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REPLACING MAC OS X SERVER: WHAT ARE YOUR OPTIONS?



WHAT ARE WE COVERING?

- ▶ Background of the Server App
- ▶ Why the change to Server?
- ▶ First Steps
- ▶ Using Macs as Servers with 10.14+

DISCLAIMER -

This is a simplified overview not a lesson on being a System Administrator or a full lesson on different services or functions of services.



LOOKING BACK ON MACS AS A SERVER

- ▶ 1987 - 2002: AppleShare
- ▶ 1999: Mac OS X Server 1.0 (aka Rhapsody)
- ▶ 2001 - 2010: Mac OS X Server 10.0 - 10.6
- ▶ 2011 - 2018: Server.App ships as an app



Server.App

What is it really???



Overlay for Open Source Software



Many Admins
switched to
Open Source in 2011



SHHHH ITS A SECRET

- ▶ Like most companies Apple Doesn't share its business strategies with the general public so we can only make guesses. (And knowledge base articles).
- ▶ All the services which have been removed were either replaced with a different service, were used by less than 1% of the market or were not actually Apple Products to begin with.
- ▶ A refocus on device management; MDM is not just for iOS.



TAKING THE FIRST STEPS



LEARN COMMAND LINE

- ▶ Macs have been running Unix for almost 18 years now. Not understanding at least basic command line utilization as a Technical Professional is unacceptable.
- ▶ All of the services provided via Mac OS X Server and Server from the initial release of Mac OS Server 1.0 have required the use of command line for proper configuration of services.
- ▶ It really isn't that hard.



INSTALL XCODE

- ▶ Xcode adds a wide range of command line based tools which are needed to fully utilize the command line system in Mac OS.
- ▶ Xcode is not just for developers.
- ▶ IT is now dev.



INSTALL PACKAGE MANAGEMENT

- ▶ Command Line based package management software allows for extremely simple installation of Open Source Software packages which cover nearly all the services that have ever been provided by Mac OS Server and Server.App
- ▶ The most common are HomeBrew and MacPorts.



MACS AS SERVERS IN 2019



WHAT IS STILL THERE

- ▶ ***Profile Manager***

Used for management of preferences, devices and package distribution (MDM).

- ▶ ***Open Directory / LDAP***

Shared User Authentication

- ▶ ***XSAN***

Shared storage



SERVICES MOVED TO OS

- ▶ ***File Sharing:***

Still present on all versions of Mac OS in Preferences. Advanced tools available in command line.

- ▶ ***Caching Server:***

Still present on all versions of Mac OS in Preferences. Advanced tools available in command line. Functionality significantly expanded.

- ▶ ***Time Machine Server:***

Still present on all versions of Mac OS in Preferences. Advanced tools available in command line. Really not a backup solution.



SERVICES UI “REMOVED”

► **WEBSITES / APACHE:**

Utilizes Open Source Apache and is still very much present on ALL Mac OS Installations. Server requires it for profile manager. Note that port 80 and 443 by default are in use by Profile Manager. If not using profile manager, disable default install.



SERVICES UI “REMOVED”

► **FIREWALL:**

Still present on all Mac OS Installations, utilizing Unix standard IPFW.

While it is still possible to utilize this system as a firewall, software firewalls are prone to significant configuration issues and should not be considered a primary security solution.

All networks should be protected by a properly configured, managed, and auto-learning hardware firewall in addition to a IDS / IPS.

You can still manage overall FW rules from Command Line.



SERVICES UI “REMOVED”

► **DHCP:**

DHCP is still present at a command line only level on all installations of Server.App. As its services are required for functionality of NetBoot & NetInstall.

Server Based DHCP services went out of practice long ago being replaced with dedicated hardware solutions at a Network Appliance level.



SERVICES UI “REMOVED”

► **NETBOOT / NETINSTALL:**

Yes both of these services are actually still around and still very much usable from a command line level.

Those still using these services should most likely be utilizing device management for proper machine configurations but these can still be extremely useful for very specific situations.



SERVICES FULLY “REMOVED” FROM SERVER.APP

- ▶ FTP
- ▶ Server Docs
- ▶ DNS
- ▶ VPN
- ▶ Mail Server
- ▶ Software Update Server
- ▶ Calendar
- ▶ Wiki
- ▶ Contacts
- ▶ Messages
- ▶ Radius



REPLACING SERVICES



FTP

- ▶ FTP also known as File Transfer Protocol is a legacy method of transferring files from one machine to another. Its use has long since diminished, those who still use it are using SFTP, as service which has never been included with Mac OS Server or Server.App
- ▶ To Enable (via homebrew):

brew install pure-ftp

brew services start pure-ftp



DNS

- ▶ DNS Services under Mac OS Server and Server.app have always utilized NameD / Bind for providing DNS services.
- ▶ DNS Services provided by Server.app have always been an overlay on top of bind and was missing a large amount of configuration options such as wildcard dns configuration which resulted in proper configurations needing to be done directly in bind anyways.



DNS

- ▶ First consider if running internal DNS is really the best option
If so:

brew install bind

- ▶ If you don't need to run your own DNS server consider offsite hosting your DNS with a service like OpenDNS.
- ▶ If you want to run internal DNS to keep things within the network, do DNS only for your internal devices then forward all DNS to a filtering dns services like OpenDNS.



VPN

- ▶ Like Firewall services VPN services by standard should not be running at Layer 7.
- ▶ By running VPN services from a server within the network it creates inherent insecurity in the network itself.
- ▶ Those using a machine as a VPN should reconsider this process and utilize a Network Appliance for the purpose.



MAIL SERVER

- ▶ Mac OS Server and Server.App have always used PostFix, DoveCot, and SendMail to provide mail services. Like other services its presence in Server.App was simply a layer accessing the open source programs listed above.
- ▶ In an effort to make things easy to use core configurations have never been available through Server.App and configuration of mail services for proper delivery still required command line configuration.
- ▶ All of the above listed items are still available for direct installation.



SOFTWARE UPDATE SERVER

- ▶ Software Update Server was removed via natural growth of the other services. Since Client Machines now utilize the App Store for Updates and the content caching services network wide the need for Software Update Server simply went away.
- ▶ Now instead of having to manage the updates you simply manage the appearance of updates in the app store. This can be done through device management.



CALENDAR & CONTACTS

- ▶ Calendar and Contacts use open source standard protocols of CalDAV and CardDav. Like other services the Server.App implementation of these was actually just an overlay on top of the open source software / protocol that is readily available and easy to install.
- ▶ There is simply no reason for them to be included in Server.App when the only control Server.App had for them was if the service was on or off. All other configurations still had to be done from command line.



WEB SITES

- ▶ Websites get into interesting territory because as previously noted Apache is still present and required for Profile Manager.
- ▶ That said like other services Server.App is simply an overlay of the Open Source implementation.
- ▶ Websites are still very much manageable in the same way they always have been through the command line.
- ▶ **BE AWARE:**
Port 80 & 443 Are Utilized By Profile Manager.



WIKI

- ▶ Wiki is a subset of a WebService, just as CMS systems like WordPress are. Again like other services provided by Server.App this is OpenSource.
- ▶ MediaWiki is the original WiKi project developed by wikipedia. To use MediaWiki you will need PHP and Apache Installed and configured first.

brew install mediawiki

- ▶ <http://www.mediawiki.org>



SERVER DOCS AKA WEBDAV

- ▶ **ServerDocs** was only available for a short time and in its standard build only available to iOS devices when account was added via MacOS Server type. It was also not available via non-iOS devices.

Due to changes in the way iOS does file sharing this service is now simply WebDav.

- ▶ WebDav is an Apache Extension and can enabled simply by turning on the Apache mod_dav module in your apache configuration.
- ▶ Once enabled iOS devices and utilize the designated folders configured for WebDav access.



MESSAGES

- ▶ Messages as a service is actually just an implementation of the Open Source Service XMPP (Extensible Messaging and Presence Protocol) commonly known as Jabber. As with other services provided through Server.App.

- ▶ Reinstallation is Easy:

brew install ejabberd



RADIUS

- ▶ Like other Services the Radius and Airport Configuration controls provided through Server.App where nothing more than a GUI layer of the Open Source Service FreeRadius.
- ▶ As Apple is no longer making a Wireless Network product (aka Airport) so providing management for them in Server.app would be pointless.
- ▶ Reinstallation of FreeRADIUS is as simple as:

brew install freeradius-server



SERVICES REMOVED LONG AGO

- ▶ **Print Server** (10.6): Replaced with Air Print
- ▶ **Mailing Lists** (10.6): Under Used, Open Source
- ▶ **QTSS** (10.6): Under Used, Open Source
- ▶ **NAT** (10.7): Under Used, Open Source
- ▶ **Xgrid** (10.7): Under Used
- ▶ **PodCast Producer** (10.7): Replaced w/ Podcast Connect
- ▶ **MySQL** (10.5): Under Used, Open Source
- ▶ **RADIUS** (10.7): Under Used, Open Source



COMMERCIAL SOLUTIONS

- ▶ **MAMP / MAMP PRO**

Apache, PHP, MySQL, DNS, PostFix, NGinx, Redis, CacheD

- ▶ **Meraki Firewalls / Switches / Access Points**

DHCP, Firewall

- ▶ **Kerio Connect (GFI), Exchange, Communigate Pro**

CalDav, CardDav, WebMail, Mailing Lists, Messaging, Email

- ▶ **MDM Services (Addigy, SimpleMDM, Jamf, Meraki SM)**

Device Management and Preference Management



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Q&A

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