Display WireShark Using Cygwin

**Goal:** We will display the WireShark application on Windows using Cygwin when we press Sniff Packets which actually runs WireShark on the Linux LANforge machine.

The native display protocol for Linux (and Unix) is the X Display Protocol. The Cygwin.org project provides Linux software that runs natively on Windows. You can run an X display server on Windows that accepts connection from LANforge. We will walk through setting up Cygwin and configuring an X display.

1. Installing Cygwin and the X display components

2. We will start at Cygwin.org and download the Cygwin installer.
setup-x86.exe

setup-x86_64.exe

Cygwin
Get that Linux feeling on Windows

This is the home of the Cygwin project

What...

...is it?
Cygwin is:
- a large collection of GNU and Open Source tools which provide functionality similar to a Linux distribution on Windows.
- a DLL (cygwin1.dll) which provides substantial POSIX API functionality.

...isn’t it?
Cygwin is not:
- a way to run native Linux apps on Windows. You must rebuild your application from source if you want it to run on Windows.
- a way to magically make native Windows apps aware of UNIX-like functionality like signals, pets, etc. Again, you need to build your apps from source if you want to take advantage of Cygwin functionality.

The Cygwin DLL currently works with all recent, commercially released x86 32 bit and 64 bit versions of Windows, starting with Windows Vista. For more information see the FAQ.

NOTE: As previously announced, Cygwin version 2.5.2 was the last version supporting Windows XP and Server 2003. (Instructions for obtaining that version)

Current Cygwin DLL version

The most recent version of the Cygwin DLL is 2.6.1. Install it by running setup-x86.exe (32-bit installation) or setup-x86_64.exe (64-bit installation).

Use the setup program to perform a fresh install or to update an existing installation.

Note that individual packages in the distribution are updated separately from the DLL so the Cygwin DLL version is not useful as a general Cygwin distribution release number.

3. Download setup-x86.exe or setup-x86_64.exe as appropriate. Go to your Downloads folder and double start the program.

4. Next
Cygwin Setup

Cygwin Net Release Setup Program

This setup program is used for the initial installation of the Cygwin environment as well as all subsequent updates. Make sure to remember where you saved it.

The pages that follow will guide you through the installation. Please note that Cygwin consists of a large number of packages spanning a wide variety of purposes. We only install a basic set of packages by default. You can always run this program at any time in the future to add, remove, or upgrade packages as necessary.

Setup.exe version 2.877 (32 bit)
Copyright 2000-2016
http://www.cygwin.com/

5. Next

Cygwin Setup - Choose Installation Directory

Select Root Install Directory
Select the directory where you want to install Cygwin. Also choose a few installation parameters.

Root Directory
C:\Cygwin

Install For
☐ All Users (RECOMMENDED)
   Cygwin will be available to all users of the system.

☐ Just Me
   Cygwin will still be available to all users, but Desktop icons, Cygwin Menu Entries, and important installer information are only available to the current user. Only select this if you lack administrator privileges or if you have specific needs.

6. Next
7. Choose a mirror that might be close to you, click Next.

8. Now you see the software selection screen, sorted by category. Some of these entries appear two or more times, because they belong to multiple categories. Try using the search box in upper middle above the software list to search for the packages listed below.
9. The items you want to search for are:
   - openssh
   - xorg-server
   - xinit
   - nxvt
   - xlaunch
A. Search for openssh and click the Skip property once to change it to the most recent version to set it to install.

Click 'Skip'

B. xorg-server provides the X display system

C. xinit helps the X system launch

D. xlaunch is what you will drag to your task bar to launch your Cygwig X server
E. `rxvt` and `rxvt-unicode` are more useful terminals than the `minterm` program that Cygwin provides by default.

<table>
<thead>
<tr>
<th>Category</th>
<th>New</th>
<th>Br?</th>
<th>Src?</th>
<th>Size</th>
<th>Package</th>
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<tbody>
<tr>
<td><code>All</code></td>
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<td><code>Default</code></td>
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<td><code>Debug</code></td>
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<td><code>Shells</code></td>
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<tr>
<td><code>rxvt-1.3.0</code></td>
<td></td>
<td></td>
<td></td>
<td>129k</td>
<td><code>rxvt</code>: Lightweight VT102 terminal emulator</td>
</tr>
<tr>
<td><code>rxvt-1.3.1</code></td>
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<td></td>
<td>690k</td>
<td><code>rxvt-unicode</code>: An improved version of <code>rxvt</code> with Unicode support</td>
</tr>
</tbody>
</table>

10. Click `Next` and let the installer finish the installation of the Cygwin packages. You will see a Cygwin Terminal icon appear on your desktop and new Cygwin icons in your Start menu.

11. Next we will **right-click** on the Cygwin Terminal icon and select `Open File Location`
12. In the Explorer window, scroll to find xlaunch.exe, and drag it to the Task Bar.
13. Click the xlaunch icon on the task bar, and click Next.


15. Check Disable Access Control and add the option: `-listen tcp`. Click Next.
16. Firewall, Click Allow Access

Windows Firewall has blocked some features of this app

Windows Firewall has blocked some features of xwin.exe on all public and private networks.

Name: xwin.exe
Publisher: Unknown
Path: C:\cygwin\bin\xwin.exe

Allow xwin.exe to communicate on these networks:
- Private networks, such as my home or work network
- Public networks, such as those in airports and coffee shops (not recommended because these networks often have little or no security)

What are the risks of allowing an app through a firewall?

17. If the LANforge Messages window reports ‘No Access’, you might need to use xhost.exe to grant X11 access.

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### XLaunch - Extra settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clipboard</td>
<td>Start the integrated clipboard manager</td>
</tr>
<tr>
<td>Native OpenGL</td>
<td>Use the native windows OpenGL library (WGL). Make sure to export the</td>
</tr>
<tr>
<td></td>
<td>LIBGL_ALWAYS_INDIRECT environment variable.</td>
</tr>
<tr>
<td>Disable access control (Not recommended)</td>
<td>Use this when you want the X server to accept connections from all clients.</td>
</tr>
</tbody>
</table>

Additional parameters for X server

- xhost.exe

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A. Open a CMD window

B. Go to the cygwin\bin folder:

```
C:\> cd \cygwin\bin
```

C. Use xhost.exe to open permissions:

```
C:\> ./xhost.exe +
```

18. Now your X display service is running. You can check that it’s running by clicking into the System Tray and seeing if the icon is there.

19. Launch the LANforge GUI from your desktop. Select a port from the Port Mgr tab. Notice how the Disp field has your laptop’s LAN address. This is the display address the remote machine will display the Wireshark window to.
20. You will see WireShark

21. Resources and other Documentation:
   A. http://unix.stackexchange.com/questions/227889/cygwin-on-windows-cant-open-display