| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/UnicastRemoteObject.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/rmi/server/UID.html)   [**NEXT CLASS**](http://docs.google.com/java/rmi/server/Unreferenced.html) | [**FRAMES**](http://docs.google.com/index.html?java/rmi/server/UnicastRemoteObject.html)    [**NO FRAMES**](http://docs.google.com/UnicastRemoteObject.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
| SUMMARY: NESTED | [FIELD](#2et92p0) | [CONSTR](#tyjcwt) | [METHOD](#3dy6vkm) | DETAIL: FIELD | [CONSTR](#17dp8vu) | [METHOD](#35nkun2) |

## **java.rmi.server**

Class UnicastRemoteObject

[java.lang.Object](http://docs.google.com/java/lang/Object.html)  
 [java.rmi.server.RemoteObject](http://docs.google.com/java/rmi/server/RemoteObject.html)  
 [java.rmi.server.RemoteServer](http://docs.google.com/java/rmi/server/RemoteServer.html)  
 **java.rmi.server.UnicastRemoteObject**

**All Implemented Interfaces:** [Serializable](http://docs.google.com/java/io/Serializable.html), [Remote](http://docs.google.com/java/rmi/Remote.html) **Direct Known Subclasses:** [ActivationGroup](http://docs.google.com/java/rmi/activation/ActivationGroup.html)

public class **UnicastRemoteObject**extends [RemoteServer](http://docs.google.com/java/rmi/server/RemoteServer.html)

Used for exporting a remote object with JRMP and obtaining a stub that communicates to the remote object.

For the constructors and static exportObject methods below, the stub for a remote object being exported is obtained as follows:

* If the remote object is exported using the [UnicastRemoteObject.exportObject(Remote)](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#exportObject(java.rmi.Remote)) method, a stub class (typically pregenerated from the remote object's class using the rmic tool) is loaded and an instance of that stub class is constructed as follows.
  + A "root class" is determined as follows: if the remote object's class directly implements an interface that extends [Remote](http://docs.google.com/java/rmi/Remote.html), then the remote object's class is the root class; otherwise, the root class is the most derived superclass of the remote object's class that directly implements an interface that extends Remote.
  + The name of the stub class to load is determined by concatenating the binary name of the root class with the suffix "\_Stub".
  + The stub class is loaded by name using the class loader of the root class. The stub class must extend [RemoteStub](http://docs.google.com/java/rmi/server/RemoteStub.html) and must have a public constructor that has one parameter, of type [RemoteRef](http://docs.google.com/java/rmi/server/RemoteRef.html).
  + Finally, an instance of the stub class is constructed with a [RemoteRef](http://docs.google.com/java/rmi/server/RemoteRef.html).
* If the appropriate stub class could not be found, or the stub class could not be loaded, or a problem occurs creating the stub instance, a [StubNotFoundException](http://docs.google.com/java/rmi/StubNotFoundException.html) is thrown.
* For all other means of exporting:  
  + If the remote object's stub class (as defined above) could not be loaded or the system property java.rmi.server.ignoreStubClasses is set to "true" (case insensitive), a [Proxy](http://docs.google.com/java/lang/reflect/Proxy.html) instance is constructed with the following properties:
    - The proxy's class is defined by the class loader of the remote object's class.
    - The proxy implements all the remote interfaces implemented by the remote object's class.
    - The proxy's invocation handler is a [RemoteObjectInvocationHandler](http://docs.google.com/java/rmi/server/RemoteObjectInvocationHandler.html) instance constructed with a [RemoteRef](http://docs.google.com/java/rmi/server/RemoteRef.html).
    - If the proxy could not be created, a [StubNotFoundException](http://docs.google.com/java/rmi/StubNotFoundException.html) will be thrown.
  + Otherwise, an instance of the remote object's stub class (as described above) is used as the stub.

**Since:** JDK1.1 **See Also:**[Serialized Form](http://docs.google.com/serialized-form.html#java.rmi.server.UnicastRemoteObject)

| **Field Summary** | |
| --- | --- |

| **Fields inherited from class java.rmi.server.**[**RemoteObject**](http://docs.google.com/java/rmi/server/RemoteObject.html) |
| --- |
| [ref](http://docs.google.com/java/rmi/server/RemoteObject.html#ref) |

| **Constructor Summary** | |
| --- | --- |
| protected | [**UnicastRemoteObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#UnicastRemoteObject())()            Creates and exports a new UnicastRemoteObject object using an anonymous port. |
| protected | [**UnicastRemoteObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#UnicastRemoteObject(int))(int port)            Creates and exports a new UnicastRemoteObject object using the particular supplied port. |
| protected | [**UnicastRemoteObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#UnicastRemoteObject(int,%20java.rmi.server.RMIClientSocketFactory,%20java.rmi.server.RMIServerSocketFactory))(int port, [RMIClientSocketFactory](http://docs.google.com/java/rmi/server/RMIClientSocketFactory.html) csf, [RMIServerSocketFactory](http://docs.google.com/java/rmi/server/RMIServerSocketFactory.html) ssf)            Creates and exports a new UnicastRemoteObject object using the particular supplied port and socket factories. |

| **Method Summary** | |
| --- | --- |
| [Object](http://docs.google.com/java/lang/Object.html) | [**clone**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#clone())()            Returns a clone of the remote object that is distinct from the original. |
| static [RemoteStub](http://docs.google.com/java/rmi/server/RemoteStub.html) | [**exportObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#exportObject(java.rmi.Remote))([Remote](http://docs.google.com/java/rmi/Remote.html) obj)            Exports the remote object to make it available to receive incoming calls using an anonymous port. |
| static [Remote](http://docs.google.com/java/rmi/Remote.html) | [**exportObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#exportObject(java.rmi.Remote,%20int))([Remote](http://docs.google.com/java/rmi/Remote.html) obj, int port)            Exports the remote object to make it available to receive incoming calls, using the particular supplied port. |
| static [Remote](http://docs.google.com/java/rmi/Remote.html) | [**exportObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#exportObject(java.rmi.Remote,%20int,%20java.rmi.server.RMIClientSocketFactory,%20java.rmi.server.RMIServerSocketFactory))([Remote](http://docs.google.com/java/rmi/Remote.html) obj, int port, [RMIClientSocketFactory](http://docs.google.com/java/rmi/server/RMIClientSocketFactory.html) csf, [RMIServerSocketFactory](http://docs.google.com/java/rmi/server/RMIServerSocketFactory.html) ssf)            Exports the remote object to make it available to receive incoming calls, using a transport specified by the given socket factory. |
| static boolean | [**unexportObject**](http://docs.google.com/java/rmi/server/UnicastRemoteObject.html#unexportObject(java.rmi.Remote,%20boolean))([Remote](http://docs.google.com/java/rmi/Remote.html) obj, boolean force)            Removes the remote object, obj, from the RMI runtime. |

| **Methods inherited from class java.rmi.server.**[**RemoteServer**](http://docs.google.com/java/rmi/server/RemoteServer.html) |
| --- |
| [getClientHost](http://docs.google.com/java/rmi/server/RemoteServer.html#getClientHost()), [getLog](http://docs.google.com/java/rmi/server/RemoteServer.html#getLog()), [setLog](http://docs.google.com/java/rmi/server/RemoteServer.html#setLog(java.io.OutputStream)) |

| **Methods inherited from class java.rmi.server.**[**RemoteObject**](http://docs.google.com/java/rmi/server/RemoteObject.html) |
| --- |
| [equals](http://docs.google.com/java/rmi/server/RemoteObject.html#equals(java.lang.Object)), [getRef](http://docs.google.com/java/rmi/server/RemoteObject.html#getRef()), [hashCode](http://docs.google.com/java/rmi/server/RemoteObject.html#hashCode()), [toString](http://docs.google.com/java/rmi/server/RemoteObject.html#toString()), [toStub](http://docs.google.com/java/rmi/server/RemoteObject.html#toStub(java.rmi.Remote)) |

| **Methods inherited from class java.lang.**[**Object**](http://docs.google.com/java/lang/Object.html) |
| --- |
| [finalize](http://docs.google.com/java/lang/Object.html#finalize()), [getClass](http://docs.google.com/java/lang/Object.html#getClass()), [notify](http://docs.google.com/java/lang/Object.html#notify()), [notifyAll](http://docs.google.com/java/lang/Object.html#notifyAll()), [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** |
| --- |

### UnicastRemoteObject

protected **UnicastRemoteObject**()  
 throws [RemoteException](http://docs.google.com/java/rmi/RemoteException.html)

Creates and exports a new UnicastRemoteObject object using an anonymous port.

**Throws:** [RemoteException](http://docs.google.com/java/rmi/RemoteException.html) - if failed to export object**Since:** JDK1.1

### UnicastRemoteObject

protected **UnicastRemoteObject**(int port)  
 throws [RemoteException](http://docs.google.com/java/rmi/RemoteException.html)

Creates and exports a new UnicastRemoteObject object using the particular supplied port.

**Parameters:**port - the port number on which the remote object receives calls (if port is zero, an anonymous port is chosen) **Throws:** [RemoteException](http://docs.google.com/java/rmi/RemoteException.html) - if failed to export object**Since:** 1.2

### UnicastRemoteObject

protected **UnicastRemoteObject**(int port,  
 [RMIClientSocketFactory](http://docs.google.com/java/rmi/server/RMIClientSocketFactory.html) csf,  
 [RMIServerSocketFactory](http://docs.google.com/java/rmi/server/RMIServerSocketFactory.html) ssf)  
 throws [RemoteException](http://docs.google.com/java/rmi/RemoteException.html)

Creates and exports a new UnicastRemoteObject object using the particular supplied port and socket factories.

**Parameters:**port - the port number on which the remote object receives calls (if port is zero, an anonymous port is chosen)csf - the client-side socket factory for making calls to the remote objectssf - the server-side socket factory for receiving remote calls **Throws:** [RemoteException](http://docs.google.com/java/rmi/RemoteException.html) - if failed to export object**Since:** 1.2

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

### clone

public [Object](http://docs.google.com/java/lang/Object.html) **clone**()  
 throws [CloneNotSupportedException](http://docs.google.com/java/lang/CloneNotSupportedException.html)

Returns a clone of the remote object that is distinct from the original.

**Overrides:**[clone](http://docs.google.com/java/lang/Object.html#clone()) in class [Object](http://docs.google.com/java/lang/Object.html) **Returns:**the new remote object **Throws:** [CloneNotSupportedException](http://docs.google.com/java/lang/CloneNotSupportedException.html) - if clone failed due to a RemoteException.**Since:** JDK1.1 **See Also:**[Cloneable](http://docs.google.com/java/lang/Cloneable.html)

### exportObject

public static [RemoteStub](http://docs.google.com/java/rmi/server/RemoteStub.html) **exportObject**([Remote](http://docs.google.com/java/rmi/Remote.html) obj)  
 throws [RemoteException](http://docs.google.com/java/rmi/RemoteException.html)

Exports the remote object to make it available to receive incoming calls using an anonymous port.

**Parameters:**obj - the remote object to be exported **Returns:**remote object stub **Throws:** [RemoteException](http://docs.google.com/java/rmi/RemoteException.html) - if export fails**Since:** JDK1.1

### exportObject

public static [Remote](http://docs.google.com/java/rmi/Remote.html) **exportObject**([Remote](http://docs.google.com/java/rmi/Remote.html) obj,  
 int port)  
 throws [RemoteException](http://docs.google.com/java/rmi/RemoteException.html)

Exports the remote object to make it available to receive incoming calls, using the particular supplied port.

**Parameters:**obj - the remote object to be exportedport - the port to export the object on **Returns:**remote object stub **Throws:** [RemoteException](http://docs.google.com/java/rmi/RemoteException.html) - if export fails**Since:** 1.2

### exportObject

public static [Remote](http://docs.google.com/java/rmi/Remote.html) **exportObject**([Remote](http://docs.google.com/java/rmi/Remote.html) obj,  
 int port,  
 [RMIClientSocketFactory](http://docs.google.com/java/rmi/server/RMIClientSocketFactory.html) csf,  
 [RMIServerSocketFactory](http://docs.google.com/java/rmi/server/RMIServerSocketFactory.html) ssf)  
 throws [RemoteException](http://docs.google.com/java/rmi/RemoteException.html)

Exports the remote object to make it available to receive incoming calls, using a transport specified by the given socket factory.

**Parameters:**obj - the remote object to be exportedport - the port to export the object oncsf - the client-side socket factory for making calls to the remote objectssf - the server-side socket factory for receiving remote calls **Returns:**remote object stub **Throws:** [RemoteException](http://docs.google.com/java/rmi/RemoteException.html) - if export fails**Since:** 1.2

### unexportObject

public static boolean **unexportObject**([Remote](http://docs.google.com/java/rmi/Remote.html) obj,  
 boolean force)  
 throws [NoSuchObjectException](http://docs.google.com/java/rmi/NoSuchObjectException.html)

Removes the remote object, obj, from the RMI runtime. If successful, the object can no longer accept incoming RMI calls. If the force parameter is true, the object is forcibly unexported even if there are pending calls to the remote object or the remote object still has calls in progress. If the force parameter is false, the object is only unexported if there are no pending or in progress calls to the object.

**Parameters:**obj - the remote object to be unexportedforce - if true, unexports the object even if there are pending or in-progress calls; if false, only unexports the object if there are no pending or in-progress calls **Returns:**true if operation is successful, false otherwise **Throws:** [NoSuchObjectException](http://docs.google.com/java/rmi/NoSuchObjectException.html) - if the remote object is not currently exported**Since:** 1.2

| | [**Overview**](http://docs.google.com/overview-summary.html) | [**Package**](http://docs.google.com/package-summary.html) | **Class** | [**Use**](http://docs.google.com/class-use/UnicastRemoteObject.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/rmi/server/UID.html)   [**NEXT CLASS**](http://docs.google.com/java/rmi/server/Unreferenced.html) | [**FRAMES**](http://docs.google.com/index.html?java/rmi/server/UnicastRemoteObject.html)    [**NO FRAMES**](http://docs.google.com/UnicastRemoteObject.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |
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[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.

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