Porting Gnuzilla and Icecat on Mac OS X Using Fink

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***Abstract*—GNUzilla is the GNU version of Mozilla suite and IceCat is the GNU version of Firefox. It is a web browser, a software application for retrieving, presenting, and traversing information resources on the World Wide Web. It is open source software which is compatible for UNIX systems. The goal of this project is to make this application compatible with MAC OS X, which can be done by making suitable modifications to the source code. Later the modifications are reflected in the info file so that the software can be listed in Fink, which is a package management system for MAC OS X.**

Keywords- Porting,Fink,icecat,dependencies,packaging.

I. INTRODUCTION

A. *Icecat and Gnuzilla:*

GNUzilla is the GNU version of Mozilla suite and IceCat is the GNU version of Firefox. Icecat provides a completely free version of the popular Mozilla source code. It is (so far the only) part of Gnuzilla, the umbrella project analogous to Mozilla. Thus, IceCat is a fork of Mozilla Firefox. It is compatible with the GNU/Linux operating system. The base Mozilla code is free but it supports and suggests using non-free plugins and other modules while GNU IceCat is completely free, and suggests only free plugins to users

B. *Distribution:*

IceCat is available as a free download for the 32-bit, i386 architecture. Both binaries and source are available, though the current build is available only for GNU/Linux.

C. *Porting:*

It involves making the application compatible to a specific platform. Thus it facilitates the usage of a software which is written for one platform on another platform.This may require writing a piece of software code for successful porting. A software is said to be portable when the cost of porting it to a new platform is less than the cost of writing it from scratch. Generally it starts with the original source code and changing it a little bit so that the application can compile and install on that particular platform. Thus the process of modifying the existing Open Source software so that it will compile and run on Mac OS X is called porting.

D. *Packaging:*

The results of the porting are available to casual users as a coherent, comfortable distribution that matches what Linux users are used to. This process is called packaging.

E. *Fink:*

Fink is a repository of Unix Software. It is basically a package management system that aims at bringing the open source software to MAC OS. Any software in fink can compile and run on Mac OS X. In order to make an application available on fink following procedure is followed:

1) Download the original source code from specified or mirror sites.
2) Create an info file, then validate it.
3) Configure the info file. If needed write the patch script.
4) Install the package using fink specific commands.

F. *Installation of Fink and XCode tools:*

Xcode is Apple's premiere development environment for Mac OS X. It includes all the tools needed to create, debug, and to optimize the application. At the heart of the Xcode tools package is the Xcode IDE, a graphical workbench that tightly integrates a professional text editor, a robust build system, a debugger, and the powerful GCC compiler capable of targeting Intel and PowerPC regardless of host platform.

G. *Programming And System Requirements*

To be comfortable in working on the porting project ,a good knowledge of C++, a basic knowledge of the UNIX command line and some knowledge of perl script is required. Other than that familiarity with extensive documentation provided by Apple , documentation provided by fink is also helpful.

A Macintosh (PowerPC/Intel) running Mac OS X 10.4. or later is required. XCode tools need to be installed. This will

ensure that proper tools are installed to compile the source which will minimize the number of problems.

II. Package Structure

A. *Dependencies*

1) libjpeg-shlibs
2) openssl098-shlibs
3) sqlite3-shlibs
4) pkgconfig
5) fink (above or = 0.28)
6) libjpeg
7) openssl098-dev
8) sqlite3
9) glib2-dev
10) libidl2 (above or = 0.8.9-1)

III. Implementation

A. *Installation through fink includes the following steps*

1) First create the info file which contains the information of the package name, version, source code mirror, maintainer name, homepage, license type, md5, compile script, install script and patch script and place it into
   /usr/sw/fink/dists/local/main/finkinfo

2) Validate the info file created by using the following fink command from the path specified above.
   fink validate icecat.info

3) After validation is done successfully then try to build it by using the following fink command
   fink -m -build-as-nobody rebuild icecat

   If the above process fails make modification to the info file as required and repeat the above process until building is done.
4) If the build is successful a deb file appears in
   sw/fink/dists/local/main/binary-darwin-i386/

5) Check the content of the package by command
   dpkg-csw/fink/dists/local/main/binary-darwin-i386/icecat-3.0.11.deb

6) After building validate the deb file and install the application through fink by using the following command
   fink install icecat

7) On success submit the package to fink tracker.

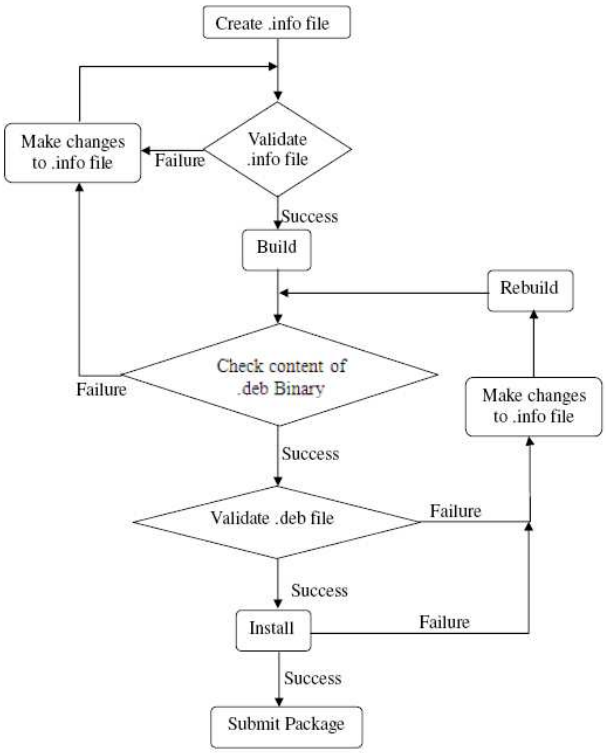

Fig. 1. Fink Package Creation Process

8) Make the changes as instructed for releasing the unstable version in the fink.

B. *Configure Options for MAC:*

Specific configure options that are required to make the icecat application run on the MAC OS

- enable-default-toolkit=cairo-cocoa
- enable-application=browser
- disable-plugins

IV. Conclusion

This paper gives an overview of the implementation of porting icecat 3.0.11 on MAC OS X using fink. This project briefly discusses the dependencies involved in the porting process and a series of steps to create, validate, configure and build the icecat package on MAC OS X.

References

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