

Java[™] 2 Platform API Specification

Version 1.2

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Java Packages

Description

This document is the API specification of the Java 2 Platform, Standard Edition, version 1.2.2.

Package Summary	
Core Packages	
java.applet	Provides the classes necessary to create an applet and the classes an applet uses to communicate with its applet context.

package java.applet

Description

Provides the classes necessary to create an applet and the classes an applet uses to communicate with its applet context.

The applet framework involves two entities: the *applet* and the *applet context*. An applet is an embeddable window (see the `Panel` class) with a few extra methods that the applet context can use to initialize, start, and stop the applet.

The applet context is an application that is responsible for loading and running applets. For example, the applet context could be a Web browser or an applet development environment.

Since: JDK1.0 \x13

Class Summary

Interfaces

[AppletStub](#)

When an applet is first created, an applet stub is attached to it using the applet's `setStub` method.

[AppletContext](#)

This interface corresponds to an applet's environment: the document containing the applet and the other applets in the same document.

[AudioClip](#)

The `AudioClip` interface is a simple abstraction for playing a sound clip.

Classes

[Applet](#)

An applet is a small program that is intended not to be run on its own, but rather to be embedded inside another application.

java.applet

Applet

Syntax

```
public class Applet extends java.awt.Panel
```

```
java.lang.Object
|
+--java.awt.Component
|   |
|   +--java.awt.Container
|       |
|       +--java.awt.Panel
|           |
|           +--java.applet.Applet
```

All Implemented Interfaces: `java.awt.image.ImageObserver`, `java.awt.MenuContainer`, `java.io.Serializable`

Description

An applet is a small program that is intended not to be run on its own, but rather to be embedded inside another application.

The `Applet` class must be the superclass of any applet that is to be embedded in a Web page or viewed by the Java Applet Viewer. The `Applet` class provides a standard interface between applets and their environment.

Since: JDK1.0

Member Summary

Constructors

[Applet\(\)](#)

Methods

void	setStub(AppletStub)
boolean	isActive()
URL	getDocumentBase()
URL	getCodeBase()
String	getParameter(String)
AppletContext	getAppletContext()
void	resize(int, int)
void	resize(Dimension)
void	showStatus(String)
Image	getImage(URL)
Image	getImage(URL, String)
AudioClip	newAudioClip(URL)
AudioClip	getAudioClip(URL)
AudioClip	getAudioClip(URL, String)
String	getAppletInfo()
Locale	getLocale()

Member Summary

String[][]	getParameterInfo()
void	play(URL)
void	play(URL, String)
void	init()
void	start()
void	stop()
void	destroy()

Inherited Member Summary**Fields inherited from class java.awt.Component**

BOTTOM_ALIGNMENT, CENTER_ALIGNMENT, LEFT_ALIGNMENT, RIGHT_ALIGNMENT, TOP_ALIGNMENT

Fields inherited from interface java.awt.image.ImageObserver

ABORT, ALLBITS, ERROR, FRAMEBITS, HEIGHT, PROPERTIES, SOMEBITS, WIDTH

Methods inherited from class java.awt.Panel

addNotify

Methods inherited from class java.awt.Container

add, add, add, add, add, add, addContainerListener, addImpl, countComponents, deliverEvent, doLayout, findComponentAt, findComponentAt, getAlignmentX, getAlignmentY, getComponent, getComponentAt, getComponentAt, getComponentCount, getComponents, getInsets, getLayout, getMaximumSize, getMinimumSize, getPreferredSize, insets, invalidate, isAncestorOf, layout, list, list, locate, minimumSize, paint, paintComponents, paramString, preferredSize, print, printComponents, processContainerEvent, processEvent, remove, remove, removeAll, removeContainerListener, removeNotify, setCursor, setFont, setLayout, update, validate, validateTree

Methods inherited from class java.awt.Component

Inherited Member Summary

action, add, addComponentListener, addFocusListener, addInputMethodListener, addKeyListener, addMouseListener, addMouseMotionListener, addPropertyChangeListener, addPropertyChangeListener, bounds, checkImage, checkImage, coalesceEvents, contains, contains, createImage, createImage, disable, disableEvents, dispatchEvent, enable, enable, enableEvents, enableInputMethods, firePropertyChange, getBackground, getBounds, getBounds, getColorModel, getComponentOrientation, getCursor, getDropTarget, getFont, getFontMetrics, getForeground, getGraphics, getHeight, getInputContext, getInputMethodRequests, getLocation, getLocation, getLocationOnScreen, getName, getParent, getPeer, getSize, getSize, getToolkit, getTreeLock, getWidth, getX, getY, gotFocus, handleEvent, hasFocus, hide, imageUpdate, inside, isDisplayable, isDoubleBuffered, isEnabled, isFocusTraversable, isLightweight, isOpaque, isShowing, isValid, isVisible, keyDown, keyUp, list, list, list, location, lostFocus, mouseDown, mouseDrag, mouseEnter, mouseExit, mouseMove, mouseUp, move, nextFocus, paintAll, postEvent, prepareImage, prepareImage, printAll, processComponentEvent, processFocusEvent, processInputMethodEvent, processKeyEvent, processMouseEvent, processMouseMotionEvent, remove, removeComponentListener, removeFocusListener, removeInputMethodListener, removeKeyListener, removeMouseListener, removeMouseMotionListener, removePropertyChangeListener, removePropertyChangeListener, repaint, repaint, repaint, repaint, requestFocus, reshape, setBackground, setBounds, setBounds, setComponentOrientation, setDropTarget, setEnabled, setForeground, setLocale, setLocation, setLocation, setName, setSize, setSize, setVisible, show, show, size, toString, transferFocus

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, wait, wait, wait

Methods inherited from interface java.awt.image.ImageObserver

imageUpdate

Methods inherited from interface java.awt.MenuContainer

getFont, postEvent, remove

Constructors

Applet()

```
public Applet()
```

Methods

destroy()

```
public void destroy()
```

Called by the browser or applet viewer to inform this applet that it is being reclaimed and that it should destroy any resources that it has allocated. The `stop` method will always be called before `destroy`.

A subclass of `Applet` should override this method if it has any operation that it wants to perform before it is destroyed. For example, an applet with threads would use the `init` method to create the threads and the `destroy` method to kill them.

The implementation of this method provided by the `Applet` class does nothing.

See Also: [init\(\)](#), [start\(\)](#), [stop\(\)](#)

getAppletContext()

```
public AppletContext getAppletContext()
```

Determines this applet's context, which allows the applet to query and affect the environment in which it runs.

This environment of an applet represents the document that contains the applet.

Returns: the applet's context.

getAppletInfo()

```
public java.lang.String getAppletInfo()
```

Returns information about this applet. An applet should override this method to return a `String` containing information about the author, version, and copyright of the applet.

The implementation of this method provided by the `Applet` class returns `null`.

Returns: a string containing information about the author, version, and copyright of the applet.

getAudioClip(URL)

```
public AudioClip getAudioClip(java.net.URL)
```

Returns the `AudioClip` object specified by the `URL` argument.

This method always returns immediately, whether or not the audio clip exists. When this applet attempts to play the audio clip, the data will be loaded.

Parameters:

`url` - an absolute `URL` giving the location of the audio clip.

Returns: the audio clip at the specified `URL`.

See Also: [AudioClip](#)

getAudioClip(URL, String)

```
public AudioClip getAudioClip(java.net.URL, java.lang.String)
```

Returns the `AudioClip` object specified by the `URL` and `name` arguments.

This method always returns immediately, whether or not the audio clip exists. When this applet attempts to play the audio clip, the data will be loaded.

Parameters:

`url` - an absolute `URL` giving the base location of the audio clip.

`name` - the location of the audio clip, relative to the `url` argument.

`getCodeBase()`

Returns: the audio clip at the specified URL.

See Also: [AudioClip](#)

getCodeBase()

```
public java.net.URL getCodeBase()
```

Gets the base URL. This is the URL of the applet itself.

Returns: the URL#_top_ of this applet.

See Also: [getDocumentBase\(\)](#)

getDocumentBase()

```
public java.net.URL getDocumentBase()
```

Gets the document URL. This is the URL of the document in which the applet is embedded.

Returns: the URL#_top_ of the document that contains this applet.

See Also: [getCodeBase\(\)](#)

getImage(URL)

```
public java.awt.Image getImage(java.net.URL)
```

Returns an `Image` object that can then be painted on the screen. The `url` that is passed as an argument must specify an absolute URL.

This method always returns immediately, whether or not the image exists. When this applet attempts to draw the image on the screen, the data will be loaded. The graphics primitives that draw the image will incrementally paint on the screen.

Parameters:

`url` - an absolute URL giving the location of the image.

Returns: the image at the specified URL.

See Also: `java.awt.Image`

getImage(URL, String)

```
public java.awt.Image getImage(java.net.URL, java.lang.String)
```

Returns an `Image` object that can then be painted on the screen. The `url` argument must specify an absolute URL. The `name` argument is a specifier that is relative to the `url` argument.

This method always returns immediately, whether or not the image exists. When this applet attempts to draw the image on the screen, the data will be loaded. The graphics primitives that draw the image will incrementally paint on the screen.

Parameters:

`url` - an absolute URL giving the base location of the image.

`name` - the location of the image, relative to the `url` argument.

Returns: the image at the specified URL.

See Also: `java.awt.Image`

getLocale()

```
public java.util.Locale getLocale()
```

Gets the Locale for the applet, if it has been set. If no Locale has been set, then the default Locale is returned.

Overrides: `java.awt.Component.getLocale()` in class `java.awt.Component`

Returns: the Locale for the applet

Since: JDK1.1

getParameter(String)

```
public java.lang.String getParameter(java.lang.String)
```

Returns the value of the named parameter in the HTML tag. For example, if this applet is specified as

```
<applet code="Clock" width=50 height=50>
<param name=Color value="blue">
</applet>
```

then a call to `getParameter("Color")` returns the value "blue".

The name argument is case insensitive.

Parameters:

name - a parameter name.

Returns: the value of the named parameter.

getParameterInfo()

```
public java.lang.String getParameterInfo()
```

Returns information about the parameters that are understood by this applet. An applet should override this method to return an array of `Strings` describing these parameters.

Each element of the array should be a set of three `Strings` containing the name, the type, and a description. For example:

init()

```
String pinfo[][] = {
    {"fps", "1-10", "frames per second"},
    {"repeat", "boolean", "repeat image loop"},
    {"imgs", "url", "images directory"}
};
```

The implementation of this method provided by the `Applet` class returns `null`.

Returns: an array describing the parameters this applet looks for.

init()

```
public void init()
```

Called by the browser or applet viewer to inform this applet that it has been loaded into the system. It is always called before the first time that the `start` method is called.

A subclass of `Applet` should override this method if it has initialization to perform. For example, an applet with threads would use the `init` method to create the threads and the `destroy` method to kill them.

The implementation of this method provided by the `Applet` class does nothing.

See Also: [destroy\(\)](#), [start\(\)](#), [stop\(\)](#)

isActive()

```
public boolean isActive()
```

Determines if this applet is active. An applet is marked active just before its `start` method is called. It becomes inactive just before its `stop` method is called.

Returns: `true` if the applet is active; `false` otherwise.

See Also: [start\(\)](#), [stop\(\)](#)

newAudioClip(URL)

```
public static final AudioClip newAudioClip(java.net.URL)
```

Get an audio clip from the given URL

Parameters:

`url` - Points to the audio clip

Since: JDK1.2

play(URL)

```
public void play(java.net.URL)
```

Plays the audio clip at the specified absolute URL. Nothing happens if the audio clip cannot be found.

Parameters:

`url` - an absolute URL giving the location of the audio clip.

play(URL, String)

```
public void play(java.net.URL, java.lang.String)
```

Plays the audio clip given the URL and a specifier that is relative to it. Nothing happens if the audio clip cannot be found.

Parameters:

- url - an absolute URL giving the base location of the audio clip.
- name - the location of the audio clip, relative to the url argument.

resize(Dimension)

```
public void resize(java.awt.Dimension)
```

Requests that this applet be resized.

Overrides: java.awt.Component.resize(java.awt.Dimension) in class java.awt.Component

Parameters:

- d - an object giving the new width and height.

resize(int, int)

```
public void resize(int, int)
```

Requests that this applet be resized.

Overrides: java.awt.Component.resize(int, int) in class java.awt.Component

Parameters:

- width - the new requested width for the applet.
- height - the new requested height for the applet.

setStub(AppletStub)

```
public final void setStub(AppletStub)
```

Sets this applet's stub. This is done automatically by the system.

Parameters:

- stub - the new stub.

showStatus(String)

```
public void showStatus(java.lang.String)
```

Requests that the argument string be displayed in the "status window". Many browsers and applet viewers provide such a window, where the application can inform users of its current state.

Parameters:

- msg - a string to display in the status window.

start()

stop()

```
public void start()
```

Called by the browser or applet viewer to inform this applet that it should start its execution. It is called after the `init` method and each time the applet is revisited in a Web page.

A subclass of `Applet` should override this method if it has any operation that it wants to perform each time the Web page containing it is visited. For example, an applet with animation might want to use the `start` method to resume animation, and the `stop` method to suspend the animation.

The implementation of this method provided by the `Applet` class does nothing.

See Also: [destroy\(\)](#), [init\(\)](#), [stop\(\)](#)

stop()

```
public void stop()
```

Called by the browser or applet viewer to inform this applet that it should stop its execution. It is called when the Web page that contains this applet has been replaced by another page, and also just before the applet is to be destroyed.

A subclass of `Applet` should override this method if it has any operation that it wants to perform each time the Web page containing it is no longer visible. For example, an applet with animation might want to use the `start` method to resume animation, and the `stop` method to suspend the animation.

The implementation of this method provided by the `Applet` class does nothing.

See Also: [destroy\(\)](#), [init\(\)](#)

java.applet AppletContext

Syntax

```
public interface AppletContext
```

Description

This interface corresponds to an applet's environment: the document containing the applet and the other applets in the same document.

The methods in this interface can be used by an applet to obtain information about its environment.

Since: JDK1.0

Member Summary

Methods

AudioClip	getAudioClip(URL)
Image	getImage(URL)
Applet	getApplet(String)
Enumeration	getApplets()
void	showDocument(URL)
void	showDocument(URL, String)
void	showStatus(String)

Methods

getApplet(String)

```
public Applet getApplet(java.lang.String)
```

Finds and returns the applet in the document represented by this applet context with the given name. The name can be set in the HTML tag by setting the name attribute.

Parameters:

name - an applet name.

Returns: the applet with the given name, or null if not found.

getApplets()

```
public java.util.Enumeration getApplets()
```

Finds all the applets in the document represented by this applet context.

Returns: an enumeration of all applets in the document represented by this applet context.

getAudioClip(URL)

```
public AudioClip getAudioClip(java.net.URL)
```

Creates an audio clip.

Parameters:

`url` - an absolute URL giving the location of the audio clip.

Returns: the audio clip at the specified URL.

getImage(URL)

```
public java.awt.Image getImage(java.net.URL)
```

Returns an `Image` object that can then be painted on the screen. The `url` argument that is passed as an argument must specify an absolute URL.

This method always returns immediately, whether or not the image exists. When the applet attempts to draw the image on the screen, the data will be loaded. The graphics primitives that draw the image will incrementally paint on the screen.

Parameters:

`url` - an absolute URL giving the location of the image.

Returns: the image at the specified URL.

See Also: `java.awt.Image`

showDocument(URL)

```
public void showDocument(java.net.URL)
```

Replaces the Web page currently being viewed with the given URL. This method may be ignored by applet contexts that are not browsers.

Parameters:

`url` - an absolute URL giving the location of the document.

showDocument(URL, String)

```
public void showDocument(java.net.URL, java.lang.String)
```

Requests that the browser or applet viewer show the Web page indicated by the `url` argument. The `target` argument indicates in which HTML frame the document is to be displayed. The target argument is interpreted as follows:

"_self" Show in the window and frame that contain the applet. "_parent" Show in the applet's parent frame. If the applet's frame has no parent frame, acts the same as "_self". "_top" Show in the top-level frame of the applet's window. If the applet's frame is the top-level frame, acts the same as "_self". "_blank" Show in a new, unnamed top-level window. *name* Show in the frame or window named *name*. If a target named *name* does not already exist, a new top-level window with the specified name is created, and the document is shown there.

An applet viewer or browser is free to ignore `showDocument`.

Parameters:

`url` - an absolute URL giving the location of the document.

`target` - a `String` indicating where to display the page.

showStatus(String)

```
public void showStatus(java.lang.String)
```

Requests that the argument string be displayed in the "status window". Many browsers and applet viewers provide such a window, where the application can inform users of its current state.

Parameters:

`status` - a string to display in the status window.

java.applet AppletStub

Syntax

```
public interface AppletStub
```

Description

When an applet is first created, an applet stub is attached to it using the applet's `setStub` method. This stub serves as the interface between the applet and the browser environment or applet viewer environment in which the application is running.

Since: JDK1.0

See Also: [setStub\(AppletStub\)](#)

Member Summary

Methods

boolean	isActive()
URL	getDocumentBase()
URL	getCodeBase()
String	getParameter(String)
AppletContext	getAppletContext()
void	appletResize(int, int)

Methods

appletResize(int, int)

```
public void appletResize(int, int)
```

Called when the applet wants to be resized.

Parameters:

`width` - the new requested width for the applet.

`height` - the new requested height for the applet.

getAppletContext()

```
public AppletContext getAppletContext()
```

Gets a handler to the applet's context.

Returns: the applet's context.

getCodeBase()

```
public java.net.URL getCodeBase()
```

Gets the base URL.

Returns: the URL of the applet.

getDocumentBase()

```
public java.net.URL getDocumentBase()
```

Gets the document URL.

Returns: the URL of the document containing the applet.

getParameter(String)

```
public java.lang.String getParameter(java.lang.String)
```

Returns the value of the named parameter in the HTML tag. For example, if an applet is specified as

```
<applet code="Clock" width=50 height=50>
<param name=Color value="blue">
</applet>
```

then a call to `getParameter("Color")` returns the value "blue".

Parameters:

name - a parameter name.

Returns: the value of the named parameter.

isActive()

```
public boolean isActive()
```

Determines if the applet is active. An applet is active just before its `start` method is called. It becomes inactive just before its `stop` method is called.

Returns: `true` if the applet is active; `false` otherwise.

java.applet AudioClip

Syntax

```
public interface AudioClip
```

Description

The `AudioClip` interface is a simple abstraction for playing a sound clip. Multiple `AudioClip` items can be playing at the same time, and the resulting sound is mixed together to produce a composite.

Since: JDK1.0

Member Summary

Methods

```
void play\(\)  
void loop\(\)  
void stop\(\)
```

Methods

loop()

```
public void loop()
```

Starts playing this audio clip in a loop.

play()

```
public void play()
```

Starts playing this audio clip. Each time this method is called, the clip is restarted from the beginning.

stop()

```
public void stop()
```

Stops playing this audio clip.

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