

microvg

User Manual



MICROEJ[®]

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Chapter 1. Data Structure Documentation

1.1. MICROVG_GRADIENT_HEADER_t struct Reference

1.1.1. Data Fields

- jint count
- jfloat x
- jfloat y
- jfloat angle
- jfloat length
- jint colors_offset
- jint positions_offset

1.1.2. Field Documentation

1.2. MICROVG_PATH_HEADER struct Reference

1.2.1. Data Fields

- uint32_t data_size
- uint8_t format
- uint8_t padding1
- uint8_t padding2
- uint8_t padding3
- float bounds_xmin
- float bounds_xmax
- float bounds_ymin
- float bounds_ymax

1.2.2. Field Documentation

Chapter 2. File Documentation

2.1. ui_drawing_bvi.h File Reference

```
#include "microvg_configuration.h"
```

Detailed Description

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/ui/inc/ui_drawing_bvi.h

2.2. microvg_configuration.h File Reference

2.2.1. Macros

- #define MICROVG_CONFIGURATION_VERSION (2)

Compatibility sanity check value. This define value is checked in the implementation to validate that the version of this configuration is compatible with the implementation.

- #define VG_FEATURE_GRADIENT_FULL (1)
- #define VG_FEATURE_GRADIENT_FIRST_COLOR (2)
- #define VG_FEATURE_FONT_FREETYPE_VECTOR (1)
- #define VG_FEATURE_FONT_FREETYPE_BITMAP (2)
- #define VG_FEATURE_PATH
- #define VG_FEATURE_GRADIENT VG_FEATURE_GRADIENT_FULL
- #define VG_FEATURE_FONT VG_FEATURE_FONT_FREETYPE_VECTOR
- #define VG_FEATURE_FREETYPE_TTF
- #define VG_FEATURE_FREETYPE_OTF
- #define VG_FEATURE_FREETYPE_COLORED_EMOJI
- #define VG_FEATURE_FONT_COMPLEX_LAYOUT
- #define VG_FEATURE_FONT_EXTERNAL
- #define VG_FEATURE_FREETYPE_HEAP_SIZE (160 * 1024)

- `#define VG_FEATURE_FONT_COMPLEX_LAYOUT_HEAP_SIZE (80 * 1024)`

Detailed Description

MicroEJ MicroVG library low level API: enable some features according to the hardware capacities.

Author: . MicroEJ Developer Team

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~ccomponentWorking/bsp/vg/inc/microvg_configuration.h`

2.3. microvg_font_freetype.h File Reference

```
#include "microvg_configuration.h"
```

```
#include <stdint.h>
```

2.3.1. Functions

- `void MICROVG_FONT_FREETYPE_initialize (void)`

Detailed Description

MicroEJ MicroVG library low level API: implementation over FreeType.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~ccomponentWorking/bsp/vg/inc/microvg_font_freetype.h`

2.4. microvg_gradient.h File Reference

```
#include "microvg_configuration.h"
```

```
#include <sni.h>
```

2.4.1. Data Structures

- `struct MICROVG_GRADIENT_HEADER_t`

2.4.2. Functions

- float MICROVG_GRADIENT_get_gradient_scale_size (void)
- uint32_t MICROVG_GRADIENT_get_gradient_header_size (void)

Detailed Description

MicroEJ MicroVG library low level API: implementation of LinearGradient.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/inc/microvg_gradient.h

2.5. microvg_helper.h File Reference

```
#include <stdio.h>
```

```
#include <sni.h>
```

```
#include "mej_log.h"
```

2.5.1. Macros

- #define MEJ_LOG_INFO_MICROVG
- #define MEJ_LOG_ERROR_MICROVG MEJ_LOG(ERROR,MICROVG,fmt, ##__VA_ARGS__)
- #define MICROVG_HELPER_NULL_GRADIENT 0

Set this define to monitor freetype heap evolution. It needs MEJ_LOG_MICROVG and MEJ_LOG_INFO_LEVEL defines to print the heap logs.

- #define FT_FACE_FLAG_COMPLEX_LAYOUT (((uint32_t)1) << 31)

Freetype supplementary flag for complex layout Uses a free bit in freetype face flags to convey the complex layout mode information with the freetype face. freetype.h must be checked on freetype update to ensure that this bit is still free.

- #define M_PI 3.1415926535
- #define RAD_TO_DEG ((r) * (180.0f / M_PI))
- #define DEG_TO_RAD (((d) * M_PI) / 180.0f)

- `#define JFLOAT_TO_UINT32_t (*(uint32_t*)&(f))`
- `#define UINT32_t_TO_JFLOAT (*(float*)&(i))`

2.5.2. Functions

- `void MICROVG_HELPER_initialize (void)`
- `int MICROVG_HELPER_get_utf (unsigned short * text, int length, int * offset)`
Gets the UTF character from a text buffer at the given offset and updates the offset to point to the next character.
- `void MICROVG_HELPER_layout_configure (int faceHandle, unsigned short * text, int length)`
- `bool MICROVG_HELPER_layout_load_glyph (int * glyph_idx, int * x_advance, int * y_advance, int * x_offset, int * y_offset)`
- `jfloat * MICROVG_HELPER_check_matrix (jfloat * matrix)`
- `uint32_t MICROVG_HELPER_apply_alpha (uint32_t color, uint32_t alpha)`

Detailed Description

MicroEJ MicroVG library low level API: helper to implement library natives methods.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~\ccomponentWorking\bsp\vg\inc\microvg_helper.h`

2.6. microvg_path.h File Reference

```
#include "microvg_configuration.h"
```

```
#include <sn1.h>
```

2.6.1. Data Structures

- `struct MICROVG_PATH_HEADER`

2.6.2. Typedefs

- `typedef struct MICROVG_PATH_HEADER MICROVG_PATH_HEADER_t`

2.6.3. Functions

- `uint8_t MICROVG_PATH_get_path_encoder_format (void)`
- `uint32_t MICROVG_PATH_convert_path_command (jint command)`
- `void MICROVG_PATH_initialize (void)`
- `uint32_t MICROVG_PATH_get_path_header_size (void)`
- `uint32_t MICROVG_PATH_get_path_command_size (jint command, uint32_t nbParams)`
- `uint32_t MICROVG_PATH_append_path_command0 (jbyte * path, uint32_t offset, jint cmd)`
- `uint32_t MICROVG_PATH_append_path_command1 (jbyte * path, uint32_t offset, jint cmd, jfloat x, jfloat y)`
- `uint32_t MICROVG_PATH_append_path_command2 (jbyte * path, uint32_t offset, jint cmd, jfloat x1, jfloat y1, jfloat x2, jfloat y2)`
- `uint32_t MICROVG_PATH_append_path_command3 (jbyte * path, uint32_t offset, jint cmd, jfloat x1, jfloat y1, jfloat x2, jfloat y2, jfloat x3, jfloat y3)`
- `uint32_t MICROVG_PATH_get_command_parameter_number (jint command)`

Detailed Description

MicroEJ MicroVG library low level API: implementation of Path.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/.ccomponentWorking/bsp/vg/inc/microvg_path.h`

2.7. microvg_trace.h File Reference

```
#include "LLTRACE_impl.h"
```

2.7.1. Macros

- `#define LOG_MICROVG_EVENTS 3`
- `#define LOG_MICROVG_IMAGE_ID 0`
- `#define LOG_MICROVG_FONT_ID 1`
- `#define LOG_MICROVG_DRAWING_ID 2`
- `#define LOG_MICROVG_IMAGE_load 0`

- `#define LOG_MICROVG_IMAGE_create 1`
- `#define LOG_MICROVG_IMAGE_close 2`
- `#define LOG_MICROVG_FONT_load 0`
- `#define LOG_MICROVG_FONT_baseline 1`
- `#define LOG_MICROVG_FONT_height 2`
- `#define LOG_MICROVG_FONT_stringWidth 3`
- `#define LOG_MICROVG_FONT_stringHeight 4`
- `#define LOG_MICROVG_DRAW_path 0`
- `#define LOG_MICROVG_DRAW_pathGradient 1`
- `#define LOG_MICROVG_DRAW_string 2`
- `#define LOG_MICROVG_DRAW_stringGradient 3`
- `#define LOG_MICROVG_DRAW_stringOnCircle 4`
- `#define LOG_MICROVG_DRAW_stringOnCircleGradient 5`
- `#define LOG_MICROVG_DRAW_image 6`
- `#define CONCAT_STRINGS p ## s`
- `#define CONCAT_DEFINES CONCAT_STRINGS(p,s)`
- `#define LOG_MICROVG_START LLTRACE_IMPL_record_event_u32(vg_trace_group_id, event, type);`
- `#define LOG_MICROVG_END LLTRACE_IMPL_record_event_end_u32(vg_trace_group_id, event, type);`

2.7.2. Variables

- `int32_t vg_trace_group_id`

Detailed Description

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/inc/microvg_trace.h`

2.8. vg_drawing.h File Reference

```
#include <LLVG_PAINTER_impl.h>
```

```
#include "ui_drawing.h"
```

2.8.1. Functions

- void VG_DRAWING_get_image_size (void * image, float * width, float * height)
- DRAWING_Status VG_DRAWING_drawPath (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint blend, jint color)
- DRAWING_Status VG_DRAWING_drawGradient (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint alpha, jint blend, jint * gradient, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_drawString (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing)
- DRAWING_Status VG_DRAWING_drawStringGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jint * gradientData, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_drawStringOnCircle (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction)
- DRAWING_Status VG_DRAWING_drawStringOnCircleGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction, jint * gradientData, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_drawImage (MICROUI_GraphicsContext * gc, void * image, jfloat * matrix, jint alpha, jlong elapsed, const float color_matrix, jint * errno)

Detailed Description

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.library.llimpl.microvg/target~/ccomponentWorking/bsp/vg/inc/vg_drawing.h

2.9. vg_drawing_bvi.h File Reference

```
#include "microvg_configuration.h"
```

Detailed Description

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.library.llimpl.microvg/target~/ccomponentWorking/bsp/vg/inc/vg_drawing_bvi.h

2.10. vg_drawing_stub.h File Reference

```
#include "vg_drawing.h"
```

2.10.1. Functions

- DRAWING_Status VG_DRAWING_STUB_drawPath (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint blend, jint color)
- DRAWING_Status VG_DRAWING_STUB_drawGradient (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint alpha, jint blend, jint * gradient, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_STUB_drawString (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing)
- DRAWING_Status VG_DRAWING_STUB_drawStringGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jint * gradientData, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_STUB_drawStringOnCircle (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction)
- DRAWING_Status VG_DRAWING_STUB_drawStringOnCircleGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction, jint * gradientData, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_STUB_drawImage (MICROUI_GraphicsContext * gc, void * image, jfloat * matrix, jint alpha, jlong elapsed, const float color_matrix, jint * errno)

Detailed Description

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/inc/vg_drawing_stub.h

2.11. LLVG_BVI_stub.c File Reference

```
#include "microvg_configuration.h"
```

```
#include <LLVG_BVI_impl.h>
```

2.11.1. Functions

- void LLVG_BVI_IMPL_map_context (MICROUI_Image * ui, void * vg)
- void LLVG_BVI_IMPL_clear (MICROUI_GraphicsContext * gc)

Detailed Description

MicroVG library low level API: stubbed implementation of LLVG_BVI_impl.h.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_BVI_stub.c

2.12. LLVG_FONT_freetype.c File Reference

```
#include "microvg_configuration.h"
```

Detailed Description

MicroEJ MicroVG library low level API: implementation over FreeType.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_FONT_freetype.c

2.13. LLVG_FONT_stub.c File Reference

```
#include "microvg_configuration.h"
```

```
#include <LLVG_FONT_impl.h>
```

```
#include <LLVG_PAINTER_impl.h>
```

2.13.1. Functions

- jint LLVG_FONT_IMPL_load_font (jchar * font_name, jboolean complex_layout)

- jfloat LLVG_FONT_IMPL_string_width (jchar * text, jint faceHandle, jfloat size, jfloat letterSpacing)
- jfloat LLVG_FONT_IMPL_string_height (jchar * text, jint faceHandle, jfloat size)
- jfloat LLVG_FONT_IMPL_get_baseline_position (jint faceHandle, jfloat size)
- jfloat LLVG_FONT_IMPL_get_height (jint faceHandle, jfloat size)
- void LLVG_FONT_IMPL_dispose (jint faceHandle)
- bool LLVG_FONT_IMPL_has_complex_layouter (void)

Detailed Description

MicroEJ MicroVG library low level API: implementation over FreeType.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_FONT_stub.c

2.14. LLVG_GRADIENT_impl.c File Reference

```
#include "microvg_configuration.h"
```

Detailed Description

MicroVG library low level API: implementation of gradient.

This implementation uses 32-bit "integer" values to store the colors and the colors positions.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_GRADIENT_impl.c

2.15. LLVG_impl.c File Reference

```
#include <LLVG_impl.h>
```

```
#include <LLUI_DISPLAY.h>
```

```
#include "microvg_configuration.h"
```

```
#include "microvg_helper.h"
```

```
#include "microvg_font_freetype.h"
```

```
#include "microvg_path.h"
```

```
#include "microvg_trace.h"
```

2.15.1. Variables

- `int32_t vg_trace_group_id`

2.15.2. Functions

- `void LLVG_IMPL_initialize (void)`

Detailed Description

Initializes the MicroVG implementation.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_impl.c`

2.16. LLVG_MATRIX_impl.c File Reference

```
#include <math.h>
```

```
#include <string.h>
```

```
#include <LLVG_MATRIX_impl.h>
```

```
#include "microvg_helper.h"
```


2.16.1. Functions

- void LLVG_MATRIX_IMPL_identity (jfloat * matrix)
- void LLVG_MATRIX_IMPL_copy (jfloat * dest, jfloat * src)
- void LLVG_MATRIX_IMPL_multiply (jfloat * dest, jfloat * a, jfloat * b)
- void LLVG_MATRIX_IMPL_setTranslate (jfloat * matrix, jfloat x, jfloat y)
- void LLVG_MATRIX_IMPL_setScale (jfloat * matrix, jfloat sx, jfloat sy)
- void LLVG_MATRIX_IMPL_setRotate (jfloat * matrix, jfloat degrees)
- void LLVG_MATRIX_IMPL_setConcat (jfloat * dest, jfloat * a, jfloat * b)
- void LLVG_MATRIX_IMPL_translate (jfloat * matrix, jfloat x, jfloat y)
- void LLVG_MATRIX_IMPL_scale (jfloat * matrix, jfloat scaleX, jfloat scaleY)
- void LLVG_MATRIX_IMPL_rotate (jfloat * matrix, jfloat angleDegrees)
- void LLVG_MATRIX_IMPL_concatenate (jfloat * matrix, jfloat * other)
- void LLVG_MATRIX_IMPL_postTranslate (jfloat * matrix, jfloat dx, jfloat dy)
- void LLVG_MATRIX_IMPL_postScale (jfloat * matrix, jfloat sx, jfloat sy)
- void LLVG_MATRIX_IMPL_postRotate (jfloat * matrix, jfloat degrees)
- void LLVG_MATRIX_IMPL_postConcat (jfloat * matrix, jfloat * other)

Detailed Description

MicroEJ MicroVG library low level API: basic implementation of matrix APIs.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_MATRIX_impl.c

2.17. LLVG_PAINTER_impl.c File Reference

```
#include <LLVG_PAINTER_impl.h>
```

```
#include <LLUI_DISPLAY.h>
```

```
#include <LLVG_FONT_impl.h>
```

```
#include <LLVG_MATRIX_impl.h>
```

```
#include "vg_drawing.h"
```

```
#include "microvg_trace.h"
```

2.17.1. Macros

- `#define LOG_MICROVG_DRAWING_START LOG_MICROVG_START(LOG_MICROVG_DRAWING_ID, CONCAT_DEFINES(LOG_MICROVG_DRAW_, fn))`
- `#define LOG_MICROVG_DRAWING_END LOG_MICROVG_END(LOG_MICROVG_DRAWING_ID, CONCAT_DEFINES(LOG_MICROVG_DRAW_, fn))`

2.17.2. Functions

- `jint LLVG_PAINTER_IMPL_drawPath (MICROUI_GraphicsContext * gc, jbyte * pathData, jint x, jint y, jfloat * matrix, jint fillRule, jint blend, jint color)`
- `jint LLVG_PAINTER_IMPL_drawGradient (MICROUI_GraphicsContext * gc, jbyte * pathData, jint x, jint y, jfloat * matrix, jint fillRule, jint alpha, jint blend, jint * gradientData, jfloat * gradientMatrix)`
- `jint LLVG_PAINTER_IMPL_drawString (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing)`
- `jint LLVG_PAINTER_IMPL_drawStringGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jint * gradientData, jfloat * gradientMatrix)`
- `jint LLVG_PAINTER_IMPL_drawStringOnCircle (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction)`
- `jint LLVG_PAINTER_IMPL_drawStringOnCircleGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction, jint * gradientData, jfloat * gradientMatrix)`
- `jint LLVG_PAINTER_IMPL_drawImage (MICROUI_GraphicsContext * gc, void * image, jint x, jint y, jfloat * matrix, jint alpha, jlong elapsed, const float color_matrix)`

Detailed Description

This file implements all MicroVG drawing native functions.

See also: . LLVG_PAINTER_impl.h file comment

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_PAINTER_impl.c

2.18. LLVG_PATH_impl.c File Reference

```
#include "microvg_configuration.h"
```

Detailed Description

MicroVG library low level API: implementation of path.

This implementation uses a 32-bit "integer" value to store a path command and a 32-bit "float" value to store each command parameter.

The encoding can be overridden, see "[optional]: weak functions" in "microvg_path.h"

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_PATH_impl.c

2.19. LLVG_PATH_stub.c File Reference

```
#include "microvg_configuration.h"
```

```
#include <LLVG_PATH_impl.h>
```

2.19.1. Functions

- jint LLVG_PATH_IMPL_initializePath (jbyte * jpath, jint length)
- jint LLVG_PATH_IMPL_appendPathCommand1 (jbyte * jpath, jint length, jint cmd, jfloat x, jfloat y)
- jint LLVG_PATH_IMPL_appendPathCommand2 (jbyte * jpath, jint length, jint cmd, jfloat x1, jfloat y1, jfloat x2, jfloat y2)

- jint LLVG_PATH_IMPL_appendPathCommand3 (jbyte * jpath, jint length, jint cmd, jfloat x1, jfloat y1, jfloat x2, jfloat y2, jfloat x3, jfloat y3)
- void LLVG_PATH_IMPL_reopenPath (jbyte * jpath)

Detailed Description

MicroVG library low level API: stubbed implementation of LLVG_PATH_impl.h and LLVG_PATH_PAINTER_impl.h.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/LLVG_PATH_stub.c

2.20. microvg_helper.c File Reference

```
#include <LLVG_MATRIX_impl.h>
```

```
#include "microvg_helper.h"
```

```
#include "microvg_configuration.h"
```

2.20.1. Macros

- #define MIN_HIGH_SURROGATE ((unsigned short)0xD800)
- #define MAX_HIGH_SURROGATE ((unsigned short)0xDBFF)
- #define MIN_LOW_SURROGATE ((unsigned short)0xDC00)
- #define MAX_LOW_SURROGATE ((unsigned short)0xDFFF)
- #define MIN_SUPPLEMENTARY_CODE_POINT 0x010000
- #define GET_NEXT_CHARACTER ((o) >= (l) ? (unsigned short)0 : (t)[o])
- #define IS_SIMPLE_LAYOUT true

2.20.2. Variables

- static jfloat g_identity_matrix

2.20.3. Functions

- void MICROVG_HELPER_initialize (void)
- int MICROVG_HELPER_get_utf (unsigned short * text, int length, int * offset)

Gets the UTF character from a text buffer at the given offset and updates the offset to point to the next character.

- jfloat * MICROVG_HELPER_check_matrix (jfloat * matrix)
- uint32_t MICROVG_HELPER_apply_alpha (uint32_t color, uint32_t alpha)

Detailed Description

MicroEJ MicroVG library low level API: helper to implement library natives methods.

Author: . MicroEJ Developer Team

Version: . 5.0.0

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/microvg_helper.c

2.21. vg_drawing.c File Reference

```
#include "vg_drawing.h"
```

```
#include "vg_drawing_stub.h"
```

```
#include "bsp_util.h"
```

2.21.1. Macros

- #define VG_DRAWING_DEFAULT_drawPath VG_DRAWING_drawPath
- #define VG_DRAWING_DEFAULT_drawGradient VG_DRAWING_drawGradient
- #define VG_DRAWING_DEFAULT_drawString VG_DRAWING_drawString
- #define VG_DRAWING_DEFAULT_drawStringGradient VG_DRAWING_drawStringGradient
- #define VG_DRAWING_DEFAULT_drawStringOnCircle VG_DRAWING_drawStringOnCircle
- #define VG_DRAWING_DEFAULT_drawStringOnCircleGradient VG_DRAWING_drawStringOnCircleGradient

- `#define VG_DRAWING_DEFAULT_drawImage VG_DRAWING_drawImage`

2.21.2. Functions

- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawPath (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint blend, jint color)`
- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawGradient (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint alpha, jint blend, jint * gradient, jfloat * gradientMatrix)`
- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawString (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing)`
- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawStringGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jint * gradientData, jfloat * gradientMatrix)`
- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawStringOnCircle (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction)`
- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawStringOnCircleGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction, jint * gradientData, jfloat * gradientMatrix)`
- `BSP_DECLARE_WEAK_FCNT DRAWING_Status VG_DRAWING_DEFAULT_drawImage (MICROUI_GraphicsContext * gc, void * sni_context, jfloat * matrix, jint alpha, jlong elapsed, const float color_matrix, jint * errno)`

Detailed Description

Definition in file `C:/Jenkins/workspace/master074c8e04/com.microej.library.llimpl.microvg/target~\ccomponentWorking\bsp\vg\src\vg_drawing.c`

2.22. vg_drawing_stub.c File Reference

```
#include "vg_drawing_stub.h"
```

2.22.1. Functions

- `static DRAWING_Status not_implemented (MICROUI_GraphicsContext * gc)`

- DRAWING_Status VG_DRAWING_STUB_drawPath (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint blend, jint color)
- DRAWING_Status VG_DRAWING_STUB_drawGradient (MICROUI_GraphicsContext * gc, jbyte * path, jint x, jint y, jfloat * matrix, jint fillRule, jint alpha, jint blend, jint * gradient, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_STUB_drawString (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing)
- DRAWING_Status VG_DRAWING_STUB_drawStringGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jfloat x, jfloat y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jint * gradientData, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_STUB_drawStringOnCircle (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction)
- DRAWING_Status VG_DRAWING_STUB_drawStringOnCircleGradient (MICROUI_GraphicsContext * gc, jchar * text, jint faceHandle, jfloat size, jint x, jint y, jfloat * matrix, jint alpha, jint blend, jfloat letterSpacing, jfloat radius, jint direction, jint * gradientData, jfloat * gradientMatrix)
- DRAWING_Status VG_DRAWING_STUB_drawImage (MICROUI_GraphicsContext * gc, void * image, jfloat * matrix, jint alpha, jlong elapsed, const float color_matrix, jint * errno)

Detailed Description

Definition in file C:/Jenkins/workspace/master074c8e04/com.microej.clibrary.llimpl.microvg/target~/ccomponentWorking/bsp/vg/src/vg_drawing_stub.c