

## Diagnose Problems with GUI on Windows

**Goal:** Learn how to diagnose problems running LANforge client on Windows.

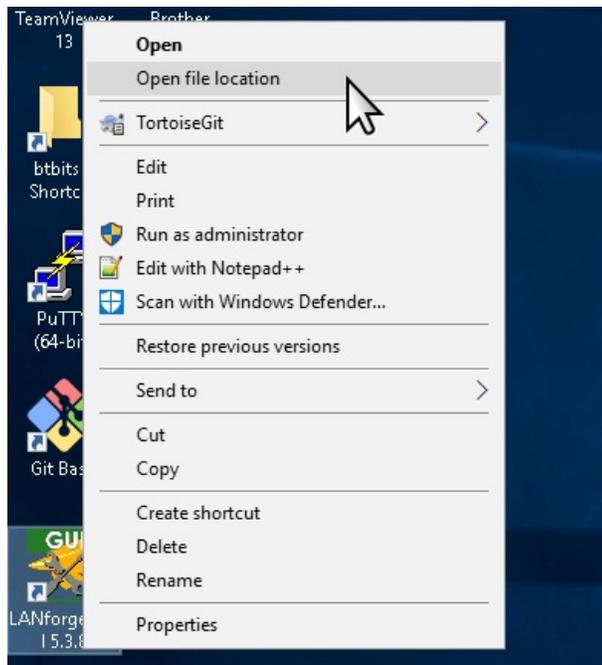
The LANforge client (GUI) can encounter variety of difficulties depending on the amount of RAM and version of Java running on your desktop. Read this guide to learn steps to take to collect error messages and how to fix out of memory problems.

i The LANforge client can be both the GUI running interactively, or in headless HTTP mode.

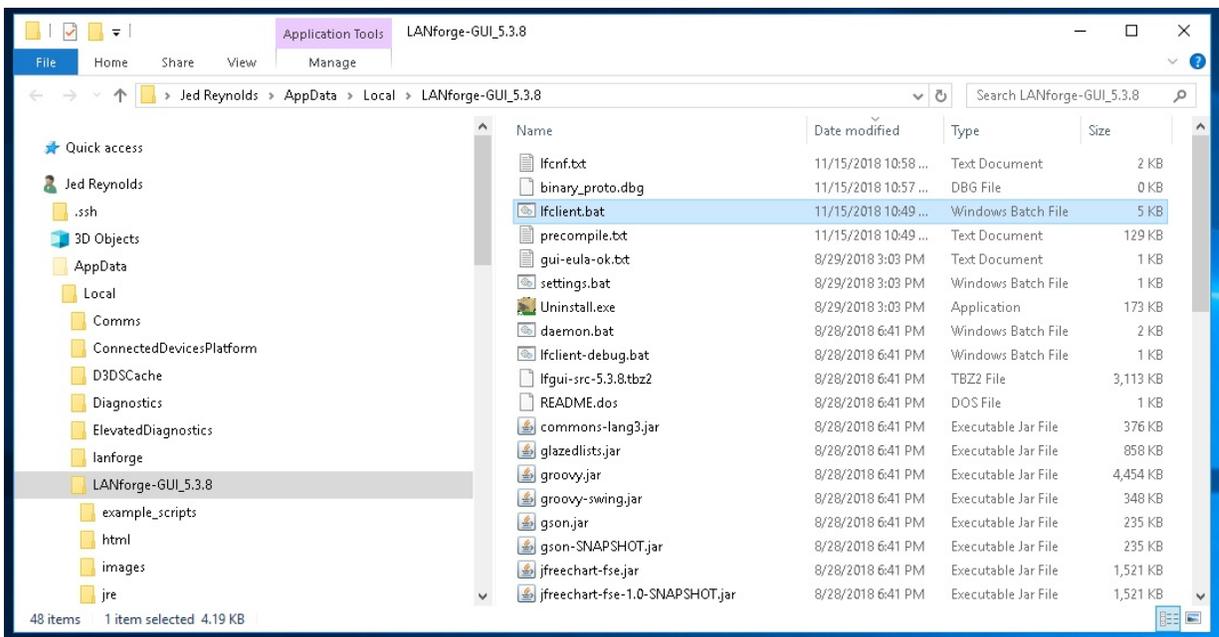


### 1. Run the client from a CMD window

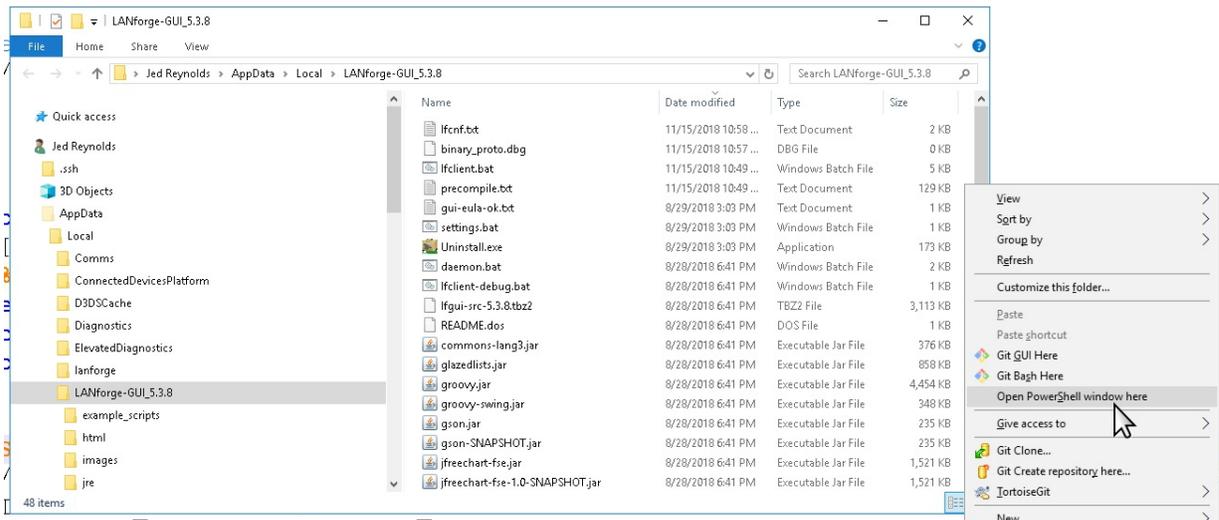
2. Right click on LANforge GUI icon and select Open File Location



3. You will see the folder where the LANforge client is installed



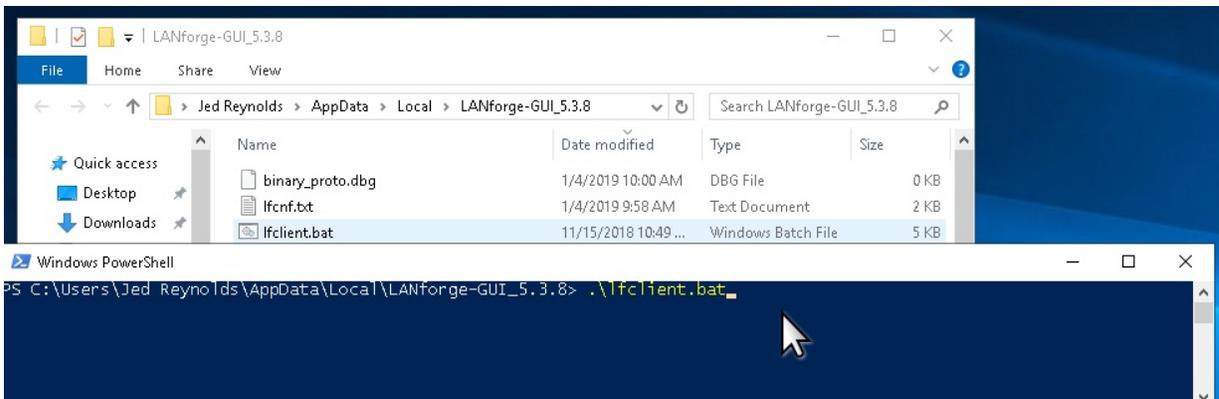
- Right click on folder area to right of files, and select Run CMD here or Run PowerShell here. This might require that you Shift-Click on anything that might be selected in the directory to un-select it.



- You will see a terminal window open



- Start the client using the command `.\lfclient.bat` **ENTER**



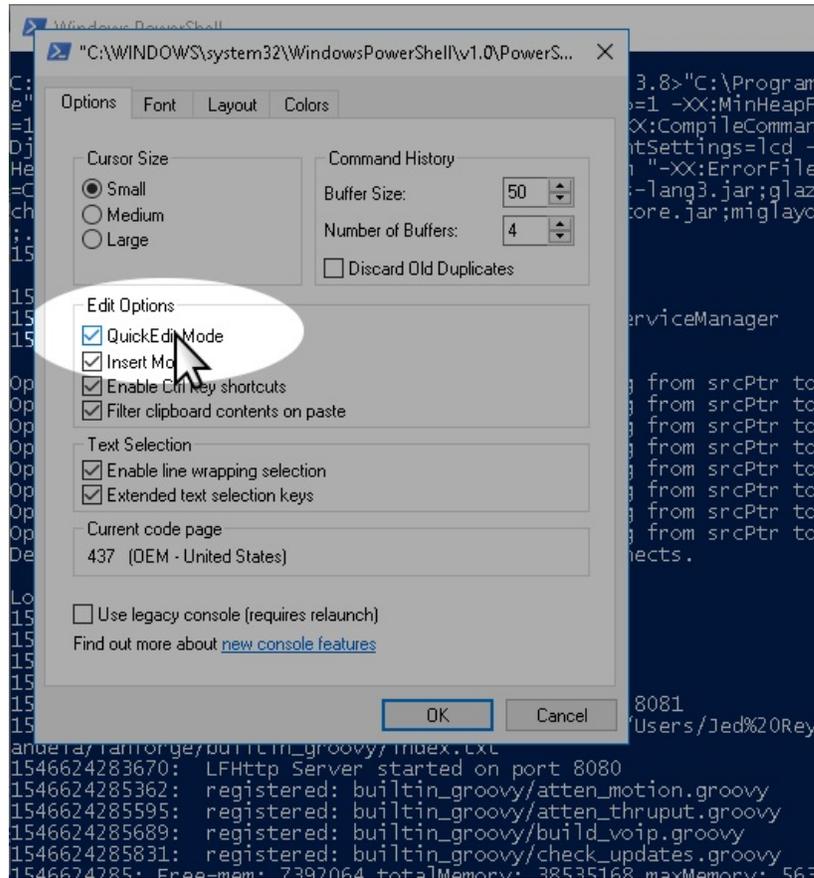
i Double-clicking `lfclient.bat` in the Windows Explorer window will start the client in a CMD window, but the window will disappear when the client quit/exits/leaves.

## 7. Be Aware of Quick Edit

- A. Quick Edit allows you to highlight text quickly with the mouse; it is a feature of both the CMD and PowerShell windows. CMD windows have the distinct drawback of halting execution while text is highlighted.

i Press `ESC` to clear text selection

- C. You can change the setting by clicking in the upper left corner, selecting Preferences, then look for Quick Select.



For more information see [Windows Server 2016 Features](#)

## 8. Copy an Error

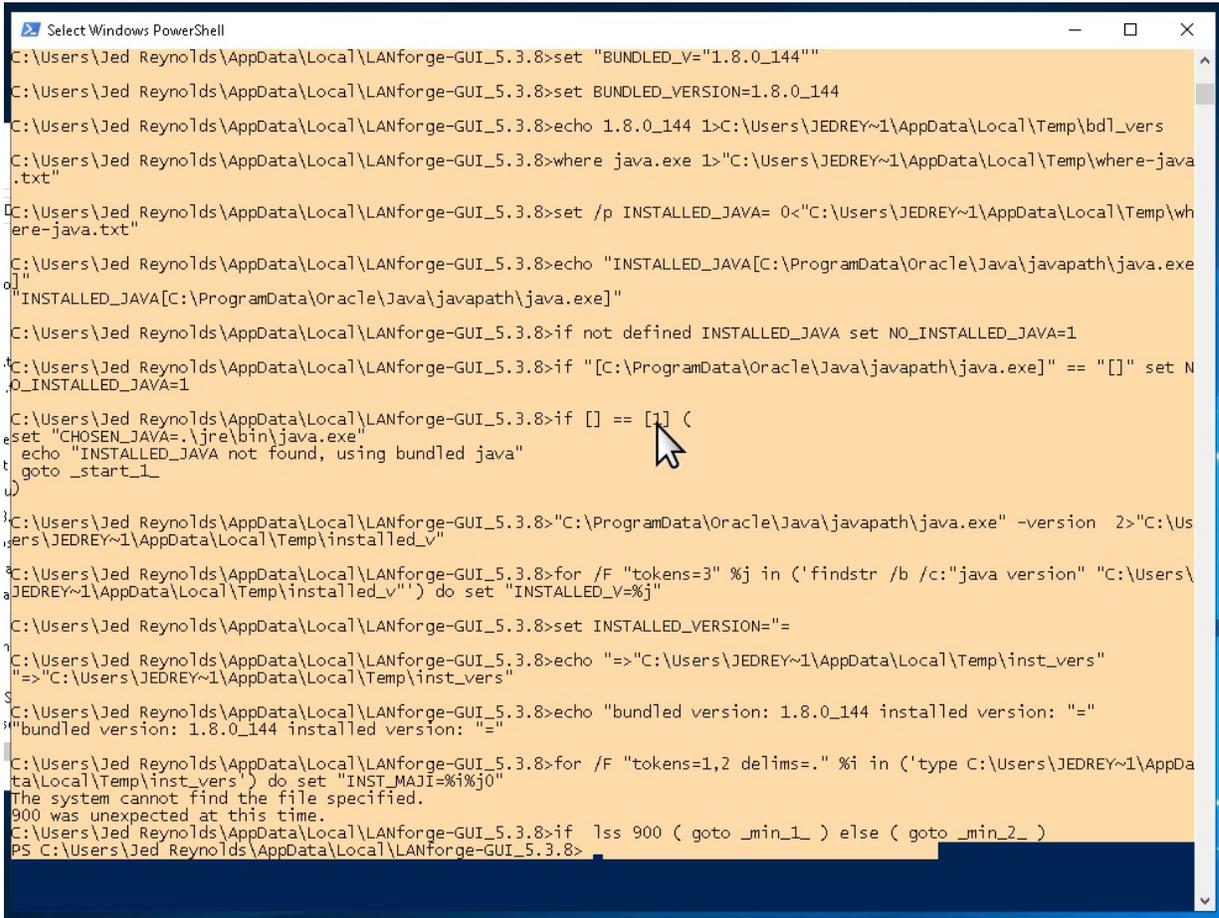
- 9. CandelaTech introduces features into LANforge quickly, and discovering a problem in the LANforge Client occasionally happens--and we want to hear when it does! You can help by copying the terminal output and emailing it to us (at [support@candelaTech.com](mailto:support@candelaTech.com)). Various kinds of errors leave messages we can find in the terminal like when the LANforge client:

- A. **...will not start** after double clicking the icon. This might be caused by a missing or mismatched version of the Java runtime, an error in the start-up script, or a program error.
- B. **...unexpectedly quits**. Probably a program error.
- C. **...does not respond**. Possibly a program error, caused often you will see many exceptions printed to the terminal.

- 10. A Java exception is a rather long list of method calls (a stack trace) that starts with the exception message. Sometimes the exception message is `IllegalArgumentException`, sometimes it is `null` (a null pointer exception)

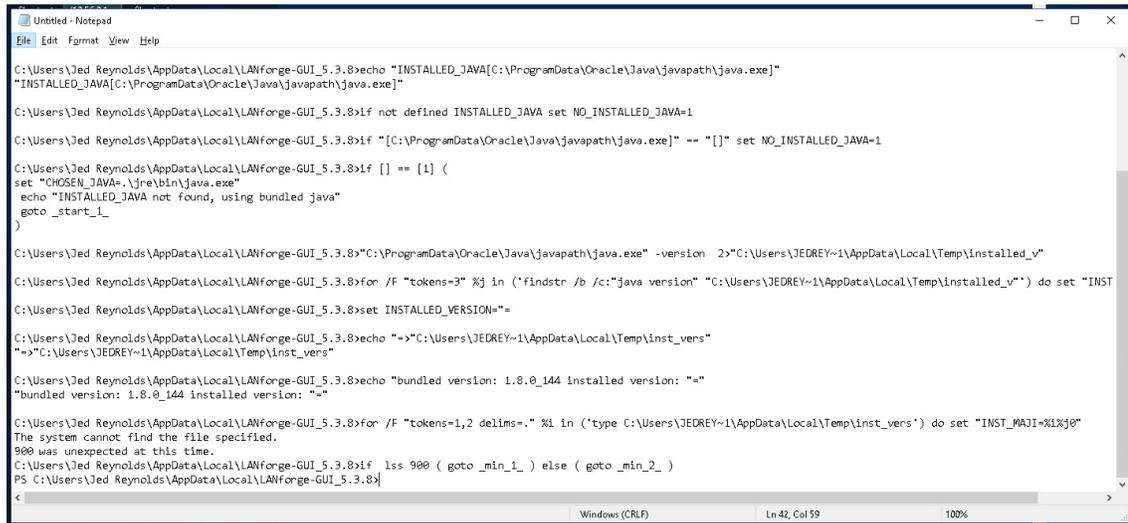
- 11. Scroll the terminal window to see the top of the exception and highlight the exception message and as much

of the stack trace as possible. Below is a picture of a condition where the LANforge client script has an error and will not start.



```
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>set "BUNDLED_V="1.8.0_144"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>set BUNDLED_VERSION=1.8.0_144
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo 1.8.0_144 1>C:\Users\JEDREY~1\AppData\Local\Temp\bd1_vers
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>where java.exe 1>C:\Users\JEDREY~1\AppData\Local\Temp\where-java.txt
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>set /p INSTALLED_JAVA= 0<C:\Users\JEDREY~1\AppData\Local\Temp\where-java.txt"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo "INSTALLED_JAVA[C:\ProgramData\Oracle\Java\javapath\java.exe"
0"
INSTALLED_JAVA[C:\ProgramData\Oracle\Java\javapath\java.exe]"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if not defined INSTALLED_JAVA set NO_INSTALLED_JAVA=1
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if "[C:\ProgramData\Oracle\Java\javapath\java.exe]" == "[ ]" set NO_INSTALLED_JAVA=1
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if [ ] == [1] (
set "CHOSEN_JAVA=.\jre\bin\java.exe"
echo "INSTALLED_JAVA not found, using bundled java"
goto _start_1
)
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>"C:\ProgramData\Oracle\Java\javapath\java.exe" -version 2>C:\Users\JEDREY~1\AppData\Local\Temp\installed_v"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>for /F "tokens=3" %j in ('findstr /b /c:"java version" "C:\Users\JEDREY~1\AppData\Local\Temp\installed_v"') do set "INSTALLED_V=%j"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>set INSTALLED_VERSION=""
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo "=>C:\Users\JEDREY~1\AppData\Local\Temp\inst_vers"
"=>C:\Users\JEDREY~1\AppData\Local\Temp\inst_vers"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo "bundled version: 1.8.0_144 installed version: ""
"bundled version: 1.8.0_144 installed version: ""
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>for /F "tokens=1,2 delims=" %i in ('type C:\Users\JEDREY~1\AppData\Local\Temp\inst_vers') do set "INST_MAJI=%i%j0"
The system cannot find the file specified.
900 was unexpected at this time.
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if lss 900 ( goto _min_1_ ) else ( goto _min_2_ )
PS C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>
```

- A. Pressing **Enter** after highlighting the text copies the text into your clipboard.
- B. The laptop might not have an email client installed. In that case, open **notepad.exe** or **wordpad.exe** from via the Start menu, and paste your stack trace into your text editor.



```
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo "INSTALLED_JAVA[C:\ProgramData\Oracle\Java\javapath\java.exe]"
"INSTALLED_JAVA[C:\ProgramData\Oracle\Java\javapath\java.exe]"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if not defined INSTALLED_JAVA set NO_INSTALLED_JAVA=1
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if "[C:\ProgramData\Oracle\Java\javapath\java.exe]" == "[ ]" set NO_INSTALLED_JAVA=1
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if [ ] == [1] (
set "CHOSEN_JAVA=.\jre\bin\java.exe"
echo "INSTALLED_JAVA not found, using bundled java"
goto _start_1
)
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>"C:\ProgramData\Oracle\Java\javapath\java.exe" -version 2>C:\Users\JEDREY~1\AppData\Local\Temp\installed_v"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>for /F "tokens=3" %j in ('findstr /b /c:"java version" "C:\Users\JEDREY~1\AppData\Local\Temp\installed_v"') do set "INST
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>set INSTALLED_VERSION=""
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo "=>C:\Users\JEDREY~1\AppData\Local\Temp\inst_vers"
"=>C:\Users\JEDREY~1\AppData\Local\Temp\inst_vers"
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>echo "bundled version: 1.8.0_144 installed version: ""
"bundled version: 1.8.0_144 installed version: ""
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>for /F "tokens=1,2 delims=" %i in ('type C:\Users\JEDREY~1\AppData\Local\Temp\inst_vers') do set "INST_MAJI=%i%j0"
The system cannot find the file specified.
900 was unexpected at this time.
C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>if lss 900 ( goto _min_1_ ) else ( goto _min_2_ )
PS C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8>
```

- C. If your circumstances don't allow highlighting, copying and pasting, you can take a **screen capture**, usually by pressing **Alt** + **PrtScr** shortcut.
- D. When contacting us, please describe the steps you took to reach this error. We need to be able to reproduce the error in order to fix it.

12.

## Out of Memory Conditions

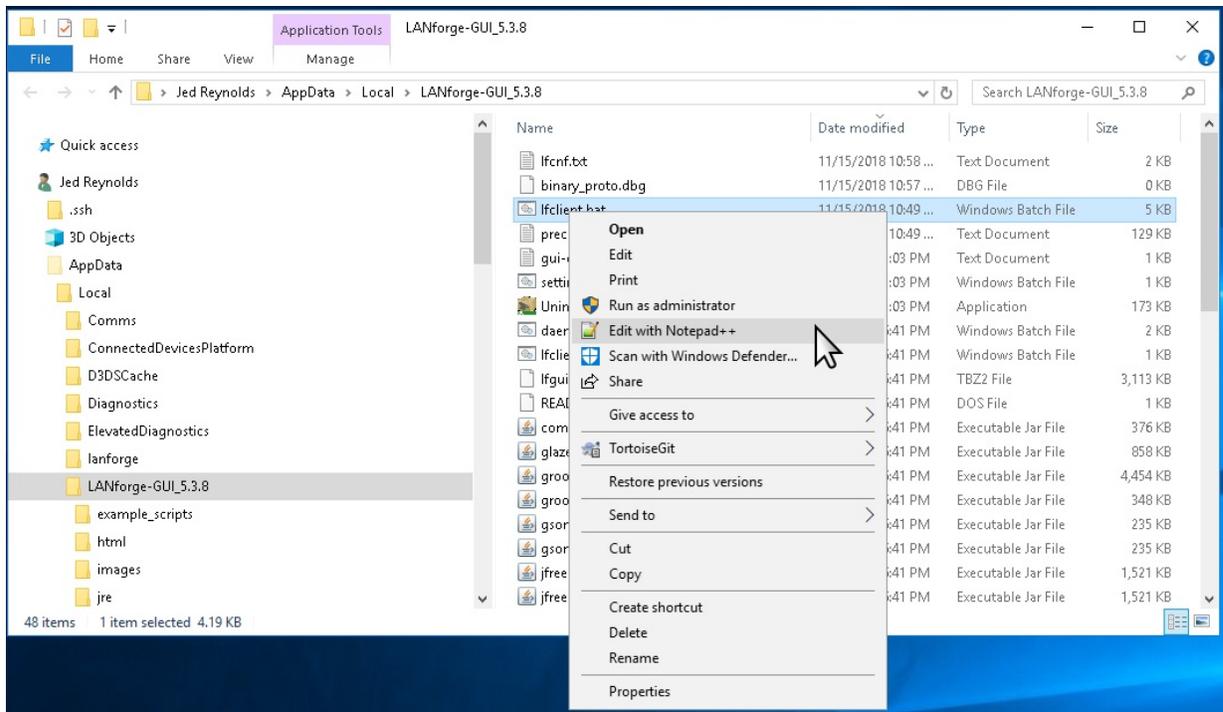
13. CandelaTech provides a 32-bit and a 64-bit version of the LANforge client. We generally suggest people use the 64-bit client, because most recent laptops are running 64-bit operating systems. This is a common fix for

running out of memory. For more information see [LANforge Downloads](#)

- When running a WiFi Capacity Test, the generated report consumes significantly more memory than a mere HTML or PDF version of the report does. If you have multiple WiFi Capacity Test reports open, we suggest you save them and close the report windows.
- Running tests for longer periods of time (like days) can also consume significant memory. By default, the LANforge client will only allocate up to two-thirds (2/3s) of the system memory it detects available at start-up. If there are programs like Chrome, Outlook and possibly Electron based applications open, those can be using most of your laptop's memory to begin with. You might need to exit other programs in Windows and restart the LANforge client in order allow it to have more memory.
- You can also edit the start-up script to configure the maximum memory permitted to the Java runtime. That is discussed next.

## 17. **Edit the start-up script**

- While it is possible to edit files with `notepad.exe`, that text editor has few conveniences. Please consider using Notepad++ if you don't already have a text editor available. For more information see [Download Notepad++](#)
- Right click on the `lfcClient.bat` startup script, and select Edit with Notepad++



- A. The file opens in the editor at the top. You will want to jump to the end of the file.

```
*C:\Users\Jed Reynolds\AppData\Local\LANforge-GUI_5.3.8\lfclient.bat - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
new 1 x lfclient.bat
1 @echo on
2 set NL=^^^
3
4
5 @rem above are two blank trailing lines *required* to
6
7 if NOT EXIST settings.bat (
8     echo "settings.txt not found. Intallation problem?"
9     exit /b
10 )
11 call settings.bat
12 setlocal EnableDelayedExpansion
13
14 set CommonJavaArgs=-XX:+UseParallelGC -Xmn15m -XX:Newl
15 -XX:InlineSmallCode=1500 -XX:MaxInlineSize=55 -XX:Ma:
16 -XX:CompileCommandFile=precompile.txt^
17 -DsuppressSwingDropSupport=true -Djava.net.preferIPv.
```

- B. At the end of the file, notice the `-Xmx` option for the java program. You will edit this to the maximum amount of memory you want to allow the program.

```
128
129 "%CHOSEN_JAVA%" -Xmx%half%m^
130 %CommonJavaArgs% ^
131 set "AddModules=--add-modules java.base,java.
132
133 :_start_1
134 "%CHOSEN_JAVA%" -Xmx%half%m^
135 %CommonJavaArgs% %AddModules% ^
136 %ExtraJavaArgs% -cp %LFGUI_CP%^
137 candela.lanforge.lfclient -httpd 8080 %*
138 goto _exit_
139
140 :_exit_
141 exit /b
142
```

- C. In this example, we've edited the start up script to request 2GB of memory. If you request more than the system will give you, the Java will give you an error and quit.

```
133 :_start_1
134 "%CHOSEN_JAVA%" -Xmx2g^
135 %CommonJavaArgs% %AddModules% ^
136 %ExtraJavaArgs% -cp %LFGUI_CP%^
137 candela.lanforge.lfclient -httpd 8080 %*
138 goto _exit_
139
140 :_exit_
141 exit /b
142
```

For more information see [Tuning Java Machines](#)

20. **Email [support@candelatech.com](mailto:support@candelatech.com) if you have questions or need help.**

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