Parameters=[], CommandType='Text', CommandTimeout='30']

      IF EXISTS
          (SELECT *
           FROM [sys].[objects] o
           WHERE [o].[type] = 'U'
           AND [o].[is_ms_shipped] = 0
           AND NOT EXISTS (SELECT *
               FROM [sys].[extended_properties] AS [ep]
               WHERE [ep].[major_id] = [o].[object_id]
                   AND [ep].[minor_id] = 0
                   AND [ep].[class] = 1
                   AND [ep].[name] = N'microsoft_database_tools_support'
           )
      )
      SELECT 1 ELSE SELECT 0
Unhandled exception. System.InvalidOperationException: The LINQ expression 'Where<Customers>(
    source: DbSet<Customers>,
```

Async Streaming

```
static async void Test2()
{
    var ctx = new MyDB2Context();
    ctx.Database.EnsureCreated();
    await foreach(var item in
          ctx.Customers.Where(a => a.NAME.StartsWith("c")).AsAsyncEnumerable())
    {
        //..........
    }
}
```

Custom Function

```
0 references
static void Main(string[] args)
{
    var ctx = new MyDB2Context();
    ctx.Database.EnsureCreated();
    var result = ctx.Customers.Where(a =>a.NAME.Left(2) == "co").FirstOrDefault();
    Console.WriteLine(result?.NAME);
    Console.ReadLine();
}
```

```
G:\Docs\SkillTree\EFCore\Examples\CustomFunctions\CustomFunctions\bin\Debug\netcoreapp3.0\CustomFunctions.exe
      );
info: Microsoft.EntityFrameworkCore.Database.Command[20100]
      Executing DbCommand [Parameters=[], CommandType='Text', CommandTimeout='30']
      SELECT TOP(1) [c].[Id], [c].[ADDRESS], [c].[CREDIT_LEVEL], [c].[JOIN_DATE], [c].[NAME]
      FROM [Customers] AS [c]
      WHERE (Left([c].[NAME], 2) = 'co') AND Left([c].[NAME], 2) IS NOT NULL
```

gRPC

- 輕量的通訊技術
- 可跨平台
- .NET Core 3 的 DI 可運用於 grpc services

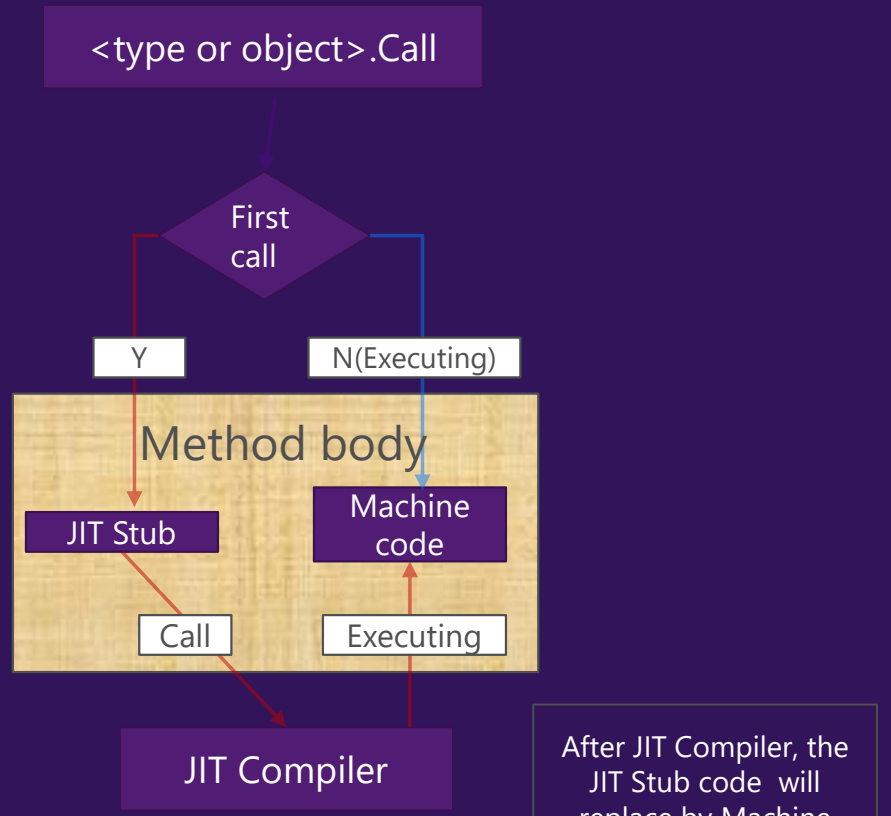
Tiered Compilation

.NET

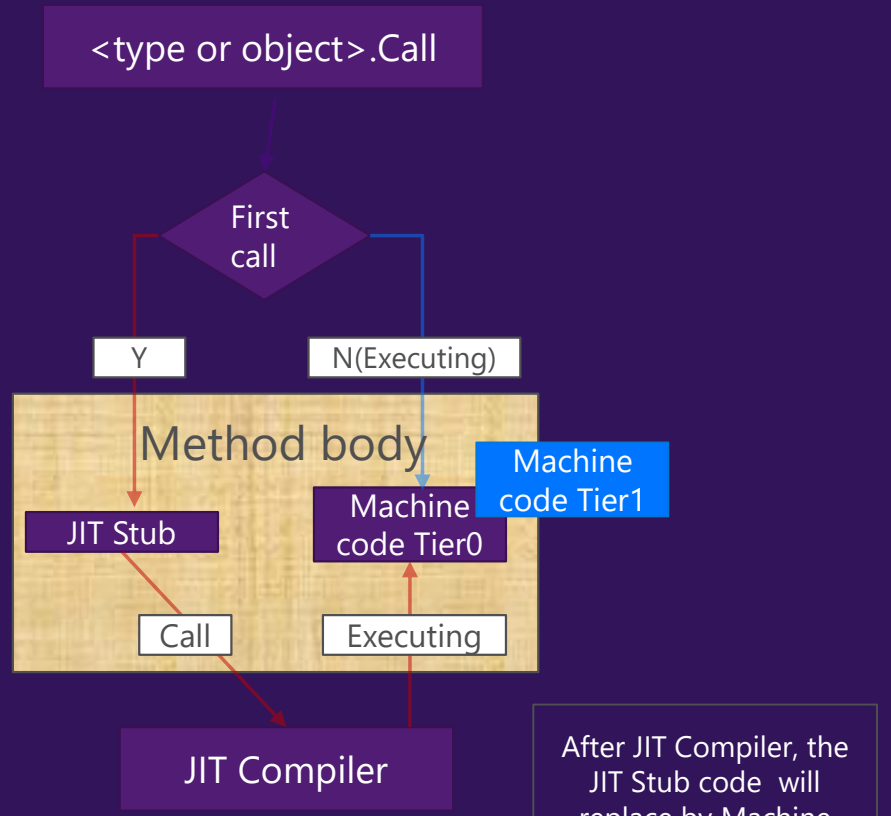


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舊的 JIT


<type or object>.Call
First call
Y
N(Executing)
Method body
JIT Stub
Machine code
Call
Executing
JIT Compiler
After JIT Compiler, the JIT Stub code will replace by Machine code

啟用 TC 的 JIT


<type or object>.Call
First call
Y
N(Executing)
Method body
JIT Stub
Machine code Tier0
Machine code Tier1
Call
Executing
JIT Compiler
After JIT Compiler, the JIT Stub code will replace by Machine code

如果不喜歡

自己編啊

```
1 reference
class Program
{
    1 reference
    static void IamTheOne()
    {
        Console.WriteLine("Static 2");
    }

    1 reference
    static void TestStatic1()
    {
        Console.WriteLine("Static 1");
    }

    1 reference
    static void TestStatic2()
    {
        Console.WriteLine("Static 2");
    }

    1 reference
    static void TestStatic3()
    {
        Console.WriteLine("Static 3");
    }

    0 references
    static void Main(string[] args)
    {
        using (var clrJit = JITInterceptor.GetOrCreate())
        {
            IamTheOne();
            TestStatic1();
            TestStatic2();
            TestStatic3();
        }
    }
}
```

```
Microsoft Visual Studio Debug Console
Static 2
Static 2
Static 2
Static 2

D:\Temp9\ManagedJit-master\ManagedJit\bin\Release\ne
Press any key to close this window . . .
```



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無界開發者社群

現在開發者已經不能單純的只會一種技術了，這社群以 .NET 為主，其他技術為輔，寫程式是要解決問題的，不是用程式語言框住自己，看看駐站版主群陣容多龐大!



天瓏資訊圖書





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