

Droplet Developer Kit 2.0

UserLand Software, Inc.

UserLand Software is located at 400 Seaport Court, Redwood City, CA 94063. 415-369-6600, 415-369-6618 (fax).

Email: userland.dts@applelink.apple.com. If you're an AppleLink user, check out the UserLand Discussion Board under the Third Parties icon. CompuServe users enter GO USERLAND at any ! prompt.

Comments, questions and suggestions are welcome!

Background

The Droplet Developer Kit includes all the scripts and docs you need to create your own droplets -- double-clickable applications that have an embedded script that is run once for each file, folder or disk icon that's dragged onto the app. It's small, they're easy to write, and lots of fun to run.

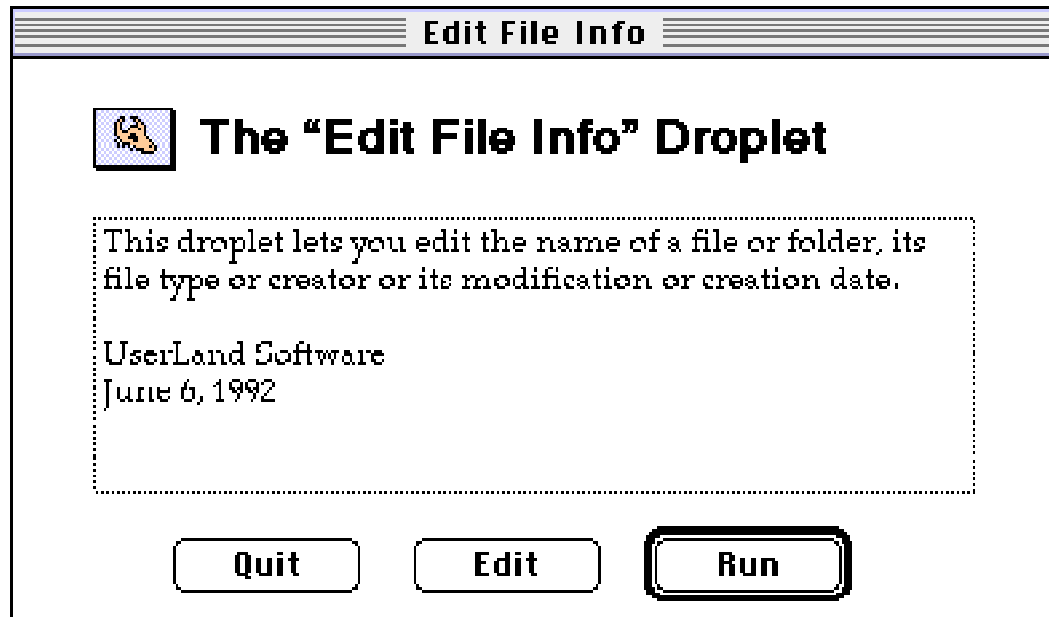
A droplet is a hybrid, part application and part script. Users can drag and drop Finder icons onto droplets. The script contained within the application is run, once for each of the icons dragged onto the application. Sample droplets are available from UserLand's CompuServe and AppleLink support boards.

How to Install

1. Be sure Frontier is running.
2. Install the Droplet Developer suite by double-clicking on the `suites.droplet` file. Readme text will automatically open explaining how to develop scripts to be installed in a copies of the Droplet Master application.
3. Install the Frontier Apple Event handlers to support droplets by double-clicking on the `traps.OHIO` file. There's a readme text object in this table providing an overview of how droplet applications communicate with Frontier.

Using a Droplet

When you drag and drop a set of file, folder or disk icons onto the droplet icon, a window appears. Here's what the Edit File Info droplet window looks like after it's launched:



Here's what each of the three buttons does:

1. **Run**

Click on this button to run the embedded script once for each file dragged onto the droplet icon.

If you double-click on the droplet icon (no files dragged) the Run button is disabled.

2. **Edit**

Brings Frontier to the front and opens a window that contains the embedded script and information about the droplet. Also launches the Droplet Developer suite.

After making changes to the droplet, choose the Export to App... command from the Droplet menu.

The Edit button is disabled if Runtime is running, not Frontier.

3. **Quit**

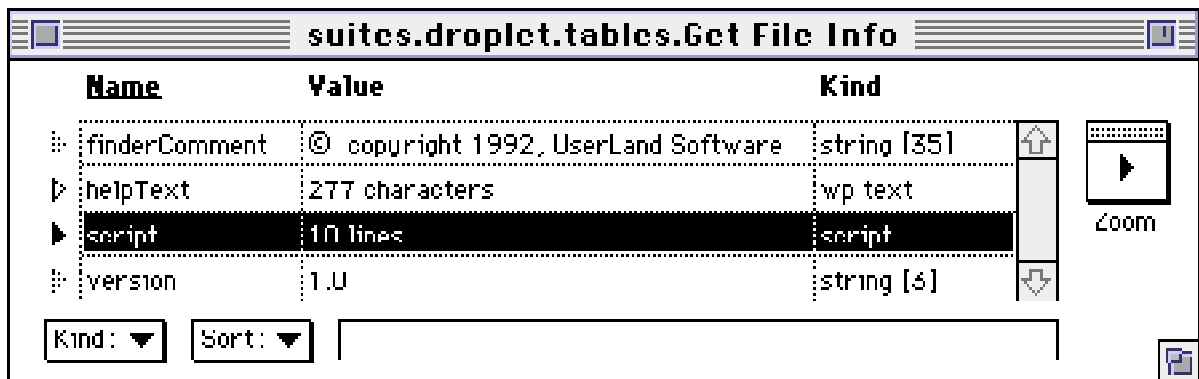
Click on this button to exit the droplet without running the embedded script.

For Your Users

1. To use your droplet, they must have either Frontier or Frontier Runtime.
2. They must be running System 7, since the drag-and-drop feature isn't available on earlier versions of the Macintosh operating system.
3. They must have a traps.OHIO table installed in their object database. Runtime comes with traps.OHIO pre-installed, future versions of Frontier will too.

To develop your own droplet

1. Copy and paste one of the sub-tables in the suites.droplet.tables table. Open it, and modify the contents. Provide a Finder comment, version number, write some help text, and of course fill in the script. Here's a screen shot of the table for the Get File Info droplet:

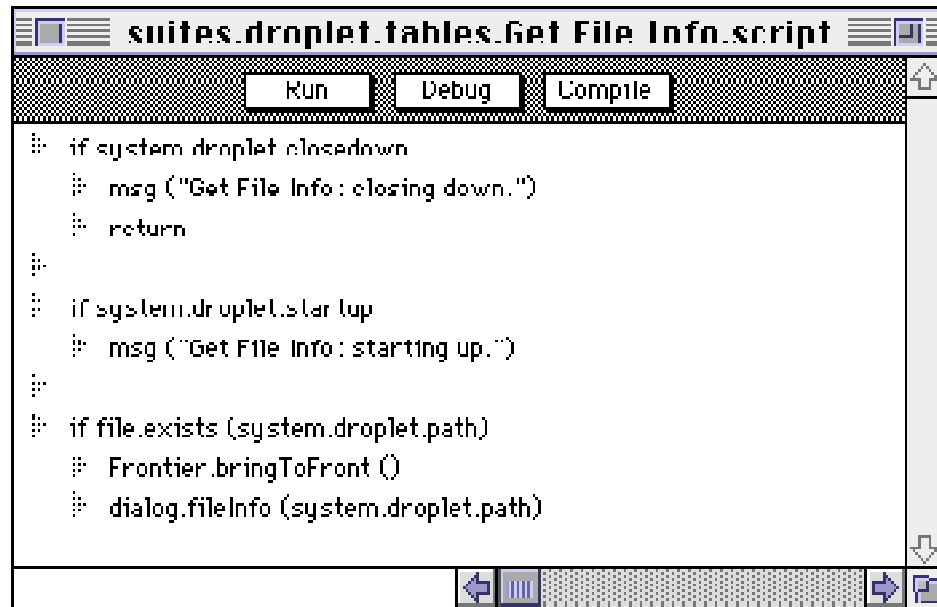


Name	Value	Kind
finderComment	© copyright 1992, UserLand Software	string [35]
helpText	277 characters	wp text
script	10 lines	script
version	1.0	string [8]

2. In the Finder, copy the Droplet Master application, and rename it to reflect the functionality of your droplet script.
3. To export the droplet script and its related information, be sure that the table window from step 1 is frontmost, and select the Export To App... command from the Droplet menu. When the file dialog appears, select the application you created in step 2.

How droplet scripts work

You might want to open up the script in the Get File Info table as an example illustrating the general principles outlined here. Here's a screen shot of that script:



This script is simpler than most droplet scripts, but it illustrates the key points.

The script is run once for every file, folder or disk that's dragged onto the droplet's icon. The first time the script runs, a boolean, `system.droplet.startup`, is set true. This allows you to do any initialization you might need to do.

The name of the file you are being asked to process is in `system.droplet.path`. You can use the `file.isFolder` verb to determine if it is a file or a folder, or use `file.isVolume` to see if a disk icon has been dragged onto your droplet. From there, you can do anything a Frontier script can do -- which is quite a lot!

After all the dragged icons have been processed, your script is called one more time with `system.droplet.closedown` set true and `system.droplet.path` set to the empty string. You can clean up after your script, deleting any temporary files or objects you created or closing windows or beeping the speaker... whatever. After you are finished closing down, return.

Droplet 2.0b9 -- 9/9/92 DW

Surprise! Droplets get a lot better...

Lots of changes detailed below. The net effect, droplets are friendlier, more colorful and much more powerful things.

Window opens before script runs

When you launch a droplet, a window opens that shows the name of the droplet and the embedded help text. Three buttons allow you to either run the droplet against the files you dragged and dropped, edit the droplet script and menu bar, or quit the droplet application.

Note: as a result of this change, the role played by your helptext has changed substantially. You should revisit your droplet and reformat the text so it looks good in this new window.

For details, see "Using a Droplet" above.

Droplets support menu sharing

You can now embed a menu bar in the droplet. The droplet application will copy it into the right place in the object database (usually `system.menubars.DRPa`). The commands in this menubar can be used to configure the droplet. If you don't want a shared menu, don't include a menubar object in your droplet's table.

Droplet suite enhanced to support new features

It exports a menubar if one is present, and imports one if it finds one in a file you're importing. The sample table was missing. Some of the scripts were reorganized to make them more useful.

`system.verbs.traps.OHIO` enhanced

Added the "edit" script, which imports from the current droplet, and opens a window. Modified the readme wp text. We left `system.verbs.traps.OHIO` in even though it's never called from a 2.0b9 droplet. You may run an older version droplet.

Droplet 2.0b8 -- 9/3/92 DW

Error reporting from droplet embedded scripts

If the script embedded in a droplet has a syntax or runtime error or calls the built-in `scriptError` routine, the message is now displayed in a dialog box by Droplet Master and all its progeny.

This should help in debugging droplets, and if `scriptError` is used thoughtfully, help make them easier to use too.

New distinctive icon for droplets

We're getting serious feedback that the droplet icon is hard to drop stuff onto because it has "dead" areas. Let's try to tweak it up so they're easier to hit.



Old Droplet Icon



New Droplet Icon

Along with this change, we changed the creator ID of the Droplet Master program to 'DPLa'. The one thing that's certain in this process, is that there will come a time when we'll want to upgrade everyone's droplets without forcing them to run a time-consuming script. This leaves room for 254 more versions of the Droplet Master program before having to recycle. Should be good for about 50 years of upgrades, assuming 5 per year.

Droplet Suite enhancements

Added `droplet.convertFile` script, Convert Folder... menu command. Makes it easy to upgrade a whole folder of droplets. But you have to manually move and DLOGs and DITLs that may be embedded in your droplet, or any other resources not found in the Droplet Master program.

Droplet 2.0b7 -- 8/31/92 DW

No source code/script changes

The Droplet Developer Kit has been added to Frontier SDK 2.0 and it's version number has been bumped to 2.0 to be consistent with the other components of the SDK.

Droplet 1.0b5 -- 8/19/92 DW

Auto-launch Frontier or Runtime

When a 1.0b5 droplet starts up it checks to see if an application whose creator id is 'LAND' is running. If so, it goes ahead as pre-b5 versions would.

To locate Frontier/Runtime, it searches the desktop databases on all mounted volumes. If no program with creator id LAND is found, it displays a dialog box, explaining what happened, and then quits. If one is found, it's launched as the new frontmost app. The droplet waits for it to show up in the process list. Then it sends Apple Events to the newly launched Frontier or Runtime.

As usual the C source code is included in the THINK C Source folder.

Frontier.isRuntime was broken

A two-line script and it was wrong! Murphy strikes again.

The mistake broke the system.verbs.traps.OHIO.help script. If you 2clicked on your droplet on the desktop no window would zoom explaining what the droplet was about. It worked fine for Runtime users, but not for Frontier users.

It's fixed in this release. To install the new version, open the Frontier.isRuntime folder and 2click on the Frontier.isRuntime desktop script.

Exporting tweak

In earlier releases, to export to the droplet app, you had to have the table for the droplet as the frontmost window in Frontier. That still works, but it also works if you have the suites.droplets.tables table frontmost with the droplet table highlighted. Some people prefer it this way.

Droplet 1.0b4 -- 7/24/92 DW

Changes for Frontier Runtime

Droplets work fine with Runtime with one exception -- when you 2click on a droplet, Frontier displays a wptext window that explains what the droplet does.

This won't work if Runtime is running the droplet, since it can't open a wptext window. Instead, we want Runtime to create a TeachText file, move the text into the file and then open it with TeachText.

So, we made a change to all components of the Droplet Developer Kit to support plain text viewing with TeachText:

- 1. In the droplet suite, we export a TEXT resource, id 128 along with the wptx resource. The text is derived from the wp object you created, so there's no need to change your table.**
- 2. In the Droplet Master app, when we send a 'help' message to Frontier, we pass the wptx and we pass the TEXT resource too. The Frontier we're talking to might be Runtime.**
- 3. In system.verbs.traps.OHIO.help, we call Frontier.isRuntime to see where we're running. If it's Runtime, we create a temporary TeachText file in the user's Read Me Files folder, and launch it.**

That's all that changed in 1.0b4.

Droplet 1.0b3 -- 6/6/92 DW

Droplet app sends full path to the application file to scripts

I wanted to build a droplet that had its own dialog embedded in it, and ran into a brick wall -- there was no way for the droplet script to know where the droplet application is.

Now there is -- it's at `system.droplet.appPath`.

Changes were made to:

Droplet Master -- when it sends the init event to Frontier it not only sends the script as a parameter to the Apple Event, it also sends a string -- the full path to the droplet application.

`system.verbs.traps.OHIO.init` -- receives the path, and copies it into `system.droplet.appPath`. To use this new feature, the user will have to have installed the new version of `traps.OHIO`. Play it safe -- ship it with your droplet and tell the user to 2click on it, or do it in your installer script.

Droplet Master is a valid droplet

It now has a `wptx` and `scpt` resource, they're very small. It just seemed to make sense that the master should also be a small droplet. I needed this for testing, it seemed prudent to leave it in the release. It won't make your droplets any larger, when you Export to App from the Droplet menu, it will overwrite these placeholders. Don't worry. DW

Does your droplet want a unique item?

According to John W. Baxter in message #3561 at GO USERLAND on CompuServe:

“For a droplet which really needs a unique icon, include an icon family with the id -16455 and set the “Has Custom Icon” bit in the Finder information. That's the mechanism Finder uses when the user pastes an icon into an application's Get Info box. And I just checked... doing this only changes the icon for the particular droplet to which it is done.”

We thought we'd pass that on. Thanks John W!

Droplet 1.0b2 -- 4/30/92 DW

Droplet suite can import as well as export

Now when you download a droplet, you can see how it works, modify it or customize it, and save it back out into the droplet application. See [suites.droplet.readme](#) for details.

Full THINK C Source included

We have included, for the first time, the THINK C source for the Droplet Master program. You can see how droplet programs communicate with Frontier using Apple Events. This project can serve as the starting point for other Frontier related drag-and-drop projects. You may use this source code in any project you're working on, but please maintain our copyright notice at the head of the file, and let us know what you come up with. Thanks!

Droplet 1.0b1 -- 4/18/92 DW

Changed program ID to OHIO

I think I was having problems with the Desktop Database, couldn't drag stuff onto the Droplet Master program. After staring at all those resources for quite a while, I decided to try changing the creator ID of the application to something different. We like four-character state names as product codenames at UserLand, so I set it to the next-available one: OHIO and rebuilt the whole thing. Now I can drag stuff onto the DM icon. So off we go!