

Namespace DouglasDwyer.JitIlVerification

Classes

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VerifiableAssemblyLoader (DouglasDwyer.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 will throw an exception upon invocation.

Class VerifiableAssemblyLoader

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- **DouglasDwyer.JitIl**

Verification

Inheritance

(**DouglasDwyer.JitIlVerification**)

↳ [object](https://learn.microsoft.com/dotnet/api/system.object) (<https://learn.microsoft.com/dotnet/api/system.object>)

↳ VerifiableAssemblyLoader

↳ (DouglasDwyer.JitIlVerification.Verif

Inherited Members

[object.Equals\(object\)](https://learn.microsoft.com/dotnet/api/system.object.equals#system-object-equals(system-object)) ([https://learn.microsoft.com/dotnet/api/system.object.equals#system-object-equals\(system-object\)](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)) ([https://learn.microsoft.com/dotnet/api/system.object.equals#system-object-equals\(system-object-system-object\)](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) (<https://learn.microsoft.com/dotnet/api/system.object.gethashcode>)

[object.GetType\(\)](https://learn.microsoft.com/dotnet/api/system.object.gettype) (<https://learn.microsoft.com/dotnet/api/system.object.gettype>)

[object.MemberwiseClone\(\)](https://learn.microsoft.com/dotnet/api/system.object.memberwiseclone) (<https://learn.microsoft.com/dotnet/api/system.object.memberwiseclone>)

[object.ReferenceEquals\(object, object\)](https://learn.microsoft.com/dotnet/api/system.object.referenceequals) (<https://learn.microsoft.com/dotnet/api/system.object.referenceequals>)

[object.ToString\(\)](https://learn.microsoft.com/dotnet/api/system.object.tostring) (<https://learn.microsoft.com/dotnet/api/system.object.tostring>)

Namespace: DouglasDwyer (DouglasDwyer.html).JitIlVerification (DouglasDwyer.JitIlVerification.html)

Assembly: JitIlVerification.dll

Syntax

```
public class VerifiableAssemblyLoader
```

Constructors

VerifiableAssemblyLoader()

Initializes a new instance of the VerifiableAssemblyLoader

(DouglasDwyer.JitIlVerification.VerifiableAssemblyLoader.html) class.

Declaration

```
public VerifiableAssemblyLoader()
```

VerifiableAssemblyLoader(bool)

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

Declaration

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

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

VerifiableAssemblyLoader(string, bool)

Initializes a new instance of the VerifiableAssemblyLoader (DouglasDwyer.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)	<i>name</i>	The display name of the load context.
bool (https://learn.microsoft.com/dotnet/api/system.boolean)	<i>isCollectible</i>	Whether this context should be able to unload.

Properties

IsCollectible

Gets a value that indicates whether this VerifiableAssemblyLoader (DouglasDwyer.JitILVerification.VerifiableAssemblyLoader.html) is collectible.

Declaration

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

Property Value

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

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Name (DouglasDwyer.JitILVerification)

VerifiableAssemblyLoader (DouglasDwyer.JitILVerification.VerifiableAssemblyLoader.html). Get the Name of the Verifiable (DouglasDwyer.JitILVerification.Verif

Declaration

```
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)	<i>assembly</i>	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
<code>AssemblyName</code> (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname)	<code>assemblyName</code>	The object that describes the assembly to be resolved.

Returns

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

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
<code>AssemblyName</code> (https://learn.microsoft.com/dotnet/api/system.reflection.assemblyname)	<code>assemblyName</code>	The object that describes the assembly to load.

Returns

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

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)	<i>assemblyPath</i>	The fully qualified path of the file to load.

Verification

Returns

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Type	Description
VerifiableAssemblyLoader	
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)	<i>assembly</i>	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)	<i>assembly</i>	A byte array that is a COFF-based image containing a managed assembly.
Stream (https://learn.microsoft.com/dotnet/api/system.io.stream)	<i>assemblySymbols</i>	A byte array that contains the raw bytes representing the symbols for the assembly.

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Returns

(DouglasDwyer.JitILVerification)

Type	Description
VerifiableAssemblyLoader 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)	<i>unmanagedDllName</i>	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)	<i>unmanagedDllPath</i>	The path to the unmanaged library.

Returns

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

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SetProfileOptimizationRoot(string)

([DouglasDwyer.JitILVerification.VerifiableAssemblyLoader.html](#))
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)	<i>directoryPath</i>	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)	<i>profile</i>	The name of the optimization profile.

Unload()

Initiates an unload of this [VerifiableAssemblyLoader](#) ([DouglasDwyer.JitILVerification.VerifiableAssemblyLoader.html](#)).

Declaration


```
public void Unload()
```

Events

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Occurs when the VerifiableAssemblyLoader (DouglasDwyer.JitIlVerification.VerifiableAssemblyLoader.html) fails when attempting to load into this assembly load context.

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

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 (DouglasDwyer.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) (DouglasDwyer.JitILVerification)		

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