

# Building ROOT on Windows

## How the build was configured on Windows

Installed cygwin including gcc, make, etc **NOTE: cygwin's link.exe application must be renamed, so that VC's link will be used for the build.**

Obtained ROOT source from their CVS repository using the tag v5.14.00d  
<http://root.cern.ch/twiki/bin/view/ROOT/PatchesV5-14-00>

Downloaded Python 2.5 for windows

We decided to upgrade to Python 2.5 at this point in the Core Meeting from March 13, 2007

We double-checked ROOT's ability to handle this version of Python and were pleased to find this ROOT forum discussion:

<http://root.cern.ch/phpBB2/viewtopic.php?t=4359>

Obtained FFTW 3.1.2 from <http://www.fftw.org/install/windows.html>

downloaded: libxml2-2.6.15.win32 from Planet Mirror

downloaded gccxml from <http://www.gccxml.org/HTML/Index.html>

Skipped CERNLIB, Oracle

From the DOS prompt:

```
set PATH=
set LIB=
set INCLUDE=
and ran vsvars32.bat
Then
set ROOTSYS=C:\heather\root514e\root
set PYTHONDIR=C:\Python25
set PYTHONPATH=%ROOTSYS%\bin
set XMLDIR=C:\heather\root514e\libxml2-2.6.15.win32
set ROOTBUILD=opt
set LIB=%LIB%;%ROOTSYS%\lib
set PATH=C:\Python25;%ROOTSYS%\bin;%PATH%;%ROOTSYS%\lib
```

Start cygwin via the command line: `bash --login -i`

At the cygwin prompt, changed directories to the %ROOTSYS% dir and then ran configure:

```
./configure win32 --enable-roofit --enable-minuit2 --enable-table \
--enable-python --disable-odbc --enable-gdml \
--enable-unuran --enable-xrootd \
--with-fftw3-incdir=C:/heather/root-5.14d/fftw-3.1.2-dll \
--with-fftw3-libdir=C:/heather/root-5.14d/fftw-3.1.2-dll \
--with-gccxml=C:/heather/root-5.14d/gcc_xml \
--with-xml-incdir=C:/heather/root-5.14d/libxml2-2.6.15.win32/include \
--with-xml-libdir=C:/heather/root-5.14d/libxml2-2.6.15.win32/lib \
--with-python-libdir=C:/Python25/libs \
--with-python-incdir=C:/Python25/include
```

Note that ROOT-central lists the following as their configuration for the win32gdk build (as seen on the page: <http://root.cern.ch/root/myconfig/Version514.config.html>):

## win32gdk

```
#import ruby from http://rubyinstaller.rubyforge.org/wiki/wiki.pl
export ROOTBUILD=opt
export ROOTSYS='c:\cygwin\home\brun\root'
export PYTHONDIR=/cygdrive/c/Python23
export PYTHONPATH='c:\cygwin\home\brun\root\bin'
export XMLDIR=$HOME/libxml2-2.6.9
#export PATH="/usr/bin/cygpath -u $ROOTSYS/bin:::$PYTHONDIR:$MAINPATH:$ORACLE/vc71:$ORACLE
export PATH=$ORACLE/vc71:$ORACLE:$HOME/root/bin:::$PYTHONDIR:$MAINPATH
./configure win32 \
--enable-roofit \
--enable-minuit2 \
--enable-table \
--enable-python \
--enable-odbc \
--enable-gdml \
--enable-unuran \
--enable-xrootd \
--with-fftw3-incdir=$HOME/fftw-3.1.1 \
--with-fftw3-libdir=$HOME/fftw-3.1.1 \
--with-gccxml=$HOME/gccxml/bin \
--with-xml-incdir=$HOME/libxml2-2.6.15.win32/libxml2-2.6.15.win32/include \
--with-xml-libdir=$HOME/libxml2-2.6.15.win32/libxml2-2.6.15.win32/lib \
--enable-oracle \
--with-oracle-incdir=$HOME/instantclient10_1/sdk/include \
--with-oracle-incdir=$HOME/instantclient10_1/sdk/include \
--with-oracle-libdir=$HOME/instantclient10_1/sdk/lib/msvc \
--with-python-incdir=$PYTHONDIR/include \
--with-python-libdir=$PYTHONDIR/libs \
--with-pythia6-libdir=$HOME/pythia6 \
--with-cern-libdir=$HOME/cernlib/2003/lib
```

renamed cygwin's link.exe to link\_cyg.exe:  
<http://root.cern.ch/root/roottalk/roottalk06/1448.html>  
 Avoids cygwin's link app from interfering with the build

```
make
make cintdlls (which seems to do nothing)
make map
make install
```

**MathMore note:** Even if we enable MathMore via --enable-mathmore, if there is no GSL library available MathMore will not be built. As of July, 2007, we have never built ROOT to include mathmore - even the ROOT-central binary distribution on windows does not include mathmore (though their unixes do). See: [http://root.cern.ch/cgi-bin/print\\_hit\\_bold.pl/root/roottalk/roottalk07/0343.html?mathmorevisual#first\\_hit](http://root.cern.ch/cgi-bin/print_hit_bold.pl/root/roottalk/roottalk07/0343.html?mathmorevisual#first_hit)

## How the build was configured on Windows using cygwin and VS2005

Installed cygwin including gcc, make, etc **NOTE: cygwin's link.exe application must be renamed, so that VC's link will be used for the build.**

Installed MS Visual C++ 2005 Express Edition from <http://msdn.microsoft.com/vstudio/express/visualc/downloadand> installed the Service Pack 1.

On this page I followed the link in Step 4 "Install the platform SDK"; on the next page I clicked on the link in Step 2 "Platform SDK" and ended up here: <http://www.microsoft.com/downloads/details.aspx?familyid=0BAF2B35-C656-4969-ACE8-E4C0C0716ADB&displaylang=en>  
 "Microsoft Windows Server 2003 R2 Platform SDK Web Install"  
 I downloaded 'PSDK-x86.exe', chose a Typical install.

Next I installed the "Microsoft .NET Framework Version 2.0 Redistributable Package (x86)" from <http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5&DisplayLang=en>  
 When I launched the installer it asked me to choose between "Repair" and (I think) "Remove" an existing installation. I chose "Repair".

Finally I downloaded and installed ".NET Framework 2.0 Software Development Kit (SDK) (x86)" from <http://www.microsoft.com/downloads/details.aspx?familyid=FE6F2099-B7B4-4F47-A244-C96D69C35DEC&displaylang=en>  
 Obtained ROOT source from their CVS repository using the tag v5.14.00e <http://root.cern.ch/twiki/bin/view/ROOT/PatchesV5-14-00>

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Obtained FFTW 3.1.2 from <http://www.fftw.org/install/windows.html>  
 downloaded: libxml2-2.6.15.win32 from Planet Mirror  
 downloaded gccxml from <http://www.gccxml.org/HTML/Index.html>

Skipped CERNLIB, Oracle

From the DOS prompt:

```
set PATH=
set LIB=
set INCLUDE=
and ran c:\Program Files\Microsoft Visual Studio 8\Common7\Tools\vsvars32.bat
Then
set ROOTSYS=C:\heather\root514e\root
set PYTHONDIR=C:\Python25
set PYTHONPATH=%ROOTSYS%\bin
set XMLDIR=C:\heather\root514e\libxml2-2.6.15.win32
set ROOTBUILD=opt
set LIB=C:\Program Files\Microsoft Platform SDK for Windows Server 2003 R2\Lib;C:\Program Files\Microsoft Visual Studio 8\SDK\v2.0\Lib;%LIB%;%
ROOTSYS%\lib
set PATH=C:\Python25;%ROOTSYS%\bin;C:\Program Files\Microsoft Platform SDK for Windows Server 2003 R2\Bin;C:\Program Files\Microsoft Platform
SDK for Windows Server 2003 R2\Lib;%PATH%;%ROOTSYS%\lib
set INCLUDE=C:\Program Files\Microsoft Platform SDK for Windows Server 2003 R2\Include;C:\Program Files\Microsoft Visual Studio 8\SDK\v2.
0\include;%INCLUDE%
```

Start cygwin via the command line: bash --login -i  
At the cygwin prompt, changed directories to the %ROOTSYS% dir and then ran configure:  
./configure win32gdk --enable-roofit --enable-minuit2 --enable-table \  
--enable-python --disable-odbc --enable-gdml \  
--enable-unuran --enable-xrootd \  
--with-fftw3-incdir=C:/heather/root-5.14d/fftw-3.1.2-dll \  
--with-fftw3-libdir=C:/heather/root-5.14d/fftw-3.1.2-dll \  
--with-gccxml=C:/heather/root-5.14d/gcc\_xml \  
--with-xml-incdir=C:/heather/root-5.14d/libxml2-2.6.15.win32/include \  
--with-xml-libdir=C:/heather/root-5.14d/libxml2-2.6.15.win32/lib \  
--with-python-libdir=C:/Python25/libs \  
--with-python-incdir=C:/Python25/include