| | [**Overview**](http://docs.google.com/overview-summary.html) | **Package** | Class | [**Use**](http://docs.google.com/package-use.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 PACKAGE**](http://docs.google.com/javax/net/ssl/package-summary.html)   [**NEXT PACKAGE**](http://docs.google.com/javax/print/attribute/package-summary.html) | [**FRAMES**](http://docs.google.com/index.html?javax/print/package-summary.html)    [**NO FRAMES**](http://docs.google.com/package-summary.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

## Package javax.print

Provides the principal classes and interfaces for the JavaTM Print Service API.

**See:**

[**Description**](#3znysh7)

| **Interface Summary** | |
| --- | --- |
| [**AttributeException**](http://docs.google.com/javax/print/AttributeException.html) | Interface AttributeException is a mixin interface which a subclass of [PrintException](http://docs.google.com/javax/print/PrintException.html) can implement to report an error condition involving one or more printing attributes that a particular Print Service instance does not support. |
| [**CancelablePrintJob**](http://docs.google.com/javax/print/CancelablePrintJob.html) | This interface is used by a printing application to cancel a print job. |
| [**Doc**](http://docs.google.com/javax/print/Doc.html) | Interface Doc specifies the interface for an object that supplies one piece of print data for a Print Job. |
| [**DocPrintJob**](http://docs.google.com/javax/print/DocPrintJob.html) | This interface represents a print job that can print a specified document with a set of job attributes. |
| [**FlavorException**](http://docs.google.com/javax/print/FlavorException.html) | Interface FlavorException is a mixin interface which a subclass of [PrintException](http://docs.google.com/javax/print/PrintException.html) can implement to report an error condition involving a doc flavor or flavors (class [DocFlavor](http://docs.google.com/javax/print/DocFlavor.html)). |
| [**MultiDoc**](http://docs.google.com/javax/print/MultiDoc.html) | Interface MultiDoc specifies the interface for an object that supplies more than one piece of print data for a Print Job. |
| [**MultiDocPrintJob**](http://docs.google.com/javax/print/MultiDocPrintJob.html) | Obtained from a MultiDocPrintService, a MultiDocPrintJob can print a specified collection of documents as a single print job with a set of job attributes. |
| [**MultiDocPrintService**](http://docs.google.com/javax/print/MultiDocPrintService.html) | Interface MultiPrintService is the factory for a MultiDocPrintJob. |
| [**PrintService**](http://docs.google.com/javax/print/PrintService.html) | Interface PrintService is the factory for a DocPrintJob. |
| [**URIException**](http://docs.google.com/javax/print/URIException.html) | Interface URIException is a mixin interface which a subclass of [PrintException](http://docs.google.com/javax/print/PrintException.html) can implement to report an error condition involving a URI address. |

| **Class Summary** | |
| --- | --- |
| [**DocFlavor**](http://docs.google.com/javax/print/DocFlavor.html) | Class DocFlavor encapsulates an object that specifies the format in which print data is supplied to a [DocPrintJob](http://docs.google.com/javax/print/DocPrintJob.html). |
| [**DocFlavor.BYTE\_ARRAY**](http://docs.google.com/javax/print/DocFlavor.BYTE_ARRAY.html) | Class DocFlavor.BYTE\_ARRAY provides predefined static constant DocFlavor objects for example doc flavors using a byte array (byte[]) as the print data representation class. |
| [**DocFlavor.CHAR\_ARRAY**](http://docs.google.com/javax/print/DocFlavor.CHAR_ARRAY.html) | Class DocFlavor.CHAR\_ARRAY provides predefined static constant DocFlavor objects for example doc flavors using a character array (char[]) as the print data representation class. |
| [**DocFlavor.INPUT\_STREAM**](http://docs.google.com/javax/print/DocFlavor.INPUT_STREAM.html) | Class DocFlavor.INPUT\_STREAM provides predefined static constant DocFlavor objects for example doc flavors using a byte stream ([java.io.InputStream](http://docs.google.com/java/io/InputStream.html)) as the print data representation class. |
| [**DocFlavor.READER**](http://docs.google.com/javax/print/DocFlavor.READER.html) | Class DocFlavor.READER provides predefined static constant DocFlavor objects for example doc flavors using a character stream ([java.io.Reader](http://docs.google.com/java/io/Reader.html)) as the print data representation class. |
| [**DocFlavor.SERVICE\_FORMATTED**](http://docs.google.com/javax/print/DocFlavor.SERVICE_FORMATTED.html) | Class DocFlavor.SERVICE\_FORMATTED provides predefined static constant DocFlavor objects for example doc flavors for service formatted print data. |
| [**DocFlavor.STRING**](http://docs.google.com/javax/print/DocFlavor.STRING.html) | Class DocFlavor.STRING provides predefined static constant DocFlavor objects for example doc flavors using a string ([java.lang.String](http://docs.google.com/java/lang/String.html)) as the print data representation class. |
| [**DocFlavor.URL**](http://docs.google.com/javax/print/DocFlavor.URL.html) | Class DocFlavor.URL provides predefined static constant DocFlavor objects. |
| [**PrintServiceLookup**](http://docs.google.com/javax/print/PrintServiceLookup.html) | Implementations of this class provide lookup services for print services (typically equivalent to printers) of a particular type. |
| [**ServiceUI**](http://docs.google.com/javax/print/ServiceUI.html) | This class is a collection of UI convenience methods which provide a graphical user dialog for browsing print services looked up through the Java Print Service API. |
| [**ServiceUIFactory**](http://docs.google.com/javax/print/ServiceUIFactory.html) | Services may optionally provide UIs which allow different styles of interaction in different roles. |
| [**SimpleDoc**](http://docs.google.com/javax/print/SimpleDoc.html) | This class is an implementation of interface Doc that can be used in many common printing requests. |
| [**StreamPrintService**](http://docs.google.com/javax/print/StreamPrintService.html) | This class extends [PrintService](http://docs.google.com/javax/print/PrintService.html) and represents a print service that prints data in different formats to a client-provided output stream. |
| [**StreamPrintServiceFactory**](http://docs.google.com/javax/print/StreamPrintServiceFactory.html) | A StreamPrintServiceFactory is the factory for [StreamPrintService](http://docs.google.com/javax/print/StreamPrintService.html) instances, which can print to an output stream in a particular document format described as a mime type. |

| **Exception Summary** | |
| --- | --- |
| [**PrintException**](http://docs.google.com/javax/print/PrintException.html) | Class PrintException encapsulates a printing-related error condition that occurred while using a Print Service instance. |

## Package javax.print Description

Provides the principal classes and interfaces for the JavaTM Print Service API. The Java Print Service API enables client and server applications to:

* Discover and select print services based on their capabilities
* Specify the format of print data
* Submit print jobs to services that support the document type to be printed.

### Print Service Discovery

An application invokes the static methods of the abstract class [PrintServiceLookup](http://docs.google.com/javax/print/PrintServiceLookup.html) to locate print services that have the capabilities to satisfy the application's print request. For example, to print a double-sided document, the application first needs to find printers that have the double-sided printing capability.

The JDK includes PrintServiceLookup implementations that can locate the standard platform printers. To locate other types of printers, such as IPP printers or JINI printers, a print-service provider can write implementations of PrintServiceLookup. The print-service provider can dynamically install these PrintServiceLookup implementations using the  [SPI JAR file specification](http://docs.google.com/technotes/guides/jar/jar.html#Service%20Provider).

### Attribute Definitions

The [javax.print.attribute](http://docs.google.com/javax/print/attribute/package-summary.html) and [javax.print.attribute.standard](http://docs.google.com/javax/print/attribute/standard/package-summary.html) packages define print attributes, which describe the capabilities of a print service, specify the requirements of a print job, and track the progress of a print job.

The javax.print.attribute package describes the types of attributes and how they can be collected into sets. The javax.print.attribute.standard package enumerates all of the standard attributes supported by the API, most of which are implementations of attributes specified in the IETF Specification,  [RFC 2911 Internet Printing Protocol, 1.1: Model and Semantics](http://www.ietf.org/rfc/rfc2911.txt), dated September 2000. The attributes specified in javax.print.attribute.standard include common capabilites, such as: resolution, copies, media sizes, job priority, and page ranges.

### Document Type Specification

The [DocFlavor](http://docs.google.com/javax/print/DocFlavor.html) class represents the print data format, such as JPEG or PostScript. A DocFlavor object consists of a MIME type, which describes the format, and a document representation class name that indicates how the document is delivered to the printer or output stream. An application uses the DocFlavor and an attribute set to find printers that can print the document type specified by the DocFlavor and have the capabilities specified by the attribute set.

### Using the API

A typical application using the Java Print Service API performs these steps to process a print request:

1. Chooses a DocFlavor.
2. Creates a set of attributes.
3. Locates a print service that can handle the print request as specified by the DocFlavor and the attribute set.
4. Creates a [Doc](http://docs.google.com/javax/print/Doc.html) object encapsulating the DocFlavor and the actual print data, which can take many forms including: a Postscript file, a JPEG image, a URL, or plain text.
5. Gets a print job, represented by [DocPrintJob](http://docs.google.com/javax/print/DocPrintJob.html), from the print service.
6. Calls the print method of the print job.

The following code sample demonstrates a typical use of the Java Print Service API: locating printers that can print five double-sided copies of a Postscript document on size A4 paper, creating a print job from one of the returned print services, and calling print.

FileInputStream psStream;  
try {  
 psStream = new FileInputStream("file.ps");  
} catch (FileNotFoundException ffne) {  
}  
if (psStream == null) {  
 return;  
}  
  
DocFlavor psInFormat = DocFlavor.INPUT\_STREAM.POSTSCRIPT;  
Doc myDoc = new SimpleDoc(psStream, psInFormat, null);   
PrintRequestAttributeSet aset =   
 new HashPrintRequestAttributeSet();  
aset.add(new Copies(5));  
aset.add(MediaSize.A4);  
aset.add(Sides.DUPLEX);  
PrintService[] services =   
 PrintServiceLookup.lookupPrintServices(psInFormat, aset);  
if (services.length > 0) {  
 DocPrintJob job = services[0].createPrintJob();  
 try {  
 job.print(myDoc, aset);  
 } catch (PrintException pe) {}  
}

Please note: In the javax.print APIs, a null reference parameter to methods is incorrect unless explicitly documented on the method as having a meaningful interpretation. Usage to the contrary is incorrect coding and may result in a run time exception either immediately or at some later time. IllegalArgumentException and NullPointerException are examples of typical and acceptable run time exceptions for such cases.

**Since:** 1.4

| | [**Overview**](http://docs.google.com/overview-summary.html) | **Package** | Class | [**Use**](http://docs.google.com/package-use.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 PACKAGE**](http://docs.google.com/javax/net/ssl/package-summary.html)   [**NEXT PACKAGE**](http://docs.google.com/javax/print/attribute/package-summary.html) | [**FRAMES**](http://docs.google.com/index.html?javax/print/package-summary.html)    [**NO FRAMES**](http://docs.google.com/package-summary.html)     [**All Classes**](http://docs.google.com/allclasses-noframe.html) |

[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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