Enterprise Library 5.0: The New Stuff

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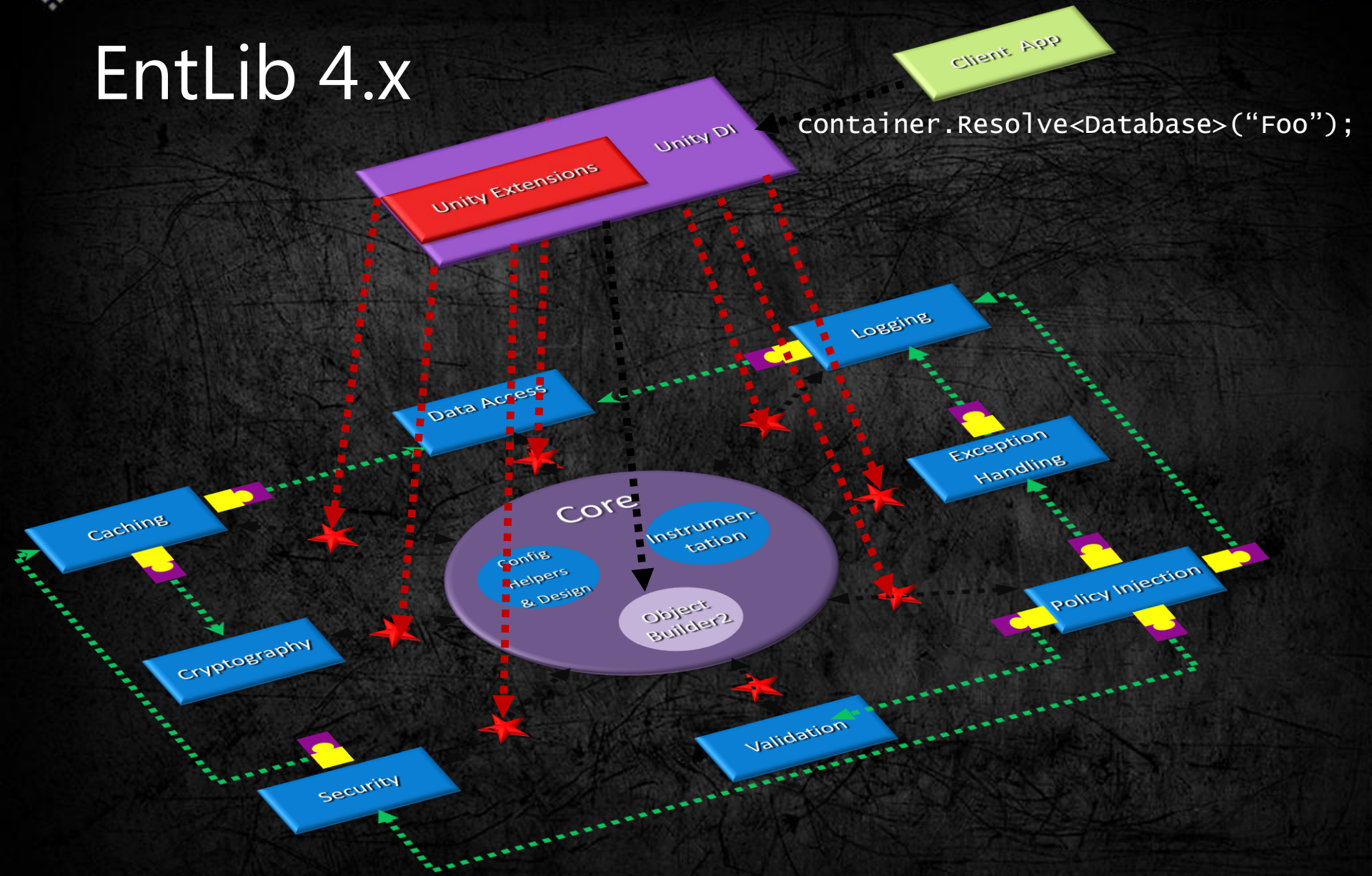
Microsoft patterns & practices

Session Objectives & Takeaways

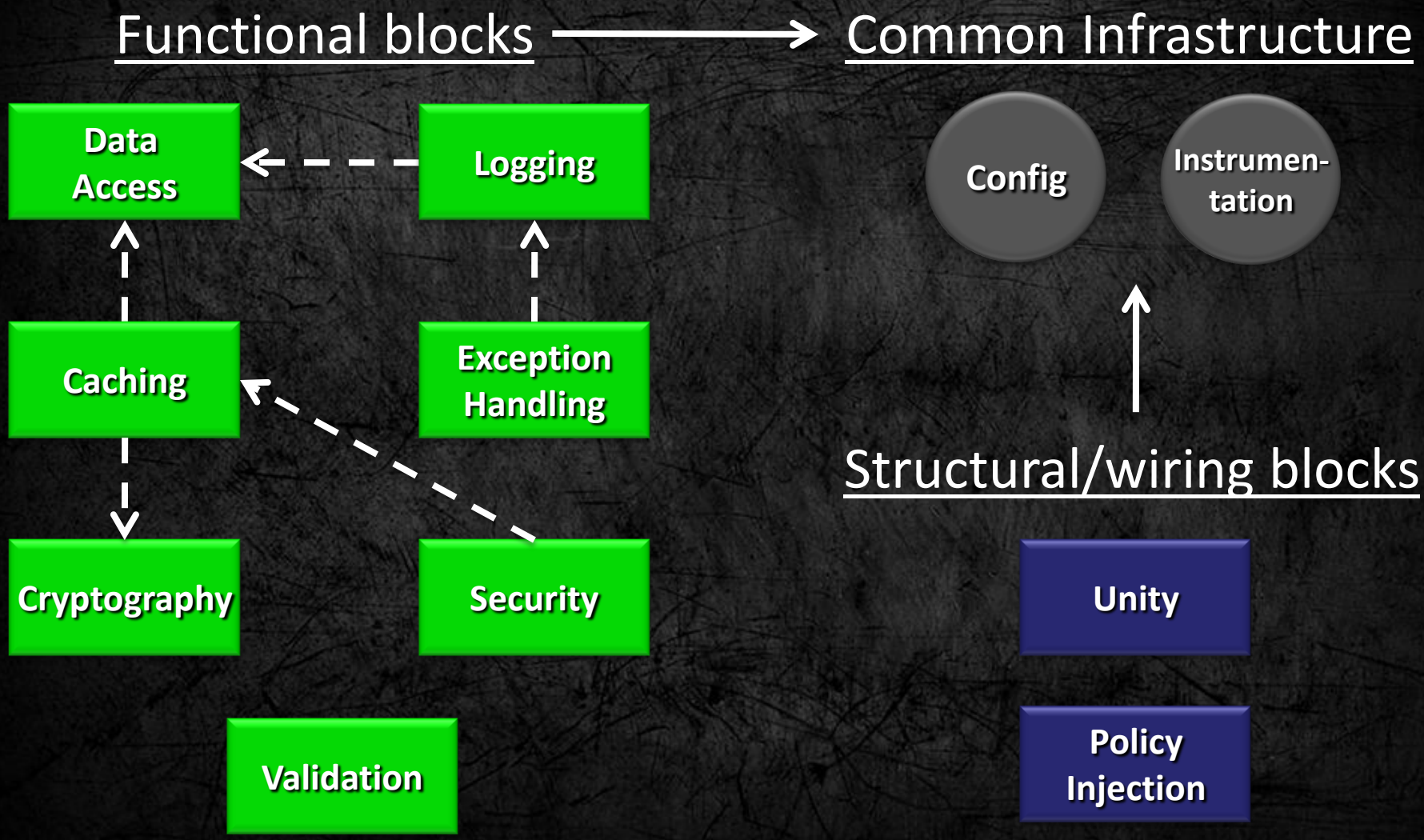
- Session Objective(s):
  - Show what's new in Enterprise Library 5

- Enhanced User Experience
- Simplicity for the Win!
- Learnability & Discoverability
- EntLib 5.0 now available!

EntLib 4.x


Client App
container.Resolve<Database>("Foo");
Unity DI
Unity Extensions
Logging
Data Access
Exception Handling
Caching
Core
Instrumen-tation
Config Helpers & Design
Object Builder2
Policy Injection
Cryptography
Validation
Security

Conceptual Architecture



What's New?

.NET 4.0 / VS 2010

- Binaries
  - Target .NET 3.5 SP1
  - Work unchanged in .NET 4.0 projects
- Source
  - VS 2008 sln/proj targeting 3.5 SP1
  - VS 2010 sln/proj targeting 4.0
- Config tool
  - Fully integrated editor in VS 2008
  - Launcher from VS 2010 (like WCF config tool)

Processing Results from Sprocs

- Data Access block traditionally made it easier to *call* stored procedures (sproc)
- Processing the results still means dropping back into classic ADO.NET code

- Issue: how could we make it easier to *consume the results* of a sproc?

LINQ Style Result Processing

- Basic idea:
  - Instead of a datareader from a query, get back an `IEnumerable<T>`
  - Now we can do LINQ to Objects
- Introduced Accessors
  - provide a higher level abstraction that combines input mapping, output mapping, and result set management into a single object.
- Note: Accessors are easily injectable

DAAB Accessors

Async DAAB

- Database API addition
- Follows classic Begin/End async pattern
  - NonQuery
  - Scalar
  - Reader
  - XmlReader (SQL Server only)
- Not supported on all databases

Async Data Access

```
var db = EnterpriseLibraryContainer
            .Current.GetInstance<Database>();
if(db.SupportsAsync) {
    db.BeginExecuteScalar("Get Top Ten Products",
        CompletionMethod);
}

public void CompletionMethod(IAsyncResult async)
{
    int count = (int)db.EndExecuteScalar(async);
    ...
}
```

Logging Performance

- Originally, planned to implement async logging
- Perf analysis of the lower level operations of the logging block (v4.1) showed:
  - The formatter took 54% of the total time
  - Of this, the most expensive operations are:
    - 11.76 Getting the machine name
    - 9.63 Computing Severity textual representation
    - 5.70 Undetermined mscorwks.dll work
    - 5.17 Computing DateTime textual representation
    - 4.46 StringBuilder.Append
    - 4.10 Getting the process name

Higher Performing Logging

- Formatter responsible for ~50% of the execution time
- Improvements

Function Name	Inclusive Samples	Exclusive Samples	Inclusive Samples %	Exclusive Samples %
FormatWithOriginalTemplate	6,686	14	48.18	0.10
FormatWithNewTemplate	3,680	9	26.52	0.06
FormatWithNewTemplateWithFixedDate	3,132	11	22.57	0.08

N=1M

upto 20% global improvement

45% local improvement

53% local improvement

Config Experience

- Programmatic config support
- IntelliSense in XML editor
- New configuration tool

Fluent Configuration Interface

- Motivation:
  - Customer requested a better way to configure EntLib programmatically
  - Make *our own* test cases more readable

Ref: Martin Fowler, Eric Evans. http://martinfowler.com/bliki/FluentInterface.html

DEMO

Configuration With Fluent Interfaces

Configuration Tool Stories

- **Usability**: Improve intuitiveness & learnability
- **Simplicity**: Reduce the number of design time assemblies
- **Extensibility**: Simplify the way config for custom handlers/providers/blocks can be plugged into the config tool

DEMO

New Configuration Tool

Hierarchical config

- Split config into multiple physical files
- Combine them at runtime
- Allows master + override style of config
  - Runtime version of environmental overrides

Validation Application Block

- ASP.NET DataAnnotations support
- WPF Validation
- MetadataType
- Polymorphic validation
- Recursive Validation

DataAnnotations Interop

- VAB API applies DataAnnotation validations
- DataAnnotation API applies VAB

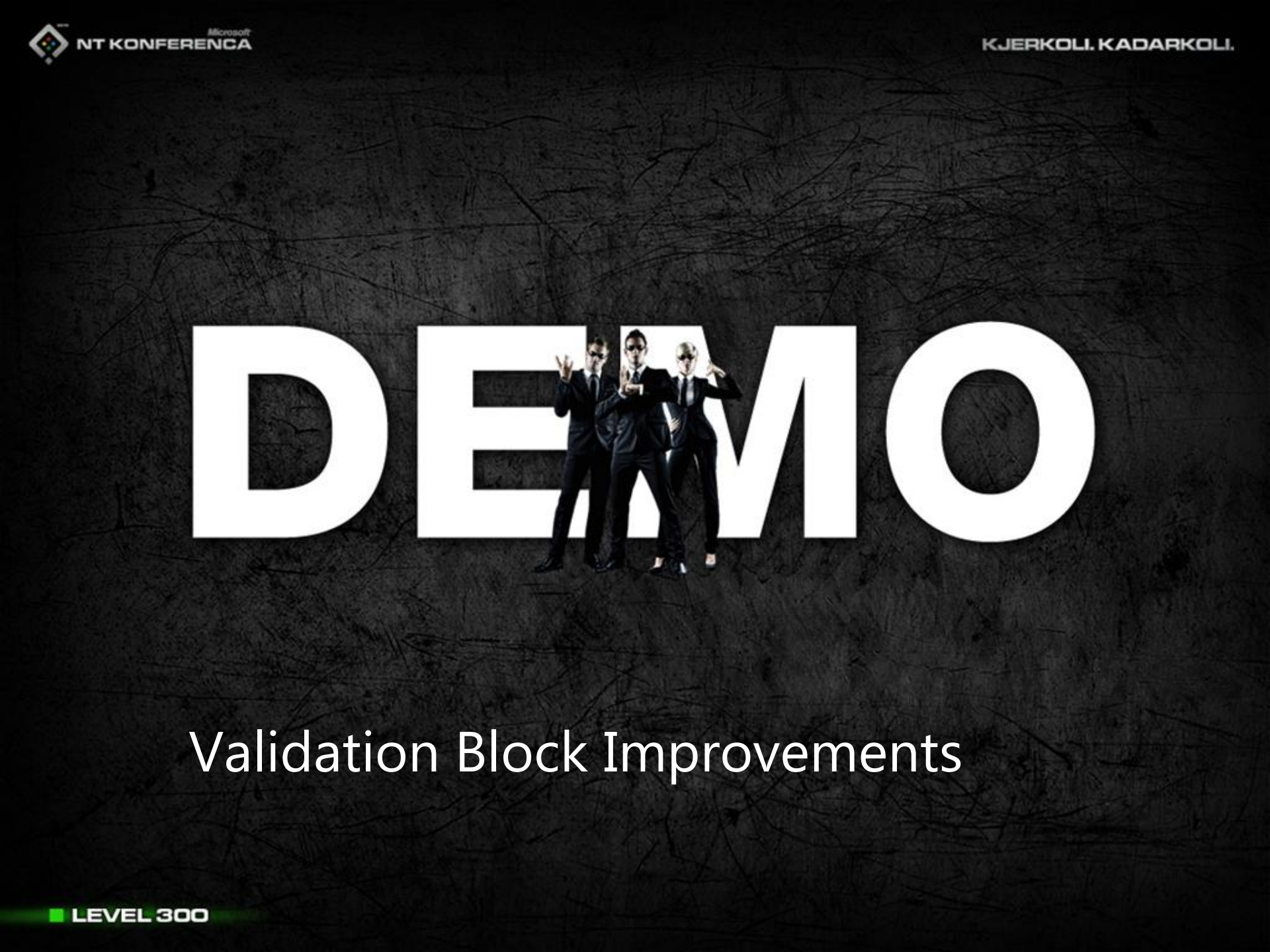
- Note: server-side only (for now)
  - Use mixed model

WPF Validation

- VAB validators hooked up to WPF validation system
- WPF only, not Silverlight

MetadataType

- Problem: Add Validation attributes to generated code
  - Linq to SQL
  - EF
- Honor MetadataType attribute
  - Adds “buddy class” with validation attributes on it



Validation Block Improvements

EntLib Internals

Tackling External Complexity

- Single entry point
  - `EnterpriseLibraryContainer.Current`
- Supporting testability in your code that uses EntLib
  - Using DI style with instances
- Container independence
  - Not tied to Unity
  - Can build your own adapters

- Preliminary perf ormance is same as 4.1 or better
- Importantly: Existing user code still works

Tackling Internal Complexity – Architectural Refactoring

- Cleanup
  - removed WMI
  - reduced # assemblies
    - EL 4.1 – 89
    - **EL 5.0 – 33**
- Changed internals significantly
  - got rid of ~200 classes!
    - added ~120, but less complicated
  - removed design time assemblies
  - removed layers of indirection

Custom Blocks & Providers

- We broke you, sorry!
  - There are not that many of you (<2%)
- Much easier to write

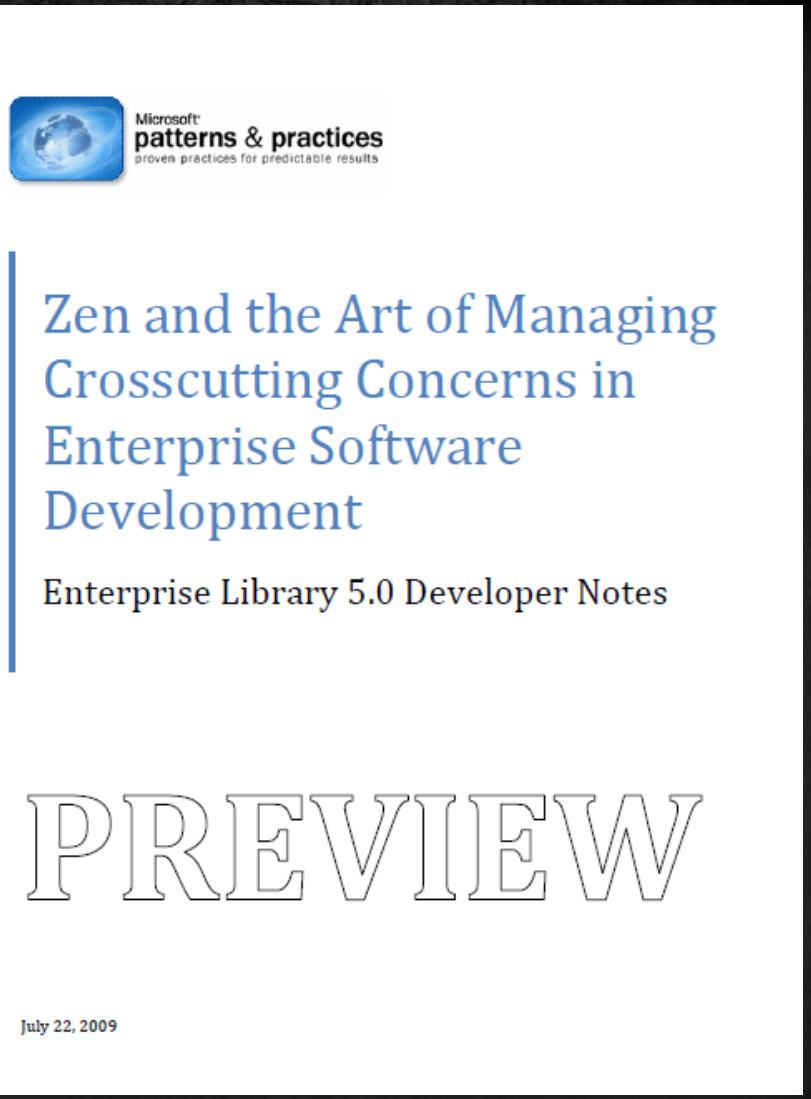
- Pay attention to:
  - Type registrations
  - Object lifetime
  - Config change support
  - Config tool

DEMO

Getting EntLib objects

Learnability

- New Guides
  - Your feedback is invited
  - entlib.codeplex.com
- Hands-On Labs



Key Takeaways

- EL 5.0 has released!

- Improved user experience
- Simpler, more consistent code base
- Simpler to use
- Better support for DI-style of development
- Focus on testability and maintainability

Engage with us!

Call for Action

1. Download it
2. Provide feedback
3. Fill out a survey
   - tinyurl.com/entlib

Resources

- All EntLib5 current bits:
  - entlib.codeplex.com
  - unity.codeplex.com
- Released Enterprise Library and related resources:
  - msdn.microsoft.com/practices
  - msdn.microsoft.com/entlib
- Enterprise Library Community Contributions:
  - codeplex.com/entlibcontrib
- Enterprise Library team blogs:
  - Chris: www.tavaresstudios.com
  - Grigori: blogs.msdn.com/agile/
  - Bob: blogs.msdn.com/bobbrum/

Thank you!

Questions?

- After this session you will receive a questionnaire about it on your email.
- Questionnaires will also be available in the profile section of the NT Conference website.
- By filling out this questionnaire you help us make this conference even better. Thank you!

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