

Personal Designer
User Programming Language
(UPL)

Revision 6.0

User Reference Guide

Appendix B

System Variables

System Variables

System Variables are predeclared and are therefore accessible to every UPL program. All System Variables are of integer data type. All system variables may be assigned values in a UPL program except **DBStatus**, **IOStatus**, and **LastChar**. There are three categories of System Variables: File, Window, and Character. The File System Variables are **DBStatus** and **IOStatus**. These return the status of the last file and database operations. The Window System Variables are **AccptWin**, **DispWin**, **PrintWin**, and **SendWin**. These control which windows are used for the corresponding UPL statements. The Character System Variables are **LastChar** and **BreakChar**. These allow some control over character I/O.

AccptWin

Specifies the UPL window used to echo data when inputting data with the Accept statement. This defaults to UPL window one, the Personal Designer command window. For more information see Chapter 3, Functional Listing of Statements and Intrinsics.

BreakChar

Specifies the ASCII value of the break character. When you type the break character, the program aborts.

If this variable is not set in your program or, if it is set less than or equal to zero, no break character is checked. If it is set greater than zero and if, during UPL program execution, the character with that ASCII value is entered, the user is asked if they wish to abort the program.

BreakChar should usually be set to three for control-C, the Personal Designer abort signal. This sets a flag which the UPL interpreter checks before executing each UPL instruction. Setting it to any other value causes the interpreter to check the input buffer before executing each instruction. If found, that character will be removed from the input buffer, and the program will be aborted.

DBStatus

Returns the status resulting from the last drawing database operation. It is set by the **Insert**, **Verify**, **Modify**, and **Erase** statements and the intrinsic procedures **ReadEnt** and **WriteEnt**.

System Variables

Other intrinsic subroutines which perform direct database access use their own error parameter to return the result. You may not assign a value to **DBStatus** in your program; it only returns a value.

DBStatus values:

Status Code	Description
0	Last operation successful.
1	MIB number specified with the EntId keyword is less than one.
2	End of the data base has been reached
or	MIB number specified with EntId keyword is past the end of the database.
3	Entity type found by a Verify or Modify statement was not the type specified by the entloc keyword.

IOStatus

Returns the status resulting from the last file IO operation. It is set by the **Open**, **Read**, **Write**, and **Close** statements and the following intrinsic procedures: **ReadCArray**, **ReadIArray**, **ReadRArray**, **WriteCArray**, **WriteIArray**, **WriteRArray**. You may not assign a value to **IOStatus** in your program; it only returns a value.

IOStatus values:

Status Code	Description
0	Operation successful, no error.
4	Too many files already open.
5	Access to file denied by operating system.
12	Invalid access.
21	Tried to read/write/close an unopened file.
23	Tried to open a file that was already open.
24	Only binary files allowed for this operation (valid for Read_Array/Write Array procedures only).
25	Tried to read more bytes than is in the file (valid for Read Array/Write Array procedures only).

System Variables

DispWin

Specifies the UPL window used by the **Display** statement to output the display text. This defaults to UPL window one, the Personal Designer command window. For more information see Chapter 3, "Functional Listing."

LastChar

Returns the ASCII value of the last character sent to Personal Designer by a UPL program. You may not assign a value to **DBStatus** in your program; it only returns a value. This value may be returned from the following sources:

- 1) **Accept** statement.
- 2) Intrinsic procedures **GetC**, **GetDig**, **GetEnd**, or **GetEnt**. Characters used to terminate input via the Getdata processor are returned in **LastChar**. The values are:
 - a) comma (ASCII 44)
 - b) colon (ASCII 58)
 - c) semi – colon (ASCII 59)
 - d) control – C (ASCII 3)
- 3) **Send** Statement.

This character may come from the keyboard, on – screen menu, tablet menu, execute file, or keyboard macro. Since its value may change often, you should save this returned value in another variable if you do not test it immediately. You may not assign a value to LastChar in your program; it only returns a value.

System Variables

PrintWin

Specifies the UPL window used by the Print statement to output the evaluated expressions. This defaults to UPL window one, the Personal Designer command window. For more information see Chapter 3, "Functional Listing."

SendWin

Specifies the UPL window used to echo commands sent from a UPL program to Personal Designer. The expressions in the Send statement are evaluated and then echoed in this window. This defaults to UPL window one, the Personal Designer command window. For more information see Chapter 3, "Functional Listing."

System Variables for Advanced Users

Variables marked with an asterisk may be set as well as read. Only advanced users should set these system variables. Incorrect use could damage or destroy your part database. It is best not to change any variables you do not understand.

Note that some of these variables are 'mutually exclusive'. That is, only one in a group may be set to a non – zero value and the others must all be zero. For example, with SysVarI, of the variables 2005 – 2008, only one may have a non – zero value. Also, of 2027, 2028, 2036, only one may be non – zero.

SysVarI: (read and/or set INTEGER system variable)

1016	Read status of autosave on = 1, off = 0
1100	Read currently selected font number
1140 – 1155*	A 16 – byte buffer which may be used to pass data between UPL programs. This buffer must be accessed two bytes at a time, treated as integers. Other values may be stored by using based variables.
1217 – 1222*	database header bit flags (bytes 144 – 127 of header)
1233*	XH (crosshatch) solid fill flag
	= 0 – normal, depends on pattern #
	= 1 – XH solid fill off
	= 2 – all XHs are solid filled

System Variables

1242	maximum number of entities in the Active Entity Table
1249*	beep control, 0 = on, 1 = off
1254	UNDO, 1 = on, 0 = off
1256	coordinate display, 1 = on, 0 = off
1286	last MIB number read in database search
1301	CPL indicator axes displayed, 1 = on, 0 = off
1302	MV number containing most recent entity pick (if multiple entity pick such as a WIN, MV number containing last entity found is returned)
1303	MVs, 1 = on, 0 = off
1311	MIB number of last entity that was stored in the memory portion of the display list
1312*	Getdata angle lock, 1 = on, 0 = off
1313*	Getdata color mask
1314*	figure activate flag, 0 = no, 1 = yes, 2 = ask
1333*	next available group number
1375	perspective, 1 = on, 0 = off
1379"	Read and/or set/clear "SEL TEXT OFF/ON"; display text, 1 = on, 0 = off
1385	hard fonts, 1 = on, 0 = off
1387*	database pack flag, 0 = no, 1 = yes, 2 = ask
1474*	visibility flag, 1 = VCON, 0 = VALL
1511*	Read and/or set/clear "SEL GRID ON/OFF"; grid on = 1, grid off = 0
1512*	Read and/or set MIB number where next entity pick search will start
2001*	dimensioning arrow head type
2002*	dimensioning precision
2003*	dimensioning tolerance precision
2004*	diameter dimensioning type
2005*	suppress both witness lines? no = 0, yes <> 0
2006*	suppress first witness lines? no = 0, yes <> 0
2007*	suppress second witness lines? no = 0, yes <> 0
2008*	display both witness lines? no = 0, yes <> 0
2009*	VALL for dimensions? no = 0, yes <> 0
2010"	VCON for dimensions? no = 0, yes <> 0

System Variables

2011*	point to point dimension? no = 0, yes <> 0
2012* 2013*	horizontal dimension? no = 0, yes <> 0
2014* 2015*	vertical dimension? no = 0, yes <> 0
2016* 2017*	dimension arrows in? no = 0, yes <> 0
2018* 2019*	dimension arrows out? no = 0, yes <> 0
2020* 2021*	auto justify dimension text? no = 0, yes <> 0
2022* 2023*	left justify dimension text? no = 0, yes <> 0
2024* 2025*	center dimension? no = 0, yes <> 0
2026*	no dimension centering? no = 0, yes <> 0
2027*	prefix dimension text? no = 0, yes <> 0
2028* 2029*	suffix dimension text? no = 0, yes <> 0
2030* 2031*	no diameter symbol? no = 0, yes <> 0
2032* 2033*	diameter symbol? no = 0, yes <> 0
2034*	diameter symbol word? no = 0, yes <> 0
	align dimension? no = 0, yes <> 0
2035*	do not align dimension? no = 0, yes <> 0
	ANSI dimensioning? no = 0, yes <> 0
2036* 2037*	JIS dimensioning? no = 0, yes <> 0
	dimension feet mode? no = 0, yes <> 0
2038*	dimension inch mode? no = 0, yes <> 0
	dimension tolerance type
	use comma in dimension numbers? no = 0, yes <> 0
	use decimal point in dimension numbers? no = 0, yes <> 0
	have trailing zeros in dimension numbers? no = 0, yes <> 0
	do not have trailing zeros in dimension numbers? no=0,yes<>0
	DIN dimensioning? no = 0, yes <> 0
	have leading zeros in dimension numbers? no = 0, yes <> 0
	do not have leading zeros in dimension numbers? no = 0,yes<>0

System Variables

SysVarR: (read and/or set REAL system variable)

1113	soft fonts scale factor
1118	trap size in screen inches
1119	Read and/or set digitize mark ('gleep') size in screen inches
1123	plotting point entity size in inches
1124	Read and/or set screen point entity size in inches
1158 – 1163	Read drawing extents X, Y,Z min and X, Y,Z max
1181 – 1183	model space coordinates of perspective eye point
1184 – 1186	view space coordinates of perspective eye point
1187	perspective depth
1192*	Read and/or set ZOOM ALL border percent factor
1200	global scale factor
1223 – 1225*	Read and/or set X, Y,Z model space location of most recent digitize
1239*	Read and/or set default text entity line spacing
1240*	Read and/or set default text entity height
1241*	Read and/or set default text entity width
1252 – 1253*	Read and/or set grid origin x,y
1254 – 1255*	grid increment x,y
2001*	dimension ang1e
2002*	dimension text height
2003*	dimension text width
2004*	dimension arrow head size
2005*	dimension offset
2006*	dimension scale
2007*	dimension both tolerances
2008*	dimension positive tolerance
2009*	dimension minus tolerance
2010*	dimension tolerance text height
2011*	dimension text line spacing
3001 – 3016*	soft font definition arrays. Each soft font definition contains 10 numbers, so a REAL array dimension to at least 10 must be used.