Deconstructing iCloud Drive: What Techs Must Know.

Derek Braunschweiger

Call Andy! Macintosh Consulting



iCloud vs. iCloud Drive:
What's the difference?

What is iCloud?

"iCloud gives you access to your music, photos, contacts, calendars, documents, and more from your Mac, iPhone, iPad, iPod touch, and Windows computer. iCloud stores your content and automatically keeps it up to date on all your devices. iCloud is easy to set up on your devices, and it's easy to use with the apps included with your Mac and iOS devices, as well as the apps on iCloud.com."

- Apple

What is iCloud Drive?

Pretty much just the “Documents-and-Data” bit of iCloud.



(2000)



(2002)

Two minute history lesson.

iTools - (2000) - POP Mail, 20MB (!) AFP iDisk, Homepage.

.Mac - (2002) - IMAP, WebDAV iDisk, iSync, Backup, 10-30GB.

MobileMe - (2008) - Windows, some features required 10.5+

iCloud (pre-Yosemite/iOS 8) - (2011) - iOS integration, 5GB



(2008)



(2011)

iCloud Drive today



Requires iOS 8 and/or Yosemite.

Why?



Requires iOS 8 and/or Yosemite.

iCloud Drive today

- In iOS, all files created by an app are saved inside that app's container.
- With iOS 8, Apple is letting developers make those containers visible.
- If you use Pages on iPad, you could open/edit/import a document saved on iCloud Drive, created on your Mac.

iCloud Drive today

Once you've updated to iOS 8/Yosemite and enabled iCloud Drive, you've jumped into the new ecosystem. You can't go back!

Upgrading to iCloud Drive when you're pre-iOS 8 or Yosemite means your data won't sync. You shouldn't lose anything except convenience.

The Good Stuff.

What's stored where on Mac OS X.

- User data is ostensibly stored in `~/Library/Mobile Documents` – just like in 10.7+

- Contains folders specific to iCloud-enabled applications, as well as other user-addressable folders.

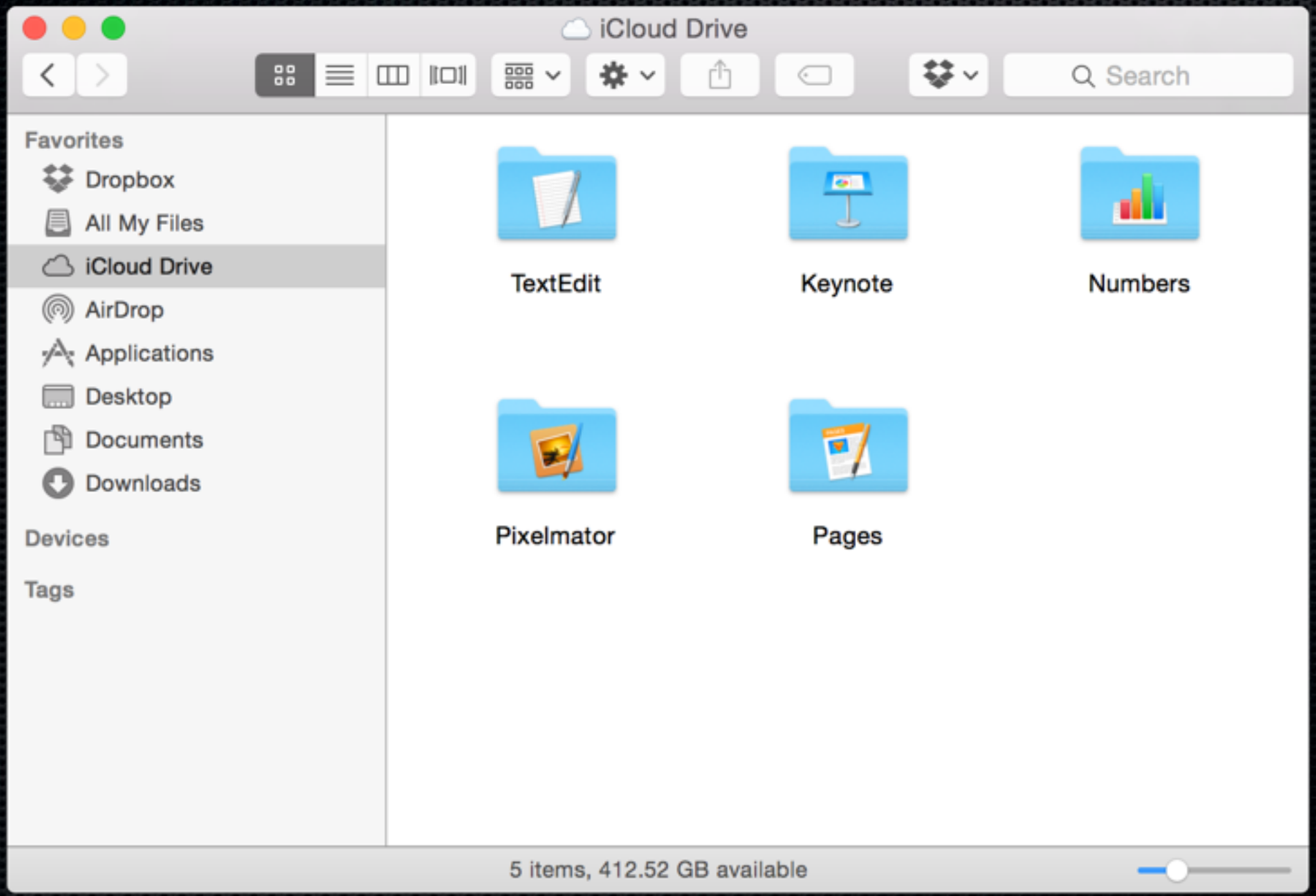
- Easy access from the Finder via Finder sidebar and "Go" menu.

- None of that is exactly accurate.

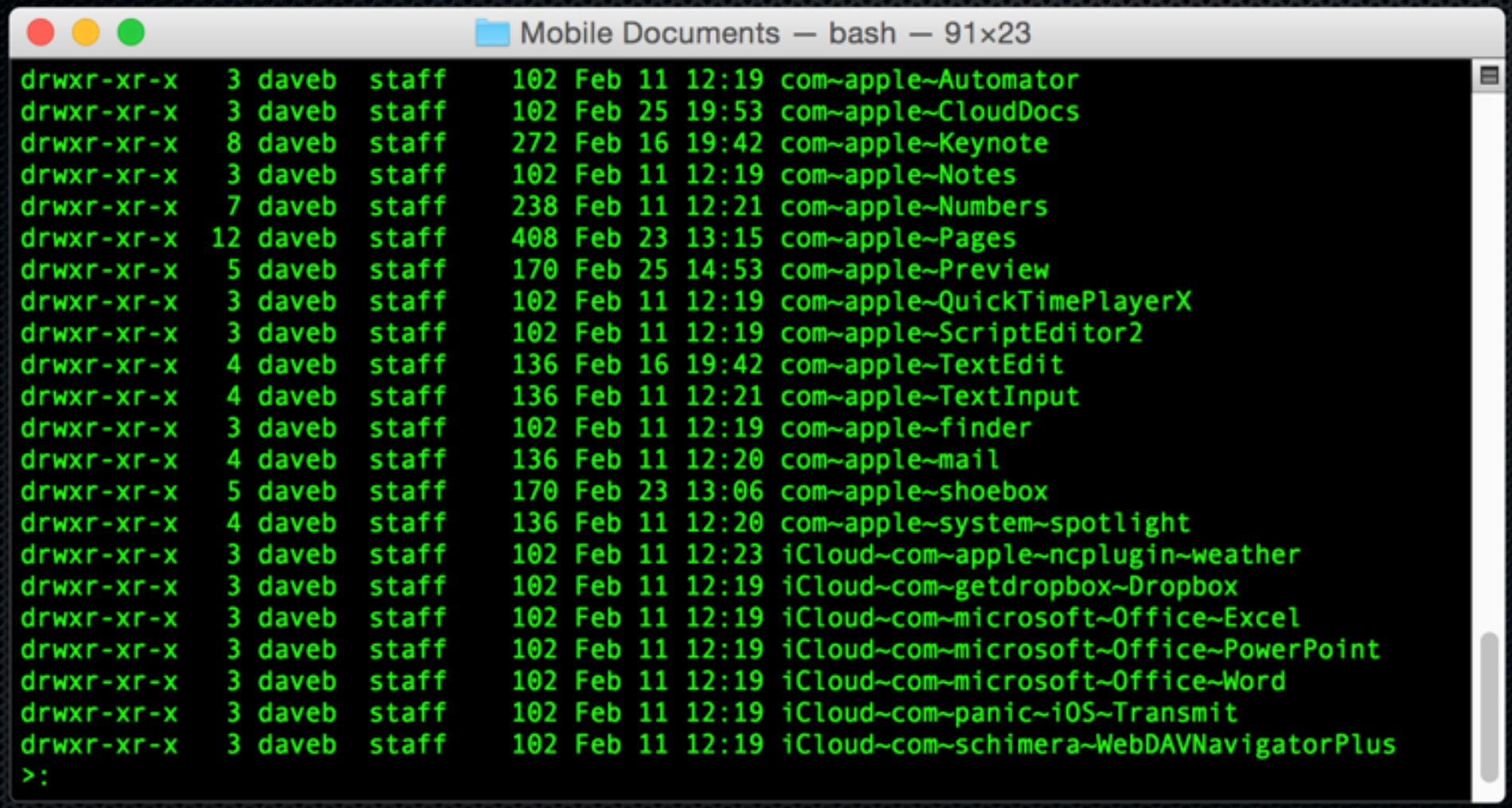
Huh?

- Folders in `~/Library/Mobile Documents` aren't actually folders. Can't "Get Info".
- Hitting the "iCloud Drive" link in the Finder/"Go" menu takes you to iCloud Drive, not that directory.

Finder:


iCloud Drive
Search
Favorites
Dropbox
All My Files
iCloud Drive
AirDrop
Applications
Desktop
Documents
Downloads
Devices
Tags
TextEdit
Keynote
Numbers
Pixelmator
Pages
5 items, 412.52 GB available

Terminal:


Mobile Documents — bash — 91×23
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 com~apple~Automator
drwxr-xr-x 3 daveb staff 102 Feb 25 19:53 com~apple~CloudDocs
drwxr-xr-x 8 daveb staff 272 Feb 16 19:42 com~apple~Keynote
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 com~apple~Notes
drwxr-xr-x 7 daveb staff 238 Feb 11 12:21 com~apple~Numbers
drwxr-xr-x 12 daveb staff 408 Feb 23 13:15 com~apple~Pages
drwxr-xr-x 5 daveb staff 170 Feb 25 14:53 com~apple~Preview
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 com~apple~QuickTimePlayerX
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 com~apple~ScriptEditor2
drwxr-xr-x 4 daveb staff 136 Feb 16 19:42 com~apple~TextEdit
drwxr-xr-x 4 daveb staff 136 Feb 11 12:21 com~apple~TextInput
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 com~apple~finder
drwxr-xr-x 4 daveb staff 136 Feb 11 12:20 com~apple~mail
drwxr-xr-x 5 daveb staff 170 Feb 23 13:06 com~apple~shoebox
drwxr-xr-x 4 daveb staff 136 Feb 11 12:20 com~apple~system~spotlight
drwxr-xr-x 3 daveb staff 102 Feb 11 12:23 iCloud~com~apple~ncplugin~weather
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 iCloud~com~getdropbox~Dropbox
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 iCloud~com~microsoft~Office~Excel
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 iCloud~com~microsoft~Office~PowerPoint
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 iCloud~com~microsoft~Office~Word
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 iCloud~com~panic~iOS~Transmit
drwxr-xr-x 3 daveb staff 102 Feb 11 12:19 iCloud~com~schimera~WebDAVNavigatorPlus
>:

Things get weird…

Signatures — bash — 86×22

```
>: cd com~apple~mail/
>: ls
Data            Documents
>: cd Data/
>: ls
MailData
>: cd MailData/
>: ls -al
total 120
drwxr-xr-x  5 daveb  staff    170 Feb 11 12:24 .
drwxr-xr-x  3 daveb  staff    102 Feb 11 12:20 ..
drwxr-xr-x  7 daveb  staff    238 Feb 11 12:24 Signatures
-rw-r--r--@ 1 daveb  staff  54186 Dec  8 22:29 ubiquitous_SyncedRules.plist
-rw-r--r--@ 1 daveb  staff   2949 Aug  6  2014 ubiquitous_SyncedSmartMailboxes.plist
>: cd Signatures/
>: ls
ubiquitous_36B23A39-646A-48D4-9EC5-657106E1E38F.mailsignature
ubiquitous_96E2B686-2ADB-4530-B1A1-C97A02CA9129.mailsignature
ubiquitous_A387011B-8557-40CF-A4AC-8ACFD1D376AD.mailsignature
ubiquitous_AllSignatures.plist
ubiquitous_B7AEC429-34A9-4B9D-9B73-117647CC0567.mailsignature
>:
```

!=Folders - Application Libraries.
(or Ubiquity Container)

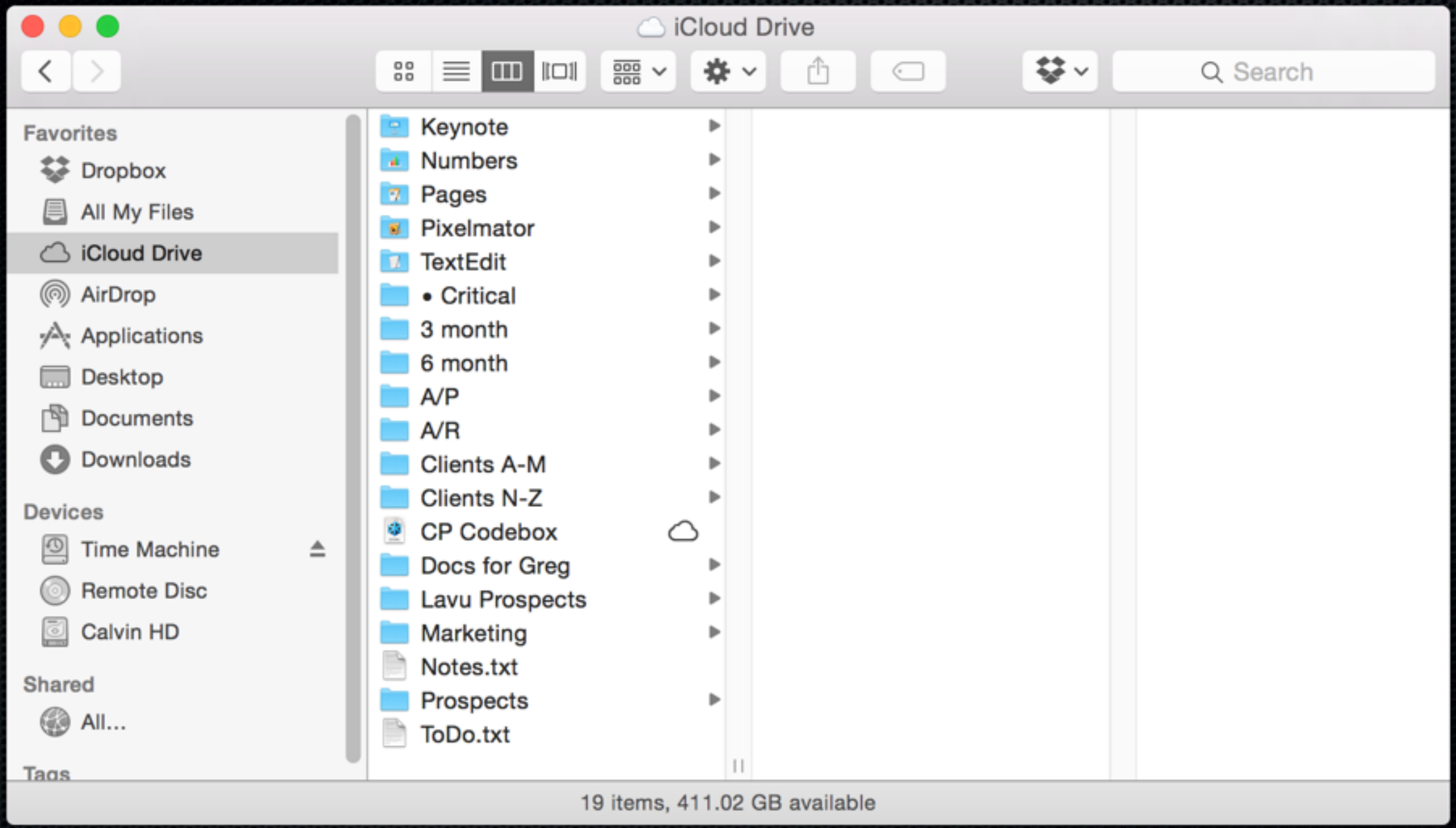
What the heck is a “Ubiquity Container”?

- Any app eligible for the App Store can use the iCloud document store.

- If it’s written to take advantage of iCloud it can access directories synced and controlled by iCloud - these are called Ubiquity Containers.

- Communication between iCloud and Ubiquity Containers is handled by the Ubiquity Daemon (`ubd`).

iCloud Drive Workflows


iCloud Drive
Search
Favorites
Dropbox
All My Files
iCloud Drive
AirDrop
Applications
Desktop
Documents
Downloads
Devices
Time Machine
Remote Disc
Calvin HD
Shared
All...
Tags
Keynote
Numbers
Pages
Pixelmator
TextEdit
• Critical
3 month
6 month
A/P
A/R
Clients A-M
Clients N-Z
CP Codebox
Docs for Greg
Lavu Prospects
Marketing
Notes.txt
Prospects
ToDo.txt
19 items, 411.02 GB available

- iOS/OS X apps enabled for iCloud Drive use default to using their app libraries.

- Other apps treat

`~/Library/Mobile Documents/com~apple~CloudDocs/.`

as a regular directory.

What's stored where on iOS 8.

- No legitimate file system access (jailbroken can poke around).
- Some legitimate third party apps e.g., CloudOpener
- Tapping "+" in enabled app takes you to document picker - some ability to browse.

What's stored where on The Cloud™.

Ultimately, all your iCloud Drive data lives on Apple's servers.

…or does it?

So, it's basically Dropbox, right?

No. Well, kinda. But mostly “No”.

iCloud vs. Dropbox vs. Google Drive vs. One Drive



Google Drive

- 15GB free, 100GB $1.99/month, 1TB $9.99/month, all the way up to 30TB $299.99/month.
- Apps for Mac/PC/Android/iOS/Web.
- Store/access anything.

iCloud vs. Dropbox vs. Google Drive vs. One Drive



OneDrive

- 15GB free, 100GB $1.99/month, 200GB $3.99/month, 1TB $6.99/month (inc. Office 365).
- Support for Office Online, Office 365.
- Excellent collaborative tools, Windows Phone support.

iCloud vs. Dropbox vs. Google Drive vs. One Drive



Dropbox

- 2-16 GB free, 1TB $9.99/month. Business users $15/user/month.
- Robust tools for group collaboration.
- Simple, cross-platform & ubiquitous.

iCloud vs. Dropbox vs. Google Drive vs. One Drive



iCloud Drive

- 5GB free, 20GB $0.99/month, 200GB $3.99/month, 500GB $9.99/month, 1TB $19.99/month.
- Works with Mac/Windows/iOS/Web.
- Part of the iCloud ecosystem.
- Space used for app data, iOS Backups

iCloud vs. Dropbox vs. Google Drive vs. One Drive

If you want simple, flexible manageable cloud storage, choose Dropbox.

If you want inexpensive cloud storage with good basic apps/integration, choose Google Drive.

If you want excellent integration into Microsoft's ecosystem, choose OneDrive.

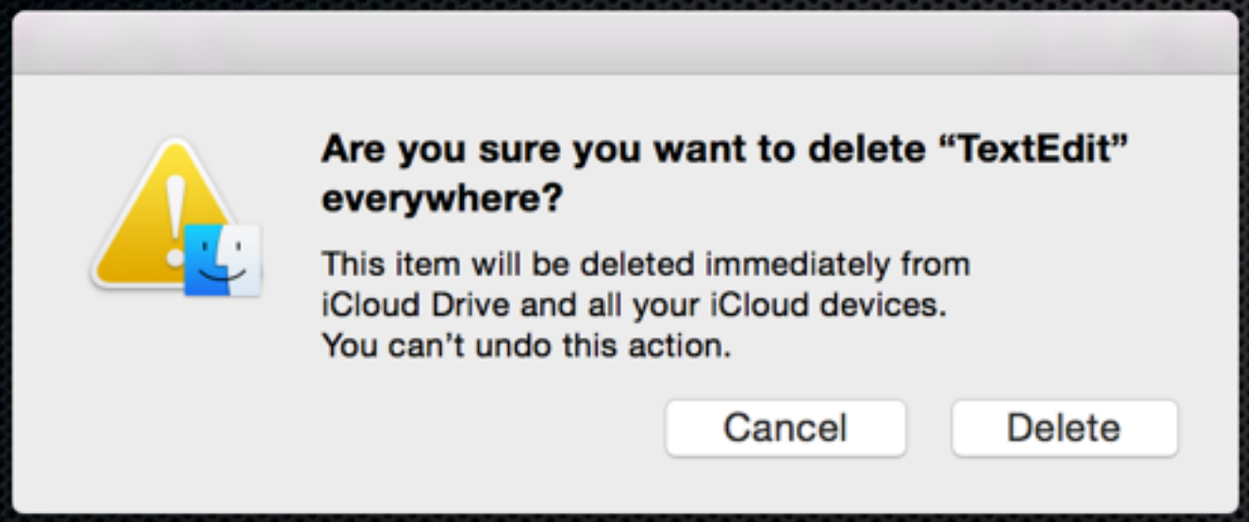
If you want excellent integration into Apple's ecosystem, choose iCloud.

Google Drive and Dropbox are great for sharing stuff with other people - OneDrive and iCloud Drive are great for sharing stuff between your own devices.

How to break iCloud Drive*

* Don’t try this at home.

Accidental deletion of App Libraries.



<- - BAD LOL!1!

File & location corruption

- iCloud daemon works on top of CloudKit. Server-side API, iCloud daemon asynchronous.
- It never assumes that a file is only being accessed/used by one device at a time.
- If lightning strikes, you can restore from another device.

No revisions/undelete.

- iCloud Drive doesn't keep multiple revisions. Be careful.
- iCloud Drive doesn't allow undelete. Be careful.

No revisions/undelete.

- iCloud Drive doesn't keep multiple revisions. Be careful.
- iCloud Drive doesn't allow undelete. Be careful.
- BYO Backup!

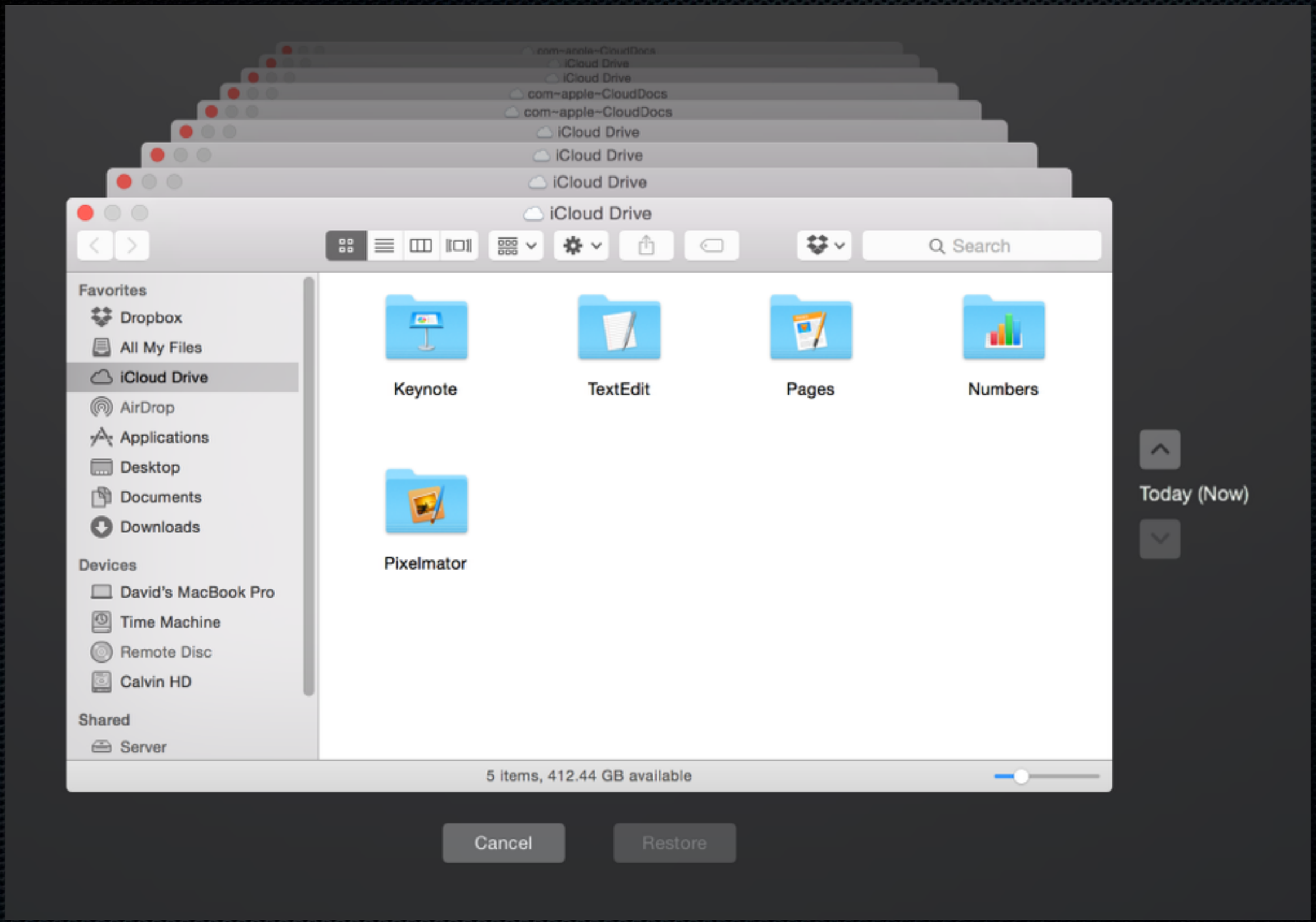
Know your network configuration

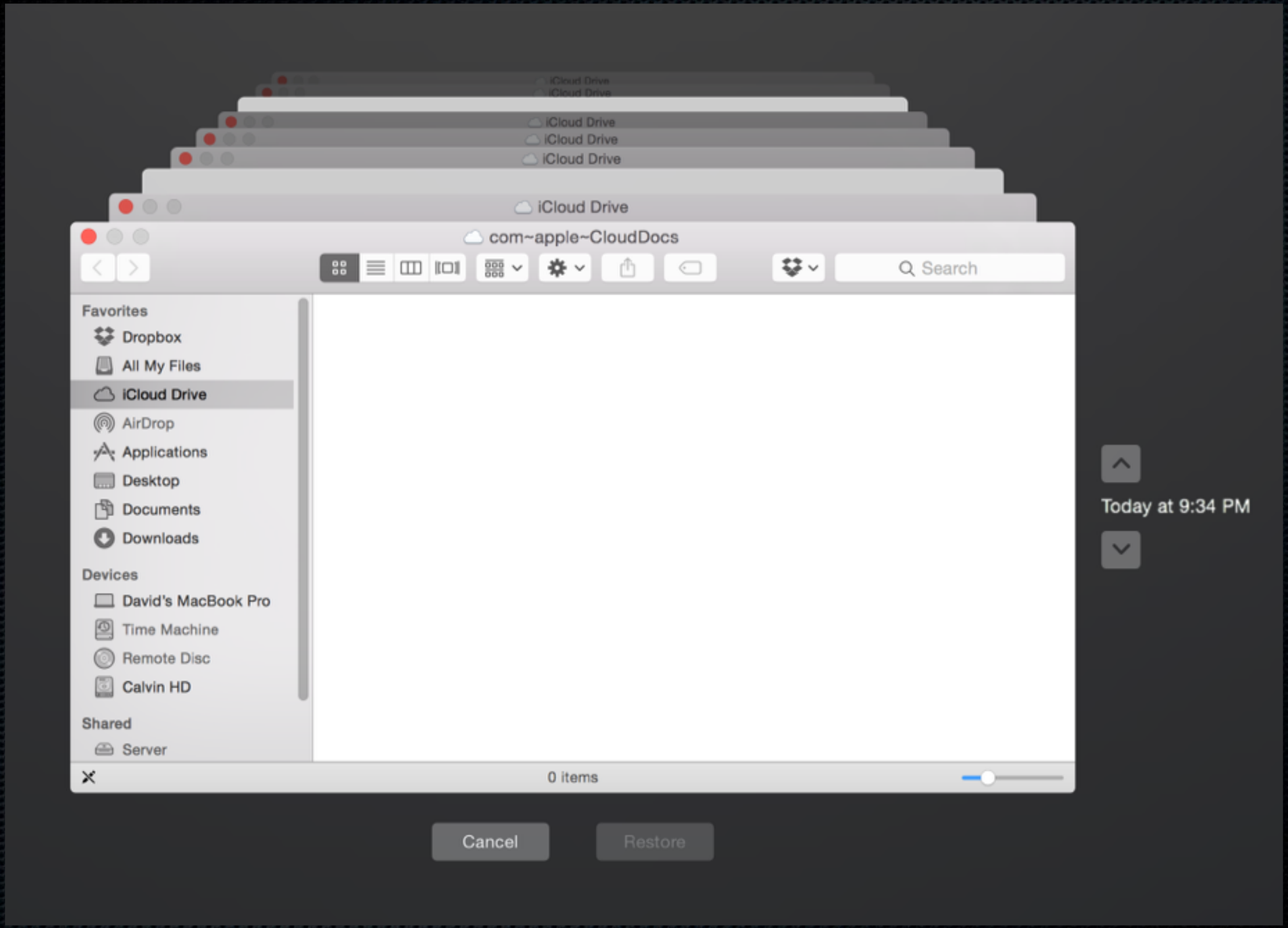
- iCloud Drive lives and dies by port 80 & 443
- Just as with iCloud, be aware of proxies/DNS issues

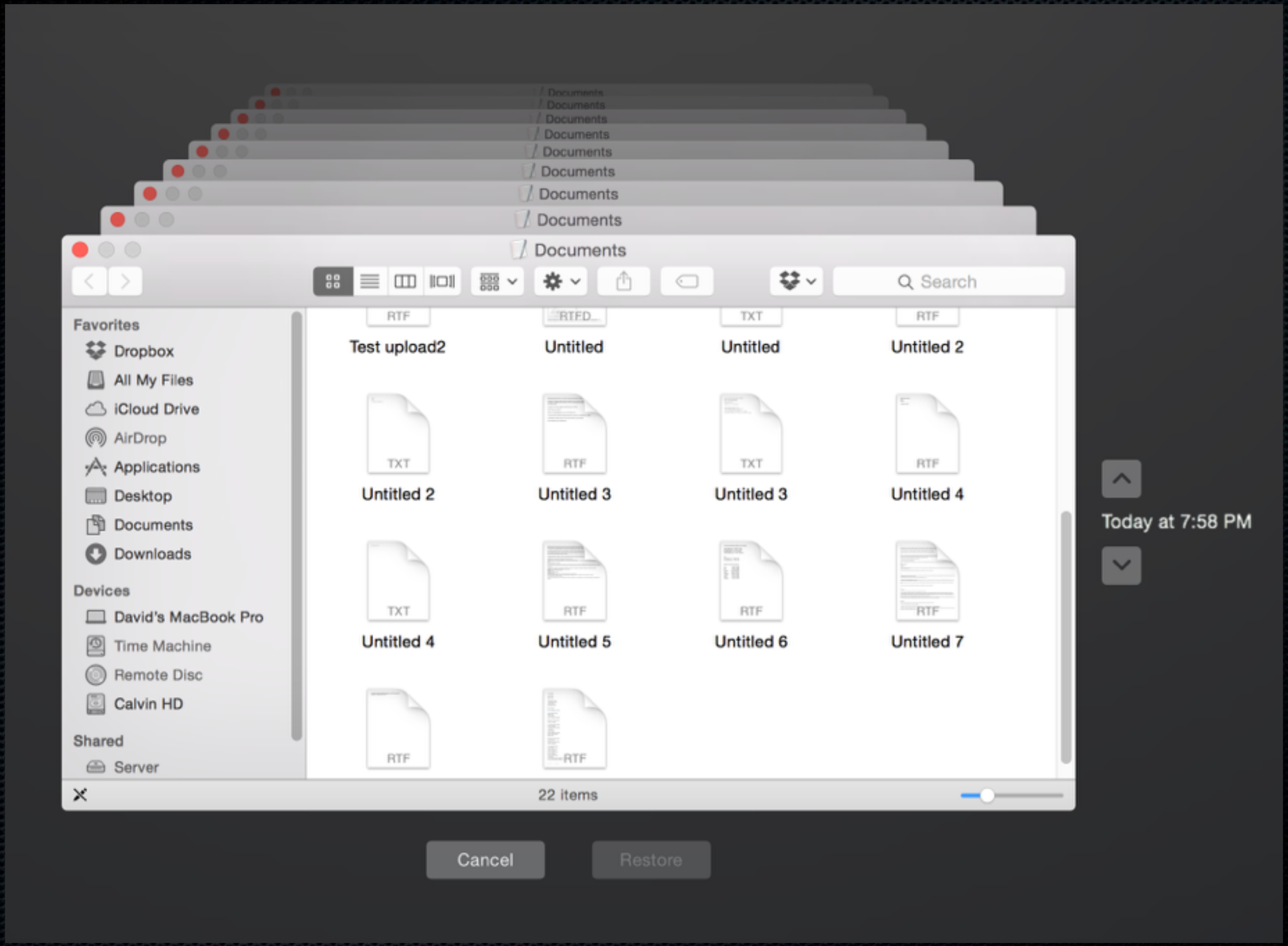
Check Processes & Permissions

- Beware runaway processes (`bird/cloudd/nsurlsessiond`)
- Sync failures trend with ~/Library permissions issues
- File sizes - iCloud Drive limit of 15GB

iCloud Drive & Time Machine


com~apple~CloudDocs
iCloud Drive
iCloud Drive
com~apple~CloudDocs
com~apple~CloudDocs
iCloud Drive
iCloud Drive
iCloud Drive
iCloud Drive
Search
Favorites
Dropbox
All My Files
iCloud Drive
AirDrop
Applications
Desktop
Documents
Downloads
Devices
David's MacBook Pro
Time Machine
Remote Disc
Calvin HD
Shared
Server
Keynote
TextEdit
Pages
Numbers
Pixelmator
5 items, 412.44 GB available
Today (Now)
Cancel
Restore


iCloud Drive
iCloud Drive
iCloud Drive
iCloud Drive
iCloud Drive
iCloud Drive
com~apple~CloudDocs
Search
Favorites
Dropbox
All My Files
iCloud Drive
AirDrop
Applications
Desktop
Documents
Downloads
Devices
David's MacBook Pro
Time Machine
Remote Disc
Calvin HD
Shared
Server
0 items
Today at 9:34 PM
Cancel
Restore


Documents
Documents
Documents
Documents
Documents
Documents
Documents
Documents
Search
Favorites
Dropbox
All My Files
iCloud Drive
AirDrop
Applications
Desktop
Documents
Downloads
Devices
David's MacBook Pro
Time Machine
Remote Disc
Calvin HD
Shared
Server
RTF
Test upload2
Untitled
TXT
Untitled
RTF
Untitled 2
TXT
Untitled 2
RTF
Untitled 3
TXT
Untitled 3
RTF
Untitled 4
TXT
Untitled 4
RTF
Untitled 5
RTF
Untitled 6
RTF
Untitled 7
RTF
RTF
22 items
Today at 7:58 PM
Cancel
Restore

Third Party backups

- Rocky start, but most utilities (Crashplan, Backblaze etc will backup `~/Library/Mobile Documents`.
- Just like Time Machine, you may have to do some digging into those App Libraries.
- Think about what you're putting back - it will sync to all the devices.

Is it safe to use yet?

Yes *

* Your mileage may vary.

http://support.apple.com/en-us/HT201104
http://support.apple.com/en-us/HT204025
http://support.apple.com/en-us/HT201385
http://www.apple.com/legal/internet-services/icloud/en/terms.html