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Introducing Apple® Events Scripting

The more you find your computer can do, the more you demand from it. Time-saving, revolutionary features, offered by applications such as QuarkXPress™, tend to lose their charm after you use them a few thousand times. For instance, you might have appreciated the ease of laying out a story by importing text, applying a style sheet, creating a drop cap, and adding local formatting. But, after repeating that four-step process day after day, it becomes tedious. The time-saving features you once appreciated now seem too time-consuming to bear.

The solution is simple: automation. With QuarkXPress 3.3 and Apple Events, you can automate your system by writing scripts. Scripts replace the keystrokes, mouse clicking, and dragging required for almost any task. By using a script, the four-step process of formatting a story with a drop cap can be condensed to one step.

Replacing your most repetitive and time-consuming tasks with fully automated scripts customises QuarkXPress 3.3 to suit your needs. Scripting not only automates functions in QuarkXPress, it also links QuarkXPress to other applications. For example, scripts can perform simple tasks such as printing a series of documents, or more complex interapplication tasks such as importing database information and then formatting the text.

Apple Events scripts are smarter than macros or scripting languages built into other applications. Macros are limited to performing a series of tasks exactly as you specify; scripting languages built into applications cannot perform system-wide functions. An Apple Events script can contain if/then statements that allow it to make decisions according to certain conditions.

QuarkXPress 3.3 includes a variety of sample scripts to illustrate the power and versatility of scripting. The scripts perform tasks ranging from the local formatting of a lead paragraph to a complete mail merge using a QuarkXPress document and a database. The sample scripts are more than an introduction to scripting; some of them are usable tools that can increase your productivity in QuarkXPress.

About Apple Events and UserLand Frontier

The ability to automate your Macintosh® with scripts is derived from a System 7™ feature called Apple Events. Apple Events is the communication link that allows scripts to talk to applications and tell them what to do. Any application that supports Apple Events can be automated by scripts. QuarkXPress 3.3, FileMaker® Pro 2.0, and other applications now support Apple Events.

Scripts are written with scripting software such as UserLand Frontier® and AppleScript™. The scripts included in QuarkXPress 3.3 were created in UserLand Frontier, a scripting application that includes a database, a user-interface design tool, and a full programming language, UserTalk.

Unlike application-specific scripting systems, Apple Events scripting requires only one language (such as UserTalk) for writing scripts that perform unlimited activities on your system and across a network. Frontier scripts work at the Finder level, within an application, or as a link between applications. For example, a Frontier script can launch QuarkXPress, open a template, import FileMaker Pro data, save the new document, delete the data file from the Finder, then e-mail the new document to another department.

Frontier Runtime™, the application that allows you to run scripts, is included with QuarkXPress 3.3. The sample scripts provided are written for Frontier. If you want to modify these scripts or write your own Frontier scripts, you must purchase a complete copy of UserLand Frontier.

About This Booklet

This booklet is included to introduce you to Apple Events scripting in QuarkXPress 3.3 with UserLand Frontier. You will see what an Apple Events script looks like, learn how to run scripts, and discover the possibilities of scripting. This booklet is not intended to teach you how to write or modify scripts.

The first section provides an overview of the scripting process and includes the UserTalk text of one sample script. The second section describes the installation process, the system requirements, and the procedure for running sample scripts. The third section lists the name, function, and special requirements of each sample script included with QuarkXPress 3.3. Finally, information on purchasing scripting software is included on page 13.

An Overview of Script Writing

Apple Events scripting is for users who are serious about customising and automating their computers. This overview of the scripting process should help you decide whether Apple Events scripting is for you. To write Apple Events scripts to automate your Macintosh you need:

- Macintosh System 7 or greater featuring Apple Events
- an application that supports Apple Events, such as QuarkXPress 3.3
- a scripting application such as UserLand Frontier or AppleScript
- the documentation included with UserLand Frontier or AppleScript that teaches you to write scripts
- reference materials that help you write scripts for specific applications that support Apple Events.

The reference material you need to write scripts for QuarkXPress 3.3 is included as a QuarkXPress document in the For Advanced Scripting folder.

The Apple Events Object Model

Scripts written for QuarkXPress are based on the Apple Events Object Model, a common language that allows Macintosh applications to talk to each other. The Object Model includes Objects and Events:

- *Objects* are the elements of an application; each object has specific capabilities. Objects in QuarkXPress are primarily box-based. For example, a picture box is an Object whose shape, location, frame, colour, shade, rotation, scale, etc., can be changed.
- *Events* are verbs that tell Objects what to do. Depending on the capabilities of an Object, it can perform different Events. QuarkXPress uses the Events defined in the Apple Events Object Model.

An application that supports Apple Events has its own Object Model that defines the application's Objects and their capabilities.

Writing a Script

To write a script, you combine Objects with Events. Essentially you are telling specific Objects what to do (within the capabilities of each application's Objects). Scripts must reference Objects precisely by absolute position, by name, by relative position, or by meeting certain conditions. For example, in a catalogue layout you could name a series of text boxes "Sale Item." You could then write a script that automatically finds every text box named "Sale Item" and applies the colour red to the text in those boxes.

Script Language Example

The UserTalk language for a typical script has been included below to illustrate the commands and format of UserLand Frontier scripts. If you purchase UserLand Frontier, you can open each script included in QuarkXPress 3.3 and edit the UserTalk language to change the function of the script. You can also cut and paste elements of these scripts into your own scripts. Additional UserLand Frontier sample scripts are available from UserLand's AppleLink and CompuServe on-line services.

You will not see the UserTalk language while running a script in QuarkXPress 3.3. The script shown below, "Format Lead Paragraph," formats the lead paragraph of every story in a document with a style popular to many newsmagazines: The first character is a four-line drop cap, and the first line is in small caps type style.

UserTalk is a full programming language with logic, looping, and subroutines. Scripts are written in outline format with headings and subheadings. Lines are indented under the headings and subheadings to show the sequence of events; the indents also serve as UserTalk's "end" statements. A chevron character («) precedes comments that convey meaningful information to the user in English, but do not add functionality to the script.

Script: Format Lead Paragraph

```
> with objectModel, QXP.defs, document [first].text flow[all].
paragraph[first]
  > set(dropcapchars,1);
  > set(dropcaplines,4);
  > set(line[1].style,smallcaps);
  > if exists(line[2])
    > set(line[2].style,plain);
  « We need to do this in case the change on line 1
  « wrapped to line 2.
```

Running the Sample Scripts

The sample scripts included with QuarkXPress 3.3 illustrate the range of tasks you can automate using scripts. They include practical scripts you can incorporate into your work, simple scripts that automate tedious tasks, and impressive examples of the full capabilities of scripting. Running the sample scripts can be as easy as making a menu selection.

What you have

- Apple Events Preview folder: Frontier Runtime version, Runtime.root with annotated Sample Scripts, and Sample Documents folder
- For Advanced Scripting folder: the necessary reference materials for scripting with QuarkXPress 3.3 and the necessary software to link the full UserLand Frontier application to QuarkXPress 3.3
- Frontier™ Menu Sharing XTension.

What you need

- Macintosh System 7 or greater is required for Apple Events scripting.
- 5MB of RAM is required to run your System software, QuarkXPress, and Frontier Runtime simultaneously.
- 8MB of RAM is required to run the sample scripts that also require FileMaker Pro to be running.
- Complete hardware and software minimum requirements for QuarkXPress 3.3 are listed in the *Getting Started* booklet included in your QuarkXPress 3.3 box.

Installation

If you checked the Apple Events Scripting check box when you installed QuarkXPress 3.3, the Frontier Runtime, Runtime.root, Sample Documents folder, For Advanced Scripting folder, and Frontier Menu Sharing XTension were installed automatically.

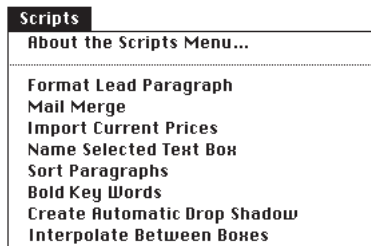
If you did not check the Apple Events Scripting check box, you can drag-copy the contents of the Apple Events Scripting Disk into your QuarkXPress folder. The Frontier Menu Sharing XTension must be in your QuarkXPress XTension folder with your other active XTensions.

Using the sample scripts

1 To launch Frontier Runtime, double-click on the Frontier Runtime icon in the Apple Events Preview folder of your QuarkXPress folder (where it was placed in the Apple Events Scripting installation).

2 Launch QuarkXPress 3.3. Frontier Runtime and the Frontier Menu Sharing XTension add a **Scripts** menu to the right of the QuarkXPress **Utilities** menu. The **Scripts** menu lists the title of each sample script.

3 To use a script, simply choose it from the **Scripts** menu. While a script is running, the **Scripts** menu is grey and unavailable. The sample scripts are described on pages 11–13.



*The **Scripts** menu is added to the right of the QuarkXPress **Utilities** menu.*

Speed of the scripts

A script can take from five seconds to more than 15 minutes to run. The time involved depends on the capabilities of your computer, the complexity of the script, and the contents of the document you are using. For example, if you use **Format Lead Paragraph** on a document with two stories it may take only a few seconds. If you use it on a document with 150 stories, it will take longer.

Interrupting scripts

To cancel a script while it is running (while the **Scripts** menu is grey), type Command-period (-.). Quitting QuarkXPress or closing the active document will also interrupt a script. Accidentally touching your keyboard or mouse while a script is running should not interfere with the script's actions.

Reversing the actions of a script

The **Undo** command (**Edit** menu) cannot be used to reverse the actions of a script. Use copies of your documents while experimenting with the scripts, and check **Auto Backup** in **Application Preferences** (**Edit** menu). **Auto Backup** allows you to save and access a specified number of revisions to a document. The **Revert to Saved** command (**File** menu) will discard changes unless the script tells QuarkXPress to save the document.

Conditional scripts

Some of the scripts assume preexisting conditions in your document. For example, a text formatting script will work only in an open document that contains a text box and text. Error messages will alert you to conditions that have not been met and allow you to meet them.

Sample Scripts

Script: Format Lead Paragraph

This script formats the lead paragraph of every story in a document with a style popular to many newsmagazines: The first character is a four-line drop cap, and the first line is in small caps type style.

- What you need: Use the “Catalogue Layout” template in the Sample Documents folder or any document containing at least one story.
- To run this script: Open the “Catalogue Layout” template or a document containing at least one story. Choose **Format Lead Paragraph** from the **Scripts** menu.

Script: Mail Merge

This script creates personally addressed letters using a form letter and names and addresses stored in a FileMaker Pro database. Each letter is on a new page in the same document.

- What you need: To use this script, you must have FileMaker Pro 2.0 and two files from the Sample Documents folder: the “Mail Merge Address File” database and the “Mail Merge Letter.”
- To run this script: Choose **Mail Merge** from the **Scripts** menu. The script displays the **Open** dialogue box and asks you to “Select the FileMaker database to get names from.” Select the “Mail Merge Address File” and click **Open**. The script will launch FileMaker Pro if it is not running. Another **Open** dialogue box asks you to “Select a QuarkXPress form letter.” Select the “Mail Merge Letter” and click **Open**.

Script: Import Current Prices

This script imports updated prices from named fields in a FileMaker Pro database into named text boxes in a QuarkXPress layout.

- What you need: To use this script, you must have FileMaker Pro 2.0 and two files from the Sample Documents folder: the “Price List” database and the “Catalogue Layout” template.
- To run this script: Choose **Import Current Prices** from the **Scripts** menu. The script displays the **Open** dialogue box and asks you to “Select a QuarkXPress document to set prices for.” Select the “Catalogue Layout” template and click **Open**. Another **Open** dialogue box asks you to “Select the FileMaker database to get prices from.” Select the “Price List” and click **Open**. The script will launch FileMaker Pro if it is not running.

Scripts

About the Scripts Menu...

Format Lead Paragraph
Mail Merge
Import Current Prices
Name Selected Text Box
Sort Paragraphs
Bold Key Words
Create Automatic Drop Shadow
Interpolate Between Boxes

To run a script, choose it from the **Scripts** menu.

Gloves

White with Mountain Green,
Mountain Purple, Mountain
Yellow, or Mountain Red trim.

14.99

The price “14.99” was automatically imported into an anchored text box (named “gloves”) from a field in a FileMaker Pro database also named “gloves.”

Script: Name Selected Text Box

This script allows you to name an active text box. Use this script prior to other scripts that require named text boxes.

- What you need: Use the “Catalogue Layout” template in the Sample Documents folder or any document containing at least one text box.
- To run this script: Open the “Catalogue Layout” template or any document containing at least one text box. Select a text box, then choose **Name Selected Text Box** from the **Scripts** menu. Enter up to 36 characters in the **Give this box a name** field and click **OK**.

Give this box a name

box 1

CancelOK

Enter up to 36 characters in the **Give this box a name** field.

Script: Sort Paragraphs

This script sorts paragraphs in an active text box alphanumerically according to the first word.

- What you need: Use the “Mail Merge Letter” template in the Sample Documents folder or any document containing several paragraphs.
- To run this script: Open the “Mail Merge Letter” template or a document containing several paragraphs. Select the small text box containing the table in the “Mail Merge Letter” template or a text box containing several paragraphs in any other document. Choose **Sort Paragraphs** from the **Scripts** menu.

Script: Bold Key Words

This script compares two text files (a base file and a key file) and bolds key words. When a word in the base file matches a word in the key file, the line containing that word is set in bold type. For example, you can compare your company’s phone list to a list of the people you contact the most. The names of your contacts will be set in bold type in the phone list.

- What you need: Use the “Base Text” file and “Key Text” file in the Sample Documents folder or create your own text files.
- To run this script: Choose **Bold Key Words** from the **Scripts** menu. The script displays the **Open** dialogue box and asks you to “Select the base text.” Select the “Base Text” file or a file you have created and click **Open**. Another **Open** dialogue box asks you to “Select the key text.” Select the “Key Text” file or a file you have created and click **Open**.

Store:	Purchases:	
Mel’s Bikes	\$100,000	Mel’s Bikes
Bike-o-rama	90,000	Bike-o-rama
Bikes ‘R Us	1,000	Bikes USA
The Bike Shop	10,000	
Bike City	25,000	
Bikes USA	350,000	
Bike & Hike	8,000	
Wheels Alive	2,500	
Hit the Trail	45,000	

Key Text file.

Base Text file.

Script: Create Automatic Drop Shadow

This script traces a runaround polygon image in an active picture box and creates a new polygon picture box with the same vertices. The background colour yellow is applied to the new polygon. The polygon is then placed behind the picture box and offset to create a drop shadow.

Store:	Purchases:
Mel’s Bikes.....	\$100,000
Bike-o-rama.....	90,000
Bikes ‘R Us.....	1,000
The Bike Shop.....	10,000
Bike City.....	25,000
Bikes USA.....	350,000
Bike & Hike.....	8,000
Wheels Alive.....	2,500
Hit the Trail.....	45,000

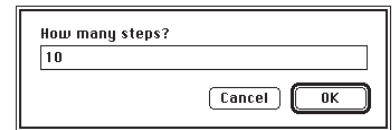
When a word in the base file matches a word in the key file, the line containing that word is set in bold type.

- What you need: Use the “Catalogue Layout” template in the Sample Documents folder or any document containing a picture.
- To run this script: Open the “Catalogue Layout” template or any document containing a picture. Select any picture box containing a picture and specify **Manual Image** runaround (**Item -> Runaround**). Choose **Create Automatic Polygon** from the **Scripts** menu. When the script is complete, you can change the background colour of the drop shadow.

Script: Interpolate Between Boxes

This script creates a number of boxes between two different boxes reflecting the changes in size, shape, angle, colour, and shade. For example, if you select a pink rounded corner picture box and a green rectangular picture box and specify 10 steps, 10 different items will be created between the two shapes illustrating the transformation.

- What you need: Use the “Picture Boxes” template in the Sample Documents folder or any document with two boxes of the same type (picture boxes or text boxes).
- To run this script: Open the “Picture Boxes” template or open a new document and create two boxes of the same type. Choose **Interpolate Between Boxes** from the **Scripts** menu. An alert will ask you to select the first object; select any picture box in the “Picture Boxes” template or a box you have created. A dialogue box will ask you “How many steps?” Specify up to 50 steps in the field. The more steps you specify, the longer the script will take to run. An alert will then ask you to select the second object; select any other picture box in the “Picture Boxes” template or a box you have created.



Enter up to 50 steps in the **How many steps?** field.

For More Information

The script writing reference material for QuarkXPress 3.3 is included on the Apple Events Scripting disk in the For Advanced Scripting folder.

For more information about purchasing scripting software such as UserLand Frontier or AppleScript, please contact the developers directly:

UserLand Software, Inc. (UserLand Frontier)

(415) 369-6600 (USA)

AppleLink at USERLAND.MKT

CompuServe: enter GO USERLAND at any ! prompt

America On-Line: enter keyword “USERLAND”

Apple Computer GmbH (AppleScript)

Guntenbergerstrasse 1

D-8045 Ismaning, Germany

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