Framework .NET

Febrero de 2014

Introducción .NET

- Microsoft. NET puede ser considerado una visión de cómo el software debe ser por escrito, y un conjunto de herramientas para desarrollar software que se da cuenta de esta visión [Microsoft].
- Vistazo a los problemas comerciales comunes de conectividad e interoperabilidad:
 - La mayoría de las empresas cooperen con otras empresas, sin embargo, sus sistemas de información funcionan de manera aislada.
 - Cadenas no están integradas. Esto es a menudo visto como un obstáculo para mejorar la productividad.
 - ▶Cuando las empresas están mejor conectadas, pueden lograr una mayor eficiencia.



Introducción al Framework .NET

Los programas de C# se ejecutan en .NET Framework, un componente que forma parte de Windows y que incluye un sistema de ejecución virtual denominado Common Language Runtime (CLR) y un conjunto unificado de bibliotecas de clases.



Introducción al Framework .NET

CLR es la implementación comercial de Microsoft de CLI (Common Language Infrastructure), un estándar internacional que constituye la base para crear entornos de ejecución y desarrollo en los que los lenguajes y las bibliotecas trabajan juntos sin ningún problema.

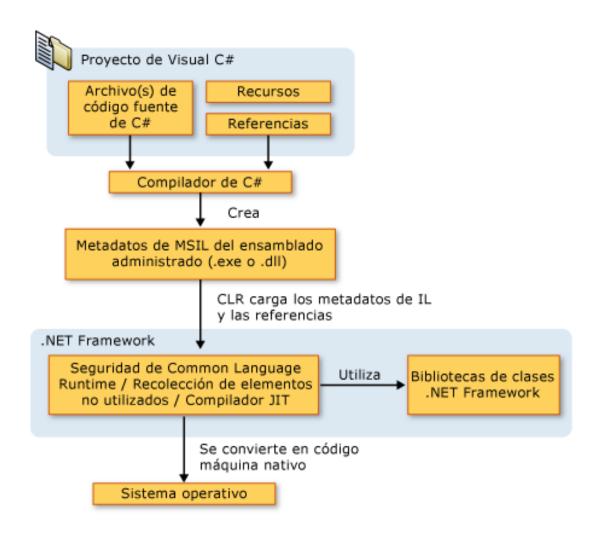


Introducción

- ▶ El código fuente escrito en C# se compila en un lenguaje intermedio (IL) conforme con la especificación CLI.
- El código de lenguaje intermedio y recursos se almacenan en disco en un archivo ejecutable denominado ensamblado, cuya extensión es .exe o .dll generalmente.
- Un ensamblado contiene un manifiesto que proporciona información sobre los tipos, la versión, la referencia cultural y los requisitos de seguridad del ensamblado.



Compilación y ejecución de un programa C#



Compilación y ejecución de un programa C#

- El código ejecutado por CLR se denomina algunas veces "código administrado", en contraposición al "código no administrado" que se compila en lenguaje máquina nativo destinado a un sistema específico.
- En el diagrama anterior muestra las relaciones en tiempo de compilación y tiempo de ejecución de los archivos de código fuente de C#, las bibliotecas de clases de .NET Framework, los ensamblados y CLR.



Componentes del Framework .NET ASP.NET, Windows Forms, ADO.NET and XML

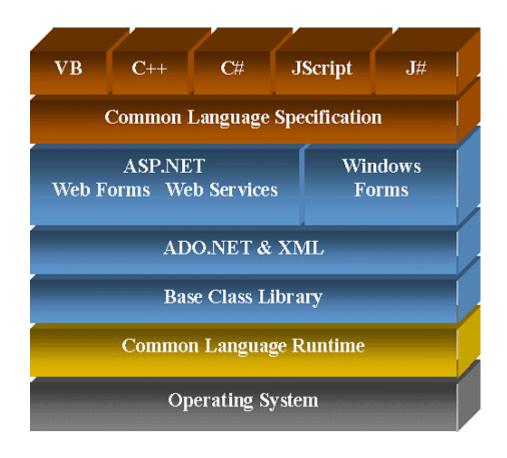
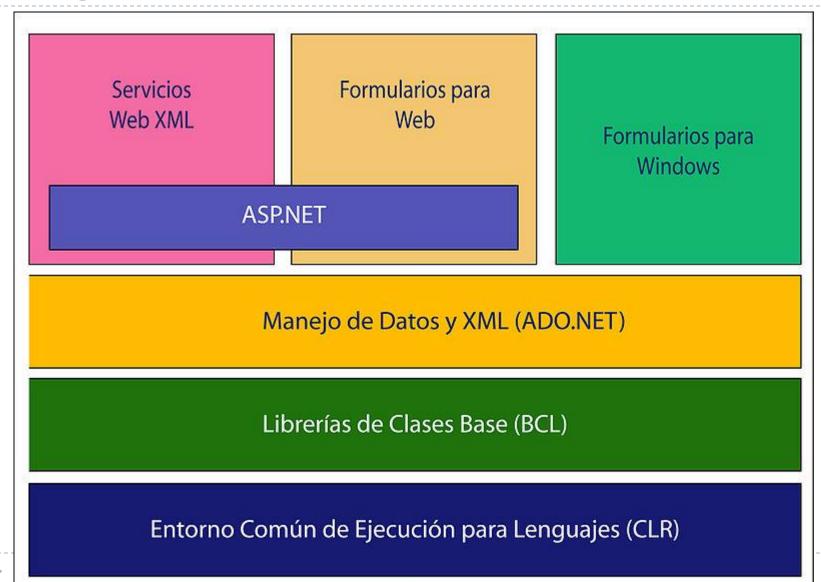
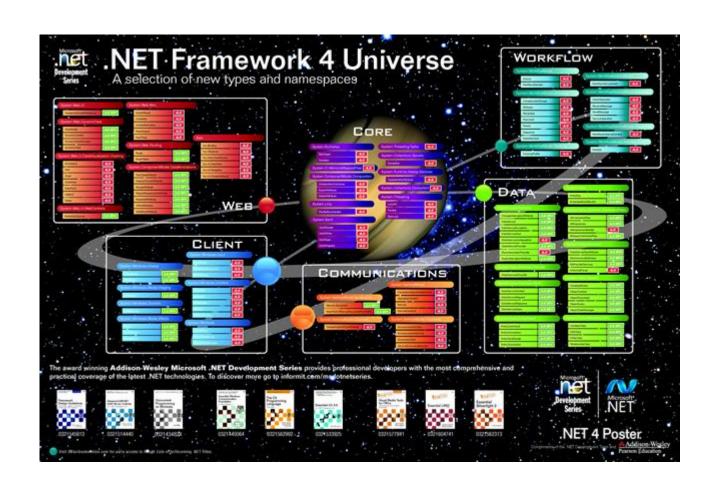


Diagrama CLR



Framework .NET



What's new in .NET Framework 4.5?

Windows Presentation Foundation

Built-in Ribbon controls

Databinding improvements

Ability to add breakpoints to databindings

Data source change aware views

Validation improvements (A)
Improved legacy UI integration

(Live Shaping) 🜟

Dispatcher improvements
Speed-up of large data sets

Windows 8 support

Support for Windows Runtime (WinRT)

.NET Profile for Metro-style apps

Improved support for sharing DLLs between .NET profiles

ASP.NET

Built-in providers now natively support SQL Azure

Support for implementing WebSocket receivers

Built-in JavaScript + CSS

Asynchronous pipeline support

ASP.NET MVC 4 ASP.NET Web Pages 2

New site templates

Versatile validation support

Support for OAuth and OpenID

Built-in map embedding tools; supports Google, Bing and others

Did you know? ASP.NET Web Pages is y another way to work the web besides Web Forms and MVC. WP sites use Razor and are typically developed with WebMatrix.

Performance improvements: Multicore JIT, 35 % faster startup.

memory optimizations, assembly sharing between sites, pre-fetch support P

Web Forms

Strongly typed data binding

MVC-like support for Models

HTML encoded binding expressions

HTML5 support *

Control support for Multifile support for File! Inload

new semantic for FileUpload elements control Validator and UpdatePanel now support new HTML5 elements

ments

Tooling

IntelliSense

IIS Express

used by default

New templates

and snippets

Request validation improvements: AntiXSS built-in, validation usable per fiel

Windows Communication Foundation

Support for UDP multicast channels
TCP channels now work with partial trust
Asynchronous operations

Simplified configuration (again!)
Can now generate service stubs from WSDL
WebSocket support ★

Windows Workflow Foundation

Expressions

State machine workflows are back! *
Workflow versioning *

Code-first activity design Faster execution P

Designer usability improvements

Managed Extensibility Framework 2.0

Debugging improvements

Support for explicit bindings between objects

Support for binding POCOs: no more attribute requirements

ADO.NET

Streaming improvements

Sparse columns support improved (SQL Server)
Passwords are now stored encrypted
Asynchronous operations

SQL Express LocalDB

New light version of SQL Express for developer use. Supported in .NET 4.5, separate patch for 4.0 is coming.

SQL Server 2012 ("Denali") Support

High Availability support on connection string level Fast failover across multiple subnets Support for new spatial data types (polygons, arcs etc.) ★

Entity Framework 4.5

Async controllers (A)

Built-in mobile templates + jQuery.Mobile support

Alternate views (e.g. print version, mobile site)

Support for Recipes:

intelligent codegen

Enumeration support
Migrations for schema changes

Designer improvements

Spatial data type support *
Table-valued function support *
Multi-result sproc support

Multiple diagrams per model

Code-first support ★

Auto-compiled LINQ queries P

Base Class Library

Usability improved for WeakReferences and Streams Key interfaces now have async versions A New ArraySegment and ReadOnlyDictionary classes Support for CLR objects over 2 GB in size Resource file management performance improved Unicode support for console applications

Task Parallel Library (A)

Task thread controls improved: Task.WaitAll/.WaitAny, various timeout primitives available

TPL Dataflow: Tools for parallel data flow processing *

C# 5.0

Support for async programming: async and await keywords A

Methods can access call site info as parameters (CallerInfo)

Visual Basic 11

Iterator implementations (Yield)

Async ja Await equal to C#

Global keyword for namespace handling

Call Hierarchy view available

Visual C++ 11

C++11 standard support improved

Auto-vectorization and parallelization of loops

Support for controlling GPU-driven processing (C++ AMP)

Wait, there's more!

Visual Studio "11" is also coming, including support for .NET 4.5, Windows 8 and more. There are plenty of other new goodies, too.

Also, .NET team is working on Project Roslyn, which enables interesting scenarios for integrating the C#/VB compilers to your own apps. Roslyn is in CTP, but will ship post-4.5.

Legend

- Asynchrony support
- = Performance improvement
- * = Significant new feature

Information based on public sources available in October 2011. Changes before RTM are likely

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www.heikniemi.net/hard