Installing RRDtool
on
Mac OS X 10.4.x

1. - Introduction

The purpose of this document is to provide instructions on how to install RRDtool on OS X 10.4.x Server.

You will not find many explanations as to why something is done one way or the other. There are plenty of tutorials on this around on the internet. This document should just help you in getting things done.

RRDtool depends on other libraries to be installed first. These include: zlib, libpng, freetype, libart_lgpl. Freetype is part of Apple's X11 distribution. zlib is already part of OS X Server, but not current on 10.4.x.

This document will require you to use the command line. If you do not feel comfortable with using the command line, you should look for a ready made installer package or for somebody to assist you.

This document is written for Mac OS X 10.4.x. However, it should apply to 10.3.x as well. Be aware though that I have not done any particular testing of this procedure on 10.3.x.

DISCLAIMER: Whatever you do based on this document, you do it at your own risk! Just in case you haven't understood: Whatever you do based on this document, you do it at your own risk!

This tutorial has been tested on a standard Mac OS X 10.4.x Server installation. If you have already tinkered with your system, be aware that things might differ. It is impossible for me to foresee all changes that one might have applied to a server.

This tutorial contains step-by-step instructions for the terminal. Although you could just type them in line by line, it is recommended you have a basic understanding of the terminal.

2. - Requirements

Before you get started, you need to make sure some basic requirements are met:

- You have made a backup of your system.
- You have the latest version of Apple's Developer Tools (Xcode 2.4 or higher for 10.4.x) installed.
  Dev Tools are available on your Server DVD and as a free download from Apple's Developer Connection.
- X11 SDK is installed (available on your OS X Developer Tools Disc or Image. This is different from the X11 client that comes with OS X.)
- You do have a backup
- You are running 10.4.x
- You have not manually updated anything related to zlib, libpng, libart_lgpl and freetype so far (if you have, you must know how to adapt these instructions to the changes you made).

3. - Getting and installing the required components

This chapter will guide you through installing zlib, libpng, lib_art. These libraries are required for RRDtool to work.

IMPORTANT NOTE: If you have already installed the GD Graphics Library following my other tutorial "Installing GD on OS X Server", you only need to install libart_lgpl. You can safely skip the instructions for zlib and libpng

So let's get going:
Make sure you are logged in as root.

Get and install the latest version of the libraries by issuing the following commands (*in oblique type*). Issue them one after the other making sure you do not miss any dots or slashes. Also note that the download URLs may change in the future. In that case just replace the URLs in this document with the current one. Lines wrapping without line spacing are a single command.

(First we create our environment)

./configure --shared

10.4.x PPC only:
gcc_select 3.3

10.4.x Intel only:
gcc_select 4.0

mkdir -p /SourceCache

cd /SourceCache

(Now we get the libraries and unpack them.)

curl -O http://www.zlib.net/zlib-1.2.3.tar.gz

curl -O http://superb-east.dl.sourceforge.net/sourceforge/libpng/libpng-1.2.12.tar.gz

curl -O http://download.savannah.gnu.org/releases/freetype/freetype-2.1.10.tar.gz

curl -O http://oss.oetiker.ch/rrdtool/pub/libs/libart_lgpl-2.3.17.tar.gz

(Do not use version 2.3.3)

tar xzpf zlib-1.2.3.tar.gz

tar xzpf libpng-1.2.12.tar.gz

tar xzpf freetype-2.1.10.tar.gz

tar xzpf libart_lgpl-2.3.17.tar.gz

(Now we install zlib)

cd /SourceCache/zlib-1.2.3

make
./configure --shared
make install
make

make install

(Now we install libpng)

cd /SourceCache/libpng-1.2.12

cp scripts/makefile.darwin Makefile

Now edit the file "Makefile" and make sure the paths are as follows. Be careful about what is commented and what isn't:
ZLIBLIB=/usr/local/lib
ZLIBINC=/usr/local/include
#ZLIBLIB=../zlib
#ZLIBINC=../zlib

Continue by issuing:

make

(Most of the time issuing "*make*" will have worked without errors. If you get errors during "*make*", issue "*./configure*" and try "*make*" again.)

make install

(Now we install libart_lgpl)

cd /SourceCache/libart_lgpl-2.3.17

env CFLAGS="-O2 -fPIC" ./configure --disable-shared --prefix=/usr/local

make

make install

(Now we install freetype)

cd /SourceCache/freetype-2.1.10

./configure

make

make install

ln -s /usr/X11R6/include/fontconfig /usr/local/include

(ignore errors if any)

4. - Installing RRDtool

This chapter will guide you through installing RRDtool.

So let's get going:
Make sure you are logged in as root.

Install the latest version of RRDtool by issuing the following commands (*in oblique type*). Issue them one after the other making sure you do not miss any dots or slashes. Lines wrapping without line spacing are a single command.

mkdir -p /SourceCache

cd /SourceCache

curl -O http://oss.oetiker.ch/rrdtool/pub/rrdtool-1.2.23.tar.gz

tar xzf rrdtool-1.2.23.tar.gz

cd /SourceCache/rrdtool-1.2.23

CPPFLAGS="-I/usr/local/include/freetype2 -I/usr/local/lib -I/usr/local/include/libart-2.0 -I/usr/local"

LDFLAGS="-L/usr/X11R6/lib -L/usr/local/lib"

CFLAGS=-O2

export CPPFLAGS LDFLAGS CFLAGS

./configure --prefix=/usr/local/rrdtool-1.2.23 --disable-python --disable-tcl --disable-ruby

make

make install

rm /usr/local/rrdtool

(This will remove any symbolic link you may have from an older installation)

ln -s /usr/local/rrdtool-1.2.23 /usr/local/rrdtool

(This will add a symbolic link to the new RRDtool library you just installed. Makes it simpler to fall back to a different version if needed.)

You are now all set and should have RRDtool and supporting libraries installed.

You can test if it works by doing the following:

cd /usr/local/rrdtool/share/rrdtool/examples

./minmax.pl

./4charts.pl

If RRDtool is properly installed it will create a series of .png files in the same directory.

5. - Caveats

Not that many. The most important caveat is that if building one library goes wrong, the rest of the succession will most likely not work either.

If you have tried to install one of the libraries in the past, you may have to remove and re-install them (unless you did install them as described).

If you have modified any paths and or environment variables, make sure you check them against above instructions.

That's all folks.
Hope this helps.
Have fun,
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