

LANforge Client Installation

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Overview

The LANforge Client is the graphical interface to the LANforge server. It can also operate as a headless client for purposes of being a JSON gateway to the LANforge Server. The Client is written in Java and should work on any platform that supports Java, including Windows, MAC and Linux. We have specific instructions and support for Windows, MAC and Linux. A general section at the end of this document will describe installations on other platforms.

1. Choosing a Machine

The suggested **minimum** client platform specification is:

- 1 Ghz processor
- 512 MB RAM
- 200MB Free Disk Space
- Monitor/Video Card capable of 1024 x 960 resolution or higher.

For **optimal** performance, we recommend at least:

- 2 Ghz+ processor
- 1 GB RAM
- 500MB Free Disk Space
- Monitor/Video Card capable of 1200 x 1064 resolution or higher.

2. Download LANforge Software

Navigate your web browser to the Candela Technologies Downloads page.

Select the LANforge product you wish to install and save it to your /home/lanforge directory (Linux) or desktop (Windows). You may need to edit your web browser preferences to save downloads to this location.

3. Installing LANforge Client on Linux

The LANforge Client has been extensively tested on Fedora Linux. However, it should work on any version of Linux that supports a recent Java Runtime Environment (JRE).

Choose a user to own the LANforge Client. Any non-root user should work, but for this document it is assumed that your user is called 'lanforge.' If you need to create a new user (on Fedora, for example) you can use these commands (as root):
 # adduser lanforge

passwd lanforge (Choose a password for the lanforge user)

- Log in as user lanforge:
 # su lanforge
- Choose a directory in which to install the LANforge Client. We suggest \$HOME/lanforge. If this directory does not yet exist, you can add it with this command (as user lanforge):
 \$ mkdir \$HOME/lanforge
- Download the LANforge Client package to the newly created \$HOME/lanforge directory. See Download LANforge Software above.
 NOTE: For CD installation, use this procedure as root:
 # mount /mnt/cdrom (This step may not be necessary)
 # cp /mnt/cdrom/LANforgeGUI_*_Linux.tar.bz2 \$HOME/lanforge
- Extract the LANforge Client package as lanforge. For example:

```
$ cd $HOME/lanforge
```

\$ tar -xvjf LANforgeGUI_*_Linux.tar.bz2 (Uncompresses the distribution)

• For release 5.0.9 and onwards, install the LANforge Client Desktop icons as the root user. For example:

```
# su -
# cd $HOME/lanforge/LANforgeGUI_X.X.X (Where X.X.X is the release number of the
Client)
# ./lfgui_install.bash
```

- Start the LANforge Client as lanforge with the commands:
 \$ cd \$HOME/lanforge/LANforgeGUI X.X.X
 - t (lfaliant back (that the Olivet)
 - \$./lfclient.bash (Starts the Client)
- Click through End User License Agreements for LANforge-Server and LANforge Client by clicking 'OK'.

• Optional configurations:

NOTE: As of release 5.1.2, these options can be configured from within the LANforge Client in the 'Control->Preferences' pulldown. menu.

The LANforge Client supports several command-line options that will help you customize its look-and-feel to your particular needs. These options can be added to the lfclient.bash script, or passed to the lfclient.bash script when invoking it (Ex: ./lfclient.bash - simpleice). The options are:

-nofire

Hides Traffic Generation (FIRE) related screens. This option is good for LANforge-ICE (only) installations.

-noice

Hides WanLink (ICE) related screens. This is good for LANforge-FIRE (only) installations.

-nocd

Hides WanLink (ICE) Collision-Domains.

-simpleice

Displays only WanLink (ICE) related screens (similar to -nofire)

-nofe

Hides File Traffic Generation (FIRE) related screens.

-novlc

Hides streaming media related screens.

-nol4

Hides Layer 4-7 (FTP, HTTP, VoIP) Traffic Generation (FIRE) related screens.

-nogen

Hides Generic Traffic Generation (FIRE) related screens.

-noarm

Hides Armageddon related screens.

-nospans

Hides T1 Serial Spans (FIRE) related screens.

-noppp

Hides PPP-Links (FIRE) related screens.

-nocli

Hides the Messages tab.

-notm

Hides the Test Manager tab.

-nocomma

Commas in groups of displayed numbers will not be displayed.

The LANforge Client should pop up shortly after this if everything worked correctly!

4. Installing LANforge Client on Microsoft Windows

The LANforge Client has been tested on XP, Vista and Windows 7. It should also work on most other Windows versions.

- Download the LANforge Client installer to your desktop. See Download LANforge Software above.
- Execute the LANforge Client installer

This will create desktop and run-menu shortcuts and provide the ability to configure the features displayed by the Client.

- Start the LANforge Client by double-clicking the LANforge Client (anvil) desktop icon.
 NOTE: Windows Vista users must run the LANforge Client as administrator to function properly. The shortcut properties should be modified to run as administrator: right-click on the shortcut icon, select Properties and click the Advanced button. Select 'Run as administrator' then click OK on both the Advanced Properties and LANforge Client Properties windows. After double-clicking the LANforge Client (anvil) desktop icon, click 'Continue' in the User Account Control popup.
- **Click through End User License Agreements** for LANforge-Server and LANforge Client by clicking 'OK'.
- Optional Package: cygwin X-windows

If you are managing Linux data generators with a Windows Client, you must have an Xwindows server installed on your system in order for the 'Sniff Packets' option on the **Port Mgr** tab to work. Cygwin X-windows is a free implementation that has been tested with LANforge and Wireshark.

1 NOTE: Cygwin versions after 1.17 require using the **-listen tcp** option.

See a detailed example here: Display Wireshark Using Cygwin

Read the install instructions for cygwin. When configuring which packages to install, choose the xorg-x11-base package (at a minimum). When done installing, double-click the Cygwin icon that was created on your desktop.

In the console that pops up, type:



 \$ startxwinlist Cygwin versions after 1.17 	en tcp
\$ xhost +] To allow all X11 connections: Connect. We'll use 192.168.1.101 as the example IP add	low only some addresses to ress of the LANforge system.
i NOTE: The xhost + command allows any system to with the X-windows protocol. To let only the LANforg \$ xhost 192.168.1.101 connect:	connect to yours ge system

Then click the **Sniff Packets** button on the **Port Mgr** tab of the LANforge Client. The **DISPLAY** variable should be **192.168.1.101:0.0** (It should default to the right value in most cases.) If all is working, the Wireshark packet sniffer should pop up within a few seconds.

5. Installing LANforge Client on Mac OS X

We provide a DMG and a TAR archive of the LANforge client. We expect most installations will be done using the DMG file.

- 1. Double click the .dmz.xz file to decompress it.
- 2. You will see the uncompressed .dmz file in your Downloads folder presently.
- 3. You may delete the .dmz.xy
- 4. Double click the .dmg installer.
- 5. A window with the LANforge GUI icon will appear.
- 6. Drag the LANforge GUI icon do your **Applications** folder.
- 7. Use Apple-E to eject the DMG folder window.
- 8. You may delete the .dmz file

We do not bundle a JRE with the DMG or the TAR archive because Apple will deactivate old Java installs on Mac OS, hoping you will use recent and secure Java releases.

You can download Java from the Oracle website. After you install it, you will want to follow these instructions to set the JAVA HOME environment variable for your terminal:

1. Open Terminal



These techniques are discussed more on Stack Overflow and Mkyong.com.

6. Installing on Other Java-Enabled Platforms

Generally, you will need to obtain a Java run-time environment (JRE), version 1.6 (aka Java 6) or greater (Older versions might work but are not officially supported.)

• **Download the 'NO JRE' LANforge Client distribution** to the \$HOME/lanforge directory. See Download LANforge Software above.



• Unzip the LANforge Client as user lanforge:

\$ cd \$HOME/lanforge
\$ unzip LANforgeGUI_*_NO_JRE.zip #

- Set (or unset) your environment variable (like CLASSPATH, etc.,) as per the JRE installation instructions, and add all of the *.jar files from the LANforgeGUI directory to your CLASSPATH.
- For example: \$ CLASSPATH="./lfclient.jar:./gnujaxp.jar:./jfreechart-1.0.13-experimental.jar:./junit.jar" \$ CLASSPATH="\$CLASSPATH:./iText-2.1.5.jar:./jfreechart-1.0.13.jar:./jcommon-1.0.16.jar" -\$ CLASSPATH="\$CLASSPATH:./jfreechart-1.0.13-swt.jar:./swtgraphics2d.jar:./" -\$ export CLASSPATH -\$ export CLASSPATH -\$ export CLASSPATH -\$ java -cp \$CLASSPATH candela.lanforge.lfclient -\$ java -cp \$CLASSPATH candela.lanforge.lfclient -\$ classpath -\$ classpath -\$ java -cp \$CLASSPATH -\$ classpath -\$ classpath -\$ classpath -\$ java -cp \$CLASSPATH -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ cp \$ classpath -\$ classpath -\$ classpath -\$ java -\$ cp \$ classpath -\$ classpath -\$ java -\$ cp \$ classpath -\$ classpath -\$ java -\$ cp \$ classpath -\$ java -\$ cp \$ classpath -\$ classpath -\$ java -\$ cp \$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ classpath -\$ classpath -\$ java -\$ classpath -\$ clas

7. Upgrading LANforge Client on Linux

To upgrade your LANforge Client from an existing Linux installation, follow these instructions:

 Download the new LANforge Client package to the \$HOME/lanforge directory. See Download LANforae Software above. NOTE: For CD installation, use this procedure as root: \$ sudo mount /mnt/cdrom + (This step may not be necessary) \$ sudo cp /mnt/cdrom/LANforgeGUI * Linux.tar.bz2 \$HOME/lanforge + • Remove the previous installation as user lanforge: \$ cd \$HOME/lanforge + \$ rm -rf LANforgeGUI X.X.X (Where X.X.X is the release number of the version you are removing) • **Remove the symbolic link**: (if upgrading from a release prior to 5.0.9) \$ rm -rf LANforgeGUI ب • **Remove Desktop Icons**: (if upgrading from a release prior to 5.0.9) \$ \$ rm -rf Desktop/LANforge*.desktop • Extract the LANforge Client package as lanforge. For example: \$ cd \$HOME/lanforge 4 -\$ tar -xvjf LANforgeGUI X.X.X Linux.tar.bz2 (Uncompresses the distribution) • Install the LANforge Client Desktop icons as root (release 5.0.9 and later). For example: \$ sudo cd \$HOME/lanforge/LANforgeGUI X.X.X +

(Where X.X.X is the release number of the Client)
\$ sudo ./lfgui_install.bash .
Start the new LANforge Client:
\$ cd \$HOME/lanforge/LANforgeGUI_X.X.X .
\$./lfclient.bash .
(Starts the Client)

• Click through End User License Agreements for LANforge-Server and LANforge Client by clicking 'OK'.

8. Upgrading LANforge Client on Microsoft Windows

To upgrade your LANforge Client from an existing Windows installation, follow these instructions:

- **Download the new LANforge Client installer** to your desktop. See Download LANforge Software above.
- Uninstall the previous LANforge Client:
 - From the Start menu, select Control Panel and Add or Remove Programs (Vista: click the Uninstall a program link).
 - Select the current version of the LANforge Client then click the **Remove** button (Vista: click the **Uninstall/Change** button on the top panel then click **Continue** in the pop-up window).
- Install the new LANforge Client:
 - Double-click the LANforge-GUI-X.X.X-Installer shortcut on your desktop (where X.X.X is the release number of the version you are installing). NOTE: Windows Vista users must select Allow in the User Account Control popup.
 - Click I Agree to the GNU General Public License, click through the setup options, and click Install.
 - Select your desired configuration: LANforge-FIRE, LANforge-ICE, or Both, then click through to OK
- Start the LANforge Client by double-clicking the LANforge Client (anvil) desktop icon.

1 NOTE: Windows Vista users must run the LANforge Client as administrator to function properly.

The shortcut properties can be modified to run as Administrator:

- 1. right-click on the shortcut icon, select Properties and click the **Advanced** button.
- 2. Select **Run as administrator** then click **OK** on both the Advanced Properties and LANforge Client Properties windows.
- 3. After double-clicking the LANforge Client (anvil) desktop icon, click **Continue** in the User Account Control popup.
- Click through End User License Agreements for LANforge-Server and LANforge Client by clicking 'OK'.

9. Fixing Windows HiDPI Scaling

Windows 8.1–10 introduce display scaling for high-DPI screens that can squeeze your Java window into the size of a postage stamp on machines the the Surface Pro. Follow these steps to disable that feature for the LANforge Client. Close the LANforge Client if you see this happen:



1. Right-click on your LANforge Client desktop icon and click Open file location



2. You are going to navigate into the jre/bin directory and look for the java.exe program.



3. Click on Properties

Image: Image	Application Tools View Manage
Quick access Quick access Desktop Downloads Documents Pictures Nusic Videos Open Run as administrator Troubleshoot compatibility Scan with Windows Defender	Name Client Client C
Restore previous versions Send to Cut Copy Create shortcut	ite.dll amer-lite.dll 5.dll ler.dll iment.dll c.dll s11.dll
Delete Rename Properties	nt.dll vitch.exe dll vitch.exe dll java_crw_demo.dll

4. Check Disabled display scaling on high DPI settings

Security	Details	Previous Versions
General	Compatibility	Digital Signatures
this program isn't v y running the comp Run compatibility	working correctly on this v patibility troubleshooter. r troubleshooter	version of Windows,
ow do I choose co	mpatibility settings manua	ally?
Compatibility mode		
Run this progra	am in compatibility mode f	for:
Windows 8		
Settings		
Reduced color	mode	
8-bit (256) color		
Run in 640 x 4	80 screen resolution	
Disable display	v scaling on high DPI setti	ings
Run this proor	am as an administrator	
	an for all upon	

- 5. Click **OK** and close the Explorer windows.
- 6. You can now re-start the LANforge Client using the desktop icon. The text in the title-bar will be strangely large, but the text inside the Java application should appear normal.

🔮 LANfor	LANforge Cor	nection N	lanagemer	nt –		×]
Control Reporting							
		Server Name/IP:	ocalhost:4002 Loc	al Machine Address		-	ELP
Layer-4 Generic Status Lave	Oendelo	Clear	Connect	Disconnect	Discover	Cancel	0
Licen	Click Discover to find LANforge Managers						
License expiration u							
Support expiration un							
<u> </u>							
Not connected.							

Other HiDPI References

There is another method of doing this using the Windows Run Programs troubleshooter. This takes about 25 steps to do about the same thing.

There is a java.exe option -Dsun.java2d.dpiaware=false that works with some combinations of windows 7, 8 and versions of Java. This technique is supposed to disable the Swing library's DPI detection and let Windows do the job. This does not appear to work in Windows 10.

10. Building the LANforge Client on Linux

You can build and customize the LANforge Client by downloading and the source code and building it on your workstation. (See the **Optional Packages** section of the **Downloads page**.). This example will start with downloading the lfgui-src-5.3.9.tar.gz file to your ~/Downloads folder, and building in /var/tmp.

These instructions apply to releases 5.3.6 and newer.

1. Create a ~/build directory:

\$ mkdir ~/build

2. Expand the archive and run the environment setup script gui_build_env.sh. That script will download any necessary packages and make symlinks as necessary. Feel free to edit that script, dependency packages can change over time. The build is going to want you

```
$ cd /var/tmp
    $ tar xf ~/Downloads/lfgui-src-5.3.9.tar.gz
    ...
    $ cd LANforgeGUI_5.3.9_src
    $ ./gui_build_env.sh
```

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
ant is already the newest version (1.9.6-lubuntul).
groovy is already the newest version (2.0.0~beta2+isreally1.8.6-4ubuntu1).
lbzip2 is already the newest version (2.5-1).
libcommons-lang3-java is already the newest version (3.4-1).
libmiglayout-java is already the newest version (4.2-1).
maven is already the newest version (3.3.9-3).
maven-ant-helper is already the newest version (7.11).
git is already the newest version (1:2.7.4-Oubuntu1.2).
openjdk-8-jdk is already the newest version (8u131-b11-2ubuntu1.16.04.3).
wget is already the newest version (1.17.1-1ubuntu1.2).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ln: failed to create symbolic link '/home/jreynolds/build/jar/commons-lang3.ja
ln: failed to create symbolic link '/home/jreynolds/build/jar/miglayout-core.j
ln: failed to create symbolic link '/home/jreynolds/build/jar/miglayout-swing.
# _____ _____ _____ _____ ____ #
# Your environment is configured to run a LANforge Client build.
  Your build will not be identical to the Candela linux-64 Client
# but it will be basically similar.
# To continue, run:
     cd client; make distrib 3pdev
```

3. Continue into the client subdirectory and run the build command:

```
$ cd client
$ make distrib_3pdev
```

There will be a lot of output, and a successful build will end with a tar command:



4. The result will be in

~/public html/lanforge/downloads/LANforgeGUI 5.3.9 Linux64 3pdev.tbz2.

5. You can install the Client by extracting the archive and using the lfclient.bash script inside:

```
$ tar xf LANforgeGUI_5.3.9_Linux64_3pdev.tbz2
$ cd LANforgeGUI_5.3.9
$ ./lfclient.bash
```

- 6. To clean the build environment:
 - \$ rm -rf ~/build/*
 - \$ rm -f ~/public html/lanforge/downloads/*
 - \$ cd ~/LANforgeGUI_5.3.9_src/client; make clean

Troubleshooting Guide

Q. I'm using Windows Vista and LANforge Client won't launch from the desktop icon.

A. Windows Vista users must run the LANforge Client as administrator to function properly. The shortcut properties should be modified to run as administrator: right-click on the shortcut icon, select Properties and click the Advanced button. Select 'Run as administrator' then click OK on both the Advanced Properties and LANforge Client Properties windows.

Q. I double click the icon and nothing happens

There is probably a problem with the path to your Java environment. Please follow the Diagnose Problems with GUI cookbook to see errors produced by the lfclient.bat script.

Q. My client is disconnecting

You might be experiencing a driver error on your LANforge machine. Please review the Trouble-Shootiung and Debugging LANforge guide for advice on how to collect data diagnostic data.

Email Candela Technologies at: support@candelatech.com if you have any questions.

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