

Lab - Making Fedora User Friendly

Upon completion of this lab the student will be able to:

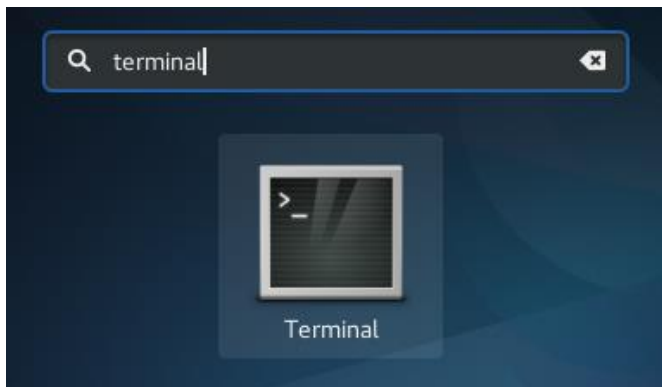
- Make Fedora Workstation user friendly
- Install Windows Applications using Wine

Overview

After you have successfully installed Fedora workstation, there are certain things you can do to make your system more user friendly. If You're considering moving away from a pure Windows environment and moving to open source and Linux, you're in for quite a ride. Depending on how you use your workstation will depend on far you get on your road to enlightenment.

This lab will be using the terminal to complete each of the steps.

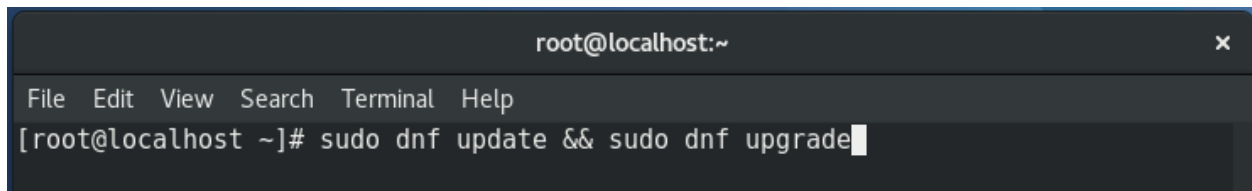
Begin by typing terminal into the search bar and launching a terminal window.



1. Update your system. Doing this can help make your system up-to-date in case of any packages updated in the few hours after the release.

Issue the following command to fully update your system:

```
sudo dnf update && sudo dnf upgrade
```



Install DKMS, GNU C compiler, kernel-headers and kernel-devel. They are required if you compile Linux kernel modules. dkms enables automatic re-compiling when a new kernel is installed.

```
sudo dnf install dkms gcc kernel-devel kernel-headers
```

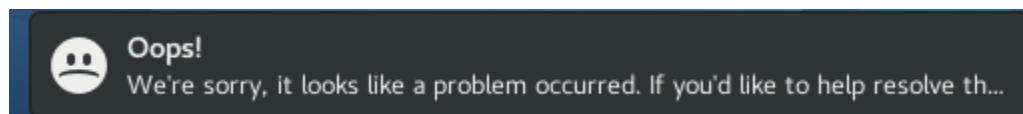
```
root@localhost:~
File Edit View Search Terminal Help
[root@localhost ~]# sudo dnf install dkms gcc kernel-devel kernel-headers
Last metadata expiration check: 0:22:00 ago on Sat Jun 10 14:55:47 2017.
Package gcc-6.3.1-1.fc25.x86_64 is already installed, skipping.
Package kernel-headers-4.11.3-202.fc25.x86_64 is already installed, skipping.
Dependencies resolved.
=====
Package           Arch      Version                               Repository  Size
=====
Installing:
dkms               noarch    2.3-5.20170523git8c3065c.fc25         updates    81 k
kernel-devel       x86_64    4.11.3-202.fc25                       updates    11 M
=====
```

Reboot Fedora: `sudo shutdown -r now` or `reboot`

```
root@localhost:~
File Edit View Search Terminal Help
[root@localhost ~]# sudo shutdown -r now
```

Updating Linux on a regular basis is a needed necessity. Updates can be made available any hour, of the day or week. A caveat must be given with updating the system, some updates have the potential to cause havoc, especially with drivers and certain software packages. This is the downside to open source.

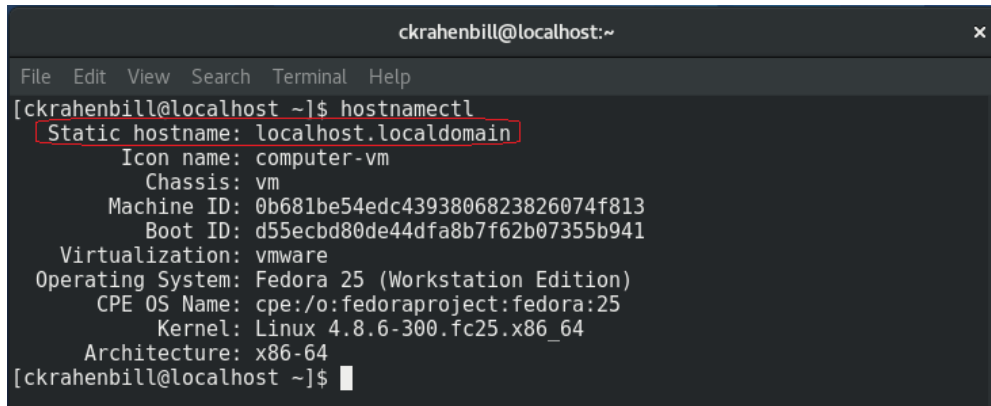
Don't be surprised if you need to run the update more than once to get past the following error message:



If this happens more than once, restart Fedora and run the update again.

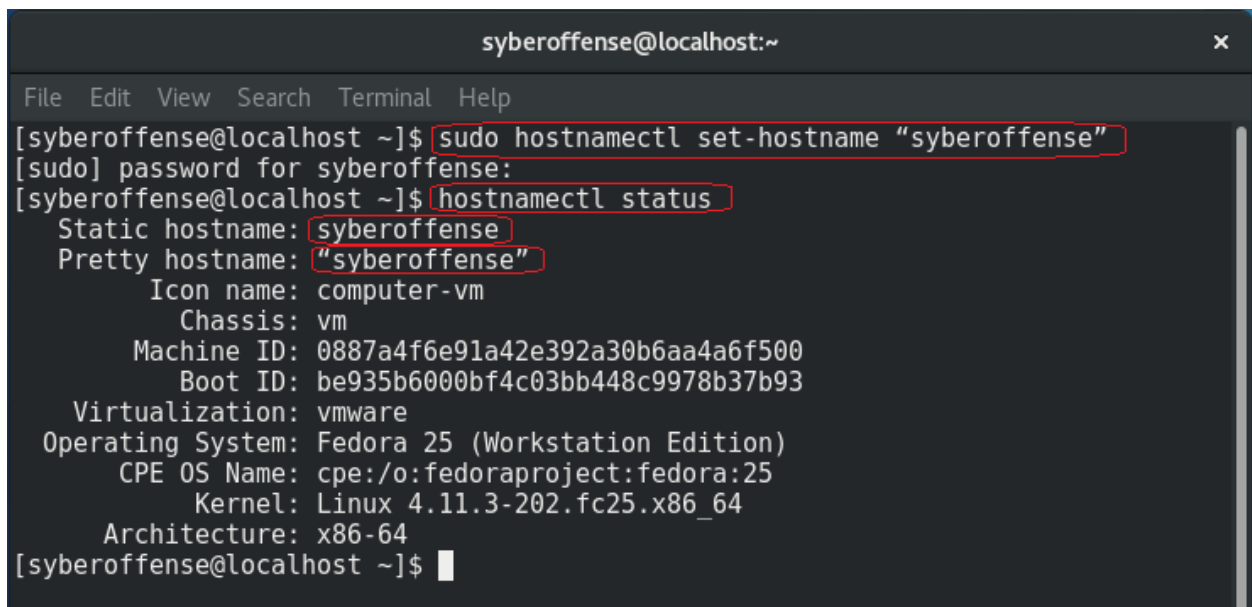
2. Configure System Hostname. Using the `hostnamectl` utility we can set the hostname. You can look at the man page of `hostnamectl` to find out more about the hostname.

To check your hostname, run the command: `hostnamectl` or `hostnamectl status`

A terminal window titled 'ckrahenbill@localhost:~' showing the output of the 'hostnamectl' command. The output lists system information including static hostname, icon name, chassis, machine ID, boot ID, virtualization, operating system, CPE OS Name, kernel, and architecture. The 'Static hostname' is highlighted with a red box.

```
ckrahenbill@localhost:~  
File Edit View Search Terminal Help  
[ckrahenbill@localhost ~]$ hostnamectl  
Static hostname: localhost.localdomain  
Icon name: computer-vm  
Chassis: vm  
Machine ID: 0b681be54edc4393806823826074f813  
Boot ID: d55ecbd80de44dfa8b7f62b07355b941  
Virtualization: vmware  
Operating System: Fedora 25 (Workstation Edition)  
CPE OS Name: cpe:/o:fedoraproject:fedora:25  
Kernel: Linux 4.8.6-300.fc25.x86_64  
Architecture: x86-64  
[ckrahenbill@localhost ~]$
```

Change the hostname of your Fedora install: `sudo hostnamectl set-hostname "syberoffense"`

A terminal window titled 'syberoffense@localhost:~' showing the execution of 'sudo hostnamectl set-hostname "syberoffense"' and the subsequent 'hostnamectl status' command. The output shows the updated hostname and other system details. The commands and the new 'Static hostname' are highlighted with red boxes.

```
syberoffense@localhost:~  
File Edit View Search Terminal Help  
[syberoffense@localhost ~]$ sudo hostnamectl set-hostname "syberoffense"  
[sudo] password for syberoffense:  
[syberoffense@localhost ~]$ hostnamectl status  
Static hostname: syberoffense  
Pretty hostname: "syberoffense"  
Icon name: computer-vm  
Chassis: vm  
Machine ID: 0887a4f6e91a42e392a30b6aa4a6f500  
Boot ID: be935b6000bf4c03bb448c9978b37b93  
Virtualization: vmware  
Operating System: Fedora 25 (Workstation Edition)  
CPE OS Name: cpe:/o:fedoraproject:fedora:25  
Kernel: Linux 4.11.3-202.fc25.x86_64  
Architecture: x86-64  
[syberoffense@localhost ~]$
```

Activate RPMFusion Repository. There are some packages not provided by RHEL and Fedora project developers, you can find both free and nonfree packages the in RPMFusion repository, here we shall focus on free packages.

To activate it, execute the following command:

Change to root user. Type `sudo` at the prompt, on the next line type in your password. You will not be able to see the password being typed. This is a security feature of Linux.

```
ckrahenbill@CMIT391:/home/ckrahenbill
File Edit View Search Terminal Help
[ckrahenbill@localhost ~]$ su
Password:
```

```
sudo rpm -ivh
http://download1.rpmfusion.org/free/fedora/rpmfusion-free-
release-24.noarch.rpm
```

```
ckrahenbill@CMIT391:/home/ckrahenbill
File Edit View Search Terminal Help
[root@CMIT391 ckrahenbill]# rpm -ivh http://download1.rpmfusion.org/free/fedora/
rpmfusion-free-release-24.noarch.rpm
Retrieving http://download1.rpmfusion.org/free/fedora/rpmfusion-free-release-24.
noarch.rpm
warning: /var/tmp/rpm-tmp.AygQnQ: Header V4 RSA/SHA1 Signature, key ID b7546f06:
NOKEY
Preparing... ##### [100%]
Updating / installing...
 1:rpmfusion-free-release-24-1 ##### [100%]
[root@CMIT391 ckrahenbill]#
```

Install VLC Media Player. VLC is a popular, cross-platform media player that supports several video and audio formats. It can be found in the RPMFusion repository and to install it, simply run the following command:

```
sudo dnf install vlc
```

```
ckrahenbill@CMIT391:/home/ckrahenbill
File Edit View Search Terminal Help
[ckrahenbill@CMIT391 ~]$ dnf install vlc
Error: This command has to be run under the root user.
[ckrahenbill@CMIT391 ~]$ clear

[ckrahenbill@CMIT391 ~]$ su
Password:
[root@CMIT391 ckrahenbill]# dnf install vlc
RPM Fusion for Fedora 25 - Free - Updates      258 kB/s | 191 kB      00:00
RPM Fusion for Fedora 25 - Free                41 kB/s | 515 kB      00:12
Last metadata expiration check: -1 day, 18:07:32 ago on Mon Jan  2 22:05:45 2017
.
Dependencies resolved.
=====
Package                Arch    Version                Repository              Size
=====
Installing:
SDL                    x86_64  1.2.15-21.fc24         fedora                  213 k
SDL_image              x86_64  1.2.12-14.fc24         fedora                  46 k
a52dec                 x86_64  0.7.4-21.fc25         rpmfusion-free          64 k
aalib-libs             x86_64  1.4.0-0.29.rc5.fc24    fedora                  70 k
faad2-libs             x86_64  1:2.7-8.fc25          rpmfusion-free          153 k
ffmpeg-libs           x86_64  3.1.6-1.fc25          rpmfusion-free-updates  6.0 M
fftw-libs-double       x86_64  3.3.5-3.fc25          fedora                  977 k
fluidsynth-libs       x86_64  1.1.6-7.fc24          fedora                  232 k
=====
```

Install Java Web Plugins. Java supports the web broadly and there are many web applications running Java code, so installing some Java web plugins will be very vital. You can issue the command below to install them:

```
sudo dnf install java-openjdk icedtea-web
```

```
ckrahenbill@CMIT391:/home/ckrahenbill
File Edit View Search Terminal Help
[root@CMIT391 ckrahenbill]# dnf install java-openjdk icedtea-web
Last metadata expiration check: -1 day, 18:11:40 ago on Mon Jan  2 22:05:45 2017
.
Dependencies resolved.
=====
Package                Arch    Version                Repository              Size
=====
Installing:
hawtjni-runtime        noarch  1.10-6.fc24           fedora                  38 k
icedtea-web            x86_64  1.6.2-3.fc25          fedora                  1.6 M
jansi                  noarch  1.11-10.fc24          fedora                  49 k
jansi-native           x86_64  1.5-10.fc24           fedora                  51 k
java-1.8.0-openjdk     x86_64  1:1.8.0.111-4.b16.fc25 updates                228 k
jline                  noarch  2.13-6.fc25           fedora                  155 k
rhino                  noarch  1.7.7.1-1.fc25        fedora                  1.1 M
tagsoup                noarch  1.2.1-11.fc24         fedora                  117 k
ttmkfdir              x86_64  3.0.9-48.fc24         fedora                  56 k
xorg-x11-fonts-Type1   noarch  7.5-16.fc24          fedora                  522 k
Upgrading:
java-1.8.0-openjdk-headless x86_64  1:1.8.0.111-4.b16.fc25 updates                32 M
Transaction Summary
=====
```

Install GIMP Image Editor. A lightweight, powerful, and easy to use Linux image editing software. To install, use the command below:

```
sudo dnf install gimp
```

```
ckrahenbill@CMIT391:/home/ckrahenbill
File Edit View Search Terminal Help

[root@CMIT391 ckrahenbill]# dnf install gimp
Last metadata expiration check: -1 day, 18:15:51 ago on Mon Jan  2 22:05:45 2017
.
Dependencies resolved.
=====
Package                Arch      Version              Repository           Size
=====
Installing:
OpenEXR-libs            x86_64    2.2.0-5.fc24         fedora               630 k
SDL                     x86_64    1.2.15-21.fc24       fedora              213 k
aalib-libs              x86_64    1.4.0-0.29.rc5.fc24  fedora               70 k
atlas                   x86_64    3.10.2-14.fc25       updates             6.2 M
babl                    x86_64    0.1.18-1.fc25        fedora              307 k
dcraw                   x86_64    9.27.0-1.fc25        fedora              264 k
gegl                    x86_64    0.2.0-29.fc25        fedora              737 k
gimp                    x86_64    2:2.8.18-1.fc25      fedora              15 M
gimp-libs               x86_64    2:2.8.18-1.fc25      fedora              1.4 M
gpm-libs                x86_64    1.20.7-9.fc24        fedora               36 k
ilmbase                 x86_64    2.2.0-5.fc24         fedora              105 k
libgfortran             x86_64    6.3.1-1.fc25         updates             304 k
libopenraw              x86_64    0.0.9-18.fc25        fedora              150 k
libquadmath             x86_64    6.3.1-1.fc25         updates             181 k
libspiro                x86_64    20150131-3.fc24      fedora               38 k
=====
```

Install Wine. WINE is a useful tool that enables Linux users to run Windows software directly on Linux. Though not all software is expected to work in WINE. You can install it on Fedora by running the following command:

```
sudo dnf install wine
```

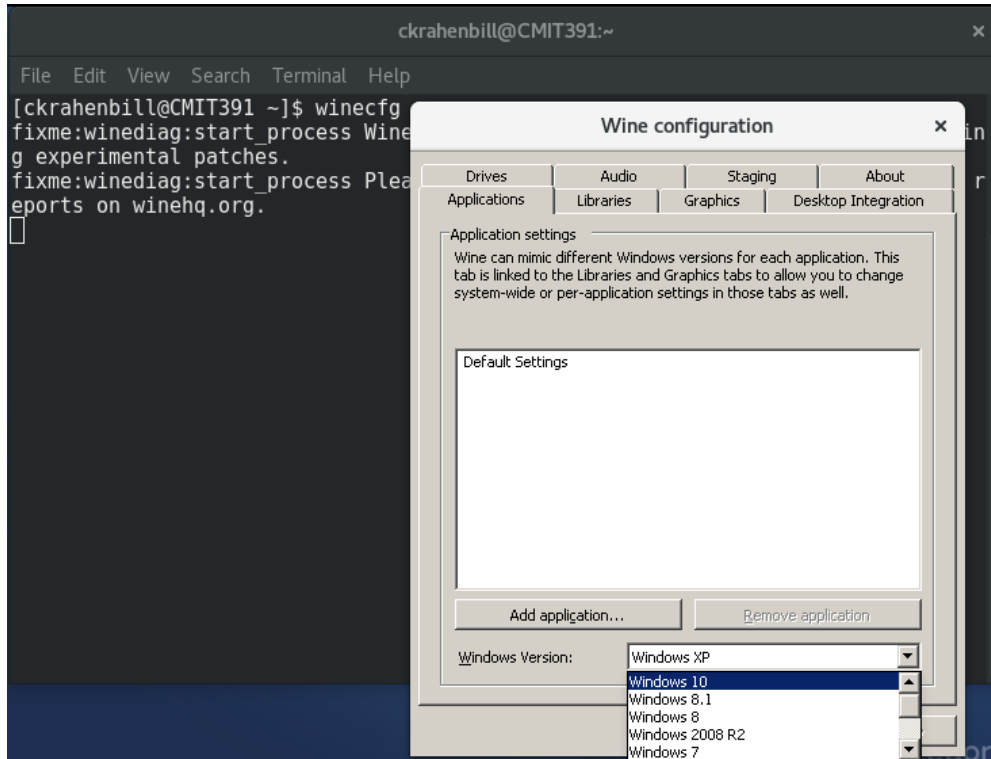
```
ckrahenbill@CMIT391:/home/ckrahenbill
File Edit View Search Terminal Help

[root@CMIT391 ckrahenbill]# dnf install wine
Last metadata expiration check: -1 day, 18:26:58 ago on Mon Jan  2 22:05:45 2017
.
Dependencies resolved.
=====
Package                Arch      Version              Repository           Size
=====
Installing:
alsa-lib                i686      1.1.1-2.fc25         fedora               411 k
audit-libs              i686      2.6.7-1.fc25         fedora               98 k
avahi-libs              i686      0.6.32-4.fc25        fedora               61 k
bzip2-libs              i686      1.0.6-20.fc24        fedora               46 k
cairo                   i686      1.14.6-2.fc25        fedora              753 k
cdparanoia-libs         i686      10.2-21.fc24         fedora               57 k
cups-libs               i686      1:2.2.0-3.fc25       fedora              410 k
cyrus-sasl-lib          i686      2.1.26-26.2.fc24     fedora              161 k
dbus-libs               i686      1:1.11.6-1.fc25      fedora              176 k
elfutils-libelf         i686      0.167-2.fc25         fedora              203 k
expat                   i686      2.2.0-1.fc25         fedora               92 k
flac-libs               i686      1.3.1-6.fc24         fedora              220 k
fontconfig              i686      2.12.1-1.fc25        fedora              250 k
freetype                i686      2.6.5-1.fc25         fedora              364 k
=====
```

After Wine installs, restart Fedora.

Configure Wine

Once WINE is installed, we need to configure the program. At the terminal prompt type **winecfg**.



From the wine configuration window, Select Windows 10 as the Windows Version.

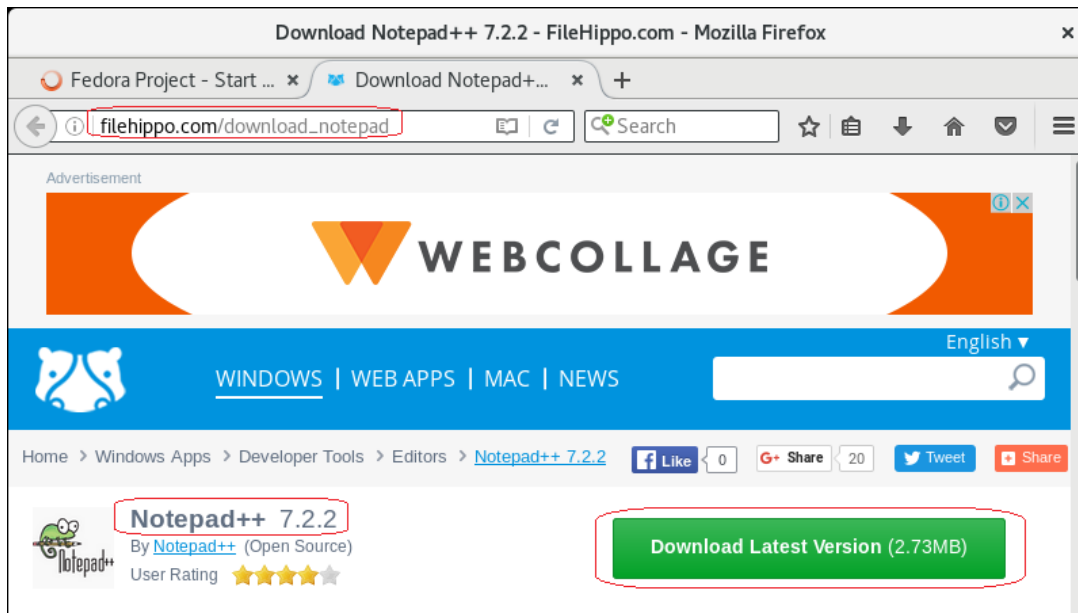
Install Windows software using Fedora Wine

To install windows software, right click on the installer (.exe file) and select ‘Open with Windows Program Loader’.

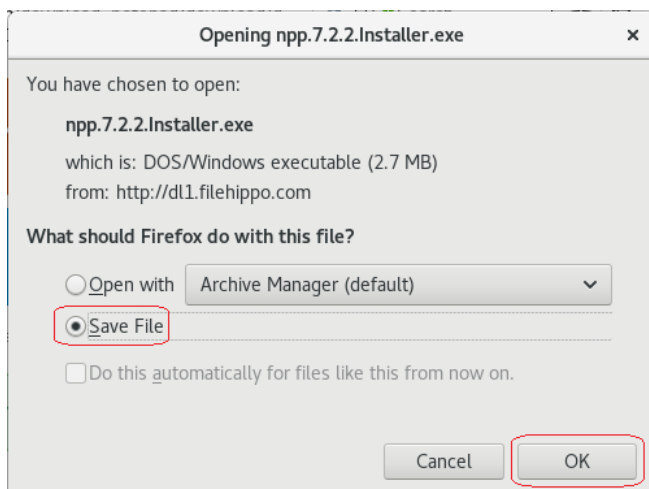
Let’s install a very popular programmer’s notepad—Notepad++. You’ll want to download the file from a location that doesn’t include third-party app install options (which can cause the application installation to fail). To be safe, download the Notepad++ installer from Filehippo.

http://filehippo.com/download_notepad

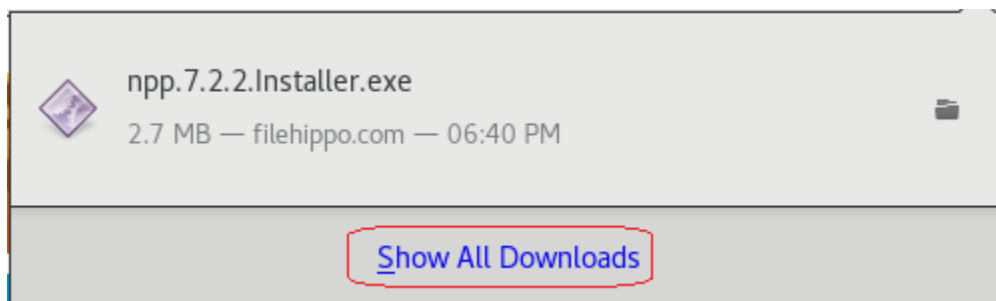
From your Fedora’s application, quick launch bar, open Firefox. Copy and paste the the URL into a new Firefox tab and hit enter. Start the download.



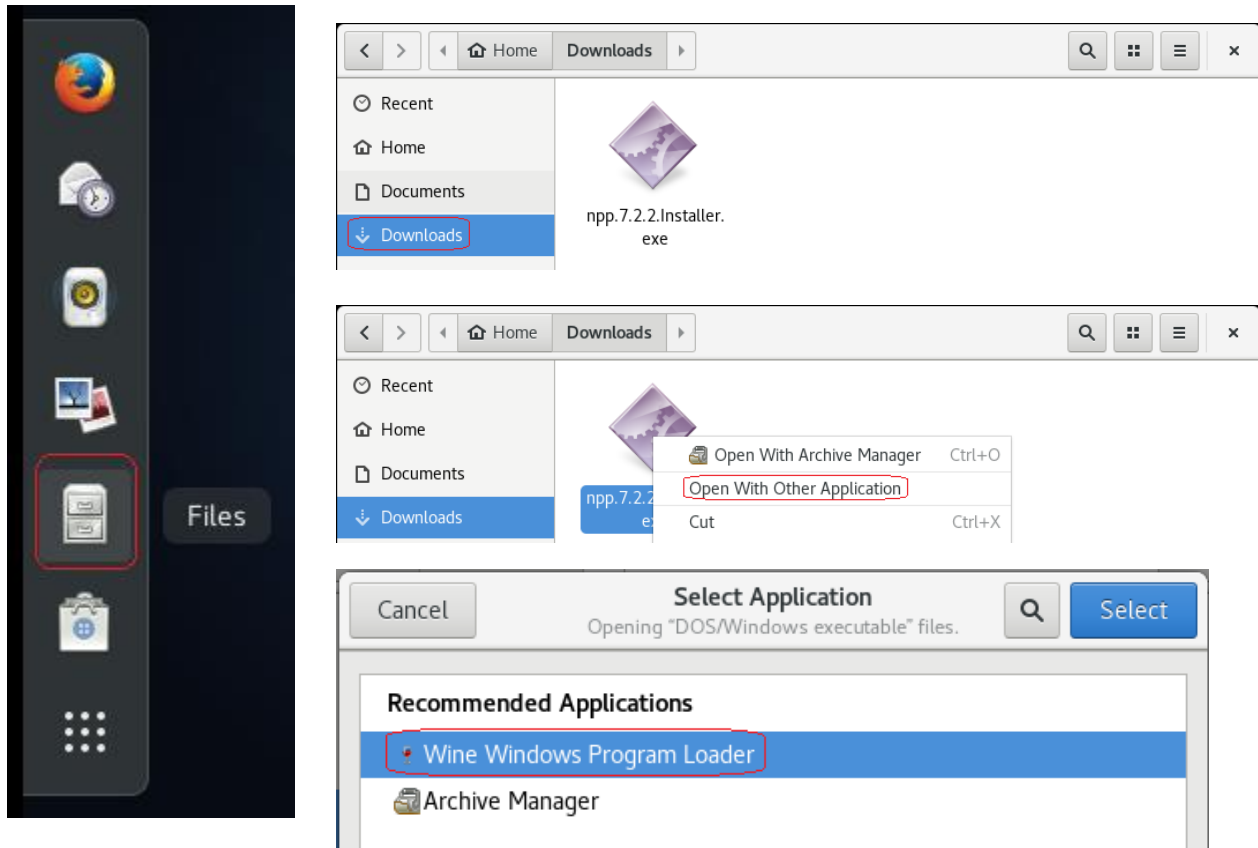
Save the file.



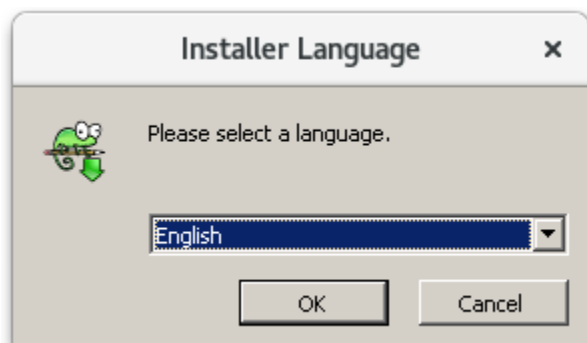
Click on the Show all Downloads. Not that this is the default download location for all your downloads.



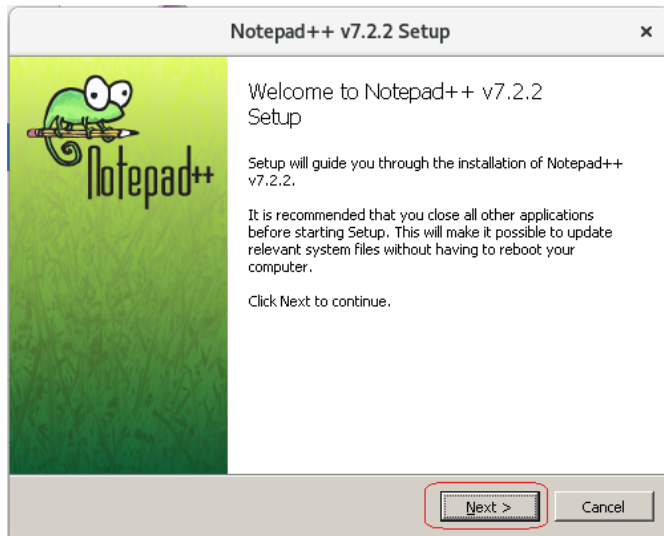
Close all your windows and come back to the application quick launch and click on the files icons. In the left Windows pan, click on the Downloads directory. Find your npp 7.2.2 Installer.exe and right click on the package selecting Open with Other Applications. Select Wine Windows Program Loader from the list. If the program is not listed, click on View all Programs, and select from the list.



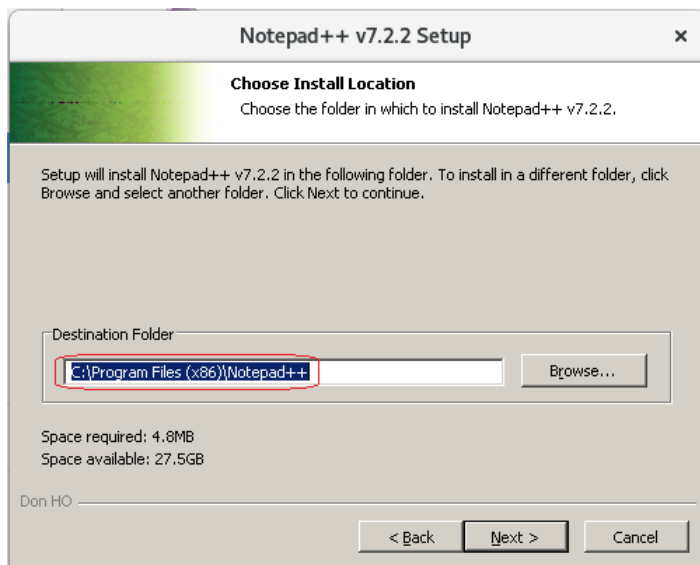
The Wine Windows Program Installer may perform an update. Once the update has completed, the installer program starts. Click OK.



This launches the Notepad++ setup wizard.



Click Next and walk through the installation process. When the second screen pops up you will notice a rather un-Linux Folder path.

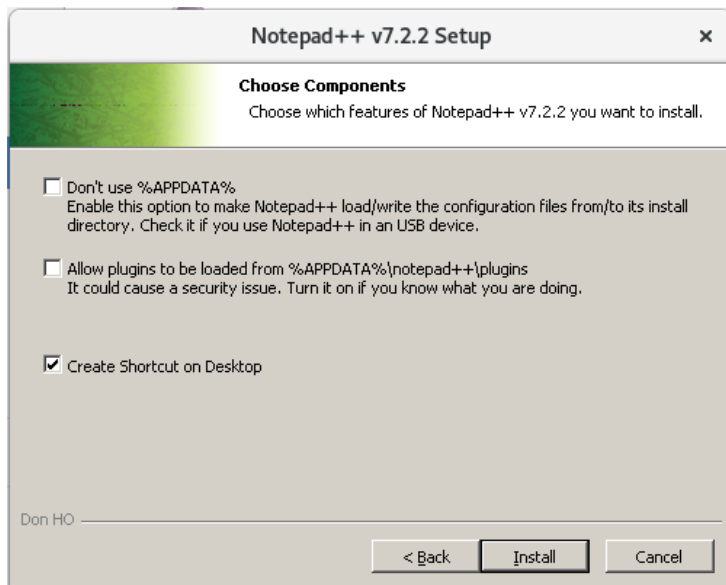


Since Linux doesn't contain a C drive like Windows one created inside the ~/.wine folder, Within this folder lies three familiar sub-folders:

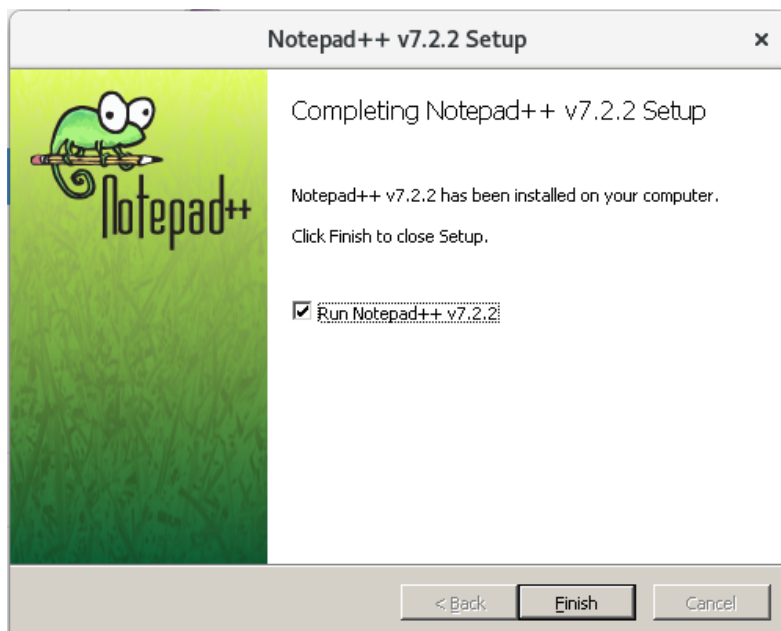
- Program Files
- users
- windows.

This is your C drive. Leave the Folder path as-is during installations.

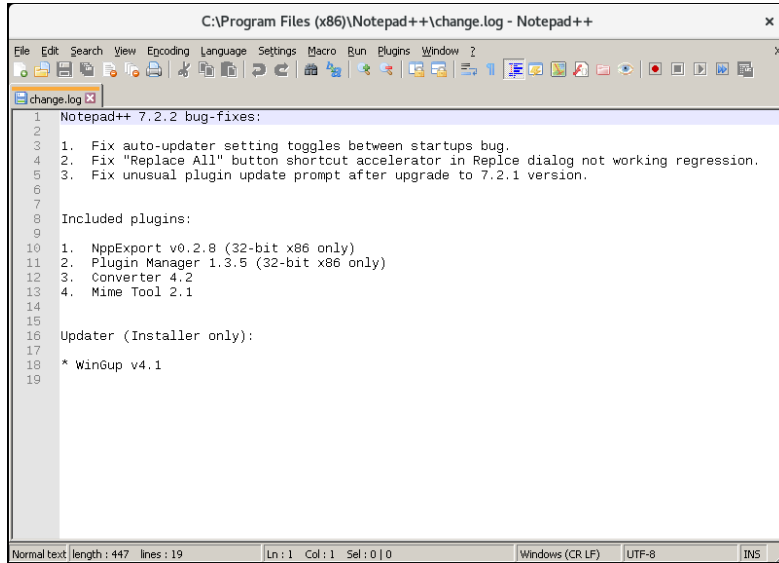
You will eventually come to the Choose Components section of the installation. Here you can select options for the installation. If a Create a Desktop Shortcut option is available, can select that option. This will help in launching the program.



Click Finish.



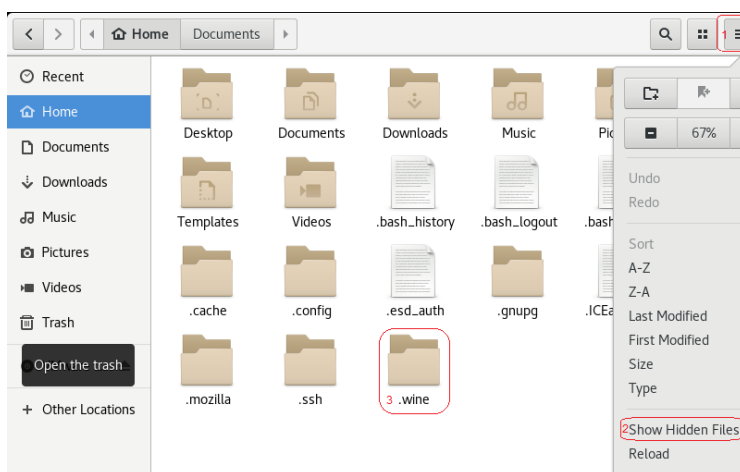
Success!



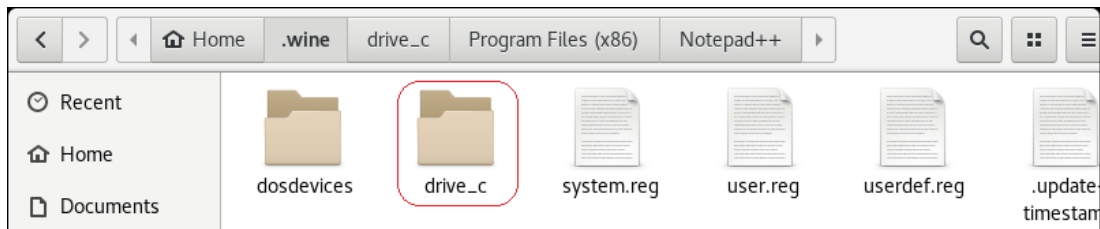
Our Fedora Workstation does not support shortcuts to the desktop. We will need to locate or Notepad++ program by locating the program folder inside the Wine directory.

Launch files from the Application Quick Launch bar.

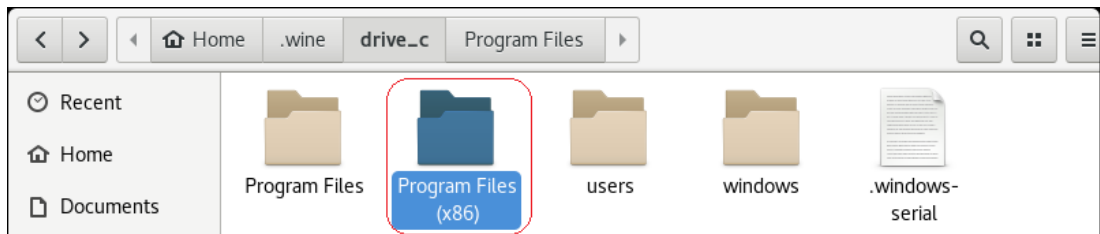
Click on the properties for the home directory (1). Select Show Hidden Files from the context menu (2). Open the Wine folder (3).



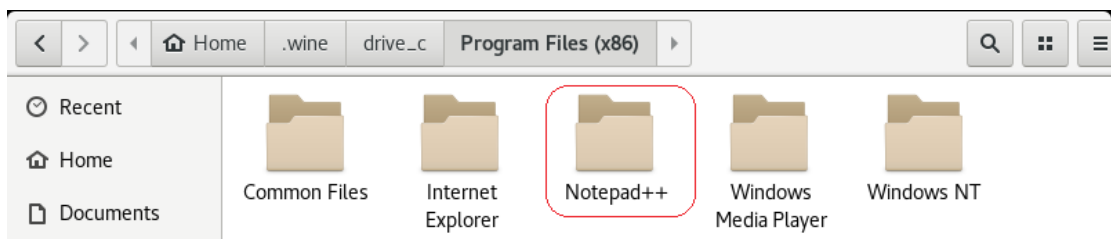
Inside the Wine directory, open the drive_c folder.



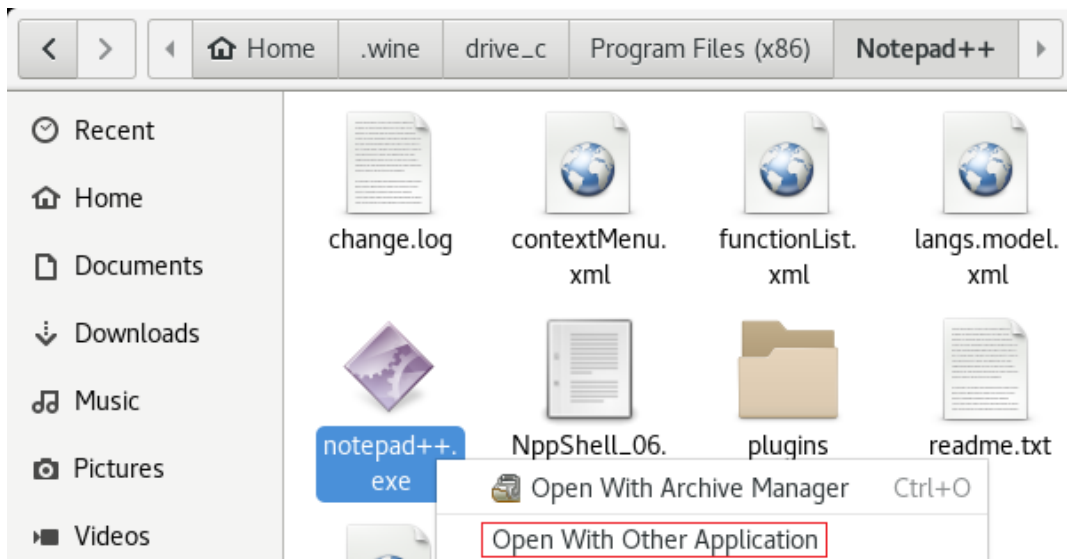
Open the Program files (x86) folder.



Open the Notepad++ folder.



Find the Notepad++.exe, right click, open with other applications and select Wine Windows Program Loader.



Summary Not every Windows program is going to work with Wine. Notepad++ was a simple example and the results vary from one Linux distro to the next. This is very problematic when you're making promises about implementing Linux on a production network.

Wine has a [database of Windows programs](#) supported.

The best thing to do is to go back to the Wine application database, locate the app you want to install, click on it, and check the current app status. You will find every app lists the version of Wine tested, if it installs, if it runs, and gives it a rating. There are:

- Platinum: Applications which run flawlessly out of the box.
- Gold: Applications which run with some modifications necessary.
- Silver: Applications which run with minor issues that do not affect usage.

You will also find some apps listed as Garbage, which means they won't install and/or run. There are 24,135 applications currently in the database.

You now know how to install Windows applications using the Wine utility.

End of lab!