**APPENDIX G**

# ServiceModelEx Catalog

## CollectionExtensions

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|---|---|
| **Category:** | C# 3.0 |
| **Description:** | Augments the LINQ collection extensions with additional methods. |
| **See Also:** | ArrayExtensions |

## ArrayExtensions

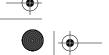| | |
|---|---|
| **Category:** | C# 3.0 |
| **Description:** | Provides all the LINQ extensions that return a collection except when operating on an array, in which case they return an array. Augments the LINQ collection extensions with additional methods for arrays. |
| **See Also:** | CollectionExtensions |

## AppDomainHost

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|---|---|
| **Category:** | Hosting |
| **Description:** | Hosts the service in a separate app domain. Can apply permission sets on the new app domain. |
| **See Also:** | CodeAccessSecurityHelper |

## InProcFactory

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|---|---|
| **Category:** | Hosting |
| **Description:** | Instantiates a .NET class over WCF. No config file or host is required. |
| **See Also:** | DuplexClientBase<T,C><br>ServiceThrottleHelper<br>NetNamedPipeContextBinding |

## ServiceHost<T>

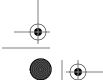| | |
|---|---|
| **Category:** | Hosting |
| **Description:** | Adds type safety to ServiceHost, adds support for string-based base addresses, streamlining and automation of metadata publishing, adding any error handler extensions, adding the ErrorHandlerBehavior to the service, including exception details in faults, verifying all queues, purging queues on shutdown in debug mode, enabling security audits, and reading throttle values. |
| **See Also:** | LogbookManager<br>LogbookManagerClient<br>LogbookManager<br>ErrorHandlerHelper<br>DebugHelper<br>QueuedServiceHelper |

## MetadataHelper

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|---|---|
| **Category:** | Contracts |
| **Description:** | Performs type-safe contract queries of service metadata. |

## DataContractSerializer<T>

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|---|---|
| **Category:** | Data Contracts |
| **Description:** | Generic type-safe wrapper of DataContractSerializer. |

## DataTableHelper

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|---|---|
| **Category:** | Data Contracts |
| **Description:** | Automates converting a table to an array of items. |

## ServiceThrottleHelper

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|---|---|
| **Category:** | Instance Management |
| **Description:** | Sets throttle extensions for `ServiceHost`. |

## IInstanceStore<ID,T>

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|---|---|
| **Category:** | Durable Services |
| **Description:** | Defines an interface for any instance store. |
| **See Also:** | `FileInstanceStore<ID,T>`<br>`TransactionalMemoryStore<ID,T>` |

## FileInstanceStore<ID,T>, FilePersistenceProvider, FilePersistenceProviderFactory

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|---|---|
| **Category:** | Durable Services |
| **Description:** | File-based store; corresponding provider and provider factory. |
| **See Also:** | `IInstanceStore<ID,T>`<br>`TransactionalMemoryProviderFactory`<br>`TransactionalInstanceProviderFactory` |

## MemoryProvider, MemoryProviderFactory

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|---|---|
| **Category:** | Durable Services |
| **Description:** | Abstract provider and provider factory for in-memory store. |
| **See Also:** | `TransactionalMemoryProviderFactor`<br>`TransactionalInstanceProviderFactory`<br>`TransactionalMemoryProvider`<br>`TransactionalInstanceProvider` |

## TransactionalMemoryStore<ID,T>, TransactionalMemoryProvider, TransactionalMemoryProviderFactory

**Category:**     Durable Services

**Description:**     In-memory transactional store shared across clients; corresponding provider and provider factory.

**See Also:**     IInstanceStore<ID,T>
TransactionalInstanceProviderFactory
FilePersistenceProviderFactory

## TransactionalInstanceStore<ID,T>, TransactionalInstanceProvider, TransactionalInstanceProviderFactory

**Category:**     Durable Services

**Description:**     Per client session in-memory transactional store; corresponding provider and provider factory.

**See Also:**     IInstanceStore<ID,T>
TransactionalMemoryProviderFactory
FilePersistenceProviderFactory

## InstanceContext<T>, DuplexClientBase<T,C>, DuplexChannelFactory<T,C>

**Category:**     Operations

**Description:**     Provide type safety for the client with callback contracts, via either a proxy class or a channel factory.
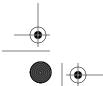
**See Also:**     SecureDuplexClientBase<T,C>
PartialTrustDuplexClientBase<T,C>

## WsDualProxyHelperCallbackBaseAddressBehaviorAttribute

**Category:**     Operations

**Description:**     Open an available port for the duplex WS proxy.

## DebugHelper

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|---|---|
| **Category:** | Faults |
| **Description:** | Constant to include exception details in faults in debug mode only, extension for FaultException<ExceptionDetail> to extract the CLR exception. |

## ErrorHandlerHelper

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|---|---|
| **Category:** | Faults |
| **Description:** | Used for promoting exceptions and logging errors to LogbookManager. |
| **See Also:** | ErrorHandlerBehaviorAttribute CallbackErrorHandlerBehaviorAttribute |

## ErrorHandlerBehaviorAttribute, CallbackErrorHandlerBehaviorAttribute

| | |
|---|---|
| **Category:** | Faults |
| **Description:** | Used for declaratively promoting exceptions and logging errors to LogbookManager; attributes for service and callback. |
| **See Also** | ServiceHost<T> ErrorHandlerHelper |

## ILogbookManager, LogbookManagerClient, LogbookManager

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|---|---|
| **Category:** | Faults |
| **Description:** | Service contract for logging errors; proxy for the contract; the logbook service itself. |
| **See Also:** | ErrorHandlerHelper |

## BindingRequirementAttribute

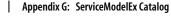| | |
|---|---|
| **Category:** | Transactions, General |
| **Description:** | Used for declaratively enforcing the Client/Service propagation mode on the service or the callback object, declaratively insisting on an intranet-only binding, and declaratively requiring reliability. |

## ResourceManager, TransactionalLock

**Category:** Transactions

**Description:** Helper classes useful when implementing a transactional resource manager.

**See Also:** Transactional<T>

## Transactional<T>

**Category:** Transactions

**Description:** A generic volatile resource manager. Performs transactions on any serializable type without compromising on the type programming model.

**See Also:** ResourceManager
TransactionalLock

## TransactionalCollection<C,T>

**Category:** Transactions

**Description:** A generic abstract volatile resource manager collection, useful when implementing a custom transactional collection.

**See Also:** Transactional<T>

## TransactionalArray<T>, TransactionalDictionary<K,T>, TransactionalLinkedList<T>, TransactionalList<T>, TransactionalQueue<T>, TransactionalSortedDictionary<K,T>, TransactionalSortedList<K,T>, TransactionalStack<T>
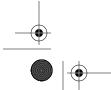
**Category:** Transactions

**Description:** The array and all the collections in .NET as transactional volatile resource managers. The collections and the array are polymorphic with the nontransactional built-in collections and are completely interchangeable.

**See Also:** TransactionalCollection<C,T>

## TransactionalBehaviorAttribute

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|---|---|
| **Category:** | Transactions |
| **Description:** | Enables transparent transactional programming on a per-session service. Negates the need to use a per-call service just for transactions. |
| **See Also:** | `TransactionalMemoryStore<ID,T>`<br>`TransactionalMemoryProvider`<br>`TransactionalMemoryProviderFactory`<br>`Transactional<T>`<br>`TransactionalDictionary<K,T>`<br>`NetNamedPipeContextBinding` |

## FormHost<F>

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|---|---|
| **Category:** | Concurrency and Windows Forms |
| **Description:** | Turns a Windows Forms form into a service, without affecting the form's implementation. Service calls simply update the UI. |

## SafeButton, SafeLabel, SafeListBox, SafeProgressBar, SafeStatusBar, SafeTextBox, SafeTrackBar

| | |
|---|---|
| **Category:** | Concurrency and Windows Forms |
| **Description:** | Controls that can be accessed by any service or callback call, on any thread, to update the UI. |
| **See Also:** | `FormHost<F>` |

## ThreadPoolSynchronizer, ThreadPoolBehaviorAttribute, CallbackThreadPoolBehaviorAttribute, ThreadPoolHelper

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|---|---|
| **Category:** | Custom Synchronization Context |
| **Description:** | Custom thread pool synchronization context; attributes to apply it declaratively on the service or a callback object; helper class to close the threads in the pool. |
| **See Also:** | `AffinitySynchronizer`<br>`PrioritySynchronizer`<br>`ThreadAffinityBehaviorAttribute`<br>`PriorityCallsBehaviorAttribute` |

## AffinitySynchronizer, ThreadAffinityBehaviorAttribute, CallbackThreadAffinityBehaviorAttribute, HostThreadAffinity

**Category:** Custom Synchronization Context

**Description:** Custom synchronization context providing thread affinity; attributes to apply it on the service and the callback; extension methods to apply at the host level.

**See Also:** ThreadPoolSynchronizer
ThreadPoolBehaviorAttribute
CallbackThreadPoolBehaviorAttribute

## PrioritySynchronizer, PriorityClientBase<T>, PriorityContext, PriorityCallsBehaviorAttribute

**Category:** Custom Synchronization Context

**Description:** Custom synchronization context executing calls by priority; proxy class to pass priority in headers; helper class to extract priority from headers; attribute to apply priority processing on service.

**See Also:** ThreadPoolSynchronizer
ThreadPoolBehaviorAttribute
GenericContext<T>
HeaderClientBase<T,H>

## QueuedServiceHelper

**Category:** Queued Services

**Description:** Used for verifying all queues on the client, verifying a queue for an endpoint as an extension, and purging a queue.

**See Also:** ServiceHost<T>

## ResponseClientBase<T>, ResponseScope<T>, ResponseContext
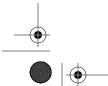
**Category:** Queued Services

**Description:** Framework for supporting a response service. Proxy class for the client to pass a response address and method IDs; scope to automate the service interacting with the response service proxy; response context for direct manipulation.

**See Also:** GenericContext<T>
HeaderClientBase<T,H>

## CredentialsManager, AspNetSqlProviderService

**Category:**      Security and ASP.NET Providers

**Description:**     Smart client application for managing the ASP.NET credentials store; WCF service wrapping the ASP.NET providers.

**See Also:**       MetadataHelper

## SecureClientBase<T>, SecureDuplexClientBase<T,C>, SecurityBehaviorAttribute, SecurityHelper, ServiceSecurity

**Category:**      Declarative Security

**Description:**     Declarative security framework. Declarative security proxy class for regular and duplex calls; attribute for declarative support for the service; declarative security extension methods for regular and duplex type-safe channel factories; declarative security extension methods for the host; extension methods for automatic impersonation; enumeration for declarative security scenarios.

**See Also:**       DuplexClientBase<T,C>
                     DuplexChannelFactory<T,C>

## HeaderClientBase<T,H>, GenericContext<T>

**Category:**      Message Headers

**Description:**     Streamlines passing custom out-of-band parameters to the proxy; helper class for extracting and setting the information in the headers.

**See Also:**       InterceptorClientBase<T>

## ContextClientBase<T>, ContextManager

**Category:**      Context Bindings

**Description:**     Streamlines passing custom out-of-band parameters to the proxy over the context bindings; helper class for extracting and setting the information in the context and managing standard IDs.

**See Also:**       GenericContext<T>
                     HeaderClientBase<T,H>

## NetNamedPipeContextBinding, NetNamedPipeContextBindingElement, NetNamedPipeContextBindingCollectionElement

**Category:**    Context Bindings

**Description:**    Adds the context protocol to the IPC binding; helper classes (not required for direct use) for enabling administrative configuration.

**See Also:**    `ContextClientBase<T>`
`ContextManager`
`InProcFactory`

## PersistentSubscriptionServiceClient, IPersistentSubscriptionService, ISubscriptionService, PersistentSubscription, PublishService<T>, SubscriptionManager<T>, PersistentSubscriptionManager

**Category:**    Publish-Subscribe

**Description:**    Framework for implementing publish-subscribe solution. Proxy class for adding persistent subscribers; service contracts for the publishing and subscription services; base classes for the implementation of the publishing and subscription services; demo application for managing persistent subscriptions.

**See Also:**    `MetadataHelper`
`DuplexClientBase<T,C>`
`DuplexChannelFactory<T,C>`

## PartialTrustClientBase<T>, PartialTrustDuplexClientBase<T,C>, CodeAccessSecurityHelper
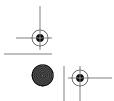
**Category:**    Code-Access Security

**Description:**    Framework for restoring code-access security support to WCF, which can be used in conjunction with `AppDomainHost` for partially trusted hosts and services. Proxy classes for partially trusted clients (both regular and type-safe duplex proxies); helper class offering extensions for direct manipulation of the `PermissionSet` class and strongly typed standard permission set management.

**See Also:**    `DuplexClientBase<T,C>`
`AppDomainHost`

## GenericInvoker, OperationInterceptorBehaviorAttribute, ServiceInterceptorBehaviorAttribute

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|---|---|
| **Category:** | Generic Interceptor |
| **Description:** | Framework for easy injection of an interceptor to do pre- or post-call processing; attributes for operation- and service-level declarative use. |
| **See Also:** | `SecurityCallStackInterceptor`<br>`OperationSecurityCallStackAttribute`<br>`SecurityCallStackBehaviorAttribute` |

## InterceptorClientBase<T>

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|---|---|
| **Category:** | Generic Interceptor |
| **Description:** | Proxy base class for easy interception of client calls. |
| **See Also:** | `HeaderClientBase<T,H>` |

## SecurityCallFrame, SecurityCallStack, SecurityCallStackContext, SecurityCallStackClientBase<T>, SecurityCallStackInterceptor, OperationSecurityCallStackAttribute, SecurityCallStackBehaviorAttribute

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|---|---|
| **Category:** | Security Identities |
| **Description:** | Framework for propagating the stack of callers' identities in the message headers; definitions of the call stack and supporting types; proxy class enabling the client to push its identity; interceptor for managing the call stack; attributes to inject the interceptor at the operation or service level. |
| **See Also:** | `GenericInvoker`<br>`OperationInterceptorBehaviorAttribute`<br>`ServiceInterceptorBehaviorAttribute`<br>`GenericContext<T>`<br>`HeaderClientBase<T,H>` |