

# Introduction

## Introduction

TODO

## Graphics

### Graphics

Provides graphics operations, such as for drawing pixels and images on the screen.

### Configuration

#### **GRAPHICS\_SET\_GRID**

Enables or disables a visual grid delimiting the screen pixels.

output (yesno) GRAPHICS\_SET\_GRID

- Parameters:
  - **yesno**: new state
    - \* **yes**: enables the grid
    - \* **no**: disables the grid

The ratio between the real and logical dimensions set with **WINDOW\_SET\_SIZE** must be greater then one.

#### **GRAPHICS\_SET\_FONT**

Changes the font for drawing and writing text.

output (text,integer) GRAPHICS\_SET\_FONT

- Parameters:
  - **text**: path for the **.ttf** font filename
  - **integer**: height of the new font in pixels

#### **GRAPHICS\_SET\_RGB**

Changes the color of all subsequent drawing operations.

output (integer,integer,integer) GRAPHICS\_SET\_RGB

- Parameters:

- **integer**: new red component
- **integer**: new green component
- **integer**: new blue component

## **GRAPHICS\_SET\_WRITE\_CURSOR**

Changes the cursor position for writing text with **GRAPHICS\_WRITE** and **GRAPHICS\_WRITELN**.

output (**integer**,**integer**) **GRAPHICS\_SET\_WRITE\_CURSOR**

- Parameters:
  - **integer**: new position in the x-axis
  - **integer**: new position in the y-axis

## **Drawing**

### **GRAPHICS\_CLEAR**

Clears the screen.

output (**none**) **GRAPHICS\_CLEAR**

- Parameters:
  - **none**: no parameters

The clear color is specified with **GRAPHICS\_SET\_RGB**.

### **GRAPHICS\_DRAW\_BMP**

Draws a bitmap image on the screen.

output (**integer**,**integer**,**text**) **GRAPHICS\_DRAW\_BMP**

- Parameters:
  - **integer**: position in the x-axis
  - **integer**: position in the y-axis
  - **text**: path for the **.bmp** image filename

### **GRAPHICS\_DRAW\_PIXEL**

Draws a pixel on the screen.

output (**integer**,**integer**) **GRAPHICS\_DRAW\_PIXEL**

- Parameters:
  - **integer**: position in the x-axis
  - **integer**: position in the y-axis

The drawing color is specified with **GRAPHICS\_SET\_RGB**.

## **GRAPHICS\_DRAW\_LINE**

Draws a line on the screen.

output (integer, integer, integer, integer) GRAPHICS\_DRAW\_LINE;

- Parameters:
  - integer: start position in the x-axis
  - integer: start position in the y-axis
  - integer: end position in the x-axis
  - integer: end position in the y-axis

The drawing color is specified with GRAPHICS\_SET\_RGB.

## **GRAPHICS\_DRAW\_RECT**

Draws a rectangle on the screen.

output (integer, integer, integer, integer) GRAPHICS\_DRAW\_RECT

- Parameters:
  - integer: position in the x-axis
  - integer: position in the y-axis
  - integer: rectangle width
  - integer: rectangle height

The drawing color is specified with GRAPHICS\_SET\_RGB.

## **GRAPHICS\_DRAW\_TEXT**

Draws a text on the screen.

output (int, int, text) GRAPHICS\_DRAW\_TEXT;

- Parameters:
  - integer: position in the x-axis
  - integer: position in the y-axis
  - text: text to draw

The drawing font is specified with GRAPHICS\_SET\_FONT. The drawing color is specified with GRAPHICS\_SET\_RGB.

## **Writing**

### **GRAPHICS\_WRITE**

Writes a text on the screen.

output (text) GRAPHICS\_WRITE;

- Parameters:

- **text**: text to draw

The drawing position is first specified with `GRAPHICS_SET_WRITE_CURSOR`. The cursor advances automatically for the position after the text. The drawing font is specified with `GRAPHICS_SET_FONT`. The drawing color is specified with `GRAPHICS_SET_RGB`.

## **GRAPHICS\_\_WRITELN**

Writes a line of text on the screen.

output (text) `GRAPHICS_WRITELN`;

The drawing position is first specified with `GRAPHICS_SET_WRITE_CURSOR`. The cursor advances automatically for the next line after the text, at the same initial position. The drawing font is specified with `GRAPHICS_SET_FONT`. The drawing color is specified with `GRAPHICS_SET_RGB`.

## **Other**

## **GRAPHICS\_\_SCREENSHOT**

Takes a screen shot.

output (text) `GRAPHICS_SCREENSHOT`

- Parameters:
  - **text**: path for the .bmp image filename to generate

# **Input Devices**

## **Input Devices**

Provides input handling, such as for keyboard and mouse.

## **Keyboard**

## **KEY\_PRESS**

input (integer) `KEY_PRESS`

- Occurrences:
  - whenever a keyboard key is pressed
- Payload:
  - **integer**: numeric key code

TODO: key codes

## KEY\_UNPRESS

input (integer) KEY\_UNPRESS

- Occurrences:
  - whenever a keyboard key is released
- Payload:
  - **integer**: numeric key code

TODO: key codes

## Mouse

### MOUSE\_CLICK

input (integer,integer,integer) MOUSE\_CLICK

- Occurrences:
  - whenever a mouse button is pressed
- Payload:
  - **integer**: numeric button code (TODO: left, middle, right?)
  - **integer**: current mouse position in the x-axis
  - **integer**: current mouse position in the y-axis

### MOUSE\_UNCLICK

input (integer,integer,integer) MOUSE\_UNCLICK

- Occurrences:
  - whenever a mouse button is released
- Payload:
  - **integer**: numeric button code (TODO: left, middle, right?)
  - **integer**: current mouse position in the x-axis
  - **integer**: current mouse position in the y-axis

### MOUSE\_MOVE

input (integer,integer) MOUSE\_MOVE

- Occurrences:
  - whenever the mouse moves
- Payload:
  - **integer**: current mouse position in the x-axis
  - **integer**: current mouse position in the y-axis

## Sound

### Sound

Provides sound playback.

#### Configuration

##### **SOUND\_SET\_VOLUME**

Changes the volume of all subsequent sound playbacks.

output (integer) SOUND\_SET\_VOLUME

- Parameters:
  - **integer**: new sound volume in percentage (from 0 to 100)

#### Playback

##### **SOUND\_PLAY**

Plays a sound file.

output (text) SOUND\_PLAY

- Parameters:
  - **text**: path for the sound filename

The playback volume is specified with SOUND\_SET\_VOLUME.

## Network

### Network

Provides unreliable broadcast communication between peers.

#### Send

##### **NET\_SEND**

Broadcasts a message to all peers.

output (integer,byte&&) NET\_SEND;

- Parameters:
  - **integer**: number of bytes to transmit

- `byte&&`: stream of bytes

## Receive

### NET\_RECEIVE

Receives all messages from all peers, including itself.

input (`integer`,`byte&&`) NET\_RECEIVE;

- Occurrences:
  - on every received message
- Payload:
  - `integer`: number of received bytes
  - `byte&&`: stream of bytes

## Frame Management

### Frame Management

Manages the game frames, such as for updating animations and redrawing the screen.

### Configuration

#### FRAMES\_SET

Enables or disables the generation of periodic `FRAMES_UPDATE` and `FRAMES_REDRAW` inputs to the application.

output (`yesno`) FRAMES\_SET

- Parameters:
  - `yesno`: new state
    - \* `yes`: enables the generation of frames
    - \* `no`: disables the generation of frames

#### FRAMES\_SET\_CLEAR\_RGB

Changes the redrawing background color.

output (`integer`,`integer`,`integer`) FRAMES\_SET\_CLEAR\_RGB

- Parameters:
  - `integer`: new red component
  - `integer`: new green component

- **integer**: new blue component

On every frame before **FRAMES\_REDRAW**, the screen is cleared with the background color.

The default color is black.

## Update

### **FRAMES\_UPDATE**

input (integer) **FRAMES\_UPDATE**

- Occurrences:
  - on every frame, before **FRAMES\_REDRAW**
- Payload:
  - **integer**: the number of elapsed milliseconds since the previous frame

## Redraw

### **FRAMES\_REDRAW**

input (none) **FRAMES\_REDRAW**

- Occurrences:
  - on every frame, after **FRAMES\_UPDATE**
- Payload:
  - **none**: no payload

Before the input occurs, the screen is cleared with the color set with **FRAMES\_SET\_CLEAR\_RGB**.

# Window Management

## Window Management

Manages the application window.

## Configuration

### **WINDOW\_SET\_SIZE**

Changes the real and logical sizes of the window.

output (integer,integer,integer,integer) **WINDOW\_SET\_SIZE**

- Parameters:



- `integer`: new real width
- `integer`: new real height
- `integer`: new logical width
- `integer`: new logical height

The window is automatically cleared with black.

The arithmetic division between the real and logical dimensions must be exact.

## **WINDOW\_SET\_TITLE**

Changes the title of the window.

output (text) WINDOW\_SET\_TITLE

- Parameters:
  - `text`: new window title

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