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Give more life to your application...
... extending it with MEF

An introduction.

Nuno Cancelo

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- **About me:**



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Agenda

- Introduction
- Managed Extensibility Framework
- GuideLines
- Demonstration

Introduction

- What is the problem?
 - Maintenance
 - Refactoring
 - Extend Application functionalities
 - Peace of Mind

Introduction

- Extend functionalities?
 - Extensible syntax
 - Extensible compiler
 - Extensible runtime
 - Extensible at will

“And God said, ‘Let there
be light,’ and there was
light.”

Genesis 1:3

How to become modular?

- Design Patterns
 - Façade, MVC, Template Method
- Build infrastructure
 - Know the libraries
 - Load the libraries
 - Use the libraries

Demonstration

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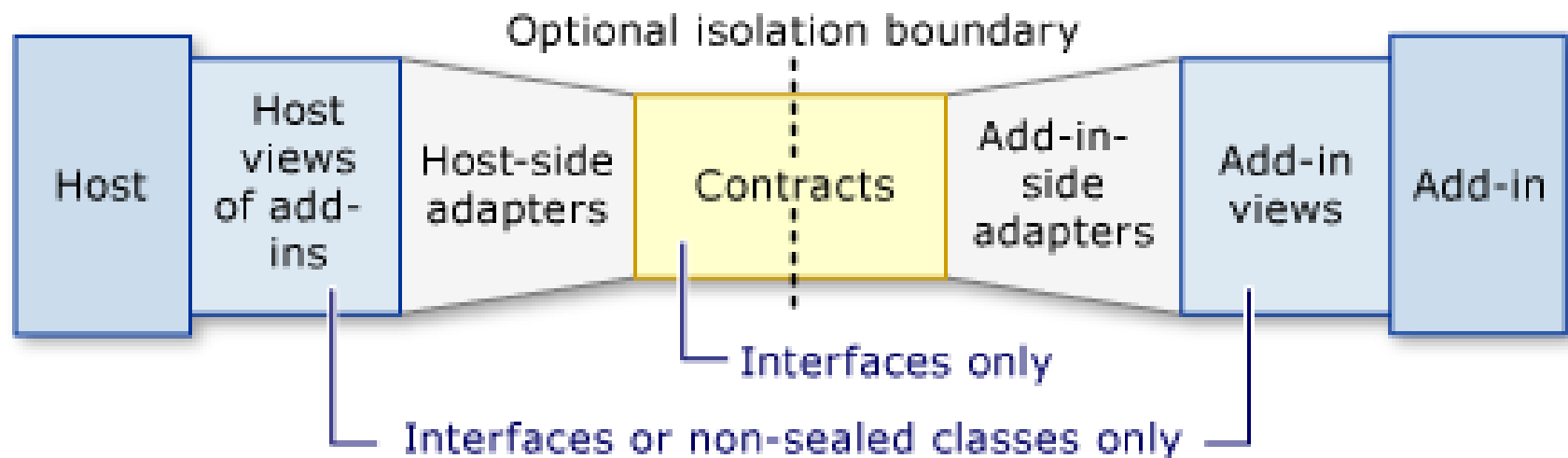


Before MEF ... there was MAF



.NET Framework 3.5

- Managed Add-in Framework
- Full Pipeline Development



.NET Framework 3.5

- Complex infra-structure
- Time consuming
- Codeplex suggested an alternative
 - Managed Extensibility Framework

Managed Extensibility Framework



Managed Extensibility Framework

- Prior to .NET Framework 4.0
 - Codeplex
- .Net Framework 4.0
- Silverlight 4.0

Managed Extensibility Framework

- Lightweight framework
- Discover extensions
- Little Configuration
- Tags additional Metadata
- Compatible with MAF

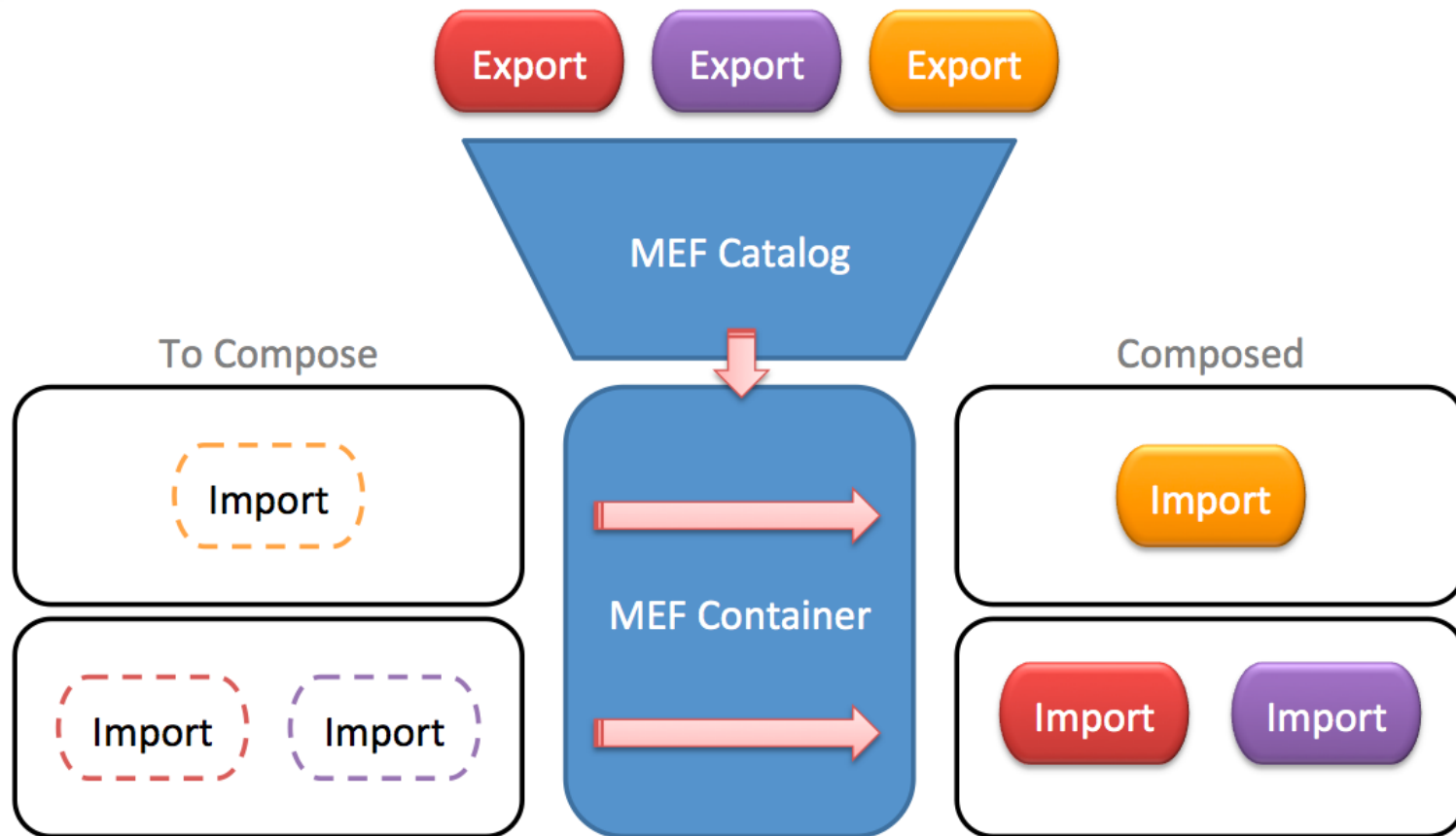
Managed Extensibility Framework

Supported Platforms :

- .NET Framework 4.5
- Windows 8
- Windows Phone 8.1
- Windows Phone Silverlight 8
- Portable Class Libraries

One step forward

GuideLines



source. <http://blogs.geniuscode.net/JeremiahRedekop/wp-content/uploads/2011/01/MEF-Diag.png>

GuideLines

- Define Contracts
 - The interface to be use
- Declare Exports
 - Expose the object
- Declare Imports
 - Consume the objects

Contract

- A set of:
 - Fields
 - Methods
- To be used by the application

Demonstration

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Export it

- [Export] attribute
 - In Class
 - In Method
 - In Properties

Metadata

- [ExportMetadata] attribute
 - Extra information
- Importers can access Metadata
 - ex:
`sender.Metadata.ContainsKey("Issecure")`

Import it

- [Import] attribute
 - Fields
 - Properties
 - Constructors

Import Collections

- [ImportMany] attribute
 - All instances from one Contract will be loaded

Catalogue it

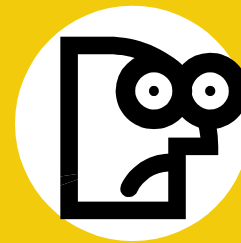
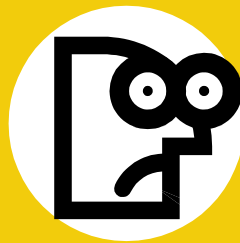
- Ability to dynamically discover parts
- Catalogues
 - Assembly Catalog
 - Directory Catalog
 - Aggregate Catalog
 - Type Catalog

Debugging

- Debugging MEF (MSDN)
 - [http://msdn.microsoft.com/en-us/library/ff603380\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/ff603380(v=vs.100).aspx)
- Diagnosing Composition Problems
 - <https://mef.codeplex.com/wikipage?title=Debugging%20and%20Diagnostics&referringTitle=Guide>
- In short Is A Bloody Pain.
- Windows Store Differences ... UPS
 - <https://mef.codeplex.com/wikipage?title=MetroChanges>

Conclusion

- Simple Implementation
- Play well with MAF
- Provide Application Extensibility
- Complex problem debugging



It's QUESTION TIME !!

References

- Building Composable Apps in .NET 4 with the Managed Extensibility Framework
 - <http://msdn.microsoft.com/en-us/magazine/ee291628.aspx>
- Managed Extensibility Framework (MEF)
 - [http://msdn.microsoft.com/en-us/library/dd460648\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/dd460648(v=vs.110).aspx)
- Gentle Introduction to MEF
 - <http://buchsbaum.us/2011/08/20/gentle-introduction-to-mefpart-one/>
- Codeplex
 - <https://mef.codeplex.com/wikipage?title=Guide>
- Virgilio Esteves Presentation about MAF
 - <http://netponto.org/sessao/maf-managed-addin-framework-criacao-de-aplicacoes-extensiveis/>

SQL Saturday #341 – Porto 2014



18 de Outubro de 2014

3 Tracks

Workshops:

- SSAS Basics
 - Regis Baccaro (16 Out 2014)
- SQL Server Query Optimizer
 - Fabiano Amorim (17 Out 2014)



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Microsoft

Twitter: @PTMicrosoft
<http://www.microsoft.com/portugal>

Sponsor “Silver”



LA.NET [PT]

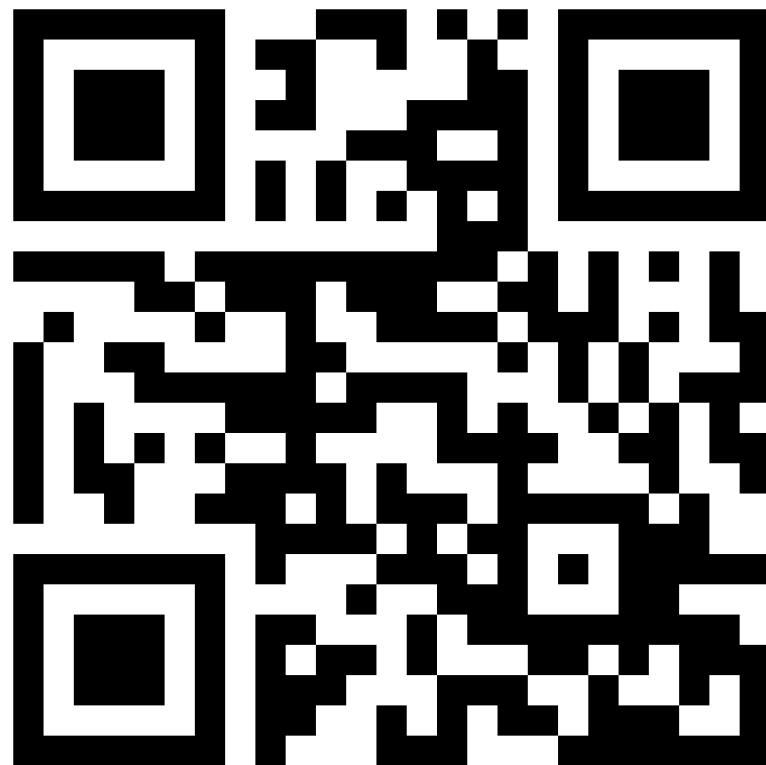
Reflexões sobre C#, .NET e programação em geral



Sponsor “Bronze”



<http://bit.ly/netponto-aval-48>



* Para quem não puder preencher durante a reunião,
iremos enviar um email com o link à tarde

Próximas reuniões presenciais

26/07/2014 – Julho (Lisboa)

20/09/2014 – Setembro (Lisboa)

18/10/2014 – Outubro - SQL Saturday – Track Programação (Porto)

25/10/2014 – Outubro (Lisboa)

22/11/2014 – Novembro (Lisboa)

??/??/???? – ?????? (Porto)

Reserva estes dias na agenda! :)

Thanks!

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Source:

Iconset: Social Media Icons by Iconshock ([12 icons](http://www.iconarchive.com/show/social-media-icons-by-iconshock.html)) : <http://www.iconarchive.com/show/social-media-icons-by-iconshock.html>

Iconset: Flat Gradient Social Icons by limav (120 icons): <http://www.iconarchive.com/show/flat-gradient-social-icons-by-limav.html>

