# The Power Azure Library Brought to you by Jeffrey Richter and Wintellect (Last update: October 13, 2011)

The Power Azure Library consists of a number of classes to assist you with building applications & services that leverage the Windows Azure Platform Services. This document provides an overview of the namespaces and classes defined within the library. The library is designed for users of .NET Framework version 4.0 and later.

## The Wintellect Namespace

This namespace defines a number of general purpose classes that simply using some core .NET Framework types that are not specific to Windows Azure.

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| Type Name | Type Description |
| AttributeEx | Offers several extensions methods to simplify working with custom attributes. |
| Diagnostics | A static class with one WhenWhere method in it. Used to capture time and calling method name for use in diagnostic output. |
| EnumEx | Offers generic type safe GetValues and Parse methods to simplify working with enumerated types. |
| StringConversions | Offers extensions methods for String & Byte[] objects to simplify encodings and decodings. |

## The Wintellect.Net Namespace

This namespace defines a single type which simplifies making HTTP RESTful requests.

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| Type Name | Type Description |
| HttpRestClient | An abstract base class to simplify making HTTP RESTful requests. Derive a type from this to customer the request for a particular REST service. The Wintellect.WindowsAzure.Management.AzureManagementClient class is derived from this base class. |

# The Wintellect.WindowsAzure.AccessControlService Namespace

This namespace defines a single type that is a factory for creating objects to manage the Windows Azure AppFabric Access Control Service.

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| Type Name | Type Description |
| AcsManagementServiceFactory | This factory class generates secured ManagementService proxy objects which can be used to make management requests of the ACS v2.0 ManagementService. The proxy returned is "hooked" with a SendingRequest event handler which adds a SWT Authorization HTTP header on-the-fly with each request. |

This class’s Create method returns a ManagementService object (defined in the Wintellect.WindowsAzure.AccessControlService.Management namespace). This type (and the types it uses) was created by a service reference to the ACS and is simply embedded in the Power Azure Library.

## The Wintellect.WindowsAzure.CloudStorage Namespace

This namespace defines a number of classes directly related to working with Windows Azure Data Storage (Blobs, Tables, and Queues).

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| Type Name | Type Description |
| CloudBlobExtensions | Defines extension methods to simplify working with blobs. Includes support for leases, BlockIDs, snapshots, parsing SAS URL times, & uploading a directory to a container. |
| ResumableFileUploader | This class encapsulates the work required to upload a large file in blocks to blob storage. It can upload blocks in parallel. In addition, if the upload fails, when you restart it, it detects which blocks have been uploaded successfully and uploads only the remaining blocks. |
| Mime | This static class offers methods that determine the mime type from data contained in a Byte[] or URL. |
| CloudQueueExtensions | Defines extension methods to simplify working with queues. Includes support for deleting, ensuring existence, & safely deleting messages. |
| CloudTableExtenions | Defines extension methods to simplify working with tables. Includes support for changing REST service header, clearing, ensuring exist, & changing merge options. |
| ACloudTable ACloudTable<TEntity> | These types simplify the code required to work with an Azure table by automatically passing the table name to various methods. The generic class is derived from the non-generic class and provides a type safe version of the GetDataServiceContext method. |
| ATableServiceContext<TEntity> | This type offers a thin type safe wrapper around the Azure SDK’s TableServiceContext. In addition to the type safety, this type exposes a slightly different API allowing for a more fluent programming model simplifying the syntax required to manipulate tables). |
| AzureTableCache<TValue> AzureTableCacheConfiguration | These classes expose an in-memory & distributed persistent cache mechanism using Azure tables as the backing persistent store. |
| TableEntity ITableEntity | A base class and corresponding interface encapsulating a table entity’s mandatory properties (PartitionKey, RowKey, and Timestamp). |
| KindTableEntity<TEnum> ITableKindEntity<TEnum> | A base class and corresponding interface (derived from TableEntity & ITableEntity respectively) that offer an addition KindCode property. This is used to indicate the kind of an entity in a table containing entities of different kinds (schemas). |
| TableEntityRaw TableEntityPropertyRaw | TableEntityRaw parses an entity’s raw XML feed and returns a dictionary of properties and each property’s TableEntityPropertyRaw object indicating each property’s name, data type, text value, and typed value. |

## The Wintellect.WindowsAzure.Diagnostics Namespace

This namespace defines a number of types to work with Windows Azure Diagnostic Monitoring.

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| Type Name | Type Description |
| WadStorage | Simplifies accessing the diagnostic data in a storage account. |
| WadContainer WadTable | Enums representing the predefined diagnostic container & table names |
| WadExtensions | Defines extension methods to working with diagnostic data maintained in a storage account. |
| WadTableEntity WadPerformanceCoutnerTableEntity WadWindowsEventLogsTableEntity WadLogsTableEntity WadDiagnosticInfrastructureLogsTableEntity WadDirectoriesTableEntity | Types derived from TableEntity that offer the properties corresponding to the diagnostic tables. |
| WadFieldOrderAttribute | A custom attribute applied to properties with the WadTableEntity and derived types indicating property order. This attribute is used by tools when converting properties to CSV files. |

## The Wintellect.WindowsAzure.Management Namespace

This namespace defines a number of classes to access the Windows Azure Management Portal via HTTP RESTful API. Most of the classes are .NET equivalents of the XML content expected by the various APIs and as such I will not list them below; instead, see Microsoft’s REST API documentation for each operation.

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| Type Name | Type Description |
| AzureManagementClient | Use this class to invoke REST APIs against the Azure Management Portal. |

## The Wintellect.WindowsAzure.Secrets Namespace

This namespace defines a class for internal use; do not use the type in this namespace.

## The Wintellect.WindowwsAzure.ServiceRuntime Namespace

This namespace defines types to simplify creating a Windows Azure Role.

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| Type Name | Type Description |
| AzureRole | This static class defines methods to assist with dynamically reconfiguring a role instance’s settings, adding user accounts to a VM, and network sharing of directories with other role instances. |
| ConfigurableCloudStorageAccount | This class wraps access to a data storage account whose connection string is maintained in the CSCFG file. This class also registers with CSCFG change notifications and dynamically reconfigures itself whenever the data storage connection string changes. |

# Change Log

October 13, 2011

* The first version.