

Lion-Sized Automation

What's new with Mac OS X automation technologies

Session 133

Sal Soghoian

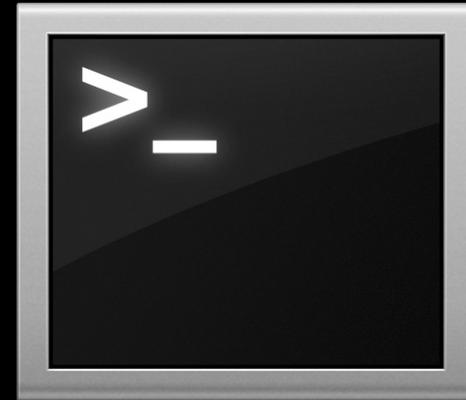
Product Manager Automation Technologies

These are confidential sessions—please refrain from streaming, blogging, or taking pictures

Welcome, We're Here to...

Only on
Mac OS

- Discover what is “new and improved”
- Mac OS X automation technologies
 - AppleScript
 - Automator and Services
 - Terminal



For Those New to Automation...

macosxautomation.com

AppleScript
The Language of Automation

Automator
Your Personal Automation Assistant

Services
Power Where You Need It

AppleScript
The Language of Automation

AppleScript is an English-like language used to create script files that control the actions of the computer and the applications that run on it. Much more than just a macro language, which merely repeats your recorded actions, AppleScript scripts can "think." Scripts can make decisions based on user interaction or by parsing and analyzing data, documents or situations. AppleScript scripts can automate much of what we do, make your time spent at the computer more productive, less stressful, and save us time and money. In fact, it's called AppleScript.

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Automator
Your Personal Automation Assistant

Automator delivers customizable automation to customers without the necessity of writing any scripts, macros, or computer code. Similar in concept to kitchen recipes, Automator enables users to create an "automation recipe" by following a simple drag-and-drop process, relating the individual steps of a workflow to pre-crafted automation snippets that are listed in the order in which the steps of the task are to be performed. If you can describe how to make a sandwich, you can use Automator!

Services
Power where you need it, when you need it.

Services in Snow Leopard are being completely thoroughly reinvented. Now more powerful, they are also streamlined to provide exceptional capability where you need it, when you need it. Services in Mac OS X v10.6 are:

- CONTEXTUAL** - In Snow Leopard, only the services appropriate for working with the currently selected data appear in the Services menu. Select text in TextEdit, Safari, iChat, or even the Terminal application, and the active services for manipulating that data are displayed. Select image files in the Finder, and only services for working with image files are displayed. Menu clutter and confusion are gone, you only see what services can assist you with the data.
- CONNECTED** - Services in Snow Leopard are accessible where you need them. Either from the Services sub-menu in the current Application menu, or the current application's contextual menu. In the Finder, Services are displayed in the Action Menu.
- CONFIGURABLE** - All the services installed on your computer are listed by category in the Keyboard Shortcuts tab of the Keyboard & Mouse system preference pane. Enable or disable them to suit your needs. You can even assign a keyboard combination to your favorite ones, so activating their power only requires a quick keystroke!
- CUSTOMIZABLE** - Can a multi-step process you want to simplify? Create your own service using Automator! It's ready, streamlined interface works with Data Detectors to make it easy to identify what kind of information or file you want to process. Then complete your automation recipe with Automator's easy drag-and-drop process of adding actions for each step.

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ADVANTAGES

- Good for detailed automation needs
- Very powerful and customizable
- Supported by hundreds of applications and system components

REQUIREMENTS

- Writing scripts requires some knowledge of AppleScript

ADVANTAGES

- Accessed from the Application menu
- Supported by most applications that use standard interfaces

REQUIREMENTS

- No script or code writing knowledge required

ADVANTAGES

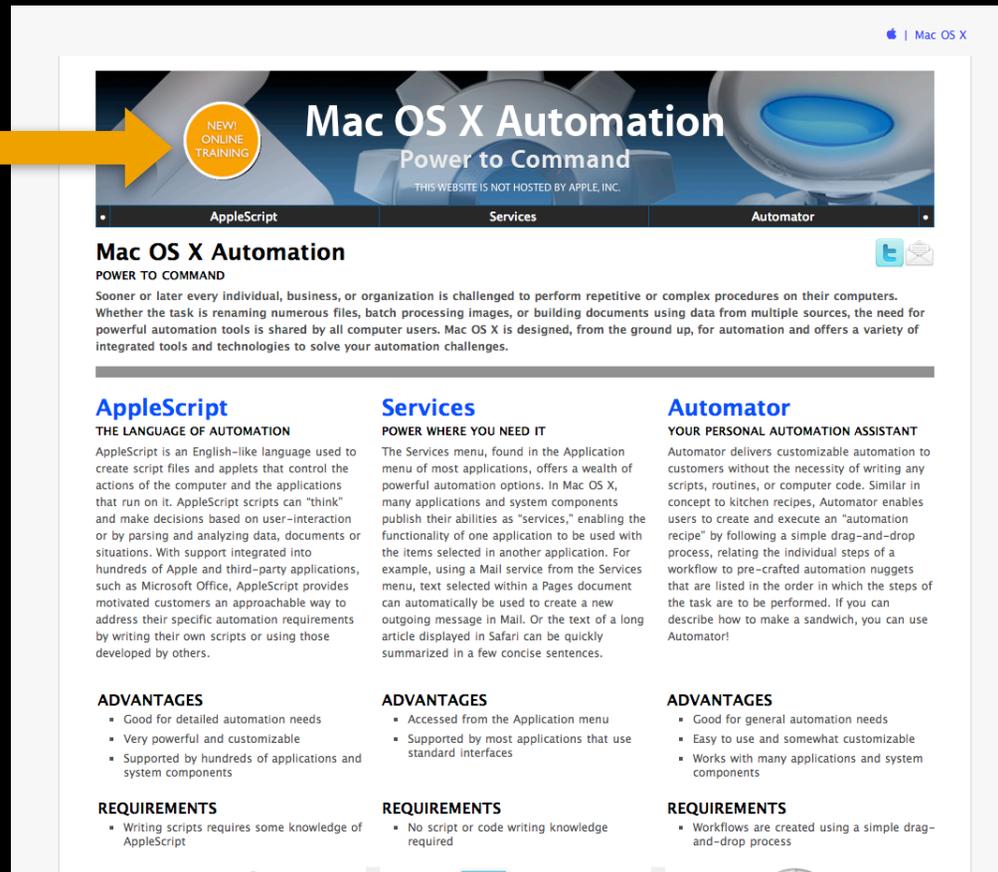
- Good for general automation needs
- Easy to use and somewhat customizable
- Works with many applications and system components

REQUIREMENTS

- Workflows are created using a simple drag-and-drop process

For Those New to Automation...

macosxautomation.com



Mac OS X Automation
Power to Command
THIS WEBSITE IS NOT HOSTED BY APPLE, INC.

AppleScript Services Automator

Mac OS X Automation

POWER TO COMMAND

Sooner or later every individual, business, or organization is challenged to perform repetitive or complex procedures on their computers. Whether the task is renaming numerous files, batch processing images, or building documents using data from multiple sources, the need for powerful automation tools is shared by all computer users. Mac OS X is designed, from the ground up, for automation and offers a variety of integrated tools and technologies to solve your automation challenges.

AppleScript

THE LANGUAGE OF AUTOMATION

AppleScript is an English-like language used to create script files and applets that control the actions of the computer and the applications that run on it. AppleScript scripts can “think” and make decisions based on user–interaction or by parsing and analyzing data, documents or situations. With support integrated into hundreds of Apple and third-party applications, such as Microsoft Office, AppleScript provides motivated customers an approachable way to address their specific automation requirements by writing their own scripts or using those developed by others.

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Services

POWER WHERE YOU NEED IT

The Services menu, found in the Application menu of most applications, offers a wealth of powerful automation options. In Mac OS X, many applications and system components publish their abilities as “services,” enabling the functionality of one application to be used with the items selected in another application. For example, using a Mail service from the Services menu, text selected within a Pages document can automatically be used to create a new outgoing message in Mail. Or the text of a long article displayed in Safari can be quickly summarized in a few concise sentences.

ADVANTAGES

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Automator

YOUR PERSONAL AUTOMATION ASSISTANT

Automator delivers customizable automation to customers without the necessity of writing any scripts, routines, or computer code. Similar in concept to kitchen recipes, Automator enables users to create and execute an “automation recipe” by following a simple drag-and-drop process, relating the individual steps of a workflow to pre-crafted automation nuggets that are listed in the order in which the steps of the task are to be performed. If you can describe how to make a sandwich, you can use Automator!

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macosxautomation.com/training

Mac OS X

Automation

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- HOME
- LEARN APPLESCRIPT
- LEARN SERVICES
- LEARN AUTOMATOR
- VIDEOS

Welcome to Training for Mac OS X Automation

LEARN TO DRIVE IN THE FAST LANE

Start Learning Here!
Welcome to the Automation Training website. Here you'll find out how to get the most from the Mac, and have it work for you. Click the red link above to watch a video describing how to use this site.

What is Automation?
Automation is the process of taking something that you do over and over, or is a long series of steps, and reducing it to a single click of the mouse. Automation saves time and makes using your Mac, even easier.

Who Automates?
Short answer: anyone who has better things to do with their time than being chained to a computer. Businesses, developers, and individuals like yourself, all benefit from automating the things they do.

MAC OS X AUTOMATION: POWER TO COMMAND

What is AppleScript?
THE LANGUAGE OF AUTOMATION
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Automator and Services

Customized contextual automation



Automator and Services

New features and updates



New



Automator and Services

Easy workflow conversion



New

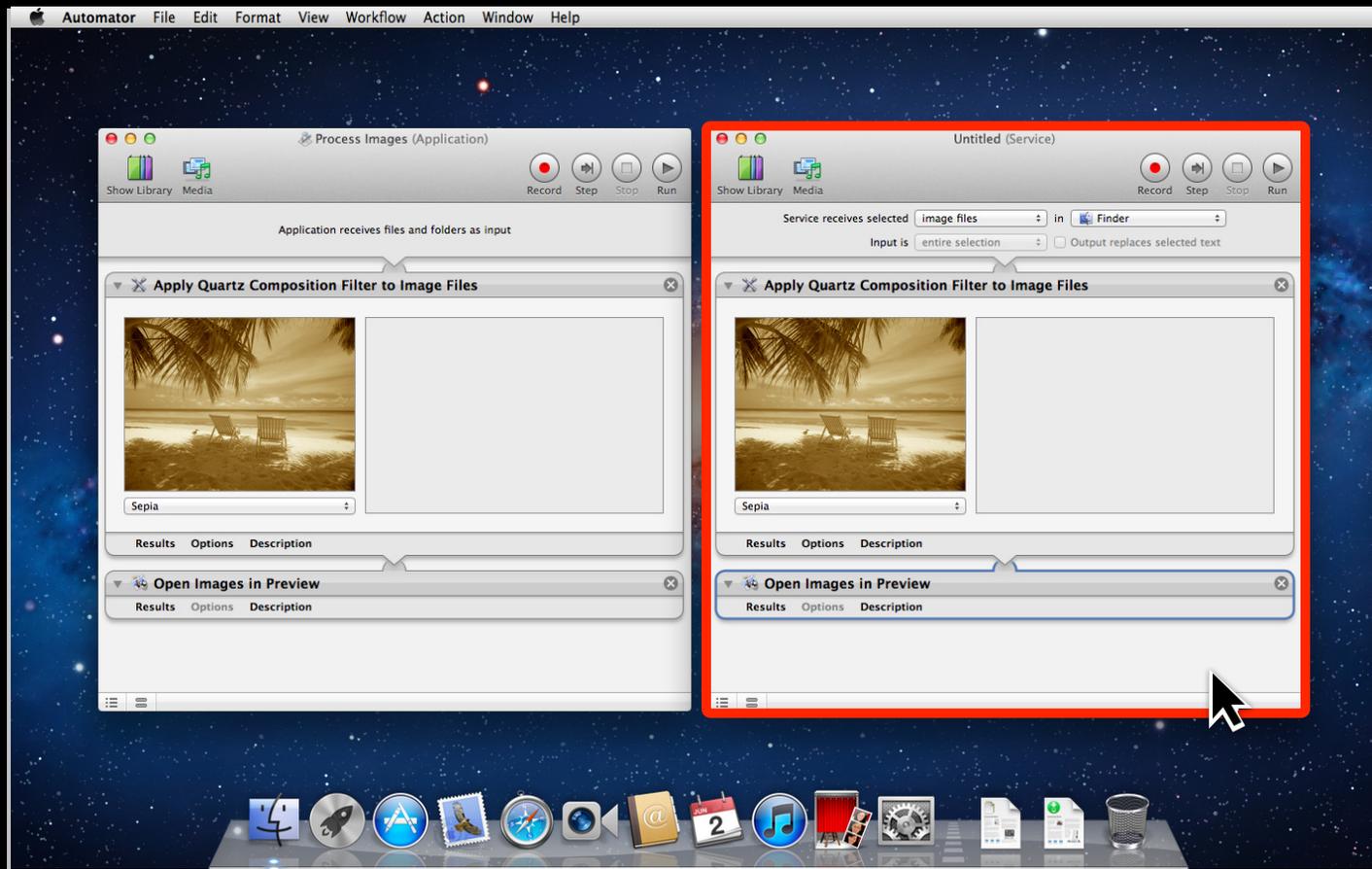


Automator and Services

Easy workflow conversion



New

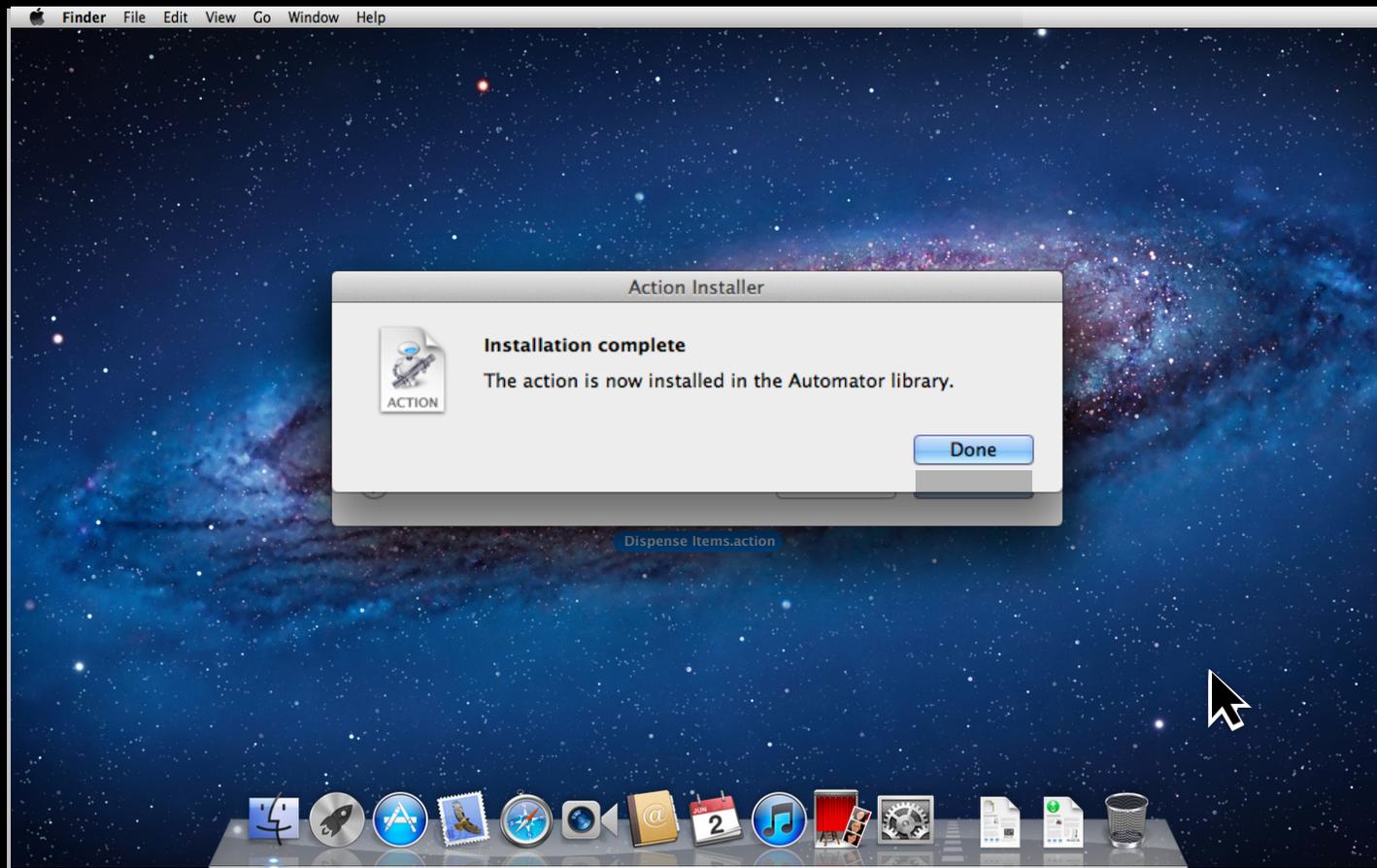


Automator and Services

Easy installation of Actions



New

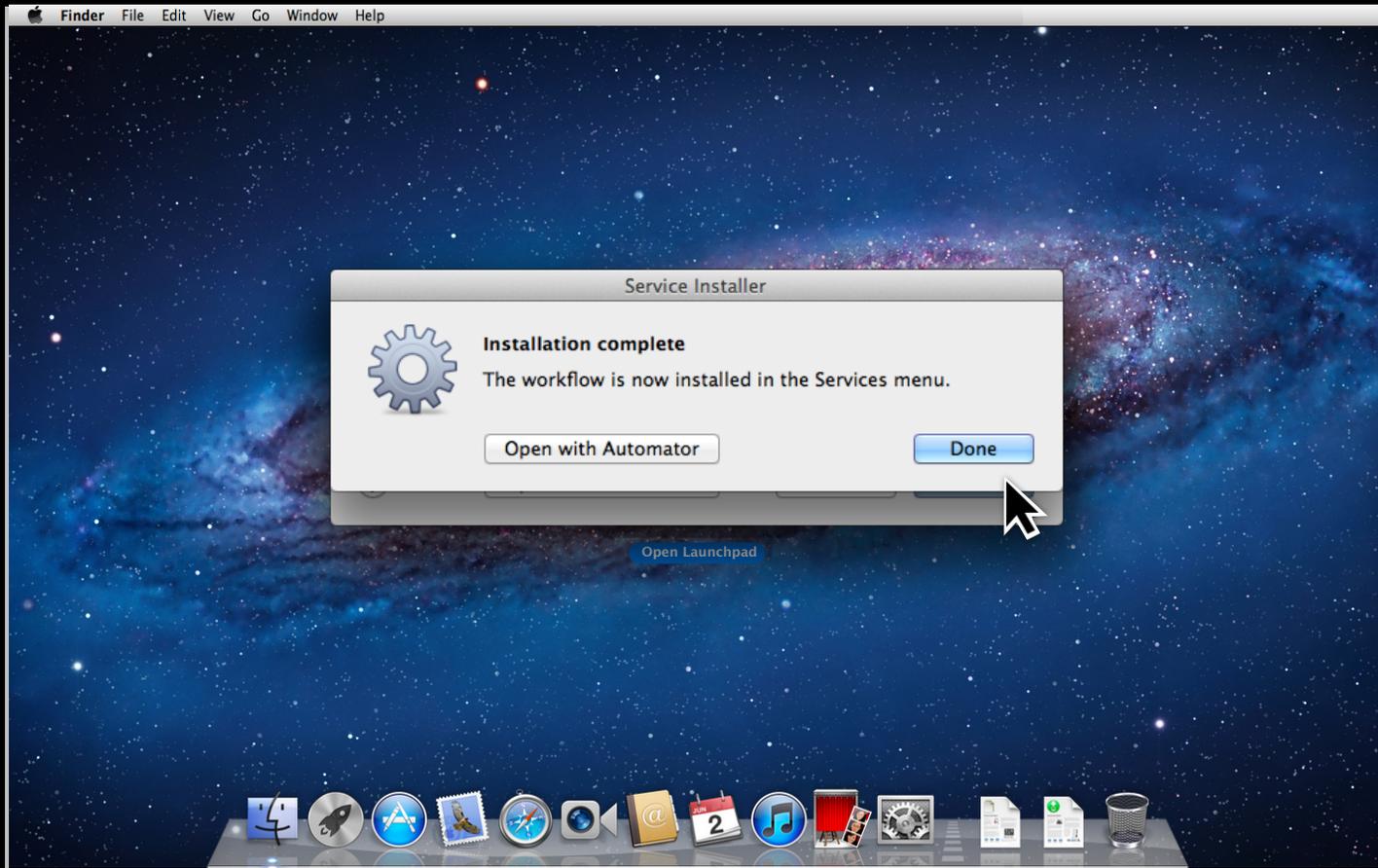


Automator and Services

Easy installation of Services

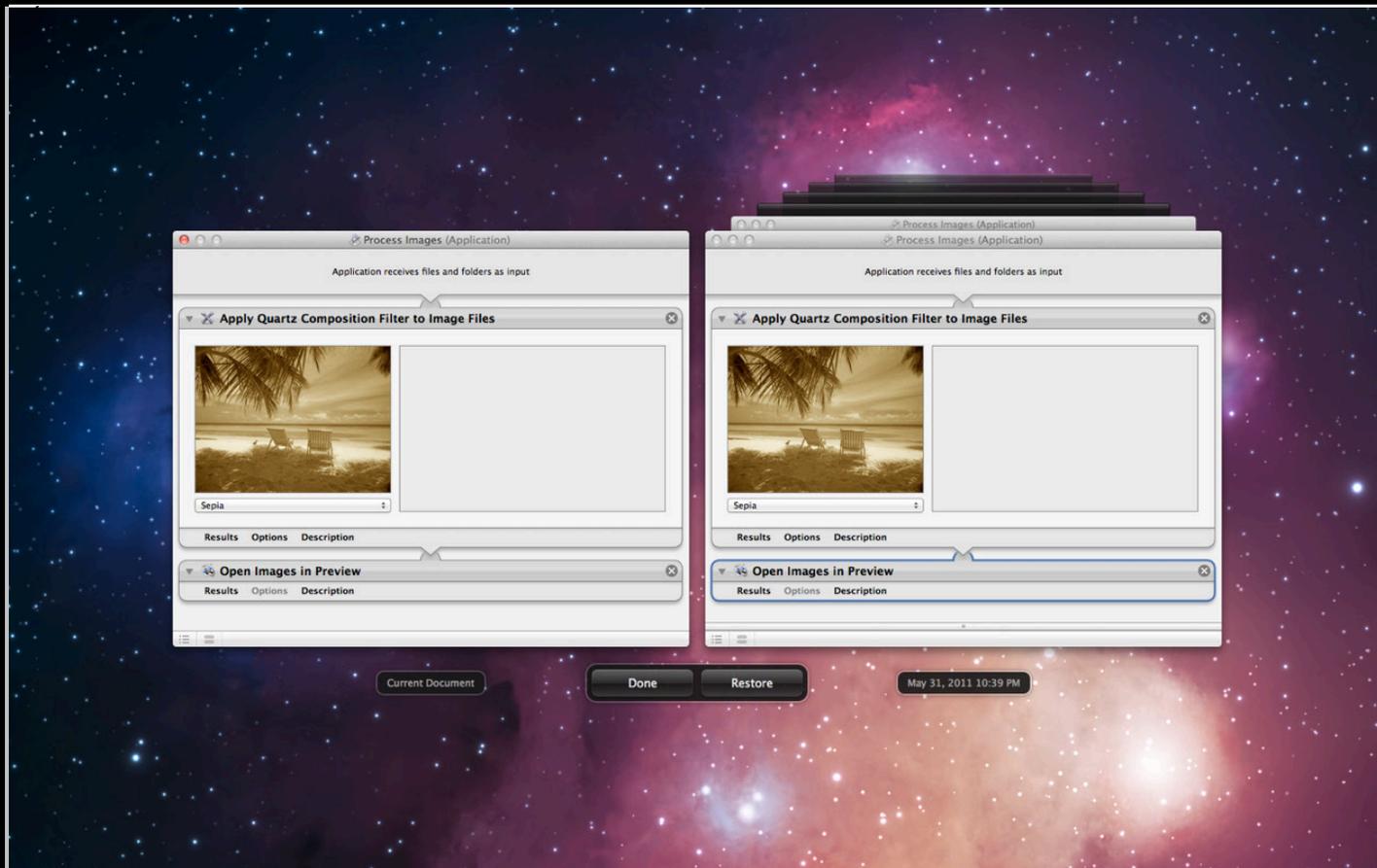


New



Automator and Services

Versions support



Automator and Services

New audio encoding Action and Service



New

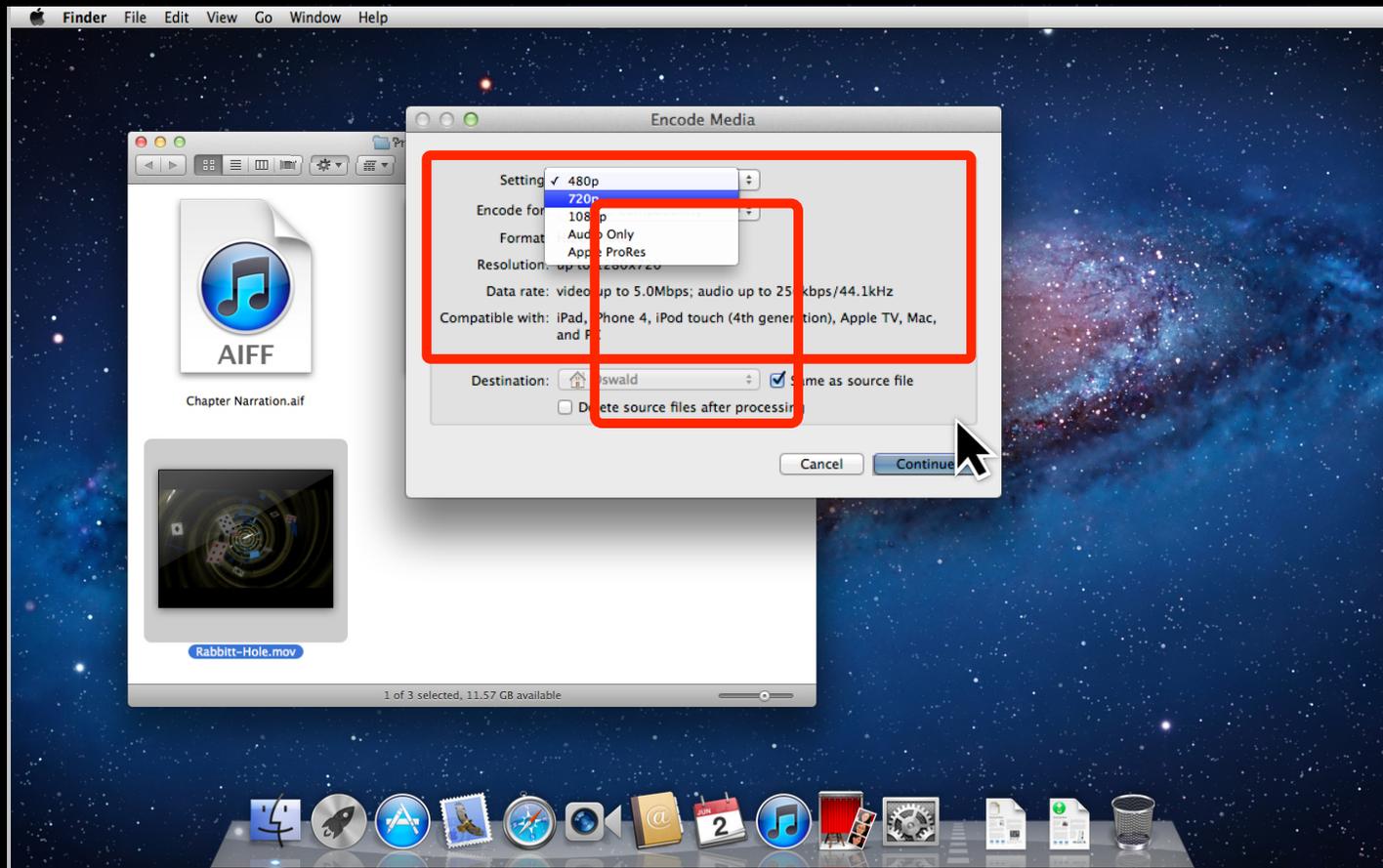


Automator and Services

New video encoding Action and Service



New

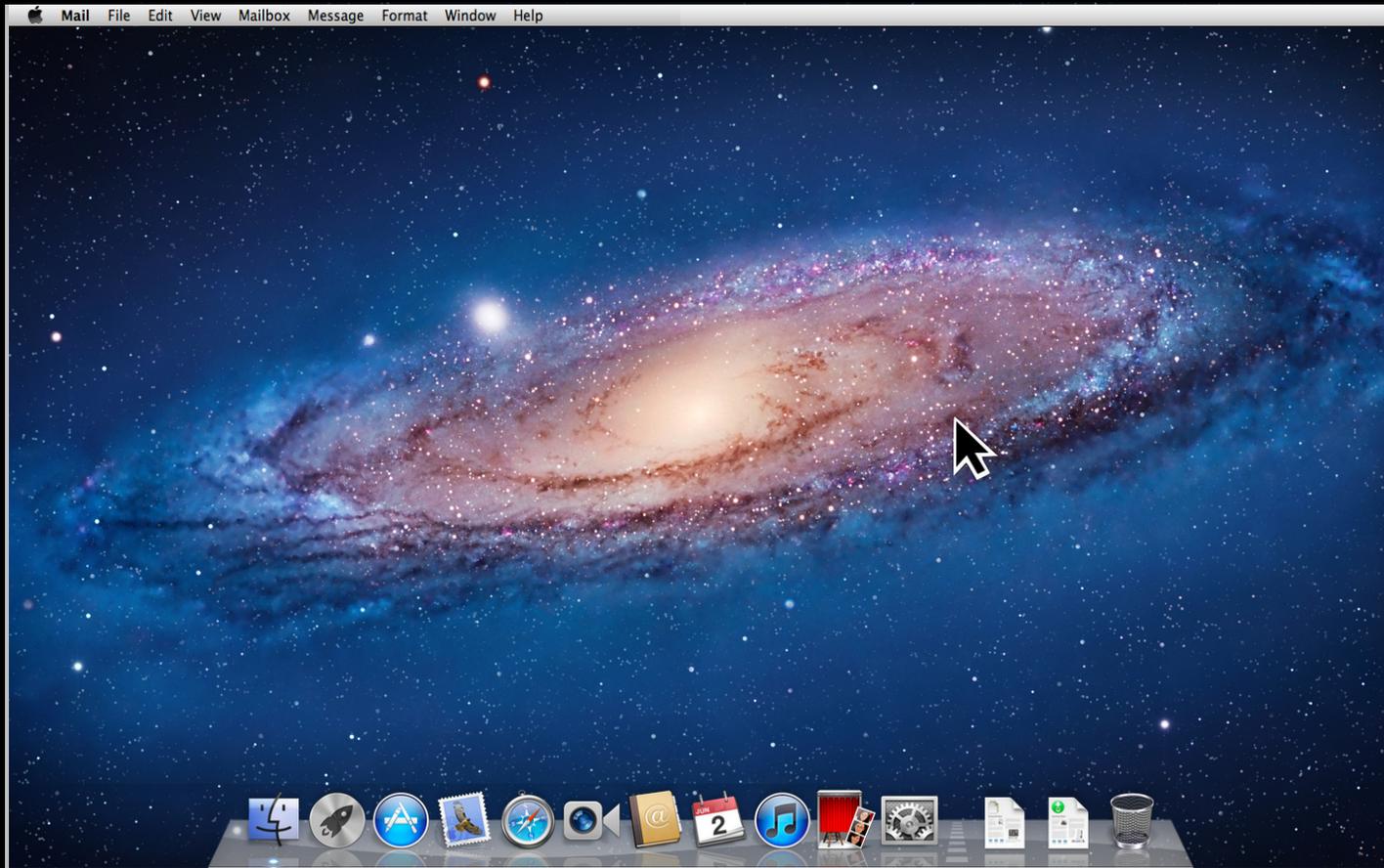


Automator and Services

New website popup Action



New



Automator and Services

New website popup Action



New

The screenshot shows a Mac OS desktop with a space-themed background. A Mail window titled "Re: Question for You" is open, displaying an email from Blatt Oswald to Sal Soghoian. The email content includes a question and an answer about flounders. To the right of the email, a red-bordered image of a galaxy is displayed. Below the galaxy, a grey box lists user agents: iPhone, iPad, and Safari. The desktop dock at the bottom contains various application icons.

Mail File Edit View Mailbox Message Format Window Help

Re: Question for You

To: Sal Soghoian

Cc:

Subject: Re: Question for You

From: Blatt Oswald <nynthawk@mac.com> MobileMe (MobileMe)

On Jun 2, 2011, at 10:21 PM, Sal Soghoian wrote:

What fish has both eyes on the same side of its head? Is it a flounder?

In its life cycle, an adult flounder has two eyes situated on one side of its head, where at hatching one eye is located on each side of its brain. One eye migrates to the other side of the body as a process of metamorphosis as it grows from larval to juvenile stage. As an adult, a flounder changes its habits and camouflages itself by lying on the bottom of the ocean floor as protection against predators.[1] As a result, the eyes are then on the side which faces up. The side to which the eyes migrate is dependent on the species type.

User Agent

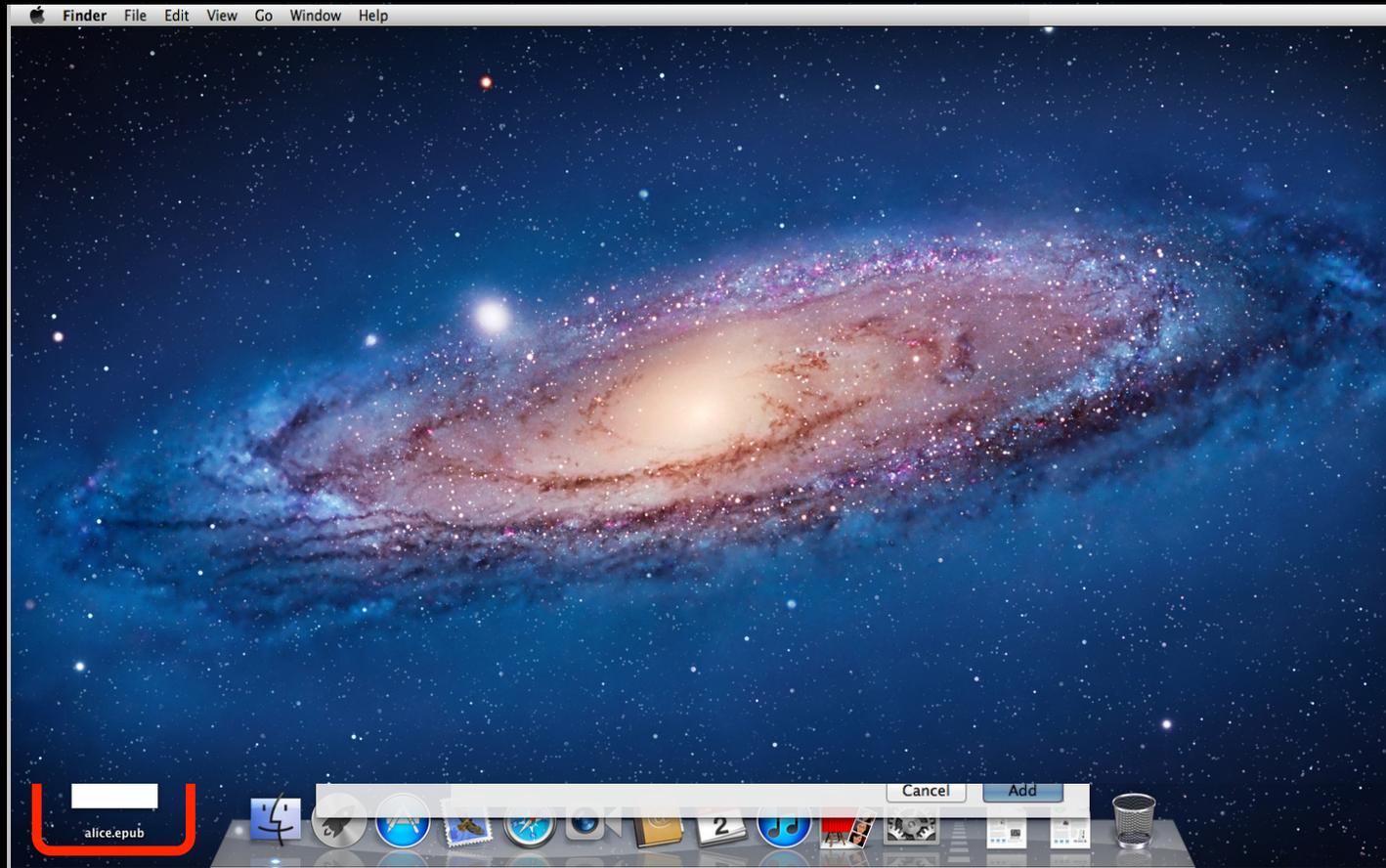
- iPhone
- iPad
- Safari

Automator and Services

New digital book builder (EPUB) Action



New

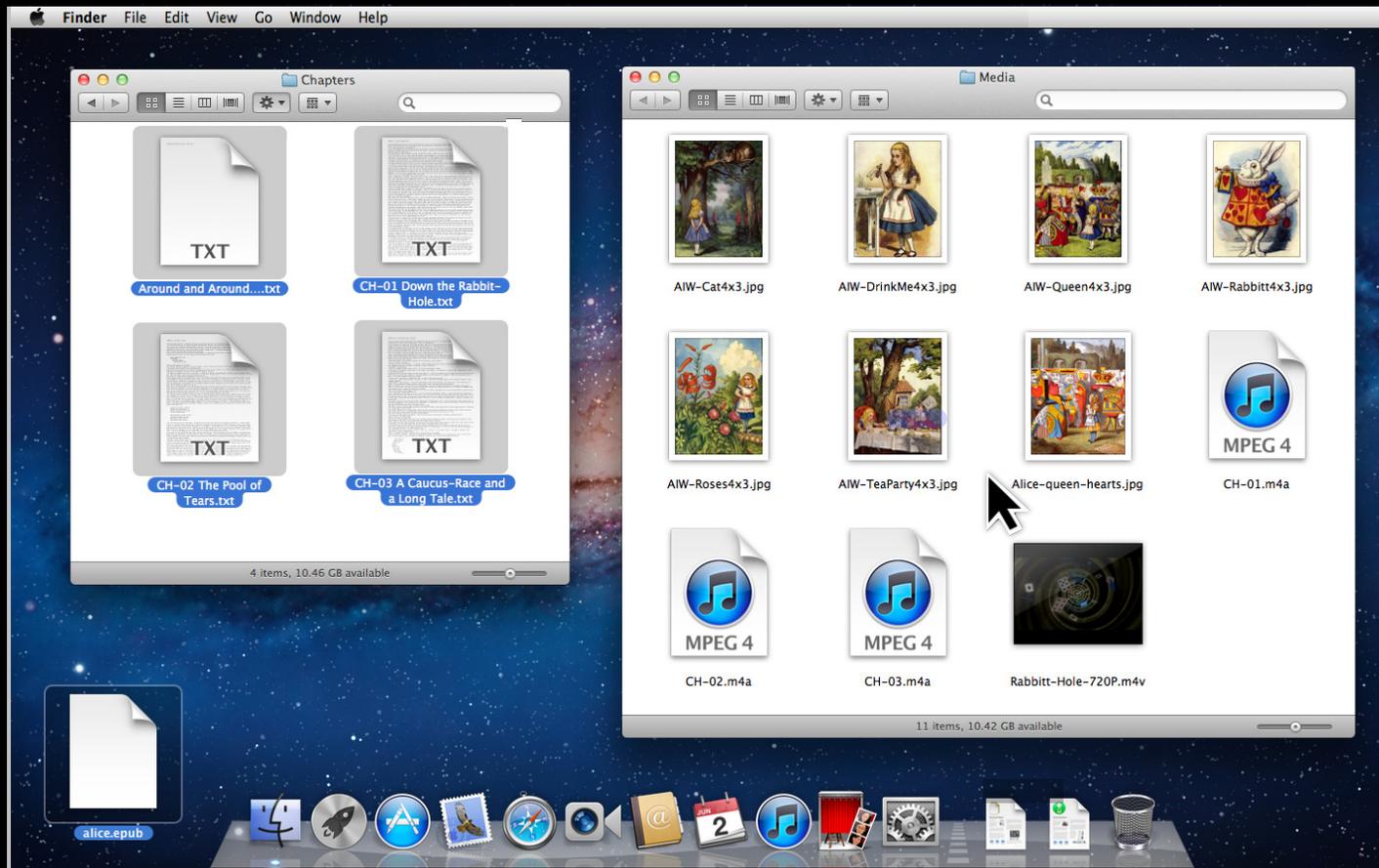


Automator and Services

New digital book builder (EPUB) Action

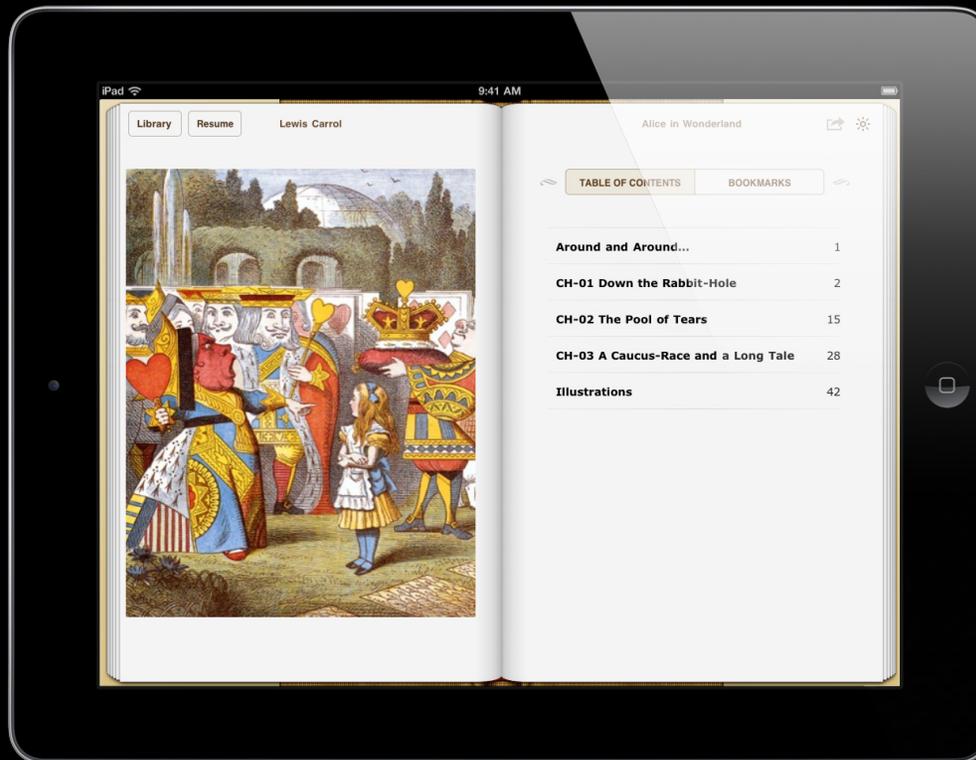


New



Automator and Services

New digital book builder (EPUB) Action



alice.epub

Demo



Sal Soghoian

Product Manager Automation Technologies

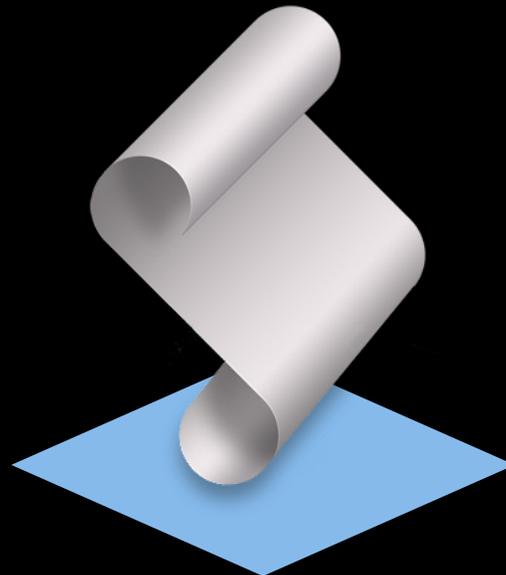
Automator and Services

Customized contextual automation



AppleScript

The Language of Automation



AppleScript

- Updated voice technology support
 - Text-to-speech (`say`)
 - Dozens of high-quality voices
 - Speaking rate, modulation, pitch, volume
 - Text-to-audio file (`saving to`)
 - Add to iTunes as Spoken Track (service)
 - Spoken phrase matching command (`listen for`)

```
tell application "SpeechRecognitionServer"  
    set the chosenFriend to -  
        listen for {"Sal","Sue","Bob"} with prompt "Who's your friend?"  
end tell  
say (chosenFriend & " is my friend too!")
```

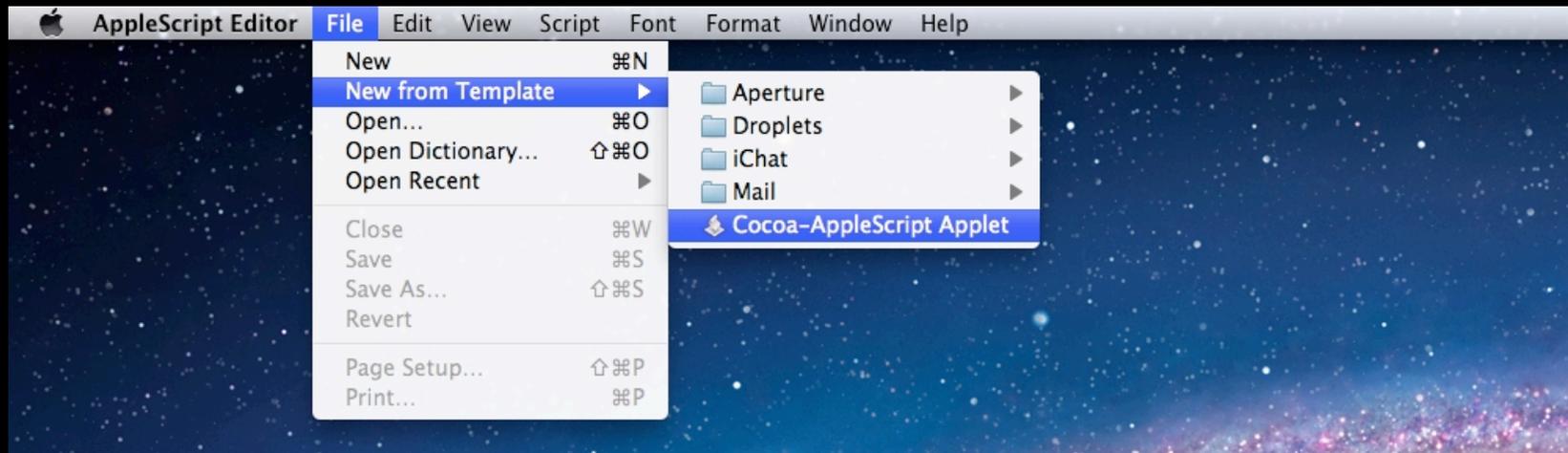


AppleScript



- Script Templates
 - Aperture import action
 - Recursive processing droplets
 - iChat responders
 - Mail rule action

Library > Application Support > Script Editor > Templates



AppleScript/Objective-C

- Cocoa-AppleScript Applets
 - Cocoa class methods
 - Cocoa class instance methods



```
property NSString : class \"NSString\"
set the sourceText to \"how now brown cow\"
set the CocoaString to NSString's stringWithString_(sourceText)
display dialog (CocoaString's uppercaseString()) as text
```

AppleScript/Objective-C

- Cocoa-AppleScript Applets

- Apple Events (scriptable applications)

- UNIX Command Line

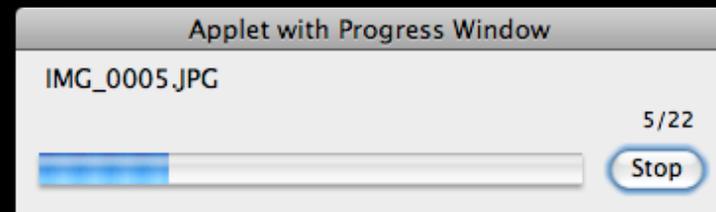
- `do shell script`

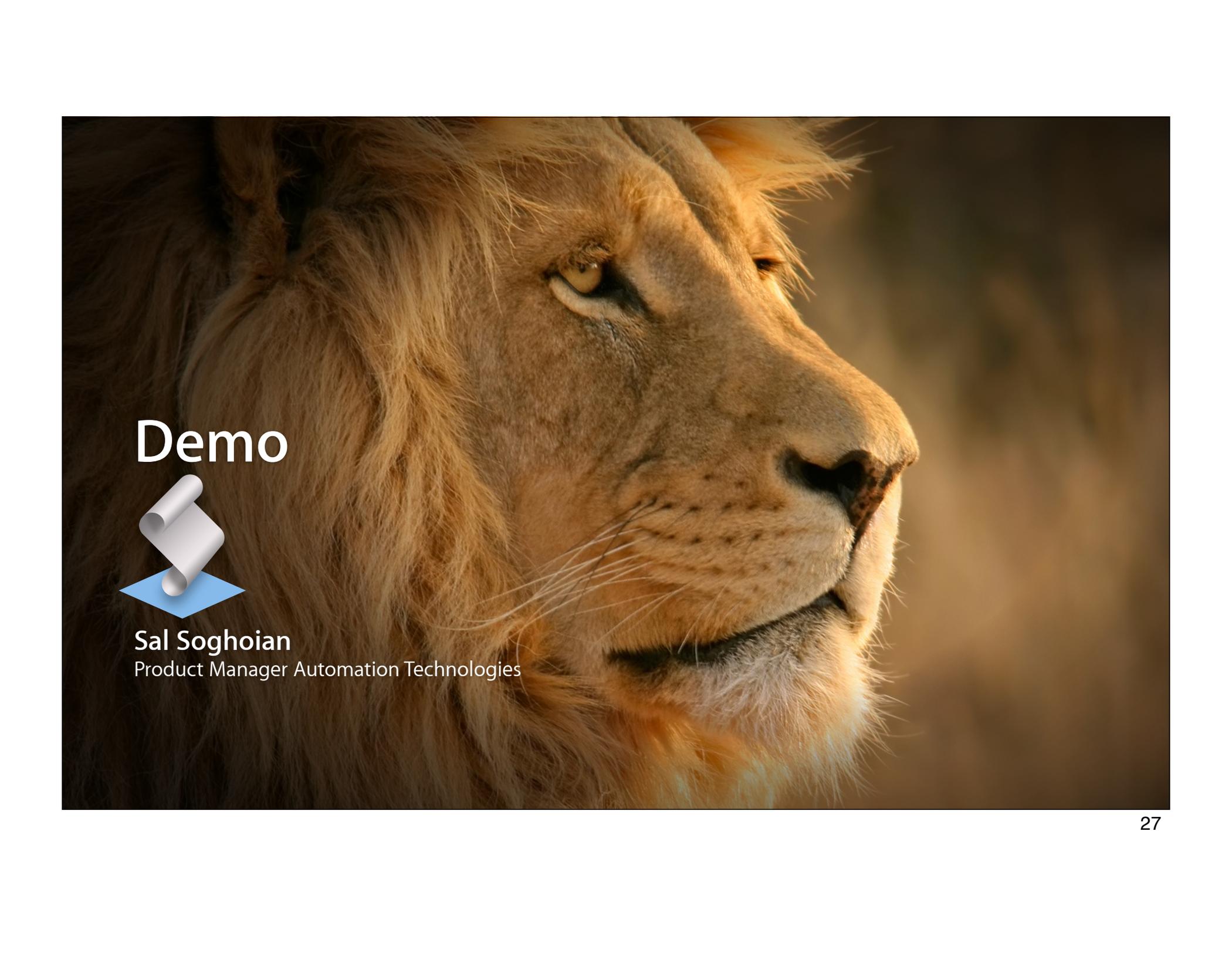
- Cocoa Frameworks

- `AppKit` and `Foundation`

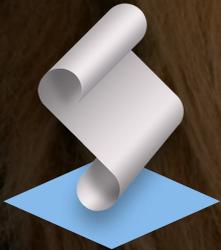
- `NSObject`, `NSWindow`, `NSString`, `NSImage`, `NSArray`, `NSNumber`, etc.

- Custom User Interfaces





Demo

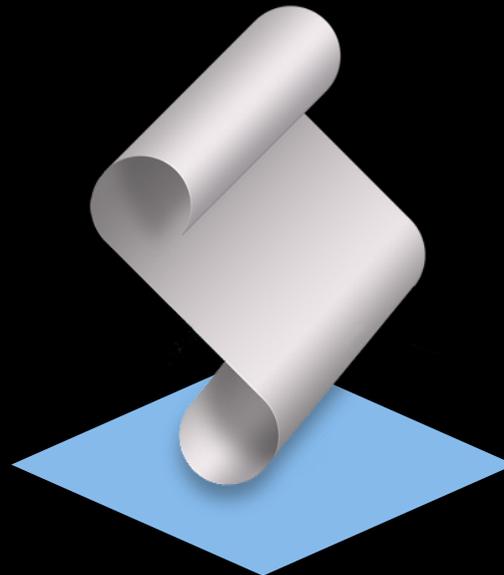


Sal Soghoian

Product Manager Automation Technologies

AppleScript

The Language of Automation



Terminal

```
awk [ -F fs ] [ -v var=value ] [ 'prog' | -f progfile ] [ file ... ]
```



Terminal



- New appearance controls
 - Optional full-screen display
 - Expanded text color support
 - Windows: background images, blur effect
- New status indicators
 - Unread text, activity, and unread bell count
 - Live Dock icon
- Proxy icon drag and drop
- Built-in systemwide services
 - cd to Finder folder, man page for selected command

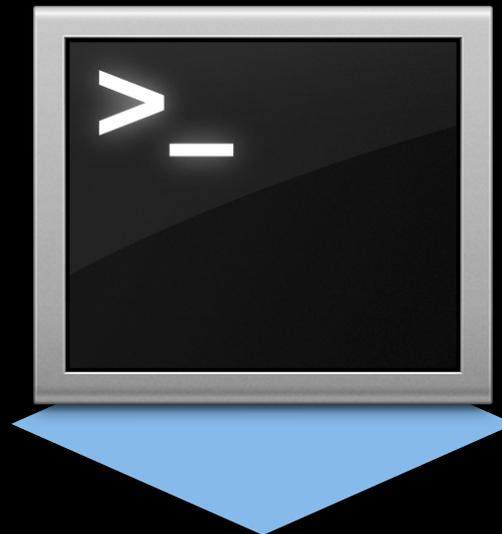
Demo



Chris "The Terminator" Page
Senior Engineer of Terminal Technologies

Terminal

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awk [ -F fs ] [ -v var=value ] [ 'prog' | -f progfile ] [ file ... ]
```



Automation in Mac OS X

Power to command



Resource Links

- <http://www.macosexautomation.com>
- <http://www.macosexautomation.com/lion>
- <http://www.macosexautomation.com/training>
- <http://www.macosexautomation.com/applescript/asoc>
- <http://www.macosexautomation.com/applescript/apps>

More Information

Eryk Vershen

Media Technologies Evangelist
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Sal Soghoian

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sal@apple.com

Documentation

Mac OS X Lion Automation Overview
<http://www.macosxautomation.com/lion>

Apple Developer Forums

<http://devforums.apple.com>

