

## **J Libraries Contents**

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## Directory Layout

The J executables j.exe and j.dll are installed in the main J directory, for example, c:\j401.

The following system subdirectories are created by the J installation:

System\Main	Main libraries and utilities
System\Packages	Packages (e.g. Stats, Printing)
System\Classes	Class definitions (e.g. Grid, Plot)
System\Extras	Various system utilities
System\Examples	Various Examples

The utility scriptdoc can be used to browse script files in these directories.

In addition, two other subdirectories are created:

User	User Definitions
Temp	Temporary files

## System Scripts

System scripts are included in the `system\main`, `system\packages`, `system\classes` and `system\extras` directories.

Scripts that are intended to support user's applications can be accessed by a short name. For example, to load the date utilities script, enter:

```
load 'dates'
```

The filename table that converts these short names into the full filenames, and load locale, is `PUBLIC_j_`. This is defined from file `system\extras\config\scripts.ijs`. This table:

- allows scripts to be accessed using a short name, e.g.

```
load 'jfiles'
```

instead of

```
load 'system\packages\files\jfiles.ijs'
```

- specifies locales into which the scripts are loaded, e.g. `load 'files'` loads the script into the `z` locale. This only applies when the locale is not specified within the script itself.
- provides a lists of script files that can be used under program control.

The filename table is a 3-column matrix with one row per file. Each row contains: short name; full pathname; locale. If the locale is empty, the base locale is assumed.

The following utilities reference the filename tables. They are defined in the `j` locale, but equivalent functions are made available in the `z` locale.

`load`

Loads one or more scripts.

*Form:* [`locale`] `load scriptnames`

`scriptnames` is a list of one or more scripts, and is given as a character or boxed list. `locale` is optional - if given, it specifies the locale into which the scripts are read.

`load` looks up names in the filename tables. If found, the full pathname is used, and if the optional locale were not given, the locale specified in the filename tables is used. For names not found, `load` assumes the script names given are the full pathnames. For example, assuming the filename tables are defined as originally installed, then:

```
load 'format jfiles user\apps\print.ijs'
```

will load `system\main\format.ijs` and `system\packages\files\jfiles.ijs` into the `z` locale, and `user\apps\print.ijs` file into the base locale.

## load

As load, but displays output to the session.

## open

Opens one or more scripts as script windows.

*Form:* open scriptnames

The argument is the same as for load. For example:

```
open 'files format'
```

## require

Loads one or more scripts. The syntax is identical to load. However, if the scripts have been loaded already, it does not reload them, thus reducing the time needed to load scripts.

## scripts

Provides access to the filename table. To list the filename table

```
scripts''
colib      colortab  compare  convert  dates    dd
debug     dir         dll      files    format  gl2
...
```

For a verbose listing, including the full filenames and locales:

```
scripts'v'
colib      c:\j401\system\main\colib.ijs      z
colortab   c:\j401\system\packages\color\colortab.ijs  z
compare    c:\j4\system\main\compare.ijs      z
...
```

## system\main

This is the main script directory.

### Lib scripts

Scripts with "lib" in the name are automatically loaded by the standard profile. In distributing scripts, you can assume that these definitions are available. In addition, these scripts, except for jadelib, are included in any projects built by the Project Manager. jadelib is an exception since it has facilities intended to support development, not runtime applications.

colib	class/object library (z locale)
jadelib	Standard jade library (j locale)
loadlib	script load library (j locale)
stdlib	standard J library (z locale)
winlib	standard windows library (z locale)

### Other scripts

compare	comparison utilities
convert	conversion utilities
dates	date and time utilities
dd	data driver utilities
debug	debug definitions and utilities
dir	directory utilities
dll	utilities for calling DLLs
files	file access utilities
format	formatting utilities
gl2	2D graphics definitions
gl3	3D graphics definitions
misc	miscellaneous utilities
myutil	example scripts for user definitions
numeric	numeric utilities
pack	package utilities
parts	partition functions
regex	Regular expression pattern matching
socket	utilities for using sockets
strings	string manipulation
text	text utilities
trig	trigonometric functions
validate	data validation

## system\packages

This directory contains various utility packages.

autocode\grid	grid autocode
color\cfmt	color formatter
color\cfmtfns	color fmt functions
color\color16	table of 16 primary colors supported by HTML
color\colortab	colortable used in J (from Internet Explorer)
color\ns216	Netscape primary colors (256 color table)
color\ntcolor	name that color (displays color table)
color\rgb	convert between color triples and RGB values
color\wdcolor	color table for wd 'qcolor'
color\xwin	X Windows color table
dde\server1	Sets up J as a hot-link DDE server.
dde\server2	Sets up J as a cold-link DDE server.
files\dbase	dBASE file access utilities
files\jfiles	Component File definitions
files\kfiles	Keyed-file definitions
files\nfiles	file read/write in various formats
finance\actfns	actuarial functions
finance\actutil	actuarial misc utilities
finance\interest	interest functions
graphics\bmp	supports bitmap files
graphics\gnuplot	supports gnuplot for Windows
graphics\gputil	gnuplot utility functions
graphics\isigmain	supports graphics using the isigraph control
graphics\isigraph	loads all isigraph files
graphics\isigutil	isigraph utilities
graphics\vkeys	vkey definitions
math\bigpi	calculate several digits of pi
math\brent	Brent's method in J
math\det	definitions for determinants
math\fermat	fermat - find factor of n near square root
math\gcd	calculate GCD
math\integer	various integer definitions
math\integrat	various methods for numeric integration
math\jacobi	jacobi's method for eigenvalues and vectors
math\legendre	legendre symbol and quadratic residues
math\linear	solve linear equations
math\makemat	make various matrices
math\matfacto	matrix factorization
math\mathutil	math utilities

math\matutil	matrix utilities
math\mean	various means
math\numbers	various number definitions
math\pollard	Pollard factorizations
math\poly	polynomial functions
math\primutil	prime testing programs
math\quatern	definitions for quaternions
math\spline	calculate cubic spline
math\svd	singular value decomposition
misc\datefmt	date formatters
misc\evolute	calculate evolutes
misc\fgh	displays calling sequence for J expressions
misc\fields	symbolic field indexes and access functions.
misc\ieee64	IEEE 64 bit representation of real number
misc\primitiv	names for primitives
misc\rtfview	view rtf text in richedit control
misc\telecom	serial port I/O API cover functions
misc\vkeyshow	shows vkey names
misc\xenos	suggested names for external conjunctions
ocx\graph	GraphLib definitions
ocx\ocxutil	Utilities for OCX controls
print\label	print labels
print\laserjet	LaserJet utilities
print\print	print package
print\printn	prints text in n columns on a page
print\write	write package
regex\regbuild	utilities for building regular expressions
regex\regdemo	regular expression demo
regex\regj	nouns for applying regular expressions to J code
regex\regjbl	build regular expressions for J code
stats\random	various random utilities
stats\statdist	Statistical Distributions
stats\statfns	Statistical functions
stats\stats	load statistics files

## system\classes

This directory contains definitions for J classes.

grid\jfggrid	jfggrid class
grid\jfreport	provides jfreport form
grid\jtable	provides jtable form
grid\jtgrid	jtable grid classe
grid\jwatch	watch form
grid\jwgrid	provides watch grid for data
grid\jzgrid	base grid class
input\jinput	provides jinput form
opengl\jzopengl	base opengl class
opengl\opengl	loads the jzopengl class
pbcb\pbcb	example class: baggage check
pbcb\pbcbx	example extend class baggage check
plot\jzplot	base plot class
plot\plot	session definitions for plot
plot\plotdefs	plot defaults

## **system\extras**

This directory is used for system facilities, such as labs, configuration and help files. The layout is:

extras\config	configuration files
extras\help	help files
extras\java	Java interface support
extras\labs	labs
extras\migrate	migration aids
extras\order	order form
extras\template	template files
extras\util	utilities

## **system\examples**

This directory contains the demos and examples that are available from the menu Studio\Demos....

## **user**

This is an empty directory set up as a convenience for the user's own scripts. The layout is:

classes	class definitions
config	configuration
projects	project files

## **temp**

This is the default directory used for temporary ijs and ijx files created by the J system.

You can choose another directory for this purpose using the /temp start up parameter. This would be useful if J were installed on a LAN where you do not have write access.

## Script Documentation

System scripts are documented in comments in the scripts themselves. The scriptdoc utility can be used to view the documentation. To load enter:

```
load 'scriptdoc'
```

To view script documentation, e.g. for dates and data driver, enter:

```
scriptdoc 'dates dd'
```

### Documentation Conventions

The following conventions are used to document J system scripts, and are recognized by the scriptdoc utility.

Scripts are documented in comment lines (i.e. lines beginning with NB.). Multi-line comments are consecutive lines beginning with NB. with no break. The first line of a multi-line comment is used for summary documentation.

The script itself is documented at the beginning. The first line describes the script, i.e

```
NB. script description...
```

Definitions produced by the script are documented in comments where the first comment line begins NB.\* and has the form:

```
NB.*name type description
```

where type is a single letter:

a	adverb
c	conjunction
n	noun
v	verb

The rest of a multi-line comment for a definition is free form, however, conventionally it may include lines beginning:

form:	describes the usage of the definition, e.g NB. form: calendar year [,months]
example:	example, e.g. NB. example: NB. todate 72460 NB. 1998 5 23

Other NB. comment lines in the script are ignored for documentation purposes.

