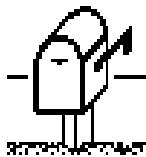


Larson Software Technology, Inc.

NPS User Guide

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Introduction

Thank you for selecting NPS User as your interface to the Network Plotting System (NPS).

NPS User is a Motif Window interface designed to provide:

- Point and Click submission of plot files
- Scaling, color, and copy options
- Tracking of submitted plot jobs
- WYSIWYG (What You See is What You Get) Viewing of plot files

About the LST Network Plotting System

The Network Plotting System (NPS) consists of two primary licenses:

NPS User License(s): This will license the “client” software with a Motif Window Manager interface for plot file submission, tracking, and viewing.

NPS Manager License: This will license the “server” software with a Motif Window Manager interface for configuring plotter and printers and for controlling the rasterization process.

NPS can process a wide variety of plotting/printing formats. Format licensing is available for:

- CGM/CGM+ files (standard)
- PostScript files (additional)
- Image Format files (XWD, TIFF, SGI Image format, PCX, Sun Raster, Windows Bitmap, GIF, JPEG, Targa, ...) (additional)

NPS has device drivers for the most popular plotters and printers: HP Designjet Plotters, HP Printers, Xerox Printers, Encad Novajet Plotters, Calcomp, Oce, Oyo and Atlantek.

Setting Up the User Environment

Upon a successful installation of the LST Network Plotting System you should have the following directory structure:

The *<installation directory>* should have a directory called *larson* in it. The *<installation directory>/larson* should have the following sub-directories: *drivers*, *examples*, *filters*, *lstbin*, *lstwrk*, *patch*.

For example: if the *<installation directory>* was */home2/apps*, then the LST software system would have the following directory structure:

```
/home2/apps/larson/drivers
    /examples
    /filters
    /lstbin
    /lstlic
    /lstwrk
    /patch
```

Setting the LSTHOME variable

Before you can launch NPS, you must have the LSTHOME variable set to point to the *<installation directory>*. From the example above, the LSTHOME variable is */home2/apps*.

To set the LSTHOME variable on the command line type:

For C-Shell environments,

```
cpu% setenv LSTHOME /home2/apps
```

For Bourne and Korn environments,

```
cpu% LSTHOME=/home2/apps  
cpu% export LSTHOME
```

Setting the PATH variable

Once the LSTHOME variable is set correctly, you must set your path to include the \$LSTHOME/larson/lstbin path. This will enable you to launch either NPS Manager or NPS User without having to specify the full path to the shell script.

To set the PATH variable on the command line type:

For C-Shell environments,

```
cpu% set path=($path $LSTHOME/larson/lstbin)
```

For Bourne and Korn environments,

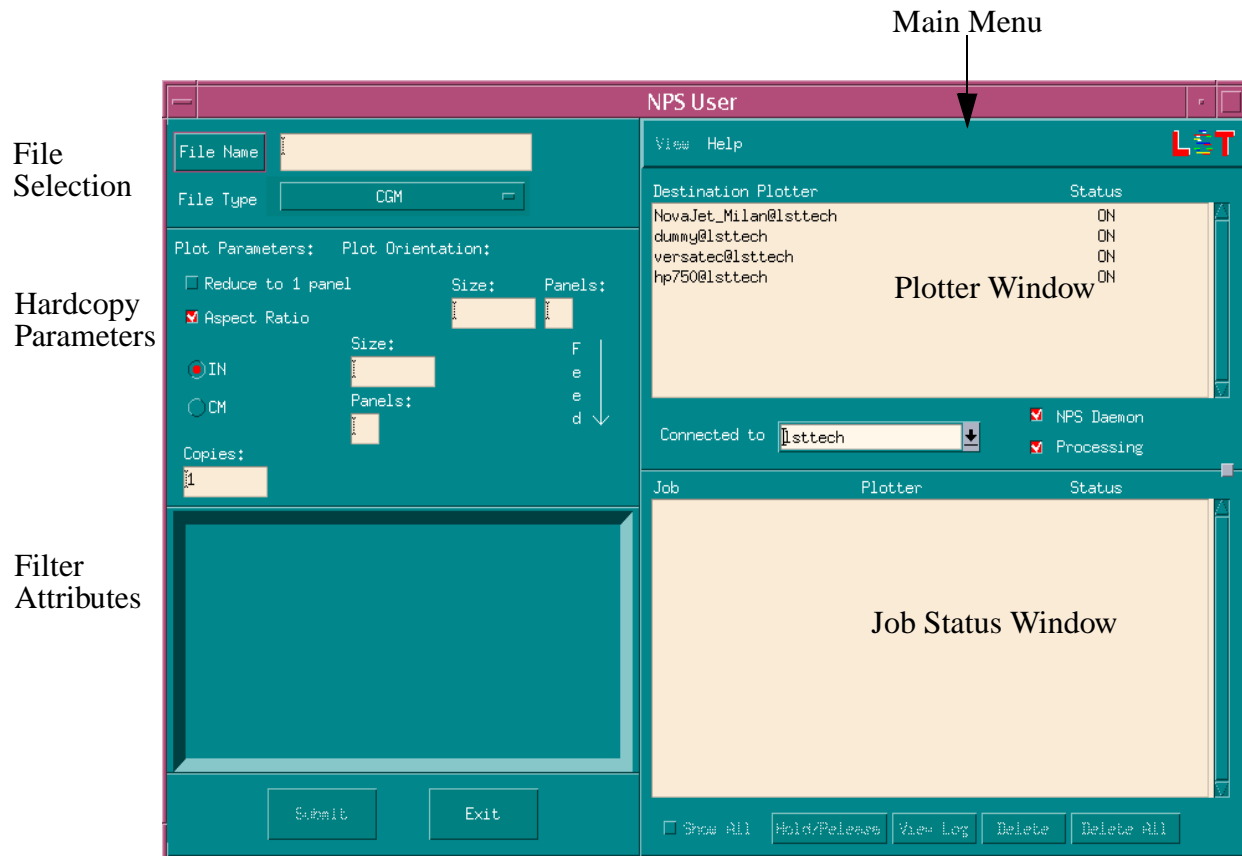
```
cpu% PATH=$PATH:$LSTHOME/larson/lstbin  
cpu% export PATH
```

Launching NPS User

Once the environment is configured, you are ready to launch the NPS User. On the command line (cpu%), type:

```
cpu% npsuser
```

and the following interface will appear on the screen:



File Selection Area allows the user to select the file, view the selected filename as well as the filetype. The filetype may be selected prior to selecting a file.

Plotter Window reports all the hardcopy devices configured on the plot server active in the Connection pulldown as well as their output status.

Hardcopy Parameters display the final plot orientation, size, and number of copies. The Aspect Ratio will maintain the proportion of height to width of the original file.

Filter Attributes give the user more control over the final hardcopy output. Filter Attributes range from color correction to additional side-label information. The Filter Attributes are determined by the filetype and the chosen plotter.

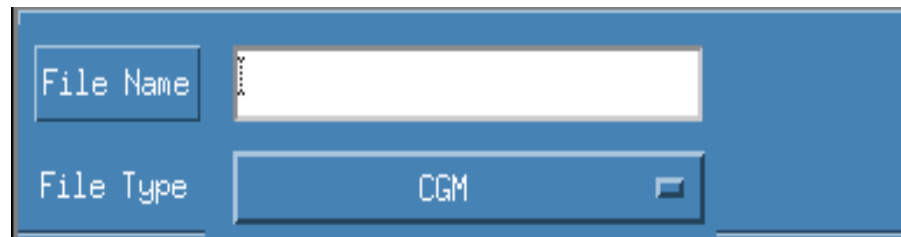
Main Menu is for viewing the selected file, displaying HELP and information about Larson Software.

Job Status Window shows the jobs submitted, job status and partial control over those jobs. The Job Status Window can show jobs submitted by just the user who launched the NPS User interface or it can show all jobs submitted into the system.

Using NPS User

Selecting A File

The File Selection area consists of three pieces: the **File Name** button, the display area for the selected file, and the **File Type** selection button.



The File Name is used to select files to be plotted. The dialog box used gets its filter information from the File Type selected. This filter information can be changed once in the dialog box.

The File Type serves two functions. The first is formatting the File Name's File Selection dialog box file filter. The file filter is set depending on which File Type is selected. Below is the correspondence between File Types and Filters.

Table 1: File Types and Their Filters

File Type	Filter
CGM	*.cgm
HPGL/HPGL2	*.hgl
Text Files	*.txt
PostScript	*.ps
X-Windows Dump	*.xwd
TIFF	*.tif
SGI Image	*.sgi
PCX	*.pcx
Encapsulated PostScript	*.eps

Table 1: File Types and Their Filters

Sun Raster	*.sunras
Windows Bitmap	*.bmp
GIF	*.gif
CALS (CCIT Group 4)	*.cals
TARGA	*.tga
Others	*.*

Of course the file filter can be modified while in a file search without having to CANCEL and change the File Type.

NPS User will always check to see if the selected file is still the same File Type displayed. If not, NPS User will update the File Type accordingly.

Once the desired file has been chosen, the File Name display area will reflect the selection.

Selecting a file to view or plot

1. Click on **File Name** with the left-most mouse button and the File Selection dialog box appears as shown below:



2. Search through the file system to find the file you wish to have as a hardcopy.

The Filter entry contains the file type to search for and the path in which we are actively looking in. The default path is the directory where NPS User was launched from and the default filter type corresponds to the FILE TYPE.

The Path can be modified either by surfing through using the Directories or you can edit the filter itself. Remember that there can be no typos if you edit the filter itself. The path won't change if the directory doesn't exist.

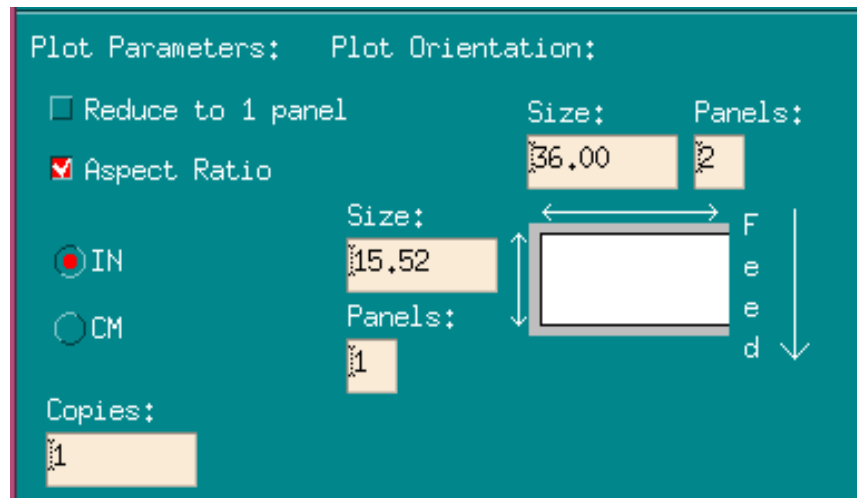
Subdirectories underneath the path are listed on the left, the files that match filter type (*.cgm, etc) in the current directory are listed on the right.

3. Highlight the file and click on OK to accept the selection.

NOTE: The ".." entry is to go up one directory in the path. And double-clicking on an item does the same as selecting and either selecting the filename or refreshing the filter and its search for file type matches.

Changing Plot Parameters

Once the file has been selected, its physical dimensions defined either in the file or in a corresponding parameter file are displayed in either inches (default) or metric units. These are the default dimensions and can be changed.



Reduce to One Panel

The **Reduce to One Panel** flag instructs NPS User to resize the current file to fit on one page of media or to panel. The size of the media depends on the hardcopy device the file gets sent to.

If the flag is ON, NPS will calculate the proper sizes needed for the height and the width to fit on one page of media. If Aspect Ratio is ON, it will resize maintaining the ratio of height to width. If the selected file already fits on the panel, no scaling will be done.

If the flag is OFF (default), NPS will generate additional pages or panels if the file exceeds the defined media size.

To turn the Reduce to One Panel option on or off, you simply click on the radio button.

Aspect Ratio

The **Aspect Ratio** flag instructs NPS User to calculate and maintain the overall ratio between the default height and width of the selected file and maintain that ratio when the file's size is changed.

If the flag is ON and the user changes the height then hits return, the width will change proportionally.

If the flag is OFF and the user changes the height then hits return, the width will not change at all. Skewing may occur if the Aspect Ratio is not maintained.

Width

See the diagram in the Height section to show the comparison between the defined width in NPS versus the defined paper size.

To change the **Width** of the selected file's hardcopy output:

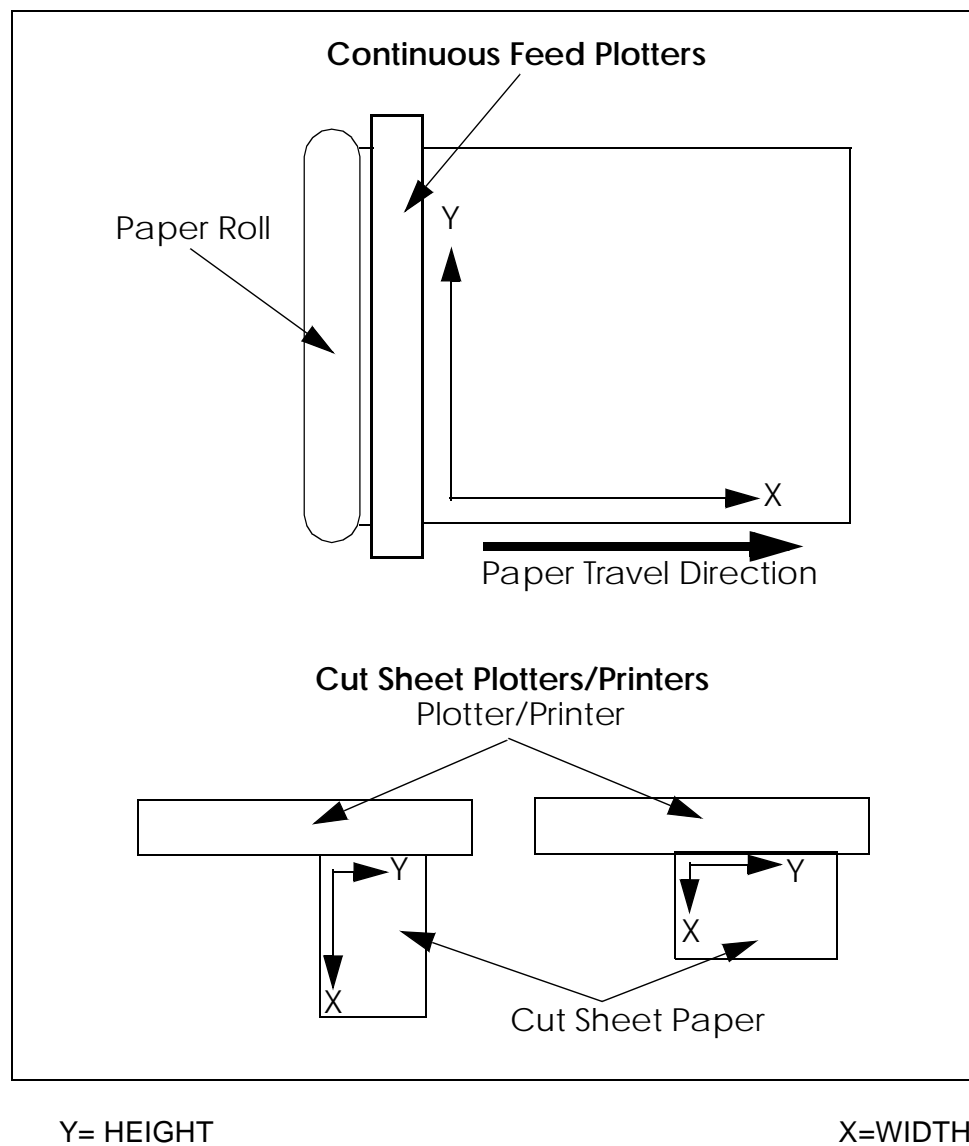
1. Highlight the width by double-clicking inside the Width field.
2. Type in the desired new width.
3. Hit RETURN on the keyboard.

Height

See the diagram below to show the comparison between the defined width in NPS versus the defined paper size.

To change the **Height** of the selected file's hardcopy output:

1. Highlight the height by double-clicking inside the Height field.
2. Type in the desired new height.
3. Hit RETURN on the keyboard.



Units

To change the **Units** from Inches to Centimeters:

1. Click on IN for Inches or CM for Centimeters.

Copies

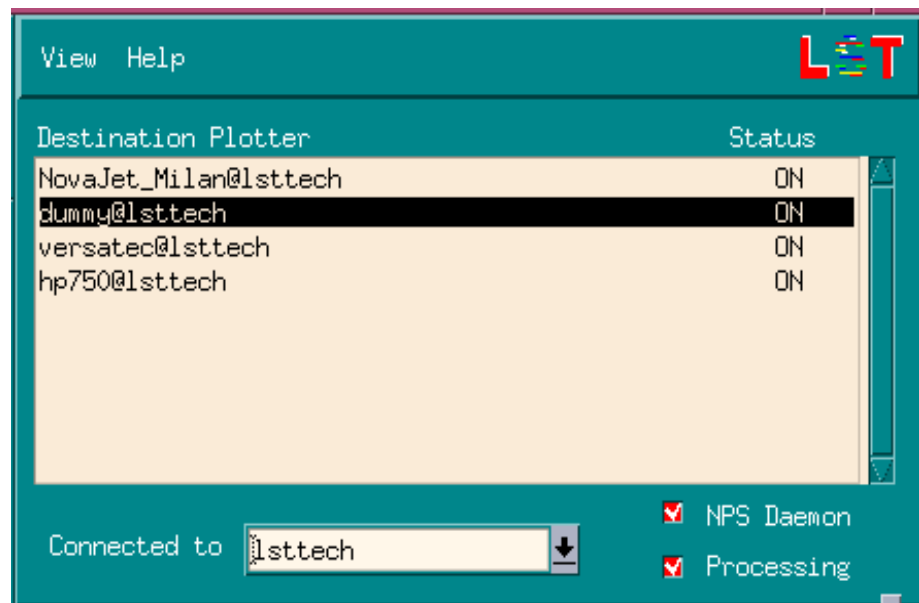
To change the number of **Copies** to send to the hardcopy device:

1. Highlight the number by double-clicking inside the Copies field.
2. Type in the desired number of copies.
3. Hit RETURN on the keyboard.

Selecting A Plotter

Plotters are added and made available to the system with the NPS Manager. The NPS Manager has control over each plotter's status as well.

Once a file has been selected, it can be viewed and then sent to a defined plotter.



The **plot server** is the machine name defined in the **Connected to** window. It is the CPU that will be performing the rasterization of the file.

The plotters that appear in the **Destination Plotter** section are defined plotters for the specific plot server. The plotters "official" name is `plotter_connection@machine`; where machine is the CPU responsible for communication with the plotter.

If the plot server machine is not the same as the plotting machine, the plot server will rasterize the file and transfer it to the plotting machine to be sent to the plotter.

To select a plotter

1. Click on the plotter name in the Destination Plotter window with the left-most mouse button.

The plotter name will become highlighted.

Viewing a File

Once a file has been selected, it can be viewed. While viewing, you can zoom in to check text and other small details. You can zoom back out restoring a bird's-eye view of the file.

To view a file

1. Click on VIEW and a View File window will appear on top of NPS User.

The image may take some time to appear on the screen. The image must be rasterized to be viewable by Motif.

To zoom in

1. Draw an elastic box around the area you wish to zoom in on.
2. To draw the elastic box, click on the left-most mouse button, hold and drag the mouse along a diagonal across the area to zoom in on.

You will see a rectangle being drawn on the screen as you move the mouse. This is the area that is getting zoomed.

To zoom out

1. Click the right-most mouse button and the following menu will appear:

Options	
Restore	Restores the file to original screen.
Zoom Out	Restores to last zoom done.
Close	Exits the View File window.

2. Click on **Restore** to return the View File back to its original size on the screen.

If you have zoomed in more than once, click on **Zoom Out** to restore the view back to the previous zoom in.

Click on **Close** to exit the View File window.

Filter Attributes

Once the file and the plotter have been selected, the **Filter Attributes** window will be filled in.

These attributes are defined in the filters loaded with NPS Manager. Each filter option has default settings and lists that are changeable with NPS User.

If you wish to have a customized filter for your plots, please consult the NPS Manager's Manual on how to customize filters.

CGM plotting options

If you are trying to plot a CGM file, there must be a CGM filter already loaded into NPS with NPS Manager.

Once a file and plotter are selected, the plotting options will appear in the Filter Attributes window. If there is more than one CGM filter loaded, a menu with the available CGM filters will appear. Select the filter to use and its options will appear in the Filter Attributes window.

Rotate



CGM files can be rotated portrait or landscape. Variable density plots are limited to only the landscape setting due to the manner in which their data is stored in the cells of the CGM file.

To change the rotation

1. Click on the down arrowhead to go from landscape to portrait.
2. Click on the up arrowhead to go from portrait to landscape.

Gamma



Gamma values are also known as color correction values. This number tells NPS how to scaled the true color defined in the CGM. A gamma of 100 is a true representation of colors as defined in the CGM.

The higher the gamma means the more intense the color and the more ink used to produce the color. The lower the gamma means the lighter, more pastel color and less ink needed to produce the color.

Gamma is based on a logarithmic curve thus is not a 1:1 nor linear function.

The gamma scale runs from 1 to 1000.

To change the gamma

1. Use the slide bar to move around the gamma scale.

-OR-

1. Select the gamma in the gamma box and type in the desired gamma.
2. Hit RETURN on the keyboard.

Picture



The picture value tells NPS which picture the image is located internal to the CGM file. Most software applications encode the image in picture one.

Picture 1 is the lowest picture number accepted.

To change the picture

Click on the up arrowhead to increase the picture number by increments of one.

Click on the down arrowhead to decrease the picture number by increments of one.

Cutline



Cutline is a radio button. A radio button is an ON/OFF switch. If ON the button is filled in with a red color. If OFF the button is unfilled and green.

If the cutline is ON, a thin line is drawn around the CGM file's border.

To turn on/off the cutline

Click on the Cutline button.

Master Color Table (MCT)



MCT is a radio button. A radio button is an ON/OFF switch. If ON the button is filled in with a red color. If OFF the button is unfilled and green.

The MCT function is for color mapping. It reduces the color table size by getting rid of the colors not allocated in the CGM. This is useful for montaged CGM files.

To turn on/off the cutline

Click on the MCT button.

Draw Mode



The Draw Mode can either be opaque or transparent.

To change the draw mode

Click on the down arrowhead for transparent.

Click on the up arrowhead for opaque.

Dither



There are a multitude of dithers that can be used in plotting. We have provided the best 16X16 dither in the default. If you wish to cut down processing time or raster file size, you may choose others.

We have also provide you with the following dither patterns:

- 16x16 Ordered
- 16x16 Clustered
- 8x8 Ordered
- 8x8 Clustered
- 6x6 Clustered

To change the dither pattern

Click on the down arrowhead to scroll down through the list of provided dither patterns.

Click on the up arrowhead to scroll back through the list of provided dither patterns.

Line Width Minimum (LWM)



LWM enables you to scale the defined lines in the CGM up or down. Seismic traces are not defined lines.

You can bold lines with a LWM greater than one. You can also thin the line widths out by using a LWM less than one.

To change the LWM

Click on the up arrowhead to increase the LWM by increments of one.

Background Color (BGC)



Most files are created with a white or clear background. This color can be changed to black. Conversely, if the background is black, it can be changed as white.

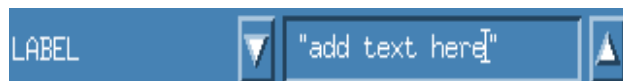
BGC is dependent on the CGM encoding to have background color defined internally.

To change BGC

Click on the down arrowhead for black.

Click on the up arrowhead for white.

Label



The label options allows you to put a note on the outside of the cutline. This is useful to tag on your company's name, client's name, or even special delivery instructions.

To add a label

Click in between the “ ”. You will see the cursor start blinking and the window become active. Start typing in between the double-quote marks.

Tray



For printers, the tray options are specific to the printer. This option is useful for multi-tray printers.

To change the tray for printers

Click on the down arrowhead for B-Size paper

Click on the up arrowhead for Letter-Size paper



For plotters, the tray option is either Color or Monochrome.

To change the color type for plotters

Click on the down arrowhead for monochrome.

Click on the up arrowhead for color.

Submitting the File to Plot

Once the file and plotter have been selected and the attribute adjusted, the file is ready to be sent to the plotter.

To submit the file

Click on **Submit** with the left-most mouse button

A blue rectangular button with the word "Submit" in white, monospaced font.

(lower left corner)

and the job gets sent to into the plotting system via a socket transmission.

Tracking Jobs

Once the file has been submitted, it will be sent to the NPS Daemon (NPSD) to be processed.

The job will appear in the Job Status Window as shown below:

A screenshot of a 'Job Status Window' with a blue border. It contains a table with three columns: 'Job', 'Plotter', and 'Status'. The table lists four jobs with their respective IDs, filenames, plotter names, and statuses. Below the table are five buttons: 'Show All' (with a checkbox), 'Del Job', 'View Log', 'Del Log', and 'Del All Logs'.

Job	Plotter	Status
460389;jenn.xwd:1	Xerox4520_lpr@lsttech	spooled
460057;corel_colorbar.cgm:1	DesignJet_JetDir@lsttech	complete
459982;ampmap16.cgm:1	Xerox4520_lpr@lsttech	spooled
460108;gmgplot.cgm:1	SeikoColorPoint_lpr@lsttech	pending

NPS User does not have the authority to re-rank or put a job on hold. These functions are restricted to NPS Manager. To learn how to re-rank or hold jobs, please read the NPS Manager's Manual.

NPSD along with NPS Manager will control the job's flow through the system.

In order to efficiently track submitted jobs in NPS, we add identifiers to the original filename. The **NPS Job Filename** has the following syntax:

serial_number:filename:number_of_copies

- **Serial_number** is derived from CPU time. This gives the plot job a unique identifier which allows users to submit the same plot file repeatedly.
- **Filename**, and **number_of_copies** information comes from options set in NPS User. NPSD will read these fields and assign it to the job's NPS name.

The second entry in the Raster/Process Queue Status window is the **Plotter Queue**. This was the queue selected when the user submitted the job.

The last entry is **Status**. The status messages are:

Status	Meaning
Pending	The file has been submitted into NPS and is ready to be processed
Processing	The file is actively being rasterized.
Spooled	The file is finished with rasterization and is waiting to be plotted.
Plotting	The file is actively being plotted.
Holding	The file was pending and put on hold with the NPS Manager.
Keep	The file was spooled and put on hold with the NPS Manager.
Complete	The file was rasterized and plotted successfully.
Error	The file failed in rasterization or plotting. See the associated log file for more information on why.

Show All



ON

The **Show All** options tells NPS User to display all jobs submitted by everybody into the plotting system. Show All is a radio button. A radio button is an ON/OFF switch. If ON, the button is filled and red. If OFF, the button is unfilled and green.

With Show All on, it allows the user to see the job's rank in the entire plotting system. Rank is assigned by arrival time into the system. Rank can be changed with NPS Manager.

The Plotter Name changes when Show All is on, instead of just the plotter name, it becomes:

user who submitted the job:plotter name

Hold/Release



Submitted jobs can be held in the queue without clogging up the queue. These jobs can be reactivated at any time.

To hold a job

1. Select the job with the left-most mouse button.
2. Click on **Hold/Release** with the left-most mouse button. The job's status will change to holding.

To release a held job

1. Select the job with the left-most mouse button.
2. Click on **Hold/Release** with the left-most mouse button. The job's status will revert back to its original status and position.

View Log

A rectangular button with a teal border and a light teal background. The text "View Log" is centered on the button in a white, monospaced font.

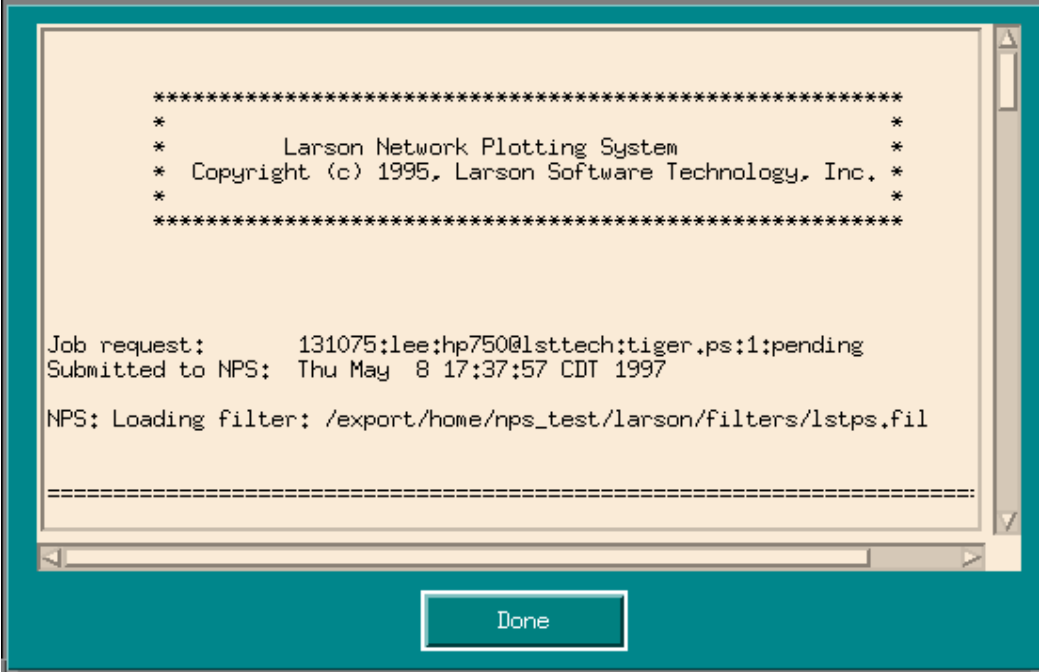
All files sent to plot have corresponding log files. While a job is in progression you can view the log files to see what NPSD is doing to the file.

The NPS Manager also has control over log files. Once a job is complete, the NPS Manager can automatically delete the log file which will result in this option not being valid.

The log files are kept in the `$LSTHOME/larson/lstwrk` directory.

To view a log file

1. Select the job with the left-most mouse button.
2. Click on **View Log** with the left-most mouse button and the following will appear:

A screenshot of a log file viewer window. The window has a teal border and a light beige background. The text inside is as follows:

```
*****
*
*      Larson Network Plotting System
*      Copyright (c) 1995, Larson Software Technology, Inc.
*
*****

Job request:      131075;lee;hp750@lsttech;tiger.ps:1:pending
Submitted to NPS: Thu May  8 17:37:57 CDT 1997

NPS: Loading filter: /export/home/nps_test/larson/filters/lstps.fil

=====
```

At the bottom center of the window is a button labeled "Done".

Use the scroll bars to read the full log file.

3. When you are finished, click on **Done** to end the View Log session.

Delete



Once a file has been submitted, both NPS User and NPS Manager can abort/delete the file from the system.

To delete a job

1. Select the job in the Job Status Window with the left-most mouse button.
2. Click on **Delete** with the left-most mouse button. The job should disappear from the NPS User Job Status Window and from the entire plotting system.

To delete a range of jobs

1. Select the first job in the range of jobs with the left-most mouse button.
2. Hold down the SHIFT key and select the last job in the range of jobs with the left-most mouse button. You will notice that the first, last, and all jobs in between will be highlighted.
3. Click on Delete and all the jobs in the range will disappear.

To delete a selection of jobs

1. Select the first job with the left-most mouse button.
2. Hold down the CONTROL key and select the next job(s).

Delete All



The **Delete All** button carries out the Delete function on all jobs in the Job Status Window that belong to you.

To delete all logs

Click on **Delete All** and jobs will disappear.

Exiting NPS User



Exiting NPS User will end the interface of NPS User into NPS. The submitted file will continue to be pushed through the system. When NPS User is relaunched, the jobs submitted in a different session will appear with their corresponding information if the jobs are still in the system.

To exit NPS User

1. Click on **Exit** with the left-most mouse button.

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