INTERACTIVE Looking Glass*
Professional
Version 2.1.2
Release Notes

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1. INTRODUCTION

This document describes the new features in INTERACTIVE Looking Glass Professional Version 2.1.2, provides information for users installing this version or updating their system from Version 1.0, and provides information to help you ensure that Looking Glass Professional runs properly in your computing environment.

2. NEW FEATURES

The following new features are available in the current version of Looking Glass Professional but are not documented in the *INTER-ACTIVE Looking Glass User's Guide*:

- OPEN LOOK* GUI look-and-feel

- Drag and drop capability

- Motif* keyboard navigation

- Trashcan capability

2.1 OPEN LOOK GUI Look-and-Feel

Looking Glass Professional now supports the OPEN LOOK GUI look-and-feel. There are many visual differences between the Motif look-and-feel (illustrated in the *INTERACTIVE Looking Glass User's Guide*) and the OPEN LOOK GUI look-and-feel, but most of the user interface items function in the same way. Looking Glass automatically invokes the appropriate look-and-feel based on which window manager you are using. If the Motif Window Manager (mwm) is running, Looking Glass starts up with the Motif look-and-feel. If the OPEN LOOK GUI window manager (olwm) is running, Looking Glass starts up with the OPEN LOOK GUI look-and-feel. OPEN LOOK's GUI two-dimensional appearance is supported on monochrome monitors, and the three-dimensional appearance is supported on color monitors. It is a good idea to use the look-and-feel corresponding to your window manager, but it is possible to force the other look-and-feel by running Looking Glass with the motif or openlook argument. For example, type:

```
lg -laf motif &
```

or

```
lg -laf openlook &
```

For more information on specifying arguments at startup, refer to Chapter 1, "Getting started in Looking Glass," in the *INTER-ACTIVE Looking Glass User's Guide*.

2.1.1 Setting Color Preferences Under the OPEN LOOK GUI

If you are using the OPEN LOOK GUI look-and-feel and a color monitor, you can set user interface colors with Looking Glass's Color Preferences dialog or with the Open Windows Workspace Properties window. If you use the Looking Glass Color Preferences

command, any color preferences you have previously set with the Workspace Properties window will be overridden in Looking Glass. If you have set colors using the Color Preferences dialog, you can force Looking Glass to use the colors specified in the Workspace Properties window by removing the `lg_colors` file from the `lg` directory in your home directory. For more information on setting color preferences with Looking Glass, refer to Chapter 12, "Changing Looking Glass preferences," in the *INTERACTIVE Looking Glass User's Guide*.

2.2 Drag and Drop Capability

Looking Glass Professional now supports the "drag and drop" method for loading a file. The drag and drop method works with applications that conform to the Sun Microsystem* drag and drop protocol. This protocol provides the connection between directories or files that you drag and drop and the running applications that receive the drop. The receiving program must be running; however, you can drop objects on an application whose window has been iconified. The receiving program determines the action taken on the dropped directory or file. For instance, if you drop a text file into a window that is running a text editor program, the text file may be displayed in the window (it may replace the contents of the window). (A technical note on incorporating the drag and drop protocol into your applications is available from Visix*.) You can still move or copy files in Looking Glass by dragging and dropping them on to a directory icon or in to a directory window. To drag and drop objects, follow these steps:

- Select a directory or file that you want to drop.

- Drag the directory or file to the window in which the receiving program is running (whether iconified or not).

- Release the mouse button to drop the selected directory or file.

The receiving application then decides what action to take on the dropped directory or file. For more information on drag and drop operations, refer to the *DeskSet Environment Reference Guide* available from Sun Microsystems.

2.2.1 Using the Drag and Drop Method With the Visix Icon Editor

The drag and drop method can be used to import bitmap images into the Visix Icon Editor — drag the bitmap file icon into a Gallery window. The drag and drop method can also be used to open an

icon gallery by dragging the icon of the icon gallery into the Icon Editor window.

2.3 Motif Keyboard Navigation

If you use Looking Glass with the Motif look-and-feel, you can now navigate Looking Glass without the mouse, using keyboard functions only. Full keyboard operation of Looking Glass is only available under the Motif look-and-feel. Under the Motif look-and-feel, menus and menu items now have an underlined letter in their name. This letter, in combination with the $\boxed{\text{ALT}}$ key, lets you open the menu or select an item without using the mouse. All Looking Glass accelerator keys still work as described in the *INTERACTIVE Looking Glass User's Guide*. Using keyboard navigation, you can do anything you can do with a mouse, including:

- Open menus

- Choose menu items

- Select and unselect check boxes

- Move from item to item in a dialog

- Move from window to window on the workspace

For complete instructions on using keyboard navigation, refer to Section 2.10 of the *OSF/Motif User's Guide*, available from Prentice Hall.

2.4 Trashcan Capability

Looking Glass Professional now features the use of a trashcan. This allows you to remove files and directories with a simple drag and drop procedure. To enable this feature, create a directory in your home directory called TRASH. An icon representing a trashcan will then appear. Move the icon to the desktop panel and it is ready for use. Note that when files are dragged and dropped into the trashcan, they are actually *moved*, not *removed*. Just like regular garbage — it is not really gone until the garbage collectors pick it up. You can physically remove files using the Looking Glass menus or by creating a shell script similar to the one below and executing it regularly (once every night, for example).

```
# script that removes all files in the TRASH directory
# except those files that have been modified in less than
# two (or number specified as argument) days
DAYS=2
if [ $# -ne 0 ]
then
DAYS=$1
fi
cd $HOME/TRASH
for i in `find . -type f -a -mtime $DAYS -print`
do
echo rm -rf $i 2> /dev/null
done
```

3. KNOWN PROBLEMS AND WORKAROUNDS

For users with 16 color X Windows Servers, the combination of running Looking Glass and Motif requests more colors for their use than the 16 colors that are available. As a result, the first client appears in full color (if used with Easy Windows* this is the Motif Window Manager), and the next client (Looking Glass) appears in monochrome. Two workarounds exist:

• Reconfigure mwm to use fewer colors (typically by using the sample Mwm configuration files provided in the MWM subset).

• Upgrade the display subsystem to one with greater color capacity (in this case, to a 256 color adapter).

4. UPDATE CONSIDERATIONS

4.1 INTERACTIVE Looking Glass Professional Conversion Utilities

Configuration files and icon galleries used by versions of Looking Glass earlier than Version 2.0 must be converted so that they will be compatible with the new resource file format used by Looking Glass Professional Version 2.0 and later. One of the benefits of the new file format is that Looking Glass resource files can be used by different types of machines accessing the same file system. To determine the version number of the Looking Glass program currently installed, type:

```
lg -version
```

Note that users should convert their old files and icon galleries to the new file format at installation time, before starting INTER-ACTIVE Looking Glass Professional.

4.2 Converting Looking Glass Configuration Files

The `lg_convert` utility converts Looking Glass configuration files to the format used by Looking Glass Professional Version 2.0 and later. Each user's Looking Glass configuration files are stored in the `lg` directory of his or her home directory. The syntax of the `lg_convert` utility is:

```
lg_convert [-save] [directory...]
```

By default, `lg_convert` replaces old configuration files with the new format. The `-save` option leaves old configuration files in place. New format files are prefixed with `lg2_`; old files are prefixed with `lg_`. If you do not specify a directory, `lg_convert` looks for an `lg` directory in the current directory. For example, if you want to replace old configuration files, type:

```
lg_convert
```

from a user's home directory.

If you are converting configuration files for more than one user, and you want to leave old configuration files in place, type:

```
lg_convert -save ~john ~tom ~mary
```

4.3 Converting Looking Glass Icon Galleries

The `icon_convert` utility converts icon galleries to the format used by Looking Glass Professional Version 2.0 and later. You must convert the Main Gallery used by Looking Glass (`lg_icons.d`) and any other icon galleries you want to work with that were created before installation of the Visix Icon Editor Version 2.0 and later. The syntax of the `icon_convert` utility is:

```
icon_convert oldgallery newgallery.vr
```

where *oldgallery* is the name of the icon gallery you want to convert and *newgallery* is the name you want to assign to the icon gallery. You may keep the same name or give it a new name. It is a good idea to follow Looking Glass's standard naming convention for resource files by giving them a `.vr` suffix, but it is not required.

5. INSTALLATION NOTES

5.1 Before You Begin

Before beginning your installation, be sure to note the following points:

- Since the installation script runs binary executable files, you cannot install Looking Glass from a system with a different hardware architecture from the one on which Looking Glass is being installed.

- You need approximately 3.5 MB of disk space to load and install Looking Glass.

- INTERACTIVE X11 must be installed on your system, but it does not need to be running during installation. It must, however, be running when you start Looking Glass.

5.2 Installing Looking Glass Professional

Use the `sysadm` utility to install Looking Glass Professional. Type:

```
# sysadm installpkg
```

to begin the procedure. Follow the instructions on-line. For more information about using `sysadm` to install software, refer to section 6.1 of the "INTERACTIVE UNIX Operating System Installation Instructions" in the *INTERACTIVE UNIX System V/386 Release 3.2 Operating System Guide*.

As part of the installation procedure, the `vls_add` utility is called and the system offers you the opportunity to add license keys:

```
Would you like to add the license keys at this time? (y/n) [y]
```

You can add license keys at this point or wait until after installation is complete. Refer to section 6.3.1.2, "Adding License Keys," for more information about this procedure.

After installation is complete, you should do the following:

- Build the Looking Glass database.
- Authorize the License Server host machine(s).

6. CONFIGURING LOOKING GLASS PROFESSIONAL

6.1 Building the Looking Glass Database

To provide rapid access to directories of any size, Looking Glass makes use of a distributed directory database that consists of a small file named .lgdb in each directory. Although these files are created automatically as Looking Glass displays directories, building the files in advance avoids the slight delay encountered as Looking Glass enters a directory for the first time and looks at each file to determine its type.

Building the Looking Glass database can take anywhere from a few minutes to an hour or more, depending on the number of directories processed. If you interrupt this process for any reason, you must restart the command. If there are directories in which you do not want .lgdb files created, refer to section 6.3, "Creating a Directory Exclusion List."

To build the directory database:

1. cd to the File System Server data directory:

   ```
   $ cd /usr/lib/visix/fss
   $ cd `cat default`
   ```

2. Execute the script to build the directory database by typing:

   ```
   $ ./db_build
   ```

   The db_build command prints the name of each directory as it is typed. If you interrupt this process for any reason, restart the command again.

6.2 Authorizing License Server Host Machines

This step is necessary only if you intend to run Looking Glass and the License Server on different machines. The License Server can be run from any authorized machine on your network. The file vls.hosts in the Looking Glass data directory is used to store the names of the authorized License Server host machines. When Looking Glass starts, it checks the machines listed in vls.hosts for an active License Server, searching in the order in which the machines are listed in the file. The first machine listed in the file is the primary License Server host.

The vls.hosts file is not necessary if you are running Looking Glass and the License Server on the same machine. However, if you

do have a `vls.hosts` file, the name of the host machine must be in the file. To authorize License Server hosts:

1. Log in to the system on which you installed Looking Glass.

2. `cd` to the License Server data directory:.

    ```
    $ cd /usr/lib/visix/vls
    $ cd `cat default`
    ```

3. Edit the file `vls.hosts` using a text editor. If the file does not already exist, create it.

4. Add (as the first line of the file) the host name of the system that is running the Visix License Server.

5. Add on additional lines any other machines where the Visix License Server might run, in case the primary host is unavailable, and save the file.

6.3 Creating a Directory Exclusion List

This section contains instructions for specifying directories in which the `.lgdb` directory database file is not to be written. The exclusion list consists of directory names, one per line, in the file `exclude.lgdb` in the Looking Glass data directory.

The installation procedure includes an optional step for building `.lgdb` files for the entire file system using `db_build`. Although the exclusion list is normally created before building the directory database files, it can be created and edited at any time. Looking Glass reads the exclusion list at startup and will not put a `.lgdb` file in any directory referenced.

Exclusion list entries consist of full path names, one per line. Blank lines are permitted. Comment lines can be included by placing the pound character (#) in column one. You can specify that the exclusion applies to all subdirectories of a directory by preceding its name with a plus sign (+). For example, the following entry would prevent `.lgdb` files from being placed in the directory `/usr/hal` or any of its subdirectories:

```
+/usr/hal
```

There are two ways to reference directories that reside on remotely mounted file systems: you can use the name under which the directory was mounted, or you can precede the directory name with a node name specifying the physical machine on which it resides. The node name must be followed by a colon (:). For example, to use a

node name to specify the directory /etc on the machine prelude, add:

```
prelude:/etc
```

Note that if you precede a directory name with a node name, you must include the name of the directory as it known on the specified machine, not the name under which it is mounted on your machine. When directories are specified in this manner, the exclusion applies to the directory regardless of the name (or names) under which it is mounted. Thus, in the example above, if prelude:/etc was mounted under the name /usr/etc on a different machine, the exclusion would apply when users on that machine accessed /usr/etc.

To create or modify a directory exclusion·list, do the following:

1. cd to the Looking Glass data directory:

    ```
    $ cd /usr/lib/visix/lg
    $ cd `cat default`
    ```

2. Edit the file exclude.lgdb (or create the file if it does not exist).

3. Add, change, or remove entries, following the guidelines given above, and save the file.

4. Restart Looking Glass.

6.3.1 Using the License Server

The Visix License Server controls the number of users and CPUs that can run Looking Glass at one time. As stated previously, two or more license numbers, or "keys," are provided for each license agreement or update:

• *CPU keys* authorize Looking Glass to run on the class of CPU for which it was purchased;

• *user keys* authorize a specific number of users to run Looking Glass at one time.

These keys are stored in the file vls.data in the Looking Glass data directory. This section provides instructions for:

• Starting the License Server

• Adding license keys

- Deleting license keys

- Displaying the currently active license keys

The Visix License Server (vls) program monitors the number of users and CPUs running Looking Glass at any one time. The vls_add and vls_del utilities are provided to maintain the file in which license keys are stored. When Looking Glass is installed or when a license agreement is upgraded to allow more users, a new license key is provided. To increase the number of authorized users, you must add the license key to the License Server data file using the vls_add utility. New license keys do not override old ones; they simply add authorization for an additional number of users.

On standalone workstations, the License Server runs on the same machine as Looking Glass. In networked environments, the License Server can run on any machine in the network. When Looking Glass starts up, it sends a broadcast message over the network to locate the License Server and asks for permission to run. If the number of users running Looking Glass is within the limit set by the license agreement, the License Server grants permission and Looking Glass operates normally. If there are no user slots available, or if the License Server is not running, Looking Glass displays an appropriate message and exits.

Each Looking Glass process sends a periodic message to the server to report that it is still active. If the License Server does not receive a message from a Looking Glass process for a certain amount of time, the user slot is made available for another user. If a Looking Glass process does not receive acknowledgment from the License Server for 5 minutes, a message is displayed telling the user that he or she has a specified amount of time to restart the License Server. If the License Server is not restarted in the time allotted, Looking Glass shuts down. For information about restarting the License Server, refer to section 6.3.1.1, "Starting and Restarting the License Server."

All vls messages are written to the License Server log file, /tmp/vlslog. This text file that can be viewed with a text editor or listed to a display with an operating system utility, such as cat. Messages written to the file should be self-explanatory. If you have a problem understanding a message, report it to your support contact. Only messages that report conditions requiring immediate attention are written to a display.

6.3.1.1 Starting and Restarting the License Server. Although the instructions for starting the License Server assume that you are working from a system prompt, we recommend that you include the License Server startup as part of your normal system startup procedure. To start the License Server:

1. Log in to the system you have chosen as the primary License Server host. Note that only machines that have been explicitly authorized as License Server hosts can be used to run the License Server. Refer to section 6.2, "Authorizing License Server Host Machines," for more information.

2. At the system prompt, type:

   ```
   vls
   ```

   to display Looking Glass messages on your screen and have them written to the License Server log file, /tmp/vlslog, or type:

   ```
   vls -q
   ```

   to suppress the display of messages to your screen. They are still written to the License Server log file.

3. Press ENTER to start the License Server immediately.

To restart the License Server after an abnormal shutdown, follow the instructions above for starting the License Server. You can also add a restart flag (-r) that gives users who were using Looking Glass at the time of the shutdown 2 minutes to restart it before new users are allowed on the system. The restart flag is not recommended for the normal startup procedure because it prevents anyone from using Looking Glass for 2 minutes.

6.3.1.2 Adding License Keys. To add license keys:

1. Log in to the system on which the Visix License Server normally runs. This is usually the system on which you installed Looking Glass.

2. Type:

   ```
   $ vls_add
   ```

3. The program prompts you for a license key. Type in the first of the license keys you want to add and press ENTER.

4. The program prompts for another license key. Repeat the previous step until you have entered all of the license keys you want to add.

5. Verify that the license keys were entered correctly by typing:

    ```
    $ vls -l
    ```

    Check the list of license keys. Make sure that the anticipated number of users and CPUs are able to run Looking Glass.

6. Restart the License Server to enable the new license keys.

If any of the keys were entered incorrectly, delete the incorrect key(s) (refer to section 6.3.1.3, "Deleting License Keys"). Once you have deleted the incorrect key, return to step 2 of this procedure. If there is a discrepancy between the expected number of authorized users and CPUs and the number reported by the license server, report the discrepancy to your support contact.

6.3.1.3 Deleting License Keys. To delete a license key:

1. At the system prompt, type:

    ```
    $ vls_del
    ```

2. The program prompts you for a key to delete. Enter a license key number and press ENTER . Press ENTER again to exit the program.

6.3.1.4 Displaying the Currently Active License Keys. To display the currently active license keys, log in to the system on which the Visix License Server normally runs. Type:

```
$ vls -l
```

to display a list of license keys and the number of users or CPUs authorized.

6.3.2 Using Alternate Fonts

The standard Looking Glass fonts are:

```
-*adobe*helvetica*-medium-r-*-*-12-*iso8859*
-*adobe*helvetica*-bold-r-*-*-12-*iso8859*
```

If these fonts are not available on your system or you prefer to use other fonts, you can specify them directly. To use other fonts with Looking Glass:

1. Determine the names of the available fonts. You can refer to your system documentation, or type:

```
$ xlsfonts
```

to determine which fonts are currently available to you while running INTERACTIVE X11.

2. Select the fonts you want to use with Looking Glass. You can select one font to display normal text and another font to display bold text, or you can use the same font for both. For best results, the fonts should not exceed 12 pixels in height. Although they are not ideal for use with Looking Glass, fonts 8x13 and 8x13bold are almost universally available and are reasonable choices when the Looking Glass default fonts are not available.

3. Start Looking Glass by typing either:

    ```
    lg -fn <font> -fb <boldfont> &
    ```

    or

    ```
    lg -frame -fn <font> -fb <boldfont> &
    ```

    where *<font>* and *<boldfont>* are the names of the fonts you chose.

4. To use these fonts automatically each time you start Looking Glass, add the following lines to your window system resources file (in most cases, this is `.Xdefaults` in your login directory):

    ```
    lg*font:        <font>
    lg*boldfont:    <boldfont>
    ```

    where *<font>* and *<boldfont>* are the names of the fonts you chose.

6.3.3 Motif Window Manager Compatibility

If you are running Looking Glass with the Motif Window Manager (`mwm`) from the Open Software Foundation*, you must clear the `clientAutoPlace`, `positionIsFrame`, and `interactivePlacement` resources. Looking Glass cannot restore its Directory windows to their saved positions unless `mwm` is told not to automatically place all windows by itself. To do this, the `clientAutoPlace`, `positionIsFrame`, and `interactivePlacement` resources must be explicitly cleared in your window system resources file. To clear them, append the following lines to your window system resources file:

```
Mwm*clientAutoPlace:            false
Mwm*positionIsFrame:            false
Mwm*interactivePlacement:       false
```

and restart `mwm`.

6.3.4 Intrinsic File Typing Feature Symbols

Some Looking Glass file typing rules are enabled only if specific feature symbols are set for the system on which Looking Glass is running. For a full description of Looking Glass feature symbols, refer to Chapter 13, "Defining file types," in the *INTERACTIVE Looking Glass User's Guide*. This version of Looking Glass has the following feature symbols intrinsically set: X, IX386, SysV.

6.3.5 Using Remote Displays

X11 allows an application such as Looking Glass to run on one system and display its windows on a display attached to another system on the same network. To use Looking Glass from a remote display on another system:

1. Log in to the system on which the display is located.

2. Ensure that Looking Glass (and other X applications) running on the host system can write to your display, by typing:

    ```
    $ xhost +<lghost>
    ```

    where *<lghost>* is the name of the system running Looking Glass. This allows all users (including you) to open windows on your display.

3. Remotely log in to the system running Looking Glass.

4. Set the environment variable `DISPLAY` to point to the system on which the display is located. If you are using the C shell, type:

    ```
    $ setenv DISPLAY <machinename>:0
    ```

    If you are using the Bourne shell, type:

    ```
    DISPLAY=<machinename>:0; export DISPLAY
    ```

    where *<machinename>* is the name of the workstation or X terminal from which you want to use Looking Glass.

5. Start Looking Glass.

The fonts you use with Looking Glass must be present on the system running the window system server (*<machinename>*). You cannot invoke Looking Glass as you would normally, because its

default fonts were installed on `lghost` (as part of the Looking Glass installation process) but not on <*machinename*>. To avoid the need to specify the font names on the Looking Glass command line, you can install the Looking Glass fonts on the system on which your display is located or specify alternate Looking Glass fonts in your window system resources file.

6.3.6 Using X Terminals

Looking Glass may be used with X terminals supplied by various vendors as long as they have sufficient memory to run large X applications that make extensive use of bitmapped graphics. Generally 2 MB or more of server memory are required. For all X terminals, including NCD X terminals supplied by Network Computing Devices, Inc. and the Visual X Display Station and other models of X terminals supplied by Visual Technology, Inc., the terminal should be installed and configured as described in the vendor's documentation. If you can successfully connect to the system on which Looking Glass is installed and run generic X applications, then you need only install either the Looking Glass default fonts for use by the X terminal or use alternate fonts when running Looking Glass. If you cannot or have not configured your X terminal to download its fonts from a system serving as a font server, then you must specify alternate fonts when invoking Looking Glass. The fonts you use with Looking Glass must be present on the X terminal.

7. STARTING LOOKING GLASS PROFESSIONAL

This section contains instructions for starting the Looking Glass program, `lg`. For a full description of the command line arguments you can specify for Looking Glass, refer to Chapter 1 of the *INTERACTIVE Looking Glass User's Guide*. To start Looking Glass:

- If INTERACTIVE X11 was not running when you installed Looking Glass, start it now.

- If you are running Looking Glass in conjunction with a window manager that provides a frame for windows, such as `mwm`, start Looking Glass by typing:

  ```
  $ lg &
  ```

- If you are running Looking Glass in conjunction with a window manager that does not provide a frame for windows, such as `uwm`, start Looking Glass by typing:

  ```
  $ lg -frame &
  ```

8. ERROR MESSAGES

This section lists some common installation-related error messages and provides explanations of how to resolve them.

```
Cannot initialize File System Server
(vsxloc = 455, errno = 13)
```
> This message is returned when Looking Glass is unable to find the `visix.apps` file, which contains the location of the executable and data directories. After the installation, the `visix.apps` file should be in `/etc`. Check to see that everyone has `read` access to the file.

```
Can't run '.../fss', errno = 2
Cannot initialize File System Server
(vsxloc = 2053, errno = 10)
```
> These messages are returned when the File System Server (`fss`) executable is not present. The Looking Glass data directory (`/usr/lib/visix/lg`) may have been removed or renamed, or the executable may have been removed or renamed. If this is the case, you may need to reinstall Looking Glass. If you performed a custom installation, make sure that the `VISIX_APPS` environment variable is set to the full, absolute path name of the `visix.apps` file.

```
Cannot initialize File System Server
(vsxloc = 2053, errno = 0)
```
> This message is returned when the File System Server (`fss`) program cannot read one of its data files (the Looking Glass file typing rulebase, `LG_rulebase`, for example). Check the permissions on all the files in the Looking Glass data directory. They should have, at minimum, `read` access for everyone. The file `/tmp/fsslog` also contains some diagnostic information from `fss`.

```
Cannot initialize Dialog Manager
(vsxloc = 8053, errno = 2)
```
> The currently running window system is incompatible with this version of Looking Glass.

```
Error opening display.
Cannot initialize Dialog Manager
(vsxerr = 2002, vsxloc = 8053, errno = 2)
```
If you are using INTERACTIVE X11, you must set your **DISPLAY** environment variable to the name of your display. INTERACTIVE X11 applications use the **DISPLAY** environment variable to determine the name of the physical display on which windows are to be displayed. If you do not know the name of the workstation or X terminal on which you are using Looking Glass, ask your system administrator.

```
vls data directory not found
```
This message usually means that the **VISIX_APPS** environment variable is not set to the full, absolute path name of the proper **visix.apps** file.

```
Cannot read vls data file '.../vls.data'
```
This message is returned when the user attempting to start the License Server does not have read permission for **vls.data**, the License Server data file. Change the ownership of **vls.data** to yourself or change its protection mode so that any Looking Glass user can read the file.

```
Network broadcast not received...exiting
```
The machine running the License Server does not have network broadcasting enabled. In general, broadcasting is enabled in the file **/etc/rc.local** or the INTERACTIVE TCP/IP parameters file, using the **ifconfig** utility (refer to your network installation manual or ask your system administrator for assistance).

```
License Server not responding
```
Looking Glass cannot connect to the License Server to register itself. Make sure that the License Server is running and that there is a **vls.hosts** file with the host name of the machine running the License Server in the Looking Glass data directory. If you run both Looking Glass and the License Server on the same host, you do not need the **vls.hosts** file. However, if you do have a **vls.hosts** file, the name of the host machine must be in the file.

9. LOOKING GLASS FILES AND DIRECTORIES

This section lists the files that make up the Looking Glass Professional product with a brief description of each.

- */usr/lib/visix/.../<LanguageDir>*
  A symbolic reference to the directory in which language-dependent Looking Glass data and executable files are stored. The name of this directory is stored in the file `/usr/lib/visix`.

- `/etc`
  The default directory for the Visix applications file, `visix.apps`.

- `/usr/bin/X11`
  The default Looking Glass executable directory.

9.1 Executable Files

The following files are installed into the executable directory (`/usr/bin/X11`) during the Looking Glass installation process:

- `assigndef`
  An executable file used during the installation process to create the applications file, `/etc/visix.apps`. Invoke `assigndef` without arguments to list the current application directories used by Looking Glass.

- `lg`
  The Looking Glass master executable file.

- `lg_pause`
  This program displays the message `[Press Return to continue]` and waits for the ENTER key to be pressed. It is used to allow the output from terminal-oriented commands to be viewed before the terminal window is closed.

- `vice`
  The Visix Icon Editor executable file.

- `vls`
  The Visix License Server.

- `vls_add`
  Visix License Server license key addition utility.

- `vls_del`
  Visix License Server license key deletion utility.

- `vls_where`
  A utility to locate the Visix License Server on the network.

- `build_db`
  Executable file invoked by the `db_build` command to build the `.lgdb` files in each directory.

- `db_build`
  The Looking Glass directory database build script.

- `db_remove`
  The Looking Glass directory database remove script.

9.2 Data Files

The following files are installed into the data directory `/usr/lib/visix/lg/`*<LanguageDir>* during the Looking Glass installation process:

- `LG_rulebase`
  Looking Glass file typing rulebase. This file is loaded by the File System Server and contains a compiled set of rules used to accurately determine the type of files.

- `colors`
  This file contains color definitions used by the Looking Glass Color Preference dialog.

- `fss`
  The Looking Glass File System Server.

- `icons.sym`
  Th icon symbol table. This file contains a hashed index to the icons stored in the `lg_icons.vr` file.

- `lang_specs`
  This file contains localized international settings used by Looking Glass.

- `lang_time`
  This file contains localization information for displaying date and time data.

- `lg_icons.vr`
  A Looking Glass resource file. This file contains binary descriptions of the icons displayed by Looking Glass.

- `system.vr`
- A Looking Glass resource file. This file contains binary descriptions of dialogs displayed by Looking Glass.

- `vice.vr`
  A Looking Glass resource file. This file contains binary descriptions of dialogs displayed by the Visix Icon Editor.

- `vuistrs.vr`
  A Looking Glass resource file. This file contains descriptions of general purpose messages displayed by Looking Glass.

- `lg.hlp`
  The compiled Looking Glass help file.

- `vice.hlp`
  The compiled Icon Editor help file.

The following files are installed into the FTC directory, `/usr/lib/visix/<LanguageDir>/lg/lg_ftc`, during the Looking Glass installation process:

- `Makefile`
  Commands to rebuild the file typing rulebase from source code.

- `class.ftc`
  File typing source code describing the characteristics of general classes of UNIX* System files (such as the class of all text files). This file should not be modified; any local changes should be made to `class.loc.ftc` instead.

- `class.loc.ftc`
  Local file typing source code describing the characteristics of general classes of UNIX System files.

- `data.ftc`
  File typing source code describing the characteristics and icon IDs of UNIX System data files. This file should not be modified; any local changes should be made to `data.loc.ftc` instead.

- `data.loc.ftc`
  Local file typing source code describing the characteristics and icon IDs of UNIX System data files.

- `dev.ftc`
  File typing source code describing the characteristics and icon IDs of UNIX System device files. This file should not be

modified; any local changes should be made to `dev.loc.ftc` instead.

- `dev.loc.ftc`
  Local file typing source code describing the characteristics and icon IDs of UNIX System device files.

- `ftc`
  The File Typing Compiler executable file.

- `ftdefs.h`
  Visix-supplied `include` file for the rulebase source code files. This file should not be modified; any local changes should be made to `ftdefs.loc.h` instead.

- `ftdefs.loc.h`
  Local include file for the rulebase source code files.

- `gen.ftc`
  File typing source code providing broad file type definitions. This file should not be modified; any local changes should be made to `gen.loc.ftc` instead.

- `gen.loc.ftc`
  Local file typing source code providing broad file type definitions.

- `prog.ftc`
  File typing source code describing the characteristics and icon IDs of UNIX System applications and system utilities. This file should not be modified; any local changes should be made to `prog.loc.ftc` instead.

- `prog.loc.ftc`
  Local file typing source code describing the characteristics and icon IDs of UNIX System applications and system utilities.

- `records.sym`
  This file relates the file type names defined in the rulebase source code to the file type IDs stored in the Looking Glass distributed directory database. It should not be edited or deleted.

- `/etc/visix.apps`
  Visix applications file (the default applications file). This file contains references to the executable and data directories used to install Looking Glass and other Visix applications. It is a binary

file and should not be edited; use `assigndef` (with no arguments) to list its contents.

9.3 License Server Data Files

The following files are accessed by the Visix License Server:

- `vls.data`
  This file contains the license numbers for Looking Glass and other Visix applications; it is created by `vls_add` in the data directory `/usr/lib/vls/<LanguageDir>`. Use the `vls -l` command to list its contents.

- `vls.hosts`
  This file contains the host names of all the machines on your network that should be checked when searching for the Visix License Server.

- `/tmp/vlslog`
  This is a log file created by the Visix License Server. Messages appear in this file if the Visix License Server is forced to terminate abnormally.

9.4 File System Server Data Files

The following files and directories are created by the File System Server, either during the installation process (when invoked by the `db_build` command) or while Looking Glass is running:

- `/tmp/fsslog`
  This is a log file created by the File System Server. Messages appear in this file if the File System Server is forced to terminate abnormally.

- `lg_rd_only`
  This directory hierarchy stores file typing information for files stored in read-only file systems; it is created in the data directory `/usr/lib/visix/lg/<LanguageDir>`.

- `.lgdb`
  This file stores file typing information for the items in a directory; it is created in each directory at Looking Glass installation time using the `db_build` command; it is updated by the File System Server as needed.

9.5 User Configuration Files

The following files and directories are created in a user's login directory by Looking Glass the first time it is invoked by that user:

- $HOME/lg
  This directory holds Looking Glass settings and preferences for a Looking Glass user.

- $HOME/lg/lg2_hosts
  This directory holds the user's directory configuration information for each visited directory on the network.

- $HOME/lg/lg2_trees
  This directory holds the user's Tree View configuration (which directories are open and in what mode to display them).

- $HOME/lg/lg2_cmd_hist
  This file stores the user's command history list (commands run from the Command Line dialog).

- $HOME/lg/lg2_colors
  This file stores the user's color preferences.

- $HOME/lg/lg2_config
  This file stores the user's Looking Glass workspace configuration (the size and position of all windows, as well as the contents of the Desktop Panel) at the time the user quits Looking Glass.

- $HOME/lg/lg2_dir_hist
  This file stores the user's directory history list (recently visited directories).

- $HOME/lg/lg2_help_hist
  This file stores the user's help system history list (recently visited help topics).

- $HOME/lg/lg2_layouts
  This directory stores the user's saved workspace layouts.

- $HOME/lg/lg2_pat_hist
  This file stores the user's pattern selection history list.

- $HOME/lg/lg2_pref
  This file stores the user's Looking Glass preferences (other than color preferences).

- `$HOME/lg/lg2_profile`
  This file stores any environment variables saved from within Looking Glass.

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