

RexxLA Symposium 2009, Chilworth Manor, UK

Building ooRexx 4.00 on MacOSX



René Vincent Jansen
Version - 20090517



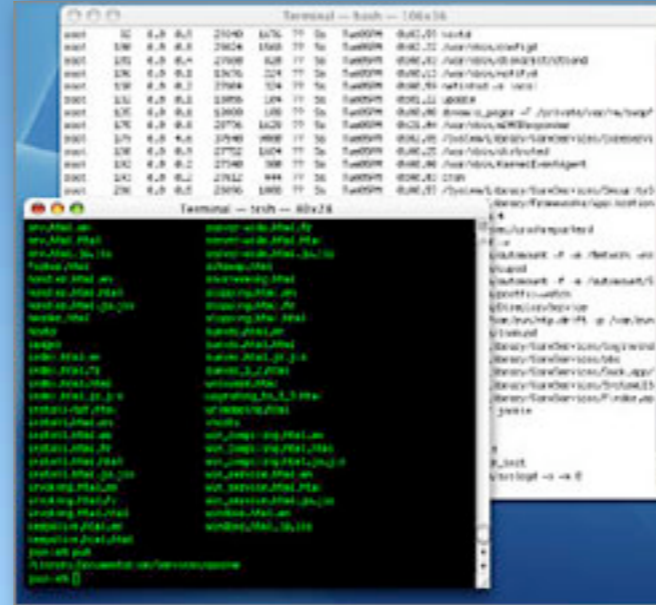
Agenda

- The Build Tools
- The Source Code
 - Sourceforge
- The Process
- Installing a build
- Debug Tools
- Building a Package



ooRexx

MacOSX is Unix



Java
for Mac OS X



Based on UNIX
Solid as a rock.



History



```
Terminal — tcsh (tty1)
[liberty:~/data/rexx] rvjansen% cps
Open Object Rexx Interpreter Version 3.0.0 for MACOSX
Build date: Jun  1 2005
Copyright (c) IBM Corporation 1995, 2004.
Copyright (c) RexxLA 2005.
All Rights Reserved.
This program and the accompanying materials
are made available under the terms of the Common Public License
which accompanies this distribution.
http://www.ibm.com/developerworks/oss/CPLv1.0.htm

----- REXXCPS 2.1 -- Measuring REXX clauses/second -----
REXX version is: REXX-ooRexx_3.0(MT) 6.00 1 Jun 2005
System is: MACOSX
Averaging: 5 measures of 3 iterations

Performance: 430812 REXX clauses per second

[liberty:~/data/rexx] rvjansen%
```

- ooRexx 3.01 poc : June 1st, 2005
- ooRexx 3.1.1 : November 2006
- ooRexx 3.1.2 : April 2007
- ooRexx 3.2.0 : November 2007
- ooRexx 4.0 : June 2009?

The Toolset

- All that is needed is a Mac with OSX (Leopard)
- And the freely downloadable developers tools

- Logon to developer.apple.com and register for a free membership
- Download the MacOSX developers kit (several hundreds of megabytes)


- Contains:

- compilers, development environment, build tools, documentation

Subversion

- Version control system, improved successor of CVS

COLLABNET Enterprise Edition [Login](#) | [Register](#)

 **Tigris.org**
Open Source Software Engineering Tools

[My pages](#) | **Projects** | [Community](#) | [openCollabNet](#)

[Projects](#) > [subversion](#)

Project tools

- [Project home](#)
- [Membership](#)

Announcements

- [via Web](#)
- [via email](#)
- [via RSS](#)

Additional Resources

- [License](#)

If you were [registered](#) and [logged in](#), you could join this project.

 **S U B V E R S I O N**

Subversion is an open source [version control system](#).
See [here](#) for a detailed feature list.

Get Subversion **Help**

The latest release of Subversion In addition to the resources below, you can use an

What's New in Subversion 1.6?
Free Webinar: [View it now](#)

Subversion 1.6
Quick Reference Card 
GET YOURS NOW!

Subversion

- Optimistic Locking
- Runs over http
- Branching and Merging

- Trunk
 - The 4.00 interpreter Trunk is in main/trunk
 - The Branches are in main/branches
 - The Releases are in main/releases

- Everyone has read access
- Committers have update access

Check out the code

- <http://oorexx.svn.sourceforge.net/svnroot/oorexx>
- `svn co http://oorexx.svn.sourceforge.net/svnroot/oorexx .`
- This downloads quite some number of files, in a directory tree, to the current directory

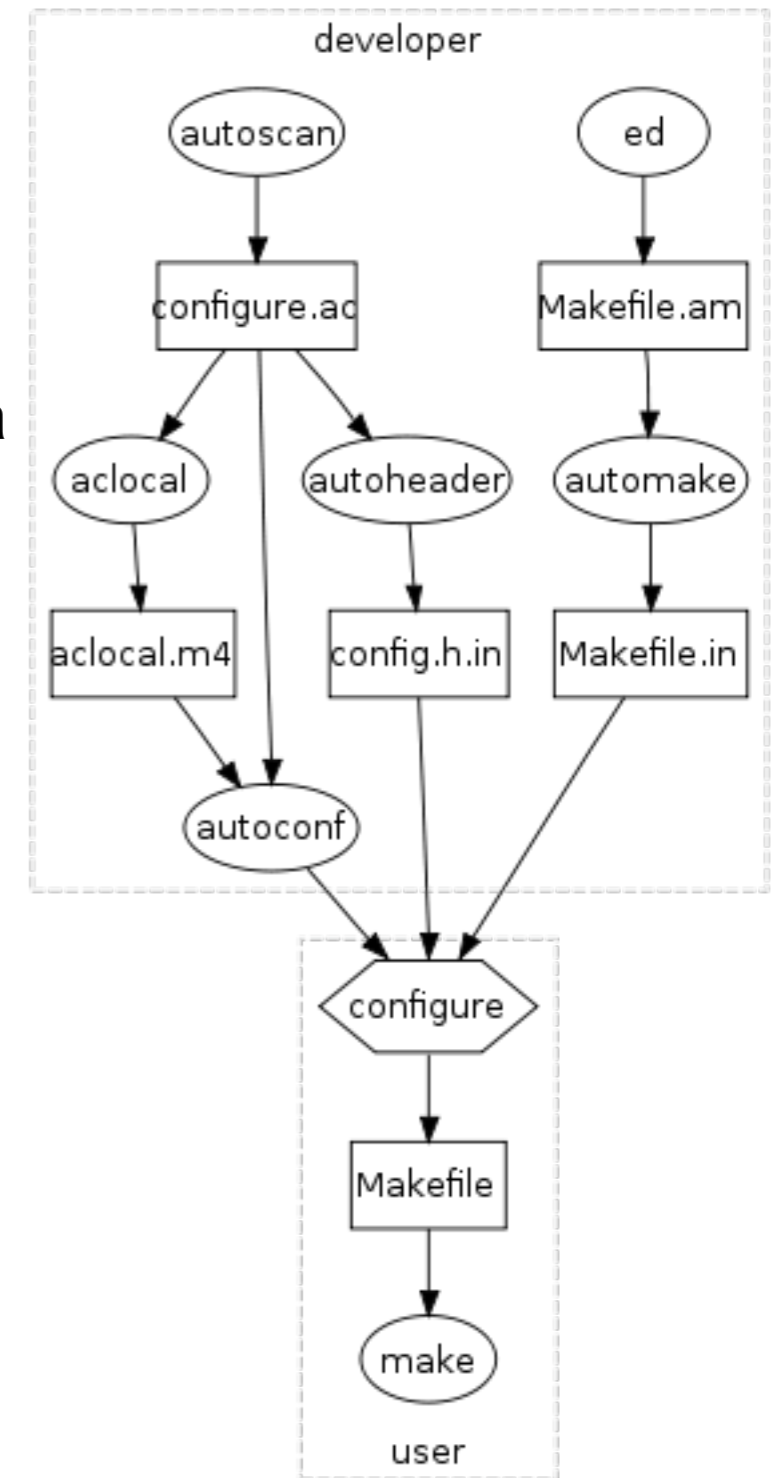
gcc



- gcc is the GNU compiler toolchain
- as ooRexx is written in C++, and gcc is the standard compiler on OSX, we are going to use it
- For Power architecture IBM has xLC - don't have experience with it, although it is the standard compiler on AIX
- Cross compilation, e.g. on Intel for Power, is a possibility
- We might be forced to look into its workings as the Power PC installed base is dwindling (at least at my home)

Autotools suite (GNU Build System)

- Works to generate various build environments for a generic C++ program
- Knows about differences between unix versions
- Dense set of shell scripts



The Build Process

- `./bootstrap`
- `./configure`
- `./make`

Installing a build

- `sudo make install`
- ... administrator password required
- Standard target location is `/opt/oorexx`
- OS Mods not necessary anymore

Debugging Tools

- gdb
- dtrace
- file
- otool

Debugging

- gdb
- load rexx
- put in breakpoints and watch state and behaviour

- -print statements!
- `cout << "hello" << endl ;`

Making a package

- You do not have to
- There should be one at sourceforge
- But maybe there is an architecture missing and you want to help out
- OSX has its own package maker in the Dev Toolkit
- All Gui driven
- There is a 'postflight' script that sets the right symbolic links in the file system
- This script is generated with an ooRexx exec
- It needs admin (root) authorization

The exec that generates the sudo ln -s script

```
"cd /opt/ooRexx/lib/ooRexx"  
"ls | rxqueue"  
  
do queued()  
  parse pull line  
  do i=1 to line~words()  
    say "sudo ln -s /opt/ooRexx/lib/ooRexx/"line~word(i) "/usr/lib/"line~word(i)".dylib"  
  end  
end  
  
"cd /opt/ooRexx/bin"  
"ls | rxqueue"  
  
do queued()  
  parse pull line  
  do i=1 to line~words()  
    say "sudo ln -s /opt/ooRexx/bin/"line~word(i) "/usr/bin/"line~word(i)  
  end  
end
```

Please note: the paths (**path**, **dyld_library_path**) need to be already correct for this to run.

Download and Build BSF4Rexx

- The ooRexx distribution for MacOSX includes BSF4Rexx
- Download it from <http://wi.wu-wien.ac.at/rgf/rexx/bsf4rexx/>
- There is a makefile.mac that is used to build for MacOSX

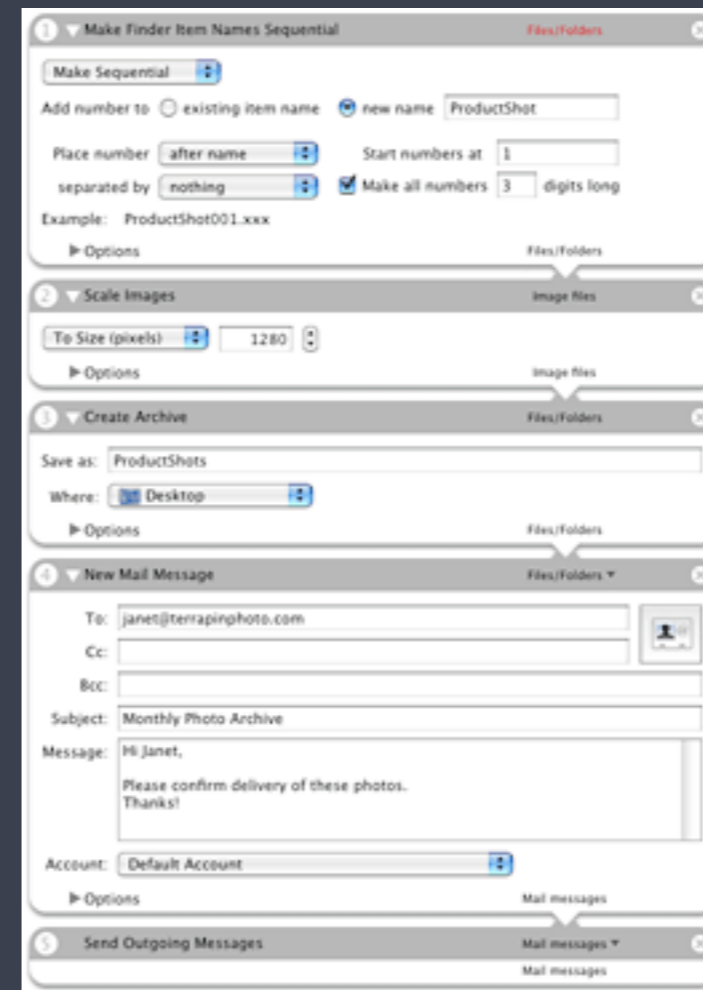


ooRexx

Automator

It is like a 21st century CMS Pipelines!

Assisted creation and sequencing of library actions



Actions can be written in ooRexx for MacOSX

- ▶ Add Rexx as a shell scripting language to automator configuration

Add to Shells.plist

- ▶ Rexx needs to be added to a file that Automator reads on startup
- ▶ It is defined as every other shell or interpreter

This file is located in

**/System/Library/Automator/Run Shell Script.action/
Contents/Resources/Shells.plist**

Remember to copy it using “sudo cp” as it needs root authority.

This needs to go into shells.plist

```
<key>/usr/bin/rexx</key>
  <dict>
    <key>args</key>
    <array>
      <string>-e</string>
      <string>%</string>
      <string>--</string>
    </array>
    <key>script</key>
    <array>
      <string>do while lines()&#10;say linein()&#10;end</string>
      <string>parse arg arg1 arg2 arg3</string>
    </array>
  </dict>
```

Testing ooRexx

- There is a built in test suite that uses the Rexx unit test tool
- Separate parts of the system can be tested individually

ooRexx 4.0 is still in beta

- ooRexx 4.0 has at least one showstopper in MacOSX for some time now
- For the other platforms, r4702 beta is available since today