Frontier Runtime 1.0b6

UserLand Software, Inc.

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Comments, questions and suggestions are welcome!

Important Disclaimer

Please Read Before Using This Software

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Letter From Dave Winer

July 31, 1992

Thanks for your interest in Frontier Runtime!

This package contains everything you need to run scripts created with the UserLand Frontier scripting system. You don't need to be a script writer, or learn anything new to use the scripts that are included in this package. Using scripts is as easy as using a Macintosh.

There are hundreds of free scripts available at UserLand's on-line services on CompuServe and AppleLink. More are being uploaded every day. Scripts range in power from simple desktop icons that perform basic chores that lots of people do all the time; to custom scripts, written by professional consultants and in-house developers, that can create networking standards for entire organizations. And there are more new uses for Frontier being discovered all the time.

We've included several sample scripts in this package to give you an idea of how powerful Frontier scripting is. To get the maximum benefit of Frontier Runtime, we hope you'll become a regular visitor to our on-line services on CompuServe and AppleLink. As I said earlier, lots of new scripts are being uploaded all the time.

The rest of this document explains how Frontier Runtime works, and provides importing pricing and distribution information.

Finally, I'd like to thank the thousands of people who have become Frontier script writers during the first half of 1992. We feel that <u>we all</u> have reached the next important milestone with the shipment of Frontier Runtime. We couldn't have done it without your support.

Thanks!

Dave Winer, President

UserLand Software, Inc.

Introduction to Frontier Runtime

How Frontier compares to Runtime

UserLand Frontier is a scripting system that makes it easy to write utilities that customize and automate the Macintosh operating system, file system, networks and integrate the capabilities of Apple Event-aware application software.

Frontier is a powerful script writer's tool. If you have experience writing dBASE or 4th Dimension applications, BASIC programs, HyperCard stacks, or spreadsheet macros, you can probably easily learn how to write Frontier scripts.

Frontier is for script writers. Frontier Runtime is for people who want to use scripts. Script writing requires a commitment to understand some of the inner-workings of the Macintosh operating system. We've simplified and streamlined Frontier script writing as much as possible, but we have not hidden the substantial power of the Macintosh operating system.

Frontier includes several components not available in Runtime: an outline-based script editor and debugger; a menubar editor that allows you to edit Frontier menus and shared menus; a table editor that's used to browse and interactively edit the contents of the object database; a simple word processor, and the ability to manage background processes interactively.
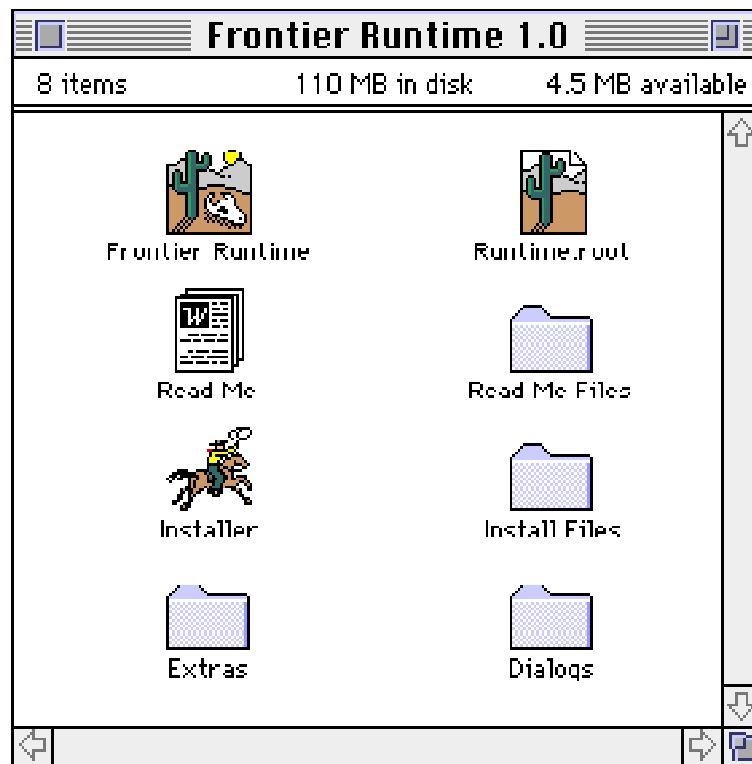
Frontier is a commercial product, carried by retailers and mail order resellers. Frontier Runtime is an inexpensive shareware application.

Runtime System Requirements

Frontier Runtime requires Macintosh II or greater, System 7.0 or greater. Frontier Runtime uses a minimum of 512K of memory. Running larger scripts or suites of scripts may require more memory. Documentation is in Word 4.0 format.

The Frontier Runtime 1.0 Folder

Here's what the Frontier Runtime 1.0 folder should look like after you have expanded the archive and opened this Read Me document:

There are eight icons in the Frontier 1.0 folder:

1. **Frontier Runtime is the application that runs scripts; scripts access and store information in Runtime.root.**

2. **Runtime.root is a collection of scripts and data objects. This file is also known as the "object database."**

3. **Read Me is this Microsoft Word 4.0 file.**

4. **Read Me Files is a folder containing Word 4.0 files with more information about registering your use of Frontier Runtime with UserLand Software; information about writing scripts that work with Runtime; and pointers to other downloads for script users, script writers and application developers.**

5. **Installer is a Frontier script that copies files in the Installer Files folder into your System Folder. All steps in the process are confirmed before any copying is done.**

6. **Install Files is a folder containing files that the Installer script copies into your System Folder.**

7. **Extras is a folder containing a set of example Frontier desktop scripts and some scripts that are useful to Frontier 1.0 script writers. Over time, as new versions of Runtime are released, this folder may include other sub-folders.**

8. **Dialogs is a folder that contains standard Macintosh dialogs used by Frontier scripts. Runtime users can safely ignore the contents of this folder, but shouldn't move or delete the files contained inside the folder.**

How to Install Frontier Runtime

Double-click on the Frontier Runtime application to launch the program. A dialog appears asking you to personalize your copy of Runtime. Enter your name, organization and initials and then click on OK. A dialog box appears showing UserLand Software's standard disclaimer. Please read it carefully, then click on OK.

Bring the Finder to the front and double-click on the Installer script. The script confirms each step of the installation process. If you want to completely install the package, click on OK for each of the dialogs that's presented. The script copies three files into your System Folder:

1. **FinderMenu INIT is copied into the Extensions sub-folder.**

2. **FinderMenu App is copied into the Startup Items sub-folder.**

3. **FinderMenu Prefs is copied into the Preferences sub-folder.**

These three components allow Frontier Runtime to add a menu or set of menus to the Finder's menu bar. If you choose not to install these items in your System Folder, you will still be able to run Frontier scripts from the desktop, but you will not be able to run scripts from the Finder's menu bar.

When the installation is complete, a dialog box offers to automatically restart your system. This is necessary for the FinderMenu INIT to start running.

The three components are part of the FinderMenu package, available as a separate download. See "Guide to Other Downloads" in the Read Me Files folder for information on downloading.

How Frontier Runtime Works

The heart of Frontier Runtime is a script-running engine that interprets scripts and accesses information stored in the Runtime.root object database. It's the same engine that forms the kernel of Frontier.

Scripts can manage the Macintosh file system: copying, deleting, moving, renaming files, creating new files and searching your disks for information. Scripts can access Finder information like comments and icon positions, and can easily get in and out of the resource forks of data files and applications.

Scripts can interact with the Macintosh operating system, launching and managing applications in a variety of different ways. Using the System 7 Apple Event Manager, Frontier scripts can control applications, utilities and system software thru the Macintosh operating system.

Scripts can also operate over Macintosh-compatible networks, talking to other copies of Frontier and Frontier Runtime, and driving other applications that support System 7 Apple Events. Script writers can build much more sophisticated client-server applications using Frontier and Frontier Runtime than was ever possible before.

There are very few limits on what Frontier scripts can do and lots of exciting possibilities in all these areas.

From a user's perspective, much of the power of Frontier Runtime is masked thru the user interface design tools available to script writers. For example, you can select commands from the Finder's (new!) Scripts menu without understanding how the scripts behind these commands work.

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Different Kinds of Scripts

Background

Frontier scripts can come in a variety of different packages, ranging from icons you double-click on in the Finder (these are called "desktop scripts") to scripts embedded within application software. In this section we review the different kinds of scripts and explain how each of the sample scripts work.

Desktop Scripts

When you double-click on a desktop script in the Finder, the script runs. It's the simplest kind of Frontier script.

Desktop scripts can operate on the folder they were launched from. For example, if you want to unlock all the locked files in your System Folder, you'd drag the Find Locked Files script into the System Folder and double-click on it.

We've included four sample desktop scripts in the Frontier Runtime package. They are located in the Sample Scripts sub-folder inside the Extras folder. Each script is described in the following four sections.

Recently Changed Files…

This desktop script creates a folder full of aliases of files that have changed recently. What's recent? That's up to you…

It displays a dialog asking you to enter a date, suggesting August 1, 1992 as a default. Enter a date in the same format you see, and click on OK to proceed, Cancel to exit the script.

The script traverses the folder it was launched from, and creates aliases of all the files changed since the date you entered. The aliases are created in a folder named "Recently Changed Files," which is overwritten without confirmation.

When it's finished, the script opens the Recently Changed Files folder.

Find Locked Files…

This script travels thru the whole folder it was launched from and all of its sub-folders, looking for locked files. When it finds one, it displays a dialog asking if you want to unlock a specific file. Click on Yes to unlock it, No to not unlock it, or Cancel to halt the traversal.

Special feature: Hold down the option key while clicking on Yes to unlock all subsequent files without confirmation.

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Open Folder…

This is a very simple, but very useful script. It opens a standard file dialog, asking you to select a folder to open.

Select a folder and click on the Folder button. An Apple Event message is sent to the Finder telling it to open the folder.

Suggestion: place this script at the desktop level.

This script is especially useful in conjunction with Boomerang, part of the Now Utilities, from Now Software.

Find Bogus Dates…

Do ever come across a file on your hard disk that was created on January 1, 1904? Or a file that was modified in the year 2016? Or a file that whose modification date pre-dates its creation date? If so, and if it bothers you (or your backup software) this script will fix things up.

It's a Frontier desktop script, so when you double-click on it in the Finder it searches all the files and folders in the folder it was launched from.

As it scans it checks both the modification and creation dates for all files and folders and stops when it finds a date that:

- **Is earlier than January 24, 1984 -- the shipdate of the Macintosh. It's hard to imagine that you have any files older than that! Script writers may want to modify the script to put a later date in here; a likely candidate is the date you got your Macintosh.**

- **Is later than the time the script started running. Time travel isn't possible (yet! -- it may of course be possible when Apple ships Knowledge Navigator).**

- **As an additional reality check, it makes sure that the creation date is earlier than the modification date.**

Before it fixes anything, it confirms with you by displaying a three-way dialog box. Click on Yes to fix the file, No to skip it, and Cancel to stop the traversal. If you hold down the option key and click on Yes it will continue the scan with stopping for confirmations.

Droplets

Droplets are small applications that have scripts embedded inside them. When you drag and drop a file onto the droplet's icon, the embedded script runs, and operates on the file, folder or disk you dragged.

We've included one sample droplet, Delete File, in the Frontier Runtime package. It is located in the Sample Droplets sub-folder inside the Extras folder.

Any set of files or folders you drag onto the Delete File icon are deleted immediately after confirmation. Unlike the Trash icon on the Finder desktop, the deletion occurs immediately.

The Finder's "Scripts" Menu

Included in the Frontier Runtime package are three components that are automatically copied into your System Folder by the Installer script. These three components allow Frontier Runtime to insert a new menu in the Finder's menu bar, the Scripts menu.

There are over twenty commands in the Scripts menu and its sub-menus. Full documentation for these commands are available on CompuServe and AppleLink. See "Guide to Other Downloads" in the Read Me Files folder for information on downloading these instructions. Many people prefer to learn by experimenting, and we wanted to keep the size of the Frontier Runtime package as small as possible.

The net result is that the Finder's menu bar is extensible by Frontier script writers. We've included some sample scripts that appear in the Scripts menu in the Finder and run when you select the commands. Other commands for the Finder's menu bar are available at UserLand's on-line services on CompuServe and AppleLink.

Other Applications' Menu Bars

Frontier scripts can also appear in the menu bars of applications that support UserLand's Menu Sharing protocol. Examples include all versions of StuffIt and CompuServe Navigator and future versions of many popular Macintosh applications.

For example, UserLand's BarChart sample application supports menu sharing. All of the commands in BarChart's Utilities menu are implemented as Frontier scripts. See "Guide to Other Downloads" in the Read Me Files folder for information on downloading BarChart and other menu sharing-aware sample applications.

QuicKeys Scripts

With CE Software's QuicKeys 2.1, script writers can link Frontier scripts to any function key, or combination of cmd, option, shift, or control keys. Scripts can be scheduled to run at any time.

Frontier scripts can also send messages to QuicKeys, which in turn, can send keystrokes or mouse actions to applications that may not support System 7 Apple Events.

Pricing & Distribution

Frontier Runtime is shareware

We want Frontier scripts to be used inexpensively, and we want people to be able to freely evaluate the benefits of Macintosh system-level scripting. Therefore we have released Frontier Runtime as a shareware package. There is no cost in using Frontier Runtime to evaluate the software and determine if it is useful to you.

You may install Frontier Runtime on your Macintosh and use it for 30 days to determine if it is useful to you. If you decide to continue using Frontier Runtime, you must register it with UserLand Software. The single-user registration fee is $25. All prices are in U.S. dollars.

A substantial amount of money and effort went into the development of Frontier Runtime. If you respect the system, the Frontier family will flourish, and UserLand Software will be able to continue to be responsive to the needs of script writers and script users. We believe this is good for the entire Macintosh community, and it will allow UserLand Software and its investors to profit from their investment.

UserLand Frontier is a commercial product

Frontier is a commercial software product. Its suggested retail price is $249. Only licensed users of UserLand Frontier may develop, distribute or modify scripts to be used with Frontier Runtime. Software piracy is illegal.

Frontier users are entitled to one free license for Frontier Runtime. If you are a licensed Frontier user, please include your serial number when registering Runtime, and (of course!) don't include the $25 registration fee. See "How to Register" in the Read Me Files folder for details.

Where to Get Frontier

Frontier is widely available from software retailers and mail order resellers. Here are a few numbers you can call to order a copy of UserLand Frontier:

Source	In the U.S.	Outside U.S.
ComputerWare	800-326-0092	415-496-1003
Mac's Place	800-367-4222	206-883-8312
MacConnection	800-800-2222	603-446-7711
MacWarehouse	800-255 6227	908-370-3801
MacZone	800-248-0800	206-883-3088
UserLand Software	800-845-1772	415-369-6600

Network Managers

If you're a network manager, you may install Frontier Runtime on up to 10 Macintoshes on your network at no cost for 30 days to allow you evaluate and test scripts that enhance your network.

After 30 days, if you decide to continue development with or use of Frontier Runtime on your network, you must register your network with UserLand Software. The cost to register is $25 per Runtime user for networks with 10 or fewer Runtime users; $20 per Runtime user for networks with more than 10 Runtime users.

Special support services are available for managers of registered Frontier Runtime networks. Contact UserLand Software for more information.

How to redistribute Frontier Runtime

Since Frontier Runtime is shareware, you may give it to your friends and people you work with. You may copy the distribution package to a shared file server for other users on your network to evaluate. Bulletin-board system operators may post the distribution package for their users to download.

However, if you redistribute Frontier Runtime, you must redistribute it in exactly the same form as it was released by UserLand Software. If there is any question, please download the original release of Frontier Runtime from UserLand's CompuServe or AppleLink on-line services. On CompuServe, the Runtime package is in RUNTIM.SIT in Library 9. On AppleLink, see the instructions in the Frontier Runtime folder in UserLand Discussions under the Third Parties icon.

Frontier Runtime may not be included as part of any commercial software or hardware product without the written permission of UserLand Software. Frontier Runtime may not be distributed on any physical media such as

floppy disk, magnetic tape, removable hard disk or CD-ROM without the written permission of UserLand Software.

Runtime can be bundled

UserLand Software has a very attractive, royalty-free distribution policy for Frontier Runtime available to developers and publishers of commercial Apple Event-aware software applications and utilities. The annual license fee is $100 per product, no royalties. Contact UserLand Software for details.

We also wish to encourage book authors writing about scripting or using Macintosh system software, applications or utilities to include Frontier Runtime with their book. Please contact us for details.

Frontier Runtime cannot be bundled with hardware products, or distributed on physical media without the written permission of UserLand Software.

Shareware authors

As a policy, UserLand Software wishes to support the shareware industry in any way we can, since we are part of it!

We offer a special "scholarship license" for shareware authors. This license allows you to get the full commercial UserLand Frontier product for $99 if you have shipped a shareware application for the Macintosh in the last three years. Contact UserLand Software for details.

However, Runtime cannot be bundled with other shareware products. Rather than increase the size of your package by including Runtime, you should instruct your users to obtain the shareware version of Frontier Runtime from one of UserLand Software's on-line services.

UserLand Consulting, Registered Developers

One of our functions at UserLand Software is to connect people who need system customization with people who are expert Frontier script writers and software developers. If you're looking for a good script writer for contract development work, please contact UserLand Software. It helps if you have a written narrative or specification of the system you want implemented.

If you're an excellent script writer who has mastered the power of Frontier, please get in touch, preferably thru one of the on-line services. We are now designing a registered developer and referral program. Your input and advice are requested!

What Frontier Scripts Look Like

If you just want to use Frontier scripts, there's no need for you to understand how scripts work, and you should skip this section. If you're curious about script writing, this section shows you the source code to a simple Frontier script. If you want to know more, check out the "Script Writing For Runtime" document in the Read Me Files folder.

If you have Frontier, you can edit the source code of a desktop script by holding down the cmd key as you double-click on it.

Here's the source code of the unlockFiles desktop script. It simply unlocks all the locked files in the folder it was launched from:

```
on unlockFiles (path) «path is the full path to the file containing the script
    local (folder = file.folderFromPath (path), f)
    fileloop (f in folder)
        if file.isLocked (f)
            file.unLock (f)
```

The script could be modified to delete all the files created before January 1, 1990:

```
on deleteOldFiles (path) «path is the full path to the file containing the script
    local (folder = file.folderFromPath (path), f)
    fileloop (f in folder)
        if file.created (f) < "January 1, 1990"
            file.delete (f)
```

These two scripts just give you a taste of how Frontier scripting works. There's a lot more power available since Frontier is a full programming language and actually, much more.

The Next Step

If you like Frontier Runtime…

There are lots more free scripts and Apple Event-aware utilities available for you to download from UserLand's AppleLink and CompuServe on-line services. For a guide to other downloads available on CompuServe and AppleLink, check out the "Guide to Other Downloads" file in the Read Me Files folder.

Also, help us spread the word! Frontier Runtime is shareware, so please pass it on.

If you want to write scripts…

Most Macintosh users will find the Frontier Runtime package useful as a platform for scripts and utilities written by others.

However, if you're one of those gutsy Macintosh power users who wants to explore the system to its fullest, or if you think others could benefit from using your scripts, please give Frontier a shot. We've included a read me file, "Script Writing For Runtime" that provides background for Frontier script writers and potential Frontier script writers.

If you're an application developer…

First, we strongly recommend that you check out Frontier script writing. If you've mastered Macintosh event-loop programming, writing scripts will be a snap! Frontier helps in the development process in lots of ways. You can customize your system so that building and testing your application are automatic.

If you're adding Apple Events to your program, it's even more important that you test with Frontier. Script writers and Runtime users will expect to be able to customize and automate your application with Frontier. UserLand has released several royalty-free C source code toolkits to make adding Apple Event support to your application very easy. This collection is called Frontier SDK and it's available for downloading from both CompuServe and AppleLink.

For all audiences…

If you're excited by system-level scripting with Frontier, if you're a script user, a script writer, or an application developer, let's all learn from each other! Application developers need to hear what script writers want, and script writers must understand the needs of Runtime users.

The only way this can work is if we congregate and exchange opinions, and learn. We've got the ball rolling with the AppleLink and CompuServe on-line services. There's a reason we repeat this message throughout our documentation. The UserLand on-line services work much better if you're part of the process. Please speak up, share your vision for system-level scripting on the Macintosh and help shape the future. Don't be a stranger!