ooRexx on MacOSX: 2007 Update

REXX on the Mac

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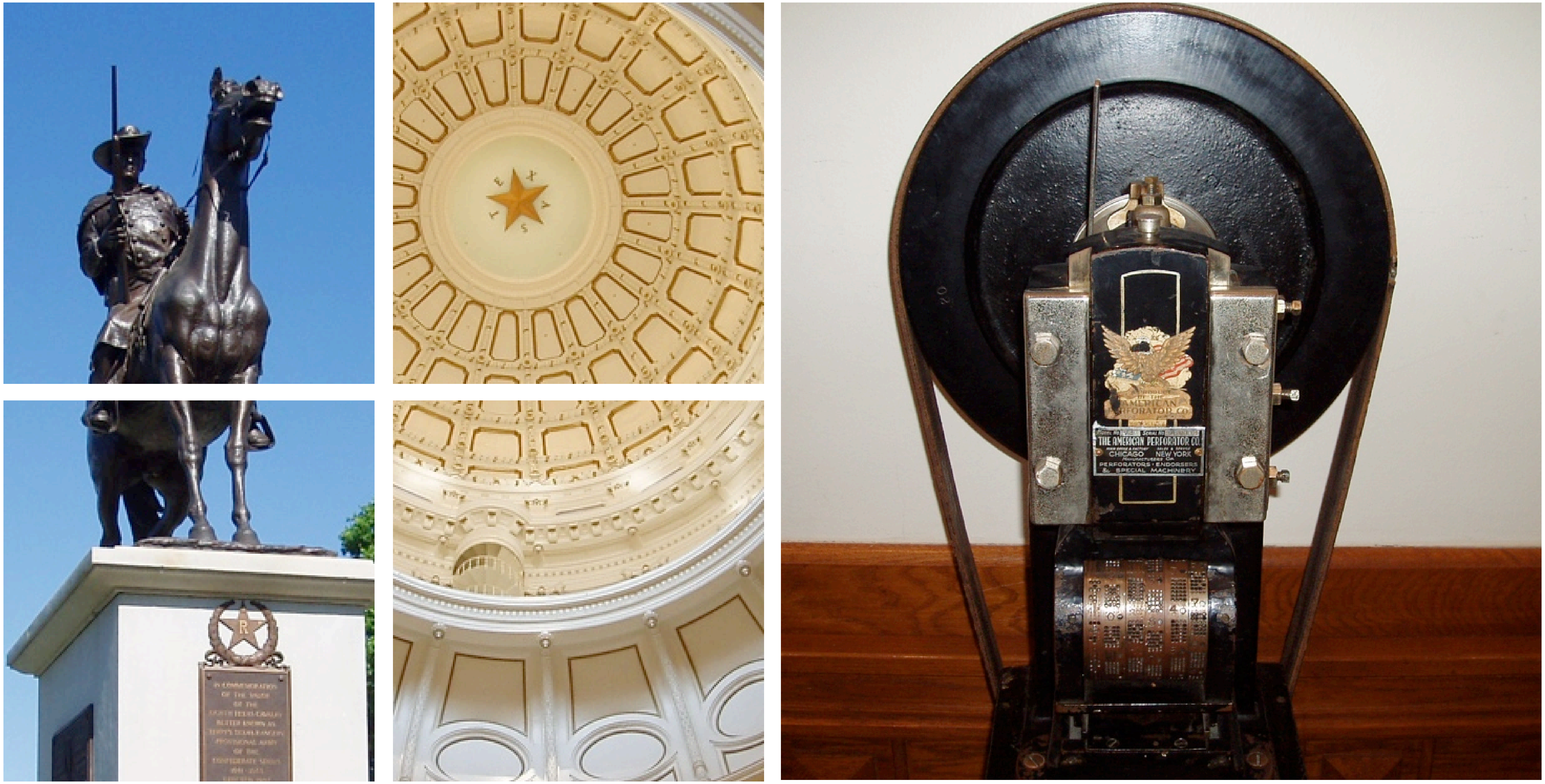
RexxLA Tampa, Florida
2007

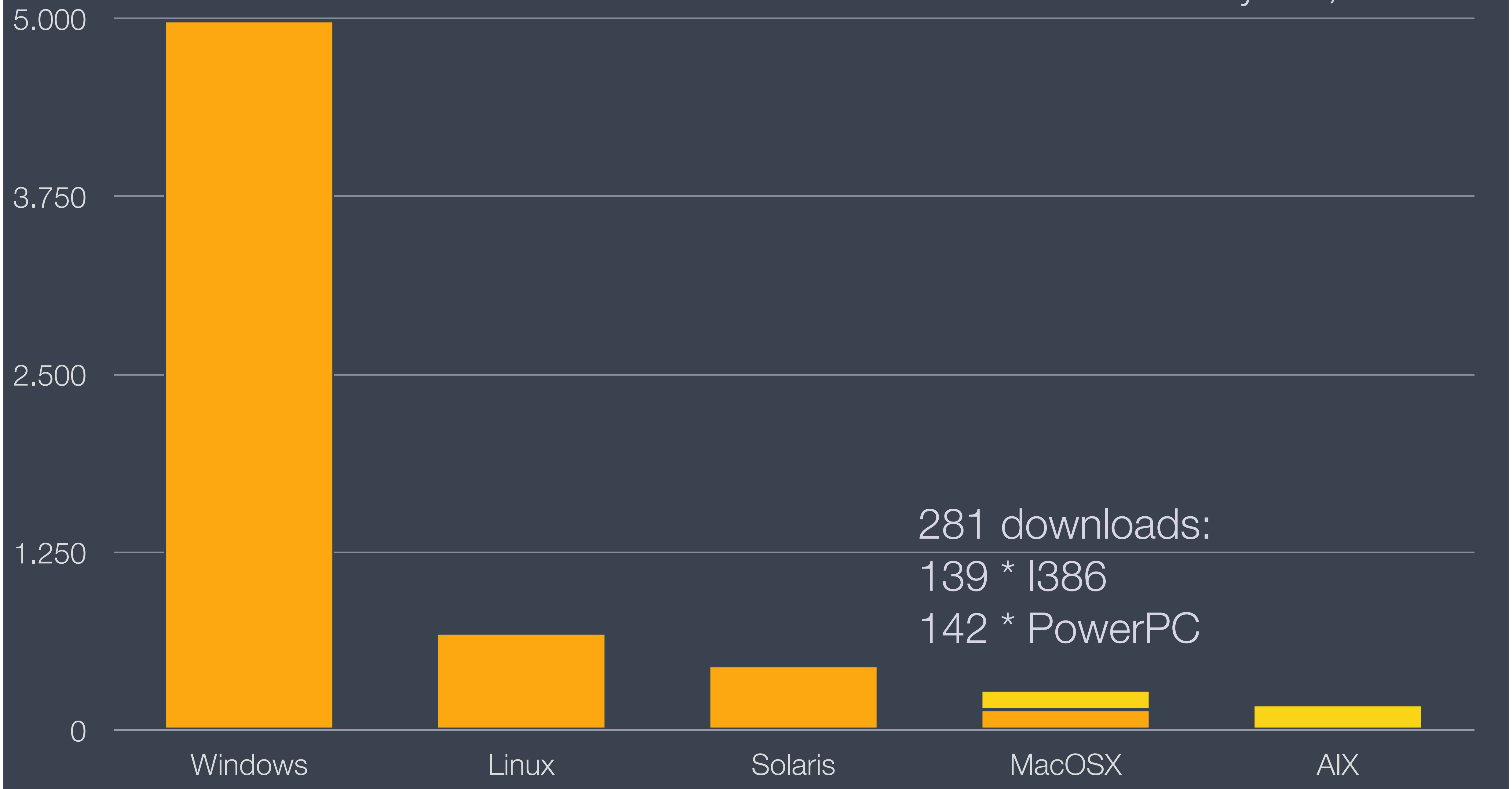


Mac Package announced at Austin

(All examples made and tested on this version, running under Max OSX 10.4.9 on Intel and Power PC)

ooRexx 3.1.1 Downloads

as of May 1st, 2007



281 downloads:
139 * I386
142 * PowerPC

Specific Mac OSX problems

- System V IPC Shared Memory API implementation
- Have to modify /etc/rc sysctl calls
- This was stopping distribution of ooRexx for MacOSX last symposium, but has since been debugged
- Problem is hopefully gone in ooRexx 4.0
  - This is using sockets instead of shared memory for IPC

Necessary mod to OSX /etc/rc

```
sysctl -w kern.sysv.shmmax=4194304
kern.sysv.shmmin=1
kern.sysv.shmmni=32
kern.sysv.shmseg=8
kern.sysv.shmall=1024
```

```
sysctl -w kern.sysv.shmmax=335544320
sysctl -w kern.sysv.shmmin=1
sysctl -w kern.sysv.shmmni=32
sysctl -w kern.sysv.shmseg=16
sysctl -w kern.sysv.shmall=327680
```

While this is still the only solution, it is ugly and not suitable for Mac user base

It was also needed for PostgreSQL, but they seem to have relaxed the numbers.

Changes for installer package

Need to softlink to /usr/bin and /usr/lib

Single most often asked question was:
“I ran the installer and Rexx cannot be found” - so admonishing the user to put /opt/ooRexx/bin on the $PATH does not really work

And: some packages run only languages that can be found on the standard path

Need to provide a single binary package for both PPC and Intel

Status

(By the way, the PPC is water cooled)

ooRexx 3.1.2 OSX Status

Builds successfully from the source distribution

Intel Package (including BSF4Rexx) is working

Includes one patch over 3.1.2

PPC Package will be ready early June 2007

Cross-platform GUI for ooRexx - Complete Rexx-Java integration

BSF4Rexx4Mac Working

And included & working in 3.1.1 installer

Since about November of 2006

Totally integrates Java and Object Rexx

Due to different Java VM implementations at the moment only runnable from Java, using the included ***rexxj*** command.

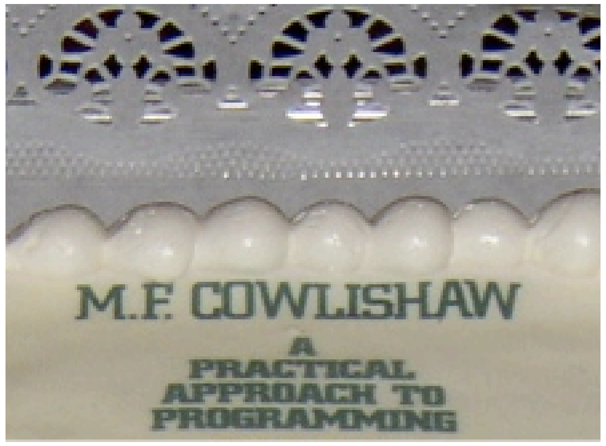
Special support added for Java classes that have originated in NetRexx - automatic, castless Rexx-NetRexx integration.

```
util = .bsf~bsf.import("org.netrexx.midms.util.Dmsutil")
Datum = .bsf~bsf.import("org.netrexx.midms.util.Datum")

util~printBanner('Hello NetRexx')
```

```
Hello NetRexx
started by rvjansen on Mac OS X 10.4.9 i386 - Java version 1.5.0_07
current directory: /Users/rvjansen
```

```
d=datum~new
say "Timestamp :"Datum~getTimestamp
say Datum~getLogTimestamp
say d~getDayOfWeekInMonth
say d~isWeekend
```

```
Timestamp :20070403213840409
2007-04-03 21:38:40.409
Wednesday 1 in April
Is Weekend: N
```



NetRexx transparency

JDBC Use with BSF

```
jclass        = .bsf~bsf.import("java.lang.Class")
driverMgr = .bsf~bsf.import("java.sql.DriverManager")

-- instantiate jdbc driver
jclass~forname('org.postgresql.Driver')~newinstance

-- make the dbms connection and open a statement
stmt = driverMgr~getConnection('jdbc:postgresql’)~createStatement

-- specify query and execute to get result set
rs = stmt~executeQuery('select * from obj_x_obj')
do while rs~next
  say rs~getString("OBJ_OID")
end

::requires 'bsf.cls'
```

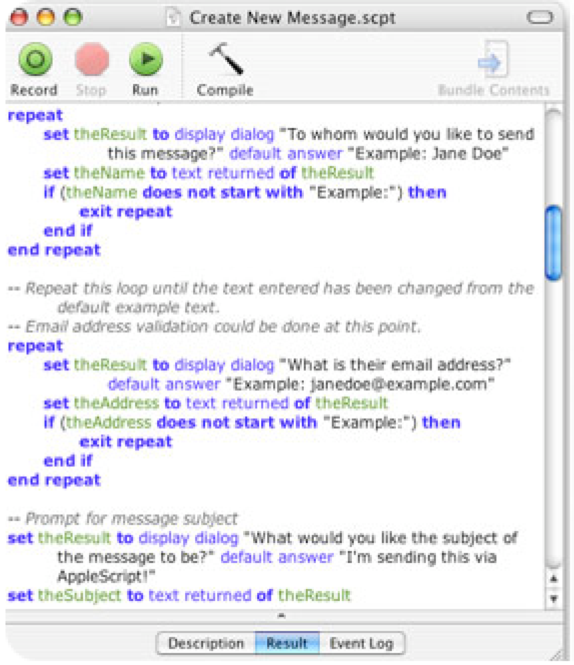
Completely platform independent

Applescript

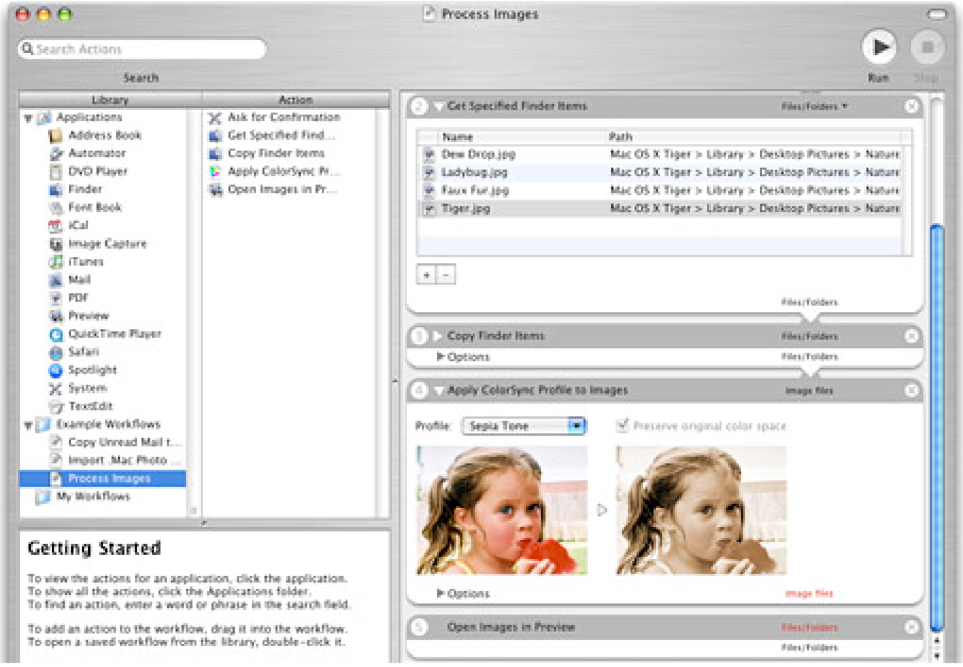
OSA

Most important applications on MacOSX are scriptable, (think Windows automation), using AppleScript, an *English-like* scripting language. There are various ways to start an Applescript command using Rexx.

Some examples follow.



```
repeat
    set theResult to display dialog "To whom would you like to send
            this message?" default answer "Example: Jane Doe"
    set theName to text returned of theResult
    if (theName does not start with "Example:") then
        exit repeat
    end if
end repeat

-- Repeat this loop until the text entered has been changed from the
      default example text.
-- Email address validation could be done at this point.
repeat
    set theResult to display dialog "What is their email address?"
            default answer "Example: janedoe@example.com"
    set theAddress to text returned of theResult
    if (theAddress does not start with "Example:") then
        exit repeat
    end if
end repeat

-- Prompt for message subject
set theResult to display dialog "What would you like the subject of
      the message to be?" default answer "I'm sending this via
      AppleScript!"
set theSubject to text returned of theResult
```



Name	Path
Dew Drop.jpg	Mac OS X Tiger > Library > Desktop Pictures > Nature
Ladybug.jpg	Mac OS X Tiger > Library > Desktop Pictures > Nature
Faux Fur.jpg	Mac OS X Tiger > Library > Desktop Pictures > Nature
Tiger.jpg	Mac OS X Tiger > Library > Desktop Pictures > Nature

Profile: Sepia Tone

☑ Preserve original color space

Getting Started

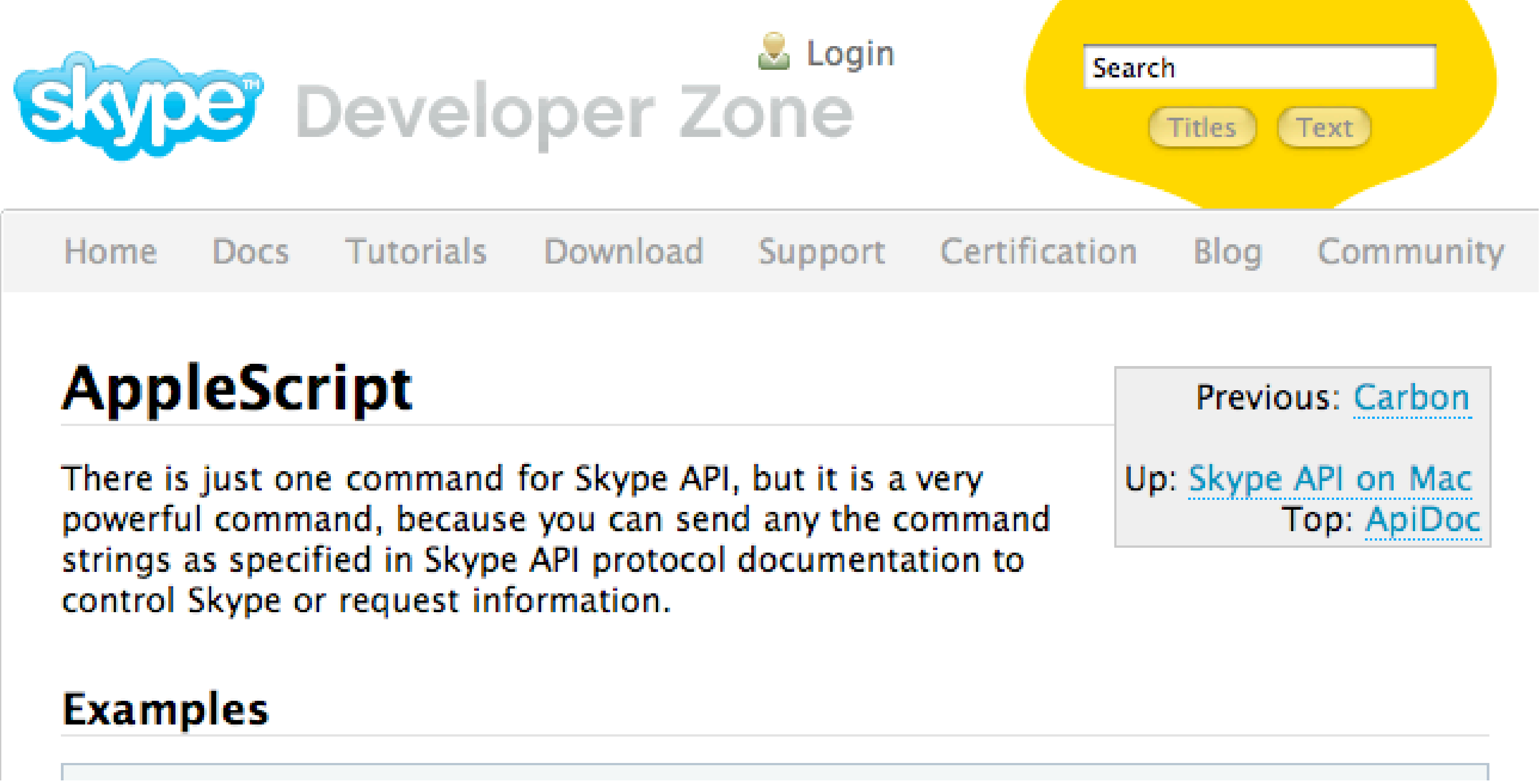
To view the actions for an application, click the application.
To show all the actions, click the Applications folder.
To find an action, enter a word or phrase in the search field.

To add an action to the workflow, drag it into the workflow.
To open a saved workflow from the library, double-click it.

AppleScript

Powerful, easy-to-learn automation for Macintosh.

Sending an IM
Query Users



skype Developer Zone

AppleScript

Previous: Carbon

Up: Skype API on Mac
Top: ApiDoc

There is just one command for Skype API, but it is a very powerful command, because you can send any the command strings as specified in Skype API protocol documentation to control Skype or request information.

Examples

Full Skype API

Using Rexx & OSASCRIPT

```
userid = 'venetiamaduro'
message = 'hello'

cmdline = "osascript -e 'tell application ""Skype""' ",
    "-e 'send command ""MESSAGE "userid" "message""" script name ""msg""'",
    "-e 'end tell'"

cmdline
```

ooRexx SkypeBot

Sends a Skype instant message to a selected Skype contact

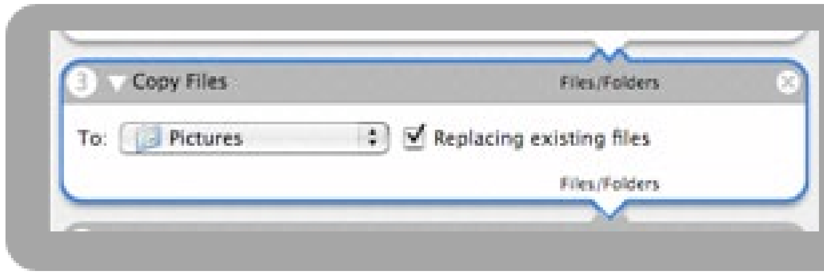
```
cmdline = "osascript -e 'tell application ""Skype""' ",
"-e 'set gcalls to send command ""SEARCH FRIENDS"" script name ""My Script""'",
"-e 'end tell'"

cmdline "| RXQUEUE"

do queued()
  parse pull line
  do i=1 to line~words()
    say line~word(i)
  end
end
```

Get a list of your Skype Contacts

And have them available in ooRexx variables

Plan to integrate using Address

- It looks like it would be useful to integrate with OS X to enable the address environment statement for some applications
  - address iTunes
  - address iPhoto
  - address Skype
- variables could be added to the pool for specific use of these scripts



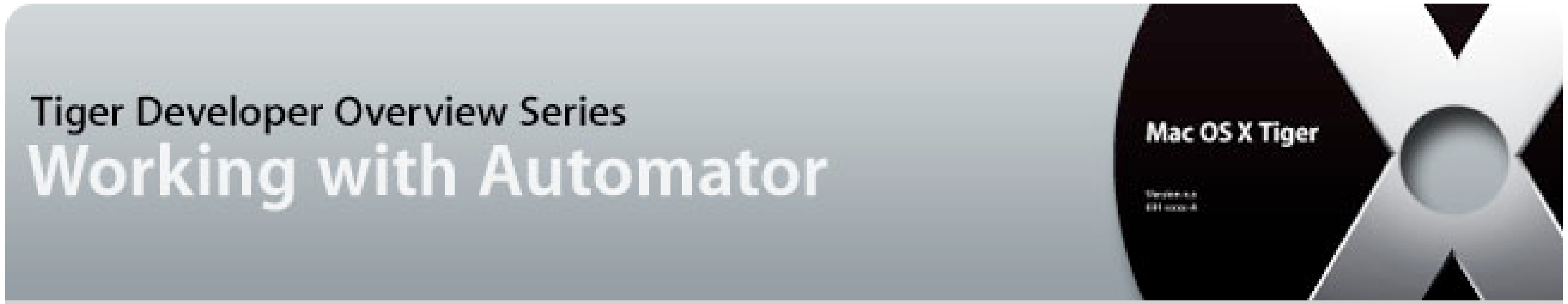
3 Copy Files — Files/Folders

To: Pictures ☑ Replacing existing files

Files/Folders

Writing ooRexx instead of Applescript

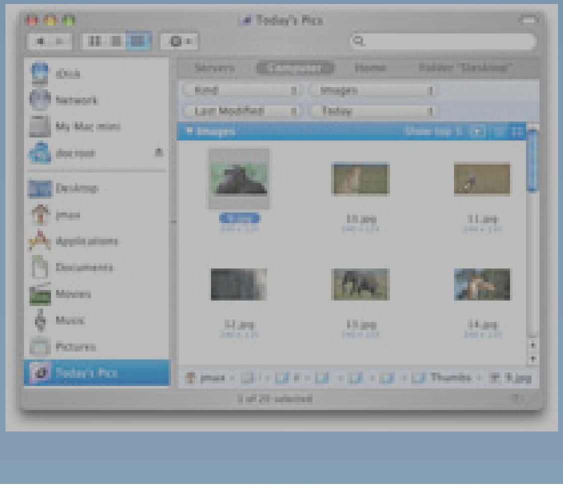
Mac OSX Automator

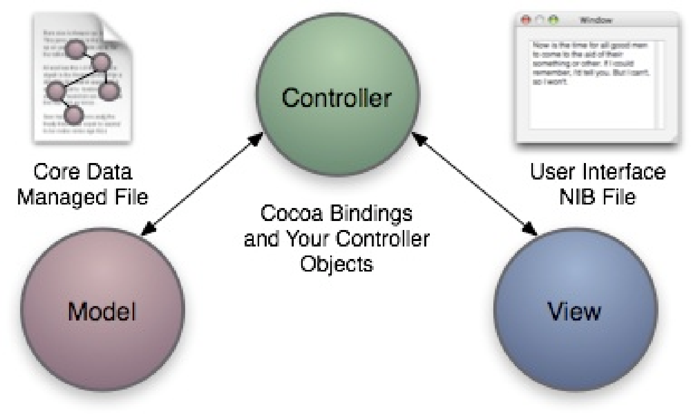


Tiger Developer Overview Series

Working with Automator

Using Rexx to start Applescript is fun, but *way nicer* of course is to write ooRexx in order to *avoid* writing AppleScript

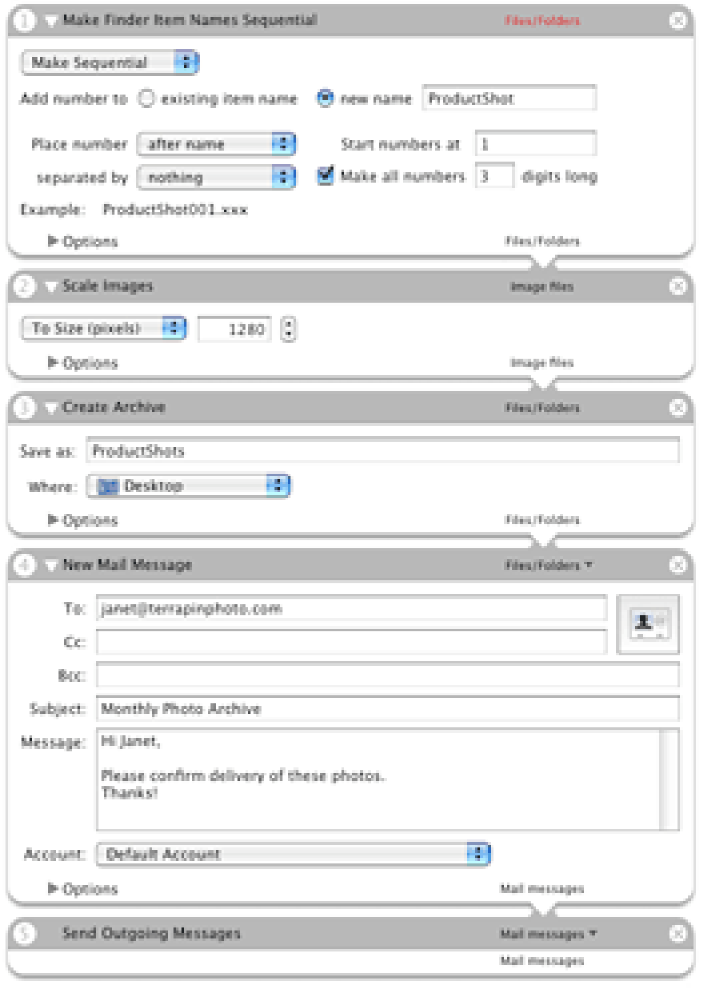




Automator

It is like a 21st century CMS Pipelines!

Assisted creation and sequencing of library actions



1 Make Finder Item Names Sequential — Files/Folders

Make Sequential

Add number to ○ existing item name ● new name: ProductShot

Place number: after name

separated by: nothing

Start numbers at: 1

☑ Make all numbers 3 digits long

Example: ProductShot001.xxx

▶ Options — Files/Folders

2 Scale Images — Image files

To Size (pixels): 1280

▶ Options — Image files

3 Create Archive — Files/Folders

Save as: ProductShots

Where: Desktop

▶ Options — Files/Folders

4 New Mail Message — Files/Folders

To: janet@terrapinphoto.com

Cc:

Bcc:

Subject: Monthly Photo Archive

Message: Hi Janet,

Please confirm delivery of these photos.
Thanks!

Account: Default Account

▶ Options — Mail messages

5 Send Outgoing Messages — Mail messages

Mail messages

Actions can be written in ooRexx for MacOSX

Necessary Preparations

- Run an ooRexx version that contains the -e startup argument
    - Which will be in the new ooRexx Mac OSX installer package
- Add Symbolic links to the default /etc/* hierarchy
- Add Rexx as a shell scripting language to automator configuration

The -e startup argument to Rexx

- Some scripting languages and Unix shells have this traditionally
- Mostly used for quick oneliners in shell scripts
- Feeds a program from the command line into the interpreter
- Rexx -e “say x2d(ff)”
  - replaces the “interpret args(0)” script (just as well, ‘say’ is a program)
  - need to do creative quoting as the shell has to be taken into account

Symbolic links

- The executables and library locations follow the sugested Linux file system layout for optional packages **/opt/***
- This is not in standard user path environment variable
- Automator expects the shells and scripting languages in the standard **/etc/*** hierarchy
- The solution is to craft a script that writes a set of **ln -s** commands
    - Looking at the moment how to run this from the installer package

Script to add symbolic links

```
"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)
  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
```

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.

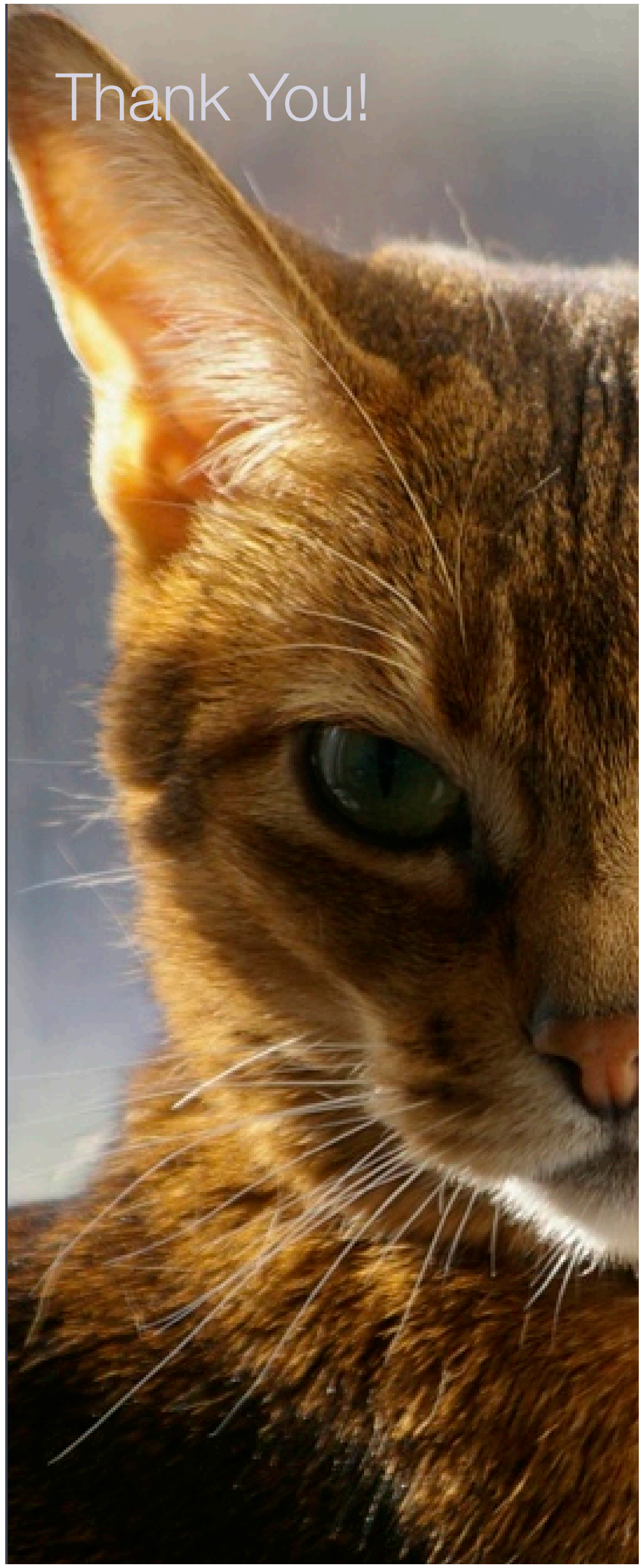
Automator Configuration

```
<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>
```

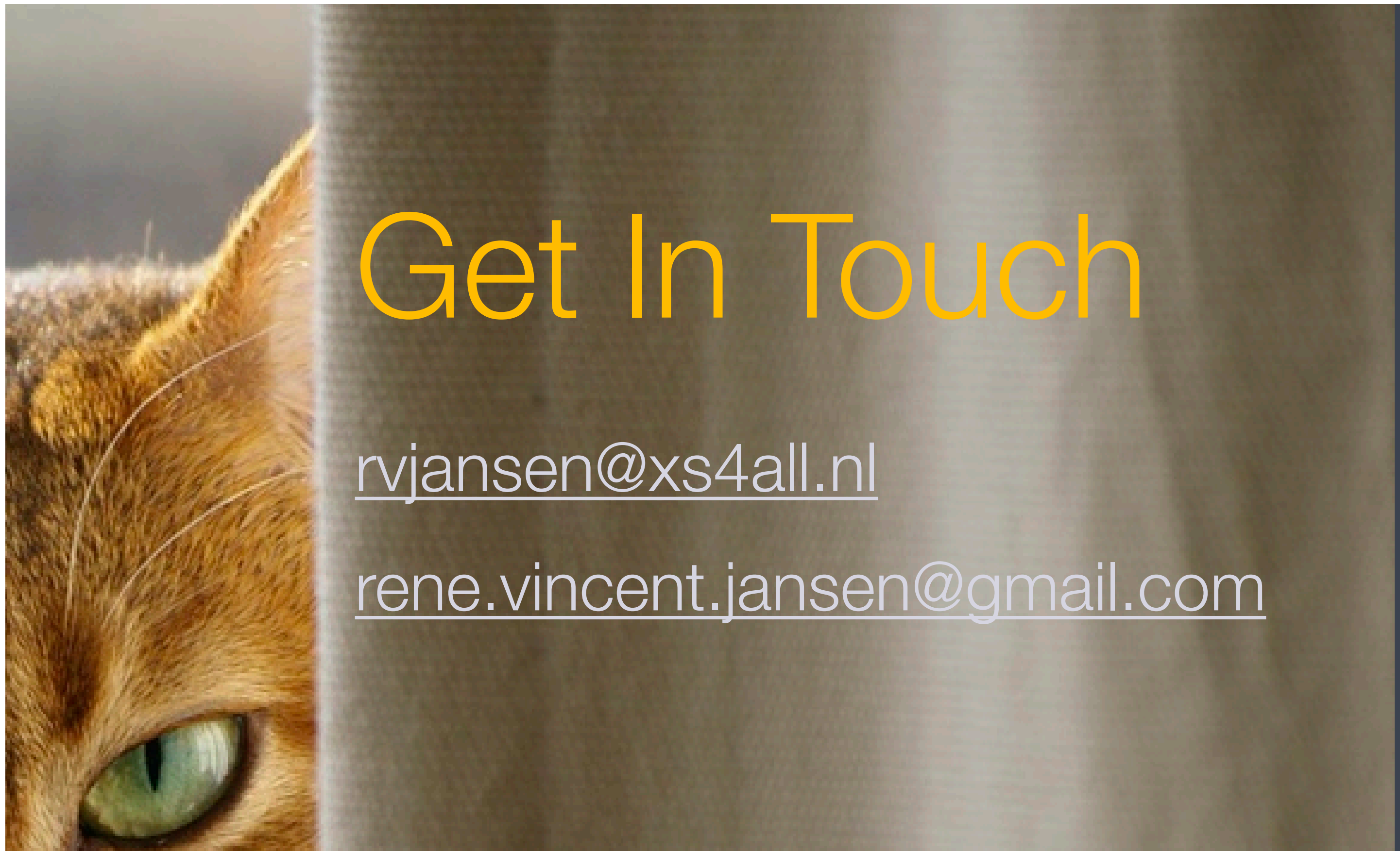
Add this set of lines and restart Automator (if it was already started)

Automator

Demo of some features



Thank You!



Get In Touch

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