

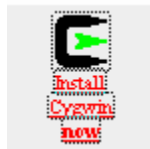
GETTING FESTIVAL TO RUN ON WINDOWS XP WITH CYGWIN

Vladimir Kulyukin John Nicholson
Computer Science Assistive Technology Laboratory
Department of Computer Science
Utah State University

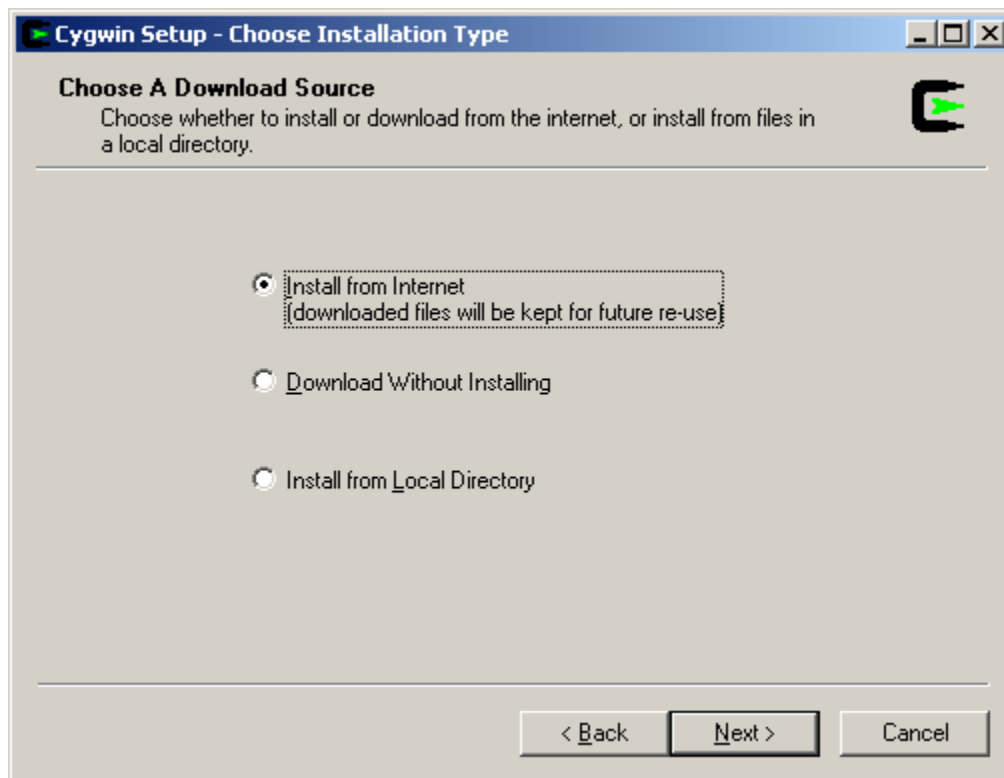
This document manual is written for Windows XP users who would like to install and play with Festival (<http://www.cstr.ed.ac.uk/projects/festival/>) but feel intimidated by Linux. In this situation, Cygwin may be a viable option.

PART I: CYGWIN INSTALLATION

0. To install Cygwin on your PC, you will need approximately 180 MB of space.
1. Go to <http://www.cygwin.com>
2. Look for this icon:

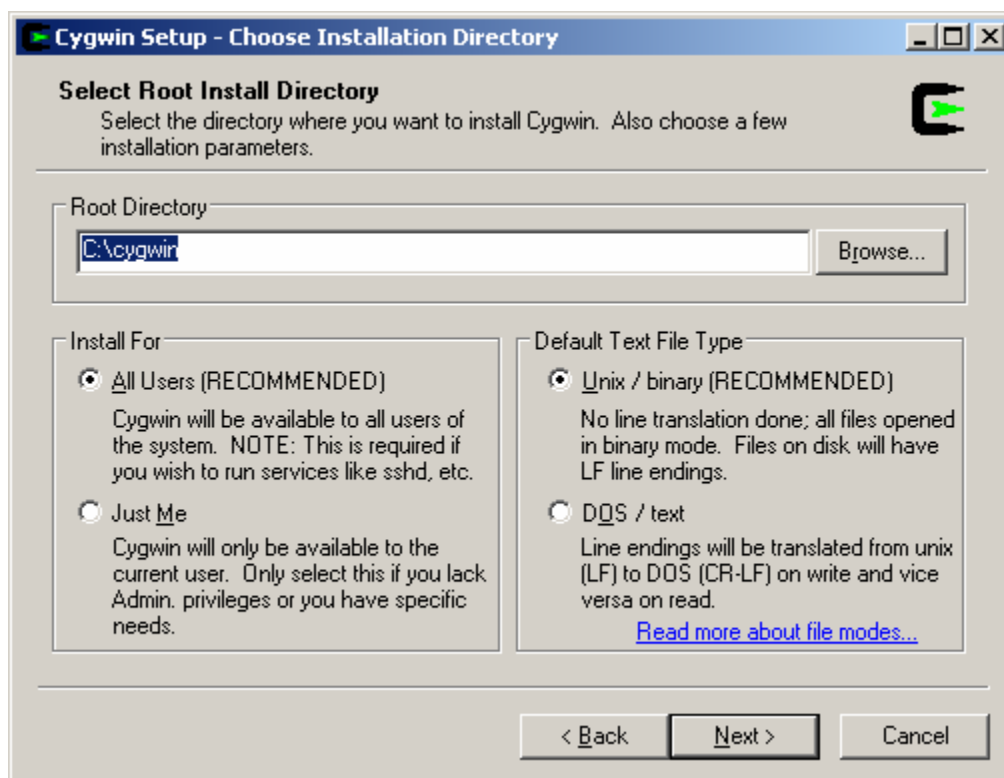


3. Click on the link.
4. Save setup.exe to your hard drive.
5. Run setup.exe. You will see the following screen.



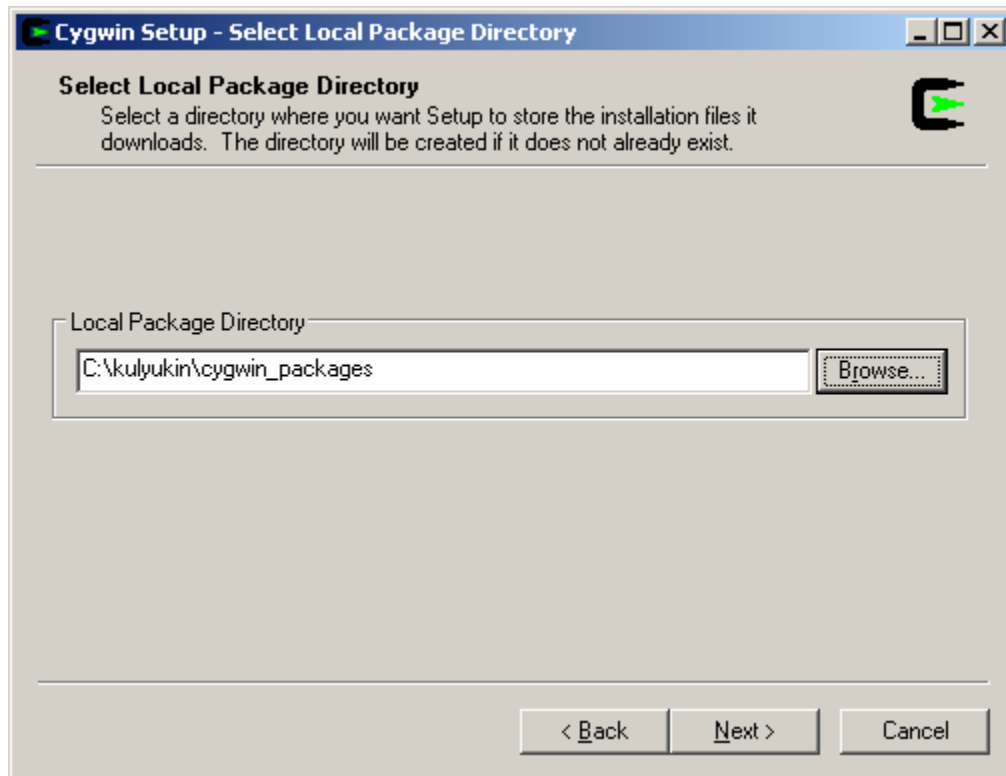
6. Choose Install from Internet and click Next.

7. You should see the following screen.

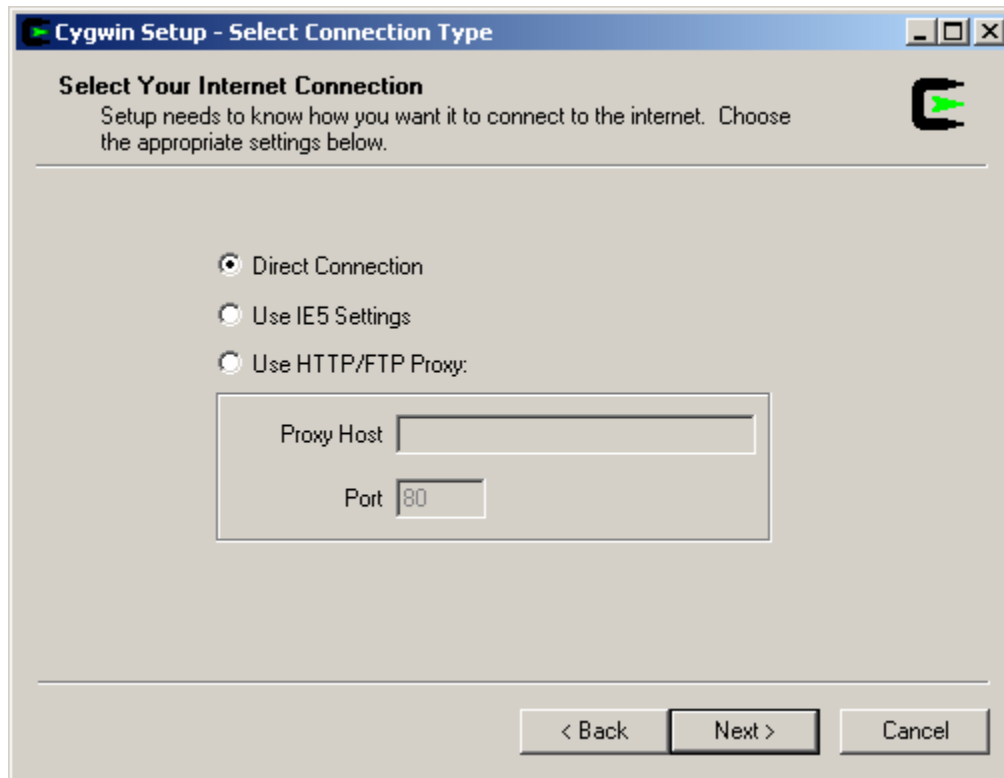


8. Choose the root directory and click Next.

9. Create a directory called `cygwin_packages` (you can call it something else if you like) on your PC where the Cygwin download script can download and store files. On our machine, we created the directory `c:\kulyukin\cygwin_packages`. You can create a similar directory on your machine. That directory must be different from the root directory chosen in step 8. In our case, the root directory chosen in step 8 was `C:\cygwin`. Here is the screen that you should see. Type in the directory and click Next.

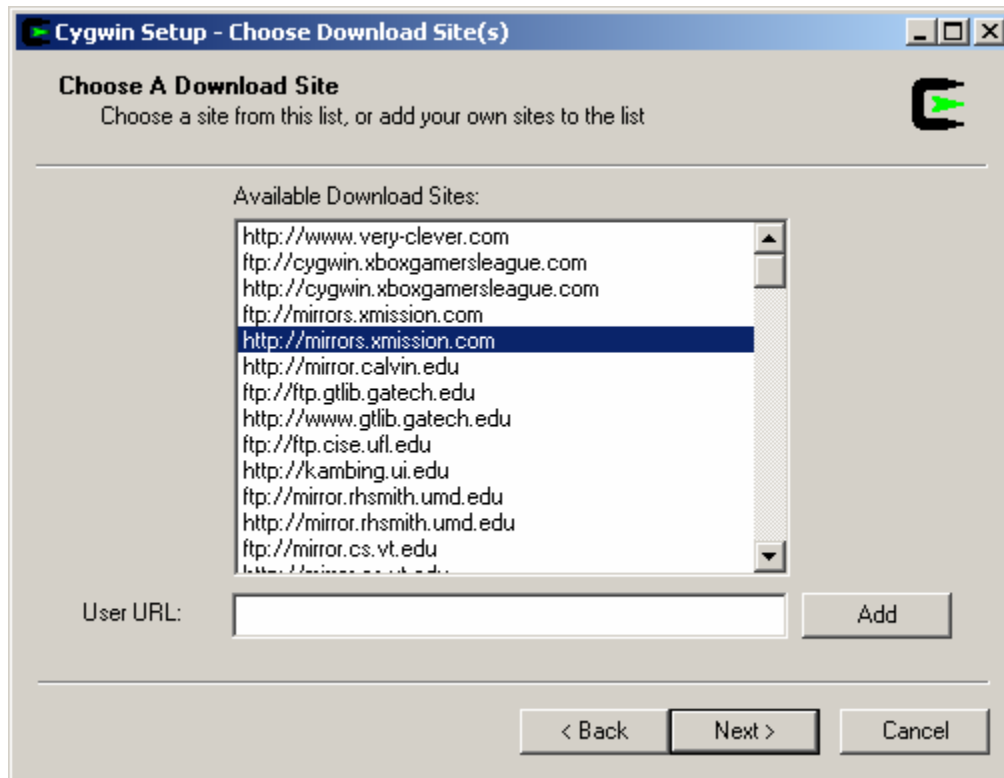


10. You should see the following screen.

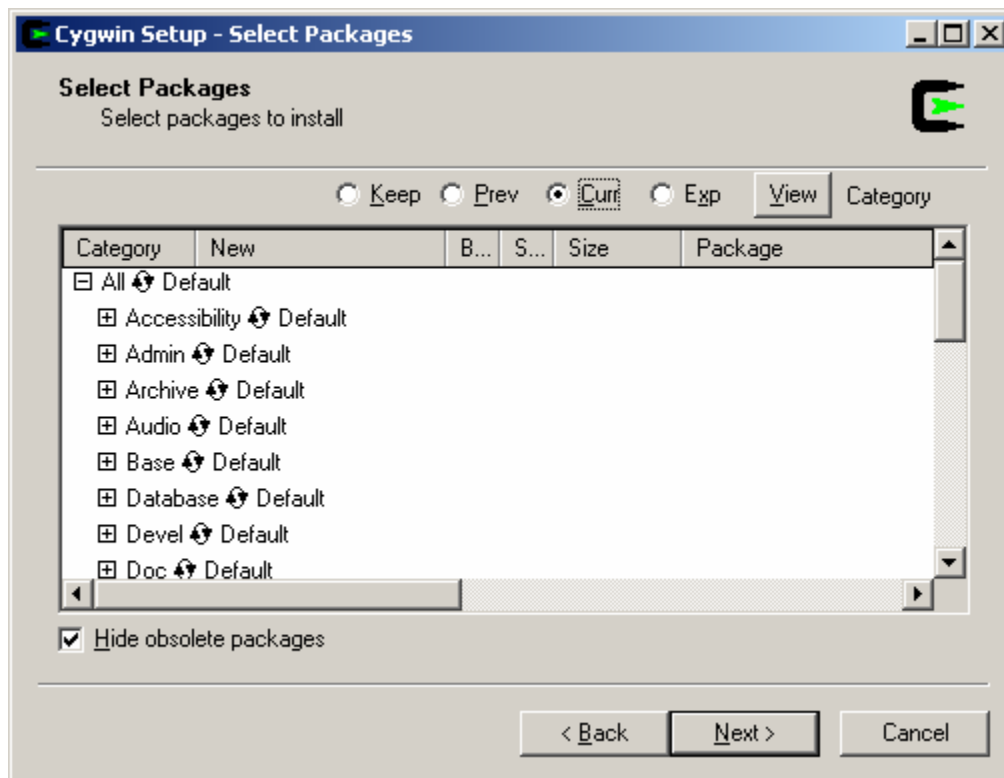


11. Select your Internet connection option. Your selection will depend on where you install Cygwin from. If the installation fails, you can always come back and select another connection option. Click Next.

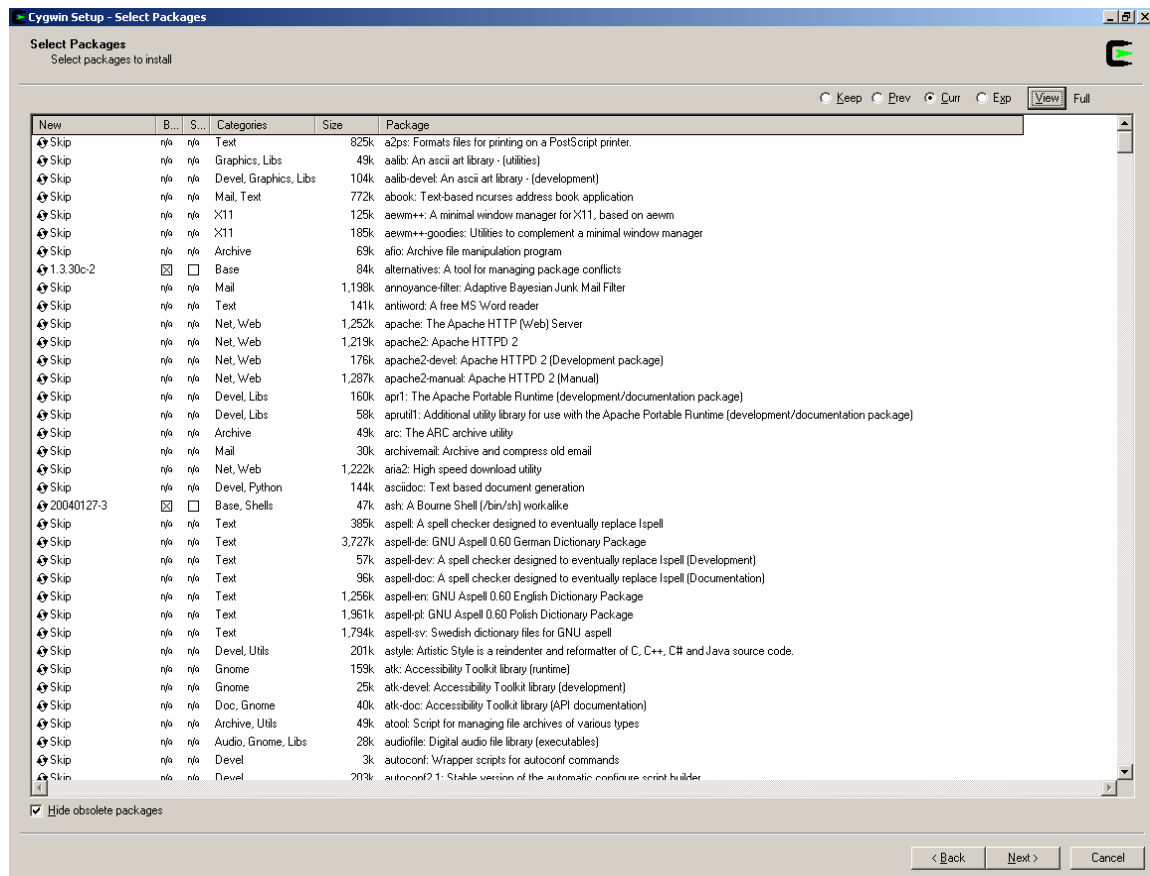
12. On the next screen shown below, choose a site to download Cygwin from. The link chosen below appears to be reliable. We have used it on multiple occasions. If you have had better experiences with another site, select it. Click Next.



13. When you see the screen below, maximize it by clicking on the square next to the X. Click on the View button once. The label "Category" should change to "Full."



14. This is the screen that you should see after you click on View. In the Package column, you will see package names and descriptions.



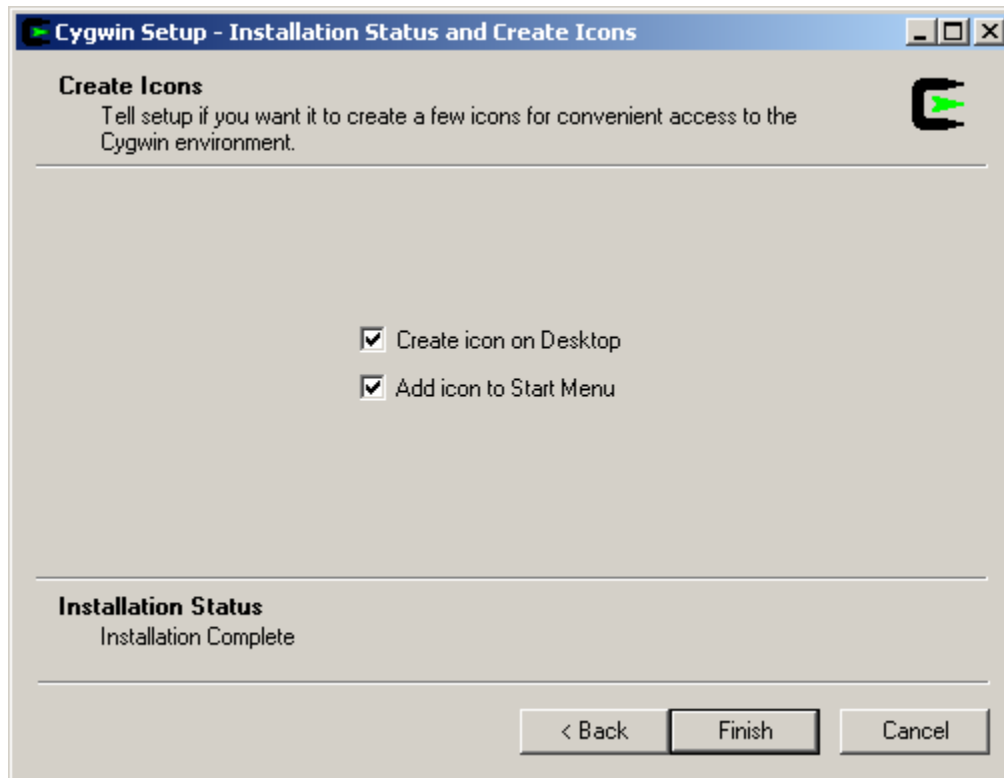
15. Find and select the following packages for installation:

1. bison
2. diffutils
3. flex
4. gcc
5. make

To select a package for installation, under the New column, click "Skip" once so that the version number appears in place of "Skip." Do this for each of the above packages.

16. Click Next and wait a while for all the packages to download. As the packages are being downloaded, you can resize the window back to normal size.

17. When everything is downloaded, you will see the following screen:



18. Click Finish.

PART 2: FESTIVAL INSTALLATION ON CYGWIN

0. Go to <http://www.cs.usu.edu/~vkulyukin/vkweb/software/festival.html> and download `festival_download.zip`. We have collected these files from various web sites to get Festival to work on Cygwin and Windows XP. The files are in tar.gz. You will have to use the Cygwin command prompt to unzip them.

2. Start Cygwin by clicking on its icon on the desktop.

2.5. Important Note: It appears that there might be a problem with Festival's installation, because some installation scripts access Windows' CLASSPATH environment variable. This is a problem if you develop in Java and use Cygwin to compile and run your Java code, because CLASSPATH tells Java where to look for .jar and .class files. These files can be in multiple directories. In Windows, multiple directories in environment variables are separated by semicolons. In UNIX/Linux/Cygwin, the directories are separated by colons whereas the semicolon represents the end of a command in a shell script. We noticed that some Festival installation scripts hang, because they access CLASSPATH (See Step 8 below).

To resolve this problem, in the Cygwin window execute:

\$ echo \$CLASSPATH

If you see multiple directories separated by semicolons, temporarily reset CLASSPATH for this session as follows:

\$ export CLASSPATH=~

This assigns CLASSPATH to only point to your Cygwin home directory. This change is not permanent so once you exit the Cygwin window, the change will go away. A caveat: if you use Java with Festival in Cygwin, you will need to assign the appropriate listing of directories to CLASSPATH in Cygwin. We are certain that there are other, more principled, solutions, but this one worked fine for us.

3. You will have to know the full path of the directory where you have unzipped the files from step 0. Another thing you need to know is that the slashes for directories are reversed from what they are in Windows. Windows uses backslash, i.e. \, Cygwin uses forward slash, i.e. /. If the path has spaces, you will have to put the path in double quotes for Cygwin to work with it.

4. At Cygwin prompt, CD into the directory where you have unzipped the files. For example,

\$ cd /cygdrive/c/kulyukin/festival/festival_download/

In the above command /cygdrive/c is the same as c: in windows. The sign \$ refers to the Cygwin command prompt. For example, if your directory is on the Windows D drive, then you will type /cygdrive/d/.

5. Once in the directory, the ls command will list the contents of the directory. Execute the following command to unpack the files.

\$ for x in *.gz ; do tar xzf \$x ; done

6. **\$ cd speech_tools**

7. **\$./configure**

8. **\$ make**

This will take a while. Go have lunch/read a book/get a cup of coffee. A warning: if this step fails while processing example_to_doc++.prl and if the error references .process_scripts_real, refer back to Step 2.5. Chances are you have a CLASSPATH conflict and need to reset CLASSPATH with export in your Cygwin window.

9. **\$ make test**

10. **\$ make install**

11. **\$ cd ..**

12. **\$ cd festival**

13. **\$./configure**

You will see a bunch of progress output lines.

14. **\$ make**

This will take a while.

15. **\$ make test**

16. **\$ make install**

17. **\$ cd ..**

18. **\$ cd festival**

19. **\$./configure**

20. **\$ make**

PART III: GETTING FESTIVAL TO RUN

0. Start Cygwin if you have not started it already.

1. Execute:

\$ export PATH=/cygdrive/c/kulyukin/festival/festival_download/festival/bin:\$PATH

The directory in the export command should point to the festival's bin directory on machine.

2. If you set your path right, then when you execute

\$ which festival_client

You should see something like this:

```
/cygdrive/c/kulyukin/festival/festival_download/festival/bin/festival_client
```

Your bin directory will, of course, be different.

If you see something like this, your PATH is not set up properly:

which: no festival_client in

```
(/usr/local/bin:/usr/bin:/bin:/usr/X11R6/bin:/cygdrive/c/WINDOWS/SYSTEM32:/cygdrive/c/WINDOWS:/cygdrive/c/WINDOWS/SYSTEM32/WBEM:/cygdrive/c/DMI/WIN32/BIN:/cygdrive/c/jdk1.3.1_06:/cygdrive/c/Program Files/ActivMedia Robotics/ARIA/bin:/cygdrive/c/texmf/miktex/bin:/cygdrive/c/Program Files/Microsoft Visual Studio/Common/Tools/WinNT:/cygdrive/c/Program Files/Microsoft Visual Studio/Common/MSDev98/Bin:/cygdrive/c/Program Files/Microsoft Visual Studio/Common/Tools:/cygdrive/c/Program Files/Microsoft Visual Studio/VC98/bin)
```

3. export ESTDIR and FESTVOXDIR by executing:

```
$ export ESTDIR=/cygdrive/c/kulyukin/festival/festival_download/speech_tools
$ export FESTVOXDIR=/cygdrive/c/kulyukin/festival/festival_download/festvox
```

4. **\$ festival**

5. You should see the following output:

```
Festival Speech Synthesis System 1.95:beta July 2004
Copyright (C) University of Edinburgh, 1996-2004. All rights reserved.
For details type `(festival_warranty)'
```

6. At the festival interpreter's prompt, execute

```
festival> (SayText "Hello World!")
```

If everything is ok, you should hear a default voice saying "hello world."

7. To exit festival, execute:

```
festival> (exit)
```

8. The three environment variables (PATH, ESTDIR, and FESTVOXDIR) must be exported every time you run festival in a new Cygwin window. Here are the three export commands again that you need to execute to set up these variables. Your directories will, of course, be different.

```
$ export PATH=/cygdrive/c/kulyukin/festival/festival_download/festival/bin:$PATH
```

```
$ export ESTDIR=/cygdrive/c/kulyukin/festival/festival_download/speech_tools  
$ export FESTVOXDIR=/cygdrive/c/kulyukin/festival/festival_download/festvox
```

9. If you want to do the limited domain (LDM) speech synthesis with Festival, you will have to record wav files. One tool that you can use for recording on Windows is Audacity. It is free. We found other sound recording options on Windows to be inadequate. Festival comes with its own recording script but we could not get it to work in Cygwin. Audacity can be downloaded from <http://audacity.sourceforge.net/>.