



Windows Workflow Foundation Deep Dive

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Agenda



- Motivation for Workflow
- Windows Workflow Foundation (WF)
- Workflow Deep Dive
- Workflow Tips

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Motivation for Workflow



- Automating business processes involves workflow
 - Order processing
 - Insurance claims processing
- Workflow very important in content management
 - Feedback and moderation
 - Document approval
 - Lifecycle management for documents and records

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Windows Workflow Foundation (WF)



- Single workflow technology for Windows
 - Extensible framework & toolset
 - Base for Microsoft products and ISV/customer solutions
 - Transform workflow from niche to mainstream paradigm

- A framework for building workflow into applications
 - A framework to build on - not an application or server
 - Exposed to developers via .NET 3.0

- Basic framework
 - Many companies rely on 3rd party products such as K2.NET, Nintex or develop their own framework

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Windows Workflow Foundation

Workflow-Aware Applications

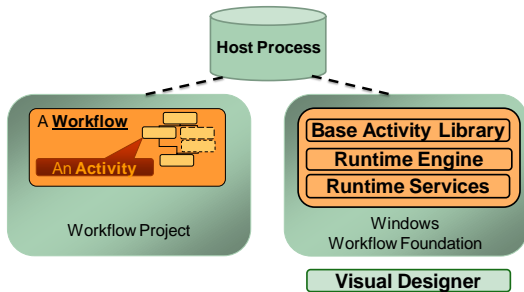


- **Browser (SharePoint)**
 - Farm and site collection administration
 - Workflow initiation, configuration and completion
- **Office 2007 Client Applications** (e.g. Word, Excel, PowerPoint)
 - Workflow initiation, configuration and completion
 - Ad-hoc Customization (Forward/Delegate)
- **Outlook 2007**
 - Task notification and task completion
- **SharePoint Designer**
 - Wizard-based authoring and forms integration + Application development

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Windows Workflow Foundation

Workflow Components



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Workflow Deep Dive
Correlation



- External communication to external objects
 - Use of interfaces as channels
 - Eg. In SharePoint: Workflows, SPListItems, ...
- Correlation Parameter:
 - What will identify instances, eg. workflowId
- Correlation Token:
 - Encapsulation of actual instance, eg. workflowId = 25

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Workflow Deep Dive
What's new in .NET 3.5 for WF



- Workflow Services
 - Greater interaction with WCF
 - Two new OOTB activities
 - Send: Send requests through WCF
 - Receive: Receive requests through WCF

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Workflow Tips

Tip: Reflector



- Reflector is your friend
- Learn how Workflow Foundation internally
- Assemblies:
 - System.Workflow.ComponentModel.dll
 - System.Workflow.Runtime.dll
 - System.Workflow.Activities.dll

 - Microsoft.SharePoint.WorkflowActions.dll
 - Microsoft.SharePoint.dll
- **Beware:** a lot of classes are sealed

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Workflow Tips

Tip: Dynamic Properties



- Create Activity properties on the fly
- Populate by overriding the `PreFilterProperties (IDictionary properties)` method of the attached `ActivityDesigner`
- **Beware:** They allow bindings, but cannot be used as binding source

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Workflow Tips

Tip: Property dropdown defaults



- Specify default values for properties
- Decorate the property with a `TypeConverter` object
- Can be dynamically calculated

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