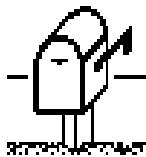


Larson Software Technology, Inc.

PlotLite and CPS User's Guide

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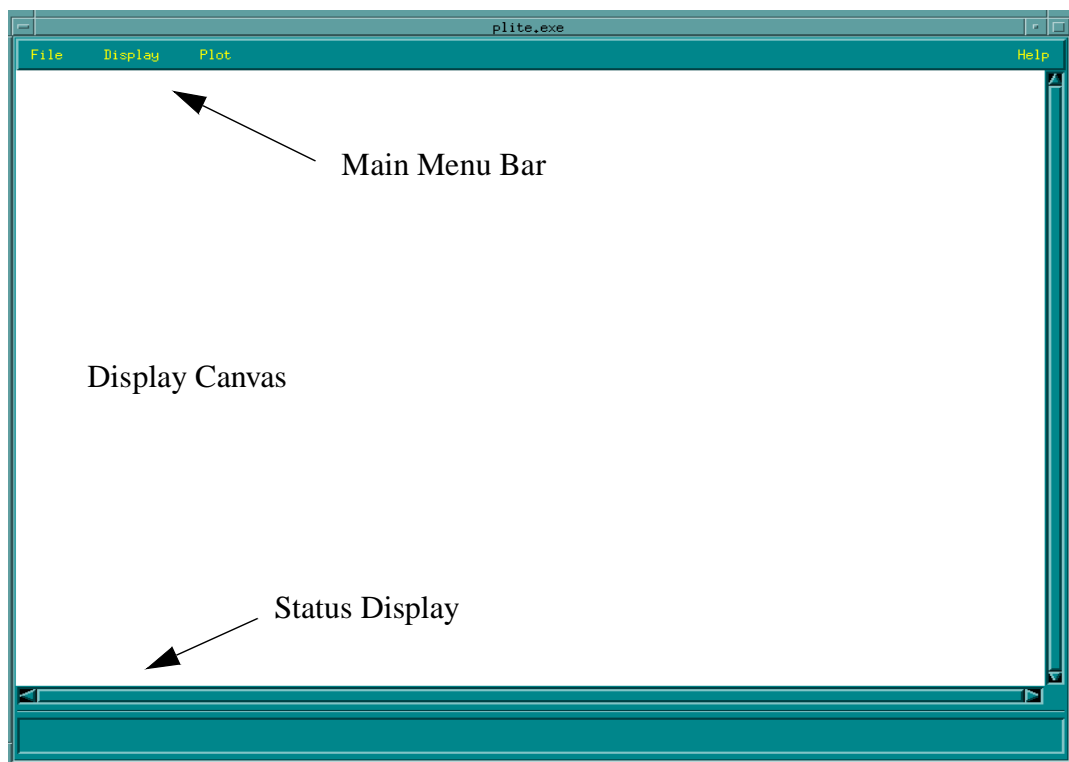
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PlotLite Plotting System (Plite)

About Plite

Plite is a low volume, low cost plotting solution. Plite consists of a viewing tool and single plot submission. It requires minimum configuration and maintenance. Plite was designed to meet the plotting requirements for a single workstation or simple network environment.

The Plite interface is shown below:



The Plite application is broken into three components: the main menu bar; the CGM display canvas; and the status display. Each component serves a specific function or group of functions which are described in detail in this manual.

Configuring Plite

“Istplite_send_plot.sh” Configuration

Configuration of the Plite application requires modification to a single shell script in the *<installation directory>/larson/istbin*.

Using the editor of your choice, edit the shell script **Istplite_send_plot.sh** and define the hardcopy device type, spooling command, and output device name.

These variables are located in a single area of the shell script with examples for the most commonly used options. An example of the user configuration region is shown on the next page:

The following are the variable names and a brief description of the variable's functionality:

1. **PTYPE:** This is the plotter type. Please uncomment the appropriate plotter type by removing the “#” from in front of the line that specifies your target plotter type. If your plotter is not listed, please contact a LST Customer Support representative.
2. **SPOOLCOM:** This is the command which communicates with the output device. Please uncomment the appropriate spool command by removing the “#” from in front of the line that specifies the proper spooling command.
3. **PNAME:** This is the system device or lp/lpr printer name which the plotter is attached via the system spooler. Please uncomment the appropriate name by removing the “#” from in front of the line that specifies your device or lp/lpr printer name.

The following figure is an example of **Istplite_send_plot.sh** for a HP750C communicating via a parallel port through device `bpp0` on a Sun Microsystems platform.

```

##### USER DEFINED VARIABLES #####
#
#           PTYPE:           njc      - NovajetII
#                           hpdjc    - Designjet
#                           ves4d3c  - Electrostatic
#                           Call LST for other types
#
#                           -----
#                           UNCOMMENT ONE OF THE FOLLOWING:
#                           -----
#
#                           For HP 650C use this
PTYPE=hpdjc
#
#                           For Novajet II and III use this
#PTYPE=njc
#
#                           For all Electrostatics use this
#PTYPE=ves4d3c
# -----
#           SPOOLCOM:       "cat" - direct parallel
#                           "lpr" - lpr with lpr entry
#                           "lp"  - lpr on a System V Operating System
#                           "swrcplt.exe" - electrostatic Calcomp
#                           "swrvrplt.exe" - electrostatic Versatec
#
#                           -----
#                           UNCOMMENT ONE OF THE FOLLOWING:
#                           -----
#
#                           For LPR (system spooler)
#                           connection use this
#SPOOLCOM="lpr"
#SPOOLCOM="lp"
#
#                           For direct parallel connection
#                           use this
SPOOLCOM="cat"
#
#                           For Versatec Electrostatic Plotters
#                           use this
#SPOOLCOM="swrvrplt.exe"
#
#                           For Calcomp Plotters Electrostatic
#                           Plotters use this
#SPOOLCOM="swrcplt.exe"
# -----
#           PNAME:          "/dev/bpp0" - sun systems on parallel
#                           "/dev/vp0" - versatec electrostatics
#                           "/dev/plp" - sgi systems on parallel
#                           "lpr entry" - lpr
#
#                           -----
#                           UNCOMMENT ONE OF THE FOLLOWING:
#                           -----
#
#                           For LPR (system spooler) enter your
#                           printcap/qconfig printer name here.
#                           This example the printcap entry is
#                           called DJ
#PNAME=DJ
#
#                           For Sun installed parallel ports
#                           use this.
PNAME="/dev/bpp0"
#
#                           For SGI installed parallel ports
#                           use this.
#PNAME="/dev/plp"
#
#                           For non-manufacturer installed
#                           parallel ports use this
#PNAME="/dev/<device name>"
#
##### DO NOT EDIT BELOW THIS LINE #####

```

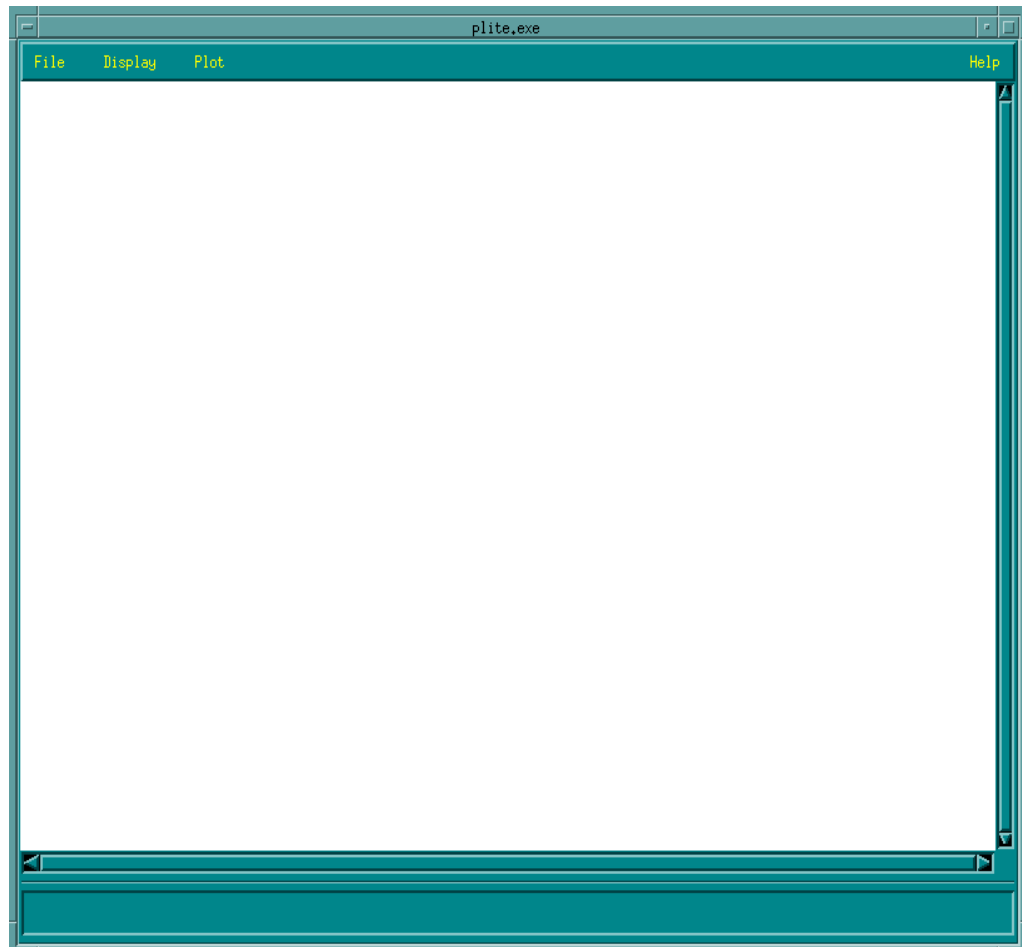

Using Plite

Starting Plite

To start Plite, type following command at the system prompt:

```
cpu% plite
```

After a few moments the Plite window will appear.



Main Menu Options



File Selection

The **FILE** option under the main menu functions allows you to select a file for viewing and plotting. The dialog box also allows you to scroll through directory structures to find the CGM you wish to view or plot.

To select a file for viewing or plotting:

1. Click the **FILE** option on the main menu bar.
2. Click the OPEN option on the pull-down menu. The File Selection dialog box appears as shown below:



This dialog box lets you search the directories and files in your file system. Directories are listed in the left side of the dialog box and files within the highlighted directory that match the filter are listed in the right side.

3. Search the file system to find the file you wish to view or plot.

The file you wish to plot will appear in the Files list in the dialog box once you are in the appropriate directory. Use the scroll bar to the right of the list to see all of the files.

4. Highlight the file you wish to view or plot and click **OK**. You can also double click on the file to select it.

Once selected, the current filename will be displayed in the message center at the bottom of the application. This display is shown below:



Viewing a CGM File

The viewing option in the Plite application allows you to display the current file on the drawing canvas. This is useful for quality control before the sending the file through the plotting process.

To view a CGM file from the Plite system:

1. Select the **DISPLAY** option from the main menu bar.

Three pull-down menu options will appear. A description for each option is shown below:

Table 1: Display Options

View	Draws the CGM contents to the drawing canvas.
Restore	If a drawing has been zoomed, this option restores the drawing to it's original size.
Zoom Out	If multiple levels of zooming have been applied, the Zoom Out option will go back one zoom level each time it is selected.

NOTE: The Restore and Zoom Out option may be invoked once a file has been displayed on the canvas by selecting the right mouse button. A pull-down menu will appear on the drawing canvas at which time the selection may

be made. Take special care to place the cursor directly over the options on the pull-down menu before releasing the right mouse button.

Zooming a CGM File

1. Move the cursor to where you would like the upper left-hand corner of the zoom window.
2. Press the left-most mouse button and hold it down. Move the cursor diagonally to the desired lower right-hand corner of the zoom window. Release the left-most mouse button.

To Restore the Original Display:

1. Place the cursor over the viewing window and press the right-most mouse button.
2. Select the RESTORE option.

To Zoom Out One Level

1. Place the cursor over the viewing window and press the right-most mouse button.
2. Select the ZOOM OUT option.

To Close the Viewing Window

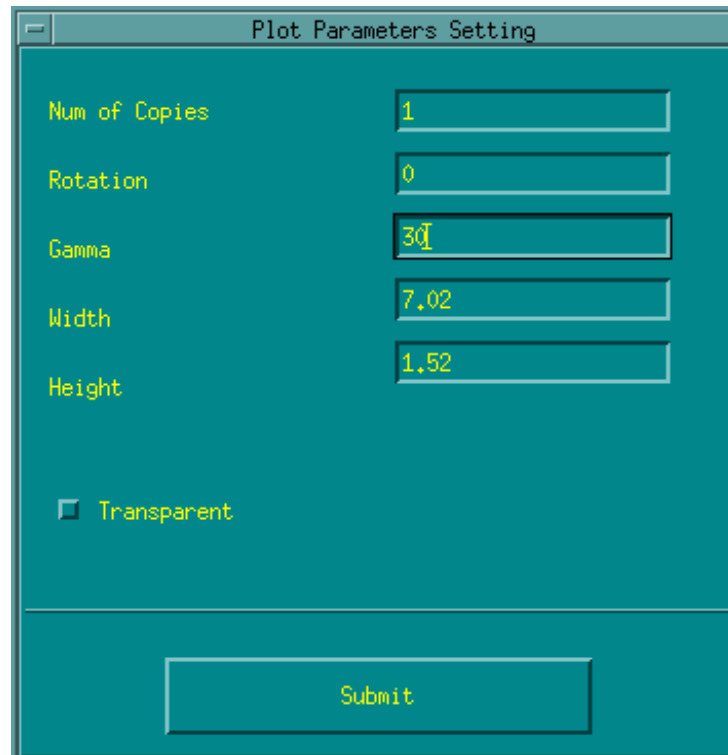
1. Place the cursor over the viewing window and press the right-most mouse button.
2. Select the CLOSE option.

Plotting a CGM File

The plotting option in the Plite application is a non-queuing, non-batch system. In other words, once the plot job has been submitted for plotting, the application is dedicated to that specific job until sending the job to the plotter is either complete or cancelled.

To plot a CGM file from the Plite system:

1. **Select the PLOT** option from the main menu.
2. **Complete the plotting options** as shown in the Plot Parameters Setting display below:



Parameter	Value
Num of Copies	1
Rotation	0
Gamma	30
Width	7.02
Height	1.52

Transparent

Submit

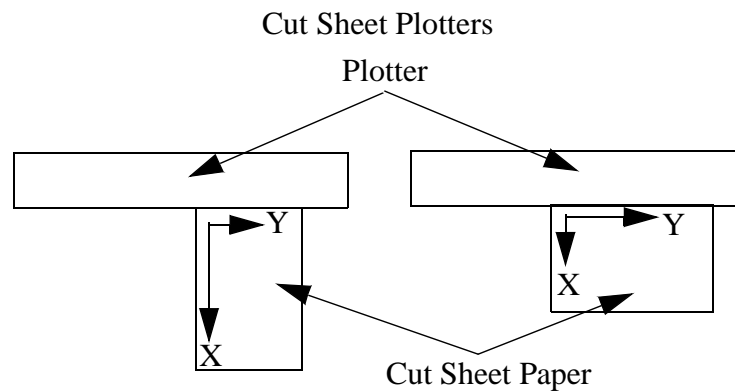
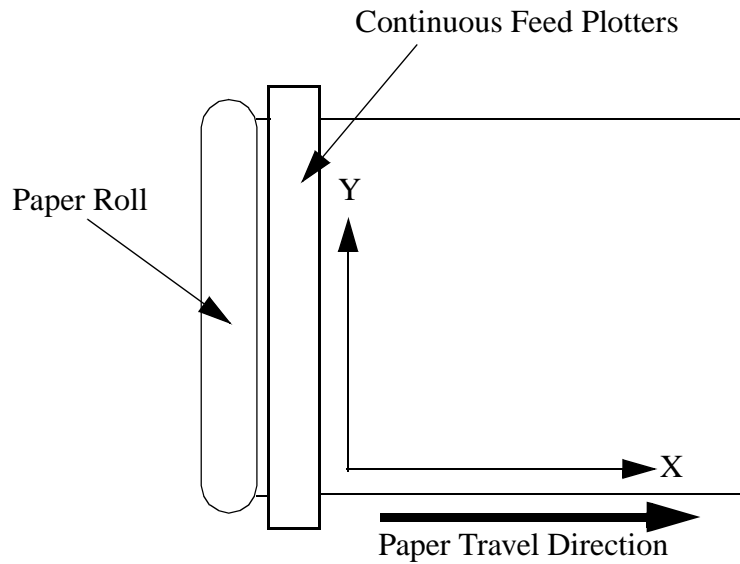
ROTATION: Allows user to change the final rotation of a plot (CGM only). The rotation feature has four options: 0, 90, 180, 270. Variable density CGM files may only be rotated 0 and 180.

GAMMA: The gamma option is used for color intensity changes. Gamma was designed so the hardcopy can match what is displayed on the screen.

A gamma of 100 means that there is no color intensity correction applied. A gamma less than 100 lightens the colors. A gamma greater than 100 darkens the colors.

For **inkjet** and **color electrostatic plotters**, we recommend that gamma range from **30 to 50**.

For **thermal wax papers** **60 to 75**.

WIDTH and HEIGHT:

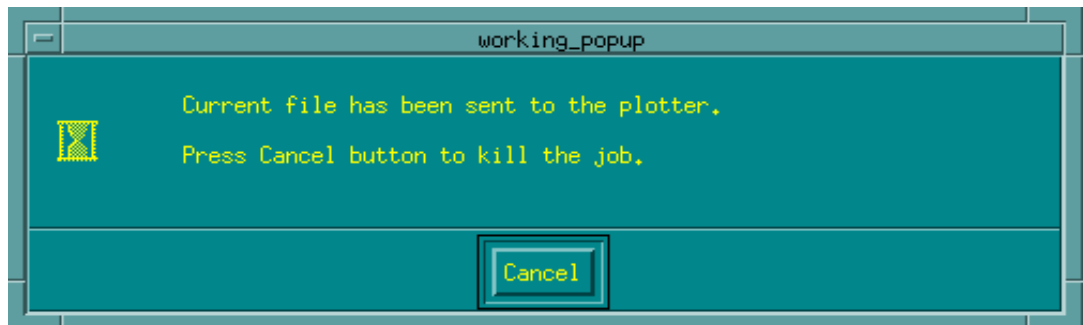
Y = height

X = width

TRANSPARENT: The transparent option, when toggled on, will redraw all objects in their order of priority with "see through" backgrounds. If the CGM was created with this option turned on, the user has the ability to plot the CGM with "see through" backgrounds.

3. **Select the Submit Button** at the bottom of the Plot Parameters Setting display.

This action will invoke the LST plotting engine (render.exe) and redirect the output to the configured plotting device. This process may be cancelled at anytime by selecting the cancel option shown below:



NOTE: If your system has been configured to use the UNIX system spooler (lp or lpr), then control over cancelling plot jobs is lost once the raster file has been sent to the lp/lpr queue. You must manually delete completed raster jobs from the queue if you wish to cancel the plot.

Command Line Plotting System (CPS)

Configuring CPS

The LST plotting engine for CGM and CGM+ files may be incorporated as a command line option. A shell script, **lstcps.sh**, has been provided showing the required syntax and supported output options. This shell script can be found in *<installation directory>/larson/lstbin*.

The output raster file can be sent two methods: internal to the shell script or manually.

The following system environment variables must also be defined before the LST plotting engine can rasterize your CGM files correctly:

LSTWRK - set this variable to a scratch directory. Depending on the type of files you are plotting, a minimum of 300 megabytes is recommended. Typically this points to *<installation directory>/larson/lstwrk*.

LSTFONTS - set this variable to point to the *<installation directory>/larson/lstbin*. The LST fonts tables are stored in this directory.

The "**lstcps.sh**" shell script may be used as a point of departure for your plotting environment.

```

# COMMENTS:
#
# none
#
#####
#
FILE=$1
COPIES=$2
PORT=$3
#
TYPE="RAS"
#
#TYPE="VGI"
#
#TYPE="CGI"
#
tmp=`basename $FILE`.tmp
plotfile=`basename $FILE`.ras
#
# ***** BEGIN PROCESSING THE CGM FILE *****
#

```

The command line syntax for the provided shell script is as follows:

lstcps.sh <CGM filename> <# of copies> <lpr port>

Supported Graphic Formats

Computer Graphics Metafile (CGM)

About CGM Files

A Computer Graphics Metafile (CGM) is a robust vector graphic file. In other words, a geometric graphical language which describes pictures and graphical elements in high level geometric terms such as lines, circles, arcs, ellipses, polygons, text string and cell arrays.

CGM is an “Open Standard”, a **non-proprietary** format developed by ANSI (American National Standards Institute) and ISO (International Standards Organization).

Supported CGM Formats

The basis for a “standard” CGM file format is the ISO 8632-1 Publication or commonly referred to as CGM, Version 1. Many additional extensions have been researched and developed for enhancements and further definition of the ISO standard by different industries. Those supported by the LST Plotting System include:

1. Seismic Trace Extension, Version 1.0 (CGM+)
2. Petroleum Industry Profile, Version 1.0 (CGM*PIP)
3. CGM: CALS (U.S.Government Specification)

The LST Plotting System CGM Option

CGM Processing is an option or sub-system in the LST Plotting System. The executable file for CGM processing is called **render.exe** and supports the inkjet, electrostatic, and desktop plotters/printers. The CGM processing option may be activated at any time without re-installing or re-configuring your LST Plotting System. Please contact Sales/Marketing or Customer Support at Larson Software for more information on this option.

Default Dither Patterns

Color electrostatic plotters inherently produce only 4 primary colors which are cyan, magenta, yellow and black. To get the range of colors necessary for most applications, it is necessary to use digital half toning techniques. These halftone patterns are called dither patterns (sometimes called color screens). The specific patterns used can have dramatic effects on the range and appearance of colors.

The default dither patterns used by the CGM option in the LST Plotting System is based on 8 x 8 patterns. The characteristic of the default patterns is they produce intense and smooth looking colors and have a wider range of colors. For some applications it is desirable to have a different range of colors. An alternate set of dither patterns are provided based on other 8 x 8 and 4 x 4 dither patterns which allow a wider range of colors but produce somewhat grainy looking colors.

CGM Parameter (CGMP) File Format

Depending on the method or application which created the CGM files being plotted, many CGM files have an associated parameter file. The CGM run-time program accepts these parameter files if the following rules are followed:

- 1). The parameter filename must be the same as the CGM file.
- 2). The parameter file extension should always be ".*cgmp*".

The parameter file is an ASCII file which can be created or modified using any text editor (the LST Plotting System will automatically create the parameter file). It contains descriptions of various options controllable by the user. The parameter file interpreter is not case sensitive, therefore, you can mix upper and lower case as much as you like. The only time when case is preserved is inside the string-type variable delimited by double quotes.

Parameter File Errors

When the CGM program reports errors discovered in the parameter file, it reports the CGM filename, line number, and the byte number at which the error occurred in the parameter file. The byte number will always point beyond the actual word which caused the error. The byte number is an indication of where the scanner was when it concluded there was a definite error. If the byte number is reported as 0, that means that the scanner discovered the error when processing the carriage return for the previous line.

All processing information is stored in a log file each time the render.sh script is invoked. The processing log will contain general information about the CGM

file, plotting information, and all error messages that occur. This file will be created in the directory which contained the CGM file and use the following naming convention:

CGM Filename:test.cgm

Processing Log Filename:test.cgm.log

Dynamic Hardcopy Color Adjustments (GAMMA)

The gamma option is used for color intensity changes. Gamma was designed so the hardcopy can match what is displayed on the screen.

A gamma of 100 means that there is no color intensity correction applied. A gamma less than 100 lightens the colors. A gamma greater than 100 darkens the colors.

For **inkjet** and **color electrostatic plotters**, we recommend that gamma range from **30 to 50**.

For **thermal wax papers** **60 to 75**.

Scaling

When a CGM uses the **abstract** scaling mode, the plot size (VDC Viewport) must be specified in the parameter file. If no corresponding parameter file is found and the CGM scaling mode is abstract, then the render software will attempt to generate a square plot of the CGM file. The dimensions of the plot are based on the shortest axis. Under these conditions, the aspect ratio may be altered on the plot.

For CGM files using the **metric** scaling mode, the CGM will be automatically scaled and successfully plotted without the use of a parameter file. However, if a VDC Viewport is specified in a parameter file, then the specified viewport will override the automatically calculated viewport.

Trouble Shooting

Table 2: Plotting System Trouble Shooting Guide

Problem/Message	Explanation/Solution
Xlib: connection to "hostname" refused by server Error: Can't Open display	The client machine is not allowing X displays to be broadcast to it's terminal/monitor. To correct this enter the command "xhost +" on the client (local) computer and set the display on the remotely logged on system.
Failed to Open Display	Environment variable DISPLAY not set to the proper workstation. Type the command: setenv DISPLAY host:0.0 where <i>host</i> is the name of your local workstation.
Error: Command not found	The command you are trying to run can not be found in your environment. Make sure your \$PATH variable has the \$LSTHOME/larson/lstbin directory in it.
Translation table syntax error	Certain key functions are not being properly mapped. The XKeysymDB file located in the larson/lstbin directory should be appended to the XKeysymDB file on your system.
Warning: Font not found, defaulting to hershy-simplex-roman	Not a critical error. Font is not emulated and will be replaced by the LST default. You can add the font to the alias.fnt table to make it point to one of the 30 PIP fonts currently supported by the Larson software products.
GUI appears miscolored	Chances are all the colors available to Motif have been allocated by another program. Quit Plite and any other color intensive program. Then launch Plite again.
Only half of image is plotted	This is typically a problem when using the system spooler (LP/LPR). In most cases, the problem is due to the size and location of the spool directory. Or the raster file is being removed before LP/LPR is finished plotting the file.
No license is available	Run the command xelmadmin as root (su -). Select the license to recover and click on the KILL SELECTED CLIENT button.
Sorry! Unlicensed	Product is unlicensed. Call LST to obtain a license password.
If you can't read the release tape (usually on the SGI platform)	Instead of tar -xvf /dev/<dev name> try: 1. dd if=/dev/<dev name> conv=swab tar -xvf <file name> -or- 2. cat /dev/<dev name> > FILE -then- dd if=FILE conv=swab tar -xvf <file name>

Error Handling and Problem Reporting

Error Files

If a job fails to execute correctly, it will abort and a report will be generated in the log file **filename.ext.log**. These log files can be found in *<installation directory>/larson/lstwrk*. Check this file for feedback on the problem or reported error.

Information Needed to Report Problem to LST

If the problem can not be resolved at your facility, contact the Larson Software Technology Customer Support. Technical calls are accepted between the hours of 9 a.m. to 5 p.m. CST Monday through Friday. Problem reference calls are automatically answered during non-business hours and processed the following business day.

When reporting errors/problems to LST, please have the following information ready:

1. System information found by running *<installation directory>/larson/lstbin/userconf*.
 - system platform
 - system name
 - system code
 - version of LST software

For more information on *userconf*, please refer to the chapter "LST Environment Tool 'userconf'".
2. Error output from the **filename.ext.log** or **filename.ext.rep** found in the *<installation directory>/larson/lstwrk*.
3. A copy of the CGM file, if necessary to FTP to LST for further review.

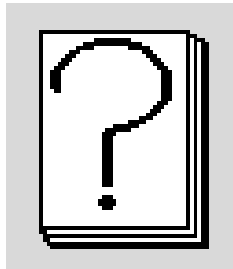
To FTP files to LST:

FTP address: ftp.cgmlarson.com
Username: anonymous
Password [your e-mail address]
Goto: pub/incoming

Please make sure that you are in binary mode when you upload the file to the pub/incoming directory.

4. A Copy of the Generated Plots, if necessary to send to LST for further review.
5. Any Special System Configurations

LST representatives may be reached via one of the following methods:



Telephone: (713) 977-4177

Sales/Marketing Fax: (713) 977-4176

Technical Support Fax: (713) 977-4175

Technical Support e-mail:

support@cgmlarson.com

LST Environment Tool “userconf”

The LST Environment tool userconf was developed to assist users in configuring their environment for LST software. **userconf** has the ability to:

1. Add LST software environment to a user's environment by adding the *<installation directory>/larson/lstbin* to the user's existing path and adding the environment variable LSTHOME to the user's account.
2. Add or update a new LST License Manager password.
3. Show the system information needed for error reporting.
4. Launch the license manager on boot.
5. Launch the Network Plotting System on boot.
6. Installing Perl for the Network Plotting System.

Executing userconf

Userconf can be executing while running *./Install* during the installation process by replying “yes” when prompted to use userconf. The user will go directly into the userconf program and then exit back into the *./Install* program. **userconf** can also be run while sitting in *<installation directory>/larson/lstbin* at any time after the installation is complete by typing the following on the command line:

```
cpu% userconf
```

The following menu will appear on the user's screen:

```

*****
* Larson Software Technology, Inc. *
* System Environment Tool *
* Main Menu *
* *
* 1 - Add LST Software Environment to a User's Environment *
* ----- *
* 2 - Add/Update New License Manager Password *
* ----- *
* 3 - Show System Information *
* ----- *
* 4 - Add Auto-launch of License Manager on boot *
* ----- *
* 5 - Add Auto-launch of NPS on boot *
* ----- *
* 6 - Install Perl for NPS *
* ----- *
* 7 - EXIT *
* *
* Enter a Selection from the Menu Now *
*****

```

Add LST Software Environment to a User's Environment

Running a C-Shell environment

This selection will create a file in the user's home directory called *.lstenv_csh* which reads:

```

setenv LSTHOME <install directory>
set path = ($path $LSTHOME/larson/lstbin)

```

Then the user's *.login* file is modified to include the following at the end of the file:

```

source .lstenv_csh

```

Once these actions have taken place, you **MUST** either type the following command:

```

cpu% source .login

```

or log all the way out of the system and log back in.

Running a Korn/Bourn environment

Creates a file in the user's home directory called `.lstenv_sh` which should look like this:

```
LSTHOME=<install directory>
export LSTHOME
PATH=$PATH:$LSTHOME/larson/lstbin
export PATH
```

The `.lstenv_sh` file will get appended directly into the user's `.profile` at run-time.

Once you have added the LST environment you **MUST** either type the following command:

```
cpu% . .profile
```

or log all the way out of the system and log back in.

Add/Update New License Manager Password

This choice runs the script **addkey** which asks the following questions:

```
On how many hosts will you run the license server? (default=1): 1
Code for "lsttech" is: 194/5246 3301 2695 0154 2
Please enter your key: █
```

1. Enter "1" for the number of license server hosts.
2. Enter the password given by an LST representative and hit enter.

Show System Information

This selection shows the following information about the machine running the Larson Software products:

- Hostname
- Operating System level
- Version of LST software installed

- License server “code” for permanent passwords

Add Auto-launch of License Manager on boot

Auto-launching of the Elan License Manager should have already been added to the proper */etc* files and directories if you have gone through a true LST installation. The License Manager will also be started if no **lst_elmd** process is already running.

When the system gets rebooted, the `lst_elmd` process will be started.

If the **lst_elmd** process goes down during a session, root (su -) can run *<installation dir>/larson/lstbin/start.license*.

Add Auto-launch of NPS on boot

Auto-launching of the Network Plotting System should have already been added to the proper */etc* files and directories if you have gone through a true LST installation.

When the system gets rebooted, the NPS daemon (`npsd.pl`) will be started, all processing will be turned on, and all queues will be turned on.

If the NPS daemon goes down and does not get restarted, root (su -) or any authorized plot administrator can run *<installation dir>/larson/lstbin/npsd.startup*.

Install Perl for NPS

The Network Plotting System requires that the Perl scripting language be installed on your system. This option will check to see if there is a Perl version already loaded on your system. If the version on your system is a different version of Perl, it will ask you if you want to overwrite the existing version.

ATTENTION ProMAX users with LST pre-installed:

If you have chosen to use the LST Network Plotting System, you must choose option 6 to install the Perl language on your system. NPS is written in Perl and the Perl version distributed with NPS is a necessity. If you have any questions about Perl, please contact a LST Customer Support representative.

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