The graPHIGS Programming Interface: Quick Reference

IBM

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> **Note**
>
> Before using this information and the product it supports, read the information in "Notices," on page 53.

Contents

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About This Book

This book provides a quick reference for the graPHIGS API. It is intended as a supplement to The graPHIGS Programming Interface: Subroutine Reference, in which the subroutines are described in detail.

Who Should Use This Book

This book is intended for application programmers.

Highlighting

The following highlighting conventions are used in this book:

Bold	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Also identifies graphical objects such as buttons, labels, and icons that the user selects.
Italics	Identifies parameters whose actual names or values are to be supplied by the user.
`Monospace`	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or information you should actually type.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Related Publications

The following books contain information on graPHIGS API products:

- *The graPHIGS Programming Interface: Customization and Problem Diagnosis*
- *The graPHIGS Programming Interface: Getting Started*
- *The graPHIGS Programming Interface: ISO PHIGS Quick Reference*
- *The graPHIGS Programming Interface: ISO PHIGS Subroutine Reference*
- *The graPHIGS Programming Interface: Messages and Codes*
- *The graPHIGS Programming Interface: Subroutine Reference*
- *The graPHIGS Programming Interface: Technical Reference*
- *The graPHIGS Programming Interface: Understanding Concepts*

Chapter 1. Abbreviations

The following abbreviations are used frequently throughout this book:

ADIB	Application Defaults Interface Block
ARCL	Archive Closed
AROP	Archive Open
ASAP	As Soon As Possible
ASF	Attribute Source Flag
ASTI	At Some Time
BNIG	Before Next Interaction Globally
BNIL	Before Next Interaction Locally
CMY	Cyan-Magenta-Yellow color model
CSID	Character Set Identifier
EDF	External Defaults File
HSV	Hue-Saturation-Value color model
NDT	Nucleus Descriptor Table
NROP	Non-Retained Structure Open
NSL	Nucleus State List
PDT	graPHIGS API Description Table
PHCL	graPHIGS Closed
PHOP	graPHIGS Open
PSL	graPHIGS API State List
RGB	Red-Green-Blue color model
SSCL	Structure Store Closed
SSL	Structure Store State List
SSOP	Structure Store Open
STCL	Structure Closed
STOP	Structure Open
UQUM	Quick Update Method
USL	Utility State List
WAIT	When Application Requests It
WDO	Workstation Dependent Output
WDT	Workstation Description Table
WSCL	Workstation Closed
WSID	Workstation Identifier
WSL	Workstation State List
WSOP	Workstation Open
WSSL	Workstation Selected
WSTYPE	Workstation Type

The following abbreviations for coordinate spaces are used:

DC	Device Coordinates
MC	Modeling Coordinates
NPC	Normalized Projection Coordinates
VC	Viewing Coordinates
WC	World Coordinates
WU	Workstation Units

Chapter 2. graPHIGS API Subroutine Functions

Control Subroutines

Name	Parameter	Long Name
GPATR	(*type*, *id*, *ncid*, *rid*, *pass*)	Attach Resource
GPCLAR	(*arid*)	Close Archive File
GPCLPH		Close graPHIGS
GPCLWS	(*wsid*)	Close Workstation
GPCNC	(*ncid*, *conn*, *len*, *spec*)	Connect Nucleus
GPCRFD	(*fdid*, *ncid*, *fdtype*, *fddesc*)	Create Font Directory
GPCRIB	(*ibid*, *ncid*, *depth*, *h*, *v*, *ibtype*, *ibdesc*)	Create Image Board
GPCRSS	(*ssid*, *ncid*, *sstype*, *ssdesc*)	Create Structure Store
GPCRWS	(*wsid*, *ncid*, *length*, *connid*, *wstype*, *option*)	Create Workstation
GPDF	(*wsid*, *defer*, *modif*)	Set Deferral State
GPDNC	(*ncid*)	Disconnect Nucleus
GPDTR	(*type*, *id*)	Detach Resource
GPMSG	(*wsid*, *length*, *text*)	Message
GPMSPW	(*ncid*, *pass*)	Set Message Password
GPOPAR	(*arid*, *ncid*, *flag*, *length*, *ardesc*)	Open Archive File
GPOPPH	(*errfil*, *adib*)	Open graPHIGS
GPOPWS	(*wsid*, *connid*, *wstype*)	Open Workstation
GPPW	(*type*, *id*, *pass*)	Set Password
GPRAST	(*wsid*, *flag*)	Redraw All Structures
GPSBMS	(*ncid*, *major*, *minor*, *len*, *msg*)	Send Broadcast Message
GPSDAL	(*wsid*)	Sound Alarm
GPSHDF	(*deferral*, *update*)	Set Shell Deferral State
GPSPMS	(*ncid*, *shid*, *pass*, *major*, *minor*, *len*, *msg*)	Send Private Message
GPSYNC	(*ncid*, *synch*)	Synchronize
GPTRCE	(*control*)	Internal Trace Control
GPUPWA	(*wsid*)	Update Workstation Asynchronous
GPUPWS	(*wsid*, *regen*)	Update Workstation

Output Primitives

Name	Parameter	Long Name
GPAN2	(*point*, *length*, *text*)	Annotation Text 2
GPAN3	(*point*, *length*, *text*)	Annotation Text 3
GPANR2	(*refpt*, *textvec*, *length*, *text*)	Annotation Text Relative 2
GPANR3	(*refpt*, *textvec*, *length*, *text*)	Annotation Text Relative 3
GPCFA2	(*ncontour*, *ncurve*, *curveinfo*, *knot*, *tess*, *vwidth*, *vdata*)	Composite Fill Area 2
GPCHL2	(*startp*, *endp*, *nomhgt*, *char*)	Character Line 2
GPCR2	(*center*, *radius*)	Circle 2
GPCRA2	(*center*, *radius*, *startang*, *endang*)	Circular Arc 2
GPDPL2	(*npoint*, *width*, *pointlist*, *mdarray*)	Disjoint Polyline 2
GPDPL3	(*npoint*, *width*, *pointlist*, *mdarray*)	Disjoint Polyline 3
GPEL2	(*center*, *refv1*, *refv2*)	Ellipse 2
GPEL3	(*center*, *refv1*, *refv2*)	Ellipse 3
GPELA2	(*center*, *refv1*, *refv2*, *startv*, *endv*)	Elliptical Arc 2
GPELA3	(*center*, *refv1*, *refv1*, *startv*, *endv*)	Elliptical Arc 3
GPLG2	(*point*, *refv1*, *refv2*, *imin*, *imax*, *jmin*, *jmax*)	Line Grid 2
GPLG3	(*point*, *refv1*, *refv2*, *imin*, *imax*, *jmin*, *jmax*)	Line Grid 3

Name	Parameter	Long Name
GPMG2	(*point, refv1, refv2, imin, imax, jmin, jmax*)	Marker Grid 2
GPMG3	(*point, refv1, refv2, imin, imax, jmin, jmax*)	Marker Grid 3
GPNBC2	(*order, npoint, knot, tflags, tdata, cflags, cwidth, ctlpts, tmin, tmax*)	Non-Uniform B-Spline Curve 2
GPNBC3	(*order, npoint, knot, tflags, tdata, cflags, cwidth, ctlpts, tmin, tmax*)	Non-Uniform B-Spline Curve 3
GPNBS	(*uorder, vorder, unum, vnum, uknots, vknots, tflag, utdata, vtdata, cflags, cwidth, ctlpts, umin, umax, vmin, vmax*)	Non-Uniform B-Spline Surface
GPPGD2	(*pflags, pdata, saflags, sawidth, sadata, vxflags, vxwidth, vxdata*)	Polygon 2 With Data
GPPGD3	(*pflags, pdata, saflags, sawidth, sadata, vxflags, vxwidth, vxdata*)	Polygon 3 With Data
GPPG2	(*areas, npoint, width, pointlist*)	Polygon 2
GPPG3	(*areas, npoint, width, pointlist*)	Polygon 3
GPPHE	(*nedge, edgelist*)	Polyhedron Edge
GPPL2	(*npoint, width, pointlist*)	Polyline 2
GPPL3	(*npoint, width, pointlist*)	Polyline 3
GPPLD3	(*pflags, pdata, plflags, plwidth, pldata, vxflags, vxwidth, vxdata*)	Polyline Set 3 With Data
GPPM2	(*npoint, width, pointlist*)	Polymarker 2
GPPM3	(*npoint, width, pointlist*)	Polymarker 3
GPPXL2	(*point, pack, numrow, numcol, startrow, startcol, nrow, ncol, array*)	Pixel 2
GPPXL3	(*point, pack, numrow, numcol, startrow, startcol, nrow, ncol, array*)	Pixel 3
GPQM3	(*mflags, mdata, qflags, qwidth, qdata, vxflags, vxwidth, vxdata*)	Quadrilateral Mesh 3
GPSPH	(*nsphere, pflags, pdata, width, spherelist*)	Polysphere
GPTNBS	(*uorder, vorder, unum, vnum, uknots, vknots, tflag, utess, vtess, cflags, cwidth, ctlpts, ncontour, ncurve, curveinfo, tknot, ttess, cdwidth, cddata*)	Trimmed Non-Uniform B-Spline Surface
GPTS3	(*pflags, pdata, tflags, twidth, tdata, vxflags, vxwidth, vxdata*)	Triangle Strip 3
GPTX2	(*point, length, text*)	Geometric Text 2
GPTX3	(*point, length, text, refv1, refv2*)	Geometric Text 3

Attribute Structure Elements

Name	Parameter	Long Name
GPAAL	(*horiz, vert*)	Set Annotation Alignment
GPADCN	(*number, names*)	Add Class Name to Set
GPAH	(*height*)	Set Annotation Height
GPAHSC	(*factor*)	Set Annotation Height Scale Factor
GPAID	(*antid*)	Set Antialiasing Identifier
GPAPT	(*path*)	Set Annotation Path
GPAS	(*style*)	Set Annotation Style
GPASF	(*number, id, flag*)	Attribute Source Flag Setting
GPAUP	(*vector*)	Set Annotation Up Vector
GPBBLF	(*srcf, destf*)	Set Back Blending Function
GPBDFM	(*minfm, magfm, boundu, boundv*)	Set Back Data Filtering Method
GPBDMI	(*index*)	Set Back Data Mapping Index
GPBDM2	(*matrix*)	Set Back Data Matrix 2

Name	Parameter	Long Name
GPBICD	(*color*)	Set Back Interior Color Direct
GPBICI	(*index*)	Set Back Interior Color Index
GPBISM	(*method*)	Set Back Interior Shading Method
GPBLF	(*srcf, destf*)	Set Blending Function
GPBRMO	(*model*)	Set Back Reflectance Model
GPBSCD	(*color*)	Set Back Specular Color Direct
GPBSCI	(*index*)	Set Back Specular Color Index
GPBSPR	(*amb, diff, spec, exp, trans*)	Set Back Surface Properties
GPBTCO	(*coeff*)	Set Back Transparency Coefficient
GPCAC	(*criteria, value*)	Set Curve Approximation Criteria
GPCHH	(*height*)	Set Character Height
GPCHLS	(*scale*)	Set Character Line Scale Factor
GPCHPM	(*posmode*)	Set Character Positioning Mode
GPCHSP	(*space*)	Set Character Spacing
GPCHUB	(*up, base*)	Set Character Up and Base Vectors
GPCHUP	(*up*)	Set Character Up Vector
GPCHXP	(*expans*)	Set Character Expansion Factor
GPCPI	(*index*)	Set Color Processing Index
GPDCI	(*index*)	Set Depth Cue Index
GPDFM	(*minfm, magfm, boundu, boundv*)	Set Data Filtering Method
GPDMI	(*index*)	Set Data Mapping Index
GPDMR	(*wsid, index, method, mdata, clengths, ctype, cdata*)	Set Data Mapping Representation
GPDM2	(*matrix*)	Set Data Matrix 2
GPECD	(*color*)	Set Edge Color Direct
GPECI	(*index*)	Set Edge Color Index
GPEF	(*edgefg*)	Set Edge Flag
GPEI	(*index*)	Set Edge Index
GPELT	(*edgelt*)	Set Edge Linetype
GPESC	(*edgesf*)	Set Edge Scale Factor
GPFBC	(*op, mask, value*)	Set Frame Buffer Comparison
GPFBM	(*mask*)	Set Frame Buffer Protect Mask
GPFDMO	(*mode*)	Set Face Distinguish Mode
GPFLM	(*flmeth*)	Set Face Lighting Method
GPHID	(*hlhsr*)	Set HLHSR Identifier
GPHLCD	(*color*)	Set Highlighting Color Direct
GPHLCI	(*index*)	Set Highlighting Color Index
GPICD	(*color*)	Set Interior Color Direct
GPICI	(*index*)	Set Interior Color Index
GPII	(*index*)	Set Interior Index
GPIS	(*style*)	Set Interior Style
GPISI	(*index*)	Set Interior Style Index
GPISM	(*method*)	Set Interior Shading Method
GPLLCD	(*color*)	Set Line-on-Line Color Direct
GPLLCI	(*index*)	Set Line-on-Line Color Index
GPLMO	(*mode*)	Set Lighting Calculation Mode
GPLSS	(*nact, act, ndea, dea*)	Set Light Source State
GPLT	(*ltype*)	Set Linetype
GPLWSC	(*lwidth*)	Set Linewidth Scale Factor
GPMSSC	(*msize*)	Set Marker Size Scale Factor
GPMT	(*mtype*)	Set Marker Type
GPPGC	(*mode*)	Set Polygon Culling
GPPHEC	(*mode*)	Set Polyhedron Edge Culling
GPPKID	(*pickid*)	Set Pick Identifier

Name	Parameter	Long Name
GPPLCD	(*color*)	Set Polyline Color Direct
GPPLCI	(*index*)	Set Polyline Color Index
GPPLET	(*endtype*)	Set Polyline End Type
GPPLI	(*index*)	Set Polyline Index
GPPLSM	(*method*)	Set Polyline Shading Method
GPPMCD	(*color*)	Set Polymarker Color Direct
GPPMCI	(*index*)	Set Polymarker Color Index
GPPMI	(*index*)	Set Polymarker Index
GPPSC	(*type*, *data*)	Parametric Surface Characteristics
GPRCN	(*number*, *names*)	Remove Class Name from Set
GPRMO	(*model*)	Set Reflectance Model
GPSAC	(*criteria*, *ctrlval1*, *ctrlval2*)	Set Surface Approximation Criteria
GPSCD	(*color*)	Set Specular Color Direct
GPSCI	(*index*)	Set Specular Color Index
GPSPR	(*amb*, *diff*, *spec*, *exp*, *trans*)	Set Surface Properties
GPTCAC	(*criteria*, *ctrlval1*, *ctrlval2*, *ctrlval3*)	Set Trimming Curve Approximation Criteria
GPTCO	(*coeff*)	Set Transparency Coefficient
GPTXAL	(*horiz*, *vert*)	Set Text Alignment
GPTXCD	(*color*)	Set Text Color Direct
GPTXCI	(*index*)	Set Text Color Index
GPTXFO	(*font*)	Set Text Font
GPTXI	(*index*)	Set Text Index
GPTXPR	(*prec*)	Set Text Precision
GPTXPT	(*path*)	Set Text Path
GPVWI	(*index*)	Set View Index
GPZBM	(*mask*)	Set Z-buffer Protect Mask

Miscellaneous Structure Elements

Name	Parameter	Long Name
GPCEXS	(*mask*, *crit*, *mode*, *strid*)	Conditional Execute Structure
GPCOND	(*on*, *off*)	Set Condition
GPCRET	(*mask*, *crit*)	Conditional Return
GPEXST	(*strid*)	Execute Structure
GPINAD	(*length*, *data*)	Insert Application Data
GPINLB	(*label*)	Insert Label
GPNULL		Null Data
GPTEX2	(*point1*, *point2*, *index*)	Test Extent 2
GPTEX3	(*point1*, *point2*, *index*)	Test Extent 3
GPWDO	(*length*, *data*)	Workstation-Dependent Output

Structure Operations

Name	Parameter	Long Name
GPASSW	(*wsid*, *ssid*)	Associate Structure Store with Workstation
GPCCM	(*mode*)	Set Convexity Checking Mode
GPCEDT	(*flag*)	Conditional Editing
GPCLST		Close Structure
GPCPER	(*strid*, *elem1*, *elem2*)	Copy Element Range
GPCPST	(*strid*)	Copy Structure
GPCSI	(*ostrid*, *rstrid*)	Change Structure Identifier
GPCSIR	(*ostrid*, *rstrid*)	Change Structure Identifier and References

Name	Parameter	Long Name
GPCSRS	(*ostrid*, *rstrid*)	Change Structure References
GPDAST		Delete All Structures
GPDCM	(*model*)	Set Direct Color Model
GPDELB	(*label1*, *label2*)	Delete Element Between Labels
GPDLC	(*wsid*, *ctid*)	Delete Color Table
GPDLE		Delete Element
GPDLEG	(*label1*, *label2*, *option*)	Delete Element Group
GPDLER	(*elem1*, *elem2*)	Delete Element Range
GPDLNC	(*strid*)	Delete Structure Network Conditionally
GPDLNT	(*strid*)	Delete Structure Network
GPDLST	(*strid*)	Delete Structure
GPEDMO	(*mode*)	Set Edit Mode
GPEP	(*elem*)	Set Element Pointer
GPEPCD	(*code*)	Locate Element Pointer at Element Code
GPEPLG	(*label*, *flag*)	Generalized Set Element Pointer at Label
GPEPPG	(*pickid*, *flag*)	Generalized Set Element Pointer at Pick Identifier
GPEST	(*strid*)	Empty Structure
GPMVER	(*elem1*, *elem2*)	Move Element Range
GPNLER	(*re1*, *re2*)	Nullify Element Range
GPOEP	(*offset*)	Offset Element Pointer
GPOPST	(*strid*)	Open Structure
GPSSS	(*ssid*)	Select Structure Store
GPSSTH	(*ssid*, *threshold*)	Set Structure Store Threshold
GPTAST	(*ssid*, *flag*)	Transfer All Structures
GPTST	(*ssid*, *flag*, *number*, *lstrid*)	Transfer Structures
GPTXCS	(*csid*)	Set Text Character Set

Archive Subroutines

Name	Parameter	Long Name
GPARAS	(*arid*)	Archive All Structures
GPARSN	(*arid*, *number*, *lstrid*)	Archive Structure Networks
GPARST	(*arid*, *number*, *lstrid*)	Archive Structures
GPCNRS	(*aflag*, *rflag*)	Set Conflict Resolution
GPDASA	(*arid*)	Delete All Structures from Archive
GPDSAR	(*arid*, *number*, *lstrid*)	Delete Structures from Archive
GPDSNA	(*arid*, *number*, *lstrid*)	Delete Structures Networks from Archive
GPRVAS	(*arid*)	Retrieve All Structures
GPRVSN	(*arid*, *number*, *lstrid*)	Retrieve Structure Networks
GPRVST	(*arid*, *number*, *lstrid*)	Retrieve Structures

Workstation Table Operations

Name	Parameter	Long Name
GPCML	(*wsid*, *model*)	Set Color Model
GPCPR	(*wsid*, *index*, *model*, *quant*, *data*)	Set Color Processing Representation
GPCRC	(*wsid*, *ctid*, *model*, *length*)	Create Color Table
GPCSR	(*wsid*, *index*, *size*)	Set Cull Size Representation
GPDCR	(*wsid*, *index*, *id*, *value*)	Set Depth Cue Representation
GPDLC	(*wsid*, *ctid*)	Delete Color Table
GPGTXC	(*wsid*, *height*, *method*)	Set Geometric Text Culling

Name	Parameter	Long Name
GPHLF	(*wsid*, *inclen*, *incl*, *exclen*, *excl*)	Set Highlighting Filter
GPHR	(*wsid*, *hatch*, *format*, *length*, *data*)	Set Hatch Representation
GPIVF	(*wsid*, *inclen*, *incl*, *exclen*, *excl*)	Set Invisibility Filter
GPLNR	(*wsid*, *ltype*, *style*, *data*)	Set Linetype Rendering
GPLSR	(*wsid*, *index*, *type*, *color*, *data*)	Set Light Source Representation
GPLTR	(*wsid*, *ltype*, *number*, *list*)	Set Linetype Representation
GPMTR	(*wsid*, *mtype*, *format*, *length*, *data*)	Set Marker Type Representation
GPPAR	(*wsid*, *index*, *numrow*, *numcol*, *strrow*, *strcol*, *nrow*, *ncol*, *array*)	Set Pattern Representation
GPVIP	(*wsid*, *view*, *refview*, *flag*)	Set View Input Priority
GPVOP	(*wsid*, *view*, *refview*, *flag*)	Set View Output Priority
GPVP	(*wsid*, *view*, *refview*, *flag*)	Set View Priority
GPXCR	(*wsid*, *ctid*, *start*, *number*, *color*)	Set Extended Color Representation
GPXER	(*wsid*, *index*, *id*, *value*)	Set Extended Edge Representation
GPXIR	(*wsid*, *index*, *id*, *value*)	Set Extended Interior Representation
GPXPLR	(*wsid*, *index*, *id*, *value*)	Set Extended Polyline Representation
GPXPMR	(*wsid*, *index*, *id*, *value*)	Set Extended Polymarker Representation
GPXTXR	(*wsid*, *index*, *id*, *value*)	Set Extended Text Representation
GPXVCH	(*wsid*, *view*, *number*, *charids*, *values*)	Set Extended View Characteristics
GPXVR	(*wsid*, *view*, *id*, *value*)	Set Extended View Representation

Display Subroutines

Name	Parameter	Long Name
GPARV	(*wsid*, *view*, *strid*, *prior*)	Associate Root with View
GPARW	(*wsid*, *strid*)	Associate Root with Workstation
GPCIM2	(*wsid*, *imap*, *view*, *index*, *origin*, *size*, *P*, *Q*, *R*, *method*, *prior*)	Create Image Mapping 2
GPCIM3	(*wsid*, *imap*, *view*, *index*, *origin*, *size*, *P*, *Q*, *R*, *method*, *prior*)	Create Image Mapping 3
GPDARW	(*wsid*)	Disassociate All Roots from Workstation
GPDIM	(*wsid*, *imap*)	Delete Image Mapping
GPDRAV	(*wsid*, *strid*)	Disassociate Root from All Views
GPDRV	(*wsid*, *view*, *strid*)	Disassociate Root from View
GPDRW	(*wsid*, *strid*)	Disassociate Root from Workstation
GPEAV	(*wsid*)	Empty All Views
GPEV	(*wsid*, *view*)	Empty View

Transformation Subroutines

Name	Parameter	Long Name
GPBDMF	(*flength*, *fdata*)	Set Back Data Morphing Factors
GPDCMM	(*wsid*, *method*, *length*, *data*)	Set Device Coordinate Mapping Method
GPDMF	(*flength*, *fdata*)	Set Data Morphing Factors
GPGLX2	(*matrix*)	Set Global Transformation 2
GPGLX3	(*matrix*)	Set Global Transformation 3
GPMCI	(*indic*)	Set Modeling Clipping Indicator
GPMCV2	(*oper*, *number*, *lhspace*)	Set Modeling Clipping Volume 2
GPMCV3	(*oper*, *number*, *lhspace*)	Set Modeling Clipping Volume 3
GPMLX2	(*matrix*, *type*)	Set Modeling Transformation 2
GPMLX3	(*matrix*, *type*)	Set Modeling Transformation 3
GPRMCV		Restore Modeling Clipping Volume

Name	Parameter	Long Name
GPVMF	(*flength, fdata*)	Set Vertex Morphing Factors
GPWSX2	(*wsid*, *window*, *viewpt*)	Set Workstation Transformation 2
GPWSX3	(*wsid*, *window*, *viewpt*)	Set Workstation Transformation 3

Input Subroutines

Name	Parameter	Long Name
GPAWEV	(*time*, *major*, *class*, *minor*)	Await Event
GPBKAC	(*wsid*, *trigger*)	Set Break Action
GPCHMO	(*wsid*, *device*, *mode*, *echosw*)	Set Choice Mode
GPCUR	(*wsid*, *index*, *format*, *shape*)	Set Cursor Representation
GPCUS	(*wsid*, *ctype*)	Set Cursor Shape
GPEPD	(*wsid*, *category*, *device*, *value*)	Emulate Physical Device
GPEVHN	(*event-handler*, *anchor*)	Define Event Handling Subroutine
GPFLEV	(*wsid*, *class*, *device*)	Flush Device Event
GPFWEV	(*wsid*)	Flush Workstation Event
GPGTCH	(*choice*)	Get Choice
GPGTLC	(*view*, *pos*)	Get Locator
GPGTMS	(*ilen*, *olen*, *string*)	Get Message
GPGTPK	(*length*, *depth*, *pickpath*)	Get Pick
GPGTSK	(*length*, *view*, *npoint*, *pointlist*)	Get Stroke
GPGTST	(*ilen*, *olen*, *string*)	Get String
GPGTVL	(*value*)	Get Valuator
GPGTXP	(*maxdepth*, *view*, *point*, *modelling*, *depth*, *pickpath*)	Get Extended Pick
GPGWIN	(*ilen*, *olen*, *data*)	Get Window
GPICS	(*wsid*, *class*, *device*, *csid*)	Set Input Character Set
GPIDMO	(*wsid*, *class*, *device*, *state*, *deact*, *echosw*, *trigger*, *break*, *reset*)	Set Input Device Mode
GPIEC	(*wsid*, *color*)	Set Input Echo Color
GPINCH	(*wsid*, *device*, *choice*, *echo*, *area*, *datalen*, *data*)	Initialize Choice
GPINLC	(*wsid*, *device*, *view*, *pos*, *echo*, *area*, *datalen*, *data*)	Initialize Locator
GPINPK	(*wsid*, *device*, *depth*, *pickpath*, *echo*, *area*, *datalen*, *data*, *order*)	Initialize Pick
GPINSK	(*wsid*, *device*, *view*, *npoint*, *width*, *pointlist*, *echo*, *area*, *buflen*, *editpos*, *datalen*, *data*)	Initialize Stroke
GPINST	(*wsid*, *device*, *length*, *string*, *echo*, *area*, *buflen*, *cursor*, *datalen*, *data*)	Initialize String
GPINVL	(*wsid*, *device*, *ivalue*, *echo*, *area*, *lovalue*, *hivalue*, *datalen*, *data*)	Initialize Valuator
GPIPKC	(*wsid*, *device*, *state*)	Set Initial Pick Correlation State
GPIT	(*wsid*, *class*, *devnum*, *listid*, *tnum*, *triglist*)	Set Input Device Trigger
GPLCMO	(*wsid*, *device*, *mode*, *echosw*)	Set Locator Mode
GPPDMO	(*wsid*, *category*, *device*, *mode*)	Set Physical Device Mode
GPPKAP	(*wsid*, *device*, *size*)	Set Pick Aperture
GPPKF	(*wsid*, *device*, *inclen*, *incl*, *exclen*, *excl*)	Set Pick Filter
GPPKMO	(*wsid*, *device*, *mode*, *echosw*)	Set Pick Mode
GPPKSC	(*wsid*, *device*, *criteria*)	Set Pick Selection Criteria
GPRQCH	(*wsid*, *device*, *status*, *choice*)	Request Choice
GPRQLC	(*wsid*, *device*, *status*, *view*, *pos*)	Request Locator
GPRQPK	(*wsid*, *device*, *length*, *status*, *depth*, *pickpath*)	Request Pick

Name	Parameter	Long Name
GPRQSK	(*wsid*, *device*, *length*, *status*, *view*, *npoint*, *pointarray*)	Request Stroke
GPRQST	(*wsid*, *device*, *length*, *status*, *number*, *string*)	Request String
GPRQVL	(*wsid*, *device*, *status*, *value*)	Request Valuator
GPRQXP	(*wsid*, *device*, *maxdepth*, *status*, *view*, *point*, *modelling*, *depth*, *pickpath*)	Request Extended Pick
GPSKMO	(*wsid*, *device*, *mode*, *echosw*)	Set Stroke Mode
GPSMCH	(*wsid*, *device*, *choice*)	Sample Choice
GPSMLC	(*wsid*, *device*, *view*, *pos*)	Sample Locator
GPSMPK	(*wsid*, *device*, *length*, *depth*, *pickpath*)	Sample Pick
GPSMSK	(*wsid*, *device*, *length*, *view*, *npoint*, *pointarray*)	Sample Stroke
GPSMST	(*wsid*, *device*, *length*, *number*, *string*)	Sample String
GPSMVL	(*wsid*, *device*, *value*)	Sample Valuator
GPSMXP	(*wsid*, *device*, *maxdepth*, *view*, *point*, *modelling*, *depth*, *pickpath*)	Sample Extended Pick
GPSTMO	(*wsid*, *device*, *mode*, *echosw*)	Set String Mode
GPVLMO	(*wsid*, *device*, *mode*, *echosw*)	Set Valuator Mode

Font Subroutines

Name	Parameter	Long Name
GPACFO	(*wsid*, *csid*, *font*)	Activate Font
GPAFDW	(*wsid*, *fdid*)	Associate Font Directory with Workstation
GPDAFO	(*wsid*, *csid*, *font*)	Deactivate Font
GPDLFO	(*fdid*, *csid*, *font*)	Delete Font
GPLDFO	(*fdid*, *csid*, *font*, *option*)	Load Font

Image Subroutines

Name	Parameter	Long Name
GPCAI	(*wsid*, *index*)	Cancel Image
GPDFI	(*wsid*, *index*, *conn*, *ctid*, *nibid*, *libid*)	Define Image
GPFRCT	(*ibid*, *origin*, *size*, *value*)	Fill Rectangle
GPRRCT	(*sibid*, *sorigin*, *size*, *format*, *parm*, *torigin*, *data*)	Read Rectangle
GPTRCT	(*tibid*, *torigin*, *size*, *sibid*, *sorigin*)	Transfer Rectangle
GPTHPO	(*tibid*, *torigin*, *size*, *sibid1*, *sorigin1*, *sibid2*, *sorigin2*, *op*, *opparm*)	Three Operand Pixel Operation
GPTWPO	(*tibid*, *torigin*, *size*, *sibid*, *sorigin*, *op*, *opparm*)	Two Operand Pixel Operation
GPWRCT	(*tibid*, *torigin*, *size*, *format*, *parm*, *sorigin*, *data*)	Write Rectangle

Utility Subroutines

Name	Parameter	Long Name
GPCCV	(*wsid*, *ctype*, *ptype*, *number*, *ilist*, *errind*, *olist*)	Convert Coordinate Values
GPCMT2	(*matra*, *matrb*, *matrix*)	Compose Matrix 2
GPCMT3	(*matra*, *matrb*, *matrix*)	Compose Matrix 3
GPCVD	(*datatype*, *env*, *origin*, *datalen*, *idata*, *odata*)	Convert Data
GPCVMT	(*matrix*)	Compute View Matrix
GPDFCO	(*origin*, *zplane*, *up*, *matrix*)	Define Coordinate System
GPEVM2	(*window*, *viewpt*, *errind*, *matrix*)	Evaluate View Mapping Matrix 2

Name	Parameter	Long Name
GPEVM3	(*window*, *viewpt*, *type*, *point*, *dist*, *near*, *far*, *errind*, *matrix*)	Evaluate View Mapping Matrix 3
GPPREC	(*numi*, *iary*, *numr*, *rary*, *nums*, *swidth*, *lens*, *sary*, *mlodr*, *errind*, *lodr*, *datarec*)	Pack Data Record
GPRNBS	(*uorder*, *vorder*, *unum*, *vnum*, *uknots*, *vknots*, *tflag*, *utdata*, *vtdata*, *cflags*, *cwidth*, *ctlpts*, *umin*, *umax*, *vmin*, *vmax*, *option*, *nelen*)	Reevaluate Non-Uniform B-Spline Surface
GPROTX	(*angle*, *matrix*)	Rotate X
GPROTY	(*angle*, *matrix*)	Rotate Y
GPROTZ	(*angle*, *matrix*)	Rotate Z
GPROT2	(*angle*, *matrix*)	Rotate 2
GPRTNS	(*uorder*, *vorder*, *unum*, *vnum*, *uknots*, *vknots*, *tflag*, *utess*, *vtess*, *cflags*, *cwidth*, *ctlpts*, *ncontour*, *ncurve*, *curveinfo*, *tknot*, *ttess*, *cdwidth*, *option*, *nelen*)	Reevaluate Trimmed Non-Uniform B-Spline Surface
GPSC2	(*scale*, *matrix*)	Scale 2
GPSC3	(*scale*, *matrix*)	Scale 3
GPTRL2	(*vector*, *matrix*)	Translate 2
GPTRL3	(*vector*, *matrix*)	Translate 3
GPVPLN	(*normal*)	Set View Plane Normal
GPVR	(*point*)	Set View Reference Point
GPVUP	(*vector*)	Set View Up
GPXF2	(*point*, *matrix*, *result*)	Transform Point 2
GPXF3	(*point*, *matrix*, *result*)	Transform Point 3

Error Handling Subroutines

Name	Parameter	Long Name
GPEHND	(*error-handler*)	Define Error Handling Subroutine GPEHND.
GPELOG	(*file*)	Error Logging GPELOG.
GPEMO	(*mode*)	Set Error Handling Mode GPEMO.
GPEXIT	(*error-routine*, *severity*)	Specify an Error Exit and Error Threshold GPEXIT.

Miscellaneous Subroutines

Name	Parameter	Long Name
GPES	(*funcid*, *lidr*, *idr*, *mlodr*, *lodr*, *odr*)	Escape
GPRDFB	(*wsid*, *frame*, *sorigin*, *size*, *format*, *parm*, *torigin*, *data*)	Read Frame Buffer

WSL Inquiries

Name	Parameter	Long Name
GPQAR	(*wsid*, *start*, *number*, *errind*, *totnum*, *strid*)	Inquire Set of Associated Roots
GPQBKS	(*wsid*, *errind*, *trigger*)	Inquire Break Action State
GPQCCH	(*wsid*, *ctid*, *errind*, *model*, *length*)	Inquire Color Table Characteristics
GPQCH	(*wsid*, *device*, *type*, *length*, *errind*, *mode*, *echosw*, *choice*, *echo*, *area*, *datalen*, *data*)	Inquire Choice Device State
GPQCID	(*wsid*, *start*, *number*, *errind*, *totnum*, *ctid*)	Inquire List of Color Table Identifiers
GPQCML	(*wsid*, *errind*, *model*)	Inquire Color Model

Name	Parameter	Long Name
GPQCPR	(*wsid, index, errind, model, quant, data*)	Inquire Color Processing Representation
GPQCSR	(*wsid, index, type, errind, size*)	Inquire Cull Size Representation
GPQCVE	(*wsid, start, number, errind, nview, view*)	Inquire Current View Table Entries Input
GPQCVO	(*wsid, start, number, errind, nview, view*)	Inquire Current View Table Entries Output
GPQCVR	(*wsid, view, number, ids, errind, data*)	Inquire Current View Representation
GPQDCR	(*wsid, index, type, number, ids, errind, data*)	Inquire Depth Cue Representation
GPQDMR	(*wsid, index, lclengths, lcdata, errind, method, mdata, clengths, ctype, cdata*)	Inquire Data Mapping Representation
GPQDV	(*wsid, errind, defer, modif, dissurf, dstat*)	Inquire Deferral and Update State Values
GPQFO	(*wsid, start, number, errind, nfont, lcsid, lfont*)	Inquire Active Fonts
GPQGFC	(*wsid, csid, font, start, num, errind, prec, nhts, lhts, lnfac, lmnfac, lmxfac*)	Inquire Geometric Font Characteristics
GPQHLF	(*wsid, inlen, exlen, errind, inclen, incl, exclen, excl*)	Inquire Highlighting Filter
GPQHR	(*wsid, index, errind, format, length, data*)	Inquire Hatch Representation
GPQICH	(*wsid, index, errind, conn, ctid, totnum, libid*)	Inquire Image Characteristics
GPQICS	(*wsid, class, device, errind, csid*)	Inquire Input Character Set
GPQID	(*wsid, class, device, errind, state, deact, echosw, trigger, break, reset*)	Inquire Input Device State
GPQIMC	(*wsid, imid, errind, view, index, origin, size, P, Q, R, method, priority*)	Inquire Image Mapping Characteristics
GPQIMI	(*wsid, index, start, number, errind, totnum, limid*)	Inquire Image Mapping of Image
GPQIMV	(*wsid, view, start, number, errind, totnum, limid*)	Inquire Image Mapping on View
GPQIMW	(*wsid, start, number, errind, totnum, limid*)	Inquire Image Mapping on Workstation
GPQITS	(*wsid, class, devnum, listid, start, number, errind, ntrigs, ltrigs*)	Inquire Input Device Trigger State
GPQIVF	(*wsid, inlen, exlen, errind, inclen, incl, exclen, excl*)	Inquire Invisibility Filter
GPQIW	(*wsid, start, number, errind, totnum, lindex*)	Inquire List of Images on the Workstation
GPQLC	(*wsid, device, type, length, errind, mode, echosw, view, pos, echo, area, datalen, data*)	Inquire Locator Device State
GPQLSR	(*wsid, index, type, errind, lstype, color, data*)	Inquire Light Source Representation
GPQLTR	(*wsid, ltype, errind, number, pattern*)	Inquire Linetype Representation
GPQMDS	(*wsid, errind, units, csize, asize*)	Inquire Mapped Display Surface Size
GPQMTR	(*wsid, mtype, errind, format, length, data*)	Inquire Marker Type Representation
GPQPAR	(*wsid, index, type, maxrow, maxcol, errind, drow, dcol, array*)	Inquire Pattern Representation
GPQPK	(*wsid, device, type, inlen, exlen, pathlen, length, errind, mode, echosw, inclen, incl, exclen, excl, depth, pickpath, echo, area, datalen, data, order*)	Inquire Pick Device State
GPQPKA	(*wsid, device, errind, size*)	Inquire Pick Aperture
GPQRCT	(*wsid, ilen, errind, olen, connid, wstype*)	Inquire Realized Connection Type
GPQRV	(*wsid, view, start, number, errind, totnum, strid, priority*)	Inquire Set of Roots in View
GPQRVE	(*wsid, start, number, errind, totnum, view*)	Inquire Requested View Table Entries Input
GPQRVO	(*wsid, start, number, errind, totnum, view*)	Inquire Requested View Table Entries Output
GPQRVR	(*wsid, view, number, ids, errind, data*)	Inquire Requested View Representation
GPQSK	(*wsid, device, type, lenpts, length, errind, mode, echosw, view, npoint, pointarray, echo, area, buflen, editpos, datalen, data*)	Inquire Stroke Device State
GPQST	(*wsid, device, type, slen, length, errind, mode, echosw, strlen, string, echo, area, buflen, editpos, datalen, data*)	Inquire String Device State

Name	Parameter	Long Name
GPQVL	(*wsid*, *device*, *type*, *length*, *errind*, *mode*, *echosw*, *ivalue*, *echo*, *area*, *lovalue*, *hivalue*, *datalen*, *data*)	Inquire Valuator Device State
GPQVR	(*wsid*, *strid*, *start*, *number*, *errind*, *totnum*, *view*)	Inquire Set of Views Which Contain Root
GPQWSU	(*wsid*, *errind*, *total*, *lgblock*, *numblks*)	Inquire Workstation Storage Utilization
GPQWSX	(*wsid*, *errind*, *state*, *rwindow*, *cwindow*, *rviewpt*, *cviewpt*)	Inquire Workstation Transformation
GPQXAF	(*wsid*, *csid*, *font*, *start*, *num*, *errind*, *prec*, *nomh*, *nahsf*, *lahsf*, *lnfac*, *lmnfac*, *lmxfac*, *proportional*, *top*, *bottom*, *nomaspect*)	Inquire Extended Annotation Font Characteristics
GPQXCR	(*wsid*, *ctid*, *start*, *number*, *type*, *errind*, *color*)	Inquire Extended Color Representation
GPQXER	(*wsid*, *index*, *type*, *number*, *ids*, *errind*, *data*)	Inquire Extended Edge Representation
GPQXIR	(*wsid*, *index*, *type*, *number*, *ids*, *errind*, *data*)	Inquire Extended Interior Representation
GPQXLR	(*wsid*, *index*, *type*, *number*, *ids*, *errind*, *data*)	Inquire Extended Polyline Representation
GPQXMR	(*wsid*, *index*, *type*, *number*, *ids*, *errind*, *data*)	Inquire Extended Polymarker Representation
GPQXTR	(*wsid*, *index*, *type*, *number*, *ids*, *errind*, *data*)	Inquire Extended Text Representation

WDT Inquiries

Name	Parameter	Long Name
GPQAAF	(*wstype*, *attrib*, *start*, *number*, *errind*, *totnum*, *enum*)	Inquire Advanced Attribute Facilities
GPQAMO	(*wstype*, *start*, *number*, *errind*, *totnum*, *mode*)	Inquire Available Antialiasing Modes
GPQANF	(*wstype*, *start*, *number*, *errind*, *totnum*, *styles*)	Inquire Annotation Facilities
GPQART	(*wstype*, *errind*, *totnum*)	Inquire Rendering Targets
GPQBK	(*wstype*, *start*, *number*, *errind*, *ntrigs*, *ltrigs*)	Inquire Break Capabilities
GPQCDF	(*wstype*, *start*, *number*, *errind*, *order*, *totnum*, *criteria*)	Inquire Curve Display Facilities
GPQCF	(*wstype*, *errind*, *model*, *ncolor*, *avcolor*, *npred*)	Inquire Color Facilities
GPQCPF	(*wstype*, *errind*, *number*, *npred*)	Inquire Color Processing Facilities
GPQCQM	(*wstype*, *start*, *number*, *errind*, *totnum*, *method*)	Inquire Available Color Quantization Methods
GPQCSF	(*wstype*, *errind*, *number*, *npred*)	Inquire Cull Size Facilities
GPQCUF	(*wstype*, *start1*, *num1*, *start2*, *num2*, *errind*, *maxent*, *maxsize*, *totnum1*, *lformat*, *totnum2*, *lcursor*, *npred*)	Inquire Cursor Facilities
GPQDBK	(*wstype*, *errind*, *trigger*)	Inquire Default Break Action
GPQDCF	(*wstype*, *errind*, *number*, *npred*)	Inquire Depth Cue Facilities
GPQDCH	(*wstype*, *device*, *start*, *number*, *length*, *errind*, *choice*, *necho*, *echo*, *area*, *datalen*, *data*)	Inquire Default Choice Device Data
GPQDDV	(*wstype*, *errind*, *defer*, *modif*)	Inquire Default Deferral State Values
GPQDIT	(*wstype*, *class*, *devnum*, *listid*, *start*, *number*, *errind*, *ndtrigs*, *dtriglist*)	Inquire Default Input Device Triggers
GPQDLC	(*wstype*, *device*, *start*, *number*, *length*, *errind*, *dimen*, *pos*, *necho*, *echo*, *area*, *datalen*, *data*)	Inquire Default Locator Device Data
GPQDPK	(*wstype*, *device*, *start*, *number*, *length*, *errind*, *maxpath*, *necho*, *echo*, *area*, *datalen*, *data*)	Inquire Default Pick Device Data
GPQDS	(*wstype*, *errind*, *units*, *csize*, *asize*)	Inquire Maximum Display Surface Size
GPQDSK	(*wstype*, *device*, *start*, *number*, *length*, *errind*, *dimen*, *size*, *necho*, *echo*, *area*, *buflen*, *editpos*, *datalen*, *data*)	Inquire Default Stroke Device Data
GPQDST	(*wstype*, *device*, *start*, *number*, *length*, *errind*, *size*, *necho*, *echo*, *area*, *buflen*, *editpos*, *datalen*, *data*)	Inquire Default String Device Data

Name	Parameter	Long Name
GPQDVL	(*wstype*, *device*, *start*, *number*, *length*, *errind*, *ivalue*, *necho*, *echo*, *area*, *lovalue*, *hivalue*, *datalen*, *data*)	Inquire Default Valuator Device Data
GPQEF	(*wstype*, *start*, *number*, *errind*, *netype*, *eltype*, *nelwidth*, *elwidth*, *minelw*, *maxelw*, *npred*)	Inquire Edge Facilities
GPQES	(*wstype*, *start*, *number*, *errind*, *totnum*, *escid*)	Inquire List of Available Escape Subroutines
GPQFBC	(*wstype*, *errind*, *org*, *n*, *depth*)	Inquire Frame Buffer Characteristics
GPQFP	(*wstype*, *errind*, *poolsize*)	Inquire Font Pool Size
GPQGD	(*wstype*, *start*, *number*, *errind*, *totnum*, *gdpid*)	Inquire List of Generalized Drawing Primitives
GPQGDP	(*wstype*, *gdpid*, *errind*, *number*, *list*)	Inquire Generalized Drawing Primitive
GPQGSE	(*wstype*, *start*, *number*, *errind*, *totnum*, *gseid*)	Inquire List of Available GSEs
GPQHD	(*wstype*, *errind*, *depth*)	Inquire Maximum Hierarchy Depth
GPQHF	(*wstype*, *errind*, *format*, *maxlen*, *npred*, *available*)	Inquire Hatch Facilities
GPQHMO	(*wstype*, *start*, *number*, *errind*, *totnum*, *mode*)	Inquire Available HLHSR Modes
GPQIDD	(*wstype*, *class*, *devnum*, *id*, *lidata*, *idata*, *mlodata errind*, *mlodata*, *odata*)	Inquire Input Device Description
GPQIDF	(*wstype*, *start*, *number*, *errind*, *nimage*, *totnum*, *conn*)	Inquire Image Definition Facilities
GPQIF	(*wstype*, *starti*, *numi*, *starth*, *numh*, *errind*, *intnum*, *interiors*, *hatnum*, *hatch*, *npred*)	Inquire Interior Facilities
GPQIMF	(*wstype*, *start*, *number*, *errind*, *nprio*, *totnum*, *method*)	Inquire Image Mapping Facilities
GPQISF	(*wstype*, *class*, *device*, *start*, *number*, *errind*, *ncsid*, *csid*)	Inquire Input Character Set Facilities
GPQIT	(*wstype*, *class*, *devnum*, *start*, *number*, *errind*, *ntrigs*, *ltrigs*)	Inquire Input Trigger Capabilities
GPQLCF	(*wstype*, *number*, *ids*, *errind*, *data*)	Inquire List of Color Facilities
GPQLI	(*wstype*, *class*, *start*, *number*, *errind*, *ndev*, *dev*)	Inquire List of Logical Input Devices
GPQLNR	(*wstype*, *start*, *number*, *errind*, *totnum*, *rstyle*)	Inquire List of Line Rendering Styles
GPQLSF	(*wstype*, *start*, *number*, *errind*, *maxe*, *totnum*, *ltype*, *maxa*, *npred*)	Inquire Light Source Facilities
GPQLTF	(*wstype*, *errind*, *sections*, *maxlen*, *unit*, *npred*, *available*)	Inquire Linetype Facilities
GPQLW	(*wstype*, *errind*, *ltable*, *mtable*, *ttable*, *itable*, *etable*, *pttable*, *ctable*)	Inquire Length of Workstation State Tables
GPQMTF	(*wstype*, *errind*, *format*, *maxlen*, *npred*, *available*)	Inquire Marker Type Facilities
GPQNCN	(*wstype*, *errind*, *number*)	Inquire Number of Available Class Names
GPQNSP	(*wstype*, *errind*, *npri*)	Inquire Number of Structure Priorities Supported
GPQNST	(*wstype*, *class*, *devnum*, *errind*, *number*)	Inquire Number of Secondary Triggers
GPQNV	(*wstype*, *errind*, *number*)	Inquire Number of Definable View Table Entries
GPQPAF	(*wstype*, *errind*, *maxrow*, *maxcol*, *indexes*)	Inquire Pattern Facilities
GPQPCR	(*wstype*, *start*, *number*, *errind*, *npred*, *indexes*, *colors*)	Inquire Predefined Color Representation
GPQPCS	(*wstype*, *errind*, *csid*)	Inquire Primary Character Set
GPQPDC	(*wstype*, *category*, *device*, *number*, *errind*, *flags*, *type*, *totnum*, *vrange*)	Inquire Physical Device Characteristics
GPQPER	(*wstype*, *index*, *errind*, *edgefg*, *edgelt*, *edgesf*, *ecol*)	Inquire Predefined Edge Representation
GPQPIR	(*wstype*, *index*, *errind*, *style*, *sindex*, *icol*)	Inquire Predefined Interior Representation
GPQPKT	(*wstype*, *device*, *errind*, *type*)	Inquire Pick Measure Type

Name	Parameter	Long Name
GPQPLF	(*wstype, start, number, errind, ntype, ltype, nlwidth, lwidth, minlw, maxlw, npred*)	Inquire Polyline Facilities
GPQPLR	(*wstype, index, errind, ltype, lwidth, color*)	Inquire Predefined Polyline Representation
GPQPMF	(*wstype, start, number, errind, ntype, mtype, nsize, size, minms, maxms, npred*)	Inquire Polymarker Facilities
GPQPMR	(*wstype, index, errind, mtype, msize, color*)	Inquire Predefined Polymarker Representation
GPQPPR	(*wstype, index, maxrow, maxcol, errind, drow, dcol, array*)	Inquire Predefined Pattern Representation
GPQPTR	(*wstype, index, errind, font, prec, factor, space, color*)	Inquire Predefined Text Representation
GPQRCM	(*wstype, start, number, errind, totnum, model*)	Inquire Available Rendering Color Models
GPQSDF	(*wstype, start, number, errind, order, totnum, criteria*)	Inquire Surface Display Facilities
GPQSPD	(*wstype, class, ldevice, errind, category, pdevice*)	Inquire Source Physical Device
GPQTDF	(*wstype, start, number, errind, order, totnum, criteria*)	Inquire Trimming Curve Display Facilities
GPQTMO	(*wstype, start, number, errind, totnum, mode*)	Inquire Available Transparency Modes
GPQVF	(*wstype, errind, shield*)	Inquire View Facilities
GPQWC	(*wstype, errind, type*)	Inquire Workstation Category
GPQWD	(*wstype, errind, type*)	Inquire Workstation Display Classification
GPQWDT	(*wstype, id, lidata, idata, mlodata, errind, lodata, odata*)	Inquire Workstation Description
GPQWTO	(*wsid, ilen, errind, wstype, olen, options*)	Inquire Workstation Type and Options
GPQXCF	(*wstype, start, number, errind, charact, nmax, lmax, totnum, model*)	Inquire Extended Color Facilities
GPQXTX	(*wstype, errind, npred, filled, proportional*)	Inquire Extended Text Facilities

PDT Inquiries

Name	Parameter	Long Name
GPQAI	(*start, number, errind, totnum, format*)	Inquire List of Available Application Image Formats
GPQCMM	(*start, number, errind, totnum, conn*)	Inquire List of Available Connection Methods

PSL Inquiries

Name	Parameter	Long Name
GPQASV	(*state*)	Inquire Archive State Value
GPQATR	(*ncid, type, start, number, errind, totnum, id*)	Inquire List of Attached Resources
GPQCEV	(*major, class, minor*)	Inquire Current Event
GPQCNC	(*start, number, errind, totnum, ncid*)	Inquire List of Connected Nuclei
GPQCS	(*csid*)	Inquire Character Set Identifier
GPQDCM	(*model*)	Inquire Direct Color Model
GPQEDM	(*mode*)	Inquire Edit Mode
GPQEMO	(*mode*)	Inquire Error Handling Mode
GPQEMS	(*length, errind, number, message*)	Inquire Error Message
GPQFAR	(*csid, font, slength, string, errind, aspect-ratio-list*)	Inquire Font Aspect Ratios
GPQFCH	(*csid, font, errind, proportional, top, bottom, nomaspect*)	Inquire Font Characteristics
GPQIBC	(*ibid, errind, depth, h, v*)	Inquire Image Board Characteristics
GPQIQO	(*errind, major, class, minor*)	Inquire Input Queue Overflow

Name	Parameter	Long Name
GPQNCC	(*ncid*, *state*)	Inquire Nucleus Connection State
GPQNCR	(*type*, *id*, *errind*, *ncid*, *rid*)	Inquire Nucleus Resource Identifier
GPQOPW	(*start*, *number*, *errind*, *totnum*, *lwsid*)	Inquire Set of Open Workstations
GPQSEV	(*simevnt*)	Inquire More Simultaneous Events
GPQSH	(*ncid*, *errind*, *shid*, *env*)	Inquire Shell Identifier
GPQSHD	(*deferral*, *update*)	Inquire Shell Deferral State
GPQSPL	(*level*)	Inquire Shell Product Level
GPQSSS	(*status*, *ssid*)	Inquire Selected Structure Store
GPQSTV	(*state*)	Inquire Structure State Value
GPQSYV	(*state*)	Inquire System State Value
GPQWSV	(*state*)	Inquire Workstation State Value

NDT Inquiries

Name	Parameter	Long Name
GPQIBF	(*ncid*, *start*, *number*, *errind*, *totnum*, *depth*, *h*, *v*)	Inquire Image Board Facilities
GPQNCE	(*ncid*, *length*, *datatype*, *errind*, *hardware*, *datalen*, *data*)	Inquire Nucleus Environment
GPQNS	(*ncid*, *ilen*, *errind*, *conn*, *olen*, *spec*)	Inquire Nucleus Specification
GPQPO	(*ncid*, *type*, *start*, *number*, *errind*, *totnum*, *op*)	Inquire Available Pixel Operations
GPQWTN	(*ncid*, *start*, *number*, *errind*, *maxa*, *totnum*, *wstype*)	Inquire List of Available Workstation Types on Nucleus

NSL Inquiries

Name	Parameter	Long Name
GPQNCS	(*ncid*, *errind*, *size*)	Inquire Available Nucleus Storage Size

SSL Inquiries

Name	Parameter	Long Name
GPELS	(*strid*, *start*, *direction*, *inclnum*, *lincl*, *exclnum*, *lexcl*, *errind*, *status*, *position*, *header*)	Element Search
GPQACS	(*ssid*, *start*, *number*, *errind*, *totnum*, *istrid*)	Inquire All Conflicting Structures in Structure Store
GPQCSN	(*ssid*, *strid*, *source*, *start*, *number*, *errind*, *totnum*, *istrid*)	Inquire All Conflicting Structures in Network in Structure Store
GPQED	(*number*, *buflen*, *errind*, *actnum*, *actlen*, *data*, *termcond*)	Inquire List of Element Data
GPQEDA	(*strid*, *start*, *number*, *buflen*, *errind*, *actnum*, *actlen*, *data*, *termcond*)	Inquire List of Element Data for any Structure
GPQEHA	(*strid*, *start*, *number*, *errind*, *actnum*, *header*)	Inquire List of Element Headers for Any Structure
GPQEHD	(*number*, *errind*, *actnum*, *header*)	Inquire List of Element Headers
GPQEP	(*errind*, *value*)	Inquire Element Pointer
GPQEXS	(*strid*, *start*, *number*, *errind*, *totnum*, *lstrid*)	Inquire Executed Structures
GPQISN	(*strid*, *start*, *number*, *errind*, *totnum*, *istrid*)	Inquire Identifiers of Structures in Network
GPQOPS	(*type*, *strid*)	Inquire Open Structure
GPQPAS	(*strid*, *order*, *depth*, *start*, *number*, *buflen*, *errind*, *actnum*, *actlen*, *totnum*, *data*, *termcond*)	Inquire Ancestors of Structure

Name	Parameter	Long Name
GPQPDS	(*strid*, *order*, *depth*, *start*, *number*, *buflen*, *errind*, *actnum*, *actlen*, *totnum*, *data*, *termcond*)	Inquire Descendents of Structure
GPQRST	(*strid*, *start*, *number*, *errind*, *totnum*, *istrid*)	Inquire Referencing Structures
GPQSTI	(*start*, *number*, *errind*, *totnum*, *lstrid*)	Inquire Structure Identifiers
GPQSTS	(*strid*, *errind*, *flag*, *count*)	Inquire Structure Status
GPQWSA	(*strid*, *start*, *number*, *errind*, *totnum*, *lwsid*)	Inquire Set of Workstations to Which Associated

Archive Inquiries

Name	Parameter	Long Name
GPQACA	(*arid*, *start*, *number*, *errind*, *totnum*, *idstrid*)	Inquire All Conflicting Structures in Archive
GPQARF	(*start*, *number*, *buflen*, *errind*, *actnum*, *totnum*, *arlist*, *termcond*)	Inquire Archive Files
GPQCNA	(*arid*, *strid*, *source*, *start*, *number*, *errind*, *totnum*, *istrid*)	Inquire Conflicting Structures in Network in Archive
GPQCNR	(*aflag*, *rflag*)	Inquire Conflict Resolution
GPRAS	(*arid*, *strid*, *order*, *depth*, *start*, *number*, *buflen*, *errind*, *actnum*, *actlen*, *totnum*, *data*, *termcond*)	Retrieve Ancestors to Structures
GPRDS	(*arid*, *strid*, *order*, *depth*, *start*, *number*, *buflen*, *errind*, *actnum*, *actlen*, *totnum*, *data*, *termcond*)	Retrieve Descendants to Structures
GPRISN	(*arid*, *strid*, *start*, *number*, *errind*, *totnum*, *istrid*)	Retrieve Identifiers of Structures in Network
GPRSTI	(*arid*, *start*, *number*, *errind*, *totnum*, *istrid*)	Retrieve Structure Identifiers

Compatibility Subroutines

Name	Parameter	Long Name
GPCR	(*wsid*, *index*, *number*, *colors*)	Set Color Representation
GPEPLB	(*label*)	Set Element Pointer at Label
GPEPPK	(*pickid*)	Set Element Pointer at Pick Identifier
GPER	(*wsid*, *index*, *edgefg*, *edgelt*, *edgesf*, *ecol*)	Set Edge Representation
GPIR	(*wsid*, *index*, *style*, *sindex*, *icol*)	Set Interior Representation
GPPLR	(*wsid*, *index*, *ltype*, *lwidth*, *color*)	Set Polyline Representation
GPPMR	(*wsid*, *index*, *mtype*, *msize*, *color*)	Set Polymarker Representation
GPQABK	(*wsid*, *start*, *number*, *errind*, *ntrigs*, *ltrigs*)	Inquire Actual Break Capabilities
GPQACF	(*wsid*, *errind*, *model*, *ncolor*, *avcolor*)	Inquire Actual Color Facilities
GPQADS	(*wsid*, *errind*, *units*, *csize*, *asize*)	Inquire Actual Maximum Display Surface Size
GPQAEF	(*wsid*, *start*, *number*, *errind*, *ntype*, *eltype*, *nelwidth*, *elwidth*, *minelw*, *maxelw*)	Inquire Actual Edge Facilities
GPQAES	(*wsid*, *start*, *number*, *errind*, *nids*, *idlist*)	Inquire List of Actual Available Escape Subroutines
GPQAFC	(*wsid*, *csid*, *font*, *start*, *num*, *errind*, *prec*, *nomh*, *nahsf*, *lahsf*, *lnfac*, *lmnfac*, *lmxfac*)	Inquire Annotation Font Characteristics
GPQAFP	(*wsid*, *errind*, *poolsize*)	Inquire Actual Font Pool Size
GPQAGD	(*wsid*, *start*, *number*, *errind*, *ngdp*, *lgdp*)	Inquire List of Actual Generalized Drawing Primitives
GPQAIF	(*wsid*, *startp*, *nump*, *starth*, *numh*, *errind*, *intnum*, *interiors*, *hatnum*, *hatch*)	Inquire Actual Interior Facilities

Name	Parameter	Long Name
GPQAIS	(*wsid*, *class*, *device*, *start*, *number*, *errind*, *ncsid*, *csid*)	Inquire Actual Input Character Set Facilities
GPQAIT	(*wsid*, *class*, *devnum*, *start*, *number*, *errind*, *ntrigs*, *ltrigs*)	Inquire Actual Input Trigger Capabilities
GPQALF	(*wsid*, *start*, *number*, *errind*, *ntype*, *ltype*, *nlwidth*, *lwidth*, *minlw*, *maxlw*)	Inquire Actual Polyline Facilities
GPQALI	(*wsid*, *class*, *start*, *number*, *errind*, *ndev*, *dev*)	Inquire List of Actual Logical Input Devices
GPQALW	(*wsid*, *errind*, *ltable*, *mtable*, *ttable*, *itable*, *etable*, *pttable*, *ctable*)	Inquire Actual Length of Workstation State Tables
GPQAMF	(*wsid*, *start*, *number*, *errind*, *ntype*, *mtype*, *nsize*, *size*, *minms*, *maxms*)	Inquire Actual Polymarker Facilities
GPQANV	(*wsid*, *errind*, *number*)	Inquire Actual Number of Definable View Table Entries
GPQAPF	(*wsid*, *errind*, *maxrow*, *maxcol*)	Inquire Actual Pattern Facilities
GPQAPS	(*wsid*, *errind*, *csid*)	Inquire Actual Primary Character Set
GPQAVF	(*wsid*, *errind*, *shield*)	Inquire Actual View Facilities
GPQAWC	(*wsid*, *errind*, *type*)	Inquire Actual Workstation Category
GPQAWD	(*wsid*, *errind*, *type*)	Inquire Actual Workstation Display Classification
GPQCR	(*wsid*, *start*, *number*, *type*, *errind*, *colors*)	Inquire Color Representation
GPQCVX	(*wsid*, *view*, *errind*, *matrix*, *window*, *viewpt*, *viewt*, *refpt*, *dist*, *near*, *far*, *wincp*, *nearcp*, *farcp*, *shield*, *shldci*, *border*, *brdrci*, *viewact*)	Inquire Current Viewing Transformation
GPQE	(*start*, *number*, *errind*, *ndata*, *data*)	Inquire Element Content
GPQER	(*wsid*, *index*, *type*, *errind*, *edgefg*, *edgelt*, *edgesf*, *ecol*)	Inquire Edge Representation
GPQETS	(*errind*, *type*, *size*)	Inquire Element Type and Size
GPQIR	(*wsid*, *index*, *type*, *errind*, *style*, *sindex*, *icol*)	Inquire Interior Representation
GPQLR	(*wsid*, *index*, *type*, *errind*, *ltype*, *lwidth*, *color*)	Inquire Polyline Representation
GPQMR	(*wsid*, *index*, *type*, *errind*, *mtype*, *msize*, *color*)	Inquire Polymarker Representation
GPQRVX	(*wsid*, *view*, *errind*, *matrix*, *window*, *viewpt*, *viewt*, *refpt*, *dist*, *near*, *far*, *wincp*, *nearcp*, *farcp*, *shield*, *shldci*, *border*, *brdrci*, *viewact*)	Inquire Requested Viewing Transformation
GPQSTE	(*strid*, *flag*)	Inquire Structure Existence
GPQTR	(*wsid*, *index*, *type*, *errind*, *font*, *prec*, *factor*, *space*, *color*)	Inquire Text Representation
GPQTXF	(*wstype*, *errind*, *npred*)	Inquire Text Facilities
GPQWCT	(*wsid*, *errind*, *connid*, *wstype*)	Inquire Workstation Connection and Type
GPQWCV	(*wstype*, *start*, *number*, *errind*, *totnum*, *flist*)	Inquire Workstation Configuration Variability
GPQWST	(*start*, *number*, *errind*, *maxopen*, *nwstype*, *wstype*)	Inquire List of Available Workstation Types
GPTXR	(*wsid*, *index*, *font*, *prec*, *factor*, *space*, *color*)	Set Text Representation
GPVCH	(*wsid*, *view*, *window*, *near*, *far*, *shield*, *shldci*, *border*, *brdrci*, *active*)	Set View Characteristics
GPVMP2	(*wsid*, *view*, *window*, *viewpt*)	Set View Mapping 2
GPVMP3	(*wsid*, *view*, *window*, *viewpt*, *type*, *point*, *dist*, *near*, *far*)	Set View Mapping 3
GPVMT2	(*wsid*, *view*, *matrix*)	Set View Matrix 2
GPVMT3	(*wsid*, *view*, *matrix*)	Set View Matrix 3

Distributed Application Processing (DAP)

Name	Parameter	Long Name
GPEXAP	(*apid*, *ncid*, *size*, *namel*, *name*, *parmt*, *parml*, *parm*, *xferflag*, *useridl*, *userid*, *passwordl*, *password*)	Execute Application Process
GPINAP	(*apid*, *ncid*, *size*, *namel*, *name*, *parmt*, *parml*, *parm*)	Initiate Application Process
GPTMAP	(*apid*)	Terminate Application Process

Explicit Traversal

Name	Parameter	Long Name
GPATS	(*strid*, *start*, *end*)	Accumulate Traversal State
GPBGST	(*strid*)	Begin Structure
GPBGTR	(*wsid*, *view*, *type*, *data*)	Begin Traversal
GPCARR	(*wsid*)	Clear All Rendering Resources
GPCPVP	(*wsid*, *view*, *srtspec*, *drtspec*)	Copy Viewport
GPCRT	(*wsid*, *rtspec*)	Clear Rendering Target
GPCVW	(*wsid*, *view*)	Clear View
GPDRI2	(*index*, *origin*, *size*, *P*, *Q*, *R*, *method*)	Draw Image 2
GPDRT	(*wsid*, *rtspec*)	Display Rendering Target
GPDRVW	(*wsid*, *view*)	Draw View
GPENST		End Structure
GPENTR		End Traversal
GPPSTS	(*strid*)	Push Set TSL
GPPTS		Pop TSL
GPSRT	(*wsid*, *rtspec*)	Select Rendering Target
GPTE	(*strid*, *start*, *end*)	Traversal Elements

Chapter 3. graPHIGS API Subroutine Functions (Alphabetical)

Name	Parameter	Long Name
GPAAL	(*horiz, vert*)	Set Annotation Alignment
GPACFO	(*wsid, csid, font*)	Activate Font
GPADCN	(*number, names*)	Add Class Name to Set
GPAFDW	(*wsid, fdid*)	Associate Font Directory with Workstation
GPAH	(*height*)	Set Annotation Height
GPAHSC	(*factor*)	Set Annotation Height Scale Factor
GPAID	(*antid*)	Set Antialiasing Identifier
GPAN2	(*point, length, text*)	Annotation Text 2
GPAN3	(*point, length, text*)	Annotation Text 3
GPANR2	(*refpt, textvec, length, text*)	Annotation Text Relative 2
GPANR3	(*refpt, textvec, length, text*)	Annotation Text Relative 3
GPAPT	(*path*)	Set Annotation Path
GPARAS	(*arid*)	Archive All Structures
GPARSN	(*arid, number, lstrid*)	Archive Structure Networks
GPARST	(*arid, number, lstrid*)	Archive Structures
GPARV	(*wsud, view, strid, prior*)	Associate Root with View
GPARW	(*wsud, strid*)	Associate Root with Workstation
GPAS	(*style*)	Set Annotation Style
GPASF	(*number, id, flag*)	Attribute Source Flag Setting
GPASSW	(*wsid, ssid*)	Associate Structure Store with Workstation
GPATR	(*type, id, ncid, rid, pass*)	Attach Resource
GPATS	(*strid, start, end*)	Accumulate Traversal State
GPAUP	(*vector*)	Set Annotation Up Vector
GPAWEV	(*time, major, class, minor*)	Await Event
GPBBLF	(*srcf, destf*)	Set Back Blending Function
GPBDFM	(*minfm, magfm, boundu, boundv*)	Set Back Data Filtering Method
GPBDMF	(*flength, fdata*)	Set Back Data Morphing Factors
GPBDMI	(*index*)	Set Back Data Mapping Index
GPBDM2	(*matrix*)	Set Back Data Mapping Matrix 2
GPBGST	(*strid*)	Begin Structure
GPBGTR	(*wsid, view, type, data*)	Begin Traversal
GPBICD	(*color*)	Set Back Interior Color Direct
GPBICI	(*index*)	Set Back Interior Color Index
GPBISM	(*method*)	Set Back Interior Shading Method
GPBKAC	(*wsid, trigger*)	Set Break Action
GPBLF	(*srcf, destf*)	Set Blending Function
GPBRMO	(*model*)	Set Back Reflectance Model
GPBSCD	(*color*)	Set Back Specular Color Direct
GPBSCI	(*index*)	Set Back Specular Color Index
GPBSPR	(*amb, diff, spec, exp, trans*)	Set Back Surface Properties
GPBTCO	(*coeff*)	Set Back Transparency Coefficient
GPCAC	(*criteria, value*)	Set Curve Approximation Criteria
GPCAI	(*wsid, index*)	Cancel Image
GPCARR	(*wsid*)	Clear All Rendering Resources
GPCCM	(*mode*)	Set Convexity Checking Mode
GPCCV	(*wsid, ctype, ptype, number, ilist, errind, olist*)	Convert Coordinate Values
GPCEDT	(*flag*)	Conditional Editing
GPCEXS	(*mask, crit, mode, strid*)	Conditional Execute Structure
GPCFA2	(*ncontour, ncurve, curveinfo, knot, tess, vwidth, vdata*)	Composite Fill Area 2
GPCHH	(*height*)	Set Character Height
GPCHL2	(*startp, endp, nomhgt, char*)	Character Line 2

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Name	Parameter	Long Name
GPCHLS	(*scale*)	Set Character Line Scale Factor
GPCHMO	(*wsid, device, mode, echosw*)	Set Choice Mode
GPCHPM	(*posmode*)	Set Character Positioning Mode
GPCHSP	(*space*)	Set Character Spacing
GPCHUB	(*up,base*)	Set Character Up and Base Vectors
GPCHUP	(*up*)	Set Character Up Vector
GPCHXP	(*expans*)	Set Character Expansion Factor
GPCIM2	(*wsid, imap, view, index, origin, size, P, Q, R, method, prior*)	Create Image Mapping 2
GPCIM3	(*wsid, imap, view, index, origin, size, P, Q, R, method, prior*)	Create Image Mapping 3
GPCLAR	(*arid*)	Close Archive File
GPCLPH		Close graPHIGS
GPCLST		Close Structure
GPCLWS	(*wsid*)	Close Workstation
GPCML	(*wsid, model*)	Set Color Model
GPCMT2	(*matra, matrb, matrix*)	Compose Matrix 2
GPCMT3	(*matra, matrb, matrix*)	Compose Matrix 3
GPCNC	(*ncid, conn, len, spec*)	Connect Nucleus
GPCNRS	(*aflag, rflag*)	Set Conflict Resolution
GPCOND	(*on, off*)	Set Condition
GPCPER	(*strid, elem1, elem2*)	Copy Element Range
GPCPI	(*index*)	Set Color Processing Index
GPCPR	(*wsid, index, model, quant, data*)	Set Color Processing Representation
GPCPST	(*strid*)	Copy Structure
GPCPVP	(*wsid, view, srtspec, drtspec*)	Copy Viewport
GPCR	(*wsid, index, number, colors*)	Set Color Representation
GPCR2	(*center, radius*)	Circle 2
GPCRA2	(*center, radius, startang, endang*)	Circular Arc 2
GPCRC	(*wsid, ctid, model, length*)	Create Color Table
GPCRET	(*mask, crit*)	Conditional Return
GPCRFD	(*fdid, ncid, fdtype, fddesc*)	Create Font Directory
GPCRIB	(*ibid, ncid, depth, h, v, ibtype, ibdesc*)	Create Image Board
GPCRSS	(*ssid, ncid, sstype, ssdesc*)	Create Structure Store
GPCRT	(*wsid, rtspec*)	Clear Rendering Target
GPCRWS	(*wsid, ncid, length, connid, wstype, option*)	Create Workstation
GPCSI	(*ostrid, rstrid*)	Change Structure Identifier
GPCSIR	(*ostrid, rstrid*)	Change Structure Identifier and References
GPCSR	(*wsid, index, size*)	Set Cull Size Representation
GPCSRS	(*ostrid, rstrid*)	Change Structure References
GPCUR	(*wsid, index, format, shape*)	Set Cursor Representation
GPCUS	(*wsid, ctype*)	Set Cursor Shape
GPCVD	(*datatype, env, origin, datalen, idata, odata*)	Convert Data
GPCVMT	(*matrix*)	Compute View Matrix
GPCVW	(*wsid, view*)	Clear View
GPDAFO	(*wsid, csid, font*)	Deactivate Font
GPDARW	(*wsid*)	Disassociate All Roots from Workstation
GPDASA	(*arid*)	Delete All Structures from Archive
GPDAST		Delete All Structures
GPDCI	(*index*)	Set Depth Cue Index
GPDCM	(*model*)	Set Direct Color Model
GPDCMM	(*wsid*, *method*, *length*, *data*)	Set Device Coordinate Mapping Method
GPDCR	(*wsid, index, id, value*)	Set Depth Cue Representation
GPDELB	(*label1, label2*)	Delete Element Between Labels
GPDF	(*wsid, defer, modif*)	Set Deferral State

Name	Parameter	Long Name
GPDFCO	(*origin, zplane, up, matrix*)	Define Coordinate System
GPDFI	(*wsid, index, conn, ctid, nibid, libid*)	Define Image
GPDFM	(*minfm, magfm, boundu, boundv*)	Set Data Filtering Method
GPDIM	(*wsid, imap*)	Delete Image Mapping
GPDLC	(*wsid, ctid*)	Delete Color Table
GPDLE		Delete Element
GPDLEG	(*label1, label2, option*)	Delete Element Group
GPDLER	(*elem1, elem2*)	Delete Element Range
GPDLFO	(*fdid, csid, font*)	Delete Font
GPDLNC	(*strid*)	Delete Structure Network Conditionally
GPDLNT	(*strid*)	Delete Structure Network
GPDLST	(*strid*)	Delete Structure
GPDMF	(*flength, fdata*)	Set Data Morphing Factors
GPDMI	(*index*)	Set Data Mapping Index
GPDMR	(*wsid, index, method, mdata, clengths, ctype, cdata*)	Set Data Mapping Representation
GPDM2	(*matrix*)	Set Data Matrix 2
GPDNC	(*ncid*)	Disconnect Nucleus
GPDPL2	(*npoint, width, pointlist, mdarray*)	Disjoint Polyline 2
GPDPL3	(*npoint, width, pointlist, mdarray*)	Disjoint Polyline 3
GPDRAV	(*wsid, strid*)	Disassociate Root from All Views
GPDRI2	(*index, origin, size, P, Q, R, method*)	Draw Image 2
GPDRT	(*wsid, rtspec*)	Display Rendering Target
GPDRV	(*wsid, view, strid*)	Disassociate Root from View
GPDRVW	(*wsid, view*)	Draw View
GPDRW	(*wsid, strid*)	Disassociate Root from Workstation
GPDSAR	(*arid, number, lstrid*)	Delete Structures from Archive
GPDSNA	(*arid, number, lstrid*)	Delete Structures Networks from Archive
GPDTR	(*type, id*)	Detach Resource
GPEAV	(*wsid*)	Empty All Views
GPECD	(*color*)	Set Edge Color Direct
GPECI	(*index*)	Set Edge Color Index
GPEDMO	(*mode*)	Set Edit Mode
GPEF	(*edgefg*)	Set Edge Flag
GPEHND	(*error-handler*)	Define Error Handling Subroutine
GPEI	(*index*)	Set Edge Index
GPEL2	(*center, refv1, refv2*)	Ellipse 2
GPEL3	(*center, refv1, refv2*)	Ellipse 3
GPELA2	(*center, refv1, refv2, startv, endv*)	Elliptical Arc 2
GPELA3	(*center, refv1, refv1, startv, endv*)	Elliptical Arc 3
GPELOG	(*file*)	Error Logging
GPELS	(*strid, start, direction, inclnum, lincl, exclnum, lexcl, errind, status, position, header*)	Element Search
GPELT	(*edgelt*)	Set Edge Linetype
GPEMO	(*mode*)	Set Error Handling Mode
GPENST	(*mode*)	End Structure
GPENTR	(*wsud, strid*)	End Traversal
GPEP	(*label*)	Set Element Pointer at Label
GPEPCD	(*code*)	Locate Element Pointer at Element Code
GPEPD	(*wsid, category, device, value*)	Emulate Physical Device
GPEPLB	(*label*)	Set Element Pointer at Label
GPEPLG	(*label, flag*)	Generalized Set Element Pointer at Label
GPEPPG	(*pickid, flag*)	Generalized Set Element Pointer at Pick Identifier
GPEPPK	(*pickid*)	Set Element Pointer at Pick Identifier

Name	Parameter	Long Name
GPER	(*wsid, index, edgefg, edgelt, edgesf, ecol*)	Set Edge Representation
GPES	(*funcid, lidr, idr, mlodr, lodr, odr*)	Escape
GPESC	(*edgesf*)	Set Edge Scale Factor
GPEST	(*strid*)	Empty Structure
GPEV	(*wsid, view*)	Empty View
GPEVHN	(*event-handler, anchor*)	Define Event Handling Subroutine
GPEVM2	(*window, viewpt, errind, matrix*)	Evaluate View Mapping Matrix 2
GPEVM3	(*window, viewpt, type, point, dist, near, far, errind, matrix*)	Evaluate View Mapping Matrix 3
GPEXAP	(*apid, ncid, size, namel, name, parmt, parml, parm, xferflag, useridl, userid, passwordl, password*)	Execute Application Process
GPEXIT	(*error-routine, severity*)	Specify an Error Exit and Error Threshold
GPEXST	(*strid*)	Execute Structure
GPFBC	(*op, mask, value*) .	Set Frame Buffer Comparison
GPFBM	(*mask*)	Set Frame Buffer Protect Mask
GPFDMO	(*mode*)	Set Face Distinguish Mode
GPFLEV	(*wsid, class, device*)	Flush Device Event
GPFLM	(*flmeth*)	Set Face Lighting Method
GPFRCT	(*ibid, origin, size, value*)	Fill Rectangle
GPFWEV	(*wsid*)	Flush Workstation Event
GPGLX2	(*matrix*)	Set Global Tranformation 2
GPGLX3	(*matrix*)	Set Global Transformation 3
GPGTCH	(*choice*)	Get Choice
GPGTLC	(*view, pos*)	Get Locator
GPGTMS	(*ilen, olen, string*)	Get Message
GPGTPK	(*length, depth, pickpath*)	Get Pick
GPGTSK	(*length, view, npoint, pointlist*)	Get Stroke
GPGTST	(*ilen, olen, string*)	Get String
GPGTVL	(*value*)	Get Valuator
GPGTXC	(*wsid, height, method*)	Set Geometric Text Culling
GPGTXP	(*maxdepth, view, point, modelling, depth, pickpath*)	Get Extended Pick
GPGWIN	(*ilen, olen, data*)	Get Window
GPHID	(*hlhsr*)	Set HLHSR Identifier
GPHLCD	(*color*)	Set Highlighting Color Direct
GPHLCI	(*index*)	Set Highlighting Color Index
GPHLF	(*wsid, inclen, incl, exclen, excl*)	Set Highlighting Filter
GPHR	(*wsid, hatch, format, length, data*)	Set Hatch Representation
GPICD	(*color*)	Set Interior Color Direct
GPICI	(*index*)	Set Interior Color Index
GPICS	(*wsid, class, device, csid*)	Set Input Character Set
GPIDMO	(*wsid, class, device, state, deact, echosw, trigger, break, reset*)	Set Input Device Mode
GPIEC	(*wsid, color*)	Set Input Echo Color
GPII	(*index*)	Set Interior Index
GPINAD	(*length, data*)	Insert Application Data
GPINAP	(*apid, ncid, size, namel, name, parmt, parml, parm*)	Initiate Application Process
GPINCH	(*wsid, device, choice, echo, area, datalen, data*)	Initialize Choice
GPINLB	(*label*)	Insert Label
GPINLC	(*wsid, device, view, pos, echo, area, datalen, data*)	Initialize Locator

Name	Parameter	Long Name
GPINPK	(*wsid, device, depth, pickpath, echo, area, datalen, data, order*)	Initialize Pick
GPINSK	(*wsid, device, view, npoint, width, pointlist, echo, area, buflen, editpos, datalen, data*)	Initialize Stroke
GPINST	(*wsid, device, length, string, echo, area, buflen, cursor, datalen, data*)	Initialize String
GPINVL	(*wsid, device, ivalue, echo, area, lovalue, hivalue, datalen, data*)	Initialize Valuator
GPIPKC	(*wsid, device, state*)	Set Initial Pick Correlation State
GPIR	(*wsid, index, style, sindex, icol*)	Set Interior Representation
GPIS	(*style*)	Set Interior Style
GPISI	(*index*)	Set Interior Style Index
GPISM	(*method*)	Set Interior Shading Method
GPIT	(*wsid, class, devnum, listid, tnum, triglist*)	Set Input Device Trigger
GPIVF	(*wsid, inclen, incl, exclen, excl*)	Set Invisibility Filter
GPLCMO	(*wsid, device, mode, echosw*)	Set Locator Mode
GPLDFO	(*fdid, csid, font, option*)	Load Font
GPLG2	(*point, refv1, refv2, imin, imax, jmin, jmax*)	Line Grid 2
GPLG3	(*point, refv1, refv2, imin, imax, jmin, jmax*)	Line Grid 3
GPLLCD	(*color*)	Set Line-on-Line Color Direct
GPLLCI	(*index*)	Set Line-on-Line Color Index
GPLMO	(*mode*)	Set Lighting Calculation Mode
GPLNR	(*wsid, ltype, style, data*)	Set Linetype Rendering
GPLSR	(*wsid, index, type, color, data*)	Set Light Source Representation
GPLSS	(*nact, act, ndea, dea*)	Set Light Source State
GPLT	(*ltype*)	Set Linetype
GPLTR	(*wsid, ltype, number, list*)	Set Linetype Representation
GPLWSC	(*lwidth*)	Set Linewidth Scale Factor
GPMCI	(*indic*)	Set Modeling Clipping Indicator
GPMCV2	(*oper, number, lhspace*)	Set Modeling Clipping Volume 2
GPMCV3	(*oper, number, lhspace*)	Set Modeling Clipping Volume 3
GPMG2	(*point, refv1, refv2, imin, imax, jmin, jmax*)	Marker Grid 2
GPMG3	(*point, refv1, refv2, imin, imax, jmin, jmax*)	Marker Grid 3
GPMLX2	(*matrix, type*)	Set Modeling Transformation 2
GPMLX3	(*matrix, type*)	Set Modeling Transformation 3
GPMSG	(*wsid, length, text*)	Message
GPMSPW	(*ncid, pass*)	Set Message Password
GPMSSC	(*msize*)	Set Marker Size Scale Factor
GPMT	(*mtype*)	Set Marker Type
GPMTR	(*wsid, mtype, format, length, data*)	Set Marker Type Representation
GPMVER	(*elem1, elem2*)	Move Element Range
GPNBC2	(*order, npoint, knot, tflags, tdata, cflags, cwidth, ctlpts, tmin, tmax*)	Non-Uniform B-Spline Curve 2
GPNBC3	(*order, npoint, knot, tflags, tdata, cflags, cwidth, ctlpts, tmin, tmax*)	Non-Uniform B-Spline Curve 3
GPNBS	(*uorder, vorder, unum, vnum, uknots, vknots, tflag, utdata, vtdata, cflags, cwidth, ctlpts, umin, umax, vmin, vmax*)	Non-Uniform B-Spline Surface
GPNLER	(*re1, re2*)	Nullify Element Range
GPOEP	(*offset*)	Offset Element Pointer
GPOPPH	(*errfil, adib*)	Open graPHIGS
GPOPAR	(*arid, ncid, flag, length, ardesc*)	Open Archive File
GPOPST	(*strid*)	Open Structure
GPOPWS	(*wsid, connid, wstype*)	Open Workstation

Name	Parameter	Long Name
GPPAR	(*wsid, index, numrow, numcol, strrow, strcol, nrow, ncol, array*)	Set Pattern Representation
GPPDMO	(*wsid, category, device, mode*)	Set Physical Device Mode
GPPG2	(*areas, npoint, width, pointlist*)	Polygon 2
GPPG3	(*areas, npoint, width, pointlist*)	Polygon 3
GPPGC	(*mode*)	Set Polygon Culling
GPPGD2	(*pflags, pdata, saflags, sawidth, sadata, vxflags, vxwidth, vxdata*)	Polygon 2 With Data
GPPGD3	(*pflags, pdata, saflags, sawidth, sadata, vxflags, vxwidth, vxdata*)	Polygon 3 With Data
GPPHE	(*nedge, edgelist*)	Polyhedron Edge
GPPHEC	(*mode*)	Set Polyhedron Edge Culling
GPPKAP	(*wsid, device, size*)	Set Pick Aperture
GPPKF	(*wsid, device, inclen, incl, exclen, excl*)	Set Pick Filter
GPPKID	(*pickid*)	Set Pick Identifier
GPPKMO	(*wsid, device, mode, echosw*)	Set Pick Mode
GPPKSC	(*wsid, device, criteria*)	Set Pick Selection Criteria
GPPL2	(*npoint, width, pointlist*)	Polyline 2
GPPL3	(*npoint, width, pointlist*)	Polyline 3
GPPLCD	(*color*)	Set Polyline Color Direct
GPPLCI	(*index*)	Set Polyline Color Index
GPPLD3	(*pflags, pdata, plflags, plwidth, pldata, vxflags, vxwidth, vxdata*)	Polyline Set 3 With Data
GPPLET	(*endtype*)	Set Polyline End Type
GPPLI	(*index*)	Set Polyline Index
GPPLR	(*wsid, index, ltype, lwidth, color*)	Set Polyline Representation
GPPLSM	(*method*)	Set Polyline Shading Method
GPPM2	(*npoint, width, pointlist*)	Polymarker 2
GPPM3	(*npoint, width, pointlist*)	Polymarker 3
GPPMCD	(*color*)	Set Polymarker Color Direct
GPPMCI	(*index*)	Set Polymarker Color Index
GPPMI	(*index*)	Set Polymarker Index
GPPMR	(*wsid, index, mtype, msize, color*)	Set Polymarker Representation
GPPREC	(*numi, iary, numr, rary, nums, swidth, lens, sary, mlodr, errind, lodr, datarec*)	Pack Data Record
GPPSC	(*type, data*)	Parametric Surface Characteristics
GPPSTS	(*strid*)	Push Set TSL
GPPTS		Pop TSL
GPPW	(*type, id, pass*)	Set Password
GPPXL2	(*point, pack, numrow, numcol, startrow, startcol, nrow, ncol, array*)	Pixel 2
GPPXL3	(*point, pack, numrow, numcol, startrow, startcol, nrow, ncol, array*)	Pixel 3
GPQAAF	(*wstype, attrib, start, number, errind, totnum, enum*)	Inquire Advanced Attribute Facilities
GPQABK	(*wsid, start, number, errind, ntrigs, ltrigs*)	Inquire Actual Break Capabilities
GPQACA	(*arid, start, number, errind, totnum, idstrid*)	Inquire All Conflicting Structures in Archive
GPQACF	(*wsid, errind, model, ncolor, avcolor*)	Inquire Actual Color Facilities
GPQACS	(*ssid, start, number, errind, totnum, istrid*)	Inquire All Conflicting Structures in Structure Store
GPQADS	(*wsid, errind, units, csize, asize*)	Inquire Actual Maximum Display Surface Size
GPQAEF	(*wsid, start, number, errind, ntype, eltype, nelwidth, elwidth, minelw, maxelw*)	Inquire Actual Edge Facilities
GPQAES	(*wsid, start, number, errind, nids, idlist*)	Inquire List of Actual Available Escape Subroutines

Name	Parameter	Long Name
GPQAFC	(*wsid, csid, font, start, num, errind, prec, nomh, nahsf, lahsf, lnfac, lmnfac, lmxfac*)	Inquire Annotation Font Characteristics
GPQAFP	(*wsid, errind, poolsize*)	Inquire Actual Font Pool Size
GPQAGD	(*wsid, start, number, errind, ngdp, lgdp*)	Inquire List of Actual Generalized Drawing Primitives
GPQAI	(*start, number, errind, totnum, format*)	Inquire List of Available Application Image Formats
GPQAIF	(*wsid, startp, nump, starth, numh, errind, intnum, interiors, hatnum, hatch*)	Inquire Actual Interior Facilities
GPQAIS	(*wsid, class, device, start, number, errind, ncsid, csid*)	Inquire Actual Input Character Set Facilities
GPQAIT	(*wsid, class, devnum, start, number, errind, ntrigs, ltrigs*)	Inquire Actual Input Trigger Capabilities
GPQALF	(*wsid, start, number, errind, ntype, ltype, nlwidth, lwidth, minlw, maxlw*)	Inquire Actual Polyline Facilities
GPQALI	(*wsid, class, start, number, errind, ndev, dev*)	Inquire List of Actual Logical Input Devices
GPQALW	(*wsid, errind, ltable, mtable, ttable, itable, etable, pttable, ctable*)	Inquire Actual Length of Workstation State Tables
GPQAMF	(*wsid, start, number, errind, ntype, mtype, nsize, size, minms, maxms*)	Inquire Actual Polymarker Facilities
GPQAMO	(*wstype, start, number, errind, totnum, mode*)	Inquire Available Antialiasing Modes
GPQANF	(*wstype, start, number, errind, totnum, styles*)	Inquire Annotation Facilities
GPQANV	(*wsid, errind, number*)	Inquire Actual Number of Definable View Table Entries
GPQAPF	(*wsid, errind, maxrow, maxcol*)	Inquire Actual Pattern Facilities
GPQAPS	(*wsid, errind, csid*)	Inquire Actual Primary Character Set
GPQAR	(*wsid, start, number, errind, totnum, strid*)	Inquire Set of Associated Roots
GPQARF	(*start, number, buflen, errind, actnum, totnum, arlist, termcond*)	Inquire Archive Files
GPQART	(*wstype, errind, totnum*)	Inquire Rendering Targets
GPQASV	(*state*)	Inquire Archive State Value
GPQATR	(*ncid, type, start, number, errind, totnum, id*)	Inquire List of Attached Resources
GPQAVF	(*wsid, errind, shield*)	Inquire Actual View Facilities
GPQAWC	(*wsid, errind, type*)	Inquire Actual Workstation Category
GPQAWD	(*wsid, errind, type*)	Inquire Actual Workstation Display Classification
GPQBK	(*wstype, start, number, errind, ntrigs, ltrigs*)	Inquire Break Capabilities
GPQBKS	(*wsid, errind, trigger*)	Inquire Break Action State
GPQCCH	(*wsid, ctid, errind, model, length*)	Inquire Color Table Characteristics
GPQCDF	(*wstype, start, number, errind, order, totnum, criteria*)	Inquire Curve Display Facilities
GPQCEV	(*major, class, minor*)	Inquire Current Event
GPQCF	(*wstype, errind, model, ncolor, avcolor, npred*)	Inquire Color Facilities
GPQCH	(*wsid, device, type, length, errind, mode, echosw, choice, echo, area, datalen, data*)	Inquire Choice Device State
GPQCID	(*wsid, start, number, errind, totnum, ctid*)	Inquire List of Color Table Identifiers
GPQCML	(*wsid, errind, model*)	Inquire Color Model
GPQCMM	(*start, number, errind, totnum, conn*)	Inquire List of Available Connection Methods
GPQCNA	(*arid, strid, source, start, number, errind, totnum, istrid*)	Inquire Conflicting Structures in Network in Archive
GPQCNC	(*start, number, errind, totnum, ncid*)	Inquire List of Connected Nuclei
GPQCNR	(*aflag, rflag*)	Inquire Conflict Resolution
GPQCPF	(*wstype, errind, number, npred*)	Inquire Color Processing Facilities
GPQCPR	(*wsid, index, errind, model, quant, data*)	Inquire Color Processing Representation
GPQCQM	(*wstype, start, number, errind, totnum, method*)	Inquire Available Color Quantization Methods

Name	Parameter	Long Name
GPQCR	(*wsid, start, number, type, errind, colors*)	Inquire Color Representation
GPQCS	(*csid*)	Inquire Character Set Identifier
GPQCSF	(*wstype, errind, number, npred*)	Inquire Cull Size Facilities
GPQCSN	(*ssid, strid, source, start, number, errind, totnum, istrid*)	Inquire All Conflicting Structures in Network in Structure Store
GPQCSR	(*wsid, index, type, errind, size*)	Inquire Cull Size Representation
GPQCUF	(*wstype, start1, num1, start2, num2, errind, maxent, maxsize, totnum1, lformat, totnum2, lcursor, npred*)	Inquire Cursor Facilities
GPQCVE	(*wsid, start, number, errind, nview, view*)	Inquire Current View Table Entries Input
GPQCVO	(*wsid, start, number, errind, nview, view*)	Inquire Current View Table Entries Output
GPQCVR	(*wsid, view, number, ids, errind, data*)	Inquire Current View Representation
GPQCVX	(*wsid, view, errind, matrix, window, viewpt, viewt, refpt, dist, near, far, wincp, nearcp, farcp, shield, shldci, border, brdrci, viewact*)	Inquire Current Viewing Transformation
GPQDBK	(*wstype, errind, trigger*)	Inquire Default Break Action
GPQDCF	(*wstype, errind, number, npred*)	Inquire Depth Cue Facilities
GPQDCH	(*wstype, device, start, number, length, errind, choice, necho, echo, area, datalen, data*)	Inquire Default Choice Device Data
GPQDCM	(*model*)	Inquire Direct Color Model
GPQDCR	(*wsid, index, type, number, ids, errind, data*)	Inquire Depth Cue Representation
GPQDDV	(*wstype, errind, defer, modif*)	Inquire Default Deferral State Values
GPQDIT	(*wstype, class, devnum, listid, start, number, errind, ndtrigs, dtriglist*)	Inquire Default Input Device Triggers
GPQDLC	(*wstype, device, start, number, length, errind, dimen, pos, necho, echo, area, datalen, data*)	Inquire Default Locator Device Data
GPQDMR	(*wsid, index, lclengths, lcdata, errind, method, mdata, clengths, ctype, cdata*)	Inquire Data Mapping Representation
GPQDPK	(*wstype, device, start, number, length, errind, maxpath, necho, echo, area, datalen, data*)	Inquire Default Pick Device Data
GPQDS	(*wstype, errind, units, csize, asize*)	Inquire Maximum Display Surface Size
GPQDSK	(*wstype, device, start, number, length, errind, dimen, size, necho, echo, area, buflen, editpos, datalen, data*)	Inquire Default Stroke Device Data
GPQDST	(*wstype, device, start, number, length, errind, size, necho, echo, area, buflen, editpos, datalen, data*)	Inquire Default String Device Data
GPQDV	(*wsid, errind, defer, modif, dissurf, dstat*)	Inquire Deferral and Update State Values
GPQDVL	(*wstype, device, start, number, length, errind, ivalue, necho, echo, area, lovalue, hivalue, datalen, data*)	Inquire Default Valuator Device Data
GPQE	(*start, number, errind, ndata, data*)	Inquire Element Content
GPQED	(*number, buflen, errind, actnum, actlen, data, termcond*)	Inquire List of Element Data
GPQEDA	(*strid, start, number, buflen, errind, actnum, actlen, data, termcond*)	Inquire List of Element Data for any Structure
GPQEDM	(*mode*)	Inquire Edit Mode
GPQEF	(*wstype, start, number, errind, netype, eltype, nelwidth, elwidth, minelw, maxelw, npred*)	Inquire Edge Facilities
GPQEHA	(*strid, start, number, errind, actnum, header*)	Inquire List of Element Headers for any Structure
GPQEHD	(*number, errind, actnum, header*)	Inquire List of Element Headers
GPQEMO	(*mode*)	Inquire Error Handling Mode
GPQEMS	(*length, errind, number, message*)	Inquire Error Message
GPQEP	(*errind, value*)	Inquire Element Pointer

Name	Parameter	Long Name
GPQER	(*wsid, index, type, errind, edgefg, edgelt, edgesf, ecol*)	Inquire Edge Representation
GPQES	(*wstype, start, number, errind, totnum, escid*)	Inquire List of Available Escape Subroutines
GPQETS	(*errind, type, size*)	Inquire Element Type and Size
GPQEXS	(*strid, start, number, errind, totnum, lstrid*)	Inquire Executed Structures
GPQFAR	(*csid, font, slength, string, errind, aspect-ratio-list*)	Inquire Font Aspect Ratios
GPQFBC	(*wstype, errind, org, n, depth*)	Inquire Frame Buffer Characteristics
GPQFCH	(*csid, font, errind, proportional, top, bottom, nomaspect*)	Inquire Font Characteristics
GPQFO	(*wsid, start, number, errind, nfont, lcsid, lfont*)	Inquire Active Fonts
GPQFP	(*wstype, errind, poolsize*)	Inquire Font Pool Size
GPQGD	(*wstype, start, number, errind, totnum, gdpid*)	Inquire List of Generalized Drawing Primitives
GPQGDP	(*wstype, gdpid, errind, number, list*)	Inquire Generalized Drawing Primitive
GPQGFC	(*wsid, csid, font, start, num, errind, prec, nhts, lhts, lnfac, lmnfac, lmxfac*)	Inquire Geometric Font Characteristics
GPQGSE	(*wstype, start, number, errind, totnum, gseid*)	Inquire List of Available GSEs
GPQHD	(*wstype, errind, depth*)	Inquire Maximum Hierarchy Depth GPQHD.
GPQHF	(*wstype, errind, format, maxlen, npred, available*)	Inquire Hatch Facilities
GPQHLF	(*wsid, inlen, exlen, errind, inclen, incl, exclen, excl*)	Inquire Highlighting Filter
GPQHMO	(*wstype, start, number, errind, totnum, mode*)	Inquire Available HLHSR Modes
GPQHR	(*wsid, index, errind, format, length, data*)	Inquire Hatch Representation
GPQIBC	(*ibid, errind, depth, h, v*)	Inquire Image Board Characteristics
GPQIBF	(*ncid, start, number, errind, totnum, depth, h, v*)	Inquire Image Board Facilities
GPQICH	(*wsid, index, errind, conn, ctid, totnum, libid*)	Inquire Image Characteristics
GPQICS	(*wsid, class, device, errind, csid*)	Inquire Input Character Set
GPQID	(*wsid, class, device, errind, state, deact, echosw, trigger, break, reset*)	Inquire Input Device State
GPQIDD	(*wstype, class, devnum, id, lidata, idata, mlodata errind, mlodata, odata*)	Inquire Input Device Description
GPQIDF	(*wstype, start, number, errind, nimage, totnum, conn*)	Inquire Image Definition Facilities
GPQIF	(*wstype, starti, numi, starth, numh, errind, intnum, interiors, hatnum, hatch, npred*)	Inquire Interior Facilities
GPQIMC	(*wsid, imid, errind, view, index, origin, size, P, Q, R, method, priority*)	Inquire Image Mapping Characteristics
GPQIMF	(*wstype, start, number, errind, nprio, totnum, method*)	Inquire Image Mapping Facilities
GPQIMI	(*wsid, index, start, number, errind, totnum, limid*)	Inquire Image Mapping of Image
GPQIMV	(*wsid, view, start, number, errind, totnum, limid*)	Inquire Image Mapping on View
GPQIMW	(*wsid, start, number, errind, totnum, limid*)	Inquire Image Mapping on Workstation
GPQIQO	(*errind, major, class, minor*)	Inquire Input Queue Overflow
GPQIR	(*wsid, index, type, errind, style, sindex, icol*)	Inquire Interior Representation
GPQISF	(*wstype, class, device, start, number, errind, ncsid, csid*)	Inquire Input Character Set Facilities
GPQISN	(*strid, start, number, errind, totnum, istrid*)	Inquire Identifiers of Structures in Network
GPQIT	(*wstype, class, devnum, start, number, errind, ntrigs, ltrigs*)	Inquire Input Trigger Capabilities
GPQITS	(*wsid, class, devnum, listid, start, number, errind, ntrigs, ltrigs*)	Inquire Input Device Trigger State

Name	Parameter	Long Name
GPQIVF	(*wsid, inlen, exlen, errind, inclen, incl, exclen, excl*)	Inquire Invisibility Filter
GPQIW	(*wsid, start, number, errind, totnum, lindex*)	Inquire List of Images on the Workstation
GPQLC	(*wsid, device, type, length, errind, mode, echosw, view, pos, echo, area, datalen, data*)	Inquire Locator Device State
GPQLCF	(*wstype, number, ids, errind, data*)	Inquire List of Color Facilities
GPQLI	(*wstype, class, start, number, errind, ndev, dev*)	Inquire List of Logical Input Devices
GPQLNR	(*wstype, start, number, errind, totnum, rstyle*)	Inquire List of Line Rendering Styles
GPQLR	(*wsid, index, type, errind, ltype, lwidth, color*)	Inquire Polyline Representation
GPQLSF	(*wstype, start, number, errind, maxe, totnum, ltype, maxa, npred*)	Inquire Light Source Facilities
GPQLSR	(*wsid, index, type, errind, lstype, color, data*)	Inquire Light Source Representation
GPQLTF	(*wstype, errind, sections, maxlen, unit, npred, available*)	Inquire Linetype Facilities
GPQLTR	(*wsid, ltype, errind, number, pattern*)	Inquire Linetype Representation
GPQLW	(*wstype, errind, ltable, mtable, ttable, itable, etable, pttable, ctable*)	Inquire Length of Workstation State Tables
GPQM3	(*mflags*, *mdata*, *qflags*, *qwidth*, *qdata*, *vxflags*, *vxwidth*, *vxdata*)	Quadrilateral Mesh 3
GPQMDS	(*wsid, errind, units, csize, asize*)	Inquire Mapped Display Surface Size
GPQMR	(*wsid, index, type, errind, mtype, msize, color*)	Inquire Polymarker Representation
GPQMTF	(*wstype, errind, format, maxlen, npred, available*)	Inquire Marker Type Facilities
GPQMTR	(*wsid, mtype, errind, format, length, data*)	Inquire Marker Type Representation
GPQNCC	(*ncid, state*)	Inquire Nucleus Connection State
GPQNCE	(*ncid, length, datatype, errind, hardware, datalen, data*)	Inquire Nucleus Environment
GPQNCN	(*wstype, errind, number*)	Inquire Number of Available Class Names
GPQNCR	(*type, id, errind, ncid, rid*)	Inquire Nucleus Resource Identifier
GPQNCS	(*ncid, errind, size*)	Inquire Available Nucleus Storage Size
GPQNS	(*ncid*, *ilen*, *errind*, *conn*, *olen*, *spec*)	Inquire Nucleus Specification
GPQNSP	(*wstype, errind, npri*)	Inquire Number of Structure Priorities Supported
GPQNST	(*wstype, class, devnum, errind, number*)	Inquire Number of Secondary Triggers
GPQNV	(*wstype, errind, number*)	Inquire Number of Definable View Table Entries
GPQOPS	(*type, strid*)	Inquire Open Structure
GPQOPW	(*start, number, errind, totnum, lwsid*)	Inquire Set of Open Workstations
GPQPAF	(*wstype, errind, maxrow, maxcol, indexes*)	Inquire Pattern Facilities
GPQPAR	(*wsid, index, type, maxrow, maxcol, errind, drow, dcol, array*)	Inquire Pattern Representation
GPQPAS	(*strid, order, depth, start, number, buflen, errind, actnum, actlen, totnum, data, termcond*)	Inquire Ancestors of Structure
GPQPCR	(*wstype, start, number, errind, npred, indexes, colors*)	Inquire Predefined Color Representation
GPQPCS	(*wstype, errind, csid*)	Inquire Primary Character Set
GPQPDC	(*wstype, category, device, number, errind, flags, type, totnum, vrange*)	Inquire Physical Device Characteristics
GPQPDS	(*strid, order, depth, start, number, buflen, errind, actnum, actlen, totnum, data, termcond*)	Inquire Descendents of Structure
GPQPER	(*wstype, index, errind, edgefg, edgelt, edgesf, ecol*)	Inquire Predefined Edge Representation
GPQPIR	(*wstype, index, errind, style, sindex, icol*)	Inquire Predefined Interior Representation

Name	Parameter	Long Name
GPQPK	(*wsid, device, type, inlen, exlen, pathlen, length, errind, mode, echosw, inclen, incl, exclen, excl, depth, pickpath, echo, area, datalen, data, order*)	Inquire Pick Device State
GPQPKA	(*wsid, device, errind, size*)	Inquire Pick Aperture
GPQPKT	(*wstype, device, errind, type*)	Inquire Pick Measure Type
GPQPLF	(*wstype, start, number, errind, ntype, ltype, nlwidth, lwidth, minlw, maxlw, npred*)	Inquire Polyline Facilities
GPQPLR	(*wstype, index, errind, ltype, lwidth, color*)	Inquire Predefined Polyline Representation
GPQPMF	(*wstype, start, number, errind, ntype, mtype, nsize, size, minms, maxms, npred*)	Inquire Polymarker Facilities
GPQPMR	(*wstype, index, errind, mtype, msize, color*)	Inquire Predefined Polymarker Representation
GPQPO	(*ncid, type, start, number, errind, totnum, op*)	Inquire Available Pixel Operations
GPQPPR	(*wstype, index, maxrow, maxcol, errind, drow, dcol, array*)	Inquire Predefined Pattern Representation
GPQPTR	(*wstype, index, errind, font, prec, factor, space, color*)	Inquire Predefined Text Representation
GPQRCM	(*wstype, start, number, errind, totnum, model*)	Inquire Available Rendering Color Models
GPQRCT	(*wsid, ilen, errind, olen, connid, wstype*)	Inquire Realized Connection Type
GPQRST	(*strid, start, number, errind, totnum, istrid*)	Inquire Referencing Structures GPQRST.
GPQRV	(*wsid, view, start, number, errind, totnum, strid, priority*)	Inquire Set of Roots in View
GPQRVE	(*wsid, start, number, errind, totnum, view*)	Inquire Requested View Table Entries Input
GPQRVO	(*wsid, start, number, errind, totnum, view*)	Inquire Requested View Table Entries Output
GPQRVR	(*wsid, view, number, ids, errind, data*)	Inquire Requested View Representation
GPQRVX	(*wsid, view, errind, matrix, window, viewpt, viewt, refpt, dist, near, far, wincp, nearcp, farcp, shield, shldci, border, brdrci, viewact*)	Inquire Requested Viewing Information
GPQSDF	(*wstype, start, number, errind, order, totnum, criteria*)	Inquire Surface Display Facilities
GPQSEV	(*simevnt*)	Inquire More Simultaneous Events
GPQSH	(*ncid, errind, shid, env*)	Inquire Shell Identifier
GPQSHD	(*deferral, update*)	Inquire Shell Deferral State
GPQSK	(*wsid, device, type, lenpts, length, errind, mode, echosw, view, npoint, pointarray, echo, area, buflen, editpos, datalen, data*)	Inquire Stroke Device State
GPQSPD	(*wstype, class, ldevice, errind, category, pdevice*)	Inquire Source Physical Device
GPQSPL	(*level*)	Inquire Shell Product Level
GPQSSS	(*status, ssid*)	Inquire Selected Structure Store
GPQST	(*wsid, device, type, slen, length, errind, mode, echosw, strlen, string, echo, area, buflen, editpos, datalen, data*)	Inquire String Device State
GPQSTE	(*strid, flag*)	Inquire Structure Existence
GPQSTI	(*start, number, errind, totnum, lstrid*)	Inquire Structure Identifiers
GPQSTS	(*strid, errind, flag, count*)	Inquire Structure Status
GPQSTV	(*state*)	Inquire Structure State Value
GPQSYV	(*state*)	Inquire System State Value
GPQTDF	(*wstype, start, number, errind, order, totnum, criteria*)	Inquire Trimming Curve Display Facilities
GPQTMO	(*wstype, start, number, errind, totnum, mode*)	Inquire Available Transparency Modes
GPQTR	(*wsid, index, type, errind, font, prec, factor, space, color*)	Inquire Text Representation
GPQTXF	(*wstype, errind, npred*)	Inquire Text Facilities
GPQVF	(*wstype, errind, shield*)	Inquire View Facilities

Name	Parameter	Long Name
GPQVL	(*wsid, device, type, length, errind, mode, echosw, ivalue, echo, area, lovalue, hivalue, datalen, data*)	Inquire Valuator Device State
GPQVR	(*wsid, strid, start, number, errind, totnum, view*)	Inquire Set of Views Which Contain Root
GPQWC	(*wstype, errind, type*)	Inquire Workstation Category
GPQWCT	(*wsid, errind, connid, wstype*)	Inquire Workstation Connection and Type
GPQWCV	(*wstype, start, number, errind, totnum, flist*)	Inquire Workstation Configuration Variability
GPQWD	(*wstype, errind, type*)	Inquire Workstation Display Classification
GPQWDT	(*wstype, id, lidata, idata, mlodata, errind, lodata, odata*)	Inquire Workstation Description
GPQWSA	(*strid, start, number, errind, totnum, lwsid*)	Inquire Set of Workstations to Which Associated
GPQWST	(*start, number, errind, maxopen, nwstype, wstype*)	Inquire List of Available Workstation Types
GPQWSU	(*wsid, errind, total, lgblock, numblks*)	Inquire Workstation Storage Utilization
GPQWSV	(*state*)	Inquire Workstation State Value
GPQWSX	(*wsid, errind, state, rwindow, cwindow, rviewpt, cviewpt*)	Inquire Workstation Transformation
GPQWTN	(*ncid, start, number, errind, maxa, totnum, wstype*)	Inquire List of Available Workstation Types on Nucleus
GPQWTO	(*wsid, ilen, errind, wstype, olen, options*)	Inquire Workstation Type and Options
GPQXAF	(*wsid, csid, font, start, num, errind, prec, nomh, nahsf, lahsf, lnfac, lmnfac, lmxfac, proportional, top, bottom, nomaspect*)	Inquire Extended Annotation Font Characteristics
GPQXCF	(*wstype, start, number, errind, charact, nmax, lmax, totnum, model*)	Inquire Extended Color Facilities
GPQXCR	(*wsid, ctid, start, number, type, errind, color*)	Inquire Extended Color Representation
GPQXER	(*wsid, index, type, number, ids, errind, data*)	Inquire Extended Edge Representation
GPQXIR	(*wsid, index, type, number, ids, errind, data*)	Inquire Extended Interior Representation
GPQXLR	(*wsid, index, type, number, ids, errind, data*)	Inquire Extended Polyline Representation
GPQXMR	(*wsid, index, type, number, ids, errind, data*)	Inquire Extended Polymarker Representation
GPQXTR	(*wsid, index, type, number, ids, errind, data*)	Inquire Extended Text Representation
GPQXTX	(*wstype, errind, npred, filled, proportional*)	Inquire Extended Text Facilities
GPRAS	(*arid, strid, order, depth, start, number, buflen, errind, actnum, actlen, totnum, data, termcond*)	Retrieve Ancestors to Structures
GPRAST	(*wsid, flag*)	Redraw All Structures
GPRCN	(*number, names*)	Remove Class Name from Set
GPRDFB	(*wsid, frame, sorigin, size, format, parm, torigin, data*)	Read Frame Buffer
GPRDS	(*arid, strid, order, depth, start, number, buflen, errind, actnum, actlen, totnum, data, termcond*)	Retrieve Descendants to Structures
GPRISN	(*arid, strid, start, number, errind, totnum, istrid*)	Retrieve Identifiers of Structures in Network
GPRMCV		Restore Modeling Clipping Volume
GPRMO	(*model*)	Set Reflectance Model
GPRNBS	(*uorder, vorder, unum, vnum, uknots, vknots, tflag, utdata, vtdata, cflags, cwidth, ctlpts, umin, umax, vmin, vmax, option, nelen*)	Reevaluate Non-Uniform B-Spline Surface
GPROTX	(*angle, matrix*)	Rotate X
GPROTY	(*angle, matrix*)	Rotate Y
GPROTZ	(*angle, matrix*)	Rotate Z
GPROT2	(*angle, matrix*)	Rotate 2
GPRQCH	(*wsid, device, status, choice*)	Request Choice

Name	Parameter	Long Name
GPRQLC	(*wsid, device, status, view, pos*)	Request Locator
GPRQPK	(*wsid, device, length, status, depth, pickpath*)	Request Pick
GPRQSK	(*wsid, device, length, status, view, npoint, pointarray*)	Request Stroke
GPRQST	(*wsid, device, length, status, number, string*)	Request String
GPRQVL	(*wsid, device, status, value*)	Request Valuator
GPRQXP	(*wsid, device, maxdepth, status, view, point, modelling, depth, pickpath*)	Request Extended Pick
GPRRCT	(*sibid, sorigin, size, format, parm, torigin, data*)	Read Rectangle
GPRSTI	(*arid, start, number, errind, totnum, istrid*)	Retrieve Structure Identifiers
GPRTNS	(*uorder, vorder, unum, uknots, vknots, tflag, utess, vtess, cflags, cwidth, ctlpts, ncontour, ncurve, curveinfo, tknot, ttess, cdwidth, cddata, option, nelem*)	Reevaluate Trimmed Non-Uniform B-Spline Surface
GPRVAS	(*arid*)	Retrieve All Structures
GPRVSN	(*arid, number, lstrid*)	Retrieve Structure Networks
GPRVST	(*arid, number, lstrid*)	Retrieve Structures
GPSAC	(*criteria, ctrlval1, ctrlval2*)	Set Surface Approximation Criteria
GPSBMS	(*ncid, major, minor, len, msg*)	Send Broadcast Message
GPSCD	(*color*)	Set Specular Color Direct
GPSCI	(*index*)	Set Specular Color Index
GPSC2	(*scale, matrix*)	Scale 2
GPSC3	(*scale, matrix*)	Scale 3
GPSDAL	(*wsid*)	Sound Alarm
GPSHDF	(*deferral, update*)	Set Shell Deferral State
GPSKMO	(*wsid, device, mode, echosw*)	Set Stroke Mode
GPSMCH	(*wsid, device, choice*)	Sample Choice
GPSMLC	(*wsid, device, view, pos*)	Sample Locator
GPSMPK	(*wsid, device, length, depth, pickpath*)	Sample Pick
GPSMSK	(*wsid, device, length, view, npoint, pointarray*)	Sample Stroke
GPSMST	(*wsid, device, length, number, string*)	Sample String
GPSMVL	(*wsid, device, value*)	Sample Valuator
GPSMXP	(*wsid, device, maxdepth, view, point, modelling, depth, pickpath*)	Sample Extended Pick
GPSPH	(*nsphere, pflags, pdata, width, spherelist*)	Polysphere
GPSPMS	(*ncid, shid, pass, major, minor, len, msg*)	Send Private Message
GPSPR	(*amb, diff, spec, exp, trans*)	Set Surface Properties
GPSRT	(*wsid, rtspec*)	Select Rendering Target
GPSSS	(*ssid*)	Select Structure Store
GPSSTH	(*ssid, threshold*)	Set Structure Store Threshold
GPSTMO	(*wsid, device, mode, echosw*)	Set String Mode
GPSYNC	(*ncid, synch*)	Synchronize
GPTAST	(*ssid, flag*)	Transfer All Structures
GPTCAC	(*criteria, ctrlval1, ctrlval2, ctrlval3*)	Set Trimming Curve Approximation Criteria
GPTCO	(*coeff*)	Set Transparency Coefficient
GPTE	(*strid, start, end*)	Traversal Elements
GPTEX2	(*point1, point2, index*)	Test Extent 2
GPTEX3	(*point1, point2, index*)	Test Extent 3
GPTHPO	(*tibid, torigin, size, sibid1, sorigin1, sibid2, sorigin2, op, opparm*)	Three Operand Pixel Operation
GPTLWS	(*lwidth*)	Set Text Line Width Scale Factor
GPTMAP	(*apid*)	Terminate Application Process

Name	Parameter	Long Name
GPTNBS	(*uorder, vorder, unum, vnum, uknots, vknots, tflag, utess, vtess, cflags, cwidth, ctlpts, ncontour, ncurve, curveinfo, tknot, ttess, cdwidth, cddata*)	Trimmed Non-Uniform B-Spline Surface
GPTRCE	(*control*)	Internal Trace Control
GPTRCT	(*tibid, torigin, size, sibid, sorigin*)	Internal Trace Control
GPTRL2	(*vector, matrix*)	Translate 2
GPTRL3	(*vector, matrix*)	Translate 3
GPTST	(*ssid, flag, number, lstrid*)	Transfer Structures
GPTS3	(*pflags, pdata, tflags, twidth, tdata, vxflags, vxwidth, vxdata*)	Triangle Strip 3
GPTWPO	(*tibid, torigin, size, sibid, sorigin, op, opparm*)	Two Operand Pixel Operation
GPTX2	(*point, length, text*)	Geometric Text 2
GPTX3	(*point, length, text, refv1, refv2*)	Geometric Text 3
GPTXAL	(*horiz, vert*)	Set Text Alignment
GPTXCD	(*color*)	Set Text Color Direct
GPTXCI	(*index*)	Set Text Color Index
GPTXCS	(*csid*)	Set Text Character Set
GPTXFO	(*font*)	Set Text Font
GPTXI	(*index*)	Set Text Index
GPTXPR	(*prec*)	Set Text Precision
GPTXPT	(*path*)	Set Text Path
GPTXR	(*wsid, index, font, prec, factor, space, color*)	Set Text Representation
GPUPWA	(*wsid*)	Update Workstation Asynchronous
GPUPWS	(*wsid, regen*)	Update Workstation
GPVCH	(*wsid, view, window, near, far, shield, shldci, border, brdrci, active*)	Set View Characteristics
GPVIP	(*wsid, view, refview, flag*)	Set View Input Priority
GPVLMO	(*wsid, device, mode, echosw*)	Set Valuator Mode
GPVMF	(*flength, fdata*)	Set Vertex Morphing Factors
GPVMP2	(*wsid, view, window, viewpt*)	Set View Mapping 2
GPVMP3	(*wsid, view, window, viewpt, type, point, dist, near, far*)	Set View Mapping 3
GPVMT2	(*wsid, view, matrix*)	Set View Matrix 2
GPVMT3	(*wsid, view, matrix*)	Set View Matrix 3
GPVOP	(*wsid, view, refview, flag*)	Set View Output Priority
GPVP	(*wsid, view, refview, flag*)	Set View Priority
GPVPLN	(*normal*)	Set View Plane Normal
GPVR	(*point*)	Set View Reference Point
GPVUP	(*vector*)	Set View Up
GPVWI	(*index*)	Set View Index
GPWDO	(*length, data*)	Workstation-Dependent Output
GPWRCT	(*tibid, torigin, size, format, parm, sorigin, data*)	Write Rectangle
GPWSX2	(*wsid, window, viewpt*)	Set Workstation Transformation 2
GPWSX3	(*wsid, window, viewpt*)	Set Workstation Transformation 3
GPXCR	(*wsid, ctid, start, number, color*)	Set Extended Color Representation
GPXER	(*wsid, index, id, value*)	Set Extended Edge Representation
GPXF2	(*point, matrix, result*)	Transform Point 2
GPXF3	(*point, matrix, result*)	Transform Point 3
GPXIR	(*wsid, index, id, value*)	Set Extended Interior Representation
GPXPLR	(*wsid, index, id, value*)	Set Extended Polyline Representation
GPXPMR	(*wsid, index, id, value*)	Set Extended Polymarker Representation
GPXTXR	(*wsid, index, id, value*)	Set Extended Text Representation
GPXVCH	(*wsid, view, number, charids, values*)	Set Extended View Characteristics
GPXVR	(*wsid, view, id, value*)	Set Extended View Representation

Name	Parameter	Long Name
GPZBM	(*mask*)	Set Z-buffer Protect Mask

Chapter 4. Enumerated Data Types

Annotation Path	1 = RIGHT
	2 = LEFT
	3 = UP
	4 = DOWN
Annotation Style	1 = UNCONNECTED
	2 = LEAD_LINE
Antialiasing Mode	1 = OFF
	2 = SUBPIXEL_ON_THE_FLY
	3 = NON_SUBPIXEL_ON_THE_FLY
Application Image Format	1 = PIXEL_ARRAY
Advanced Attribute Group Identifier	1 = EDGE_FLAG
	2 = FACE_DISTINGUISH_MODE
	3 = LIGHTING_CALCULATION_MODE
	4 = POLYGON_CULLING
	5 = POLYHEDRON_EDGE_CULLING
	6 = POLYLINE_END_TYPE
	8 = INTERIOR_SHADING_METHODS
	10 = REFLECTANCE_MODES
Archive State Value	1 = ARCL
	2 = AROP
Attribute List	1 = POLYLINE
	2 = POLYMARKER
	3 = TEXT
	4 = INTERIOR
	5 = EDGE
Attribute Source Flag	1 = BUNDLED
	2 = INDIVIDUAL
Border Indicator	1 = OFF
	2 = ON
Boundary Flag	1 = NOT_AN_EDGE
	2 = IS_AN_EDGE
Bounding Method	1 = CLAMP
	2 = REPEAT
Break Switch	1 = OFF
	2 = ON
Character Positioning Mode	1 = CONSTANT
	2 = PROPORTIONAL
Clip Indicator	1 = NOCLIP
	2 = CLIP
Color Model/Availability	1 = MONOCHROME
	2 = COLOR
Color Model	1 = RGB
	2 = HSV
	3 = CMY
	4 = CIELUV
Color Quantization Method	1 = WORKSTATION_DEPENDENT
	2 = BITWISE
Color Table Characteristics	1 = NEITHER_MODIFIABLE
	2 = ONLY_DISPLAY_COLOR_TABLE_MODIFIABLE
	3 = ONLY_RENDERING_COLOR_TABLE_MODIFIABLE
	4 = BOTH_MODIFIABLE
Color Table Identifier	-1 = DISPLAY_COLOR_TABLE
	0 = RENDERING_COLOR_TABLE
	>0 = IMAGE_COLOR_TABLES

Conflict Resolution Flags	1 = MAINTAIN_FLAG
	2 = ABANDON_FLAG
	3 = UPDATE_FLAG
Connection Method	1 = CALL
	2 = GAM
	3 = SOCKETS
Connection State	1 = ACTIVE
	2 = INACTIVE
	3 = NON_EXISTENT
Control Flag	1 = CONDITIONALLY
	2 = ALWAYS
Conversion Type	1 = NPC_TO_WU
	2 = WU_TO_NPC
	3 = DC_TO_WU
	4 = WU_TO_DC
Convert Data Type	1 = CHARACTER_STRING
	2 = FLOATS
	3 = INTEGERS
	4 = DATA_RECORD
Convexity Checking Mode	1 = OFF
	2 = ON
Convexity Flag	1 = CONCAVE
	2 = CONVEX
Curve Approximation Criteria	1 = WORKSTATION_DEPENDENT
	3 = CONSTANT_SUBDIVISION_BETWEEN_KNOTS
	8 = VARIABLE_SUBDIVISION_BETWEEN_KNOTS
Data Mapping Color Data Types	1 = TYPE_COLOR
	2 = TYPE_PACKED_RGB
	3 = TYPE_COLOR_TRANS
	4 = TYPE_PACKED_RGB_ALPHA
Data Mapping Method	-1 = IMAGE_ARRAY
	1 = DM_METHOD_COLOR
	2 = SINGLE_VALUE_UNIFORM
	4 = BI_VALUE_UNIFORM
Data Organization Format	1 = BASE_DATA
	2 = SQUARE_MM
	3 = RECT_MM
Deactivate Switch	1 = OFF
	2 = ON
Deferral State	1 = ASAP
	2 = BNIG
	3 = BNIL
	4 = ASTI
	5 = WAIT
Delete Option	1 = START_AT_CURRENT_ELEMENT_NEITHER_DELETED
	2 = START_AT_CURRENT_ELEMENT_BOTH_DELETED
	3 = START_AT_CURRENT_ELEMENT_FIRST_DELETED
	4 = START_AT_CURRENT_ELEMENT_SECOND_DELETED
	5 = START_AT_NEXT_ELEMENT_NEITHER_DELETED
	6 = START_AT_NEXT_ELEMENT_BOTH_DELETED
	7 = START_AT_NEXT_ELEMENT_FIRST_DELETED
	8 = START_AT_NEXT_ELEMENT_SECOND_DELETED
Depth Cue Mode	1 = SUPPRESSED
	2 = ALLOWED
Depth Cue Representation Group Identifier	1 = DEPTH_CUE_MODE
	2 = DEPTH_CUE_REFERENCE_PLANES
	3 = DEPTH_CUE_SCALE_FACTORS
	4 = DEPTH_CUE_COLOR

Destination Blending Function	1 = DSTBF_ZERO
	2 = DSTBF_ONE
	3 = DSTBF_SRC_ALPHA
	4 = DSTBF_ONE_MINUS_SRC_ALPHA
	5 = DSTBF_DST_ALPHA
	6 = DSTBF_ONE_MINUS_DST_ALPHA
	7 = DSTBF_SRC_COLOR
	8 = DSTBF_ONE_MINUS_SRC_COLOR
Device Coordinate Units	1 = METERS
	2 = OTHER
Device Event/Class	1 = LOCATOR
	2 = STROKE
	3 = VALUATOR
	4 = CHOICE
	5 = PICK
	6 = STRING
Display Status	1 = CORRECT
	2 = DEFERRED
	3 = SIMULATED
Display Surface State	1 = NOT_EMPTY
	2 = IS_EMPTY
Display Type	1 = VECTOR
	2 = RASTER
	3 = OTHERS
Echo Switch	1 = NOECHO
	2 = ECHO
Edge Boundary Flag	1 = NOT_AN_EDGE
	2 = IS_AN_EDGE
Edge Flag	1 = OFF
	2 = ON
	3 = GEOMETRY_ONLY
Edge Representation Group Identifier	1 = EDGE_FLAG
	2 = EDGE_LINETYPE
	3 = EDGE_LINEWIDTH_SCALE_FACTOR
	4 = EDGE_COLOR
Edit Mode	1 = INSERT_MODE
	2 = REPLACE_MODE
Error Handling Mode	1 = OFF
	2 = ON
Event Queue Space Flag	0 = SPACE_AVAILABLE
	1 = NO_MORE_SPACE_AVAILABLE
Event Queue Overflow Flag	0 = NOT_OVERFLOWED_YET
	1 = ALREADY_OVERFLOWED
Face Distinguish Mode	1 = NONE
	2 = COLOR_SURFACE_PROPERTIES
Face Lighting Method	1 = FACE_INDEPENDENT
	2 = FACE_DEPENDENT
Font Characteristics	1 = FIXED
	2 = PROPORTIONAL
Font Directory Type	1 = NORMAL
Font Option	2 = IBM_DEFINED_RANGE
	3 = USER_DEFINED_RANGE
Font Support	1 = NOT_SUPPORTED
	2 = SUPPORTED
Frame Buffer Comparison Options	1 = NO_OPERATION
	2 = WRITE_WHEN_EQUAL
	3 = WRITE_WHEN_NOT_EQUAL

Geometric Text Culling Method	1 = TEXT_DISPLAY
	2 = BOX_DISPLAY
	3 = NO_DISPLAY
Hardware Type	1 = RISC_6000
	2 = IBM_6095
	3 = IBM_370
Hatch Format	1 = BIT_ARRAY
Hatch/Line/Pattern Representation	1 = NOT_AVAILABLE
	2 = BOTH_AVAILABLE
	3 = INQUIRE_ONLY_AVAILABLE
	4 = SET_ONLY_AVAILABLE
HLHSR Identifiers	1 = VISUALIZE_IF_NOT_HIDDEN
	2 = VISUALIZE_IF_HIDDEN
	3 = VISUALIZE_ALWAYS
	4 = NOT_VISUALIZE
	5 = FACE_DEPENDENT_VISUALIZATION
	6 = NO_UPDATE
	7 = GREATER_THAN
	8 = EQUAL_TO
	9 = LESS_THAN
	10 = NOT_EQUAL
	11 = LESS_THAN_OR_EQUAL_TO
HLHSR Mode	1 = OFF
	2 = ON_THE_FLY
Horizontal Alignment	1 = NORMAL
	2 = LEFT_ALIGN
	3 = CENTER
	4 = RIGHT_ALIGN
Image Board Type	1 = NORMAL
Image Connection Type	-1 = FRAME_BUFFER_COMPATIBLE
	1 = COMPONENT
	2 = INDEXED
Image Pixel Order	1 = LEFT_TO_RIGHT_BOTTOM_TO_TOP
	2 = LEFT_TO_RIGHT_TOP_TO_BOTTOM
Interior Representation Group Identifier	1 = INTERIOR_STYLE
	2 = INTERIOR_STYLE_INDEX
	3 = INTERIOR_COLOR
Interior Shading Method	1 = SHADING_NONE
	2 = SHADING_COLOR
	3 = SHADING_DATA
Interior Style	1 = HOLLOW
	2 = SOLID
	3 = PATTERN
	4 = HATCH
	5 = EMPTY
Image Mapping Method	1 = PIXEL_BY_PIXEL
Label Deletion Option	1 = START_AT_CURRENT_ELEMENT_NEITHER_DELETED
	2 = START_AT_CURRENT_ELEMENT_BOTH_DELETED
	3 = START_AT_CURRENT_ELEMENT_FIRST_DELETED
	4 = START_AT_CURRENT_ELEMENT_SECOND_DELETED
	5 = START_AT_NEXT_ELEMENT_NEITHER_DELETED
	6 = START_AT_NEXT_ELEMENT_BOTH_DELETED
	7 = START_AT_NEXT_ELEMENT_FIRST_DELETED
	8 = START_AT_NEXT_ELEMENT_SECOND_DELETED
Light Source Type	1 = AMBIENT
	2 = DIRECTIONAL
	3 = POSITIONAL
	4 = SPOT

Lighting Calculation Mode	1 = NONE
	2 = PER_AREA
	3 = PER_VERTEX
Line Rendering Styles	1 = WORKSTATION_DEPENDENT_RENDERING
	2 = SCALED_TO_FIT_RENDERING
Line/Hatch/Pattern Representation	1 = NOT_AVAILABLE
	2 = BOTH_AVAILABLE
	3 = INQUIRE_ONLY_AVAILABLE
	4 = SET_ONLY_AVAILABLE
Line Types	1 = SOLID_LINE
	2 = DASHED
	3 = DOTTED
	4 = DASH_DOT
	5 = LONG_DASH
	6 = DOUBLE_DOT
	7 = DASH_DOUBLE_DOT 8-n = SOLID_LINE
Locator Device	1 = 2D
	2 = 3D
Magnification Filtering Method	1 = SAMPLE_IN_BASE
	2 = INTERP_IN_BASE
Marker Pattern Format	1 = VECTOR
Marker Types	1 = DOT
	2 = PLUS_SIGN
	3 = ASTERISK
	4 = CIRCLE T = DIAGONAL_CROSS 6-n = ASTERISK
Minification Filtering Method	1 = SAMPLE_IN_BASE
	2 = INTERP_IN_BASE
	3 = SAMPLE_IN_SQUARE_MM
	4 = SAMPLE_IN_AND_INTERP_BTWN_SQUARE_MM
	5 = INTERP_IN_SQUARE_MM
	6 = INTERP_IN_AND_BTWN_SQUARE_MM
	7 = SAMPLE_IN_RECT_MM
	8 = SAMPLE_IN_AND_INTERP_BTWN_RECT_MM
	9 = INTERP_IN_RECT_MM
Modeling Clipping Indicator	1 = NO_CLIP
	2 = CLIP
Modeling Clipping Operator	1 = REPLACE_VOLUME
	2 = INTERSECT_VOLUME
Modification Mode	1 = NO_IMMEDIATE_VISUAL_EFFECT
	2 = UPDATE_WITHOUT_REGENERATION
	3 = QUICK_UPDATE
Move/Draw Indicators	1 = MOVE
	2 = DRAW
Open Structure Type	1 = NIL
	2 = STRUCTURE
Operating Mode	1 = REQUEST
	2 = SAMPLE
	3 = EVENT
	4 = APPLICATION_DEFINED
Operating System	1 = RISC_6000
	2 = IBM_6095
	3 = IBM_370
Operating System Data	1 = SYSTEM_LEVEL
	2 = ENVIRONMENT_DESCRIPTOR
Path Order	1 = TOPFIRST
	2 = BOTTOMFIRST

Pattern/Line/Hatch Representation	1 = NOT_AVAILABLE
	2 = BOTH_AVAILABLE
	3 = INQUIRE_ONLY_AVAILABLE
	4 = SET_ONLY_AVAILABLE
Physical Device Mode	1 = DISABLED
	2 = ENABLED
Physical Device Number/Category	1 = BUTTON
	2 = SCALAR
	3 = 2D_VECTOR
Pick Correlation State	1 = OFF
	2 = ON
Pick Measure	1 = NORMAL
	2 = EXTENDED
Pick Path Order	1 = TOP_FIRST
	2 = BOTTOM_FIRST
Pick Selection Criteria	1 = FIRST
	2 = LAST
	3 = ALL
	4 = FIRST_VISIBLE
	5 = LAST_VISIBLE
	6 = ALL_VISIBLE
Pixel Order	1 = LEFT_TO_RIGHT_BOTTOM_TO_TOP
	2 = LEFT_TO_RIGHT_TOP_TO_BOTTOM
Pixel Operations	1 = TWO_OPERAND
	2 = THREE_OPERAND
Pixel Packing Factor	1 = 8_BITS_PIXEL
	2 = 16_BITS_PIXEL
	3 = 32_BITS_PIXEL
Point Type	1 = POINT_2D
	2 = POINT_3D
Polygon Culling Mode	1 = NONE
	2 = BACK
	3 = FRONT
Polyhedron Edge Culling Mode	1 = NONE
	2 = BOTH_BACK
	3 = BOTH_FRONT
	4 = BOTH_BACK_OR_BOTH_FRONT
	5 = BACK_AND_FRONT
	6 = LEAST_ONE_BACK
	7 = LEAST_ONE_FRONT
Polyline End Type	1 = FLAT
	2 = ROUND
	3 = SQUARE
Polyline Representation Group Identifier	1 = LINETYPE
	2 = LINEWIDTH_SCALE_FACTOR
	3 = POLYLINE_COLOR
Polyline Shading Method	1 = POLYLINE_SHADING_NONE
	2 = POLYLINE_SHADING_COLOR
Polymarker Representation Group Identifier	1 = MARKER_TYPE
	2 = MARKER_SIZE_SCALE_FACTOR
	3 = POLYMARKER_COLOR
Projection Type	1 = PARALLEL
	2 = PERSPECTIVE
Quantization Method	1 = WORKSTATION_DEPENDENT
	2 = BITWISE
Reference View	1 = HIGHER
	2 = LOWER

Reflectance Model	1 = REFLECTANCE_NONE
	2 = AMB
	3 = AMB_DIFF
	4 = AMB_DIFF_SPEC
Regeneration Flag	1 = POSTPONE
	2 = PERFORM
Rendering Color Model	1 = RGB_NORMAL
	2 = RGB_B_ONLY
Request Choice/Pick/String Input/Valuator Status	1 = NONE
	2 = OK
Reset Switch	1 = OFF
	2 = ON
Resource Type	1 = WORKSTATION
	2 = STRUCTURE_STORE
	3 = IMAGE_BOARD
	4 = FONT_DIRECTORY
	5 = ARCHIVE_FILE
Selected Structure Store Status	1 = NON_EXISTENT
	2 = EXISTENT
Set Modeling Transformation Method	1 = PRECONCATENATE
	2 = POSTCONCATENATE
	3 = REPLACE
Shell Deferral Mode	1 = FLUSH
	2 = DEFERRED
	3 = DEFERRED_PLUS_MSGS
Shielding Available	1 = NOT_AVAILABLE
	2 = AVAILABLE
Shielding Indicator	1 = OFF
	2 = ON
Simultaneous Event Flag	0 = NO_MORE_SIMULTANEOUS_EVENT
	1 = MORE_SIMULTANEOUS_EVENT
Source Blending Function	1 = SRCBF_ZERO,
	2 = SRCBF_ONE,
	3 = SRCBF_SRC_ALPHA,
	4 = SRCBF_ONE_MINUS_SRC_ALPHA,
	5 = SRCBF_DST_ALPHA,
	6 = SRCBF_ONE_MINUS_DST_ALPHA,
	7 = SRCBF_DST_COLOR,
	8 = SRCBF_ONE_MINUS_DST_COLOR,
	9 = SRCBF_MIN_SRC_ALPHA_ONE_MINUS_DST_ALPHA
State Switch	1 = DEVICE_INACTIVE
	2 = DEVICE_ACTIVE
Stroke Device	1 = 2D
	2 = 3D
Structure Existence	1 = NON_EXISTENT
	2 = EXISTENT
Structure Network Source	1 = SELECTED_STRUCTURE_STORE
	2 = SPECIFIED_STRUCTURE_STORE
	2 = SPECIFIED_ARCHIVE_FILE
Structure State Value	1 = STCL
	2 = STOP
	3 = SSCL
	4 = SSOP
	5 = NROP
Structure Store Type	1 = NORMAL
Surface Approximation Criteria	1 = WORKSTATION_DEPENDENT
	3 = CONSTANT_SUBDIVISION_BETWEEN_KNOTS
	8 = VARIABLE_SUBDIVISION_BETWEEN_KNOTS

Synchronization Mode	1 = NOWAIT
	2 = SYNC_WAIT
System State Value	1 = CLOSED
	2 = OPEN
	3 = SELECTED
Temporary View Indicator	1 = OFF
	2 = ON
Text Encoding Method	1 = UNICODE
Text Precision	1 = STRING_PREC
	2 = CHAR_PREC
	3 = STROKE_PREC
Text Path	1 = RIGHT
	2 = LEFT
	3 = UP
	4 = DOWN
Text Representation Group Identifier	1 = TEXT_FONT
	2 = TEXT_PRECISION
	3 = CHARACTER_EXPANSION_FACTOR
	4 = CHARACTER_SPACING
	5 = TEXT_COLOR
Three Operand Pixel Operation	1 = LOGICAL
	2 = ARITHMETIC
Transfer and/or Execute Flag	1 = EXECUTE_ONLY
	2 = TRANSFER_EXECUTE
Transparency Processing Mode	1 = OFF
	2 = PARTIAL_TRANSPARENT
	3 = BLEND
	4 = BLEND_ALL
Trigger Switch	1 = OFF
	2 = ON
Two Operand Pixel Operation	1 = REFLECTION
Update Notification Mode	1 = NO
	2 = YES
Vertical Alignment	1 = NORMAL
	2 = TOP
	3 = CAP
	4 = HALF
	5 = BASE
	6 = BOTTOM
View Active Flag	1 = INACTIVE
	2 = ACTIVE
View Priority	1 = HIGHER
	2 = LOWER
View Projection Type	1 = PARALLEL
	2 = PERSPECTIVE
Window Mapping Method	1 = MAPPED
	2 = DIRECT
Workstation Category	1 = OUTPUT
	2 = INPUT
	3 = OUTIN
Workstation Transformation Update State	1 = NOT_PENDING
	2 = PENDING
Workstation State Value	1 = CLOSED
	2 = OPEN
	3 = SELECTED

Chapter 5. Miscellaneous Information

Interior Style Hatch Table Entries

1   Vertical lines

2   Horizontal lines

3   Diagonal lines, lower left to upper right, wide spacing

4   Diagonal lines, lower left to upper right, medium spacing

5   Diagonal lines, lower right to upper left, wide spacing

6   Diagonal lines, lower right to upper left, medium spacing

7   Raster pattern 1

8   Raster pattern 2

9   Raster pattern 3

10   Raster pattern 4

11   Raster pattern 5

12   Raster pattern 6

13   Raster pattern 7

14   Raster pattern 8

15   Horizontal/Vertical cross-hatch, spacing 1

16   Diagonal cross-hatch, spacing 1

17   Horizontal/Vertical cross-hatch, spacing 2

18   Diagonal cross-hatch, spacing 2

19   Horizontal/Vertical cross-hatch, spacing 3

20   Diagonal cross-hatch, spacing 3

21   Horizontal/Vertical cross-hatch, spacing 4

22   Diagonal cross-hatch, spacing 4

23   Brick pattern - horizontal

24   Brick pattern - diagonal

Codes for Inquire Element Header

Output Primitives

Decimal	Hex Value	Subroutine
Line Primitives		
257	X'0101'	Polyline 3 (GPPL3)
258	X'0102'	Polyline 2 (GPPL2)
318	X'013E'	Polyline Set 3 With Data (GPPLD3)
259	X'0103'	Disjoint Polyline 3 (GPDPL3)
260	X'0104'	Disjoint Polyline 2 (GPDPL2)
273	X'0111'	Circle 2 (GPCR2)
274	X'0112'	Circular Arc 2 (GPCRA2)

Decimal	Hex Value	Subroutine
280	X'0118'	Ellipse 3 (GPEL3)
281	X'0119'	Ellipse 2 (GPEL2)
282	X'011A'	Elliptical Arc 3 (GPELA3)
283	X'011B'	Elliptical Arc 2 (GPELA2)
295	X'0127'	Line Grid 3 (GPLG3)
296	X'0128'	Line Grid 2 (GPLG2)
278	X'0116'	Non-uniform B-Spline Curve 3 (GPNBC3)
279	X'0117'	Non-uniform B-Spline Curve 2 (GPNBC2)
309	X'0135'	Polyhedron Edge (GPPHE)
320	X'0140'	Quadrilateral Mesh 3 (GPQM3)

Marker Primitives

261	X'0105'	Polymarker 3 (GPPM3)
262	X'0106'	Polymarker 2 (GPPM2)
293	X'4300'	Marker Grid 3 (GPMG3)
294	X'4300'	Marker Grid 2 (GPMG2)

Annotation Text Primitives

265	X'0109'	Annotation Text 3 (GPAN3)
266	X'010A'	Annotation Text 2 (GPAN2)
229	X'010D'	Annotation Text Relative 3 (GPANR3)
270	X'010E'	Annotation Text Relative 2 (GPANR2)

Geometric Text Primitives

263	X'0107'	Geometric Text 3 (GPTX3)
264	X'0108'	Geometric Text 2 (GPTX2)
304	X'0130'	Character Line 2 (GPCHL2)

Area Primitives

289	X'0121'	Polygon 3 (GPPG3)
290	X'0122'	Polygon 2 (GPPG2)
299	X'012B'	Polygon 3 With Data (GPPGD3)
300	X'012C'	Polygon 2 With Data (GPPGD2)
301	X'012D'	Triangle Strip 3 (GPTS3)
305	X'0131'	Non-uniform B-Spline Surface (GPNBS)
308	X'0134'	Composite Fill Area 2 (GPCFA2)
306	X'0132'	Trimmed Non-uniform B-Spline Surface (GPTNBS)
312	X'0138'	Polysphere (GPSPH)

Pixel Primitives

271	X'010F'	Pixel 3 (GPPXL3)
272	X'0110'	Pixel 2 (GPPXL2)

Attribute Setting Structure Elements

Decimal	Hex Value	Subroutine
General Attributes		
74	X'004A'	Set HLHSR Identifier (GPHID)
82	X'0052'	Set Antialiasing Identifier (GPAID)
85	X'0055'	Set Z-buffer Protect Mask (GPZBM)
84	X'0054'	Set Face Lighting Method (GPFLM)
6	X'0006'	Set Depth Cue Index (GPDCI)
7	X'0007'	Set Color Processing Index (GPCPI)
224	X'00E0'	Set Highlighting Color Index (GPHLCI)
225	X'00E1'	Set Highlighting Color Direct (GPHLCD)
226	X'00E2'	Add Class Name to Set (GPADCN)
227	X'00E3'	Remove Class Name from Set (GPRCN)
Attribute Selection		
53	X'0035'	Set Attribute Source Flag (GPASF)

Decimal	Hex Value	Subroutine
Polyline Attributes		
76	X'004C'	Set Curve Approximation Criteria (GPCAC)
80	X'0050'	Set Trimming Curve Approximation Criteria (GPTCAC)
78	X'004E'	Set Polyhedron Edge Culling (GPPHEC)
1	X'0001'	Set Polyline Index (GPPLI)
8	X'0008'	Set Linetype (GPLT)
31	X'001F'	Set Polyline End Type (GPPLET)
9	X'0009'	Set Linewidth Scale Factor (GPLWSC)
10	X'000A'	Set Polyline Color Index (GPPLCI)
40	X'0028'	Set Polyline Color Direct (GPPLCD)
98	X'0062'	Set Polyline Shading Method (GPPLSM)
Polymarker Attributes		
2	X'0002'	Set Polymarker Index (GPPMI)
11	X'000B'	Set Marker Type (GPMT)
12	X'000C'	Set Marker Size Scale Factor (GPMSSC)
13	X'000D'	Set Polymarker Color Index (GPPMCI)
41	X'0029'	Set Polymarker Color Direct (GPPMCD)
Text Attributes		
19	X'0013'	Set Character Height (GPCHH)
39	X'0027'	Set Character Line Scale Factor (GPCHLS)
20	X'0014'	Set Character Up Vector (GPCHUP)
38	X'0026'	Set Character Up and Base Vectors (GPCHUB)
21	X'0015'	Set Text Path (GPTXPT)
23	X'0017'	Set Text Alignment (GPTXAL)
22	X'0016'	Set Character Positioning Mode (GPCHPM)
3	X'0003'	Set Text Index (GPTXI)
14	X'000E'	Set Text Font (GPTXFO)
15	X'000F'	Set Text Precision (GPTXPR)
16	X'0010'	Set Character Expansion Factor (GPCHXP)
17	X'0011'	Set Character Spacing (GPCHSP)
18	X'0012'	Set Text Color Index (GPTXCI)
42	X'002A'	Set Text Color Direct (GPTXCD)
Annotation Text Attributes		
33	X'0021'	Set Annotation Height Scale Factor (GPAHSC)
34	X'0022'	Set Annotation Height (GPAH)
32	X'0020'	Set Annotation Style (GPAS)
35	X'0023'	Set Annotation Up Vector (GPAUP)
36	X'0024'	Set Annotation Path (GPAPT)
37	X'0025'	Set Annotation Alignment (GPAAL)
Polygon Attributes		
77	X'004D'	Set Surface Approximation Criteria (GPSAC)
69	X'0045'	Set Polygon Culling (GPPGC)
Interior Attributes		
72	X'0048'	Set Face Distinguish Mode (GPFDMO)
73	X'0049'	Set Light Source State (GPLSS)
79	X'004F'	Set Lighting Calculation Mode (GPLMO)
84	X'0054'	Set Face Lighting Method (GPFLM)
5	X'0005'	Set Interior Index (GPII)
24	X'0018'	Set Interior Style (GPIS)
25	X'0019'	Set Interior Style Index (GPISI)
26	X'001A'	Set Interior Color Index (GPICI)
43	X'002B'	Set Interior Color Direct (GPICD)
63	X'003F'	Set Back Interior Color Index (GPBICI)
64	X'0040'	Set Back Interior Color Direct (GPBICD)

Decimal	Hex Value	Subroutine
65	X'0041'	Set Specular Color Index (GPSCI)
66	X'0042'	Set Specular Color Direct (GPSCD)
67	X'0048'	Set Back Specular Color Index (GPBSCI)
68	X'0044'	Set Back Specular Color Direct (GPBSCD)
70	X'0046'	Set Surface Properties (GPSPR)
71	X'0047'	Set Back Surface Properties (GPBSPR)
81	X'0051'	Set Parametric Surface Characteristics (GPPSC)
Edge Attributes		
4	X'0004'	Set Edge Index (GPEI)
27	X'001B'	Set Edge Flag (GPEF)
28	X'001C'	Set Edge Linetype (GPELT)
30	X'001E'	Set Edge Scale Factor (GPESC)
29	X'001D'	Set Edge Color Index (GPECI)
44	X'002C'	Set Edge Color Direct (GPECD)

Transformation Setting Structure Elements

Decimal	Hex Value	Subroutine
Modeling Transformation		
210	X'00D2'	Set Global Transformation 3 (GPGLX3)
211	X'00D3'	Set Global Transformation 2 (GPGLX2)
208	X'00D0'	Set Modeling Transformation 3 (GPMLX3)
209	X'00D1'	Set Modeling Transformation 2 (GPMLX2)

Miscellaneous Structure Elements

Decimal	Hex Value	Subroutine
View Selection		
216	X'00D8'	Set View Index (GPVWI)
Traversal Control		
250	X'00FA'	Execute Structure (GPEXST)
242	X'00F1'	Test Extent 3 (GPTEX3)
241	X'00F2'	Test Extent 2 (GPTEX2)
243	X'00F3'	Set Condition (GPCOND)
254	X'00FE'	Conditional Execute Structure (GPCEXS)
240	X'00F0'	Conditional Return (GPCRET)
Identification		
251	X'00FB'	Insert Label (GPINLB)
252	X'00FC'	Set Pick Identifier (GPPKID)
Frame Buffer Control		
49	X'0031'	Set Frame Buffer Protect Mask (GPFBM)
50	X'0032'	Set Frame Buffer Comparison (GPFBC)
Application-Defined Data		
228	X'00E4'	Insert Application Data (GPINAD)
229	X'00E5'	Null Data (GPNULL)
246	X'00F6'	Workstation-Dependent Output

Choice Values for Choice Device 4

65537	X'10001'	Enter
65538	X'10002'	New Line
65539	X'10003'	Alt-Cancel

65540	X'10004'	Up arrow
65541	X'10005'	Down arrow
65542	X'10006'	Left arrow
65543	X'10007'	Right arrow
65544	X'10008'	Tab Forward
65545	X'10009'	Tab back
65546	X'1000A'	Insert
65547	X'1000B'	Delete
65548	X'1000C'	Backspace
65549	X'1000D'	Up arrow + Shift
65550	X'1000E'	Down arrow + Shift
65551	X'1000F'	Left arrow + Shift
65552	X'10010'	Right arrow + Shift
65553	X'10011'	Up arrow + Alt
65554	X'10012'	Down arrow + Alt
65555	X'10013'	Left arrow + Alt
65556	X'10014'	Right arrow + Alt
65557	X'10015'	Home
65558	X'10016'	Home + Shift
65559	X'10017'	Home + Alt
65560	X'10018'	PA1
65561	X'10019'	EOF
65563	X'1001A'	EOF + Shift
65563	X'1001B'	EOF + Alt
65564	X'1001C'	PA2
65565	X'1001D'	CLEAR
65566	X'1001E'	+ on numeric pad + Alt
65567	X'1001F'	- on numeric pad + Alt

List of ASF Identifiers

1 Linetype
2 Linewidth scale factor
3 Polyline color
4 Marker type
5 Marker size scale factor
6 Polymarker color
7 Text font
8 Text precision
9 Character expansion factor
10 Character spacing
11 Text color
12 Interior style
13 Style
14 Interior color
15 Edge flag
16 Edge linetype
17 Edge color
18 Edge scale factor

GDP Identifiers

1001   Pixel 3

1002	Pixel 2
1003	Disjoint Polyline 3
1004	Disjoint Polyline 2
1005	Circle 2
1006	Circular Arc 2
1007	Ellipse 2
1008	Ellipse 3
1009	Elliptical Arc 2
1010	Elliptical Arc 3
1014	Polyline Set 3 With Data
1016	Polygon 3 With Data
1017	Polygon 2 With Data
1020	Marker Grid 3
1021	Marker Grid 2
1022	Line Grid 3
1023	Line Grid 2
1027	Composite Fill Area 2
1029	Triangle Strip 3
1031	Quadrilateral Mesh 3
1033	Non-Uniform B-Spline Curve 3
1034	Non-Uniform B-Spline Curve 2
1035	Non-Uniform B-Surface
1036	Trimmed Non-Uniform B-Spline Surface
1037	Polyhedron Edge
1039	Character Line 2
1046	Polysphere

Escape Functions

1001	Sound Alarm
1002	Enable/Disable Link Switch
1003	GDF Plot Size
1004	Initialize Pick Correlation State
1005	Set Pick Selection Criteria
1006	Set Input Echo Color
1007	Read Frame Buffer
1008	Geometric Text Culling
1009	Window Resize Notification Control
1010	Inquire Mapped Display Surface Size
1011	Window Exposure Notification Control
1012	Window Deletion Notification Control
1014	Workstation-Dependent Output
1015	Convert Coordinate Values

GSE Identifiers

1001	Set Frame Buffer Protect Mask
1002	Set Frame Buffer Comparison
1003	Set Condition
1004	Conditional Execute Structure
1005	Conditional Return
1006	Test Extent 3
1007	Test Extent 2

1008	Parametric Surface Characteristics
1009	Z-buffer Protect Mask
1010	Workstation-Dependent Output

Character Code and Font Designations

EBCDIC and ASCII

CSID 1	— U.S. ENGLISH
	Font 1 (graPHIGS Default)
	Font 2 (Complex Roman)
	Font 3 (Complex Italian)
	Font 4 (Complex Script)
	Font 5 (Duplex Roman)
	Font 6 (Gothic English)
	Font 7 (Gothic German)
	Font 8 (Gothic Italian)
	Font 9 (Simplex Roman)
	Font 10 (Triplex Italic)
	Font 11 (Triplex Roman)
CSID 2	— U.K. ENGLISH
	Font 1 (graPHIGS Default)
CSID 3	— GERMAN
	Font 1 (graPHIGS Default)
CSID 4	— FRENCH
	Font 1 (graPHIGS Default)
CSID 5	— ITALIAN
	Font 1 (graPHIGS Default)
CSID 6	— JAPANESE KATAKANA
	Font 1 (graPHIGS Default)
CSID 7	— SWEDISH
	Font 1 (graPHIGS Default)
CSID 8	— MULTI-LANGUAGE
	Font 1 (graPHIGS Default)
CSID 9	— SINGLE-BYTE KOREAN
	Font 1 (graPHIGS Default)
CSID 10	— ISO 8859-1 (LATIN 1)
	Font 1 (graPHIGS Default)
CSID 128	— JAPANESE KANJI
	Font 1 (graPHIGS Default)
CSID 129	— HANGUL
	Font 1 (graPHIGS Default)
CSID 130	— TRADITIONAL CHINESE
	Font 1 (graPHIGS Default)
CSID 111-127	— RESERVED
CSID 131-255	— RESERVED

Prompt/Echo Type Definitions

Choice Device

1 = workstation dependent

2 = individual indicators

Locator Device		
	1 =	workstation dependent
	2 =	cross hair
	3 =	tracking cross
	4 =	rubber band line
	5 =	rubber band rectangle
	7 =	structure drag
Pick Device	**1 =**	workstation dependent
Stroke Device	**1 =**	workstation dependent
	3 =	markers
	4 =	lines
String Device	**1 =**	workstation dependent
	2 =	application-specified prompt string
Valuator Device	**1 =**	workstation dependent
	3 =	digital representation
	4 =	implementation dependent mapping of multiple turns

Trace Control Word Format

Byte 0-1 =	FLAGS	
	Bit 0 =	trace word ″unchangeable″
	Bit 1-15 =	reserved
Byte 2 =	TRACE QUALIFIER	
	'00'X =	controlled by other flags
	'03'X =	abend at termination
	'20'X =	storage use report
Byte 3 =	TRACE LEVEL	
	'00'X =	stop component, subcomponent, module trace
	'01'X =	start component entry and exit
	'02'X =	start component trace, subcomponent entry and exit
	'03'X =	start component trace, subcomponent trace, module entry and exit

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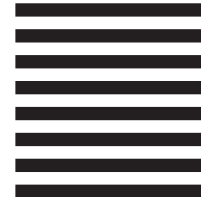Fold and Tape   **Please do not staple**   Fold and Tape

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