

```
<?php require_once "lib.php"; title("LANforge Client Install Guide");
require_once("javascript_hdr.php"); ?>
</head>
<body>
<?php require_once("header.php"); ?>
<?php require_once("menu.php"); ?>

<div id="contentDiv">

<h1 class="big_heading">LANforge Client Installation</h1>

<P>
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```

```
<a name="overview"></a>
<h2 class="big_heading">Overview</h2>
```

```
<p>
The LANforge Client is the graphical interface to the LANforge server.
It can also operate as a <em>headless</em> 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.
</p>
```

```
<ol class="med">
<li>
<a name="machine"><h3 class="big_heading">Choosing a Machine</h3></a>

<P>
The suggested <b><i>minimum</i></b> client platform specification is:
<P>
<ul class="yellow">
<li>1 Ghz processor</li>
<li>512 MB RAM</li>
<li>200MB Free Disk Space</li>
<li>Monitor/Video Card capable of 1024 x 960 resolution or higher.</li>
</ul>
<P>
For <b>optimal</b> performance, we recommend at least:
<P>
<ul class="yellow">
<li>2 Ghz+ processor</li>
<li>1 GB RAM</li>
<li>500MB Free Disk Space</li>
<li>Monitor/Video Card capable of 1200 x 1064 resolution or higher.</li>
</ul>

</li>
```

```
<P>
<li>
<a name="download"><h3 class="big_heading">Download LANforge Software</h3></a>
<P>
Navigate your web browser to the Candela Technologies
<a href=http://www.candelatech.com/downloads.php>Downloads</a> page. You will
need a Candela Technologies user account to access the downloads page. If you do not have one,
you can create one on the <a href=http://www.candelatech.com/cgi/cr_login.cgi>Accounts</a>
page.
<P>
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.
</li>
```

```

<?php /*
  <P>
  <a name="i18n"></a>
  <br>
  <span class="big_heading">

<li>
  Selecting a Language: Internationalization</span>
  <P>
  <b>The LANforge-GUI has not been fully internationalized</b>. If your preferred language
  is not English, you may edit the start script for your platform and pass in the command line
  arguments to choose the correct Properties file.
  <ul class="yellow">
  <li>For instance, if you want the GUI to be useful to German speakers, use the command
    line arguments as lanforge:<br>
    <tt>$ lfclient.bash -lang DE -country de</tt></li>
  <P>
  <li>To see a full list of options, run the GUI with the --help argument:<br>
    <tt>$ lfclient.bash --help</tt></li>
  </ul>
</li>
*/ ?>
  <P>
  <li>
  <a name="linux"><h3 class="big_heading">Installing LANforge Client on Linux</h3></a>
  <P>
  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).
  <P>
  <ul class="yellow">
  <li><b>Choose a user</b> 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):
    <br>
    <tt># adduser lanforge<br>
    # passwd lanforge</tt> (Choose a password for the lanforge user)</li>
  <P>
  <li><b>Log in</b> as user lanforge:<br>
    <tt># su - lanforge</tt></li>
  <P>
  <li><b>Choose a directory</b> in which to install the LANforge Client. We suggest $HOME/lanforge.
    If this directory does not yet exist, you can add it
    with this command (as user lanforge):<br>
    <tt>$ mkdir $HOME/lanforge</tt></li>
  <P>
  <li><b>Download the LANforge Client package</b> to the newly created $HOME/lanforge
    directory. See <a href="#download">Download LANforge Software</a> above.<br>
    <b>NOTE</b>: For CD installation, use this procedure as root:<br>
    <tt># mount /mnt/cdrom</tt> (This step may not be necessary)<br>
    <tt># cp /mnt/cdrom/LANforgeGUI_*_Linux.tar.bz2 $HOME/lanforge<br></tt></li>
  <P>
  <li><b>Extract the LANforge Client package</b> as lanforge. For example:<br>
    <tt>$ cd $HOME/lanforge<br>
    $ tar -xvzf LANforgeGUI_*_Linux.tar.bz2</tt> (Uncompresses the distribution)</li>
  <P>
  <li><b>For release 5.0.9 and onwards, install the LANforge Client Desktop icons</b> as the <b>root</b> user.<br>
    For example:<br>
    <tt># su - <br></tt>
    <tt># cd $HOME/lanforge/LANforgeGUI_X.X.X</tt> (Where X.X.X is the release number of the Client)<br></tt>
    <tt># ./lfgui_install.bash<br></tt>
  </li>
  <P>
  <li><b>Start the LANforge Client</b> as lanforge with the commands:<br>
    <tt>$ cd $HOME/lanforge/LANforgeGUI_X.X.X<br>
    $ ./lfclient.bash</tt> (Starts the Client)</li>
  <P>
  <li><b>Click through End User License Agreements</b> for LANforge-Server and LANforge Client
  by clicking 'OK'.</li>
  <P>
  <li><b>Optional configurations:</b><br>
  <b>NOTE: As of release 5.1.2, these options can be configured from within the
  LANforge Client in the 'Control->Preferences' pulldown. menu.</b><br>
  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: `./lflclient.bash -simpleice`). The options are:

- <P>
- <dl>
 - <dt>-nofire</dt>
 - <dd>Hides Traffic Generation (FIRE) related screens. This option is good for LANforge-ICE (only) installations.</dd>
 - <dt>-noice</dt>
 - <dd>Hides WanLink (ICE) related screens. This is good for LANforge-FIRE (only) installations.</dd>
 - <dt>-nocd</dt>
 - <dd>Hides WanLink (ICE) Collision-Domains.</dd>
 - <dt>-simpleice</dt>
 - <dd>Displays only WanLink (ICE) related screens (similar to -nofire) </dd>
 - <dt>-nofe</dt>
 - <dd>Hides File Traffic Generation (FIRE) related screens.</dd>
 - <dt>-novlc</dt>
 - <dd>Hides streaming media related screens.</dd>
 - <dt>-no14</dt>
 - <dd>Hides Layer 4-7 (FTP, HTTP, VoIP) Traffic Generation (FIRE) related screens.</dd>
 - <dt>-nogen</dt>
 - <dd>Hides Generic Traffic Generation (FIRE) related screens.</dd>
 - <dt>-noarm</dt>
 - <dd>Hides Armageddon related screens.</dd>
 - <dt>-nospan</dt>
 - <dd>Hides T1 Serial Spans (FIRE) related screens.</dd>
 - <dt>-noppp</dt>
 - <dd>Hides PPP-Links (FIRE) related screens.</dd>
 - <dt>-nocli</dt>
 - <dd>Hides the Messages tab.</dd>
 - <dt>-notm</dt>
 - <dd>Hides the Test Manager tab.</dd>
 - <dt>-nocomma</dt>
 - <dd>Commas in groups of displayed numbers will not be displayed.</dd>

</dl>

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

<P>

<h3 class="big_heading">Installing LANforge Client on Microsoft Windows</h3>

<P>

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

<P>

<ul class="yellow">

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

<P>

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.

<P>

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.

<P>

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

<P>

Optional Package: cygwin X-windows

If you are managing Linux data generators with a Windows Client, you must have an X-windows 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.

<p class='tip'>NOTE: Cygwin versions after 1.17 require using the <tt>-listen tcp</tt> option.</p>

<p>See a detailed example here:

Display Wireshark

Using Cygwin

</p>

<P>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.

<p>In the console that pops up, type:</p>

Cygwin versions before 1.17 <tt class='cmd'>startx</tt>

Cygwin versions after 1.17 <tt class='cmd'>startxwin -- -listen tcp</tt>

<P>To allow all X11 connections: <tt class='cmd'>xhost +</tt>. You can allow only some addresses to connect. We'll use <tt>192.168.1.101</tt> as the example IP address of the LANforge system.</p>

<div class="tip">NOTE: The <tt>xhost +</tt> command allows any system to connect to yours with the X-windows protocol.

To let only the LANforge system connect: <tt class='cmd'>xhost 192.168.1.101</tt>

</div>

Then click the Sniff Packets button on the Port Mgr tab of the LANforge Client.

The <tt>DISPLAY</tt> variable should be <tt>192.168.1.101:0.0</tt>

(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.

<h3 id="macos" class="big_heading">Installing on Mac OS X</h3>

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

Double click the <tt>.dmz.xz</tt> file to decompress it.

You will see the uncompressed .dmz file in your

Downloads folder presently.

You may delete the .dmz.xy

Double click the <tt>.dmg</tt> installer.

A window with the LANforge GUI icon will appear.

Drag the LANforge GUI icon to your Applications folder.

Use <key>Apple-E</key> to eject the DMG folder window.

You may delete the .dmz file

<p class='tip'>We do not bundle a JRE with the DMG or the TAR archive because Apple will de-activate old

Java installs on Mac OS, hoping you will use recent and secure Java releases.</p>

<p>You can download Java from the Oracle website.

After you install it, you will want to follow these instructions to set the <tt>JAVA_HOME</tt>

environment variable for your terminal:</p>

Open Terminal

Edit your <tt>.bash_profile</tt> to include your <tt>.bashrc</tt> file:

<tt class='cmd'>vim .bash_profile</tt> :

<pre>source .bashrc</pre>

Edit your <tt>.bashrc</tt> to export the <tt>JAVA_HOME</tt> environment variable:

<tt class='cmd'>vim .bashrc</tt>:

<pre>export JAVA_HOME=\$(/usr/libexec/java_home)</pre>

Save the files and close the terminal.

Verify the settings by opening a new terminal and typing:

<tt class='cmd'>echo \$JAVA_HOME</tt>

You should see something like:</br>

<tt>/Library/Java/JavaVirtualMachines/1.8.144.jdk/Contents/Home</tt>

<p>These techniques are discussed more on

Stack Overflow and

[Mkyong.com](https://www.mkyong.com/java/how-to-set-java-home-environment-variable-on-mac-os-x/).

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.

- NOTE:** For CD installation, use this procedure as root:

```
sudo mount /mnt/cdrom
```

 (This step may not be necessary)

```
sudo cp /mnt/cdrom/LANforgeGUI_*_NO_JRE.zip $HOME/lanforge
```

- 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
```

- Start the LANforge Client with a command similar to:

```
java -cp $CLASSPATH candela.lanforge.lfclient
```

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 LANforge 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
```

- 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
tar -xvf 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'.

<p>

Check **Disabled display scaling on high DPI settings**

</p>

Click **OK** and close the Explorer windows.

<p>

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.

</p>

<h4>Other HiDPI References</h4>

<p>

There is another method of doing this using the Windows

[Run Programs troubleshooter](https://www.microsoft.com/surface/en-us/support/apps-and-windows-store/app-display-issues?os=windows-10&undefined#S2). This takes about 25 steps to do about the same thing.

</p>

<p>

There is a `java.exe` option `-Dsun.java2d.dpiaware=false` that works with

[some combinations of windows 7, 8 and versions of Java](http://stackoverflow.com/questions/23651486/netbeans-ide-scaling-on-windows-8).

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.

</p>

<h3 class='big_heading'>Building the LANforge Client on Linux</h3>

<p>

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](http://www.candelatech.com/downloads.php#releases) 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`.

</p>

<p class='notetext'>

These instructions apply to releases 5.3.6 and newer.

</p>

Create a `~/build` directory:

```
<pre>$ mkdir ~/build</pre>
```


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

```
<pre>$ cd /var/tmp
```

```
$ tar xf ~/Downloads/lfgui-src-5.3.9.tar.gz
```

```
...
```

```
$ cd LANforgeGUI_5.3.9_src
```

```
$ ./gui_build_env.sh
```

```
</pre>
```

```
<pre class='code'>
```

```
Reading package lists... Done
```

```
Building dependency tree
```

```
Reading state information... Done
```

```
ant is already the newest version (1.9.6-lubuntu1).
```

```
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 (1:2.7.4-0ubuntu1.2).
```

```
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.jar': File exists
ln: failed to create symbolic link '/home/jreynolds/build/jar/miglayout-core.jar': File exists
ln: failed to create symbolic link '/home/jreynolds/build/jar/miglayout-swing.jar': File exists
# ----- #
# 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
# ----- #</pre>
</li>
<li>Continue into the <tt>client</tt> subdirectory and run the build command:
  <pre>$ cd client
$ make distrib_3pdev</pre>
There will be a lot of output, and a successful build will end with a tar command:
  <pre class='code'> ...lots of output...
tar -I lbzip2 -cf <b>/home/lanforge/public_html/lanforge/downloads/LANforgeGUI_5.3.9_Linux64_3pdev.tbz2</b> LANforgeGUI_5.3.9</pre>
</li>
<li>
  The result will be in <tt>~/public_html/lanforge/downloads/LANforgeGUI_5.3.9_Linux64_3pdev.tbz2</tt>.
</li>
<li>
  You can install the Client by extracting the archive and using the <tt>lfclient.bash</tt> script inside:
  <pre>$ tar xf LANforgeGUI_5.3.9_Linux64_3pdev.tbz2
$ cd LANforgeGUI_5.3.9
$ ./lfclient.bash</pre>
</li>
<li>
  To clean the build environment:
  <ul>
    <li><tt>$ rm -rf ~/build/*</tt></li>
    <li><tt>$ rm -f ~/public_html/lanforge/downloads/*</tt></li>
    <li><tt>$ cd ~/LANforgeGUI_5.3.9_src/client; make clean</tt></li>
  </ul>
</li>
</ol>
</li>
<a name="ts"><h3 class="big_heading">Troubleshooting Guide</h3></a>
<dl>
  <dt><b>Q. I'm using Windows Vista and LANforge Client won't launch from the desktop icon.</b></dt>
  <dd>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.</dd>
  <dt><b>Q. I double click the icon and nothing happens</b></dt>
  <dd>There is probably a problem with the path to your Java environment. Please follow the <a href='/cookbook.php?vol=misc&book=Diagnose+GUI+Problems+on+Windows'><i>Diagnose Problems with GUI</i> cookbook</a> to see errors produced by the <tt>lfclient.bat</tt> script.</dd>
  <dt><b>Q. My client is disconnecting</b></dt>
  <dd>You might be experiencing a driver error on your LANforge machine. Please review the <a href='/debugging-lanforge.php'><i>Trouble-Shooting and Debugging LANforge</i> guide</a> for advice on how to collect data diagnostic data.</dd>
</dl>
</li>
</ol>
<h4 class="med_heading">
Email Candela Technologies at: <a href="mailto:support@candelatech.com">support@candelatech.com</a>
if you have any questions.</h4>
<?php require_once("footer.php"); ?>
</div>
</BODY>
```