

Use Cygwin to Run Linux Commands on Windows

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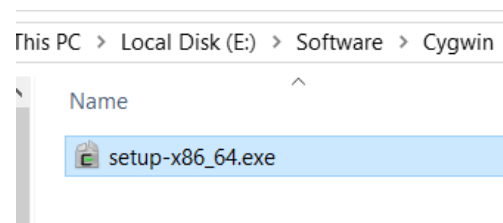
This document outlines the steps needed to install Cygwin tool on Windows Operating system.

1. Overview:

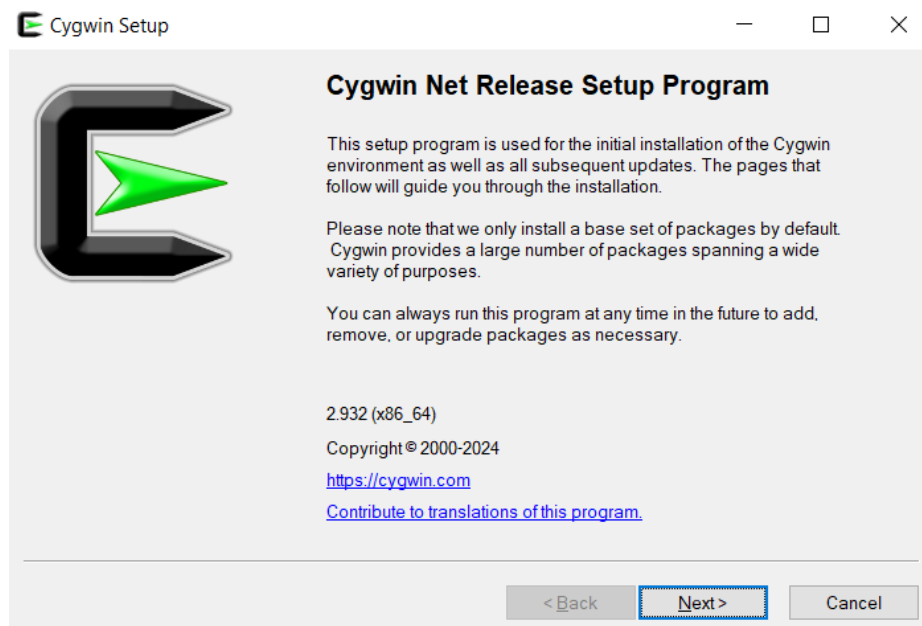
Cygwin is a project developed using a collection of open source tools that provide Linux OS look and feel like functionality on Windows. Many software applications in the world are being built to work on Linux Operating System primarily due to its vast features and security that may not come with Windows and this makes us curious to know how Linux commands work but without a need of installing Linux operating system in the machine. This is where Cygwin helps us to achieve our goal.

2. Cygwin Installation:

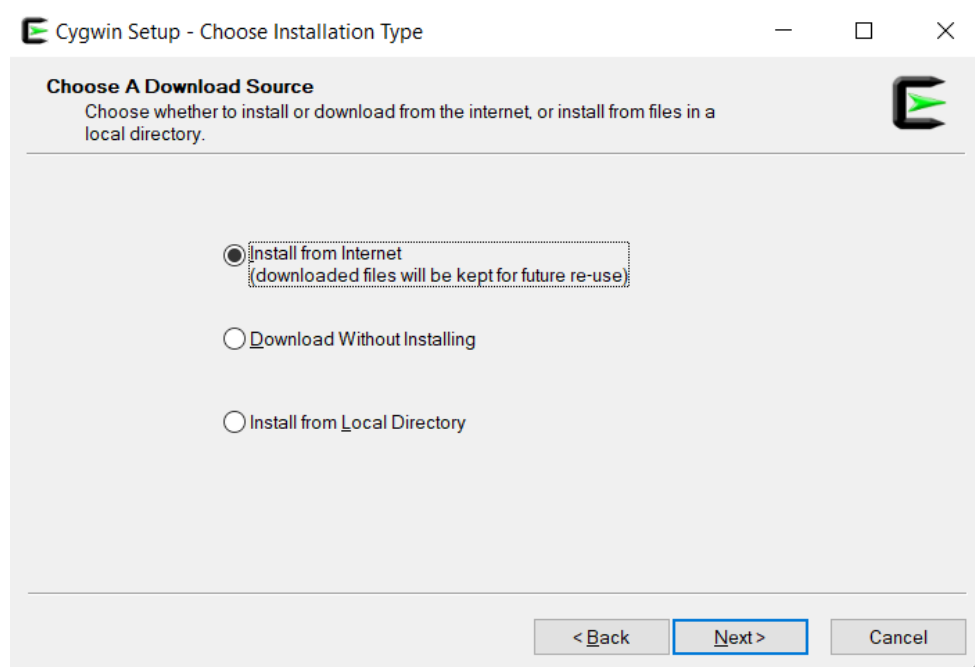
First, we need to download Cygwin setup tool from the [official site](#) which provides us `setup-x86-64.exe` file to run.



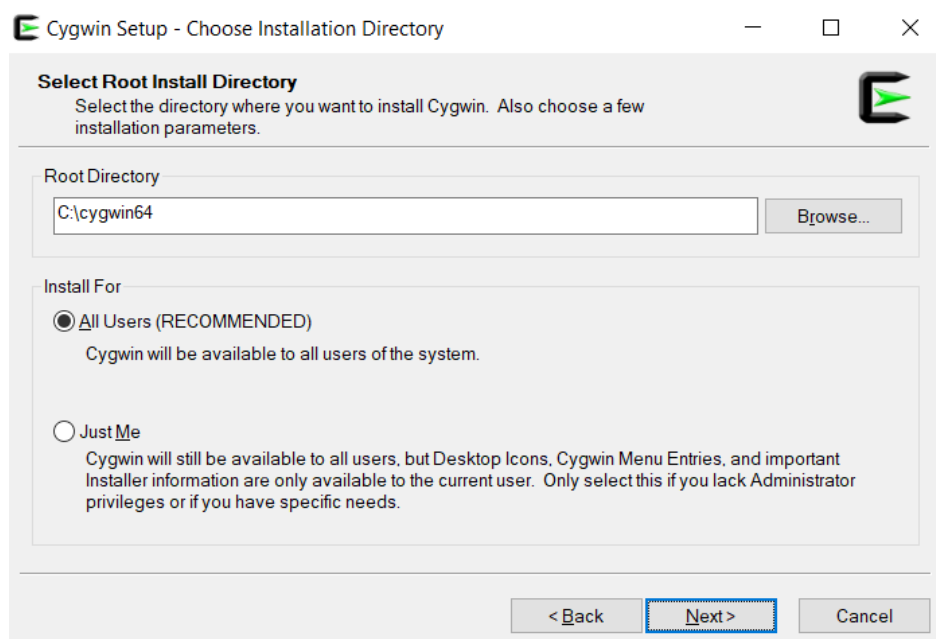
After downloading `.exe` file, double-click on it to launch **Cygwin Setup** window and hit Next.



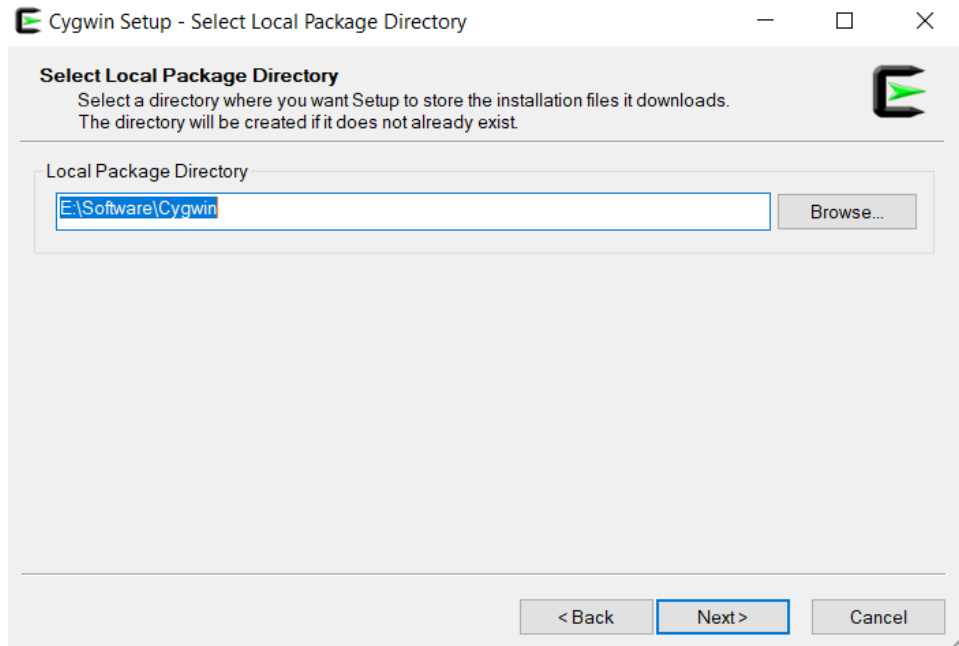
Choose the installation type: “Install from Internet” and hit Next.



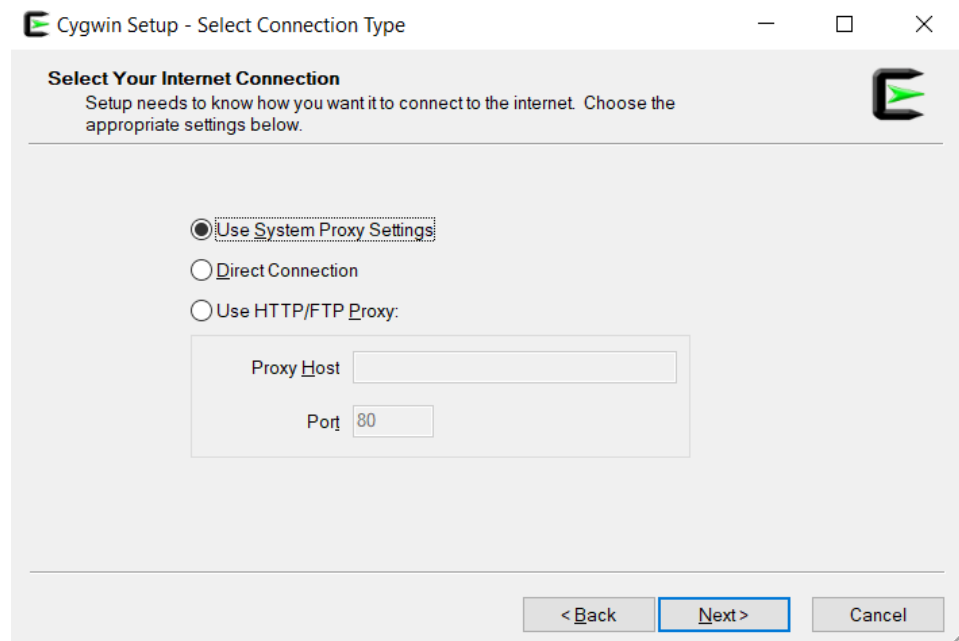
Select the root installation directory where Cygwin needs to be installed (note that the default install path is `C:\cygwin64` in Windows 64-bit OS) and choose if this installation is for you or for all users accessing the machine and click on Next.



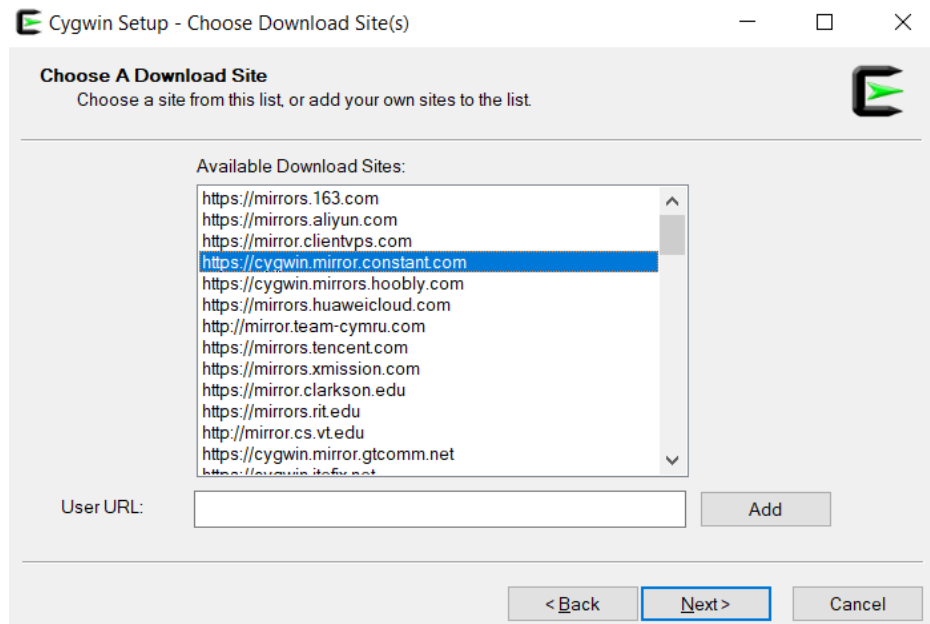
Next, select a local directory where Cygwin needs to store installation files when it downloads. By default, it shows the location of where `.exe` file got launched. Change it if you wish to and press Next.



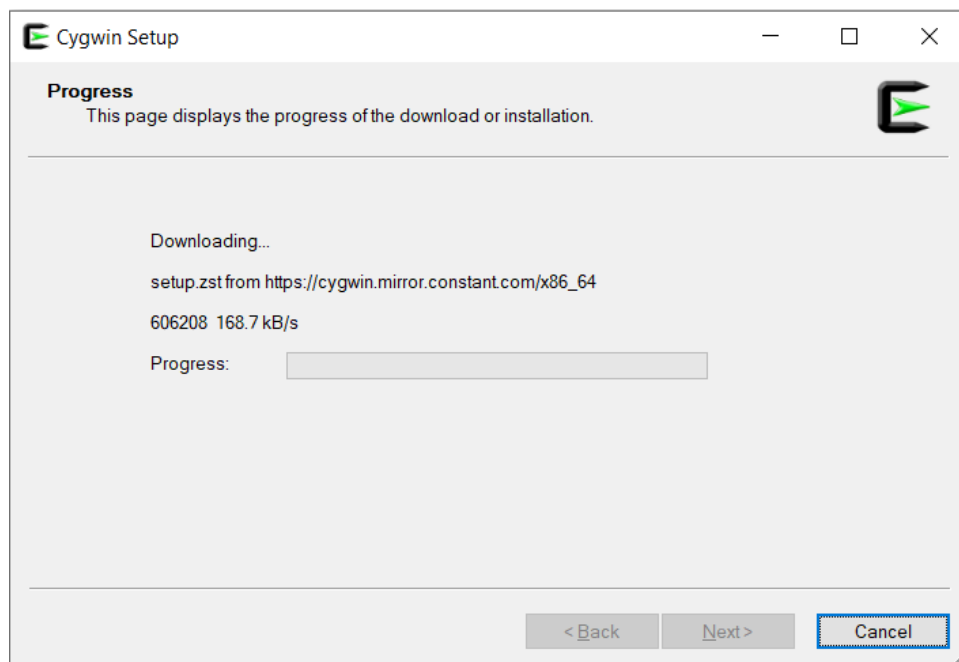
Select the option of how Cygwin needs to connect to Internet. You can leave the default selection and press Next.



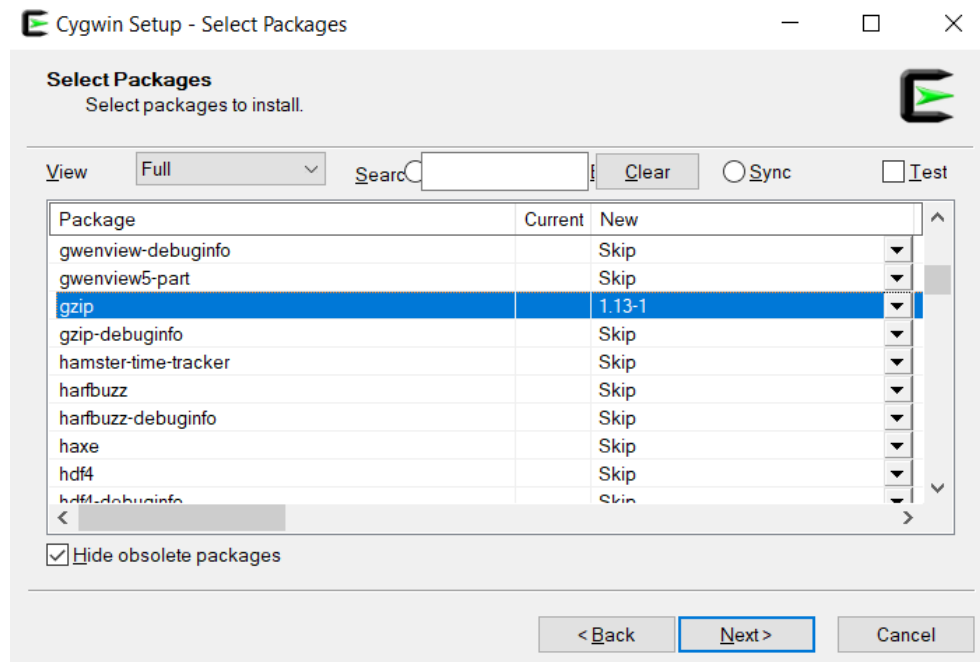
Then, choose a download site from the available list or mention a different download URL to add to this list and hit Next



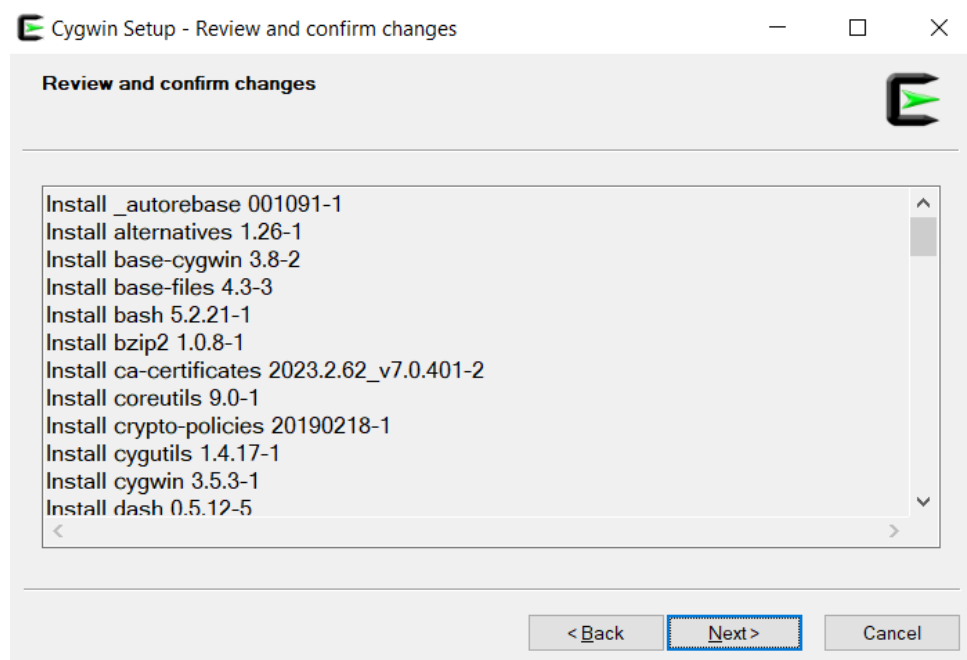
Then it starts downloading Cygwin from the chosen download URL.



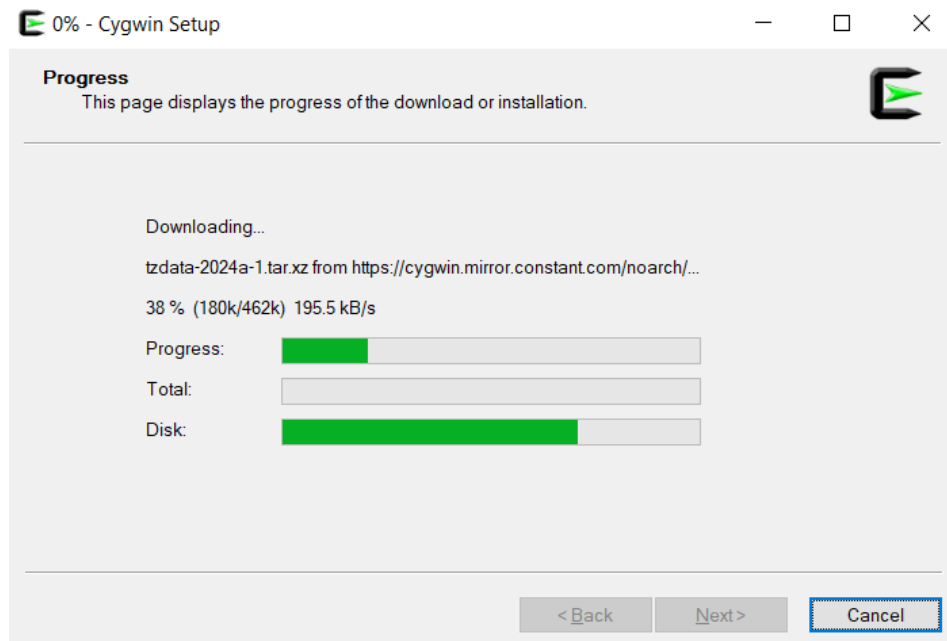
Next, select Linux packages that you would want Cygwin to install and press Next



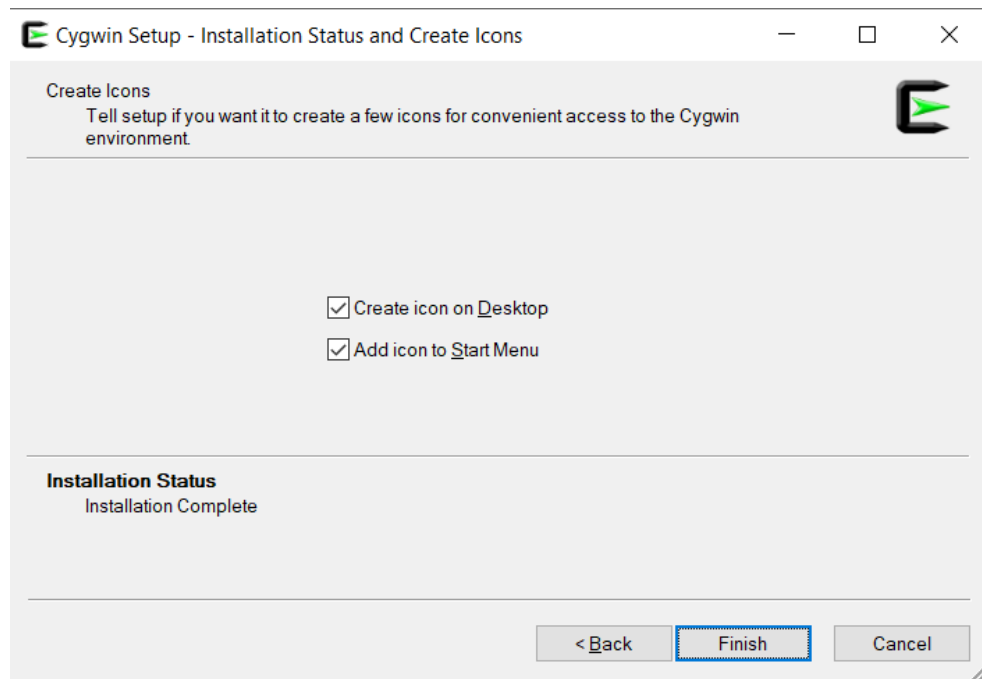
Review and confirm changes by pressing Next.



It takes time to get selected packages downloaded.

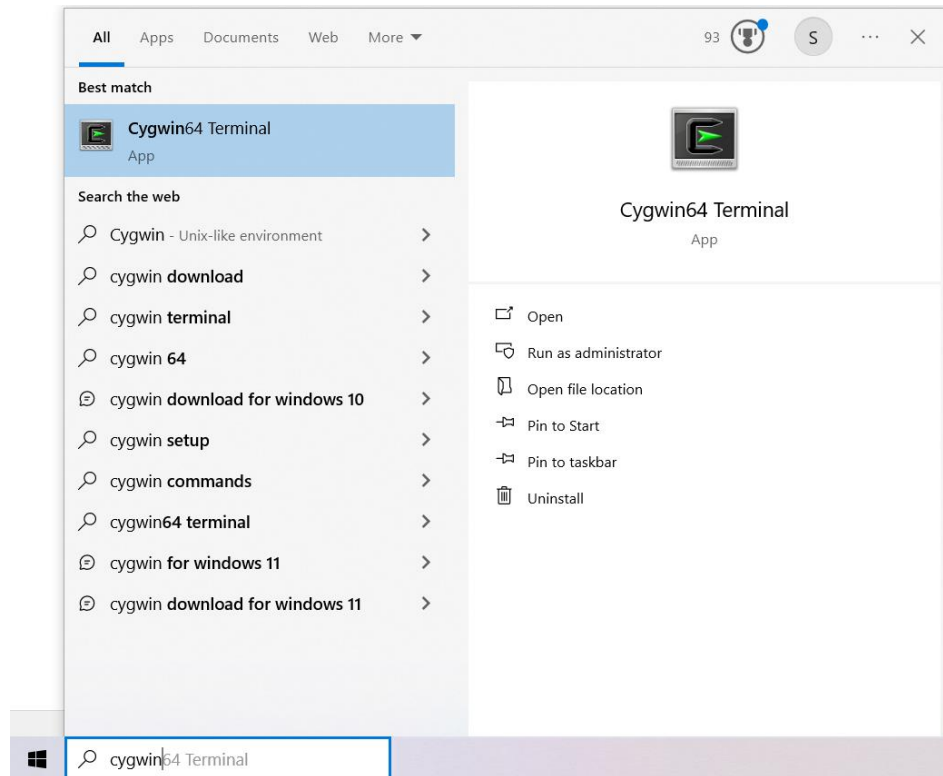


Installation is completed and we are ready to use Cygwin now. Click on Finish to close the setup window.



3. Cygwin Terminal Usage:

To run Linux commands on the Cygwin terminal, start typing “Cygwin” in the Windows search bar and open **Cygwin64 Terminal** application.



The first usage of Cygwin terminal may give the following messages just as an FYI

```
/cygdrive/c/users
Copying skeleton files.
These files are for the users to personalise their cygwin experience.
They will never be overwritten nor automatically updated.
'./bashrc' -> '/home/hp/./bashrc'
'./bash_profile' -> '/home/hp/./bash_profile'
'./inputrc' -> '/home/hp/./inputrc'
'./profile' -> '/home/hp/./profile'
hp@DESKTOP-KGH2E2G ~
```

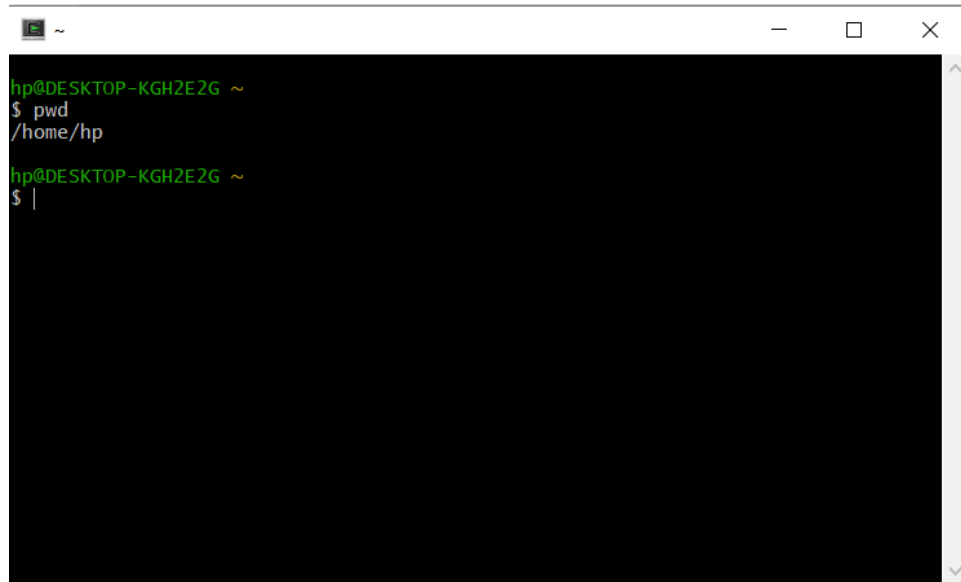
Hurray!!, you can now play with Linux commands on Windows without Linux operating system.

Some basic Linux commands that you can start with:

Simply type a command on the terminal and press Enter to see results

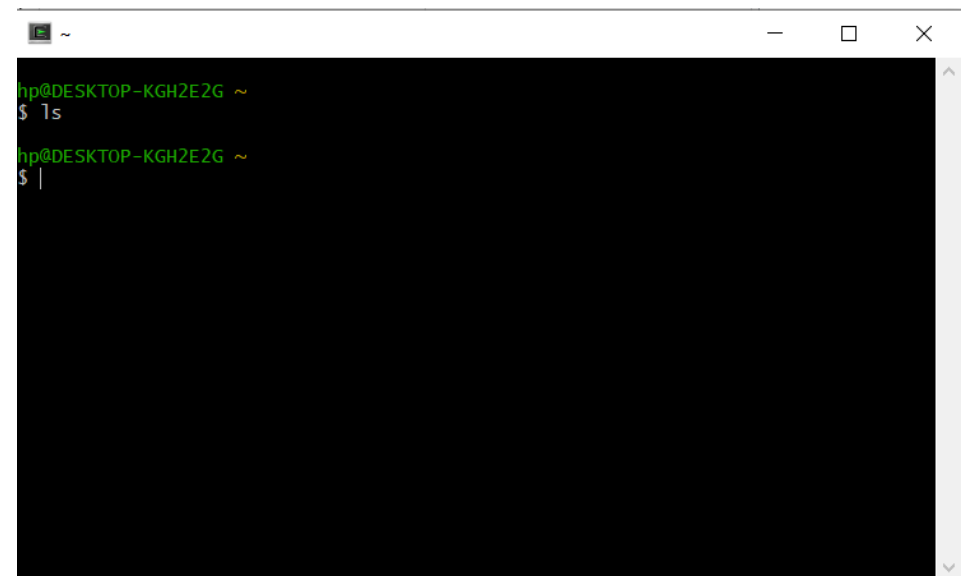
Command 1: Get present working directory:

```
pwd
```

A terminal window titled '~' with standard window controls. The prompt is 'hp@DESKTOP-KGH2E2G ~'. The command 'pwd' has been entered and executed, resulting in the output '/home/hp'. The prompt is now '\$ |'.

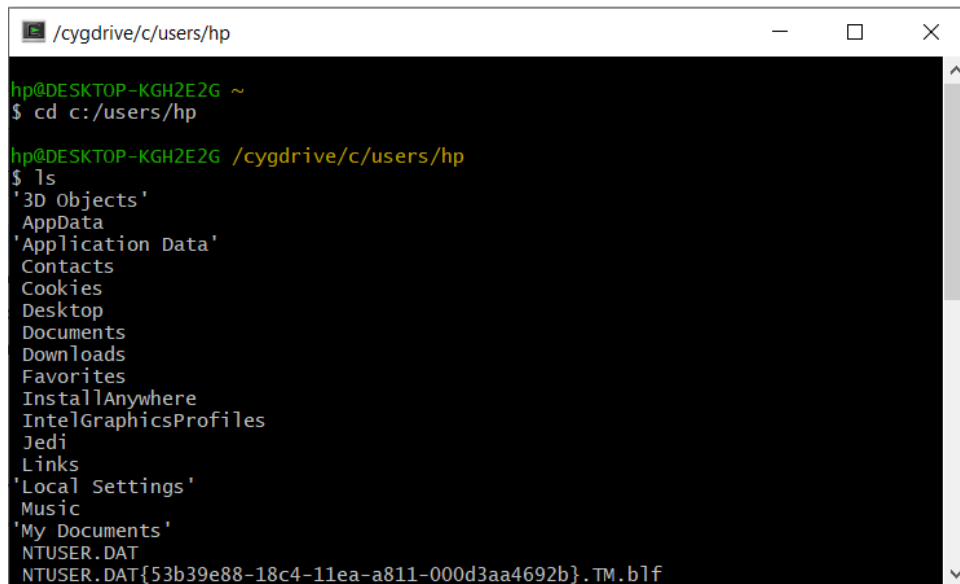
Command 2: List all directories and files in the present working directory:

```
ls
```

A terminal window titled '~' with standard window controls. The prompt is 'hp@DESKTOP-KGH2E2G ~'. The command 'ls' has been entered and executed. The output is not visible in the screenshot. The prompt is now '\$ |'.

Command 3: Navigate to specific directory:

```
cd <dirname>
```

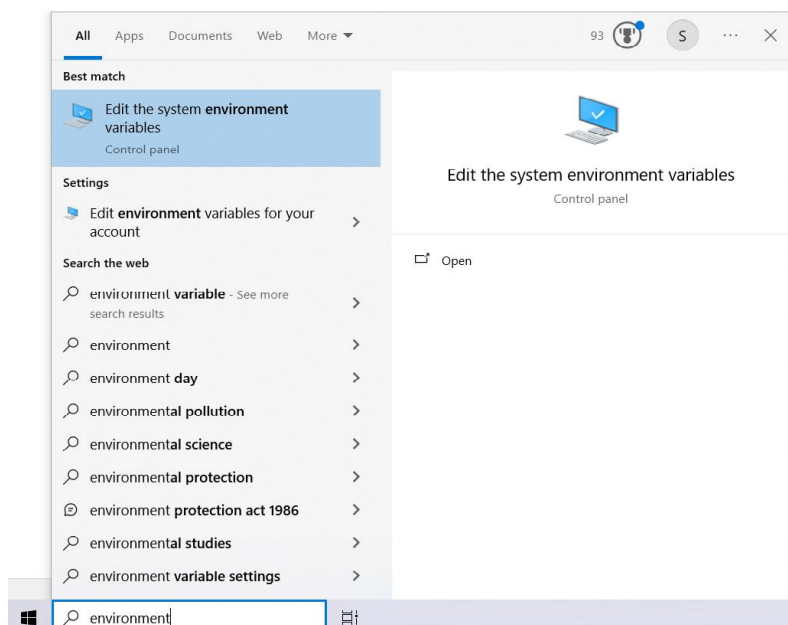


```
/cygdrive/c/users/hp  
hp@DESKTOP-KGH2E2G ~  
$ cd c:/users/hp  
hp@DESKTOP-KGH2E2G /cygdrive/c/users/hp  
$ ls  
'3D Objects'  
AppData  
'Application Data'  
Contacts  
Cookies  
Desktop  
Documents  
Downloads  
Favorites  
InstallAnywhere  
IntelGraphicsProfiles  
Jedi  
Links  
'Local Settings'  
Music  
'My Documents'  
NTUSER.DAT  
NTUSER.DAT{53b39e88-18c4-11ea-a811-000d3aa4692b}.TM.blf
```

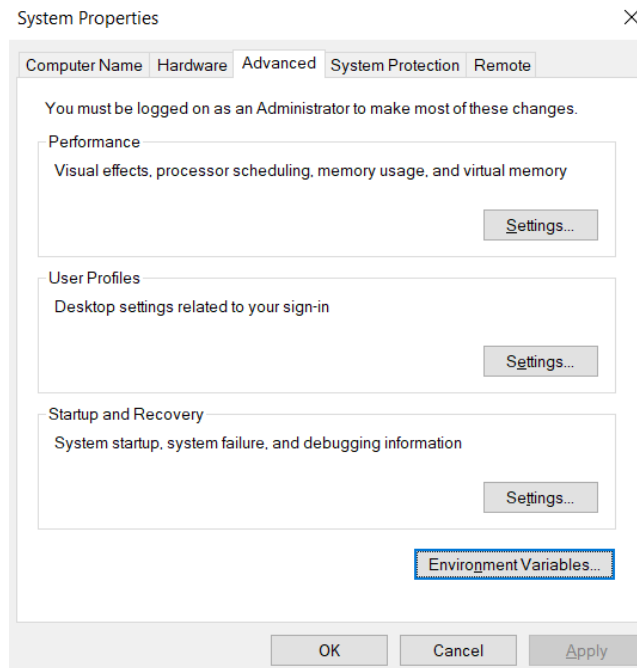
4. Linux Commands on Windows Prompt:

Apart from using Cygwin Terminal, we can directly run Linux commands on Command Prompt itself. To do that, we need to add Cygwin path to Windows PATH environment variable.

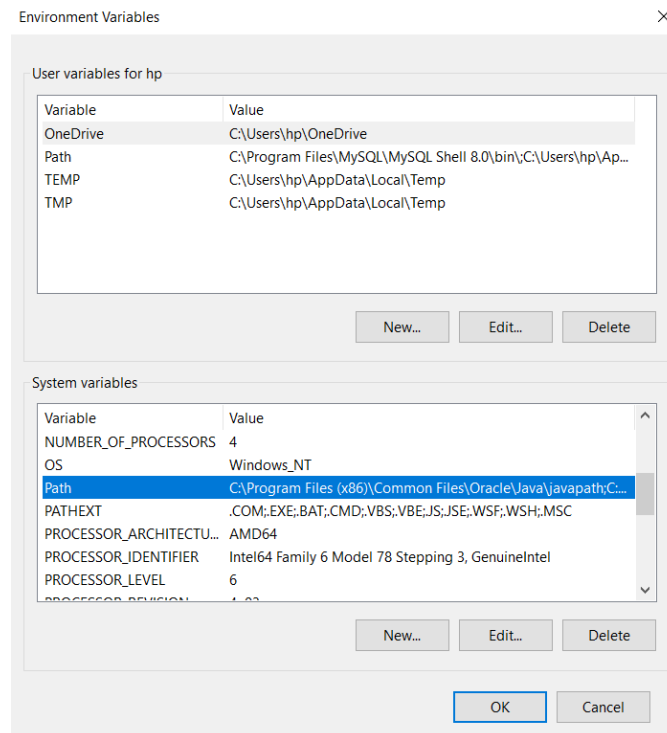
In the Windows search bar, start typing “environment variables” and select the first match.



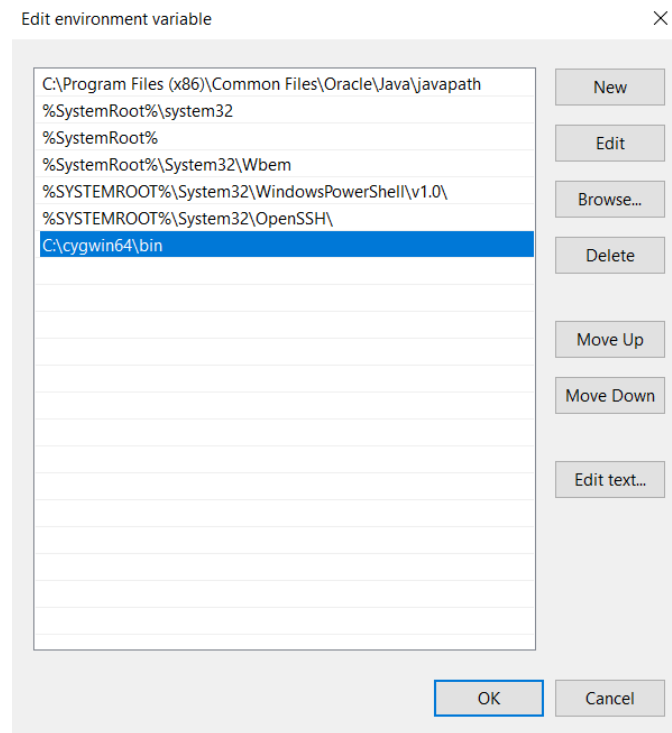
On the “System Properties” window, click on “Environment Variables” button on the bottom right side.



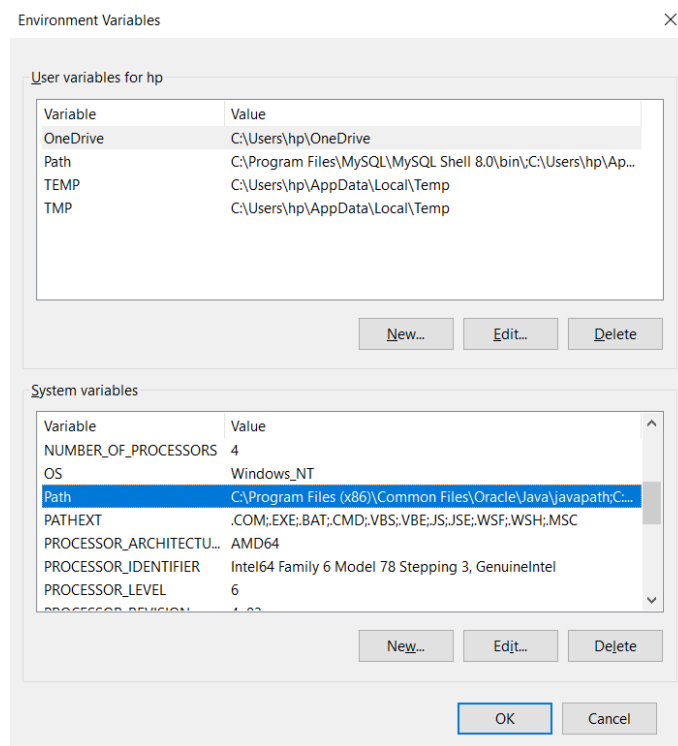
Select **Path** variables under “System Variables” tab and press Edit.



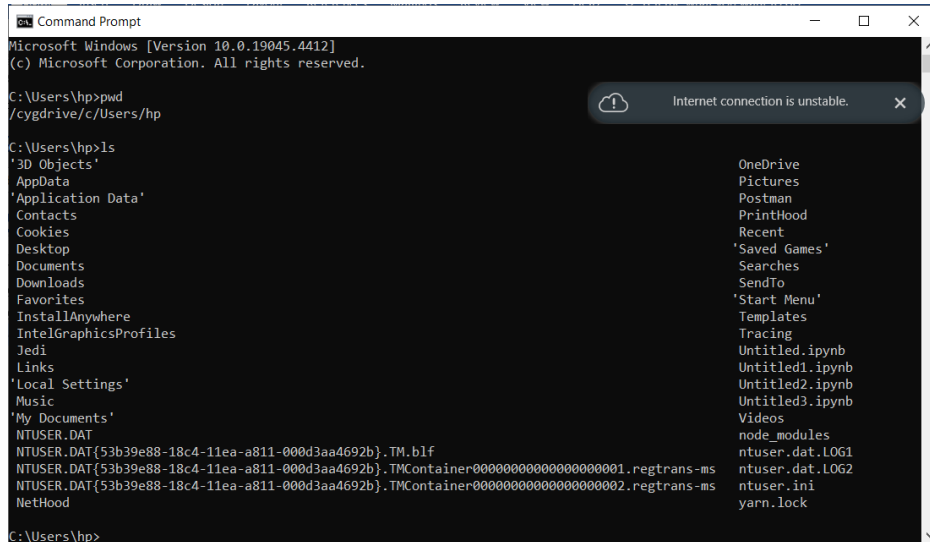
Press **New**, add the path of `cygwin\bin` installation directory and Press **OK**



After **Path** variable is updated, press **OK** on “Environment Variables” window to apply changes.



Open new **Command Prompt** and it now works like Linux terminal which accepts Linux commands.



```
Command Prompt
Microsoft Windows [Version 10.0.19045.4412]
(c) Microsoft Corporation. All rights reserved.

C:\Users\hp>pwd
/cygdrive/c/Users/hp

C:\Users\hp>ls
'3D Objects'                                OneDrive
AppData                                     Pictures
'Application Data'                         Postman
Contacts                                  PrintHood
Cookies                                   Recent
Desktop                                  'Saved Games'
Documents                                Searches
Downloads                               SendTo
Favorites                              'Start Menu'
InstallAnywhere                         Templates
IntelGraphicsProfiles                  Tracing
Jedi                                   Untitled.ipynb
Links                                  Untitled1.ipynb
'Local Settings'                       Untitled2.ipynb
Music                                  Untitled3.ipynb
'My Documents'                          Videos
NTUSER.DAT                             node_modules
NTUSER.DAT{53b39e88-18c4-11ea-a811-000d3aa4692b}.TM.b1f  ntuser.dat.LOG1
NTUSER.DAT{53b39e88-18c4-11ea-a811-000d3aa4692b}.TM.Container000000000000000001.regtrans-ms  ntuser.dat.LOG2
NTUSER.DAT{53b39e88-18c4-11ea-a811-000d3aa4692b}.TM.Container000000000000000002.regtrans-ms  ntuser.ini
NetHood                                yarn.lock

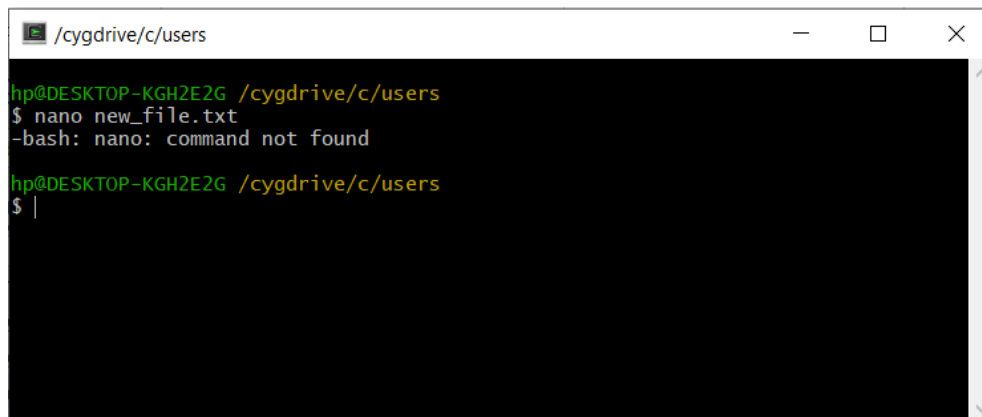
C:\Users\hp>
```

Note:

When you try to execute non-basic Linux commands in Cygwin, you may get error “command not found”.

Run nano command:

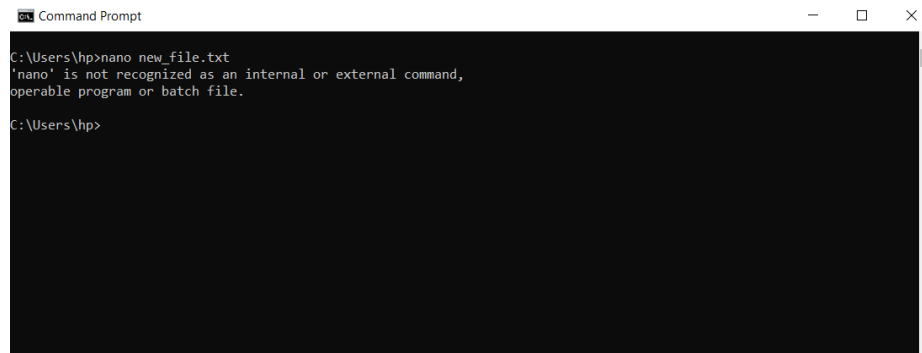
```
nano <dirname>
```



```
/cygdrive/c/users

hp@DESKTOP-KGH2E2G /cygdrive/c/users
$ nano new_file.txt
-bash: nano: command not found

hp@DESKTOP-KGH2E2G /cygdrive/c/users
$ |
```

A screenshot of a Windows Command Prompt window. The title bar reads "Command Prompt". The command prompt shows the user at the C:\Users\hp> prompt. They have entered the command "nano new_file.txt". The response from the system is: "'nano' is not recognized as an internal or external command, operable program or batch file." The prompt then returns to C:\Users\hp>.

```
Command Prompt
C:\Users\hp>nano new_file.txt
'nano' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\hp>
```

This error is because the installed packages of Cygwin don't support these commands. To use these commands, you have to start **Cygwin setup** by running `setup-x86-64.exe` file, keep pressing Next until you reach "select packages" where you have to select packages containing the functionality of this command.

There you go! Now, you are free to execute Linux commands either on Windows Command Prompt or on Cygwin Terminal.

As a next step, you can refer [Linux Commands Cheat sheet](#) and start practicing.