Todd Houle

Todd works as an Apple Systems Engineer at Partners Healthcare in Boston, MA. He provides Tier 3 support and develops central solutions for Macintosh services as a member of the PEAS (Partners Enterprise Apple Support) team.



When not in his cube, he can be found riding his motorcycle around Boston's north shore.

Caching servers, DNS Tricks, and More

Why Cache?



Why Cache?

First download content from Apple. Future downloads are on LOCAL Network from your cache server.

Save Internet Bandwidth for same content on different devices.

Clients fall back to Apple if cache server is not available.

No client configuration required.

What is Cached?

Software Updates and Installers

App Store Applications

iBooks media

Internet Recovery image for Mac OS X

iTunes media

Client Requirements

Mac OS X 10.8.2 or later

iOS 7 or later

iTunes 11.0.2 or later (Mac and Windows)

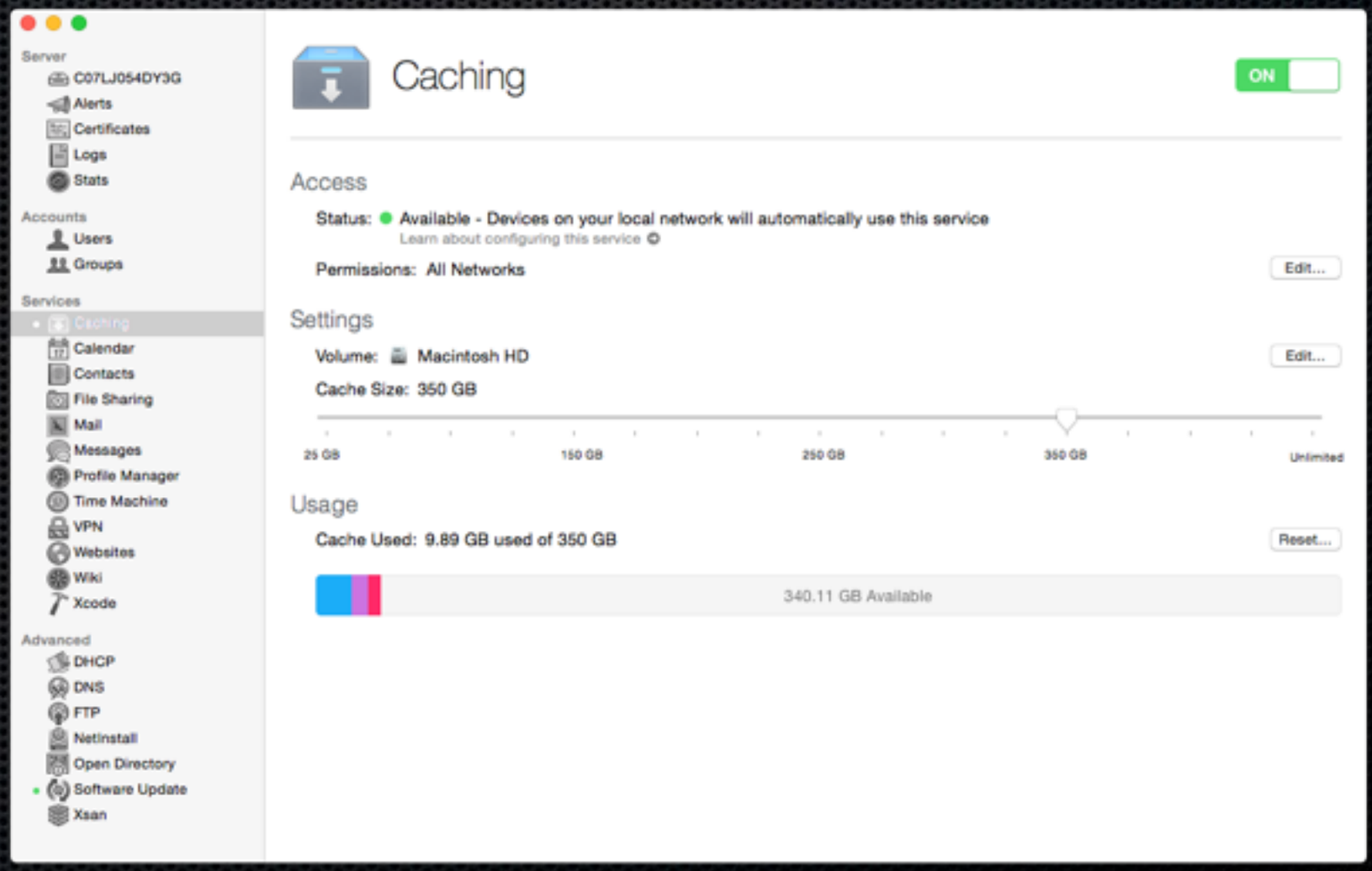
(Earlier devices will ignore cache and go directly to Apple)

Configuration is automatic!

Enabling the Cache Server

Step 1: Turn it on

Requires OS X Server, of course!



How does this work?

Cache server registers the public IP of the server.

(http://myipaddress.com) to check your pubic address

Client requests media from Apple, redirected to local Cache server.

How caching server works…





GUID:2BC5071E-7007-476F-A18D-78EA55C84991

local address: 192.168.2.78
public IP: 24.172.20.238



How caching server works…



Package Content



server address: 192.168.2.78

local address: 192.168.2.78
public IP: 24.172.20.238

Request for package



local address: 192.168.2.33
public IP: 24.172.20.238

How caching server works…



local address: 192.168.2.78

public IP: 24.172.20.238



server address: 192.168.2.78

Package Content

local address: 192.168.2.79

public IP: 24.172.20.238



Request for package



local address: 192.168.2.33

public IP: 24.172.20.238

Other Options

Akamai? That'll cover it.

Apple Software Update Server.

- Does allow for 'approval' process
- Can download updates before client requests
- Does only OS Updates for Mac
- Clients must be configured to point to ASUS
- Might duplicate content in Cache server

Yosemite Changes

If not behind NAT, you now have options (maybe)

Allows you to define local IP range, and public IP range of supported clients. Must have ability to make edits to your DNS server.

Cache Server must have a public IP address.

Cache content for clients connecting from:



Understanding Non-NAT Configuration of Cache Server

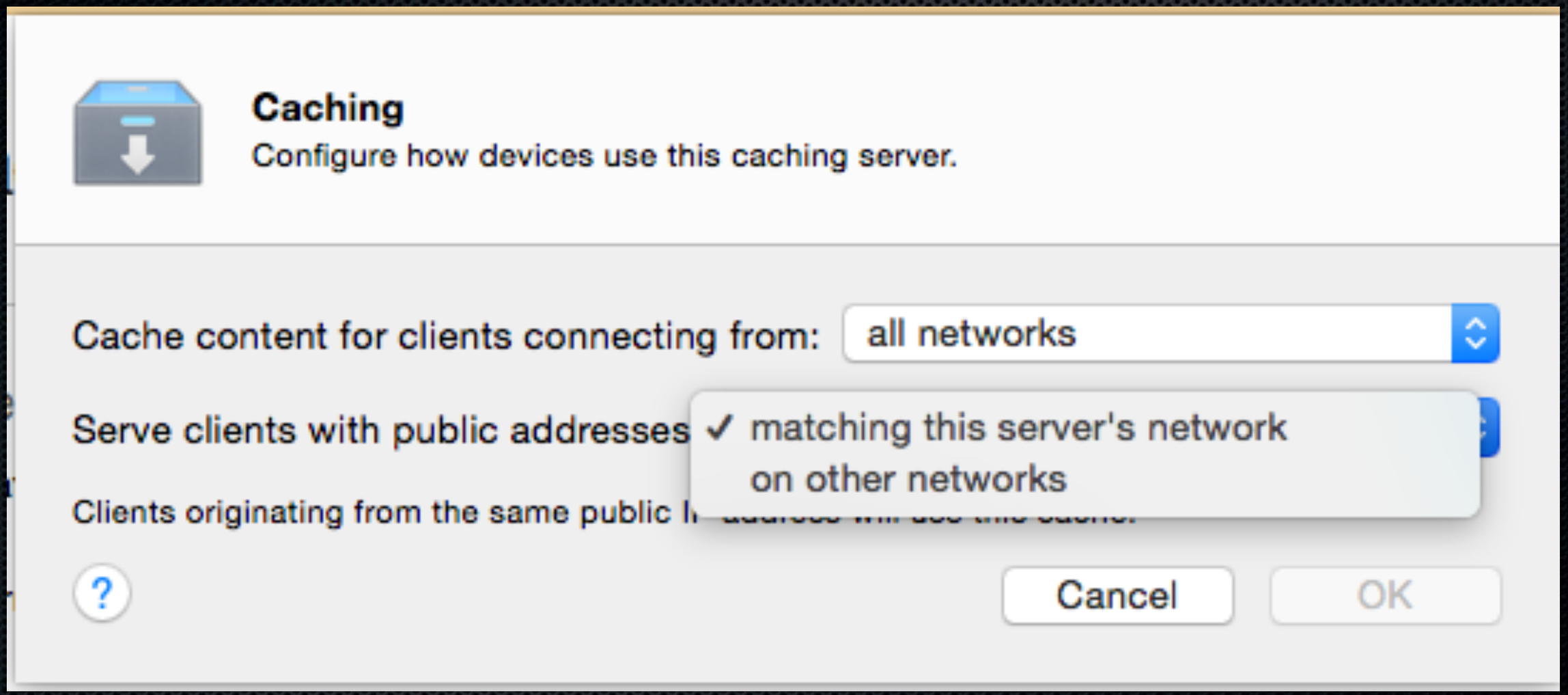
Cache content for clients connecting from:

All Networks - No limitation on the internal IP of the client

Only Local Subnets - Mac figures out the local subnet IP range and limits to only those clients.

Only Some Networks - Allows you to specify the IP address range of the local clients

Serve Clients with Public Addresses:



Understanding Non-NAT Configuration of Cache Server

Serving Clients with Public Addresses:

Matching This Server's Network - Only clients with the same public IP address as your server will use cached content. This is NAT mode.

On Other Networks - Enter the Public IP address range of the other clients. Requires you to then edit your DNS server with new A records.

Example:



Caching
Configure how devices use this caching server.

Cache content for clients connecting from: only some networks

Art Department (192.168.2.2 - 192.168.2.254)
Private Networks

+ −

Only cache content for clients on these networks

Serve clients with public addresses: on other networks

Localish (132.183.76.1 - 132.183.77.254)

− Client Configuration...

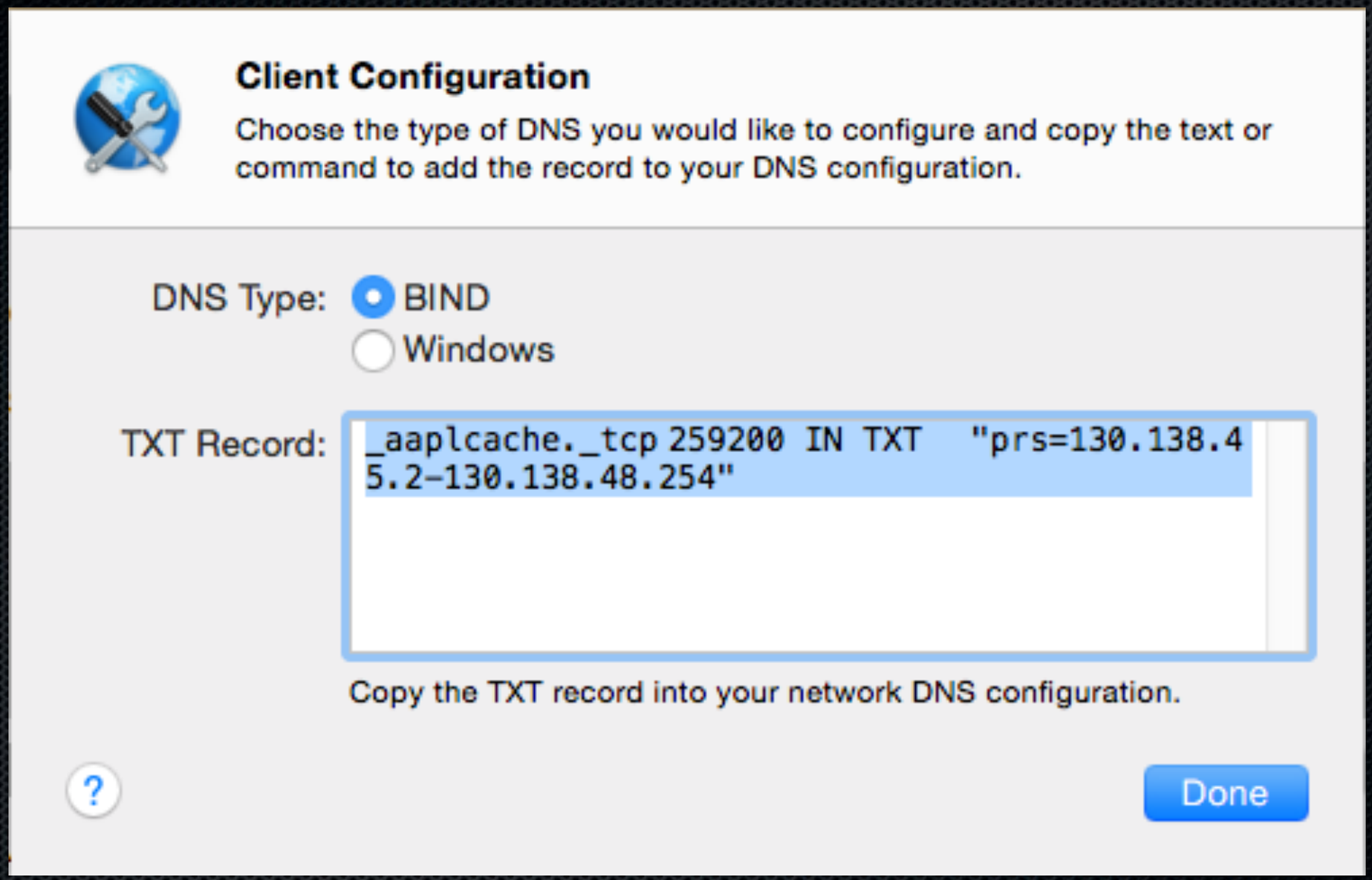
Additional configuration is required for clients in the specified IP address ranges to use this caching server. Click Client Configuration to view these settings.

?

Cancel OK

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DNS Configuration



New: Shows Windows command

Command Line Options

serveradmin settings caching

```
bash-3.2# serveradmin settings caching
caching:ListenRangesOnly = no
caching:ListenRanges = _empty_array
caching:ReservedVolumeSpace = 25000000000
caching:CacheLimit = 350000000000
caching:PublicRanges = _empty_array
caching:LocalSubnetsOnly = no
caching:DataPath = "/Library/Server/Caching/Data"
caching:ServerGUID = "C05F4408-0137-4F2E-B23E-C97ACE9496F5"
caching:Port = 0
caching:ServerRoot = "/Library/Server"
bash-3.2#
```

serveradmin fullstatus caching

```
bash-3.2# serveradmin fullstatus caching
caching:Active = yes
caching:state = "RUNNING"
caching:CacheUsed = 9964860225
caching:Port = 49376
caching:TotalBytesRequested = 448421819
caching:RestrictedMedia = no
caching:CacheLimit = 350000000000
caching:RegistrationStatus = 1
caching:CacheFree = 340035139775
caching:Peers = _empty_array
caching:TotalBytesFromPeers = 0
caching:StartupStatus = "OK"
caching:TotalBytesFromOrigin = 448421819
caching:CacheStatus = "OK"
caching:TotalBytesReturned = 720382315
caching:CacheDetails:_array_index:0:BytesUsed = 8348380998
caching:CacheDetails:_array_index:0:LocalizedType = "Mac Software"
caching:CacheDetails:_array_index:0:MediaType = "Mac Software"
caching:CacheDetails:_array_index:0:Language = "en"
caching:CacheDetails:_array_index:1:BytesUsed = 1475473956
caching:CacheDetails:_array_index:1:LocalizedType = "iOS Software"
caching:CacheDetails:_array_index:1:MediaType = "iOS Software"
caching:CacheDetails:_array_index:1:Language = "en"
caching:CacheDetails:_array_index:2:BytesUsed = 0
caching:CacheDetails:_array_index:2:LocalizedType = "Books"
caching:CacheDetails:_array_index:2:MediaType = "Books"
caching:CacheDetails:_array_index:2:Language = "en"
caching:CacheDetails:_array_index:3:BytesUsed = 0
caching:CacheDetails:_array_index:3:LocalizedType = "iTunes U"
caching:CacheDetails:_array_index:3:MediaType = "iTunes U"
caching:CacheDetails:_array_index:3:Language = "en"
caching:CacheDetails:_array_index:4:BytesUsed = 0
caching:CacheDetails:_array_index:4:LocalizedType = "Movies"
caching:CacheDetails:_array_index:4:MediaType = "Movies"
caching:CacheDetails:_array_index:4:Language = "en"
caching:CacheDetails:_array_index:5:BytesUsed = 0
caching:CacheDetails:_array_index:5:LocalizedType = "Music"
caching:CacheDetails:_array_index:5:MediaType = "Music"
caching:CacheDetails:_array_index:5:Language = "en"
caching:CacheDetails:_array_index:6:BytesUsed = 141005271
caching:CacheDetails:_array_index:6:LocalizedType = "Other"
```

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Settings are saved in…

/Library/Server/Caching/Config/Config.plist

https://support.apple.com/en-us/HT202657

chown _assetcache:_assetcache

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/
<plist version="1.0">
 <dict>
   <key>CacheLimit</key>
   <!-- Set a CacheLimit of 200 GB -->
   <integer>200000000000</integer>
   <key>DataPath</key>
   <string>/Volumes/BigDisk/Caching/Data</string>
   <key>Interface</key>
   <string>en1</string>
   <key>ListenRanges</key>
   <array>
     <dict>
       <key>type</key>
       <string>IPv4</string>
       <key>first</key>
       <string>10.0.0.1</string>
       <key>last</key>
```

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One More Thing….

Cache Warmer

http://blog.fraserhess.com/2014/12/introducing-cachewarmer.html

One More
One More Thing….

Resource:

http://blog.fraserhess.com/2014/10/caching-server-enterprise-edition.html

https://www.apple.com/support/osxserver/cachingservice/

https://support.apple.com/en-us/HT202657

Questions?



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