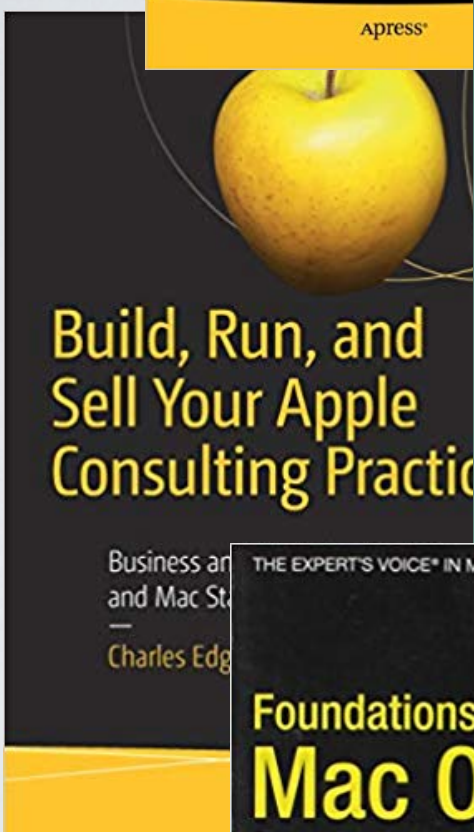
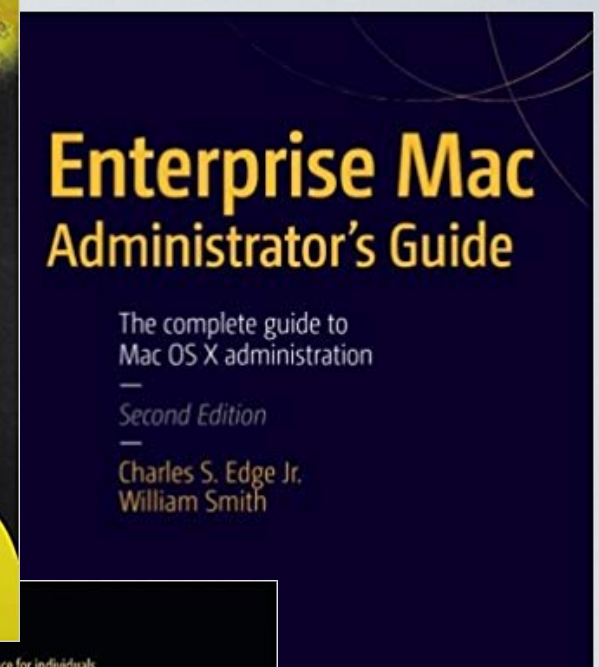
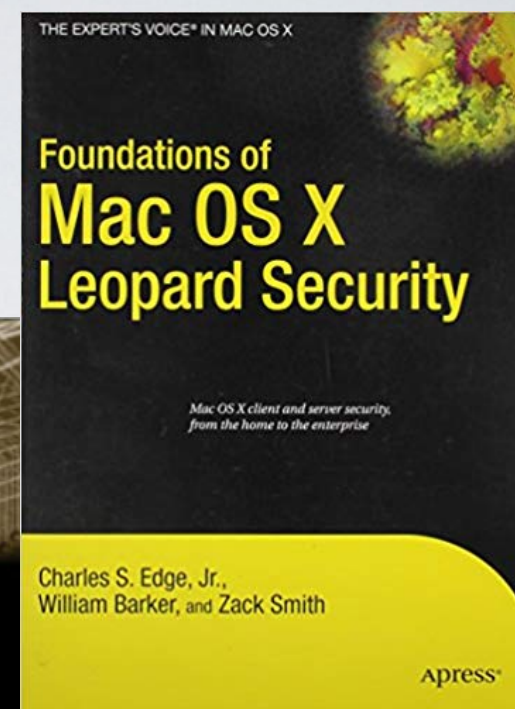
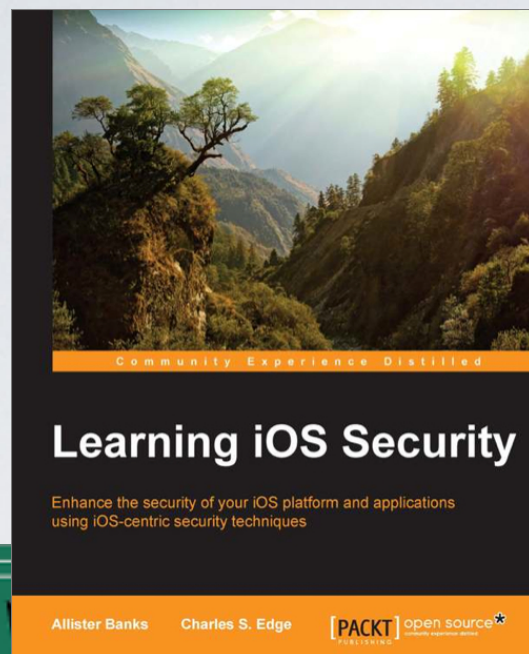
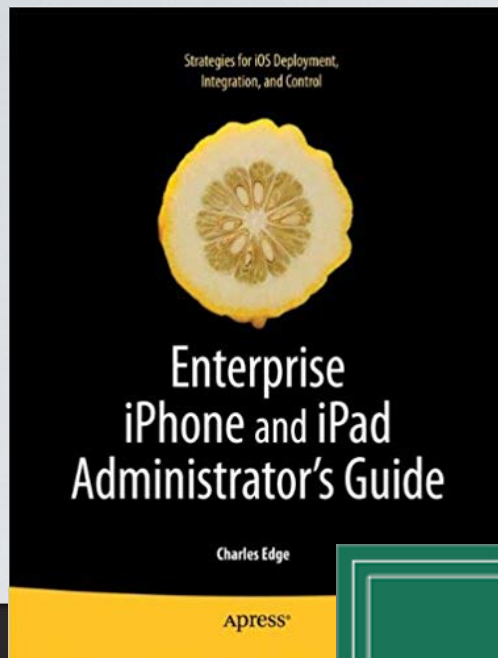


# MIGRATING FROM MACOS SERVER

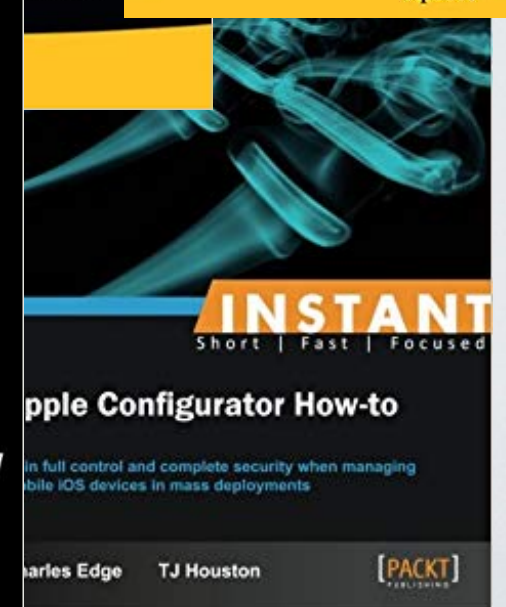
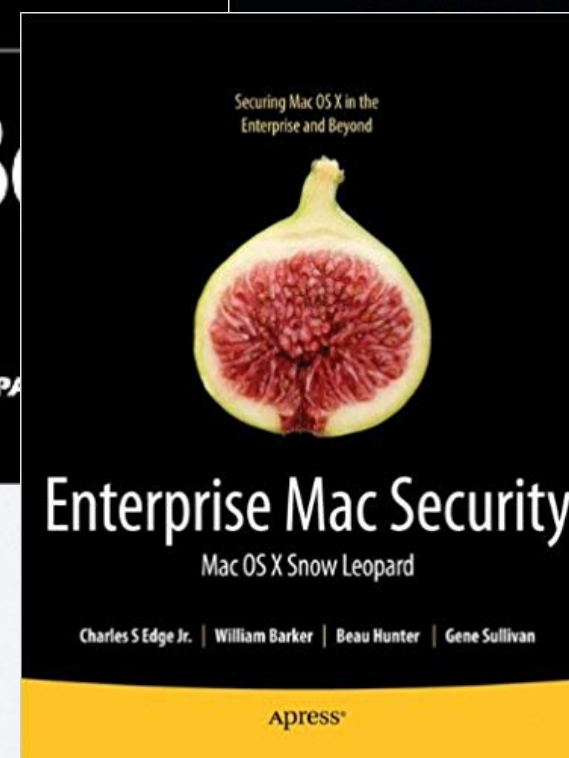
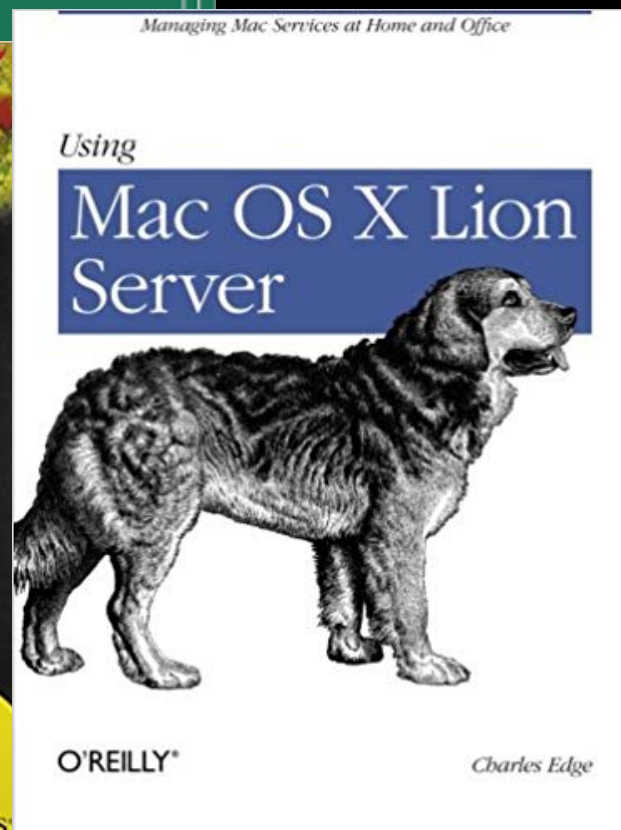
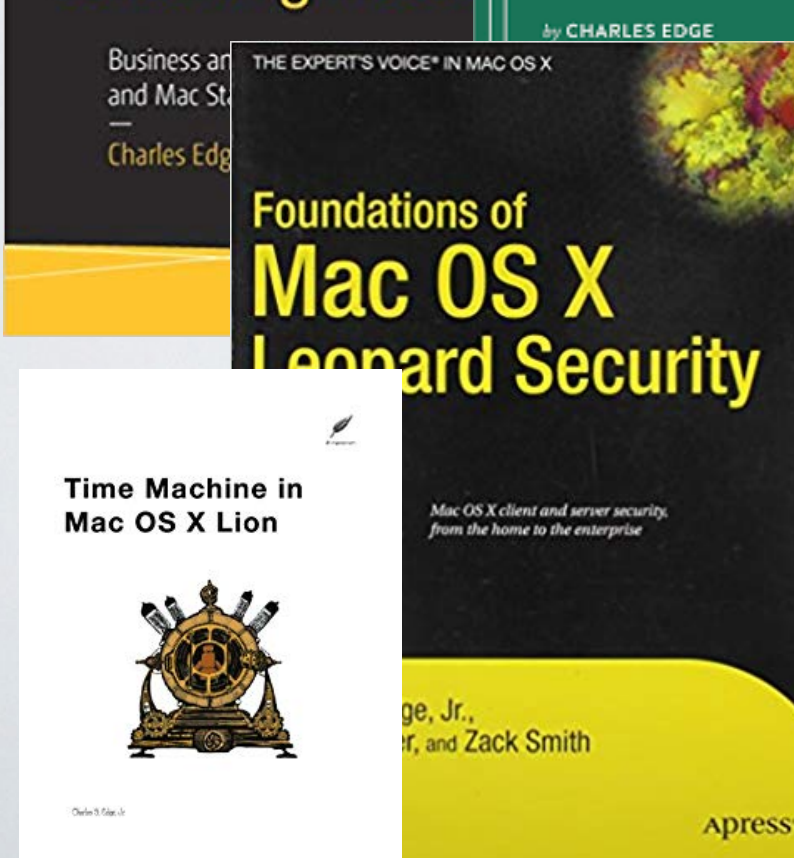
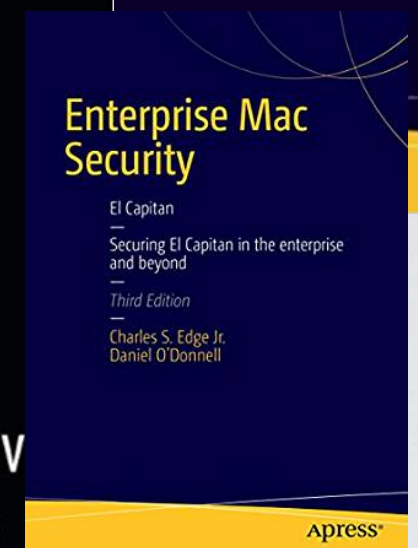
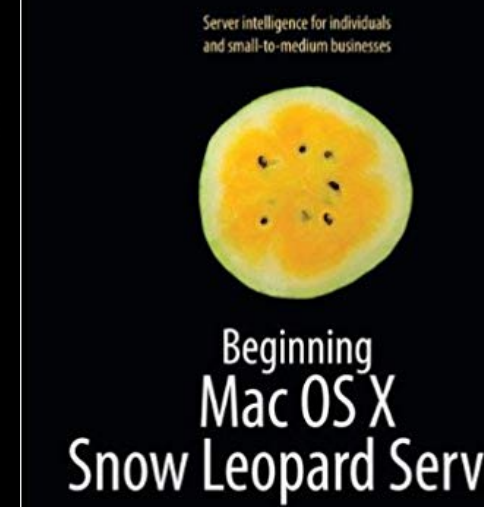
Charles Edge

THANK YOU FOR 10  
AWESOME YEARS!





# Mac Tiger Server



Time Machine in Mac OS X Lion



Charles S. Edge Jr.



THIS PRESENTATION BREAKS  
MY HEART  
(A LITTLE)



# Digging into the data

Rhapsody	Mac Server 1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	10.1	10.11	10.12
10	9	13	15	19	24	24	22	18	21	21	21	21
AppleShare	AFP	AFP	AFP	AFP	AFP	AFP	AFP	AFP	AFP	AFP	AFP	AFP
NFS	NFS	NFS	NFS	NFS	NFS	NFS	NFS	NFS	NFS	NFS	NFS	NFS
Web	Web	Web	Web	Web	Web	Web	Web	Websites	Websites	Websites	Websites	Websites
NetInfo	NetInfo	Directory Server	Open Directory	Open Directory	Open Directory	Open Directory	Open Directory	Open Directory	Open Directory	Open Directory	Open Directory	Open Directory
NetBoot	NetBoot	NetBoot	NetBoot	NetBoot	NetBoot	NetBoot	NetBoot	NetInstall	NetInstall	NetInstall	NetInstall	NetInstall
FTP	FTP	FTP	FTP	FTP	FTP	FTP	FTP	FTP	FTP	FTP	FTP	FTP
		Windows	Windows	Windows	SMB	SMB	SMB	SMB	SMB	SMB	SMB	SMB
		Mail	Mail	Mail	Mail	Mail	Mail	Mail	Mail	Mail	Mail	Mail
		DNS	DNS	DNS	DNS	DNS	DNS	DNS	DNS	DNS	DNS	DNS
		DHCP	DHCP	DHCP	DHCP	DHCP	DHCP		DHCP	DHCP	DHCP	DHCP
			VPN	VPN	VPN	VPN	VPN	VPN	VPN	VPN	VPN	VPN
				Software Updates	Software Updates	Software Updates	Software Updates	Software Updates	Software Updates	Software Updates	Software Updates	Software Updates
				iChat	iChat	iChat	iChat	Messages	Messages	Messages	Messages	Messages
					iCal	iCal	iCal	Calendar	Calendar	Calendar	Calendar	Calendar
					Wiki	Wiki	Wiki	Wiki	Wiki	Wiki	Wiki	Wiki
						Address Book	Address Book	Contacts	Contacts	Contacts	Contacts	Contacts
							Time Machine	Time Machine	Time Machine	Time Machine	Time Machine	Time Machine
							Profile Manager	Profile Manager	Profile Manager	Profile Manager	Profile Manager	Profile Manager
								Xsan	Xsan	Xsan	Xsan	Xsan
									Caching	Caching	Caching	Caching
									Xcode	Xcode	Xcode	Xcode
Macintosh Manager	Macintosh Manager											
Web Objects	Web Objects			Web Objects	Web Objects							
			Application Server	Application Server	Tomcat	Tomcat						
Print		Print	Print	Print	Print	Print						
QTSS	QTSS	QTSS	QTSS	QTSS	QTSS	QTSS						
		NAT	NAT	NAT	NAT	NAT		NAT				
				Xgrid	Xgrid	Xgrid		Xgrid				
					RADIUS	RADIUS		RADIUS				
					Podcast	Podcast		Podcast				
						Mobile Access						
					MySQL							

[Mac](#)[iPad](#)[iPhone](#)[Watch](#)[TV](#)[Music](#)[Support](#)

## Prepare for changes to macOS Server 5.7.1

As hosted services have become widespread—and the need to keep software up to date is more important than ever—Apple is making some changes to macOS Server.

### Learn about current and future support

Apple continues to develop and support macOS Server, which includes Open Directory, Profile Manager, and Xsan management. The most popular server features—Caching Server, File Sharing Server, and Time Machine Server—have been bundled with every installation of macOS High Sierra since its release in fall 2017, so that even more customers have access to these essential services at no extra cost.

Starting with macOS Server 5.7.1, Apple no longer bundles open source services such as Calendar Server, Contacts Server, the Mail Server, DNS, DHCP, VPN Server, and Websites with macOS Server. Customers can get these same services directly from open-source providers. This way, macOS Server customers can install the most secure and up-to-date services as soon as they're available.

Apple has published [documentation to help with this transition](#).

### Services included in macOS Server 5.7.1

The following services are included and fully supported in macOS Server 5.7.1:

# APPLE ANNOUNCED A THING

<https://support.apple.com/en-us/HT208312>



# WHY ISN'T THIS A BIG DEAL?

- Most organizations had already abandoned Apple servers for critical services
- Apple is focused on the clients
- Most MacAdmins focused on the clients
- With Apple's explosive growth our jobs are all safe

# THERE ARE ALTERNATIVES NOW

- The all-in-one server appliance market has become commoditized
- I wrote about Synology (Buffalo, NetGear, etc)
- Some people had bad experiences with Synology
- Many other alternatives, but do you want to host your own servers now?





# macOS Server

## Service Migration Guide v1.2

June 2018

# APPLE MADE A GUIDE

[https://developer.apple.com/support/macos-server/  
macOS-Server-Service-Migration-Guide.pdf](https://developer.apple.com/support/macos-server/macOS-Server-Service-Migration-Guide.pdf)

# THIS TIME WE GOT A GUIDE!

- Xgrid
- Podcast Producer
- Web Objects
- QuickTime Streaming Services
- Mobile Access
- Xcode
- Print Server



## A Service-By-Service Guide For Moving Away From macOS Server

I've been making guides to macOS Server since Server 2:

- [Mountain Lion Server \(Server 2\)](#)
- [Yosemite Server \(Server 3\)](#)
- [Mavericks Server \(Server 4\)](#)
- [OS X Server 5 \(for El Capitan\)](#)
- [macOS Server 5.2 \(for macOS Sierra\)](#)
- [macOS Server 5.4 \(for High Sierra\)](#)

And along the way, I've also sold plenty of books on Mac Servers and gotten a lot of opportunities I might not have gotten otherwise. So thank you to everyone for joining me on that journey. After teaching so many how to use the services that Apple made available in their server operating system, when they announced they'd no longer be making many of the services my readers have grown dependent upon, I decided to start working on a guide on moving away from macOS Server.

- [macOS Server Changes Coming Soon To A Server Near You](#)
- [A list of other services and tools available for the Apple platform](#)
- DNS and Network Services
  - [Export DNS Settings and Records So they Can Be Run without macOS Server](#)
  - [Run A DNS Server On Your Mac Without macOS Server](#)
  - [Manage DNS Services on Windows Servers](#)
  - [Install And Manage DHCP Services On A Mac](#)
- Time Machine

Search



CAPE AND TIGHTS  
NOT INCLUDED  
*Switch from reactive to  
PROACTIVE support*

# I MADE A GUIDE

<http://krypted.com/mac-os-x-server/service-service-guide-moving-away-macos-server/>

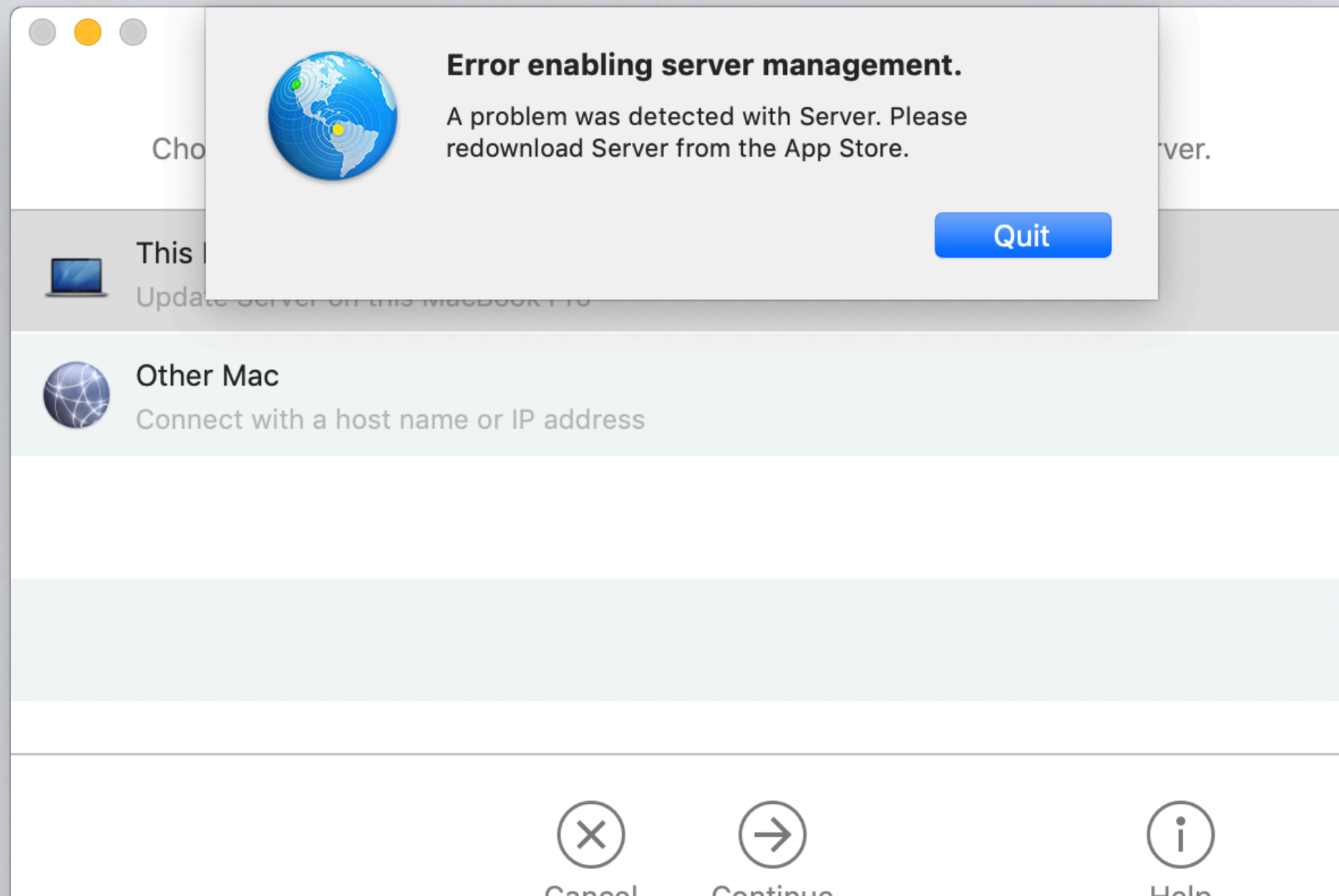
# BEFORE YOU TOUCH ANYTHING

- Don't upgrade
- Make an image of the system
- Backup the settings for every service:
  - `sudo serveradmin settings dns > test.dns`
  - Test the imports
  - Verify client settings don't need to change



# RETHINK ALL THE THINGS

- 10 Should you be running your own server?
- 20 If you said yes, goto 10
- 30 End
- If you Open-Apple-X then OK, let's do this...



MEANS DELETE AND RE-ADD

Errors...



Server Info

Server

486.8 MB

Modified: Today, 9:46 AM

Add Tags...

General:

Kind: Application

Size: 486,845,205 bytes (209.8 MB on disk)

Where: Macintosh HD ▸ Applications

Created: September 12, 2018 at 11:12 AM

Modified: September 28, 2018 at 9:46 AM

Version: 5.6.3

Copyright: © 2001–2018 Apple Inc. All Rights Reserved.

☐ Open in Low Resolution

☐ Locked

More Info:

Last opened: Sep 28, 2018 at 10:15 AM

Name & Extension:

Server.app

☒ Hide extension

Comments:

Preview:

Sharing & Permissions:

You have custom access

Name	Privilege
system	Read & Write
wheel	Read only
everyone	Read only

+ | - ⚙

macOS Server

Discover

Create

Work

Play

Develop

Categories

Updates 1

krypted@mac.com

macOS Server

Utilities

Apple

OPEN

1.7

★ ★ ☆ ☆ ☆

185 Ratings

#6

Utilities

4+

Age

This version of Server is no longer supported on this version of macOS.

Visit the App Store to get the latest version of Server.

Open App Store...

OK

Preview

MacBook

Overview Settings Storage Access

Host Name: MacBook.local

Computer Name: MacBook

Internet: Reachable at 192.168.168.1

Running for: 25 minutes

Version: macOS 10.13.4 (Build 17E182a)

Server 5.5.55 (Build 1752088)

Network interfaces: Wi-Fi 192.168.168.1

Users

Name	Account	Type
Beth Duarte	bethduarte	
Chella Boehm	chellaboehm	
Dave Elving	daveelving	
Emily Bergendahl	emilybergendahl	
Fritz Ogden	fritzogden	
Gilbert Solano	gilbertsolano	
Hayden Jones	haydenjones	
Ivy Calhoun	ivycalhoun	
Kevin Frank	kevinfrank	
Lars Wilson	larswilson	

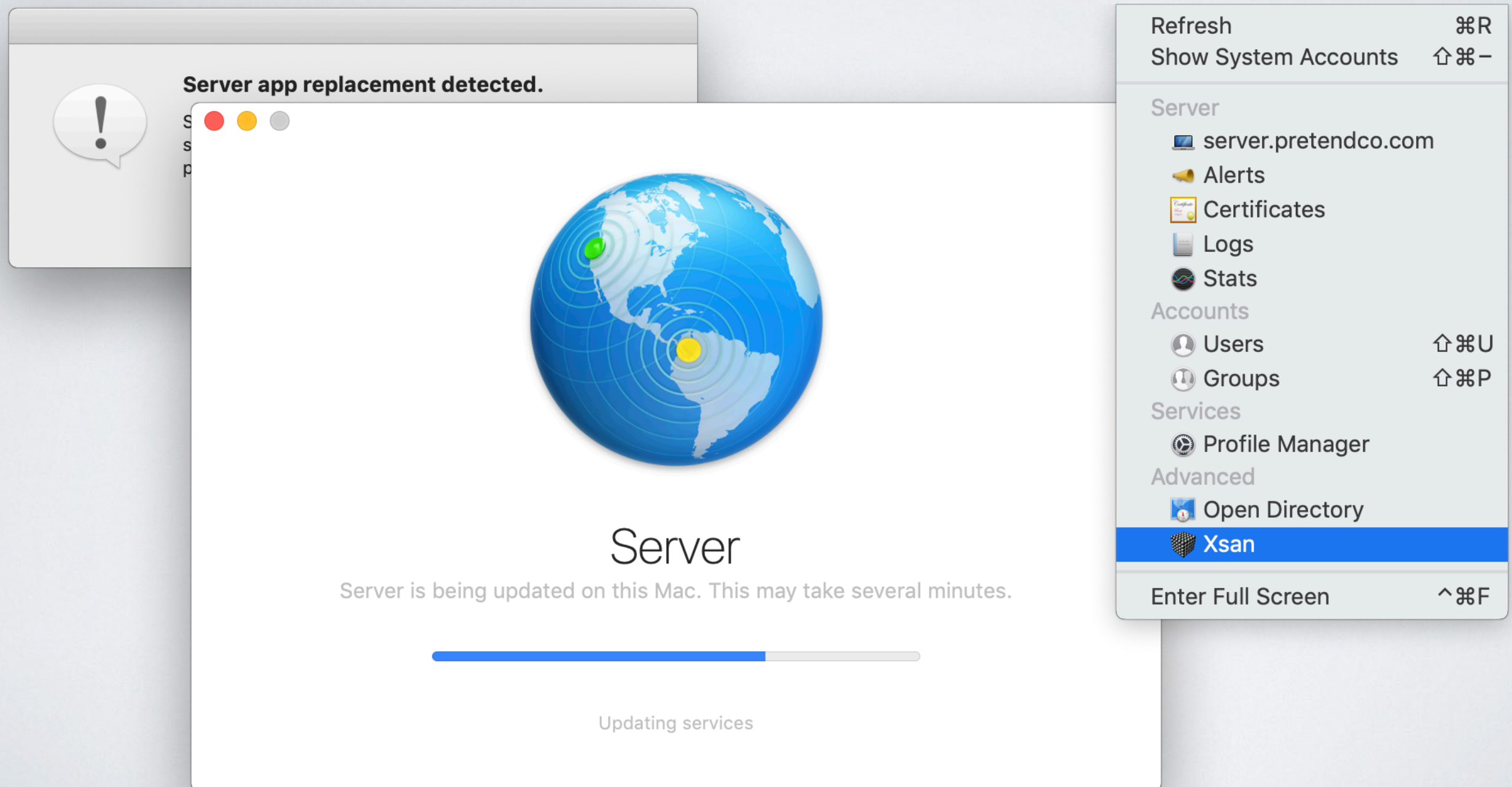
macOS Server makes it easy to configure and monitor Mac, iPhone, iPad, and Apple TV devices and

Apple

# APPLE'S ATTENTION TO DETAIL



# THE “UPGRADE” PROCESS



Server

server.pretendco.com

Alerts

Certificates

Logs

Stats

Accounts

Users

Groups


Services

Profile Manager

Advanced

Open Directory


Xsan

Open Directory

ON


Status: ● Available at server.pretendco.com  
[Learn about configuring this service](#)

Servers:

Name	Type	Addresses
 server.pretendco.com	Master	10.0.0.124

+

−


⌵

Locales:

Locale	Type
Default Locale	All Networks

+

−



SERVER

No Hidden Services



WHO IS KEEPING A 10.13  
SERVER AROUND?

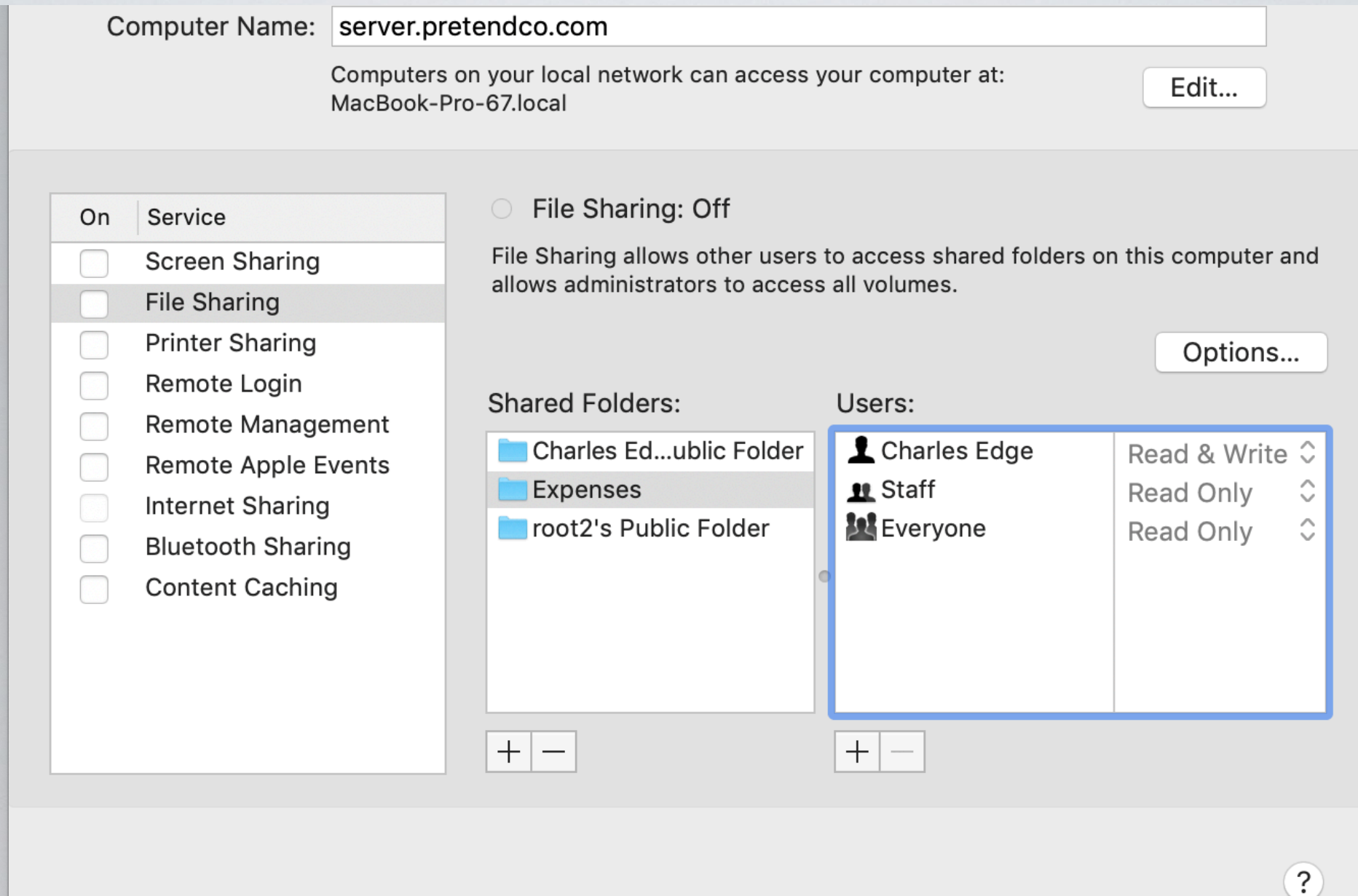
# WHAT'S LEFT?

- Profile Manager
- Open Directory
- Xsan



# MOVED TO THE OS

- File Server
- Caching Server
- Time Machine Server



# FILE SHARING

Same File Sharing service as before



# AFP AND SMB

- Less options than with serveradmin
- No DAV/FTP in the GUI
- Can still use the **sharing** command
- Manually set NFSHomeDirectory to do network homes (ugh)

☐ Share files and folders using SMB  
File Sharing: Off

☐ Share files and folders using AFP  
File Sharing: Off

Windows File Sharing:

Sharing files with some Windows computers requires storing the user's account password on this computer in a less secure manner. When you enable Windows sharing for a user account, you must enter the password for that account.

On	Account
<input type="checkbox"/>	root2
<input type="checkbox"/>	meh
<input checked="" type="checkbox"/>	Charles Edge
<input checked="" type="checkbox"/>	com.apple.calendarserver

? Done

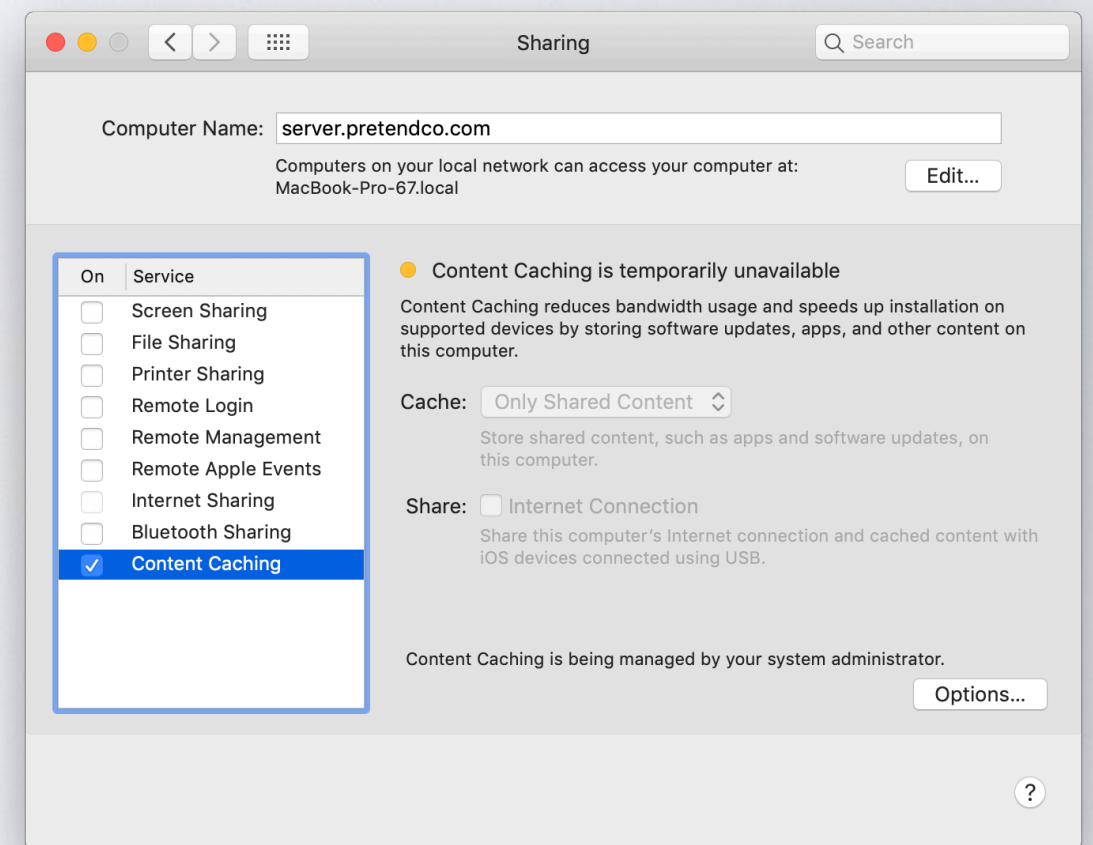
# TIME MACHINE

- Time Machine Server was moved to the client
- You could also use Code42, Backblaze, Carbonite, ARQ, Acronis, or many others
- Restoring a machine to a given state (not called imaging)?
- <http://krypted.com/mac-os-x/ins-outs-using-tmutil-backup-restore-review-time-machine-backups/>



# CACHING

- Most of the features from macOS Server
- Can also share the internet connection
- LaunchDaemon: `/System/Library/com.apple.AssetCache.builtinfo.plist`
- Most organizations so far want to lock standard users out



# ASSETCACHE.PLIST

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
  <key>Activated</key>
  <false/>
  <key>CacheLimit</key>
  <integer>0</integer>
  <key>DataPath</key>
  <string>/Library/Application Support/Apple/AssetCache/Data</string>
  <key>LastPort</key>
  <integer>55813</integer>
  <key>LocalSubnetsOnly</key>
  <true/>
  <key>PeerLocalSubnetsOnly</key>
  <true/>
  <key>Port</key>
  <integer>0</integer>
  <key>ReservedVolumeSpace</key>
  <integer>2000000000</integer>
  <key>SavedCacheDetails</key>
  <dict/>
  <key>SavedCacheSize</key>
  <integer>0</integer>
  <key>ServerGUID</key>
  <string>5604A5C8-D997-4EF2-B34B-60EF3B4A4C50</string>
  <key>Version</key>
  <integer>1</integer>
</dict>
</plist>
```



# ASSETCACHEMANAGERUTIL

- /usr/bin/AssetCacheManagerUtil Settings

```
2018-09-30 19:17:37.432 AssetCacheManagerUtil[83029:1716610] Content caching settings: {
    AllowPersonalCaching = 1;
    AllowSharedCaching = 1;
    AllowTetheredCaching = 0;
    CacheLimit = 0;
    DataPath = "/Library/Application Support/Apple/AssetCache/Data";
    ListenRangesOnly = 0;
    LocalSubnetsOnly = 1;
    ParentSelectionPolicy = "round-robin";
    PeerLocalSubnetsOnly = 1;
}
```

# ASSETCACHE AUTOMATION

- /usr/bin/AssetCacheManagerUtil verbs
  - activate, deactivate, isActivated, canActivate, flushCache, flushPersonalCache, flushSharedCache, status, settings, reloadSettings, moveCacheTo, absorbCacheFrom
- /Library/Application Support/Apple/AssetCache/Data/AssetInfo.db



# WORKING ON UPDATING PRECACHE

<https://github.com/krypted/precache>

# MOVED TO OS MEANS...

- A few less GUI controls but easier to use
- Most of the command line options are still there
- Stopgaps: R.I.P. File Server, Caching Server, and Time Machine Server



# WHAT'S GONE

- DHCP

- DNS

- FTP

- VPN

- Mail Server

- Contacts

- Calendar

- **RADIUS**

- Messages

- NetBoot

- **Firewall**

- Airport

- WebDAV

- Wiki

AIRPORT



# FTP

- Born in 1971 - That's 9,673 in protocol years
- Apple bashed the security of FTP for years
- Seriously though, it's older than I am (and I'm old)
- Although... It does have better auth than DEP...

# FIREWALL

- Still shows in serveradmin but...
- serveradmin status firewall results in firewall:error = "UNEXPECTED\_COMMAND"
- Because /Applications/Server.app/Contents/ServerRoot/usr/libexec/afctl -f doesn't start pf
- The bits are still there I suppose...



DNS

# EXPORTING DNS SETTINGS

- `/Applications/Server.app/Contents/ServerRoot/System/Library/PrivateFrameworks/DNSManager.framework/dnsconfig` list
- For each entry, grab the named files:
  - `cat /Library/Server/named/db.test.com`

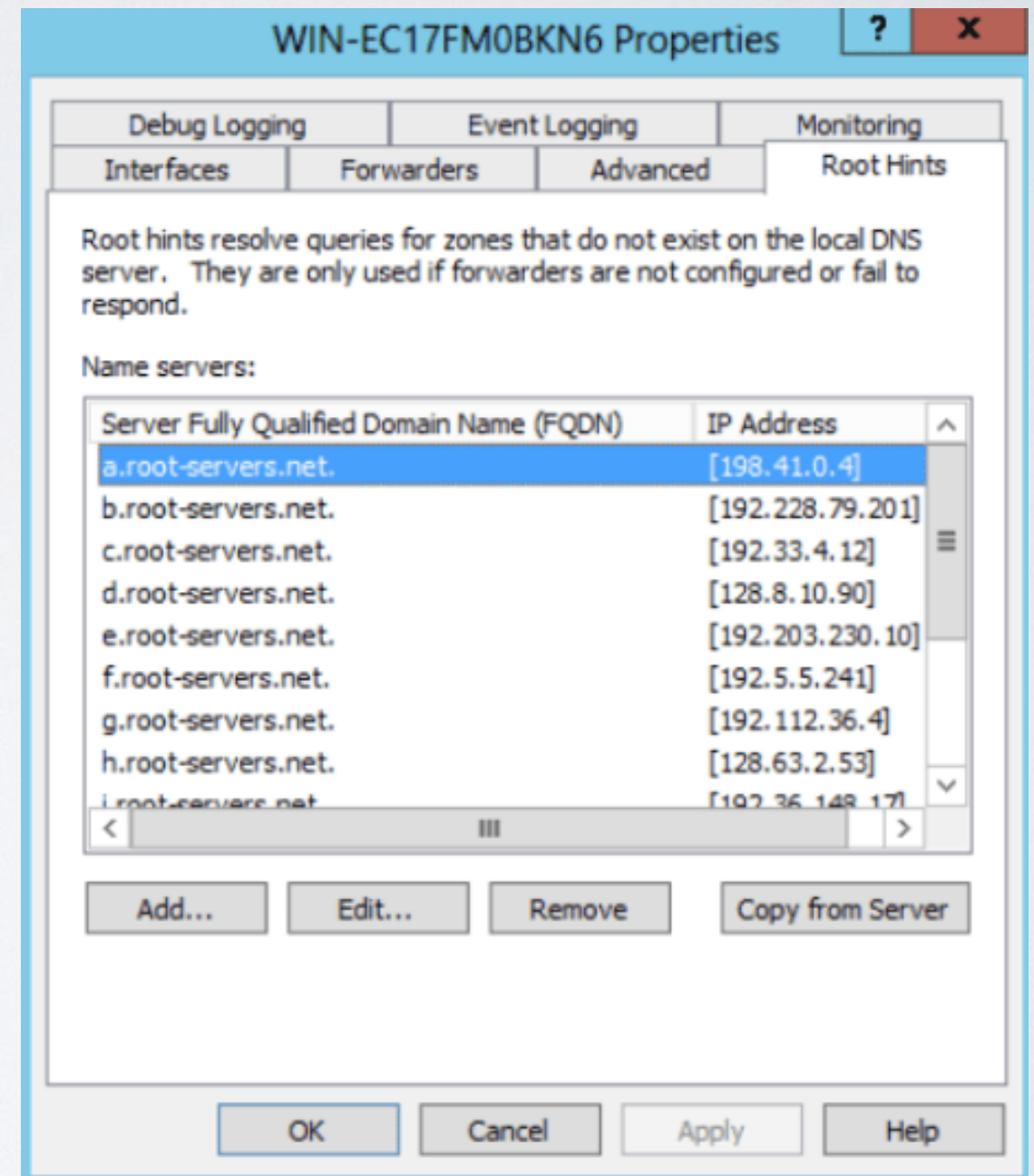


# INSTALL YOUR OWN BIND

- `./configure --enable-symtable=none --infodir="/usr/share/info" --sysconfdir="/etc" --localstatedir="/var" --enable-atomic="no" --with-gssapi=yes --with-libxml2=no`
- `make ; make install`
- `chmod root:wheel /Library/LaunchDaemons/org.isc.named.plist`
- `launchctl load -w /Library/LaunchDaemons/org.isc.named.plist`

# OR USE WINDOWS

- An intuitive GUI
- Active Directory Integrated Zones
- Bind Views in the GUI
- API and CLI-only servers if you just can't stand to look at Windows




# OR USE A SYNOLOGY


- An acceptable GUI
- Similar to the look and feel of macOS Server
- Inexpensive network appliance

**Edit Resource Record**

Create ▾EditDelete

 Search

Name	Type	TTL	Information	
CNAMEtest.test.com.	CNAME	86400	test.test.com.	
ns.test.com.	A	86400	192.168.0.52	
test.com.	NS	86400	ns.test.com.	
test.test.com.	MX	43200	0 test.com.	
test.test.com.	A	86400	10.0.0.1	

5 item(s) 

Finish



# DNS IN THE CLOUD

- I'm not sold
- Some services support VLANs bridged to a cloud provider
- If you have no servers left then you might not need internal DNS at all

DHCP

# EXPORT OLD SETTINGS

- `/Applications/Server.app/Contents/ServerRoot/usr/sbin/serveradmin settings dhcp`
- Thinking of setting up a DHCP server on the old macOS Server? Don't.
- Use a network appliance or a purpose-built Windows or Linux server instead.



OPEN DIRECTORY

# CHOICES, CHOICES...

- What are you trying to get out of a directory service?
- Are your services moving online?
- The new SSO and directory services.
- Okta, Ping, Azure, etc.
- Hybrids.

# BEFORE YOU START

- Still needed for Xsan
- Find the input to your new system (e.g. ldif, csv, etc)
  - CSV: <https://github.com/krypted/swift-ldif-csv>
  - LDIF: <https://support.microsoft.com/en-us/help/555636>



# BEFORE YOU START

- Still needed for Xsan
- Find the input to your new system (e.g. ldif, csv, etc)
  - CSV: <https://github.com/krypted/swift-ldif-csv>
  - LDIF: <https://support.microsoft.com/en-us/help/555636>
- Passwords

# STRATEGIES FOR DEALING WITH PASSWORDS

- Capture in a form, validate while the password is in the clear, and create an account.
- Have users create an account manually.
- Generate on the fly and message passwords to users.
- Don't forget to sync/update!
- *Note: This is a once every 10 or 20 years task*

# ETL

- Extract: `sudo slapconfig -backupdb ~/Desktop/slapexport/`
- Transform: `ldif_to_csv -csv ~/Desktop/OD.csv ~/Desktop/slapexport/backup.ldif`
- Load to Linux: `./hsqldb --import OD.csv.` \*
- Load to AD: `Import-CSV C:\OD.csv | New-ADUser`

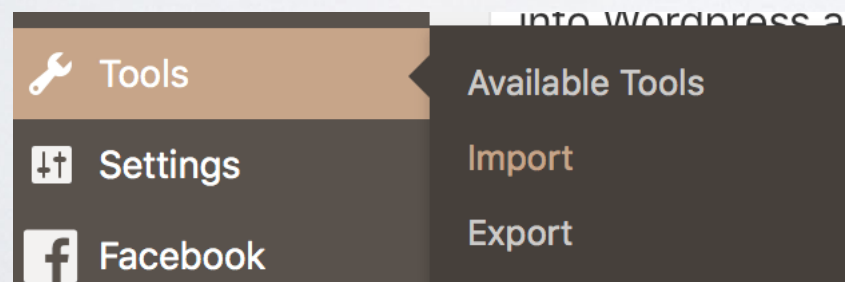
\* <https://lsc-project.org/documentation/tutorial/csvtoldap>



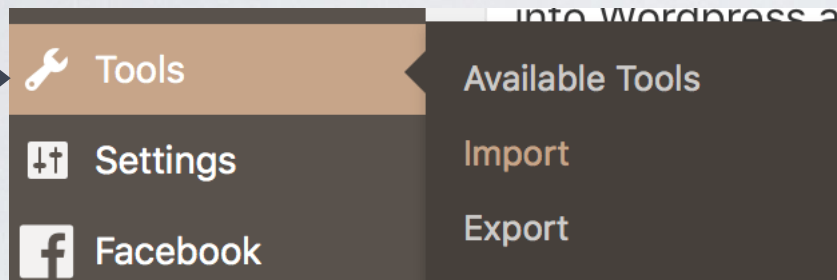
WIKI

# MIGRATE TO WORDPRESS

- `sudo /Applications/Server.app/Contents/ServerRoot/usr/bin/wikiadmin export -name Legal -format wxr -path /exports`
- `chmod` or `chown`



# IMPORT TO WORDPRESS



## Import

If you have posts or comments in another system, WordPress can import those into this site. To get started, choose a system to import from below:

<b>Blogger</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Import posts, comments, and users from a Blogger blog.
<b>Blogroll</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Import links in OPML format.
<b>Categories and Tags Converter</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Convert existing categories to tags or tags to categories, selectively.
<b>LiveJournal</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Import posts from LiveJournal using their API.
<b>Movable Type and TypePad</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Import posts and comments from a Movable Type or TypePad blog.
<b>RSS</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Import posts from an RSS feed.
<b>Tumblr</b> <a href="#">Install Now</a>   <a href="#">Details</a>	Import posts & media from Tumblr using their API.
<b>WordPress</b> <a href="#">Run Importer</a>	Import posts, pages, comments, custom fields, categories, and tags from a WordPress export file.

If the importer you need is not listed, [search the plugin directory](#) to see if an importer is available.

---

Howdy! Upload your WordPress eXtended RSS (WXR) file and we'll import the posts, pages, comments, custom fields, categories, and tags into this site.

Choose a WXR (.xml) file to upload, then click Upload file and import.

Choose a file from your computer: (Maximum size: 20 MB)  no file selected



# NOT USING WORDPRESS

- json is the standard for most web services
- `sudo /Applications/Server.app/Contents/ServerRoot/usr/bin/wikiadmin export -all -format json -path /exports`
- Interns...

WEBSITES

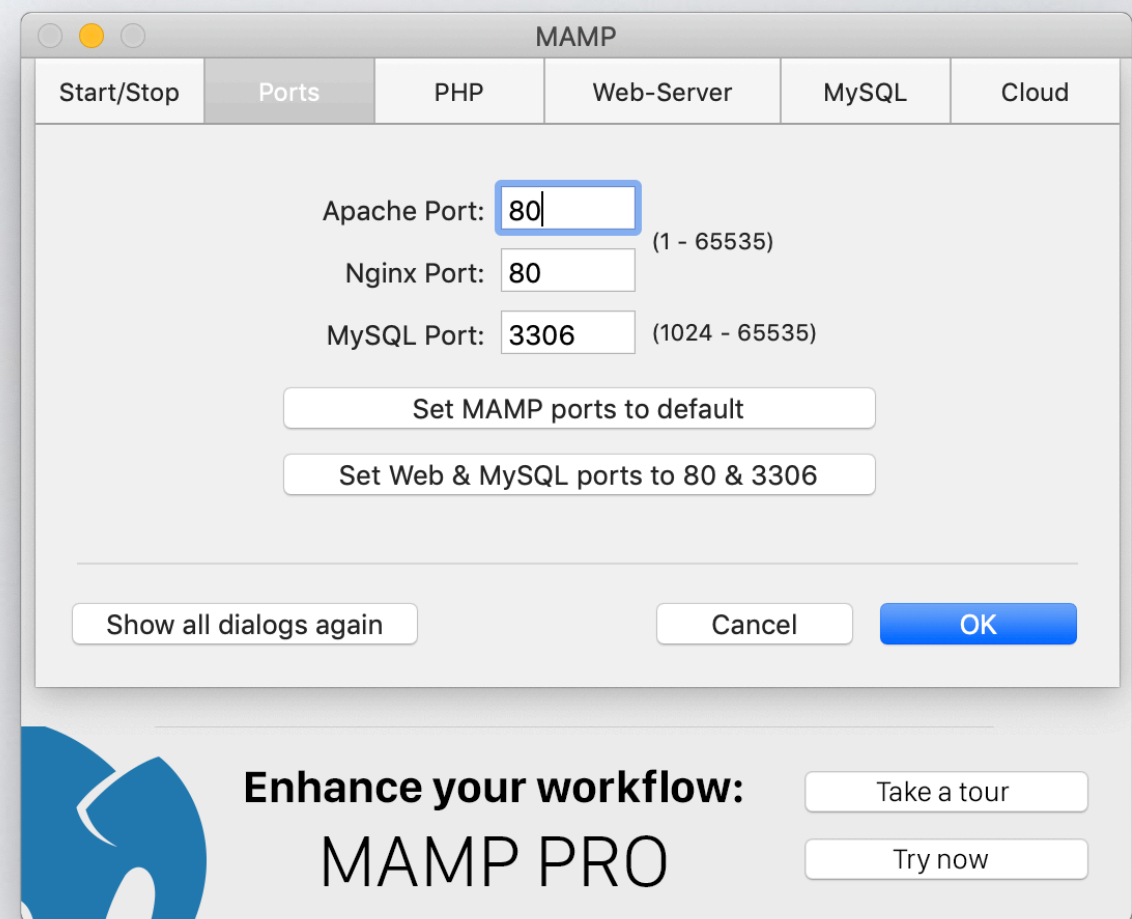
# EXPORT SETTINGS

- `sudo serveradmin settings web`
- Per domain: `cat /Library/Server/Web/Config/apache2/sites/0000_any_80_blog.krypted.com.conf`
- Rebuild settings manually with output of the conf file (avoids problems with listing)
- `/Library/Server/Web/Data/Sites/blog.krypted.com`



# MAMP

- Simple to manage
- As stable as macOS
- Can copy/paste settings into config files from macOS Server
- Easy certificate installation and simple SQL
- Can sync with the mamp cloud



WEBDAV

# MOVE SHARES AND FILES

- Backup settings: server admin settings sharing
- `/usr/sbin/sharing -l`
- Usually a good chance to review that the files have the right permissions
- You can move stuff into a dropbox, box, google drive folder, and let them sync then share them



# CONTACTS

# CLIENT SIDE SCRIPTING

- Oh client side scripting how I loathe thee
- You can just export them from Contacts.app
- Applescript Export: <https://apple.stackexchange.com/questions/70281/how-to-export-address-book-to-mailchimp-or-csv-file>

# EXPORT

```
#!/bin/bash
```

```
tables=`sqlite3 $1 "SELECT tbl_name FROM sqlite_master WHERE type='table' and tbl_name not like 'sqlite_%';"`
```

```
for table in $tables; do
```

```
sqlite3 $1 <<!
```

```
.headers on
```

```
.mode csv
```

```
.output $table.csv
```

```
select * from $table;
```

```
!
```

```
done
```



# BUT HAVE FUN WITH THIS...

- ZABCDALERTTONE
- ZABCDCALENDARURI
- ZABCDCONTACTDATE
- ZABCDCONTACTINDEX
- ZABCDCUSTOMPROPERTY
- ZABCDCUSTOMPROPERTYVALUE
- ZABCDDATECOMPONENTS
- ZABCDDELETEDRECORDLOG
- ZABCDDISTRIBUTIONLISTCONFIG
- ZABCDEMAILADDRESS
- ZABCDLIKENESS

# CALENDARS

# MIGRATE CALENDARS

- Each calendar stored in `~/Library/Calendars/*.caldav` where GUID makes it  
`1CD6F849-2E18-4A4E-98FD-776C453A2CCF.caldav`
- Manually move each: <https://support.apple.com/guide/calendar/import-or-export-calendars-icl1023/11.0/mac/10.14>
- Calendar Scripting Guide: <https://developer.apple.com/library/archive/documentation/AppleApplications/Conceptual/CalendarScriptingGuide/index.html>



# BACK TO APPLESRIPT

```
tell application "Calendar"
```

```
    set allEvents to events of calendar "SOURCE"
```

```
    repeat with theEvent in allEvents
```

```
        copy theEvent to end of events of calendar "TARGET"
```

```
        delete theEvent
```

```
    end repeat
```

```
end tell
```

# OR TO THE SERVER

- Exchange: <https://blogs.msdn.microsoft.com/emeamsgdev/2012/02/13/powershell-script-to-import-calendar-items-into-exchange-mailbox-from-csv-file/>
- Google: <https://developers.google.com/calendar/v3/reference/events/import>

MAIL SERVER



# BACKUP EXISTING SETTINGS

- domains = `sudo /Applications/Server.app/Contents/ServerRoot/usr/sbin/serveradmin settings mail:postfix:domains:\_array\_index:`
- emailaddresses = sudo cat /Library/Server/Mail/Config/postfix/virtual\_users | grep -E -o "\b[a-zA-Z0-9.-]+@[a-zA-Z0-9.-]+\.[a-zA-Z0-9.-]+\b"
- users = `cat /Library/Server/Mail/Config/postfix/virtual\_users`

# MIGRATING

- Migrate your domains manually
- Each target system will have different ways to import or automate the creation of accounts within each domain (e.g. powershell for Office365)
- Passwords...
- Coexistence: does the target mail server have a migration option?

# SYNC MAIL

- <https://github.com/imapsync/imapsync>
- `imapsync --host1 oldmail.krypted.com --user1 charles.edge  
--password1 mypassword --host2 newmail.krypted.com --  
user2 charles.edge --password2 mynewpassword`
- One last sync
- Cut DNS



VPN

# BACKUP AND RECREATE BY HAND

- Services enabled: `sudo serveradmin settings vpn:Servers:com.apple.ppp.pptp:enabled`; `sudo serveradmin settings vpn:Servers:com.apple.ppp.l2tp:enabled`
- Get address range: `sudo serveradmin settings vpn:Servers:com.apple.ppp.pptp:IPv4:DestAddressRanges`
- Now let's grab the DNS servers handed out so those can be recreated:
- `sudo serveradmin settings vpn:Servers:com.apple.ppp.pptp:DNS:OfferedServerAddresses:_array_index`
- `sudo serveradmin settings vpn:Servers:com.apple.ppp.l2tp:DNS:OfferedServerAddresses:_array_index`
- Shared secret: `sudo serveradmin settings vpn:Servers:com.apple.ppp.l2tp:L2TP:IPSecSharedSecretValue`

RADIUS



# RADIUS

- Choosing the tool: Appliances, Windows, roll your own
- Get Homebrew: `/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"`
- Install wget and dependencies: `brew install wget`
- Install freeradius: `brew install freeradius-server`
- Keep it up-to-date: `brew upgrade freeradius-server`

MESSAGES

# NETBOOT





## Scripting OS X

#! is not a curse word

### PAGES

[Article Series](#)

[Books](#)

[Terminal Witchcraft](#)

[Scripting Bash Presentation](#)

[About the Author](#)

### BOOKS



**Imaging is Dead... Long Live  
the Installer!**

# IMAGING IS DEAD

<https://scriptingosx.com/2017/10/imaging-is-dead/>

# DEPLOYMENT

- Deployment is less bits on devices and more installers
- DEP is maturing slowly (although recent press may bring more advancements)
- More logistically difficult and less technically difficult



# WHAT'S LEFT?

- Xsan
- Open Directory
- Profile Manager
- You need OD for Xsan but not Profile Manager



# A TIME OF TRANSITION

- SIP, UAMDM, UAKEL, now Privacy Preferences Payloads
- More logic moving to MDM
- More “rootless” less /System/Library/Sandbox/Compatibility.bundle/Contents/Resources/paths
- Pulling apart Unix

# WHAT'S NEXT FOR US?

- Less server management and less client scripting
- More profiles
- Do you want to build apps, manage mobility, devop, or manage humans?
- They are all important. They are all equally as cool.  
And I hope to see you all doing great things

THANK YOU



AND THANK YOU