z390 GUI Graphical User Interface Guide v1.0.08 (See limitations ****)

The z390 GUI Graphical User Interface provides assembler program GUI window support when the ez390 GUI option is specified. The following macro interfaces to the GUI window are supported:

- **WTO 'msg' – write to operator via MCS console scrolling log view**
- **WTOR 'msg',reply,reply_length,ecb – write to operator with reply via MCS console scrolling log view**
- **WAIT ECB=ecb – wait for WTOR reply from GUI interface and post ecb**
- **TGET buffer,buffer_length – read next line of text from GUI TN3270 interface (the default is EDIT mode and WAIT for input from keyboard)**
- **TPUT buffer,buffer_length – write next line of text to GUI TN3270 24 x 80 screen view (the default is EDIT mode)**
- **TGET buffer,buffer_len,ASIS – read TN3270 data stream from GUI TN3270 interface (the default is to WAIT for ENTER or PF key)**
- **TPUT buffer,buffer_len,FULLSCR – write TN3270 data stream to GUI TN3270 interface**
- **TN3270 – macro to generate native TN3270 data streams including SBA addresses using symbolic references for control codes (See DEMOGUI4.MLC for example usage).**
- **GUI – macro to perform GUI interface functions:**
  - **WINDOW,TITLE,'text' – set window title**
  - **WINDOW,LOC,x,y – set window location from upper left in pixels**
  - **WINDOW,SIZE,width,height – set window size in pixels**
  - **WINDOW,FONT,size – set window character font size (8-30)**
  - **WINDOW,VIEW,MCS – set scrolling MCS console log view (default)**
  - **WINDOW,VIEW,SCREEN,row,col,color – set text screen view**
  - **WINDOW,VIEW,GRAPH,x,y,color – set graphic display view**
  - **WINDOW,GETVIEW,view – get current view**
  - **SCREEN,READ,buffer,buffer_len,WAIT/NOWAIT – read text**
  - **SCREEN,WRITE,row,col,buffer,buffer_len,color – write text**
  - **SCREEN,FIELD,row,col,length – define field**
  - **SCREEN,CURSOR, type – set cursor type**
  - **SCREEN,CURSOR,row,col – set cursor position**
  - **GRAPH,POINT,x,y,color – draw point**
  - **GRAPH,LINE,x1,y1,x2,y2,color – draw line**
  - **GRAPH,FILL,x1,y1,x2,y2,color – fill area**
  - **GRAPH,TEXT,x,y,'text',color – draw text**
  - **KEYBOARD,mode,char,WAIT/NOWAIT – read keyboard**
  - **MOUSE,x,y,left,right – read mouse position on graph and buttons**
  - **SOUND,START,wav_file – play wav sound file**
  - **SOUND,STOP**

When the ez390 GUI option is specified for execution of a z390 assembler program, a GUI window is opened in default MCS console view displaying all WTO and WTOR messages issued by program in a scrolling window. Whenever TPUT, or

TGET macros are executed the GUI window switches to TN3290 screen view display mode. Whenever GUI macro graphic commands are executed, the GUI window switches to GRAPH display mode. When in SCREEN or GRAPH view, WTO and WTOR commands can continue to executed and displayed one at a time via the status line with command line replies as required. The user can switch between any of the 3 GUI views manually via view menu selection. Assembler application programs can set window title, location, size, font, and view mode at any time using the GUI WINDOW commands regardless of display view. Multiple user controlled GUI windows can be opened by executing different assembler programs as separate tasks under control of master program using the z390 CMDPROC macro.

****** Note z390 v1.0.08 has the following GUI interface support:**

- **Full support for the MCS console view for WTO and WTOR commands**
- **Full support for the TN3270 edit mode form of TGET and TPUT**
- **Limited support for the TN3270 data steam form of TGET and TPUT (The data is treated as if in edit mode. TN3270 data stream support is targeted for next release per RPI 136)**
- **Limited support for the GUI macro graphics commands. (The GUI WINDOW,VIEW,GRAPH command can be used to display the graph view but the graphic commands are not yet functional. The initial primitive graphic commands are targeted for next release per RPI 137)**
- **However, any comments on the user guide, demo programs, and macros included in PTF 1.0.07b are welcome. ******

The following GUI demo programs are included:

1. **DEMOGUI1.MLC – Issue WTOR, wait for reply via WAIT, display reply via WTO and repeat loop until END is entered. This program can be run in any of the following modes:**
    a. **Windows command line mode – ASMLG DEMO\DEMOGUI1**
    b. **Windows GUI interface – ASMLG DEMO\DEMOGUI1 GUI**
2. **DEMOGUI2.MLC – Issue WTOR, execute 3 instruction loop until ECB is posted, display reply via WTO along with date, time, instruction loop count and calculated MIP rate for the 3 instruction loop. It is very interesting to note that on a 3 GHZ Pentium 4 system, this demo runs at about 1.1 MIPS using command line mode, and about 2.6 MIPS using the GUI mode. This program can be run in any of the following modes:**
    a. **Windows command line mode – ASMLG DEMO\DEMOGUI1**
    b. **Windows GUI interface – ASMLG DEMO\DEMOGUI1 GUI**
3. **DEMOGUI3.MLC – issue TPUT and TGET with WAIT option in loop until END is entered. This demo uses default EDIT mode of TPUT and TGET to scroll the 24 lines of TN3270 screen view with wrap around after status line prompt for input each time last line is written.**
4. **DEMOGUI4.MLC – issue TN3270 data stream TPUT and TGET with WAIT option in loop until END is entered. This demo uses TPUT with**

FULLSCR option and TGET with ASIS option to write and read TN3270 data streams including SBA set buffer addresses to position output at specified row and column addresses. This program uses TN3270 macro to generate TN3270 data streams including SBA address translated from row and column macro parms plus symbolic references to control codes. (* Note currently runs as if in EDIT mode – see RPI 136)**

5. **DEMOGUI5.MLC – This demo used GUI graphic commands to draw text and graphics and read keyboard and mouse. (Note this program brings up graphic display view but the graphics commands are not implemented yet – see RPI 137)**

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