| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/URLClassLoader.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/net/URL.html)   [**NEXT CLASS**](http://docs.google.com/java/net/URLConnection.html) | [**FRAMES**](http://docs.google.com/index.html?java/net/URLClassLoader.html)    [**NO FRAMES**](http://docs.google.com/URLClassLoader.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#4d34og8) | [METHOD](#26in1rg) |

## **java.net**

Class URLClassLoader

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 [java.lang.ClassLoader](http://docs.google.com/java/lang/ClassLoader.html)  
 [java.security.SecureClassLoader](http://docs.google.com/java/security/SecureClassLoader.html)  
 **java.net.URLClassLoader**

**Direct Known Subclasses:** [MLet](http://docs.google.com/javax/management/loading/MLet.html)

public class **URLClassLoader**extends [SecureClassLoader](http://docs.google.com/java/security/SecureClassLoader.html)

This class loader is used to load classes and resources from a search path of URLs referring to both JAR files and directories. Any URL that ends with a '/' is assumed to refer to a directory. Otherwise, the URL is assumed to refer to a JAR file which will be opened as needed.

The AccessControlContext of the thread that created the instance of URLClassLoader will be used when subsequently loading classes and resources.

The classes that are loaded are by default granted permission only to access the URLs specified when the URLClassLoader was created.

**Since:** 1.2

| **Constructor Summary** | |
| --- | --- |
| [**URLClassLoader**](http://docs.google.com/java/net/URLClassLoader.html#URLClassLoader(java.net.URL%5B%5D))([URL](http://docs.google.com/java/net/URL.html)[] urls)            Constructs a new URLClassLoader for the specified URLs using the default delegation parent ClassLoader. |
| [**URLClassLoader**](http://docs.google.com/java/net/URLClassLoader.html#URLClassLoader(java.net.URL%5B%5D,%20java.lang.ClassLoader))([URL](http://docs.google.com/java/net/URL.html)[] urls, [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) parent)            Constructs a new URLClassLoader for the given URLs. |
| [**URLClassLoader**](http://docs.google.com/java/net/URLClassLoader.html#URLClassLoader(java.net.URL%5B%5D,%20java.lang.ClassLoader,%20java.net.URLStreamHandlerFactory))([URL](http://docs.google.com/java/net/URL.html)[] urls, [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) parent, [URLStreamHandlerFactory](http://docs.google.com/java/net/URLStreamHandlerFactory.html) factory)            Constructs a new URLClassLoader for the specified URLs, parent class loader, and URLStreamHandlerFactory. |

| **Method Summary** | |
| --- | --- |
| protected  void | [**addURL**](http://docs.google.com/java/net/URLClassLoader.html#addURL(java.net.URL))([URL](http://docs.google.com/java/net/URL.html) url)            Appends the specified URL to the list of URLs to search for classes and resources. |
| protected  [Package](http://docs.google.com/java/lang/Package.html) | [**definePackage**](http://docs.google.com/java/net/URLClassLoader.html#definePackage(java.lang.String,%20java.util.jar.Manifest,%20java.net.URL))([String](http://docs.google.com/java/lang/String.html) name, [Manifest](http://docs.google.com/java/util/jar/Manifest.html) man, [URL](http://docs.google.com/java/net/URL.html) url)            Defines a new package by name in this ClassLoader. |
| protected  [Class](http://docs.google.com/java/lang/Class.html)<?> | [**findClass**](http://docs.google.com/java/net/URLClassLoader.html#findClass(java.lang.String))([String](http://docs.google.com/java/lang/String.html) name)            Finds and loads the class with the specified name from the URL search path. |
| [URL](http://docs.google.com/java/net/URL.html) | [**findResource**](http://docs.google.com/java/net/URLClassLoader.html#findResource(java.lang.String))([String](http://docs.google.com/java/lang/String.html) name)            Finds the resource with the specified name on the URL search path. |
| [Enumeration](http://docs.google.com/java/util/Enumeration.html)<[URL](http://docs.google.com/java/net/URL.html)> | [**findResources**](http://docs.google.com/java/net/URLClassLoader.html#findResources(java.lang.String))([String](http://docs.google.com/java/lang/String.html) name)            Returns an Enumeration of URLs representing all of the resources on the URL search path having the specified name. |
| protected  [PermissionCollection](http://docs.google.com/java/security/PermissionCollection.html) | [**getPermissions**](http://docs.google.com/java/net/URLClassLoader.html#getPermissions(java.security.CodeSource))([CodeSource](http://docs.google.com/java/security/CodeSource.html) codesource)            Returns the permissions for the given codesource object. |
| [URL](http://docs.google.com/java/net/URL.html)[] | [**getURLs**](http://docs.google.com/java/net/URLClassLoader.html#getURLs())()            Returns the search path of URLs for loading classes and resources. |
| static [URLClassLoader](http://docs.google.com/java/net/URLClassLoader.html) | [**newInstance**](http://docs.google.com/java/net/URLClassLoader.html#newInstance(java.net.URL%5B%5D))([URL](http://docs.google.com/java/net/URL.html)[] urls)            Creates a new instance of URLClassLoader for the specified URLs and default parent class loader. |
| static [URLClassLoader](http://docs.google.com/java/net/URLClassLoader.html) | [**newInstance**](http://docs.google.com/java/net/URLClassLoader.html#newInstance(java.net.URL%5B%5D,%20java.lang.ClassLoader))([URL](http://docs.google.com/java/net/URL.html)[] urls, [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) parent)            Creates a new instance of URLClassLoader for the specified URLs and parent class loader. |

| **Methods inherited from class java.security.**[**SecureClassLoader**](http://docs.google.com/java/security/SecureClassLoader.html) |
| --- |
| [defineClass](http://docs.google.com/java/security/SecureClassLoader.html#defineClass(java.lang.String,%20byte%5B%5D,%20int,%20int,%20java.security.CodeSource)), [defineClass](http://docs.google.com/java/security/SecureClassLoader.html#defineClass(java.lang.String,%20java.nio.ByteBuffer,%20java.security.CodeSource)) |

| **Methods inherited from class java.lang.**[**ClassLoader**](http://docs.google.com/java/lang/ClassLoader.html) |
| --- |
| [clearAssertionStatus](http://docs.google.com/java/lang/ClassLoader.html#clearAssertionStatus()), [defineClass](http://docs.google.com/java/lang/ClassLoader.html#defineClass(byte%5B%5D,%20int,%20int)), [defineClass](http://docs.google.com/java/lang/ClassLoader.html#defineClass(java.lang.String,%20byte%5B%5D,%20int,%20int)), [defineClass](http://docs.google.com/java/lang/ClassLoader.html#defineClass(java.lang.String,%20byte%5B%5D,%20int,%20int,%20java.security.ProtectionDomain)), [defineClass](http://docs.google.com/java/lang/ClassLoader.html#defineClass(java.lang.String,%20java.nio.ByteBuffer,%20java.security.ProtectionDomain)), [definePackage](http://docs.google.com/java/lang/ClassLoader.html#definePackage(java.lang.String,%20java.lang.String,%20java.lang.String,%20java.lang.String,%20java.lang.String,%20java.lang.String,%20java.lang.String,%20java.net.URL)), [findLibrary](http://docs.google.com/java/lang/ClassLoader.html#findLibrary(java.lang.String)), [findLoadedClass](http://docs.google.com/java/lang/ClassLoader.html#findLoadedClass(java.lang.String)), [findSystemClass](http://docs.google.com/java/lang/ClassLoader.html#findSystemClass(java.lang.String)), [getPackage](http://docs.google.com/java/lang/ClassLoader.html#getPackage(java.lang.String)), [getPackages](http://docs.google.com/java/lang/ClassLoader.html#getPackages()), [getParent](http://docs.google.com/java/lang/ClassLoader.html#getParent()), [getResource](http://docs.google.com/java/lang/ClassLoader.html#getResource(java.lang.String)), [getResourceAsStream](http://docs.google.com/java/lang/ClassLoader.html#getResourceAsStream(java.lang.String)), [getResources](http://docs.google.com/java/lang/ClassLoader.html#getResources(java.lang.String)), [getSystemClassLoader](http://docs.google.com/java/lang/ClassLoader.html#getSystemClassLoader()), [getSystemResource](http://docs.google.com/java/lang/ClassLoader.html#getSystemResource(java.lang.String)), [getSystemResourceAsStream](http://docs.google.com/java/lang/ClassLoader.html#getSystemResourceAsStream(java.lang.String)), [getSystemResources](http://docs.google.com/java/lang/ClassLoader.html#getSystemResources(java.lang.String)), [loadClass](http://docs.google.com/java/lang/ClassLoader.html#loadClass(java.lang.String)), [loadClass](http://docs.google.com/java/lang/ClassLoader.html#loadClass(java.lang.String,%20boolean)), [resolveClass](http://docs.google.com/java/lang/ClassLoader.html#resolveClass(java.lang.Class)), [setClassAssertionStatus](http://docs.google.com/java/lang/ClassLoader.html#setClassAssertionStatus(java.lang.String,%20boolean)), [setDefaultAssertionStatus](http://docs.google.com/java/lang/ClassLoader.html#setDefaultAssertionStatus(boolean)), [setPackageAssertionStatus](http://docs.google.com/java/lang/ClassLoader.html#setPackageAssertionStatus(java.lang.String,%20boolean)), [setSigners](http://docs.google.com/java/lang/ClassLoader.html#setSigners(java.lang.Class,%20java.lang.Object%5B%5D)) |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [clone](http://docs.google.com/java/lang/Object.html#clone()), [equals](http://docs.google.com/java/lang/Object.html#equals(java.lang.Object)), [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [hashCode](http://docs.google.com/java/lang/Object.html#hashCode()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [toString](http://docs.google.com/java/lang/Object.html#toString()), [wait](http://docs.google.com/java/lang/Object.html#wait()), [wait](http://docs.google.com/java/lang/Object.html#wait(long)), [wait](http://docs.google.com/java/lang/Object.html#wait(long,%20int)) |

| **Constructor Detail** |
| --- |

### URLClassLoader

public **URLClassLoader**([URL](http://docs.google.com/java/net/URL.html)[] urls,  
 [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) parent)

Constructs a new URLClassLoader for the given URLs. The URLs will be searched in the order specified for classes and resources after first searching in the specified parent class loader. Any URL that ends with a '/' is assumed to refer to a directory. Otherwise, the URL is assumed to refer to a JAR file which will be downloaded and opened as needed.

If there is a security manager, this method first calls the security manager's checkCreateClassLoader method to ensure creation of a class loader is allowed.

**Parameters:**urls - the URLs from which to load classes and resourcesparent - the parent class loader for delegation **Throws:** [SecurityException](http://docs.google.com/java/lang/SecurityException.html) - if a security manager exists and its checkCreateClassLoader method doesn't allow creation of a class loader.**See Also:**[SecurityManager.checkCreateClassLoader()](http://docs.google.com/java/lang/SecurityManager.html#checkCreateClassLoader())

### URLClassLoader

public **URLClassLoader**([URL](http://docs.google.com/java/net/URL.html)[] urls)

Constructs a new URLClassLoader for the specified URLs using the default delegation parent ClassLoader. The URLs will be searched in the order specified for classes and resources after first searching in the parent class loader. Any URL that ends with a '/' is assumed to refer to a directory. Otherwise, the URL is assumed to refer to a JAR file which will be downloaded and opened as needed.

If there is a security manager, this method first calls the security manager's checkCreateClassLoader method to ensure creation of a class loader is allowed.

**Parameters:**urls - the URLs from which to load classes and resources **Throws:** [SecurityException](http://docs.google.com/java/lang/SecurityException.html) - if a security manager exists and its checkCreateClassLoader method doesn't allow creation of a class loader.**See Also:**[SecurityManager.checkCreateClassLoader()](http://docs.google.com/java/lang/SecurityManager.html#checkCreateClassLoader())

### URLClassLoader

public **URLClassLoader**([URL](http://docs.google.com/java/net/URL.html)[] urls,  
 [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) parent,  
 [URLStreamHandlerFactory](http://docs.google.com/java/net/URLStreamHandlerFactory.html) factory)

Constructs a new URLClassLoader for the specified URLs, parent class loader, and URLStreamHandlerFactory. The parent argument will be used as the parent class loader for delegation. The factory argument will be used as the stream handler factory to obtain protocol handlers when creating new jar URLs.

If there is a security manager, this method first calls the security manager's checkCreateClassLoader method to ensure creation of a class loader is allowed.

**Parameters:**urls - the URLs from which to load classes and resourcesparent - the parent class loader for delegationfactory - the URLStreamHandlerFactory to use when creating URLs **Throws:** [SecurityException](http://docs.google.com/java/lang/SecurityException.html) - if a security manager exists and its checkCreateClassLoader method doesn't allow creation of a class loader.**See Also:**[SecurityManager.checkCreateClassLoader()](http://docs.google.com/java/lang/SecurityManager.html#checkCreateClassLoader())

| **Method Detail** |
| --- |

### addURL

protected void **addURL**([URL](http://docs.google.com/java/net/URL.html) url)

Appends the specified URL to the list of URLs to search for classes and resources.

**Parameters:**url - the URL to be added to the search path of URLs

### getURLs

public [URL](http://docs.google.com/java/net/URL.html)[] **getURLs**()

Returns the search path of URLs for loading classes and resources. This includes the original list of URLs specified to the constructor, along with any URLs subsequently appended by the addURL() method.

**Returns:**the search path of URLs for loading classes and resources.

### findClass

protected [Class](http://docs.google.com/java/lang/Class.html)<?> **findClass**([String](http://docs.google.com/java/lang/String.html) name)  
 throws [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html)

Finds and loads the class with the specified name from the URL search path. Any URLs referring to JAR files are loaded and opened as needed until the class is found.

**Overrides:**[findClass](http://docs.google.com/java/lang/ClassLoader.html#findClass(java.lang.String)) in class [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) **Parameters:**name - the name of the class **Returns:**the resulting class **Throws:** [ClassNotFoundException](http://docs.google.com/java/lang/ClassNotFoundException.html) - if the class could not be found

### definePackage

protected [Package](http://docs.google.com/java/lang/Package.html) **definePackage**([String](http://docs.google.com/java/lang/String.html) name,  
 [Manifest](http://docs.google.com/java/util/jar/Manifest.html) man,  
 [URL](http://docs.google.com/java/net/URL.html) url)  
 throws [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html)

Defines a new package by name in this ClassLoader. The attributes contained in the specified Manifest will be used to obtain package version and sealing information. For sealed packages, the additional URL specifies the code source URL from which the package was loaded.

**Parameters:**name - the package nameman - the Manifest containing package version and sealing informationurl - the code source url for the package, or null if none **Returns:**the newly defined Package object **Throws:** [IllegalArgumentException](http://docs.google.com/java/lang/IllegalArgumentException.html) - if the package name duplicates an existing package either in this class loader or one of its ancestors

### findResource

public [URL](http://docs.google.com/java/net/URL.html) **findResource**([String](http://docs.google.com/java/lang/String.html) name)

Finds the resource with the specified name on the URL search path.

**Overrides:**[findResource](http://docs.google.com/java/lang/ClassLoader.html#findResource(java.lang.String)) in class [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) **Parameters:**name - the name of the resource **Returns:**a URL for the resource, or null if the resource could not be found.

### findResources

public [Enumeration](http://docs.google.com/java/util/Enumeration.html)<[URL](http://docs.google.com/java/net/URL.html)> **findResources**([String](http://docs.google.com/java/lang/String.html) name)  
 throws [IOException](http://docs.google.com/java/io/IOException.html)

Returns an Enumeration of URLs representing all of the resources on the URL search path having the specified name.

**Overrides:**[findResources](http://docs.google.com/java/lang/ClassLoader.html#findResources(java.lang.String)) in class [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) **Parameters:**name - the resource name **Returns:**an Enumeration of URLs **Throws:** [IOException](http://docs.google.com/java/io/IOException.html) - if an I/O exception occurs

### getPermissions

protected [PermissionCollection](http://docs.google.com/java/security/PermissionCollection.html) **getPermissions**([CodeSource](http://docs.google.com/java/security/CodeSource.html) codesource)

Returns the permissions for the given codesource object. The implementation of this method first calls super.getPermissions and then adds permissions based on the URL of the codesource.

If the protocol of this URL is "jar", then the permission granted is based on the permission that is required by the URL of the Jar file.

If the protocol is "file" and the path specifies a file, then permission to read that file is granted. If protocol is "file" and the path is a directory, permission is granted to read all files and (recursively) all files and subdirectories contained in that directory.

If the protocol is not "file", then to connect to and accept connections from the URL's host is granted.

**Overrides:**[getPermissions](http://docs.google.com/java/security/SecureClassLoader.html#getPermissions(java.security.CodeSource)) in class [SecureClassLoader](http://docs.google.com/java/security/SecureClassLoader.html) **Parameters:**codesource - the codesource **Returns:**the permissions granted to the codesource

### newInstance

public static [URLClassLoader](http://docs.google.com/java/net/URLClassLoader.html) **newInstance**([URL](http://docs.google.com/java/net/URL.html)[] urls,  
 [ClassLoader](http://docs.google.com/java/lang/ClassLoader.html) parent)

Creates a new instance of URLClassLoader for the specified URLs and parent class loader. If a security manager is installed, the loadClass method of the URLClassLoader returned by this method will invoke the SecurityManager.checkPackageAccess method before loading the class.

**Parameters:**urls - the URLs to search for classes and resourcesparent - the parent class loader for delegation **Returns:**the resulting class loader

### newInstance

public static [URLClassLoader](http://docs.google.com/java/net/URLClassLoader.html) **newInstance**([URL](http://docs.google.com/java/net/URL.html)[] urls)

Creates a new instance of URLClassLoader for the specified URLs and default parent class loader. If a security manager is installed, the loadClass method of the URLClassLoader returned by this method will invoke the SecurityManager.checkPackageAccess before loading the class.

**Parameters:**urls - the URLs to search for classes and resources **Returns:**the resulting class loader

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/URLClassLoader.html) | [**Tree**](http://docs.google.com/package-tree.html) | [**Deprecated**](http://docs.google.com/deprecated-list.html) | [**Index**](http://docs.google.com/index-files/index-1.html) | [**Help**](http://docs.google.com/help-doc.html) | | --- | --- | --- | --- | --- | --- | --- | --- | | | ***Java™ Platform***  ***Standard Ed. 6*** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [**PREV CLASS**](http://docs.google.com/java/net/URL.html)   [**NEXT CLASS**](http://docs.google.com/java/net/URLConnection.html) | [**FRAMES**](http://docs.google.com/index.html?java/net/URLClassLoader.html)    [**NO FRAMES**](http://docs.google.com/URLClassLoader.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | FIELD | [CONSTR](#3znysh7) | [METHOD](#2et92p0) | DETAIL: FIELD | [CONSTR](#4d34og8) | [METHOD](#26in1rg) |

[Submit a bug or feature](http://bugs.sun.com/services/bugreport/index.jsp)

For further API reference and developer documentation, see [Java SE Developer Documentation](http://docs.google.com/webnotes/devdocs-vs-specs.html). That documentation contains more detailed, developer-targeted descriptions, with conceptual overviews, definitions of terms, workarounds, and working code examples.

Copyright 2006 Sun Microsystems, Inc. All rights reserved. Use is subject to [license terms](http://docs.google.com/legal/license.html). Also see the [documentation redistribution policy](http://java.sun.com/docs/redist.html).