

# jcgm -- Features

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## 1 Core Package

### 1.1 File Formats

Binary CGM files as defined in ISO/IEC 8632-3 are supported. Clear text encoding is not supported.

### 1.2 CGM Commands

The following is a list of CGM commands and their level of support in jcgm.

Legend for the Status column:

- O: supported
- X: unsupported
- ~: partially supported, see remarks

#### 1.2.1 Delimiter Elements: Class 0

Class	Element Code	Element Name	Status	Remarks
0	0	no-op	O	
0	1	BEGIN METAFILE	O	
0	2	END METAFILE	O	
0	3	BEGIN PICTURE	O	
0	4	BEGIN PICTURE BODY	O	
0	5	END PICTURE	O	
0	6	BEGIN SEGMENT	X	
0	7	END SEGMENT	X	
0	8	BEGIN FIGURE	X	
0	9	END FIGURE	X	
0	13	BEGIN PROTECTION REGION	X	

Class	Element Code	Element Name	Status	Remarks
0	14	END PROTECTION REGION	X	
0	15	BEGIN COMPOUND LINE	X	
0	16	END COMPOUND LINE	X	
0	17	BEGIN COMPOUND TEXT PATH	X	
0	18	END COMPOUND TEXT PATH	X	
0	19	BEGIN TILE ARRAY	O	
0	20	END TILE ARRAY	O	
0	21	BEGIN APPLICATION STRUCTURE	X	
0	22	BEGIN APPLICATION STRUCTURE BODY	X	
0	23	END APPLICATION STRUCTURE	X	

Table 1: Delimiter Elements: Class 0

### 1.2.2 Metafile Descriptor Elements: Class 1

Class	Element Code	Element Name	Status	Remarks
1	1	METAFILE VERSION	O	
1	2	METAFILE DESCRIPTION	O	

Class	Element Code	Element Name	Status	Remarks
1	3	VDC TYPE	O	
1	4	INTEGER PRECISION	O	
1	5	REAL PRECISION	O	
1	6	INDEX PRECISION	O	
1	7	COLOUR PRECISION	O	
1	8	COLOUR INDEX PRECISION	O	
1	9	MAXIMUM COLOUR INDEX	O	
1	10	COLOUR VALUE EXTENT	O	
1	11	METAFILE ELEMENT LIST	O	It is not checked whether all elements required are really implemented.
1	12	METAFILE DEFAULTS REPLACEMENT	O	
1	13	FONT LIST	O	
1	14	CHARACTER SET LIST	X	
1	15	CHARACTER CODING ANNOUNCER	X	
1	16	NAME PRECISION	O	
1	17	MAXIMUM VDC EXTENT	X	

Class	Element Code	Element Name	Status	Remarks
1	18	SEGMENT PRIORITY EXTENT	X	
1	19	COLOUR MODEL	O	
1	20	COLOUR CALIBRATION	X	
1	21	FONT PROPERTIES	X	
1	22	GLYPH MAPPING	X	
1	23	SYMBOL LIBRARY LIST	X	
1	24	PICTURE DIRECTORY	X	

Table 1: Metafile Descriptor Elements: Class 1

### 1.2.3 Picture Descriptor Elements: Class 2

Class	Element Code	Element Name	Status	Remarks
2	1	SCALING MODE	O	
2	2	COLOUR SELECTION MODE	O	
2	3	LINE WIDTH SPECIFICATION MODE	O	
2	4	MARKER SIZE SPECIFICATION MODE	O	
2	5	EDGE WIDTH SPECIFICATION MODE	O	
2	6	VDC EXTENT	O	
2	7	BACKGROUND COLOUR	O	

Class	Element Code	Element Name	Status	Remarks
2	8	DEVICE VIEWPORT	X	
2	9	DEVICE VIEWPORT SPECIFICATION MODE	O	
2	10	DEVICE VIEWPORT MAPPING	X	
2	11	LINE REPRESENTATION	X	
2	12	MARKER REPRESENTATION	X	
2	13	TEXT REPRESENTATION	X	
2	14	FILL REPRESENTATION	X	
2	15	EDGE REPRESENTATION	X	
2	16	INTERIOR STYLE SPECIFICATION MODE	X	
2	17	LINE AND EDGE TYPE DEFINITION	O	
2	18	HATCH STYLE DEFINITION	X	
2	19	GEOMETRIC PATTERN DEFINITION	O	
2	20	APPLICATION STRUCTURE DIRECTORY	X	

Table 1: Picture Descriptor Elements: Class 2

<b>1.2.4 Control Elements: Class 3</b>				
Class	Element Code	Element Name	Status	Remarks
3	1	VDC INTEGER PRECISION	O	
3	2	VDC REAL PRECISION	O	
3	3	AUXILIARY COLOUR	X	
3	4	TRANSPARENCY	X	
3	5	CLIP RECTANGLE	O	
3	6	CLIP INDICATOR	O	
3	7	LINE CLIPPING MODE	X	
3	8	MARKER CLIPPING MODE	X	
3	9	EDGE CLIPPING MODE	X	
3	10	NEW REGION	X	
3	11	SAVE PRIMITIVE CONTEXT	X	
3	12	RESTORE PRIMITIVE CONTEXT	X	
3	17	PROTECTION REGION INDICATOR	X	
3	18	GENERALIZED TEXT PATH MODE	X	
3	19	MITRE LIMIT	X	

Class	Element Code	Element Name	Status	Remarks
3	20	TRANSPARENT CELL COLOUR	X	

Table 1: Control Elements: Class 3

### 1.2.5 Graphical Primitive Elements: Class 4

Class	Element Code	Element Name	Status	Remarks
4	1	POLYLINE	O	
4	2	DISJOINT POLYLINE	O	
4	3	POLYMARKER	O	
4	4	TEXT	O	Append text is not supported
4	5	RESTRICTED TEXT	O	
4	6	APPEND TEXT	X	
4	7	POLYGON	O	
4	8	POLYGON SET	O	
4	9	CELL ARRAY	~	Only cell arrays with orthogonal axis are supported
4	10	GENERALIZED DRAWING PRIMITIVE	X	
4	11	RECTANGLE	O	
4	12	CIRCLE	O	
4	13	CIRCULAR ARC 3 POINT	O	
4	14	CIRCULAR ARC 3 POINT CLOSE	O	
4	15	CIRCULAR ARC CENTRE	O	



Class	Element Code	Element Name	Status	Remarks
4	16	CIRCULAR ARC CENTRE CLOSE	O	
4	17	ELLIPSE	O	
4	18	ELLIPTICAL ARC	O	
4	19	ELLIPTICAL ARC CLOSE	O	
4	20	CIRCULAR ARC CENTRE REVERSED	X	
4	21	CONNECTING EDGE	X	
4	22	HYPERBOLIC ARC	X	
4	23	PARABOLIC ARC	X	
4	24	NON-UNIFORM B-SPLINE	X	
4	25	NON-UNIFORM RATIONAL B- SPLINE	X	
4	26	POLYBEZIER	O	
4	27	POLYSYMBOL	X	
4	28	BITONAL TILE	~	Only cell path direction 0 and line progression 90 supported; only compression type JPEG and PNG supported
4	29	TILE	~	See Bitonal Tile

Table 1: Graphical Primitive Elements: Class 4

<b>1.2.6 Attribute Elements: Class 5</b>				
Class	Element Code	Element Name	Status	Remarks
5	1	LINE BUNDLE INDEX	X	
5	2	LINE TYPE	O	
5	3	LINE WIDTH	~	Only for LINE WIDTH SPECIFICATION MODE ABSOLUTE and SCALED
5	4	LINE COLOUR	O	
5	5	MARKER BUNDLE INDEX	X	
5	6	MARKER TYPE	O	
5	7	MARKER SIZE	~	Only for MARKER SIZE SPECIFICATION MODE ABSOLUTE and SCALED
5	8	MARKER COLOUR	O	
5	9	TEXT BUNDLE INDEX	X	
5	10	TEXT FONT INDEX	X	
5	11	TEXT PRECISION	X	
5	12	CHARACTER EXPANSION FACTOR	X	
5	13	CHARACTER SPACING	X	

Class	Element Code	Element Name	Status	Remarks
5	14	TEXT COLOUR	O	
5	15	CHARACTER HEIGHT	O	
5	16	CHARACTER ORIENTATION	O	
5	17	TEXT PATH	X	
5	18	TEXT ALIGNMENT	X	
5	19	CHARACTER SET INDEX	X	
5	20	ALTERNATE CHARACTER SET INDEX	X	
5	21	FILL BUNDLE INDEX	X	
5	22	INTERIOR STYLE	~	Only HOLLOW, SOLID, HATCH, EMPTY
5	23	FILL COLOUR	O	
5	24	HATCH INDEX	O	
5	25	PATTERN INDEX	X	
5	26	EDGE BUNDLE INDEX	X	
5	27	EDGE TYPE	O	
5	28	EDGE WIDTH	~	Only for EDGE WIDTH SPECIFICATION MODE ABSOLUTE and SCALED
5	29	EDGE COLOUR	O	
5	30	EDGE VISIBILITY	O	

Class	Element Code	Element Name	Status	Remarks
5	31	FILL REFERENCE POINT	X	
5	32	PATTERN TABLE	X	
5	33	PATTERN SIZE	X	
5	34	COLOUR TABLE	O	
5	35	ASPECT SOURCE FLAG	X	
5	36	PICK IDENTIFIER	X	
5	37	LINE CAP	~	Only BUTT and ROUND
5	38	LINE JOIN	O	
5	39	LINE TYPE CONTINUATION	X	
5	40	LINE TYPE INITIAL OFFSET	X	
5	41	TEXT SCORE TYPE	X	
5	42	RESTRICTED TEXT TYPE	O	
5	43	INTERPOLATED INTERIOR	X	
5	44	EDGE CAP	~	Only BUTT and ROUND
5	45	EDGE JOIN	O	
5	46	EDGE TYPE CONTINUATION	X	
5	47	EDGE TYPE INITIAL OFFSET	X	
5	48	SYMBOL LIBRARY INDEX	X	
5	49	SYMBOL COLOUR	X	

Class	Element Code	Element Name	Status	Remarks
5	50	SYMBOL SIZE	X	
5	51	SYMBOL ORIENTATION	X	

Table 1: Attribute Elements: Class 5

### 1.2.7 Escape Elements: Class 6

Class	Element Code	Element Name	Status	Remarks
6	1	ESCAPE	X	

Table 1: Escape Elements: Class 6

### 1.2.8 External Elements: Class 7

Class	Element Code	Element Name	Status	Remarks
7	1	MESSAGE	O	
7	2	APPLICATION DATA	O	

Table 1: External Elements: Class 7

### 1.2.9 Segment Elements: Class 8

Class	Element Code	Element Name	Status	Remarks
8	1	COPY SEGMENT	X	
8	2	INHERITANCE FILTER	X	
8	3	CLIP INHERITANCE	X	
8	4	SEGMENT TRANSFORMATION	X	
8	5	SEGMENT HIGHLIGHTING	X	
8	6	SEGMENT DISPLAY PRIORITY	X	

Class	Element Code	Element Name	Status	Remarks
8	7	SEGMENT PICK PRIORITY	X	

Table 1: Segment Elements: Class 8

### 1.2.10 Application Structure Descriptor Elements: Class 9

Class	Element Code	Element Name	Status	Remarks
9	1	APPLICATION STRUCTURE ATTRIBUTE	X	

Table 1: Application Structure Descriptor Elements: Class 9

## 2 Image Package