Operand stack manipulation operators

operands	operator	results
any	**pop**	-
any_1 any_2	**exch**	any_2 any_1
any	**dup**	any any
any_1 .. any_n n	**copy**	any_1 .. any_n any_1 .. any_n
any_n .. any_0 n	**index**	any_n .. any_0 any_n
any_{n-1} .. any_0 n j	**roll**	$any_{(j-1) \bmod n}$ .. any_0 any_{n-1} .. $any_{j \bmod n}$
# any_1 .. any_n	**clear**	#
# any_1 .. any_n	**count**	# any_1 .. any_n n
-	**mark**	mark
mark any_1 .. any_n	**cleartomark**	-
mark obj_1 .. obj_n	**counttomark**	mark obj_1 .. obj_n n

Arithmetic and math operators

operands	operator	results
num_1 num_2	**add**	num_3
num_1 num_2	**div**	num_3
int_1 int_2	**idiv**	int_3
int_1 int_2	**mod**	reminder
num_1 num_2	**mul**	num_3
num_1 num_2	**sub**	num_3
num_1	**abs**	num_2
num_1	**neg**	num_2
num_1	**ceiling**	num_2
num_1	**floor**	num_2
num_1	**round**	num_2
num_1	**truncate**	num_2
num_1	**sqrt**	num_2
num den	**atan**	angle
angle	**cos**	real
angle	**sin**	real
base exponent	**exp**	real
num	**ln**	real
num	**log**	real
-	**rand**	int
int	**srand**	-
-	**rrand**	int

Array operators

operands	operator	results
int	**array**	arry
-	**[**	mark
mark obj_0 .. obj_{n-1}	**]**	array
array	**length**	int
array index	**get**	any
array index any	**put**	-
array index count	**getinterval**	subarry
$arry_1$ index $arry_2$	**putinterval**	-
array	**aload**	$array_0$ .. $array_{n-1}$ array
any_0 .. any_{n-1} array	**astore**	arry
$array_1$ $array_2$	**copy**	$subarray_2$
array proc	**forall**	-

Dictionary operators

operands	operator	results
int	**dict**	dict
dict	**length**	int
dict	**maxlength**	int
dict	**begin**	-
-	**end**	-
key value	**def**	-
key	**load**	value
key value	**store**	-
dict key	**get**	any
dict key any	**put**	-
dict key	**known**	bool
key	**where**	*If found:* dict true
		If not found: false
$dict_1$ $dict_2$	**copy**	$dict_2$
dict proc	**forall**	-
-	**errordict**	dict
-	**systemdict**	dict
-	**userdict**	dict
-	**currentdict**	dict
-	**countdictstack**	int
array	**dictstack**	subarray

String operators

operands	operator	results
int	**string**	string
string	**length**	int
string index	**get**	int
string index int	**put**	-
string index count	**getinterval**	substring
$string_1$ index $string_2$	**putinterval**	-
$string_1$ $string_2$	**copy**	$substring_2$
string proc	**forall**	-
string seek	**anchorsearch**	*If found:* post match true
		If not found: string false
string seek	**search**	*If found:* post match pre true
		If not found: string false
string	**token**	*If found:* post any true
		If not found: false

Relational, boolean, and bitwise operators

operands	operator	results
any_1 any_2	**eq**	bool
any_1 any_2	**ne**	bool
$num_1\|string_1$ $num_2\|string_2$	**ge**	bool
$num_1\|string_1$ $num_2\|string_2$	**gt**	bool
$num_1\|string_1$ $num_2\|string_2$	**le**	bool
$num_1\|string_1$ $num_2\|string_2$	**lt**	bool
$bool_1\|int_1$ $bool_2\|int_2$	**and**	$bool_3\|int_3$
$bool_1\|int_1$	**not**	$bool_2\|int_2$
$bool_1\|int_1$ $bool_2\|int_2$	**or**	$bool_3\|int_3$
$bool_1\|int_1$ $bool_2\|int_2$	**xor**	$bool_3\|int_3$
-	**true**	true
-	**false**	false
int_1 shift	**bitshift**	int_2

Control operators

operands	operator	results
any	**exec**	-
bool proc	**if**	-
bool $proc_1$ $proc_2$	**ifelse**	-
init incr limit proc	**for**	-
count proc	**repeat**	-
proc	**loop**	-
-	**exit**	-
-	**stop**	-
any	**stopped**	bool
-	**countexecstack**	int
array	**execstack**	subarray
-	**quit**	-
-	**start**	-

Type, attribute, and conversion operators

operands	operator	results
any	**type**	name
any	**cvlit**	any
any	**cvx**	any
any	**xcheck**	bool
array|file|string	**executeonly**	array|file|string
array|dict|file|string	**noaccess**	array|dict|file|string
array|dict|file|string	**readonly**	array|dict|file|string
array|dict|file|string	**rcheck**	bool
array|dict|file|string	**wcheck**	bool
num	**cvi**	int
string	**cvn**	name
num|string	**cvr**	real
any string	**cvs**	substring
num radix string	**cvrs**	substring

File operators

operands	operator	results
$string_1$ $string_2$	**file**	file
file	**closefile**	-
file	**read**	*If end-of-file:* byte true
		If not end-of-file: false
file int	**write**	-
file string	**readhexstring**	substring bool
file string	**writehexstring**	-
file string	**readstring**	substring bool
file string	**writestring**	-

file string **readline** substring bool
file **token** *If found:* any true
                  If not found: false
file **bytesavailable** int
- **flush** -
file **flushfile** -
file **resetfile** -
file **status** bool
string **run** -
- **currentfile** file
string **print** -
any **=** -
any_1 .. any_n **stack** # any_1 .. any_n
any **==** -
any_1 any_n **pstack** # any_1 any_n
- **prompt** -
bool **echo** -

Virtual memory operators

- **save** save
save **restore** -
- **vmstatus** level used maximum

Miscellaneous operators

proc **bind** proc
- **null** null
- **usertime** int
- **version** string

Graphics state operators

- **gsave** -
- **grestore** -
- **grestoreall** -
- **initgraphics** -
num **setlinewidth** -
- **currentlinewidth** num
int **setlinecap** -
- **currentlinecap** int
int **setlinejoin** -
- **currentlinejoin** int
num **setmiterlimit** -
- **curentmiterlimit** num
array offset **setdash** -
- **currentdash** array offset
num **setflat** -
- **currentflat** num
num **setgray** -
- **currentgray** num
hue satur bright **sethsbcolor** -
- **currenthsbcolor** hue satur bright
red green blue **setrgbcolor** -
- **currentrgbcolor** red green blue
frequency rotation proc **setscreen** -
- **currentscreen** frequency rotation proc
proc **settransfer** -
- **currenttransfer** proc

Coordinate system and matrix operators

- **matrix** matrix
- **initmatrix** -
matrix **identmatrix** matrix
matrix **defaultmatrix** matrix
matrix **currentmatrix** matrix
matrix **setmatrix** -
t_x t_y **translate** -
t_x t_y matrix **translate** matrix
s_x s_y **scale** -
s_x s_y matrix **scale** matrix
angle **rotate** -
angle matrix **rotate** matrix
matrix **concat** -
$matrix_1$ $matrix_2$ $matrix_3$ **concatmatrix** $matrix_3$
x y **transform** x' y'
x y matrix **transform** x' y'

xd yd **dtransform** xd' yd'
xd yd matrix **dtransform** xd' yd'
x' y' **itransform** x y
x' y' matrix **itransform** x y
xd' yd' **idtransform** xd yd
xd' yd' matrix **idtransform** xd yd
$matrix_1$ $matrix_2$ **invertmatrix** $matrix_2$

Path construction operators

- **newpath** -
- **currentpoint** x y
x y **moveto** -
d_x d_y **rmoveto** -
x y **lineto** -
d_x d_y **rlineto** -
x y r ang_1 ang_2 **arc** -
x y r ang_1 ang_2 **arcn** -
x_1 y_1 x_2 y_2 r **arcto** xt_1 yt_1 xt_2 yt_2
x_1 y_1 x_2 y_2 x_3 y_3 **curveto** -
dx_1 dy_1 dx_2 dy_2 dx_3 dy_3 **rcurveto** -
- **closepath** -
- **flattenpath** -
- **reversepath** -
- **strokepath** -
string bool **charpath** -
- **clippath** -
- **pathbbox** ll_x ll_y ur_x ur_y
move line curve close **pathforall** -
- **initclip** -
- **clip** -
- **eoclip** -

Painting operators

- **erasepage** -
- **fill** -
- **eofill** -
- **stroke** -
width height bits/sample matrix proc **image** -
width height invert matrix proc **imagemask** -

Device setup and output operators

- **showpage** -
- **copypage** -
matrix width height proc **banddevice** -
matrix width height proc **framedevice** -
- **nulldevice** -
proc **renderbands** -

Character and font operators

key font **definefont** font
key **findfont** font
font num **scalefont** font'
font matrix **makefont** font'
font **setfont** -
- **currentfont** font
string **show** -
a_x a_y string **ashow** -
c_x c_y char a_x a_y string **widthshow** -
c_x c_y char a_x a_y string **awidthshow** -
proc string **kshow** -
string **stringwidth** w_x w_y
- **FontDirectory** dict
- **StandardEncoding** array

Font cache operators

- **cachestatus** bsz bmx msz mmx csz cmx maxbits
w_x w_y ll_x ll_y ur_x ur_y **setcachedevice** -
w_x w_y **setcharwidth** -
num **setcachelimit** -

PostScript