

# Manual for installing NS2.29 under Window XP

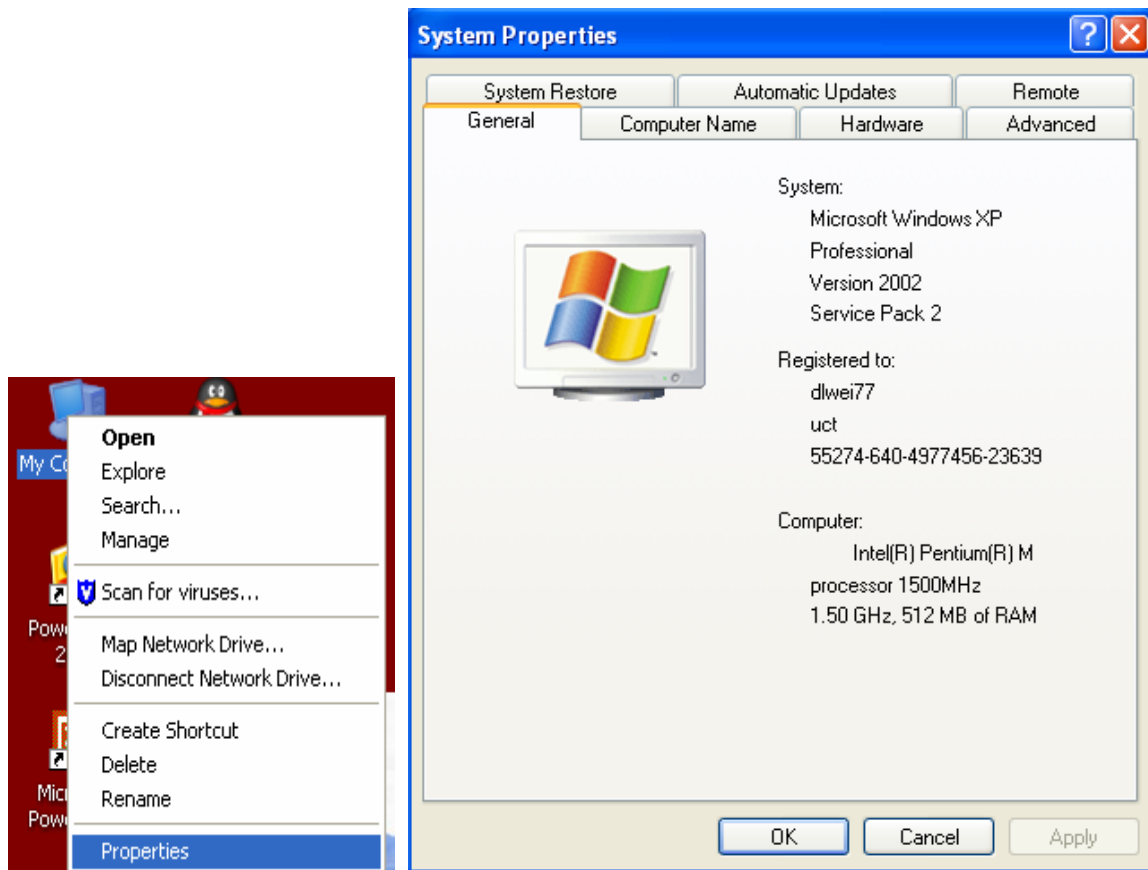
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Considering that the refresh rate of the monitor under Linux system is lower (60) compared with Windows XP (you may improve it to 85). This low rate is harmful for your eyes. Also, many guys can not install NS2 under Window XP successfully. We are very happy to share our experience on how to install NS2 under Window XP system. In this short manual, all steps are shown with detail figures.

Before you start to install NS2, please make sure to check the name of your computer first.

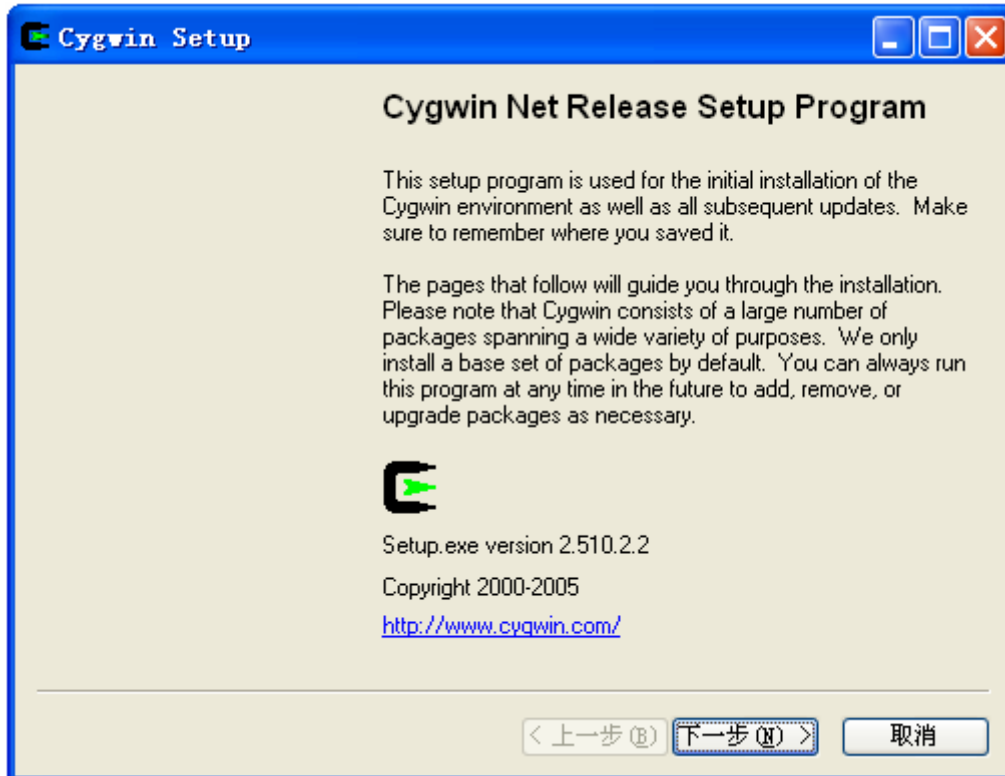


In my special scenario as shown in the above figures, the name is “dlwei77” (there is no space in the name). If you find that there is a space in your computer name like “??? ??”, NS2 will complain it and can not run properly even it is installed. Therefore, please change the name of your computer first in this situation (Thanks to [Engelbert Linus Chuwa](#) to help me sort out this issue). The detail steps on how to change the name of your computer are described as following:

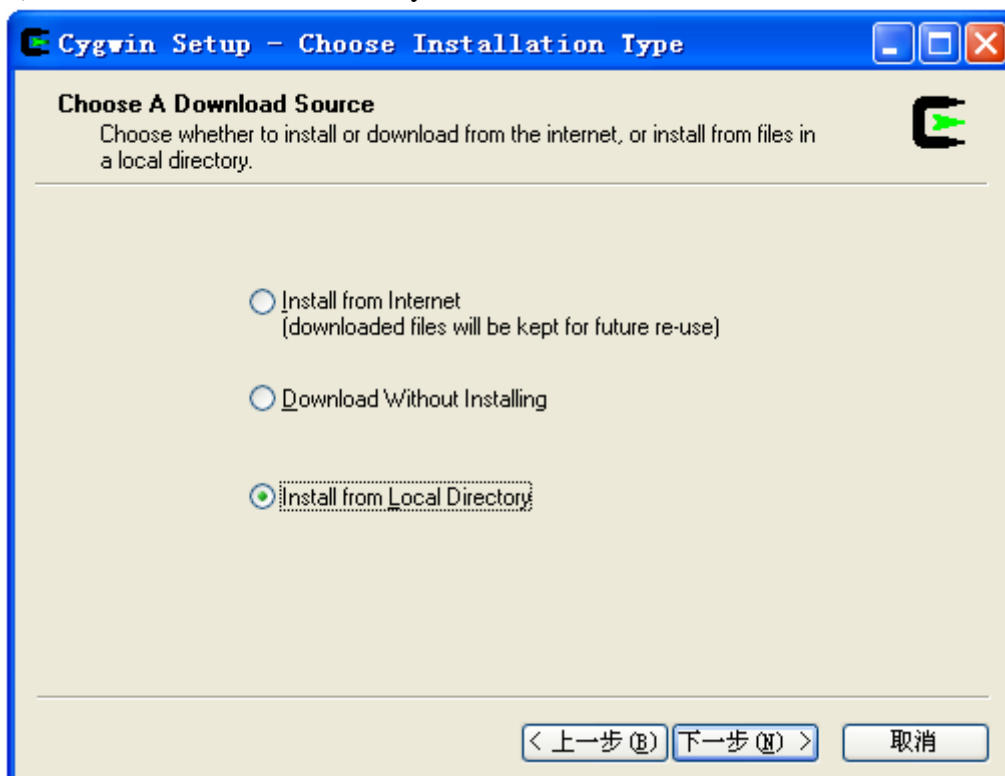
1. Begin by first clicking on the Start Button.
2. Then click on the Run Icon, which will open up the Run Menu for you.
3. Type the word “**Regedit**” into the white area and then click on the OK button.
4. Click on the plus sign [+] next to HKEY\_LOCAL\_MACHINE to expand that section.
5. Then click on the plus sign [+] next to “**Software**” to expand that section.
6. Then click on the plus sign [+] next to “**Microsoft**” to expand that section.
7. Then click on the plus sign [+] next to “**Windows NT**” to expand that section.
8. Then click on the yellow folder entitled “**Current Version**”. Do not click on its plus sign [+].
9. Now move over to the right side of the screen and scroll down until you see “**Registered Owner**”.
10. Double click directly onto the words Registered Owner and input your new name, make sure no space there.
11. You need to reboot your computer for the changes to take effect for Windows XP.

## 1. Install CYGWIN

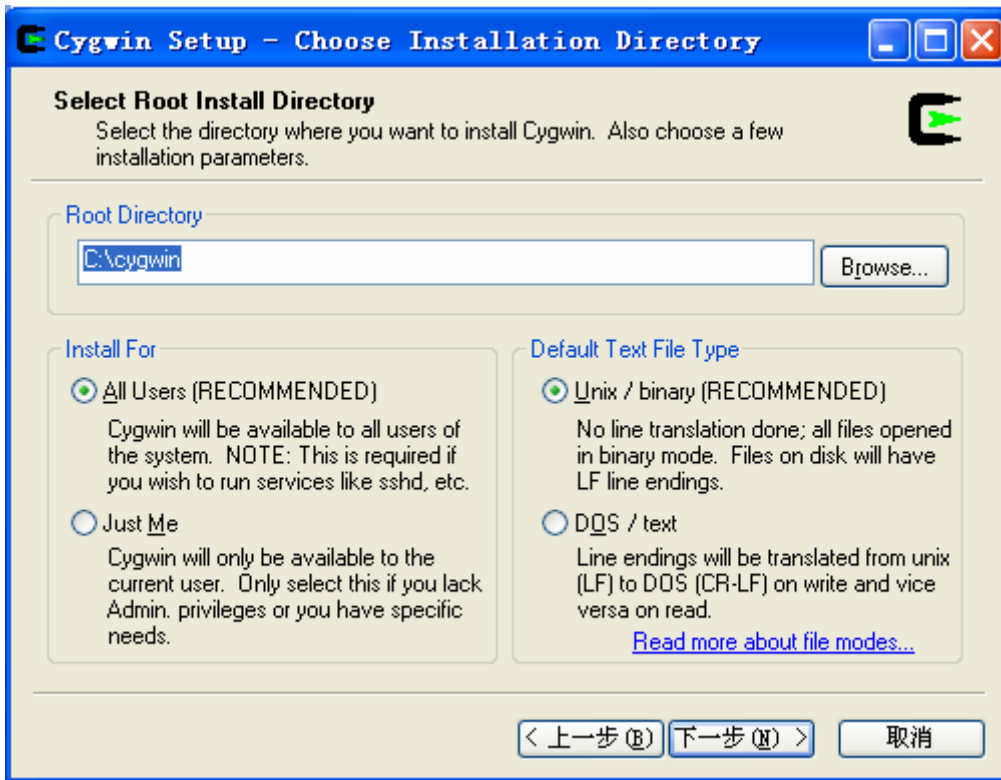
- 1) Download zip file of ns2.29 (allinone) from:  
<http://www.isi.edu/nsnam/dist/ns-allinone-2.29.2.tar.gz>
- 2) Download **cygwin setup.exe** from [www.cygwin.com](http://www.cygwin.com)
- 3) Click on “cygwin.exe”.



- 4) Select “install local directory”



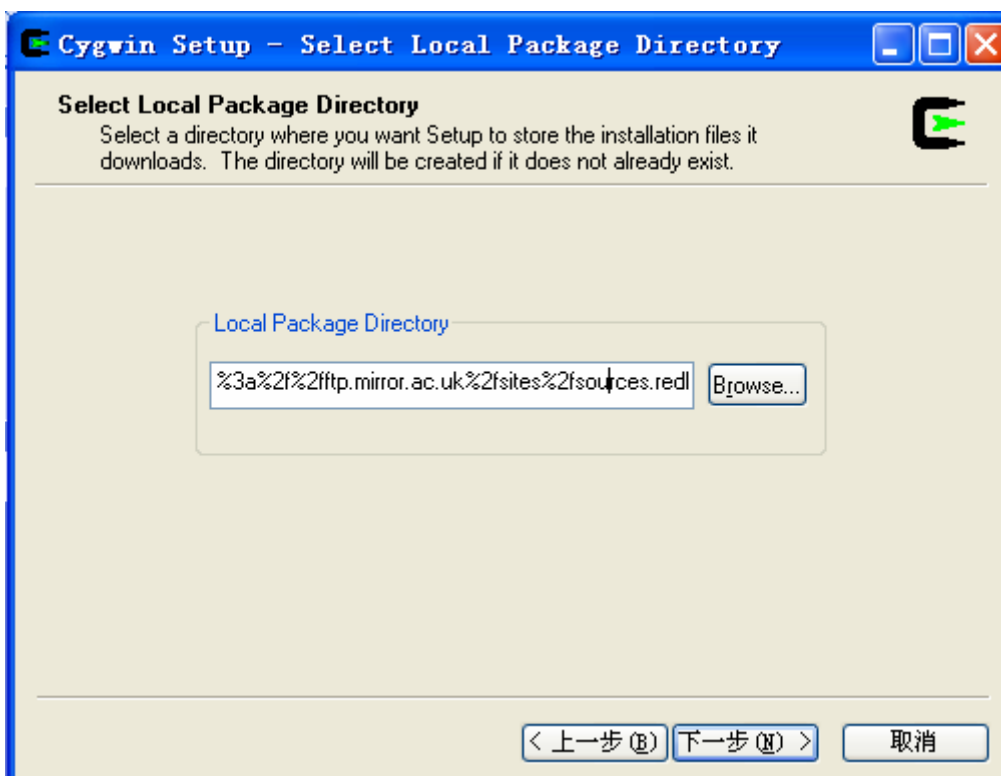
5) Select browse for “cygwin” file (I selected as default).



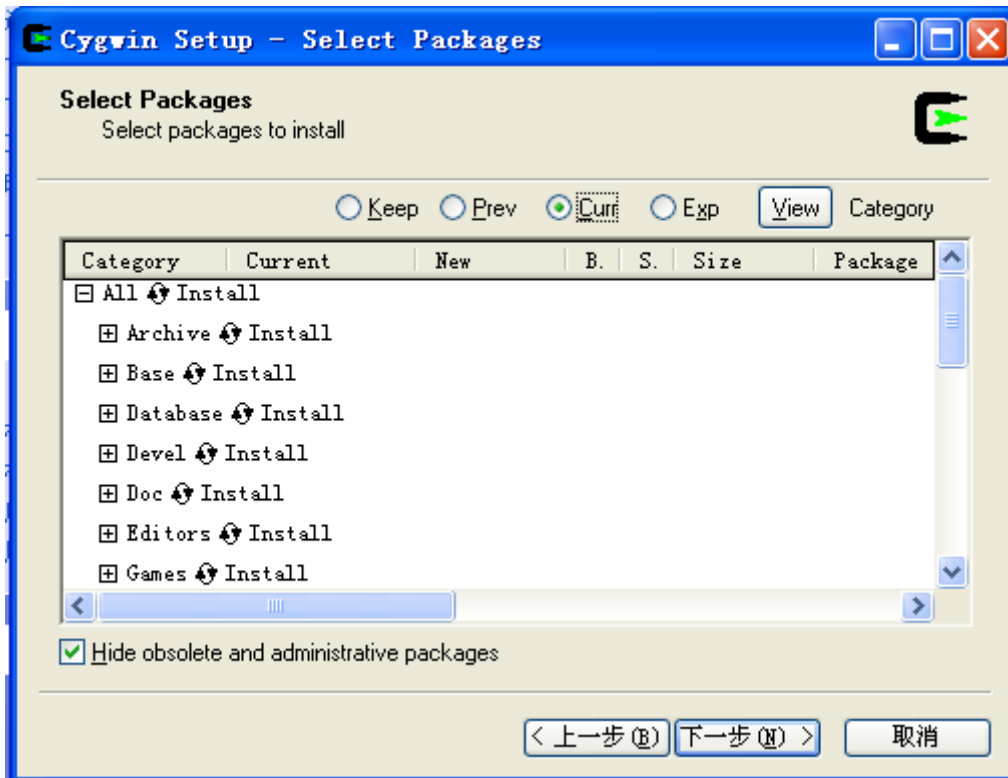
6) Install

“C:\NS2\NS-2.29 Install files\Cygwin files

\ftp%3a%2f%2fftp.mirror.ac.uk%2fsites%2fsources.redhat.com%2fftp%2fcygwin”

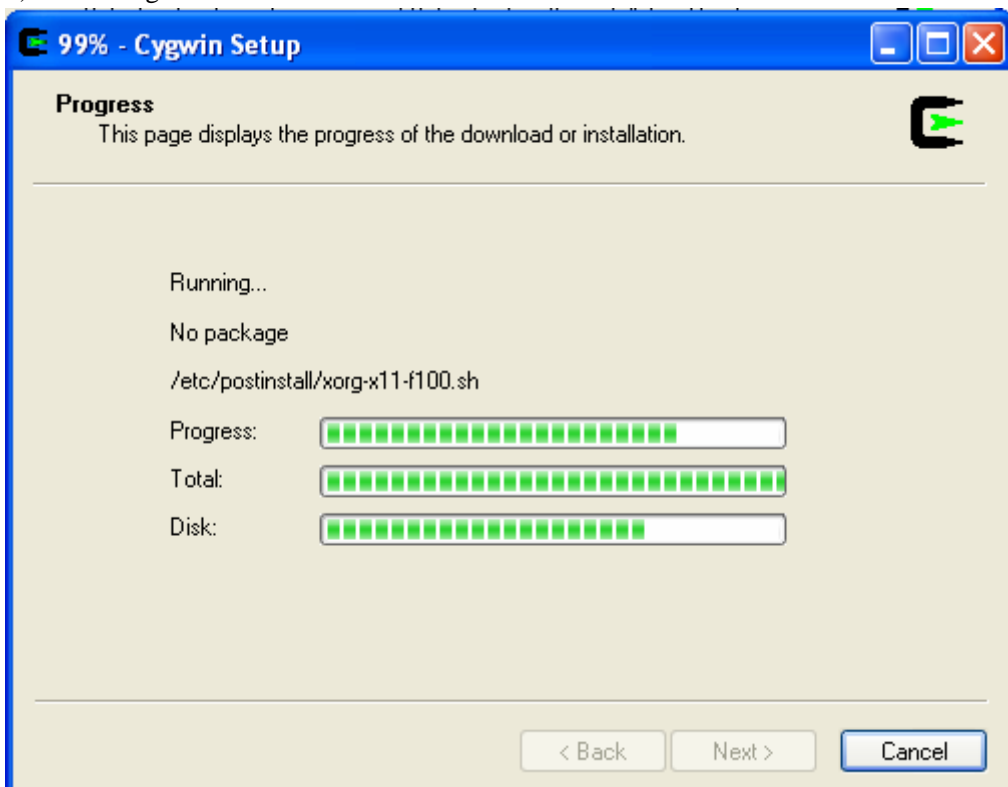


7) Select to install all



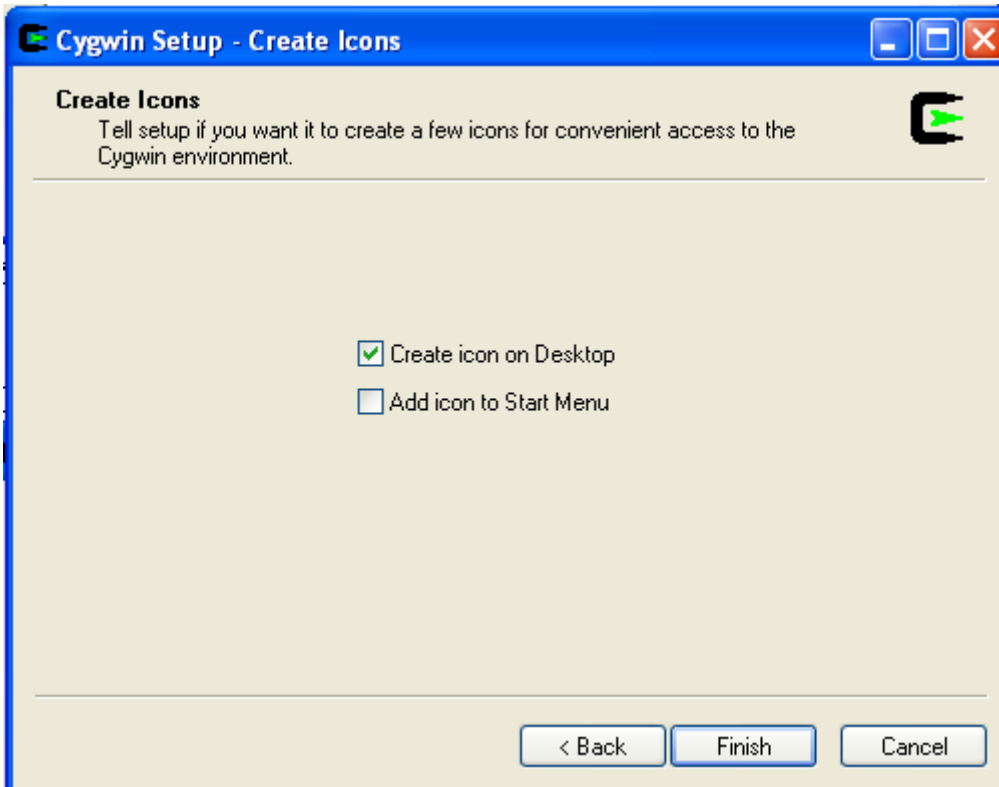
You can select “install”, “default”, “uninstall”, “install”, and “reinstall” behind the first line “all”. If we select “install”, then all sub items will be automatically selected. Otherwise you may lose some items.

8) Installing



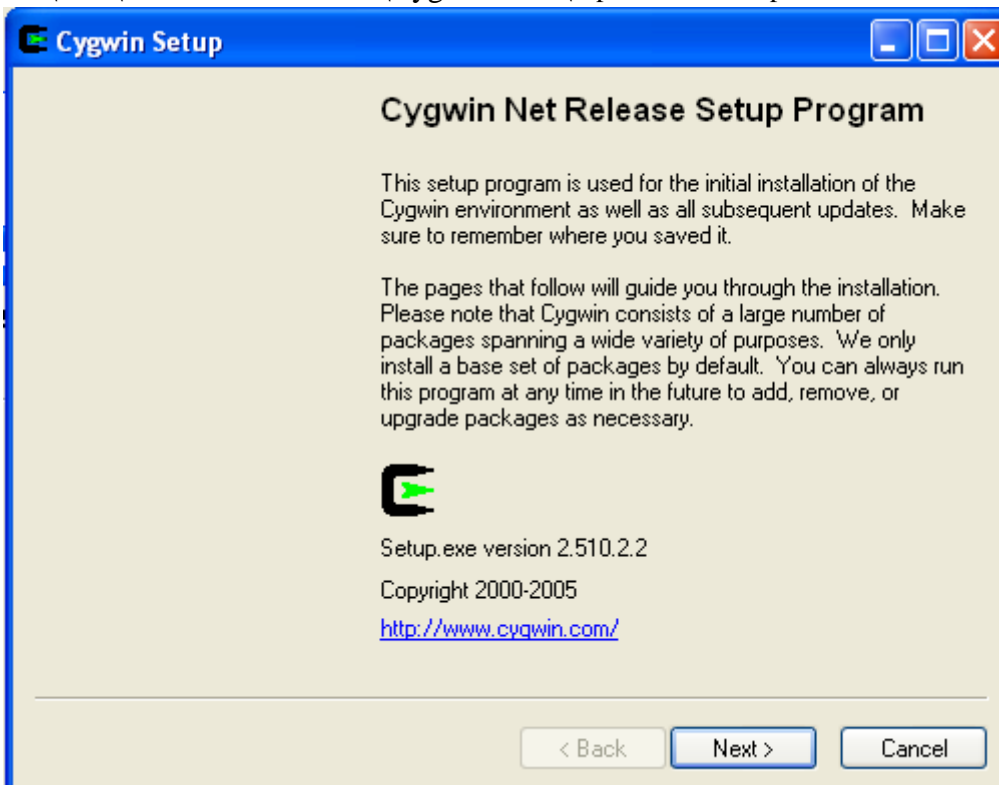
9) Finish in installing

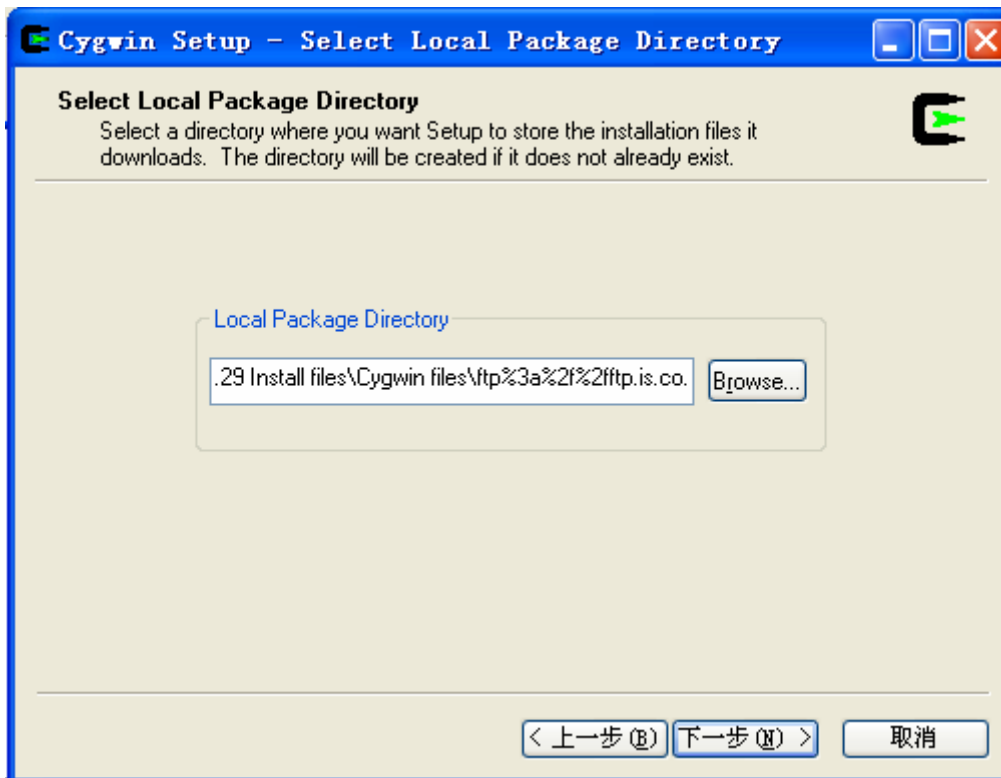
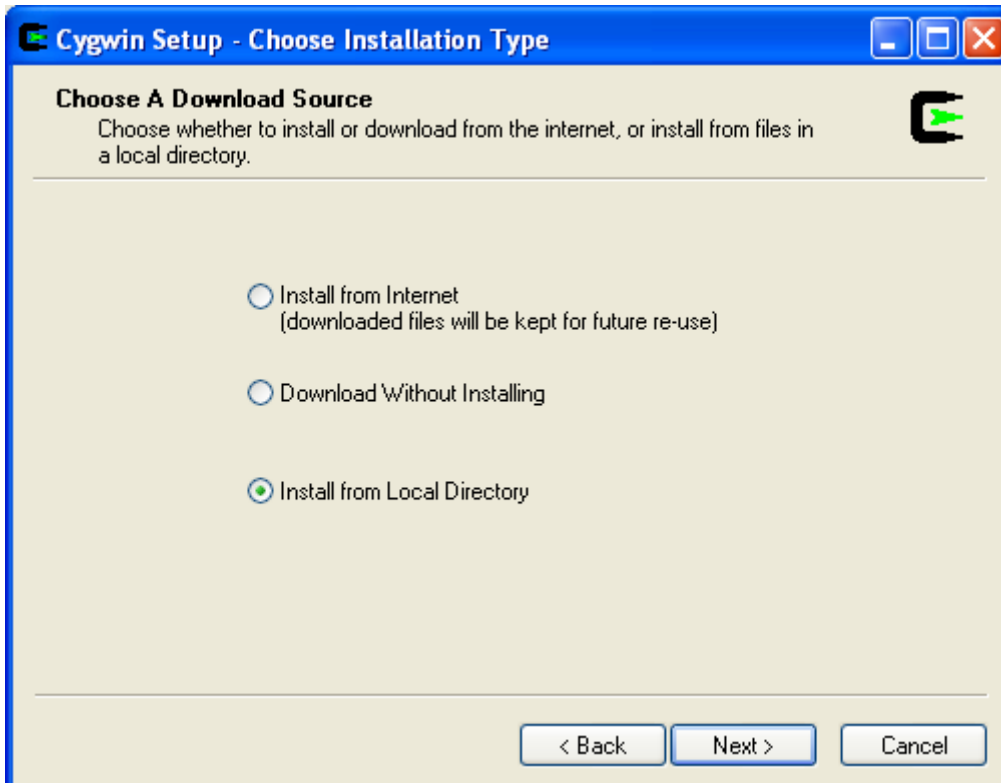
“ftp%3a%2f%2fftp.mirror.ac.uk%2fsites%2fsources.redhat.com%2fftp%2fcygwin”



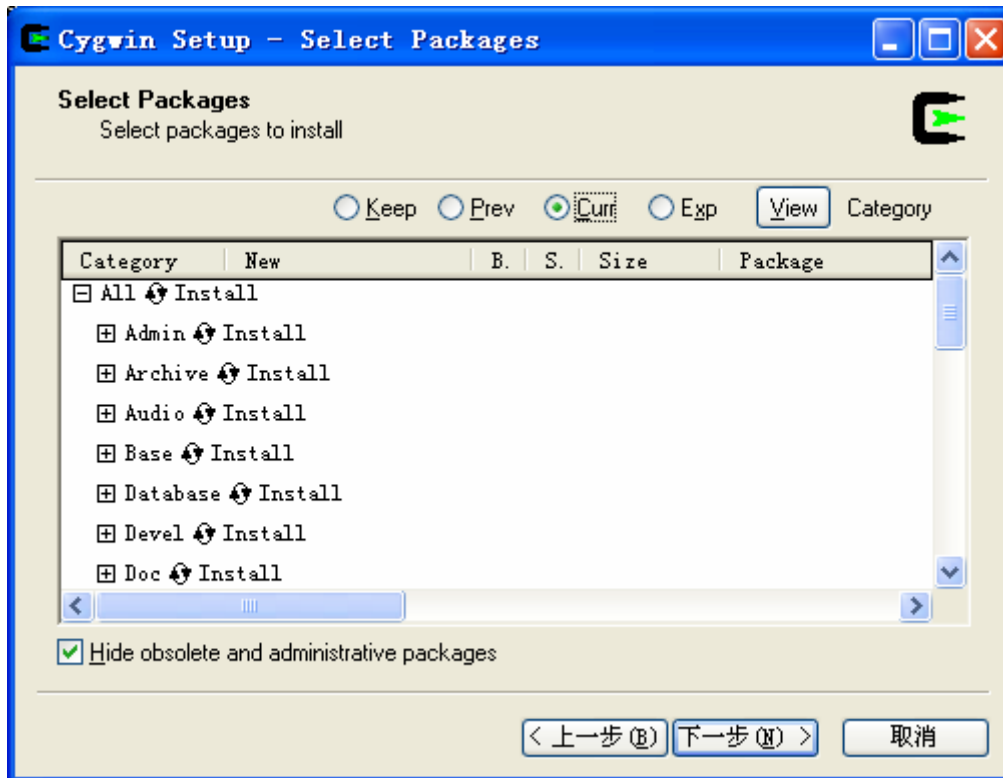
10) Install "Install

“C:\NS2\NS-2.29 Install files\Cygwin files \ ftp%3a%2f%2fftp.is.co.za%2fmirrors%2fcygwin”.

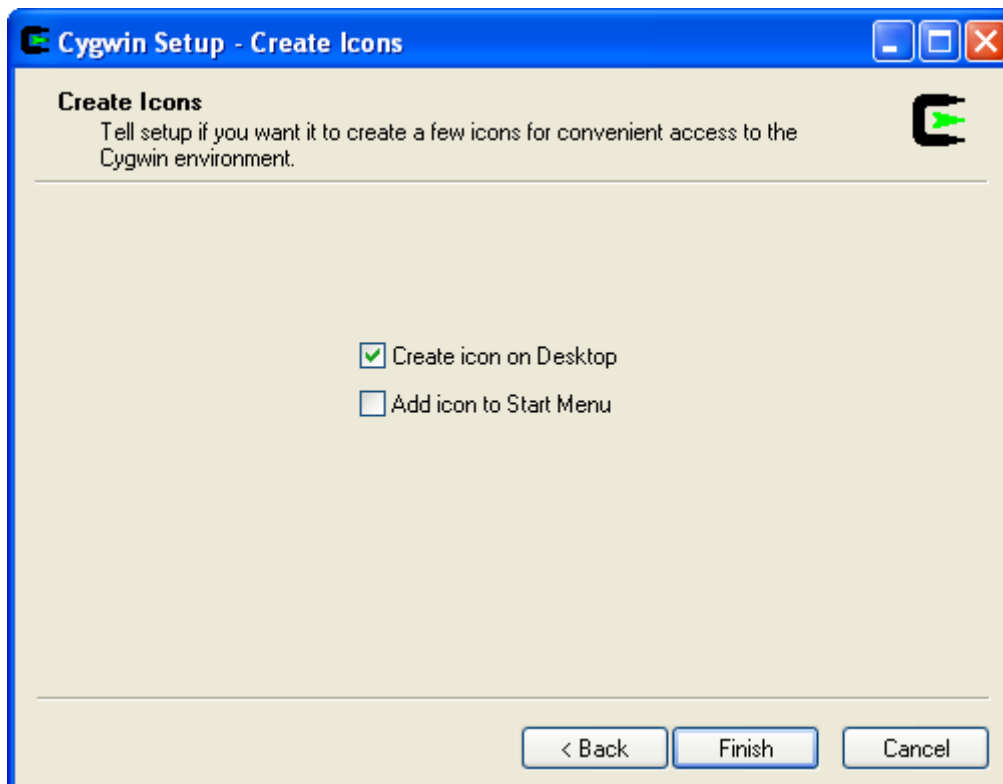




11) Select to install all.



12) Finish in stalling “ftp%3a%2f%2fftp.is.co.za%2fmirrors%2fcygwin”

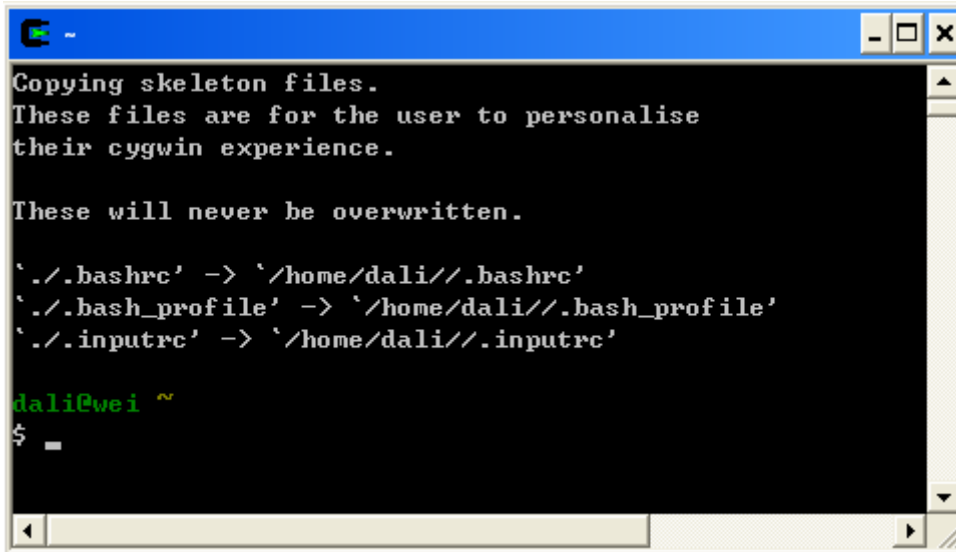


## 2. Install NS2

13) Copy ns-allinone-2.29.2.tar to directory c:/cygwin/usr/local

14) Unzip “ns-allinone-2.29.2.tar”

15) Click on desktop icon “cygwin”



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

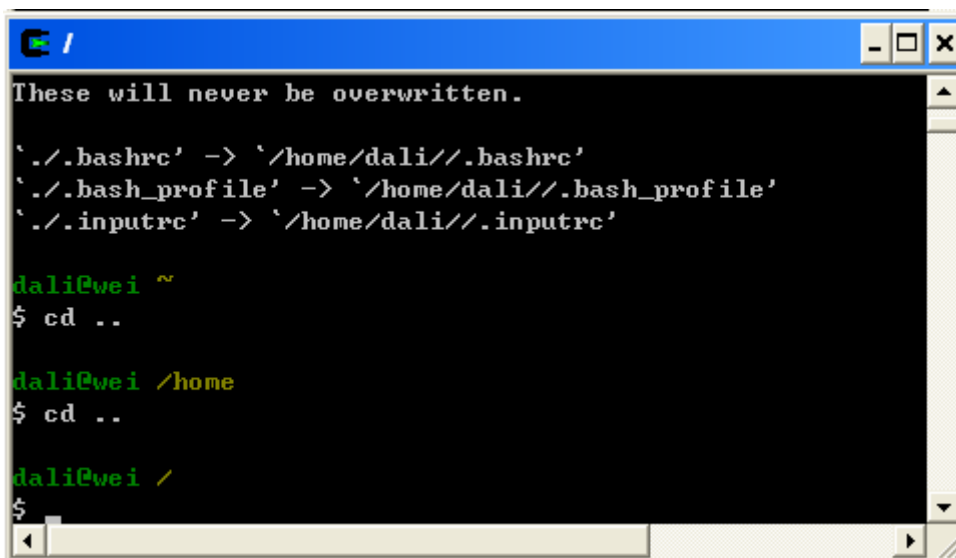
These will never be overwritten.

`./bashrc' -> `/home/dali/./bashrc'
`./bash_profile' -> `/home/dali/./bash_profile'
`./inputrc' -> `/home/dali/./inputrc'

dali@wei ~
$ =
```

16) Type “cd ..” to go to the upper folder(“cd” must be low case. And there is one space between “d” and “.”)

17) Type “cd ..” again.



```
These will never be overwritten.

`./bashrc' -> `/home/dali/./bashrc'
`./bash_profile' -> `/home/dali/./bash_profile'
`./inputrc' -> `/home/dali/./inputrc'

dali@wei ~
$ cd ..

dali@wei /home
$ cd ..

dali@wei /
$
```

18) “cd usr”, go to folder “usr”

19) “cd local”, go to folder “local”

```

/usr/local
dali@wei /
$ cd usr
dali@wei /usr
$ cd local
$
dali@wei /usr/local
$

```

20) Find the “install.exe” file

```

/usr/local/ns-allinone-2.29.2/ns-allinone-2.29
dali@wei /usr
$ cd local
$
dali@wei /usr/local
$
$ ls
bin  etc  lib  ns-allinone-2.29.2  ns-allinone-2.29.2.tar.gz
dali@wei /usr/local
$ cd ns*
dali@wei /usr/local/ns-allinone-2.29.2
$ cd ns*
dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$

```

```

/usr/local/ns-allinone-2.29.2/ns-allinone-2.29
dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$ ls
$
README      install  otcl-1.11  tclcl-1.17  zlib-1.2.3
cweb        nam-1.11  sgb        tk8.4.11
dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$

```

21) Start to run the installation “./install” (Attention: After finish installing, some comments will come out. In my computer with celeron 2.66 CPU and 512 M Memory, this step took around 75 minutes.)

```

/usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$ ls
INSTALL.WIN32  gt-itm      ns-2.29     tcl8.4.11  xgraph-12.1
README        install    otcl-1.11   tclcl-1.17  zlib-1.2.3
cweb          nam-1.11   sgb         tk8.4.11

dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$ ./install
=====
* Testing for Cygwin environment
=====
Cygwin detected
Note: Cygwin install is still considered EXPERIMENTAL

Checking Cygwin version is >= 1.3.12... 1.5.19 (should be ok)

```

```

/usr/local/ns-allinone-2.29.2/ns-allinone-2.29
IBM_USER@ibm-v5wfflqb2kx /usr/local/ns-allinone-2.29.2/ns-al
$ ./install
=====
* Testing for Cygwin environment
=====
Cygwin detected
Note: Cygwin install is still considered EXPERIMENTAL

```

22) Installing

```

/usr/local/ns-allinone-2.29.2/ns-allinone-2.29
checking for tmpnam... yes
checking for waitpid... yes
checking for strerror... yes
checking for getwd... yes
checking for wait3... yes
checking for uname... yes
checking for realpath... yes
checking dirent.h... no
checking for errno.h... yes
checking for float.h... yes
checking for values.h... no
checking for limits.h... yes
checking for stdlib.h... yes

```

```
ite/satnode.o satellite/satnode.cc
g++ -c -Wall -DTCP_DELAY_BIND_ALL -DMO_TK -DTCLCL_CLASSINSTUAR
SHM -DHAVE_LIBTCLCL -DHAVE_TCLCL_H -DHAVE_LIBOTCL1_11 -DHAVE_OTC
8_4 -DHAVE_TK_H -DHAVE_LIBTCL8_4 -DHAVE_TCL_H -DHAVE_CONFIG_H -
SMAC_NO_SYNC -DCPP_NAMESPACE=std -DUSE_SINGLE_ADDRESS_SPACE -Dn
r/local/ns-allinone-2.29.2/ns-allinone-2.29/tclcl-1.17 -I/usr/lo
2.29.2/ns-allinone-2.29/otcl-1.11 -I/usr/local/ns-allinone-2.29.
29/include -I/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/incl
de/pcap -I./tcp -I./sctp -I./common -I./link -I./queue -I./adc -
-I./mobile -I./trace -I./routing -I./tools -I./classifier -I./mc
n3/lib/main -I./diffusion3/lib -I./diffusion3/lib/nr -I./diffusi
on3/filter_core -I./asim/ -I./qs -I./diffserv -I./satellite -I
ite/satposition.o satellite/satposition.cc
```

### 3. Configure system variables and library paths

23) Installing is finished and the following window appears: **Make sure to copy all these contents.**

```
Please put /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/bin:/usr/local/ns-alli
none-2.29.2/ns-allinone-2.29/tcl8.4.11/unix:/usr/local/ns-allinone-2.29.2/ns-all
inone-2.29/tk8.4.11/unix
into your PATH environment; so that you'll be able to run itm/tclsh/wish/xgraph.

IMPORTANT NOTICES:

<1> You MUST put /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/otcl-1.11, /usr/
local/ns-allinone-2.29.2/ns-allinone-2.29/lib,
into your LD_LIBRARY_PATH environment variable.
If it complains about X libraries, add path to your X libraries
into LD_LIBRARY_PATH.
If you are using csh, you can set it like:
    setenv LD_LIBRARY_PATH <paths>
If you are using sh, you can set it like:
    export LD_LIBRARY_PATH=<paths>

<2> You MUST put /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/tcl8.4.11/librar
y into your TCL_LIBRARY environmental
variable. Otherwise ns/nam will complain during startup.

<3> [OPTIONAL] To save disk space, you can now delete directories tcl8.4.11
and tk8.4.11. They are now installed under /usr/local/ns-allinone-2.29.2/ns-
allinone-2.29/<bin,include,lib>

After these steps, you can now run the ns validation suite with
cd ns-2.29; ./validate

For trouble shooting, please first read ns problems page
http://www.isi.edu/nsnam/ns/ns-problems.html. Also search the ns mailing list ar
chive
for related posts.

dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$
```

Yet if you forget, the following is the whole contents of the notices:

Please put /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/bin:/usr/local/ns-alli  
none-2.29.2/ns-allinone-2.29/tcl8.4.11/unix:/usr/local/ns-allinone-2.29.2/ns-all  
inone-2.29/tk8.4.11/unix into your PATH environment; so that you'll be able to run  
itm/tclsh/wish/xgraph.

#### IMPORTANT NOTICES:

(1) You MUST put /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/otcl-1.11,  
/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/lib, into your LD\_LIBRARY\_PATH  
environment variable.

If it complains about X libraries, add path to your X libraries into  
LD\_LIBRARY\_PATH.

If you are using csh, you can set it like:

```
setenv LD_LIBRARY_PATH <paths>
```

If you are using sh, you can set it like:

```
export LD_LIBRARY_PATH=<paths>
```

(2) You MUST put /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/tcl8.4.11/library into your TCL\_LIBRARY environmental variable. Otherwise ns/nam will complain during startup.

(3) [OPTIONAL] To save disk space, you can now delete directories tcl8.4.11 and tk8.4.11. They are now installed under /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/{bin,include,lib}

After these steps, you can now run the ns validation suite with `cd ns-2.29; ./validate`

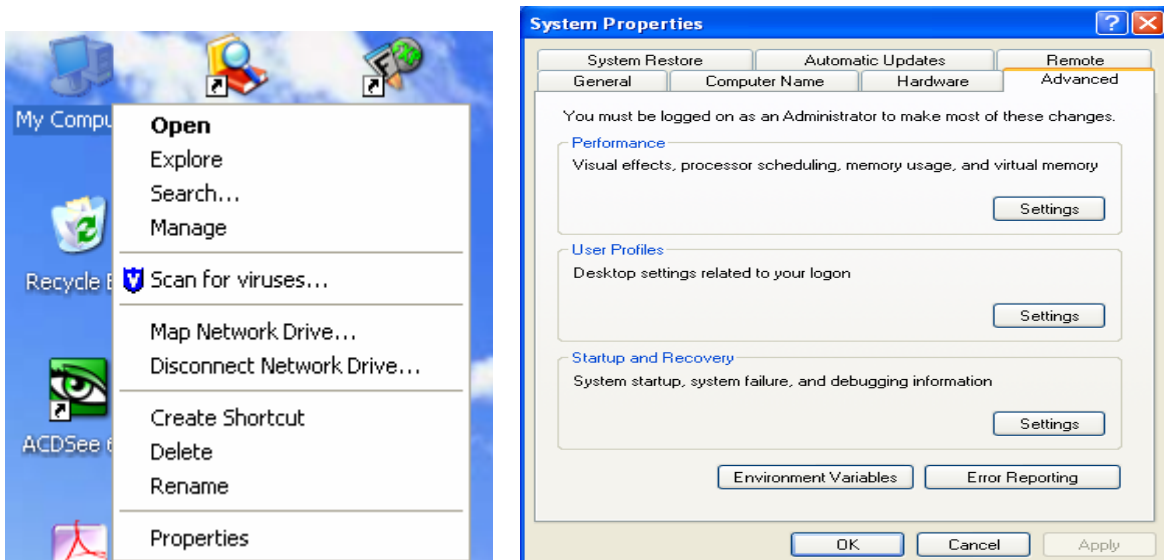
For trouble shooting, please first read ns problems page

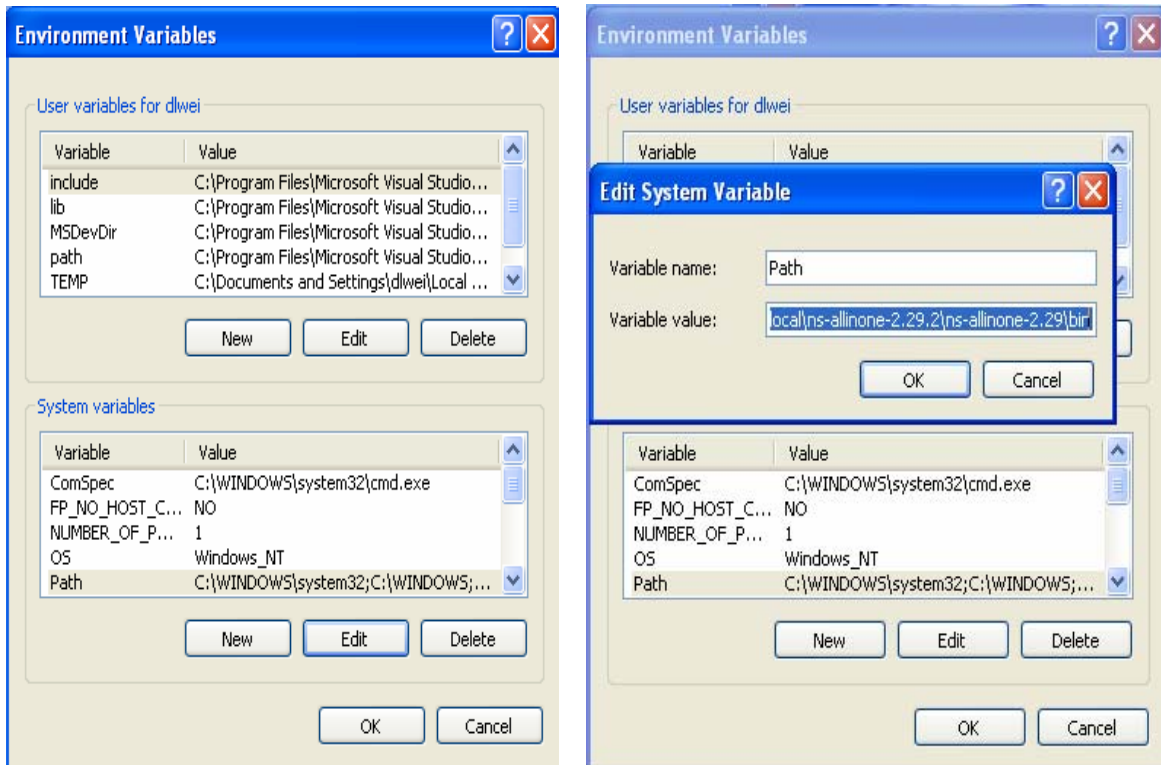
<http://www.isi.edu/nsnam/ns/ns-problems.html>. Also search the ns mailing list archive for related posts.

If you find your notice is different, then make sure to according to your own notice.

24) Configure system variables:

“My computer”-“system properties”-“advanced”-“environment variables-system variables” –“path”-“edit”, use “;” to separate them.



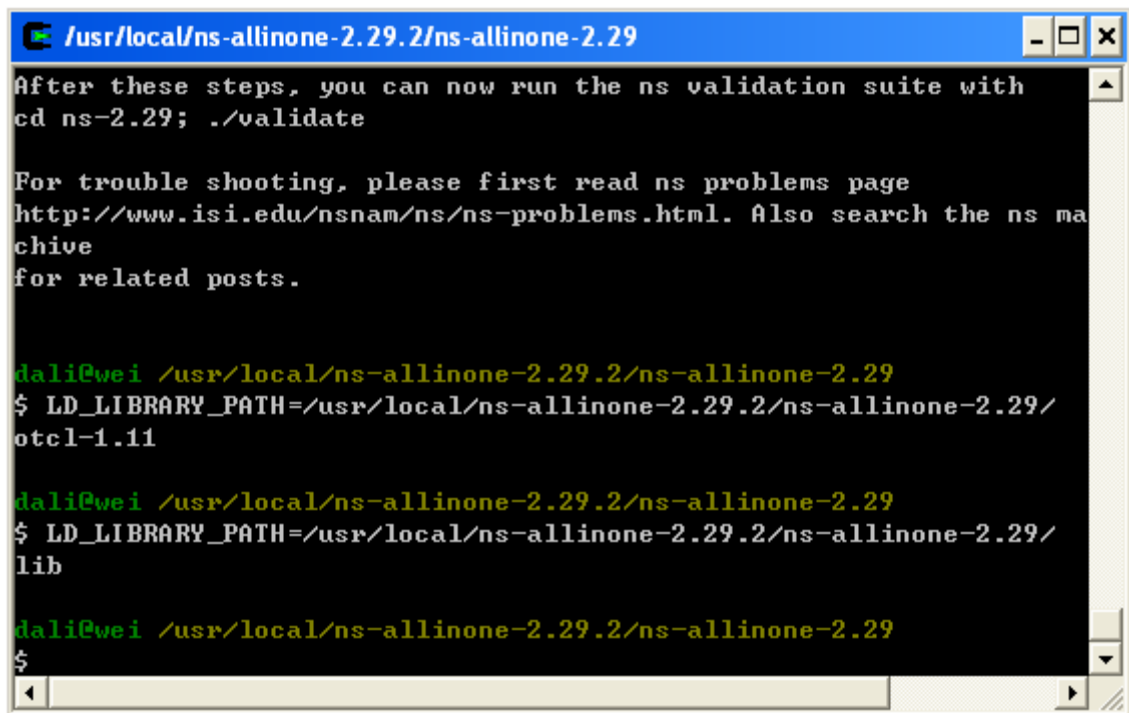


Add the following path separated with “;” make sure to not change the existing path.

`/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/bin,`  
`/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/tcl8.4.11/unix,`  
`/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/tk8.4.11/unix.`

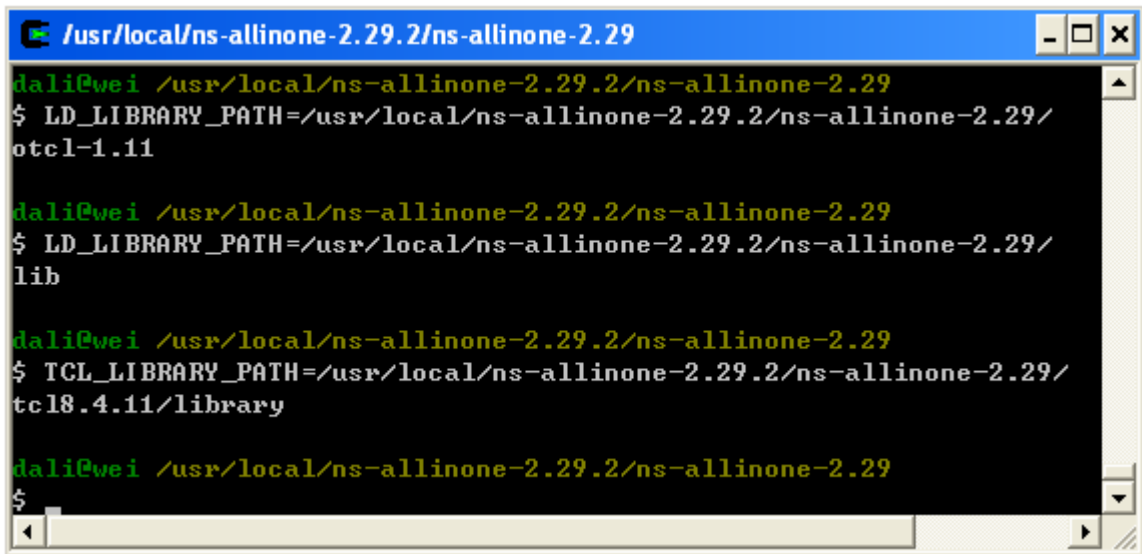
25) Then go to cygwin, and type the following content:

Export “`LD_LIBRARY_PATH= /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/otcl-1.11`”,  
 Export “`LD_LIBRARY_PATH=/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/lib`”,



26) Export

“TCL\_LIBRARY\_PATH= /usr/local/ns-allinone-2.29.2/ns-allinone-2.29/tcl8.4.11/library”



```
/usr/local/ns-allinone-2.29.2/ns-allinone-2.29
dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$ LD_LIBRARY_PATH=/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/
otcl-1.11

dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$ LD_LIBRARY_PATH=/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/
lib

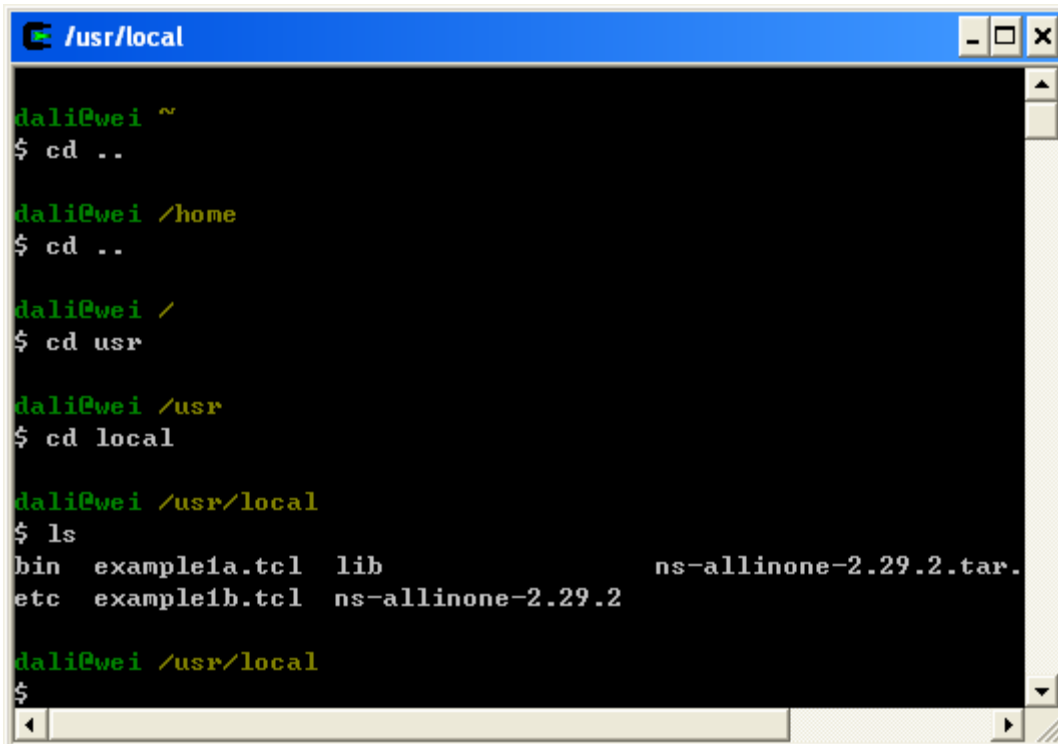
dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$ TCL_LIBRARY_PATH=/usr/local/ns-allinone-2.29.2/ns-allinone-2.29/
tcl8.4.11/library

dali@wei /usr/local/ns-allinone-2.29.2/ns-allinone-2.29
$
$
```

#### 4. The first simple example

Before the following step, you should download some existing exe files first to examine whether your NS2 can run properly. A very good tutorial of NS2 for beginners is at: <http://www.isi.edu/nsnam/ns/tutorial/>. The following examples were also downloaded there. Make sure to put the exe files under: C:\cygwin\usr\local

27) Click “icon” on the desktop, and then do the following steps as shown in the figure.



```
~/usr/local
dali@wei ~
$ cd ..

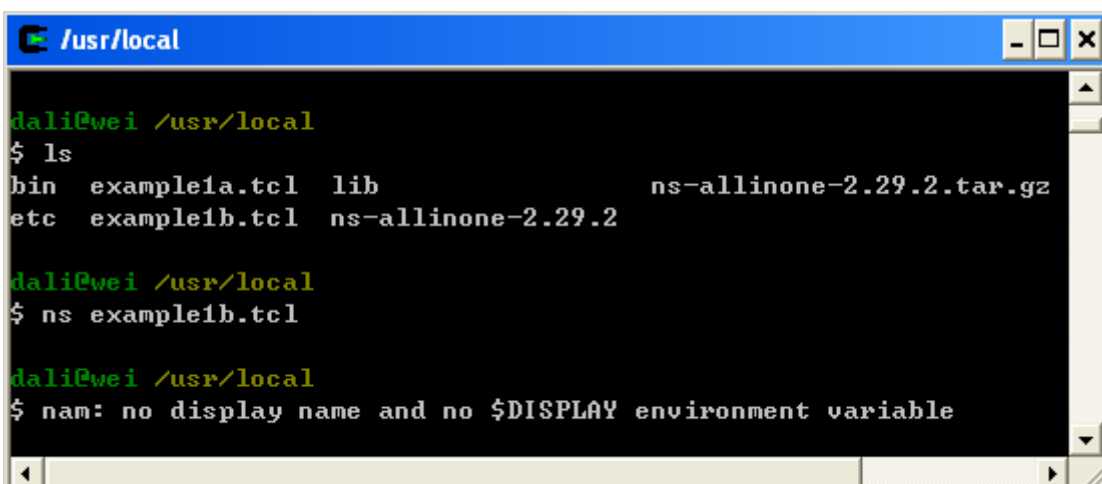
dali@wei /home
$ cd ..

dali@wei /
$ cd usr

dali@wei /usr
$ cd local

dali@wei /usr/local
$ ls
bin  example1a.tcl  lib          ns-allinone-2.29.2.tar.
etc  example1b.tcl  ns-allinone-2.29.2
```

28) How ever you will fail to run the “Example1a.tcl” with the displayed notice.



```
~/usr/local
dali@wei /usr/local
$ ls
bin  example1a.tcl  lib          ns-allinone-2.29.2.tar.gz
etc  example1b.tcl  ns-allinone-2.29.2

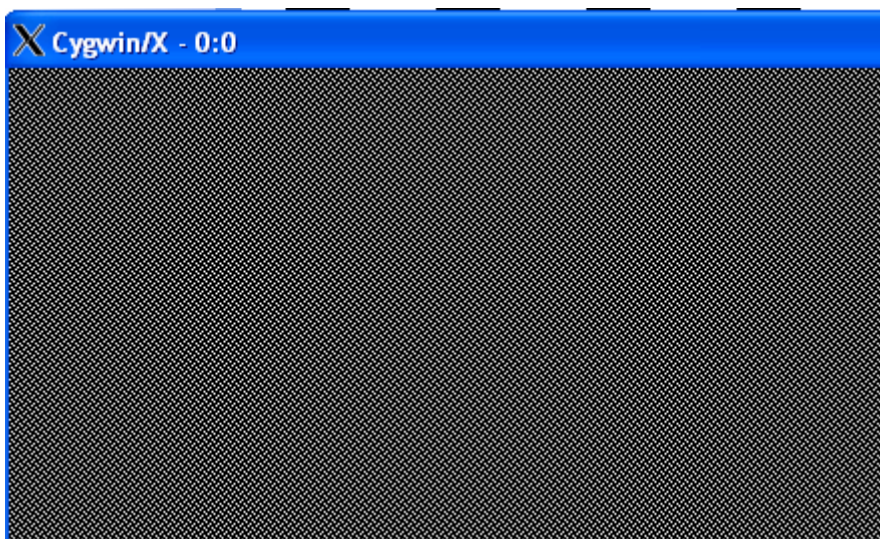
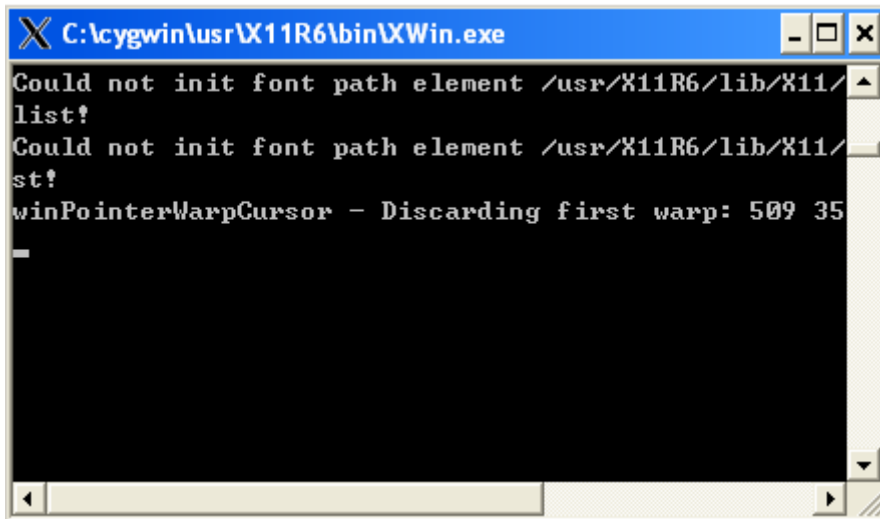
dali@wei /usr/local
$ ns example1a.tcl

dali@wei /usr/local
$ nam: no display name and no $DISPLAY environment variable
```

This is because you did not open “XWin” yet.

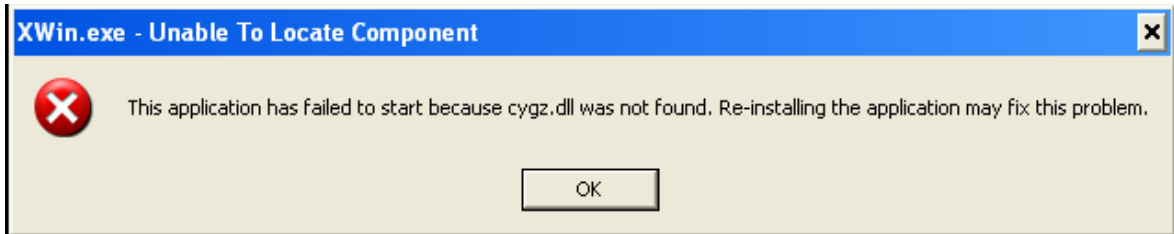
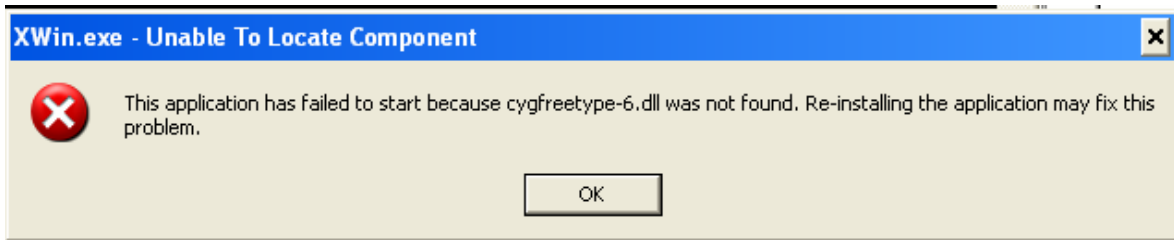
29) Open “Xwin” from “C:\cygwin\usr\X11R6\bin”

If everything is fine, you will then get the following figures.



Yet you may get the following warning messages:





That means some components missed. You can then copy these files from “C:\cygwin\bin” to “C:\cygwin\usr\X11R6\bin”

30) After you open X11, you may still can not run “example1a.tcl”

```
~/usr/local
dali@wei ~
$ cd ..

dali@wei /home
$ cd ..

dali@wei /
$ cd usr

dali@wei /usr
$ cd local

dali@wei /usr/local
$ ls
bin  example1a.tcl  lib          ns-allinone-2.29.2.tar.gz
etc  example1b.tcl  ns-allinone-2.29.2  out.nam

dali@wei /usr/local
$ ns example1b.tcl

dali@wei /usr/local
$
```

```
 /usr/local
$ ls
bin  example1a.tcl  lib          ns-allinone-2.29.2.tar.gz
etc  example1b.tcl  ns-allinone-2.29.2  out.nam

dali@wei /usr/local
$ ns example1b.tcl

dali@wei /usr/local
$ nam: no display name and no $DISPLAY environment variable
```

31) The following command can solve this issue  
“export DISPLAY=:0.0”

```
 /usr/local
$ export DISPLAY=:0.0

dali@wei /usr/local
$
```

You may have question if you input “DISPLAY” with low case!

32) Run “example1b.tcl.tcl”

```
 /usr/local
dali@wei /usr/local
$ export DISPLAY=:0.0

dali@wei /usr/local
$ ls
bin  example1a.tcl  lib          ns-allinone-2.29.2.tar.gz
etc  example1b.tcl  ns-allinone-2.29.2  out.nam

dali@wei /usr/local
$ ns example1b.tcl
```

33) Done!!!

