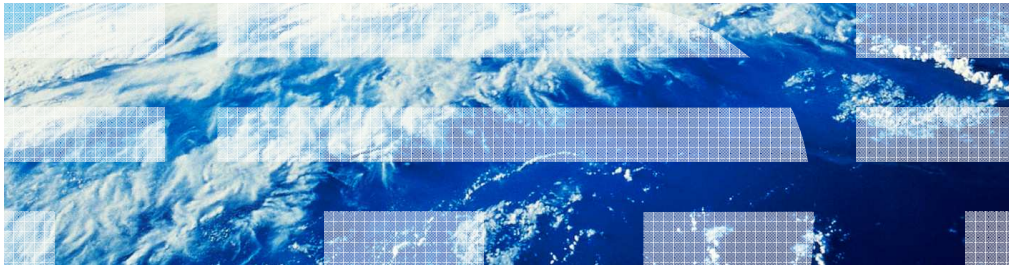


IBM WebSphere Extreme Scale V8.6

Overview - WebSphere eXtreme Scale client for .NET



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This presentation provides a general overview of the WebSphere® eXtreme Scale Client for .NET, including system requirements, a high level description of its features, and a comparison with the WebSphere eXtreme Scale Java client.

WebSphere eXtreme Scale client for .NET

- .NET programming interface and associated .NET assemblies that enable .NET applications to directly access WebSphere eXtreme scale grid
- Before WebSphere eXtreme scale 8.6 (WebSphere eXtreme scale 7.1 and later)
 - Access to WebSphere eXtreme Scale data grid for Non-Java applications (including .NET) was through REST data service
 - Requires installation and configuration of a web server
 - Requires installation and configuration the REST data service
 - Limited to the Entity Manager API (create, retrieve, update, and delete and query operations only)
- With WebSphere eXtreme Scale 8.6 client for .NET
 - A native programming interface similar to the native Java ObjectMap interface
 - No additional server-side components
 - Grid data can be shared between .NET and Java applications (XIO required)
 - Primitive data types and custom, complex classes

The .NET client is a programming interface for .NET applications that enables access to data contained in a WebSphere eXtreme Scale grid. Before version 8.6, the WebSphere eXtreme Scale REST data service was the only programming interface available to .NET application developers. Now, in version 8.6, .NET application developers can write WebSphere eXtreme Scale applications using a programming model similar to the model available to WebSphere eXtreme Scale Java application developers. Because the .NET client uses the XIO protocol to access the grid, data saved to the grid can be shared with non-.NET applications.

Java client and .NET client comparison

F	J Cli	Client .NET
WebSphere eXtreme scale transport	ORB or XIO	XIO
CRUD APIs	Yes	Yes
Generics based APIs	No	Yes
Single partition batch APIs	Yes	Yes
Auto-commit APIs	Yes	Yes
Manual transaction APIs (begin/commit)	Yes ("session")	Yes
Multi-map transactions	Yes	No
Multi-partition R/W	Yes	No
Copy Modes	Multiple	Only COPY_TO_BYTES
Serialization	XDF, Java, Plug-in	XDF
Entity Manager API	Yes	No
Data Grid APIs (grid-wide)	Yes	No
Local/Near Cache	Yes	No
Index support	Yes	No
Locking	None, Pessimistic, Optimistic	Pessimistic
Client Plug-In (listeners, extensions)	Yes	No
Security	Transport: SSL/TLS Client: Credential plug-in	Transport: SSL/TLS Client: Credential plug-in

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WebSphere eXtreme Scale client for .NET

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While the .NET client programming interface is similar to the WebSphere eXtreme Scale Java client interface, there are some WebSphere eXtreme Scale features, as shown in this table, that the .NET client does not currently support. For example, the .NET client only supports the XIO protocol when communicating with the grid. Additionally, the .NET client only supports maps configured for Pessimistic locking. When migrating WebSphere eXtreme Scale Java applications to .NET, be sure to take into account the differences in the supported WebSphere eXtreme Scale features.

Requirements

- Development Environment
 - Microsoft .NET Framework 3.5 or later
 - Microsoft Visual Studio 2008 SP1, 2010 SP1, 2012
 - Any Windows platform that supports these .NET and MSVS requirements
 - Memory: 1GB
 - Disk Space: 45 MB
- Run time Environment
 - Microsoft .NET Framework 3.5 or later
 - Any Windows platform that supports these .NET requirement
 - Memory: 65MB per application instance
 - Disk space: 35 MB + up to 2.5 GB for logging when detailed tracing is enabled
- WebSphere eXtreme Scale Server Configuration
 - ObjectGrid.xml
 - Copy Mode must be set to COPY_TO_BYTES
 - Lock Strategy must be set to PESSIMISTIC
 - No Map Serializer, Object Transformer, or Optimistic Callback plug-in defined
 - Deployment.xml
 - Map Placement Strategy must be set to FIXED_PARTITIONS
 - Map Placement Scope must be set to DOMAIN_SCOPE or ZONE_SCOPE

The .NET client supports .NET framework version 3.5 or later. .NET developers using Microsoft's Visual Studio 2008 SP1, 2010 SP1, and 2012 are supported when the system has 1GB of total memory and 45 MB of available disk space. In non-development environments, each .NET application instance requires 65MB of additional memory and a minimum of 35 MB of disk space for the installation, and several GB of disk space for detailed logging.

WebSphere eXtreme Scale grid and map configuration restrictions shown here conform to the .NET client feature limitations listed in the previous slide. If the WebSphere eXtreme Scale server is not configured correctly, the .NET client will throw an exception to the .NET application, indicating the configuration incompatibility.

Windows .NET Application 'Run As' permission requirements

- Client applications that use the WebSphere eXtreme Scale .NET Client APIs must be run under an account that has these permissions:
 - Read authority for the <InstallDir>\config
 - This is for reading the configuration files
 - Read/Write authority for the <InstallDir>\logs
 - This is for creating and writing to the logs
 - Read access to the Global Assembly Cache
 - This is for loading the eXtreme Scale client for .NET dll's
 - IBM.WebSphere.Caching.dll
 - IBM.WebSphere.Caching.CredentialGenerator.dll

WebSphere eXtreme Scale applications using the .NET client APIs must run with an account that has authority to access .NET client required directories. The directory where the .NET Client configuration files are stored must be readable by the application. The directory where the .NET client logs are written must be readable and writeable by the application. And finally, the application must be able to access the .NET Client assemblies whether these assemblies are installed in the Global Assembly Cache or manually loaded from the disk.

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