Application Creation for the Impatient

Blending AppleScript and Shell

Session M212

Macworld San Francisco 2005

Joel Rennich

Consulting Engineer – Apple Enterprise Consulting Services

mactroll@apple.com

Apple Certifications for 10.3.x

Course Names	Certification Level	Length (days)
Mac OS X Help Desk Essentials	ACHDS	3
Mac OS X Server Essentials	ACTC (with Help Desk Essentials)	4
System Administration of Mac OS X Clients	Apple Certified System Administrator	5 days each course
System Administration using Mac OS X Server		

train.apple.com • 800-848-6398

Introduction

- Overview of scripting

  - AppleScript

  - Shell

- Live demo!

What You'll Learn

- How to integrate shell script into AppleScript Studio

- Some cool script ideas

- How to leave work early

What Script?

Scripting languages in OS X 10.3

- AppleScript.
- Shell – sh, tcsh, zsh, bash, etc.
- Perl.
- Python.
- Ruby.
- tcl.
- php.
- expect.

Others not installed with OS X 10.3

- Smalltalk.
- F-script.
- Frontier.
- Real BASIC.
- Many, many others.

Picking a scripting language

- Does it do what you need?

- Do you know the language?

- Will you be able to run it where you need to?

- Most scripting languages will be able to do most things. Some will do it better than others, but all will probably get you where you want to be in the end.

What scripting isn't

- Not just a "hack" job. Many scripts are more full featured than applications.

- Not a replacement for network administrators.

- Not always faster than an application, but almost always faster to develop.
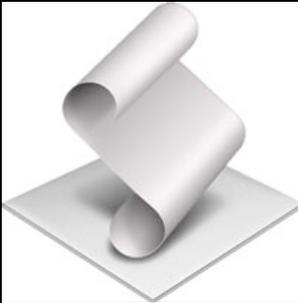
AppleScript

A GUI scripter and oh so much more!

AppleScript

- Started off as a language to control other apps.

- Fully functional in its own right.

- Closest to spoken English.

- In the OS since System 7.

AppleScript advantages

- Primarily the only GUI scripting language.
  - Scriptable apps
  - GUI scripting
- Easy to pick up.
- Spoken English syntax – easy to learn.
- AppleScript Studio – easily allows a GUI.
- Recordable – gets you started with the basics.

AppleScript disadvantages

- Spoken English syntax – sometimes annoying to write a script in.

- Single threaded.

- Only on the Mac – can't deploy on other platforms.

Sample AppleScript

· This checks for not enough free space.

```
tell app "Finder"
    if (free space of startup disk) < 1.0E+9 then
        empty trash
        beep
        display dialog "Ack, I feel full!"
        say "Need more room"
    end if
end tell
```

OS X Server user import file creation utility

AppleScript demo

Interaction with Shell commands

· Do Shell script.

```
tell application "Finder"
    set lastuser_temp to do shell script "last -1"
    repeat
        set lastuser to do shell script "last -1"
        if lastuser is not equal to lastuser_temp then
            set lastuser_temp to lastuser
            set login_name to first word of lastuser as text
            say first word of lastuser as text
            say "just logged in"
            delay 2
        end if
    end repeat
end tell
```

AppleScript IDS

AppleScript GUI scripting demo

Common examples of AppleScript

· Carbon Copy Cloner.

· iTunes helpers.

· Print Center Repair.

Shell

Just like the command line!

Shell

- Built-in scripting function of the Shell.

- One of the oldest forms of scripting.

- Years and years of sample scripts available.

Shell advantages

- Just like the Command Line – only automated.

- Simple – if you can use the CLI, you can script it.

- Very few terms – easy to pick up.

- Relatively portable – most Unix shell scripts will work on OS X with little or no modification.

Shell disadvantages

- No GUI – have to use AppleScript.

- Hard to do some Shell functions – those that require interaction.

- Check your Shell – not all shells can do the same things. Make sure you specify the one you actually want.

Simple Mail Server backup

- No error handling.
- No restore functionality.
- Does the job.

```bash
#!/bin/bash

logger "beginning mail backup"

serveradmin stop mail

/usr/bin/rsync -az /var/spool/imap /Volumes/XRAID/Backup
/usr/bin/gnutar -czv /etc/postfix > /Volumes/XRAID/post.tgz

serveradmin start mail

logger "finished mail backup"
```

Complete Mail Server Backup Script

Shell script demo

Complete Mail Server Backup Script GUI

AppleScript Studio GUI for a shell script

Interaction with AppleScript

- Osascript.

```bash
#!/bin/bash

MY_PATH=`osascript /Applications/PathScript.scpt`

echo $MY_PATH
```

```applescript
tell application "Finder"
  activate
  set mylocation to choose file with prompt "Please select
      your Application" of type "APPL"
  set mypath to POSIX path of mylocation
  return mypath
end tell
```

OSAScript Example

Postinstall script that uses an AppleScript GUI

Common examples of Shell

· /etc/daily, /etc/weekly, /etc/monthly.

· Startup Items.

· Disk Space Monitor alerts.

· Preflight and Postflight package scripts.

Live Scripting Extravaganza

Something useful in 30 minutes or less, or I'm going home.

Questions?

Session M212
Macworld San Francisco 2005

Joel Rennich
Consulting Engineer – Apple Enterprise Consulting Services
mactroll@apple.com