



WE GET IT. WE SPEAK IT. WE KNOW IT.

WWW.ROBERTHALF.JP
(03) 5219-6633

QUICK REFERENCE GUIDE TO JZEE

WE GET IT. WE SPEAK IT. WE KNOW IT.®



ABOUT ROBERT HALF TECHNOLOGY...

With more than 100 locations in Asia, Europe and North America, Robert Half Technology is a leading provider of IT professionals for initiatives ranging from web development and multiplatform systems integration to network engineering and technical support. In Japan, Robert Half Technology offers online job searches at www.roberthalf.jp.

This Quick Reference Guide is one of the many ways that Robert Half Technology provides companies and IT professionals with valuable resources for businesses and career development. In addition, we offer timely career and management-related information through complimentary publications, such as salary guides, industry reports and white papers. To take advantage of these services, please call Robert Half Technology in Japan at **(03) 5219-6633**.

(03) 5219-6633

WWW.ROBERTHALF.JP

WE GET IT. WE SPEAK IT. WE KNOW IT.



Robert Half[®]
Technology

Introduction

The Java 2 Platform, Enterprise Edition (J2EE) is built on the Java 2 Platform, Standard Edition (J2SE). J2EE adds features to J2SE that can bring a complete, stable, secure and fast Java platform to the enterprise level. It is a set of specifications and practices that enable solutions for developing, deploying, and managing multi-tier server-centric applications. It includes the following benefits:

- Complete Web services support
- Simpler, faster application development compared to earlier releases
- Compatibility with products from many vendors
- Connectivity to existing applications and systems
- The ability to move existing applications to the Web and to

©2005 Robert Half International Inc. All registered trademarks, trademarks, and service marks mentioned in this guide are the property of their respective companies.

Table of Contents

New Features in J2EE	2
Related Technologies	3
Short Descriptions of JDK Packages	4
Abbreviations	6
Primitive Data Types	9
Operators	10
Regex Operators	12
Characters	12
Character Classes	13
Predefined Character Classes	13
Quantifiers	14
Anchors	14
Errors	15
Exceptions	16
Converting Data Types to Objects	21

New Features in J2EE

Feature	Description
JAX-RPC-1.1 API	Allows interoperability with Web services based on WSDL and SOAP.
JSR 921 specification	Uses the JAX-RPC programming model to define deployment requirements.
Support for WS-I Basic Profile 1.0	Enables platform Web services interoperability.
J2EE Management 1.0 API	Uses JMX to define the information model for J2EE management.
J2EE Deployment 1.1	Provides a standard API for application deployment.
Enhanced servlet functionality	Support for request listeners and enhanced filters.
Simplified JSP development	Enabled by a simple expression language, tag files, and a simpler tag extension API.
J2EE Connector Architecture	Provides an incoming resource adapter and makes JMS pluggable.
Improved EJB	Web service endpoints, a timer service, enhancements to EJB QL and message-driven beans.
Enhanced deployment descriptors	Defined using the XML schema.

Related Technologies

Technology	Description
Enterprise JavaBeans (EJB)	A server-side component architecture for writing reusable business logic and portable enterprise applications.
Java Database Connectivity (JDBC)	An API used to connect the J2EE platform to a data source.
Java Message Service (JMS)	An API used to invoke operations on an enterprise message system.
Java Naming and Directory Interface (JNDI)	An API used to manage naming and directories.
Java Server Page (JSP) er.	An extensible Web technology that generates dynamic content for a client such as a Web browser. The content can be HTML elements, XML elements, JSP elements, or server-side Java objects.
Javamail	An API used to send and receive e-mail.
Servlet	A Java program that generates dynamic content, and interacts with Web applications. Used to extend the functionality of a Web server.

Short Descriptions of JDK Packages

Package	Description
java.applet	Classes used to create applets and classes used by an applet to communicate with its context.
java.awt	Classes used for creating user interfaces and describing their components, such as buttons and scroll bars.
java.beans	Classes used for developing beans or used by the beans during operation.
java.io	Classes that enable data input and output. Data can be transmitted through data streams, serialization, or the file system.
java.lang	Basic Java classes, including Object and Class. Object is the root of the class hierarchy, and instances of Class are used during runtime.
java.math	Classes used in arithmetic where control over the precision of the value is necessary. The BigDecimal class is useful for currency calculations and other operations where rounding is an issue. The BigInteger class provides standard arithmetic operations, plus modular arithmetic, bit manipulation, and other miscellaneous operations.
java.net	Classes used to implement networking applications.
java.nio	Buffer classes used as containers for data. A buffer can hold a specified amount of data of a specified primitive type.
java.rmi	Allows remote method invocation, so that an object on one JVM can invoke methods on a different JVM.
java.security	Classes for access control, cryptographic public key pairs, and exportable cryptographic operations.
java.sql	The API that allows Java to access and process data stored in, for example, a relational database.

Package	Description
java.text	Classes and interfaces for handling text, numbers, and messages.
java.util	Utilities that handle collections and bit arrays, dates and times, internationalization, random number generation, and other tasks that may be needed by different parts of an application.
javax.accessibility	The Java Accessibility API, which enables an application to work with screen readers, screen magnifiers, and other assistive technologies.
javax.activity	Contains only exceptions, no classes. The exceptions are related to Activity service and may be thrown by the ORB when arguments are unmarshalled at a remote JVM.
javax.crypto	Classes used for cryptographic operations, including encryption, key generation and key agreement, and MAC generation.
javax.imageio	Classes for reading and writing images in various formats.
javax.naming	Classes for accessing naming services using the JNDI.
javax.net	Classes for networking applications, including factories for creating sockets.
javax.print	Classes and interfaces used with the Java Print Service API to handle printing jobs.
javax.rmi	APIs for use with RMI-IIOP (Java Remote Method Invocation technology over Internet Inter-Orb Protocol).
javax.sql	The API for data source access and processing on the server side.
javax.swing	A set of Java components that work the same on all platforms (as much as possible).
javax.transaction	Exceptions thrown by the ORB machinery during unmarshalling.
javax.xml	Defines XML constants and functionality based on standards from the World Wide Web Consortium.

continued

Package	Description
org.omg.IOP	The portions of the IOP module specified by the Object Management Group that are referenced as return values or parameter types in public APIs.
org.w3c.dom	Interfaces for the Document Object Model, which allows programs to access and update the content and structure of documents dynamically.

Abbreviations

Abbreviation	Explanation
API	application programming interface
BLOB	binary large object
CGI	Common Gateway Interface
CLOB	character large object
CORBA	Common Object Request Broker Architecture
DII	Dynamic Invocation Interface
DOM	Document Object Model
DTD	Document Type Definition

Abbreviation	Explanation
EJB	Enterprise JavaBeans
IDL	Interface Definition Language
INS	Interoperable Naming Service
IOR	Interoperable Object Reference
JAR	Java Archive
JAXP	Java API for XML Parsing
JDBC	Java Database Connectivity
JMS	Java Message Service
JNDI	Java Naming and Directory Interface
JNI	Java Native Interface API
JRMP	Java Remote Method Protocol
JSP	Java Server Page
JTA	Java Transaction API
JVM	Java Virtual Machine
JWS	Java Web Server
LDAP	Lightweight Directory Access Protocol
LOB	Large Object

Abbreviation	Explanation
OODBMS	Object-Oriented DataBase Management System
RMI	Remote Method Invocation
SAX	Simple API for XML Parsing
SPI	Service Provider Interface
URI	Universal Resource Identifier
WAR	Web Archive
WSDL	Web Services Description Language
XSLT	XML Stylesheet

Primitive Data Types

Object Type	Built-in Type	Description	Value Range
Byte	byte	byte-length integer	-128 to 127
Short	short	short integer	-32,768 to 32,767
Integer	int	integer	-2,147,483,648 to 2,147,483,647
Long	long	long integer	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
Float	float	single-precision floating point	IEEE 32-bit standard
Double	double	double-precision floating point	IEEE 64-bit standard
Character	char	character	0 to 65,535 ('\u0000' to '\uffff')
Boolean	boolean	boolean value	"true" or "false"

Operators

Operator	Type	Use
-	Numerical (unary)	Identifies an int or long as negative.
-	Numerical (additive)	“X - Y” returns the value of X minus the value of Y.
--	Numerical (decrement)	Prefix evaluates the operand after the operation, postfix before.
%	Numerical (multiplicative)	“X % Y” returns the remainder after dividing X by Y.
&	Bitwise	Bitwise “and”.
(type)	Other	Cast a value to a new type.
()	Other	List arguments or parameters.
*	Numerical (multiplicative)	“X * Y” returns the value of X multiplied by Y.
.	Other	Access instance members of an object or class members of a class.
/	Numerical (multiplicative)	“X / Y” returns the value of X divided by Y.
?:	Logical	“X ? Y : Z” means “If X, then Y; else Z”.
[]	Other	Declare or create arrays, access array elements.
^	Bitwise	Bitwise “exclusive or”.
	Bitwise	Bitwise “inclusive or”.
~	Bitwise	Bitwise complement.

Operator	Type	Use
+	Numerical (unary)	Identifies a number as positive.
+	Numerical (additive)	“X + Y” returns the value of X plus the value of Y.
++	Numerical (increment)	Prefix evaluates the operand after the operation, postfix before.
<	Comparison	“X < Y” returns “true” if X is less than Y.
<<	Shift	“X << Y” shifts the bits of operand X left by Y positions.
<=	Comparison	“X <= Y” returns “true” if X is less than or equal to Y.
>	Comparison	“X > Y” returns “true” if X is greater than Y.
>=	Comparison	“X >= Y” returns “true” if X is greater than or equal to Y.
>>	Shift	“X >> Y” shifts the bits of operand X right by Y positions.
>>>	Shift	“X >>> Y” shifts the bits of operand X right by Y positions (unsigned).
instanceof	Logical	“X instanceof Y” returns “true” if X is an instance of Y.
new	Other	Create a new object or array.
+	Concatenation (string)	Converts an integral operand to a string before concatenating it to another string.

Regex Operators

Regular expression operators are not strictly a part of J2EE but they are useful to know about.

Characters

Regex Construct	Matches
x	The character x
\\	The backslash character
\\0n	The character with octal value 0n (0 <= n <= 7)
\\0nn	The character with octal value 0nn (0 <= n <= 7)
\\0mnn	The character with octal value 0mnn (0 <= m <= 3, 0 <= n <= 7)
\\xhh	The character with hexadecimal value 0xhh
\\uhhhh	The character with hexadecimal value 0xhhhh
\\t	The tab character ('\\u0009')
\\n	The newline (line feed) character ('\\u000A')
\\r	The carriage-return character ('\\u000D')
\\f	The form-feed character ('\\u000C')
\\a	The alert (bell) character ('\\u0007')
\\e	The escape character ('\\u001B')
\\cx	The control character corresponding to x

Character Classes

Regex Construct	Matches
[abc]	a, b, or c (simple class)
[^abc]	Any character except a, b, or c (negation)
[a-zA-Z]	a through z or A through Z, inclusive (range)
[a-z-[bc]]	a through z, except for b and c: [ad-z] (subtraction)
[a-z-[m-p]]	a through z, except for m through p: [a-lq-z]
[a-z-[^def]]	d, e, or f

Predefined Character Classes

Regex Construct	Matches
.	Any character (may or may not match line terminators)
\d	A digit: [0-9]
\D	A non-digit: [^0-9]
\s	A whitespace character: [\t\n\r\f]
\S	A non-whitespace character: [^\s]
\w	A word character: [a-zA-Z_0-9]
\W	A non-word character: [^\w]

Quantifiers

Regex Construct	Matches
?	Any character zero or one times
*	The preceding element zero or more times
+	The preceding element at least one time
{num}	The preceding element the specified number of times
{min, max}	The preceding element at least min times, but not more than max times

Anchors

Regex Construct	Matches
^	The start of the line
\$	The end of the line
\<	The beginning of a word
\>	The end of a word
\b	The beginning or the end of a word
\B	Any character not at the beginning or end of a word

Errors

Error	Meaning
AnnotationFormatError	The annotation parser tried to read an annotation from a class file but the annotation was malformed.
AssertionError	An assertion has failed.
AWT Error	A serious Abstract Window Toolkit error has occurred.
CoderMalfunctionError	The decodeLoop or encodeLoop method has thrown an unexpected exception.
FactoryConfigurationError	A problem exists with the Parser Factories configuration, such as when a class specified in the system properties cannot be found or instantiated.
LinkageError	A class on which another class has a dependency has changed and is no longer compatible.
ThreadDeath	The stop method with zero arguments in the class Thread has been called.
TransformerFactoryConfigurationError	The Transformer Factories have a configuration problem.
VirtualMachineError	The JVM is broken or has run out of resources.

Exceptions

Exception	Meaning
ACLNotFoundException	A reference has been made to a nonexistent ACL.
ActivationException	A parameter sent to the <code>java.rmi.activation</code> package is invalid.
AlreadyBoundException	A request has been made to bind an object in the registry to a name that is already bound to another object.
ApplicationException	An application-level exception has occurred between the ORB and a stub.
AWTException	A specific Abstract Window Toolkit exception has occurred as detailed in a text message associated with the exception.
BackingStoreException	A preferences operation could not complete because of a problem related to the backing store.
BadAttributeValueExpException	An invalid MBean attribute has been passed to a query constructing method.
BadBinaryOpValueExpException	An invalid expression has been passed to a method for constructing a query.
BadLocationException	A reference has been made to a location that does not exist within the document model.
BadStringOperationException	An invalid string operation has been passed to a method for constructing a query.
BrokenBarrierException	A thread has attempted to wait upon a barrier that is broken, or that entered the broken state while the thread was waiting.
CertificateException	A problem exists with a certificate. May or may not include an explanatory text message.

Exception	Meaning
ClassNotFoundException	An application has tried to load in a class through its string name, but there is no class with that name.
CloneNotSupportedException	The clone method in class Object has been called to clone an object that does not implement cloning.
DataFormatException	A data format error has occurred.
DatatypeConfigurationException	A serious configuration error has occurred.
DestroyFailedException	The destroy method has failed.
ExecutionException	An attempt has been made to retrieve the results of a task that aborted by throwing an exception.
ExpandVetoException	The application prevented a tree from expanding or collapsing.
FontFormatException	The specified font is bad.
GeneralSecurityException	A problem related to security has occurred.
GSSException	A GSS-API error has occurred.
IllegalAccessException	The application does not have access to the definition of the class, field, method, or constructor it is trying to use.
IllegalClassFormatException	Input parameters to ClassFileTransformer.transform are invalid.
InstantiationException	An instance of a class cannot be created because the class object is an interface or an abstract class.
InterruptedException	A paused thread has been interrupted by another thread using the interrupt method in class Thread.
IntrospectionException	An exception has occurred during Introspection, such as a string method name that could not be resolved or a method name has the wrong type signature for its intended use.

Exception	Meaning
InvalidApplicationException	An attempt has been made to apply a subquery expression to an MBean or a qualified attribute expression to an MBean of the wrong class.
InvalidMidiDataException	Inappropriate MIDI data was found.
InvalidPreferencesFormatException	An operation's input does not conform to the appropriate XML document type for a collection of preferences, so the operation could not complete.
InvalidTargetObjectTypeException	An invalid target object type has been specified.
InvocationTargetException	An exception has been thrown by an invoked method or constructor. InvocationTargetException is a checked exception that wraps such an exception.
IOException	An input-output exception has occurred. This is the general class of exceptions produced by failed or interrupted I/O exceptions.
JMXException	An exception, other than a runtime exception, has been thrown by a JMX implementation.
LastOwnerException	An attempt has been made to delete the last owner of an ACL.
LineUnavailableException	A line cannot be opened because it is unavailable.
MidiUnavailableException	The requested MIDI component is unavailable and cannot be opened or created.
MimeTypeParseException	A parsing-related exception has occurred.
NamingException	An error has occurred in the Context or DirContext interface. This is the superclass of all such exceptions.
NoninvertibleTransformException	An operation requiring the inverse of the AffineTransform object, but the AffineTransform object is in a

	non-invertible state.
Exception	Meaning
NoSuchFieldException	The class does not have a field of a specified name.
NoSuchMethodException	The specified method does not exist.
NotBoundException	An attempt has been made to look up or unbind in the registry a name that has no associated binding.
NotOwnerException	A non-owner has attempted to modify an object that can only be modified by the owner.
ParseException	An unexpected parsing error has been encountered.
ParserConfigurationException	There is a serious configuration error.
PrinterException	An exceptional condition has occurred in the print system.
PrintException	A printing-related error condition has occurred while the system was using a Print Service instance.
PrivilegedActionException	An action has thrown a checked exception.
PropertyVetoException	A proposed change to a property is an unacceptable value.
RefreshFailedException	A refresh operation has failed.
RemarshalException	A locate forward exception or an object forward GIOP message has been sent to the ORB, which must remarshal the request.
RuntimeException	An exception has occurred during the normal operation of the JVM.
SAXException	The XML parser or the application has encountered a SAX error.
ServerNotActiveException	The getClientHost method has been called outside of servicing a remote method call.

SQLException	A database access error or another SQL-related error has occurred.
Exception	Meaning
TimeoutException	A blocking operation has timed out.
TooManyListenersException	More than one concurrent listener has attempted to listen to unicast special case of a multicast Event Source.
TransformerException	An exceptional condition has occurred during the transformation process.
UnmodifiableClassException	One of the classes specified by the Instrumentation.redefineClasses cannot be modified.
UnsupportedAudioFileException	A specified file did not contain valid data of a recognized file type and format.
UnsupportedCallbackException	A CallbackHandler does not recognize the specified Callback.
UnsupportedFlavorException	The requested data is not supported in the specified flavor.
UnsupportedLookAndFeelException	The requested look and feel management classes are not present on the user's system.
URISyntaxException	A string could not be parsed as a URI reference.
UserException	A user exception has been encountered by CORBA. All CORBA user exceptions are checked exceptions.
XAException	An error has been encountered in the transaction by the Resource Manager.
XMLParseException	An XML formatted string is being parsed into ModelIMBean objects or XML formatted strings are being

Converting Data Types to Objects

Convert From Type	Convert To	Example
Boolean	object	<code>Boolean bb = new Boolean (true);</code>
Character	object	<code>Character cc = new Character ('a');</code>
Double	object	<code>Double dd = new Double (1.0);</code>
Double	string	<code>String s = Double.toString (20.0);</code>
Integer	object	<code>Integer ii = new Integer (1);</code>
Integer	string	<code>String s = Integer.toString (20);</code>
Integer	string	<code>s = "Answer is:" + 20;</code>

