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SETUP CYGWIN ON WINDOWS MACHINE

By www.HadoopExam.com

Note: These instructions should be used with the HadoopExam Apache OOzie: Professional Trainings. Where it is executed and you can do hands on with trainer.
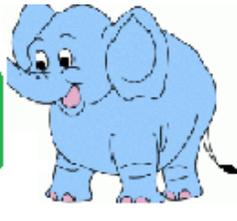
Cloudera CCA175 (Hadoop and Spark Developer Hands-on Certification available with total 90 solved problem scenarios. Click for More Detail)

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Step 1: Download Cygwin from below URL

https://www.cygwin.com/

Current Cygwin DLL version

The most recent version of the Cygwin DLL is 2.8.0. Install it by running setup-x86.exe (32-bit installation) or setup-x86_64.exe (64-bit installation).
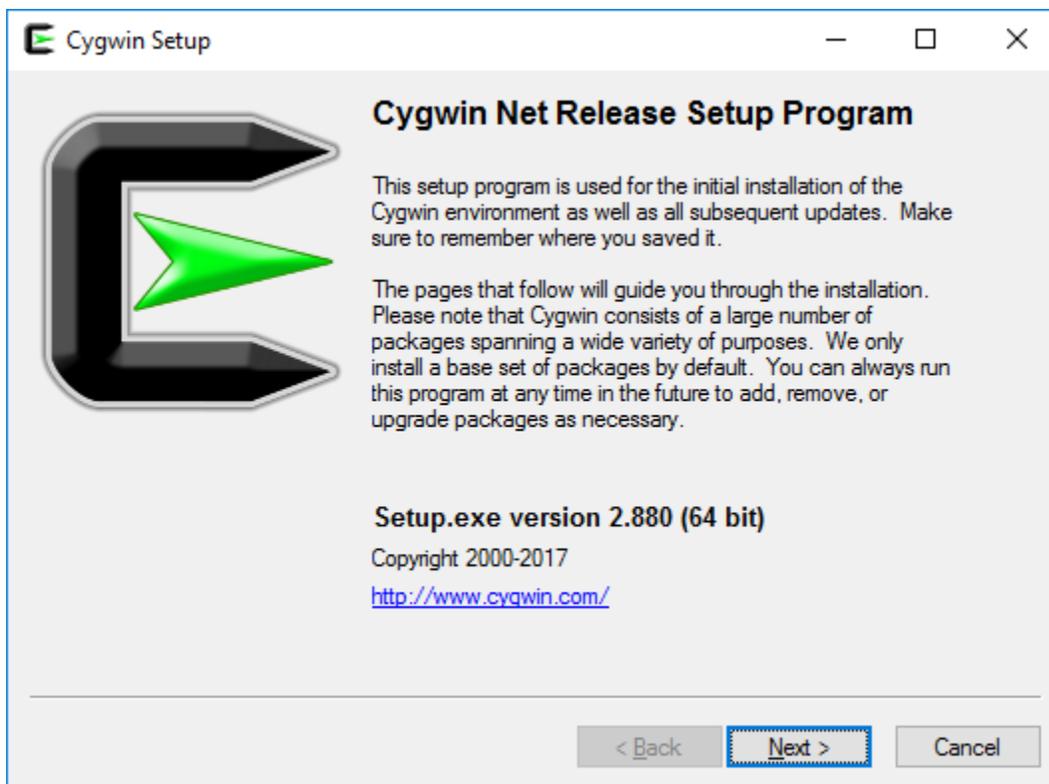
Use the setup program to perform a fresh install or to update an existing installation.

Download following setup file
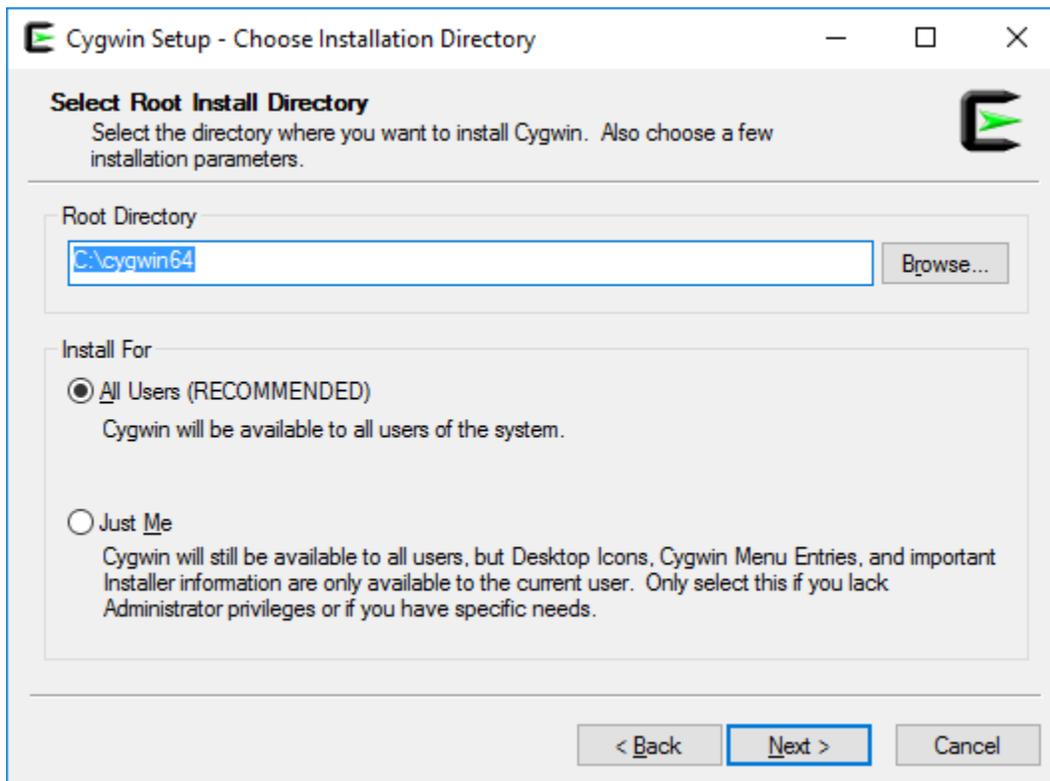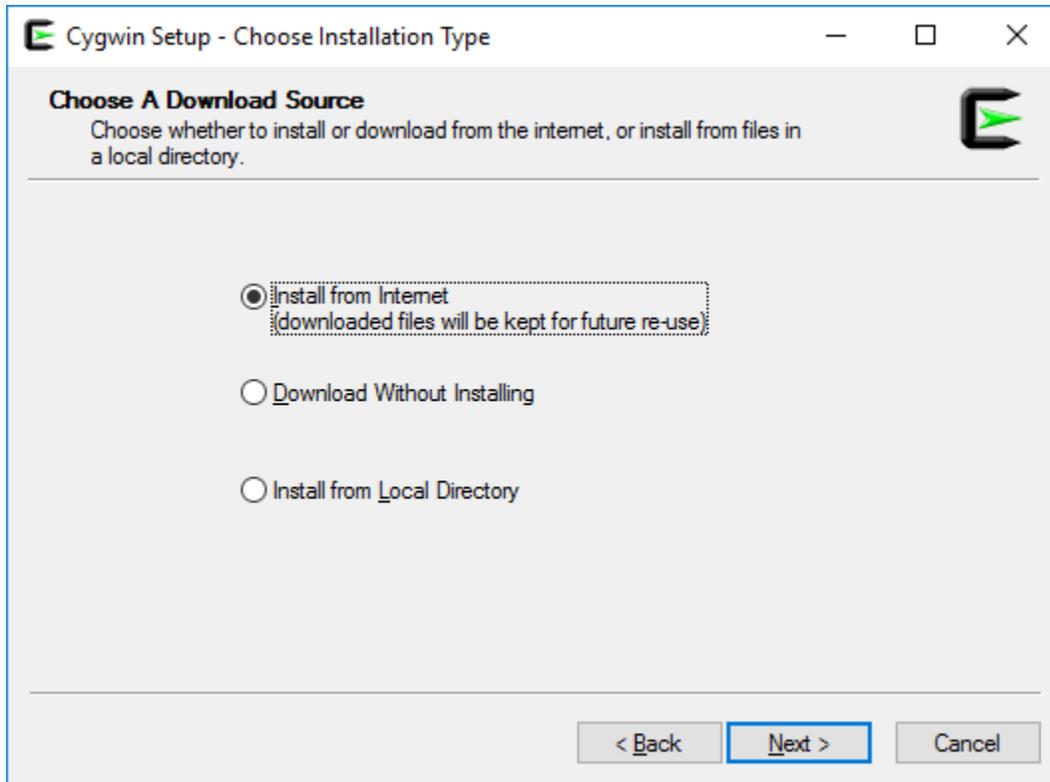
setup-x86_64.exe

VMware-workstation-full-12.5.6-5528349.exe
☑ setup-x86_64.exe
CentOS-7-x86_64-DVD-1611.iso
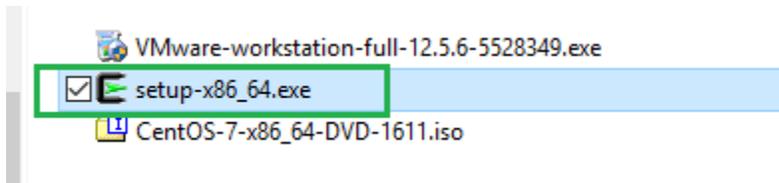
Step 2: Now double click to start setup (Now keep everything default and click next). You can refer below images.

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 base 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 2.880 (64 bit)

Copyright 2000-2017

http://www.cygwin.com/

< Back   Next >   Cancel

Cygwin Setup - Choose Installation Type   —   ☐   ✕

Choose A Download Source

Choose whether to install or download from the internet, or install from files in a local directory.

⦿ Install from Internet
(downloaded files will be kept for future re-use)

◯ Download Without Installing

◯ Install from Local Directory

< Back   Next >   Cancel

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:\cygwin64   Browse...

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.

< Back   Next >   Cancel

Cygwin Setup - Select Local Package Directory   — □ ✕

Select Local Package Directory
Select a directory where you want Setup to store the installation files it downloads. The directory will be created if it does not already exist.

Local Package Directory

C:\Users\hadoo\Downloads   Browse...

< Back   Next >   Cancel

Cygwin Setup - Select Connection Type   — □ ✕

Select Your Internet Connection
Setup needs to know how you want it to connect to the internet. Choose the appropriate settings below.

◉ Direct Connection

○ Use System Proxy Settings

○ Use HTTP/FTP Proxy:

　　Proxy Host [   ]

　　　　Port [80]

○ Direct Connection (legacy)

< Back   Next >   Cancel

Cygwin Setup - Choose Download Site(s) — □ ✕

Choose A Download Site
Choose a site from this list, or add your own sites to the list

Available Download Sites:

```
http://cygwin.mirror.constant.com
http://cygwin.mirrors.hoobly.com
http://mirrors.koehn.com
http://mirrors.metapeer.com
http://cygwin.parentingamerica.com
http://www.pirbot.com
http://cygwin.skazkaforyou.com
ftp://mirrors.xmission.com
http://mirrors.xmission.com
ftp://ftp.gtlib.gatech.edu
http://mirror.cs.vt.edu
http://ftp.daum.net
http://mirror.nexcess.net
```

User URL: [   ]   Add

< Back   Next >   Cancel

Cygwin Setup — □ ✕

Progress
This page displays the progress of the download or installation.

Downloading...

setup.xz from http://cygwin.mirror.constant.com/x86_64

2019328 828.6 kB/s

Progress: [   ]

< Back   Next >   Cancel
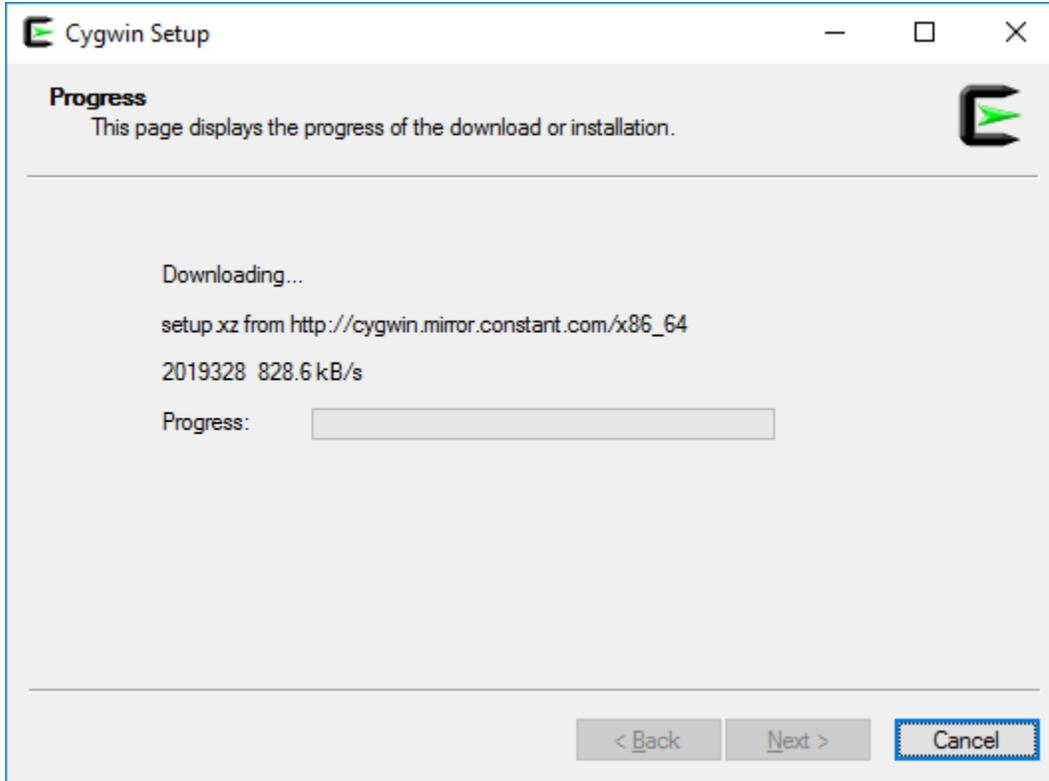
Step 3: Let's keep the installation as default and click next.

Cygwin Setup - Resolving Dependencies — □ ✕

Resolving Dependencies
    The following packages are required to satisfy dependencies.

bzip2   (1.0.6-3)
           BZip file de/compressor
           Required by: tar

ca-certificates   (2.14-1)
           CA root certificates
           Required by: libopenssl100

groff   (1.22.3-1)
           GNU roff formatter
           Required by: man-db

☑ Select required packages (RECOMMENDED)

< Back   Next >   Cancel
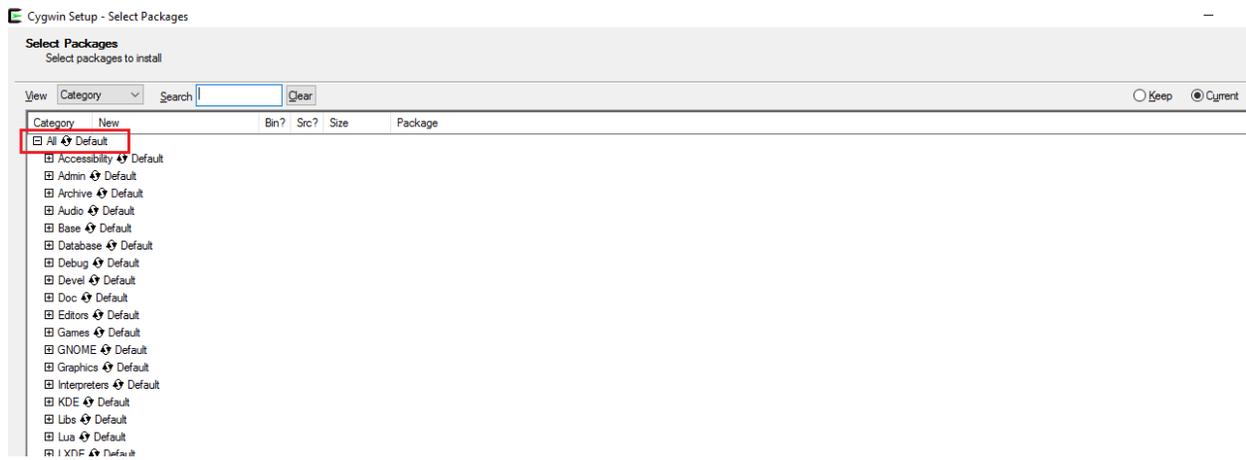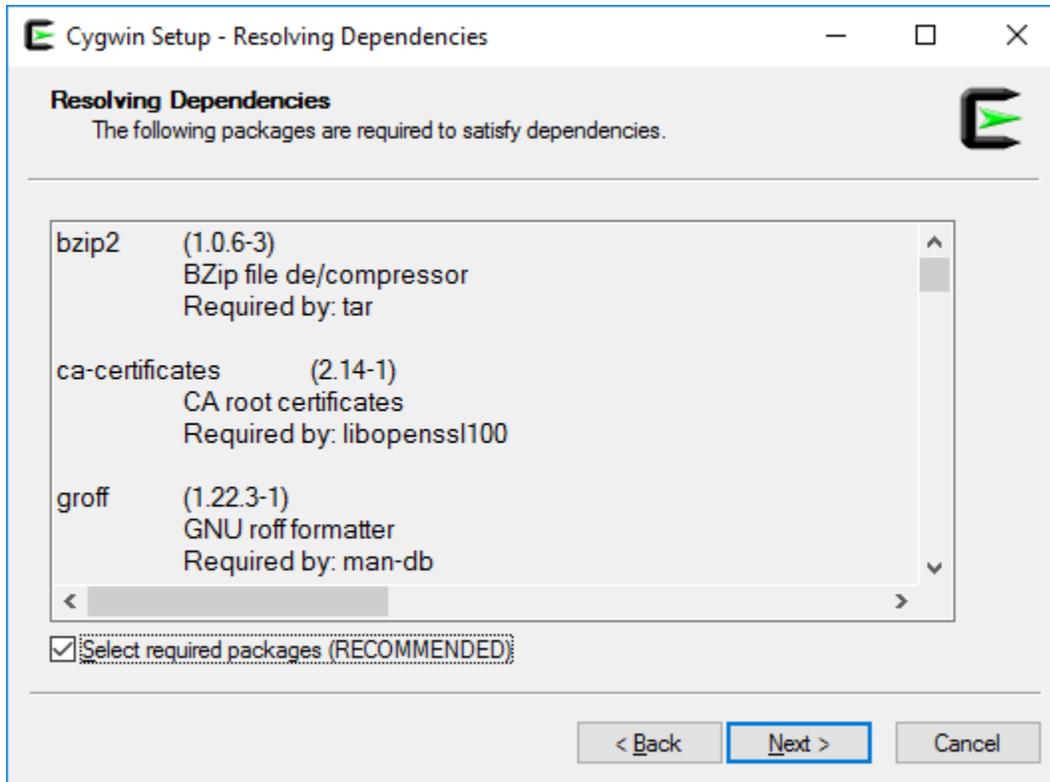
It will take some time to get completed.

8% - Cygwin Setup — □ ✕

Progress
    This page displays the progress of the download or installation.

Downloading...

ca-certificates-2.14-1.tar.xz from http://cygwin.mirror.constant.c...

62 % (262k/417k) 578.7 kB/s

Package:
Total:
Disk:

< Back   Next >   Cancel
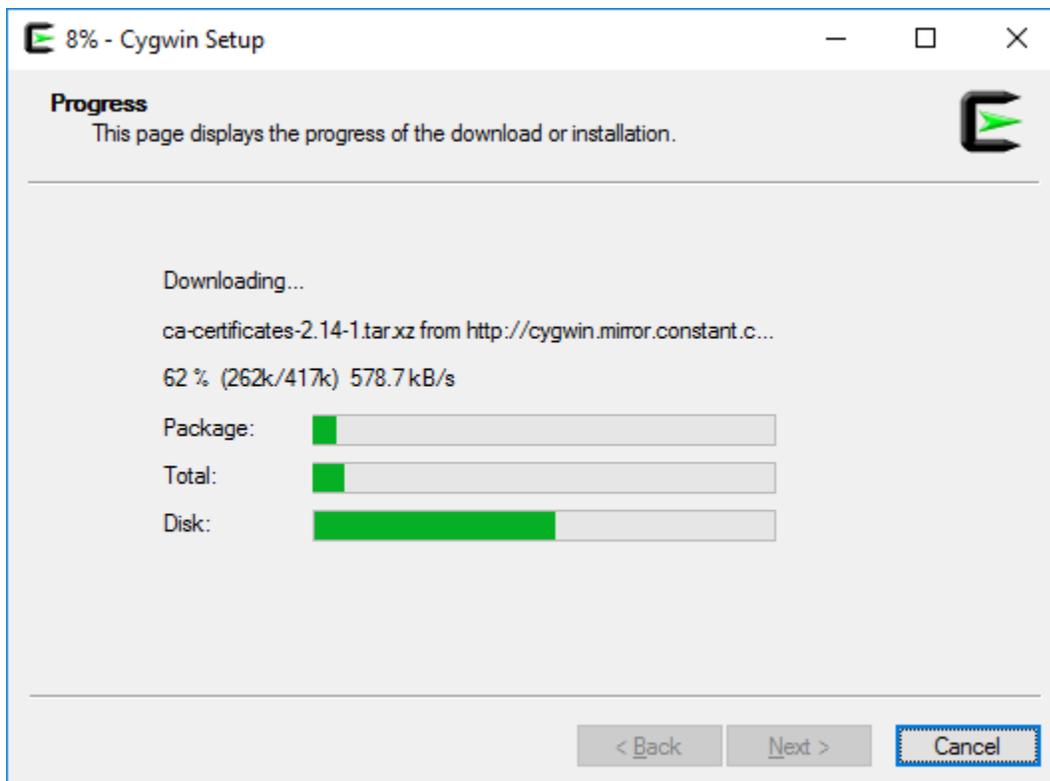
Now it will ask to create shortcuts on desktop
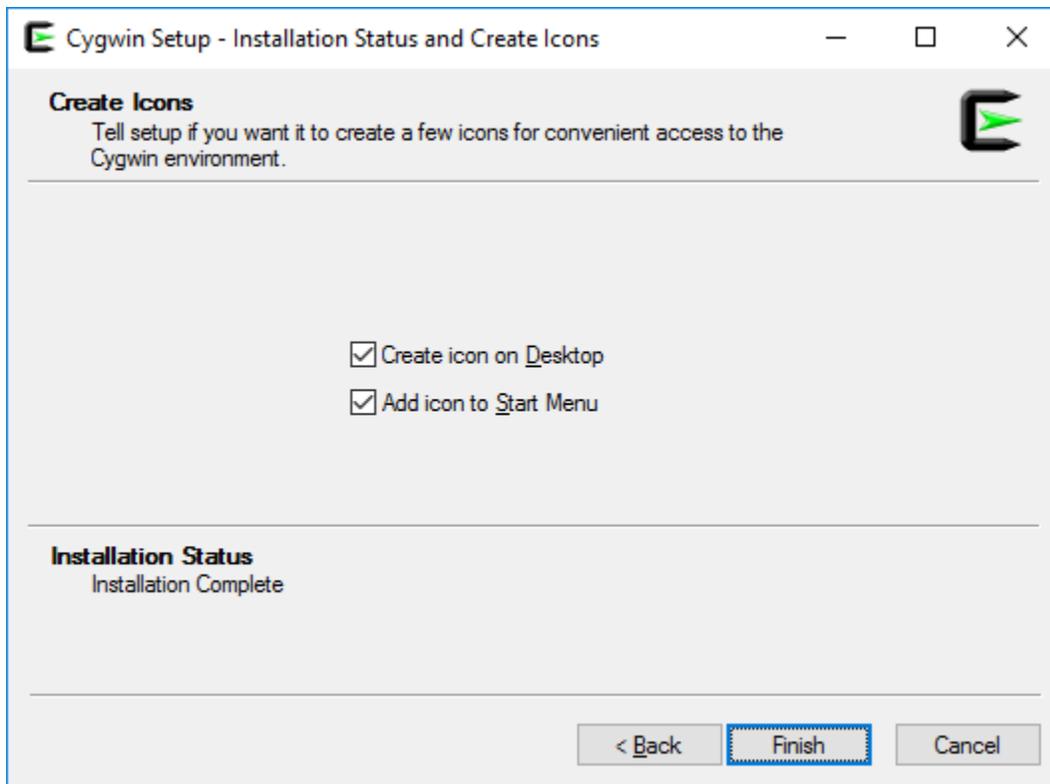
Step 4 : Now start Cygwin from desktop
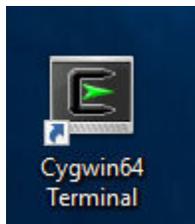
You can see below window, and you can try some linux commands e.g pwd

```
Copying skeleton files.
These files are for the users to personalise their cygwin experience.

They will never be overwritten nor automatically updated.

'./.bashrc' -> '/home/hadoo//.bashrc'
'./.bash_profile' -> '/home/hadoo//.bash_profile'
'./.inputrc' -> '/home/hadoo//.inputrc'
'./.profile' -> '/home/hadoo//.profile'

hadoo@HadoopExam ~
$ ls -ltr
total 0

hadoo@HadoopExam ~
$ pw
-bash: pw: command not found

hadoo@HadoopExam ~
$ pwd
/home/hadoo

hadoo@HadoopExam ~
$ |
```

Step 5: Now ping virtual machine from Cygwin

ping **192.168.182.101**

```
hadoo@HadoopExam ~
$ ping 192.168.182.101

Pinging 192.168.182.101 with 32 bytes of data:
Reply from 192.168.182.101: bytes=32 time<1ms TTL=64
Reply from 192.168.182.101: bytes=32 time<1ms TTL=64



Reply from 192.168.182.101: bytes=32 time<1ms TTL=64


Reply from 192.168.182.101: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.182.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Step 6 : To go to your machine c drive. Type below command

cd /cygdrive/c

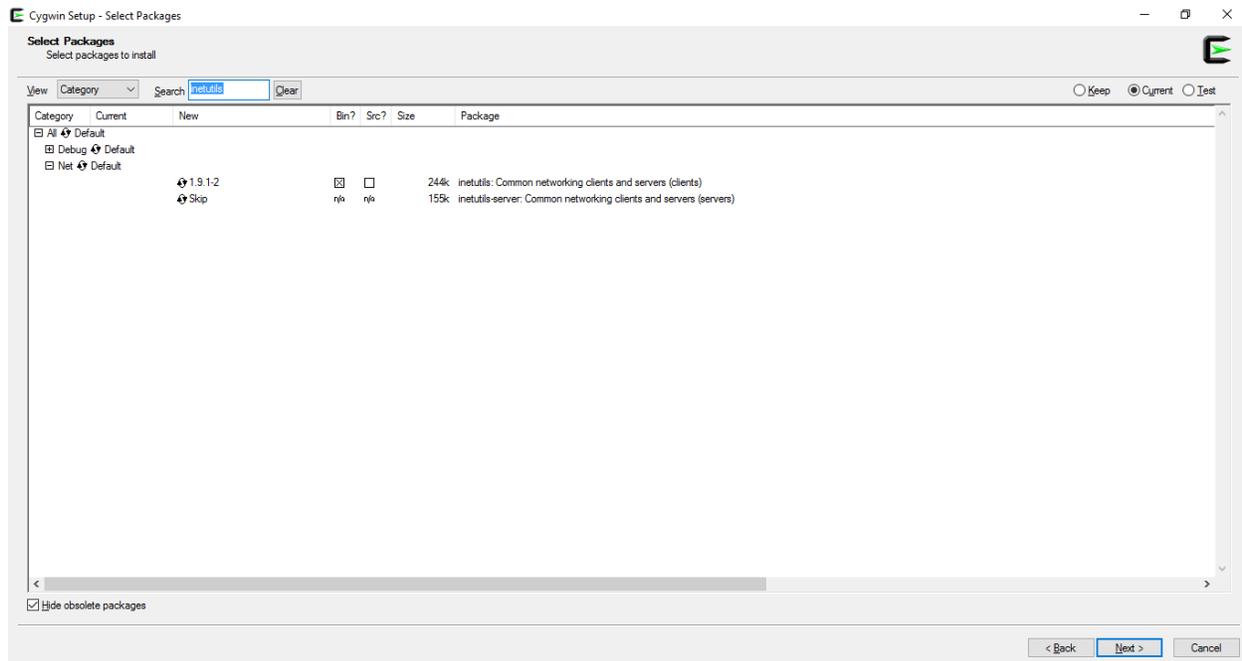Step 7: Now install different packages in Cygwin. We will install following two packages

ssh(openssh)
inetutils

Start Cygwin setup(setup-x86_64.exe) again until you reach the package selection.

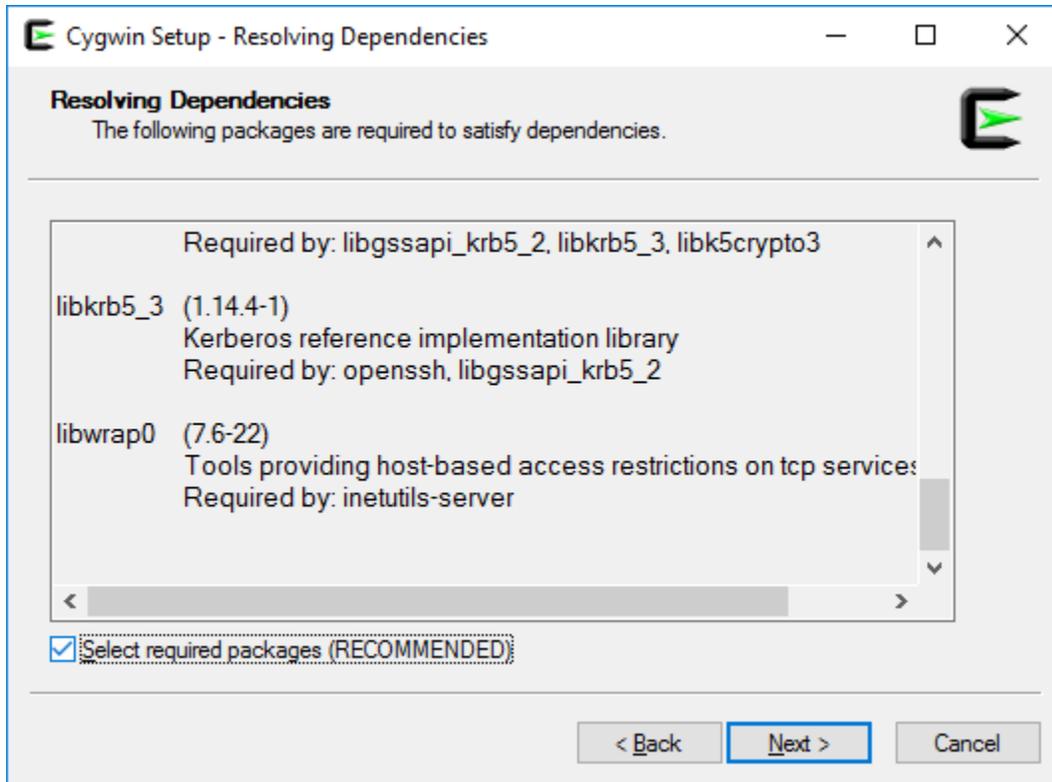Search for openssh and select
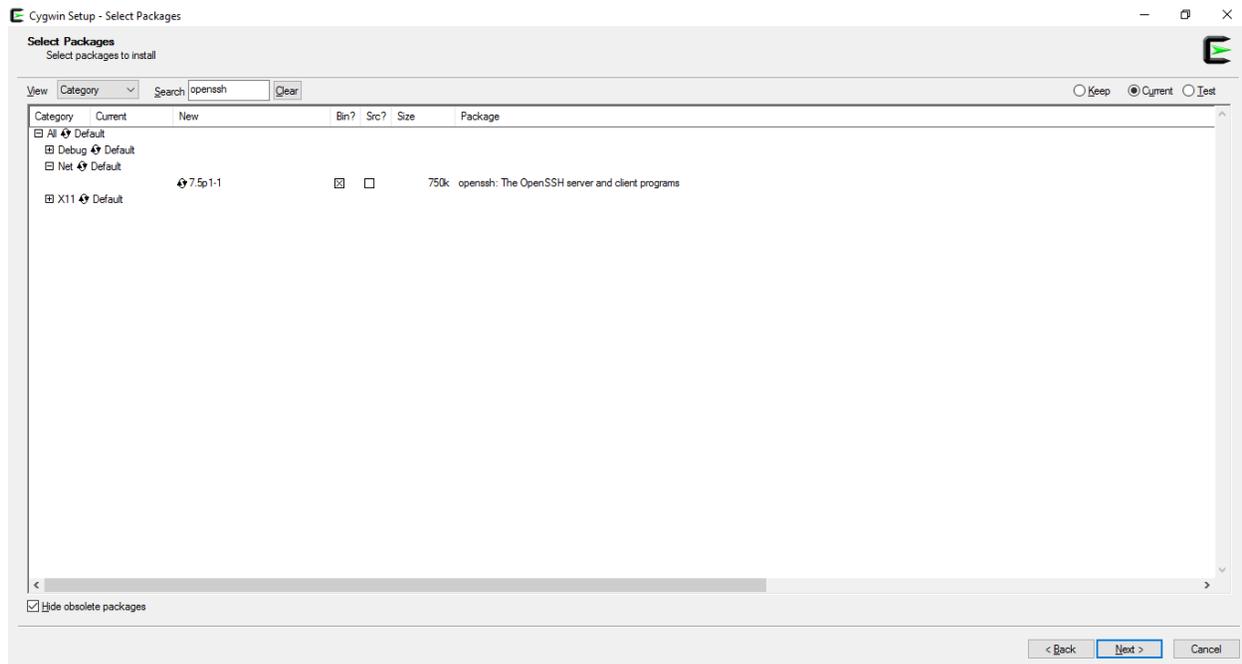
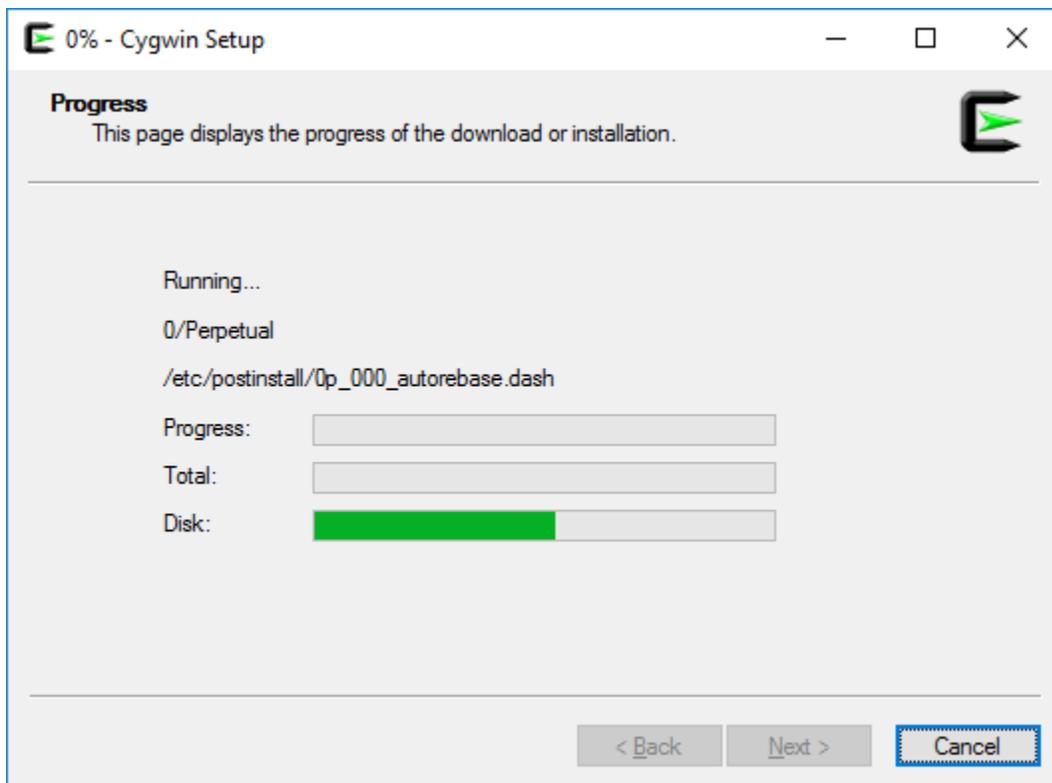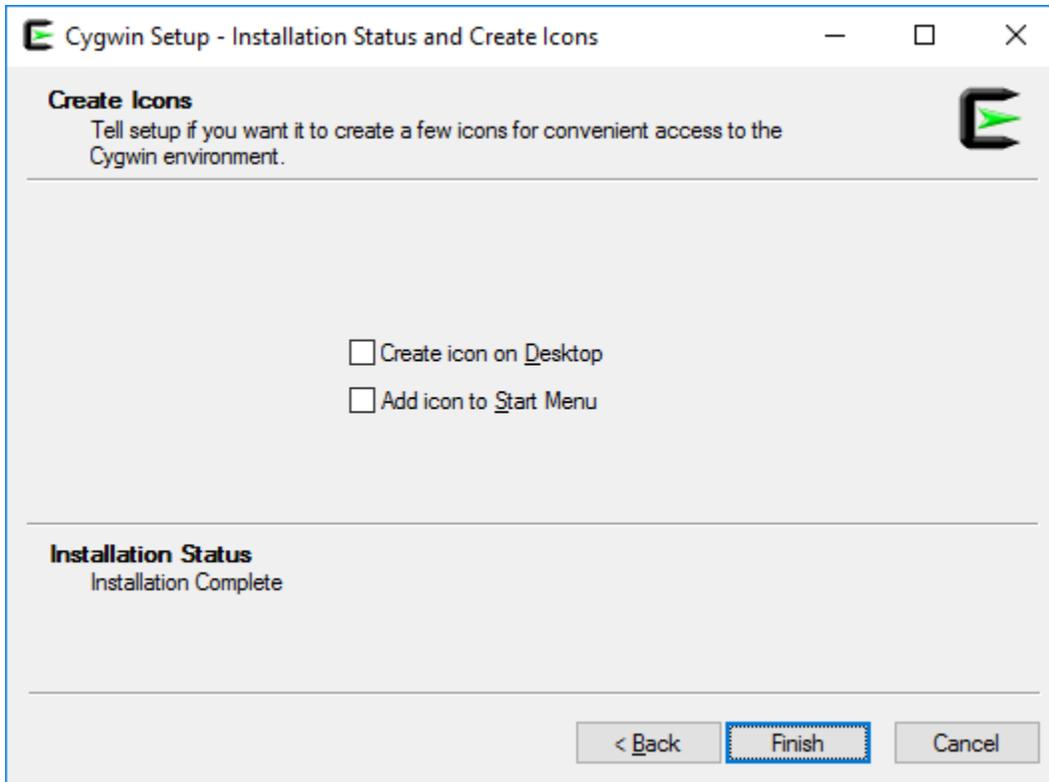Search for inetutils and select

Click next

Cygwin Setup - Resolving Dependencies — ☐ ✕

Resolving Dependencies
The following packages are required to satisfy dependencies.

Required by: libgssapi_krb5_2, libkrb5_3, libk5crypto3

libkrb5_3 (1.14.4-1)
Kerberos reference implementation library
Required by: openssh, libgssapi_krb5_2

libwrap0 (7.6-22)
Tools providing host-based access restrictions on tcp services
Required by: inetutils-server

☑ Select required packages (RECOMMENDED)

< Back   Next >   Cancel

It will start installations

0% - Cygwin Setup — ☐ ✕

Progress
This page displays the progress of the download or installation.

Running...

0/Perpetual

/etc/postinstall/0p_000_autorebase.dash

Progress:

Total:

Disk:

< Back   Next >   Cancel

Once finished , you can see below window.

Step 8 : Now start Cygwin terminal and fire below ssh command to connect the VM.

```
ssh root@192.168.182.101
```

And enter password as hadoopexam, you are now connected to your vm
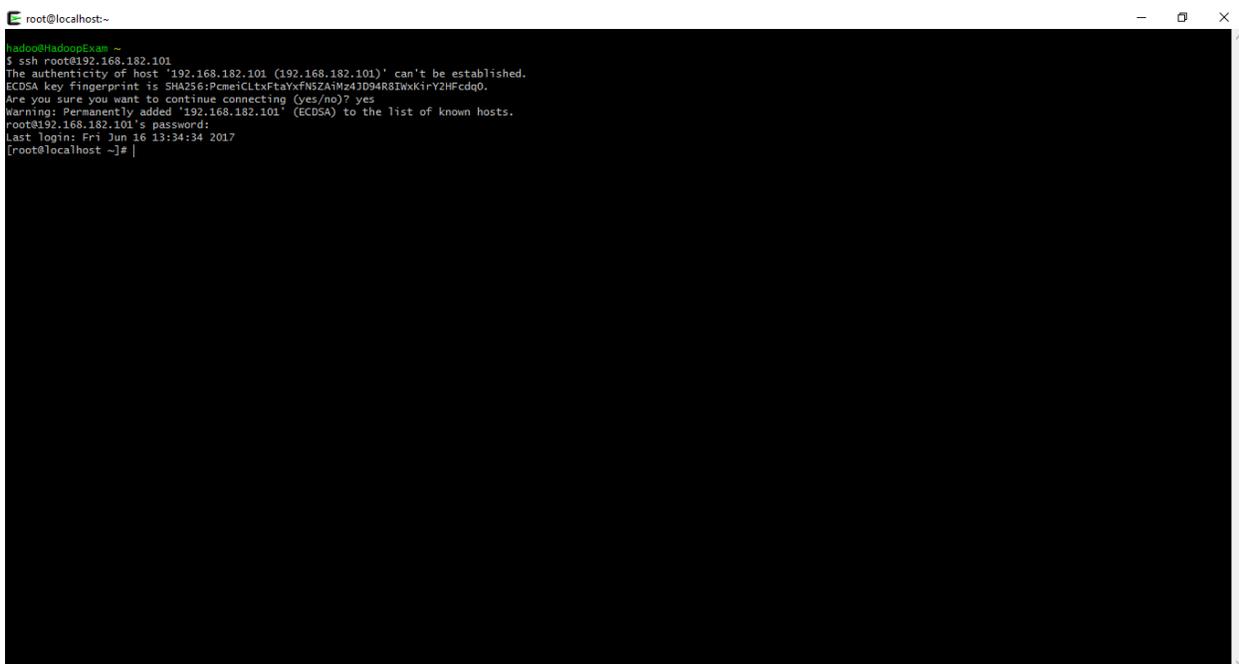
Setup Passwordless login to Remote Machine (Our Virtual Machine)

Step 9: Generate ssh public and private key from your windows machine, using below command on windows os in Cygwin terminal (Please be in home directory). **Don't enter anything else**.

```
ssh-keygen
```

```
hadoo@HadoopExam ~
$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/hadoo/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/hadoo/.ssh/id_rsa.
Your public key has been saved in /home/hadoo/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:2XmRGIa1EJN2tHcpfFt8awEDSgyZTSeCnAwOCzZBDpw hadoo@HadoopExam
The key's randomart image is:
+---[RSA 2048]----+
|=*o.+ oo@X=o.o    |
|=E=  = o**=* .oo  |
| o .    . o+ * +.+|
|          o o = o+|
|         S o . .o |
|              . . |
|                  |
|                  |
+----[SHA256]-----+
```

Step 10: Now we will copy public keys in Virtual Machine.

```
scp .ssh/id_rsa.pub root@192.168.182.101:~/he.pub
```

Now we are having 'he.pub' on remote virtual machine. To check login to virtual machine

```
hadoo@HadoopExam ~
$ scp .ssh/id_rsa.pub root@192.168.182.101:~/he.pub
root@192.168.182.101's password:
id_rsa.pub
```

Step 11: Login to remote VM.

```
ssh root@192.168.182.101
```

Now we have to add, windows public key as an authorized hosts. Hence, apply following command

```
cat he.pub >> .ssh/authorized_keys
```

```
[root@localhost ~]# cat he.pub >> .ssh/authorized_keys
```

Check the content in authorized keys

```
cat   .ssh/authorized_keys
```

Step 12: Now exit from (Disconnect from vm and try to connect again, it should not ask for password)

```
ssh root@192.168.182.101
```

Now you can see, it is not asking for password.

```
hadoo@HadoopExam ~
$ ssh root@192.168.182.101
Last login: Fri Jun 16 16:01:09 2017 from 192.168.182.1
[root@localhost ~]#
```
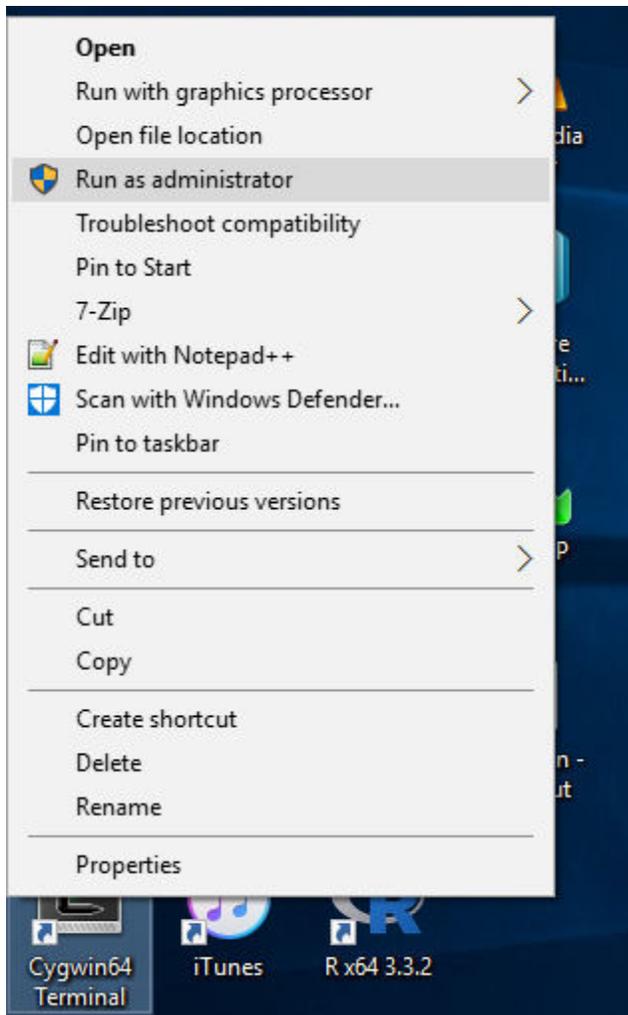
Step 13: Now add our virtual machine in host file. So we can connect using alias, rather than ip address.

```
echo '192.168.182.101                    hemain' >> /etc/hosts
```

If you get below error. It means , you don't have permissions to edit this file.

```
hadoo@HadoopExam ~
$ echo 192.168.182.101                    hemain >> /etc/hosts
-bash: /etc/hosts: Permission denied
```

If you are an admin of this machine than run Cygwin as a administrator and then try above command again.

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Open

Run with graphics processor   >

Open file location

🛡 Run as administrator

Troubleshoot compatibility

Pin to Start

7-Zip   >

📝 Edit with Notepad++

⊞ Scan with Windows Defender...

Pin to taskbar

Restore previous versions

Send to   >

Cut

Copy

Create shortcut

Delete

Rename

Properties

Cygwin64   iTunes   R x64 3.3.2
Terminal

Once you are done, your host files should have content something like this.

```
hadoo@HadoopExam /etc
$ cat /etc/hosts
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#      102.54.94.97     rhino.acme.com          # source server
#       38.25.63.10     x.acme.com              # x client host

# localhost name resolution is handled within DNS itself.
#       127.0.0.1       localhost
#        ::1            localhost
127.0.0.1       sandbox.hortonworks.com

192.168.182.101                 hemain
```

Step 14: Now you can connect to the host using ssh command and alias.

```
ssh root@hemain
```

```
hadoo@HadoopExam /etc
$ ssh root@hemain
The authenticity of host 'hemain (192.168.182.101)' can't be established.
ECDSA key fingerprint is SHA256:PcmeiCLtxFtaYxfN5ZAiMz4JD94R8IWxKirY2HFcdq0.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'hemain' (ECDSA) to the list of known hosts.
Last login: Fri Jun 16 16:02:34 2017 from 192.168.182.1
[root@localhost ~]#
[root@localhost ~]#
```

Run commands like

```
ifconfig -a
```

Setup Internet Connectivity

Step 15 : As we can see , we can not ping any websites from VM Ware, because there is no name server defined.

```
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# ping hadoopexam.com
ping: hadoopexam.com: Name or service not known
[root@localhost ~]#
```

Step 16: Now define the nameserver on virtual machine. We will use the same Gateway ip (**192.168.182.2)** as a nameserver. By running below command , it will add nameserver

```
echo 'nameserver 192.168.182.2' >> /etc/resolv.conf
```


Step 17: Now install some, software which we required on VM.

wget : to fetch software using URL

perl : We need to run various perl scripts. Hence, perl is required.

open-ssh : We will be doing ssh from this vm to another hosts, hence we need ssh as well.

Java : We will install it later on.

```
yum -y install wget perl openssh-clients
```


Step 18: Setting up ntpd service.

Check whether ntpd service is available or not. It is not.

```
service ntpd status
```


Install similarly using yum command

```
yum  install ntp
```

Now start ntpd service and configure to start, whenever VM starts it should start.

```
service ntpd start

chkconfig ntpd on

service ntpd status
```

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- AWS Solution Architect: Professional
- AWS Developer : Associate
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- Azure 70-533

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- 1z0-060 (Oracle 12c)
- 1z0-061 (Oracle 12c)

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