

## Writing a Text Image Generator (TIG)

A Text Image Generator (TIG) is a small program that generates images of text rendered on a remote system and provides those text images to Eggplant.

The TIG is started on the remote system and opens a socket (typically on port 5899) on which it listens for connections from an Eggplant client.

The TIG then receives requests from Eggplant and generates text images which it sends as replies over the socket connection.

Requests from Eggplant are sent whenever a text image is needed, such as when a script includes a Text Property List that uses a TextPlatform with that TIG as its Generator, or when generating such a command with previews enabled.

A request is a string in XML plist format containing the text and associated properties such as font, size, and colors. The XML plist format for this request (and for the Header in the reply) is described here: <http://developer.apple.com/Mac/library/documentation/Darwin/Reference/ManPages/man5/plist.5.html>

The plist is followed by an EOT (0x04 or Ctrl-D) character to mark the end of transmission.

The Request XML plist may include the following keys and values:

TEXT -- string: the text whose image is requested. This may be exactly the same string as the "Text" property of the Text Property List, or it may be derived from that string by applying any "markup" processing for embedded tags.

TEXTCOLOR -- string: a hexadecimal string specifying the color of the text in #RRGGBB format

TEXTBACKGROUNDCOLOR -- string: a hexadecimal string specifying the color of the background in #RRGGBB format

BOLD -- string: "Yes" if the text should be bold

ITALIC -- string: "Yes" if the text should be italicized

UNDERLINE -- string: "Yes" if the text should be underlined

Any other keys and values supplied in the script as part of the Text Property List that produced this TIG request. The TIG may ignore these or respond to any that have special meaning to it.

In response to the request, the TIG sends a reply that consists of the following 3 parts:

HeaderSize: an unsigned 4-byte integer (in network byte order) containing the size of the following XML header data

Header: an XML plist containing header information. This header plist is a dictionary (<dict>) that may contain the following keys and associated values:

WIDTH -- integer: the width of the text image in pixels

HEIGHT -- integer: the height of the text image in pixels

DATASIZE -- integer: the total number of bytes in the image data. This must be equal to 4 \* WIDTH \* HEIGHT

ERROR -- string: a descriptive error message if there was a problem generating the text image

AGENTID -- string: a string identifying the TIG server

Override of any standard Eggplant text property list values. In particular:

Trim -- boolean: if NO, this will prevent Eggplant from trimming the image

Additional custom keys containing any other information about the image that the TIG chooses to return.

ImageData: binary image data as specified by DATASIZE in the header. Every 4 bytes of the the image data represents one pixel of the image, starting at the top left corner of the image and proceeding row by row to the bottom right corner of the image. Each pixel value is treated as an unsigned integer (in network byte order) containing the RGBA values for that pixel (with 8 bits each for the red, green, blue, and alpha components).