Namespace Dwyer.JitIlVerification

Classes
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VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html)

Provides scoped assembly loading with the same semantics as AssemblyLoadContext
(https://learn.microsoft.com/dotnet/api/system.runtime.loader.assemblyloadcontext). Any assemblies loaded
with this context will be checked for type/memory safety issues. Any unverifiable methods with throw an
exception upon invocation.

Class VerifiableAssemblyLoader

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Inheritance

VerifiableAssemblyLoader

↳ object (https://learn.microsoft.com/dotnet/api/system.object)
  (Dwyer.JitIlVerification.VerifiableAss
  ↳ VerifiableAssemblyLoader
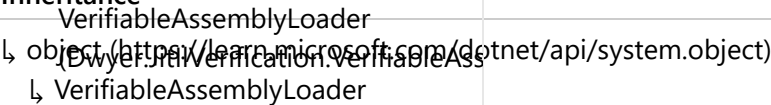
Inherited Members

object.Equals(object) (https://learn.microsoft.com/dotnet/api/system.object.equals#system-object-equals(system-object))

object.Equals(object, object) (https://learn.microsoft.com/dotnet/api/system.object.equals#system-object-equals(system-object-system-object))

object.GetHashCode() (https://learn.microsoft.com/dotnet/api/system.object.gethashcode)

object.GetType() (https://learn.microsoft.com/dotnet/api/system.object.gettype)

object.MemberwiseClone() (https://learn.microsoft.com/dotnet/api/system.object.memberwiseclone)

object.ReferenceEquals(object, object) (https://learn.microsoft.com/dotnet/api/system.object.referenceequals)

object.ToString() (https://learn.microsoft.com/dotnet/api/system.object.tostring)

Namespace: Dwyer (Dwyer.html).JitIlVerification (Dwyer.JitIlVerification.html)

Assembly: JitIlVerification.dll

Syntax

```
public class VerifiableAssemblyLoader
```

Constructors

VerifiableAssemblyLoader()

Initializes a new instance of the VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html) class.

Declaration

```
public VerifiableAssemblyLoader()
```

VerifiableAssemblyLoader(bool)

Initializes a new instance of the VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html) class with a value that indicates whether unloading is enabled.

Declaration

```
public VerifiableAssemblyLoader(bool isCollectible)
```

Parameters

Type		Name	Description
bool (https://learn.microsoft.com/dotnet/api/system.boolean)		*isCollectible*	Whether this context should be able to unload.

VerifiableAssemblyLoader(string, bool)

Initializes a new instance of the VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html) class with a name and a value that indicates whether unloading is enabled.

Declaration

```
public VerifiableAssemblyLoader(string name, bool isCollectible)
```

Parameters

Type		Name	Description
string (https://learn.microsoft.com/dotnet/api/system.string)		*name*	The display name of the load context.
bool (https://learn.microsoft.com/dotnet/api/system.boolean)		*isCollectible*	Whether this context should be able to unload.

Properties

IsCollectible

Gets a value that indicates whether this VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html) is collectible.

Declaration

```
public bool IsCollectible { get; }
```

Property Value

Type	Description
bool (https://learn.microsoft.com/dotnet/api/system.boolean)	

Name

Get the name of the VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html).

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Declaration

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```
public string? Name { get; }
```

Property Value

Type	Description
string (https://learn.microsoft.com/dotnet/api/system.string)	

Methods

InstrumentAssembly(AssemblyDefinition)

Adds verification guards to all methods in the assembly. The first time that any method is invoked, it will call the verifier on itself.

Declaration

```
protected virtual void InstrumentAssembly(AssemblyDefinition assembly)
```

Parameters

Type		Name	Description
AssemblyDefinition (https://github.com/jbevain/cecil/blob/8c123e16bd0d693afc9932da85e1c9e740aa508c/Mono.Cecil/AssemblyDefinition.cs)		*assembly*	The assembly to instrument.

Load(AssemblyName)

When overridden in a derived class, allows an assembly to be resolved based on its AssemblyName (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname).

Declaration

```
protected virtual Assembly? Load(AssemblyName assemblyName)
```

Parameters

Type		Name	Description
AssemblyName (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname)		*assemblyName*	The object that describes the assembly to be resolved.

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Returns

Type		Description
Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly)		The resolved assembly, or `null`.

LoadFromAssemblyName(AssemblyName)

Resolves and loads an assembly given its AssemblyName (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname).

Declaration

```
public Assembly LoadFromAssemblyName(AssemblyName assemblyName)
```

Parameters

Type		Name	Description
AssemblyName (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname)		*assemblyName*	The object that describes the assembly to load.

Returns

Type		Description
Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly)		The resolved assembly, or `null`.

LoadFromAssemblyPath(string)

Loads the contents of an assembly file on the specified path.

Declaration

```
public Assembly LoadFromAssemblyPath(string assemblyPath)
```

Parameters

Type	Name	Description
string (https://learn.microsoft.com/dotnet/api/system.string)	*assemblyPath*	The fully qualified path of the file to load.

Returns

Type		Description
Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly)		The loaded assembly.

LoadFromStream(Stream)

Loads the assembly with a common object file format (COFF)-based image containing a managed assembly.

Declaration

```
public Assembly LoadFromStream(Stream assembly)
```

Parameters

Type	Name	Description
Stream (https://learn.microsoft.com/dotnet/api/system.io.stream)	*assembly*	A byte array that is a COFF-based image containing a managed assembly.

Returns

Type		Description
Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly)		The loaded assembly.

LoadFromStream(Stream, Stream?)

Loads the assembly with a common object file format (COFF)-based image containing a managed assembly, optionally including symbols for the assembly.

Declaration

```
public Assembly LoadFromStream(Stream assembly, Stream? assemblySymbols)
```

Parameters

Type	Name	Description
Stream (https://learn.microsoft.com/dotnet/api/system.io.stream)	*assembly*	A byte array that is a COFF-based image containing a managed assembly.

Type	Name	Description
Stream (https://learn.microsoft.com/dotnet/api/system.io.stream)	*assemblySymbols*	A byte array that contains the raw bytes representing the symbols for the assembly.

Returns

Type		Description
Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly)		The loaded assembly.

LoadUnmanagedDll(string)

Allows derived class to load an unmanaged library by name.

Declaration

```
protected virtual nint LoadUnmanagedDll(string unmanagedDllName)
```

Parameters

Type	Name	Description
string (https://learn.microsoft.com/dotnet/api/system.string)	*unmanagedDllName*	Name of the unmanaged library. Typically this is the filename without its path or extensions.

Returns

Type	Description
nint (https://learn.microsoft.com/dotnet/api/system.intptr)	A handle to the loaded library, or Zero (https://learn.microsoft.com/dotnet/api/system.intptr.zero).

LoadUnmanagedDllFromPath(string)

Loads an unmanaged library from the specified path.

Declaration

```
protected nint LoadUnmanagedDllFromPath(string unmanagedDllPath)
```

Parameters

Type		Name	Description
string (https://learn.microsoft.com/dotnet/api/system.string)		*unmanagedDllPath*	The path to the unmanaged library.

Returns

Type	Description
nint (https://learn.microsoft.com/dotnet/api/system.intptr)	The OS handle for the loaded native library.

SetProfileOptimizationRoot(string)

Sets the root path where the optimization profiles for this load context are stored.

Declaration

```
public void SetProfileOptimizationRoot(string directoryPath)
```

Parameters

Type	Name	Description
string (https://learn.microsoft.com/dotnet/api/system.string)	*directoryPath*	The full path to the directory where the optimization profiles are stored.

StartProfileOptimization(string?)

Starts the profile optimization for the specified profile.

Declaration

```
public void StartProfileOptimization(string? profile)
```

Parameters

Type	Name	Description
string (https://learn.microsoft.com/dotnet/api/system.string)	*profile*	The name of the optimization profile.

Unload()

Initiates an unload of this VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html).

Declaration

```
public void Unload()
```

Events

Resolving

Occurs when the resolution of an assembly fails when attempting to load into this assembly load context.

▼

Declaration

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```
public event Func<AssemblyLoadContext, AssemblyName, Assembly?>? Resolving
```

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Event Type

Type	Description
Func (https://learn.microsoft.com/dotnet/api/system.func-3)< AssemblyLoadContext (https://learn.microsoft.com/dotnet/api/system.runtime.loader.assemblyloadcontext) , AssemblyName (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname), Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly)>	

ResolvingUnmanagedDll

Occurs when the resolution of a native library fails.

Declaration

```
public event Func<Assembly, string, nint>? ResolvingUnmanagedDll
```

Event Type

Type	Description
Func (https://learn.microsoft.com/dotnet/api/system.func-3)< Assembly (https://learn.microsoft.com/dotnet/api/system.reflection.assembly), string (https://learn.microsoft.com/dotnet/api/system.string), nint (https://learn.microsoft.com/dotnet/api/system.intptr)>	

Unloading

Occurs when the VerifiableAssemblyLoader (Dwyer.JitIlVerification.VerifiableAssemblyLoader.html) is unloaded.

Declaration

```
public event Action<AssemblyLoadContext>? Unloading
```

Event Type

Type	Description
Action (https://learn.microsoft.com/dotnet/api/system.action-1)< AssemblyLoadContext (https://learn.microsoft.com/dotnet/api/system.runtime.loader.assemblyloadcontext) > ▼	

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