

# Tom Bridge

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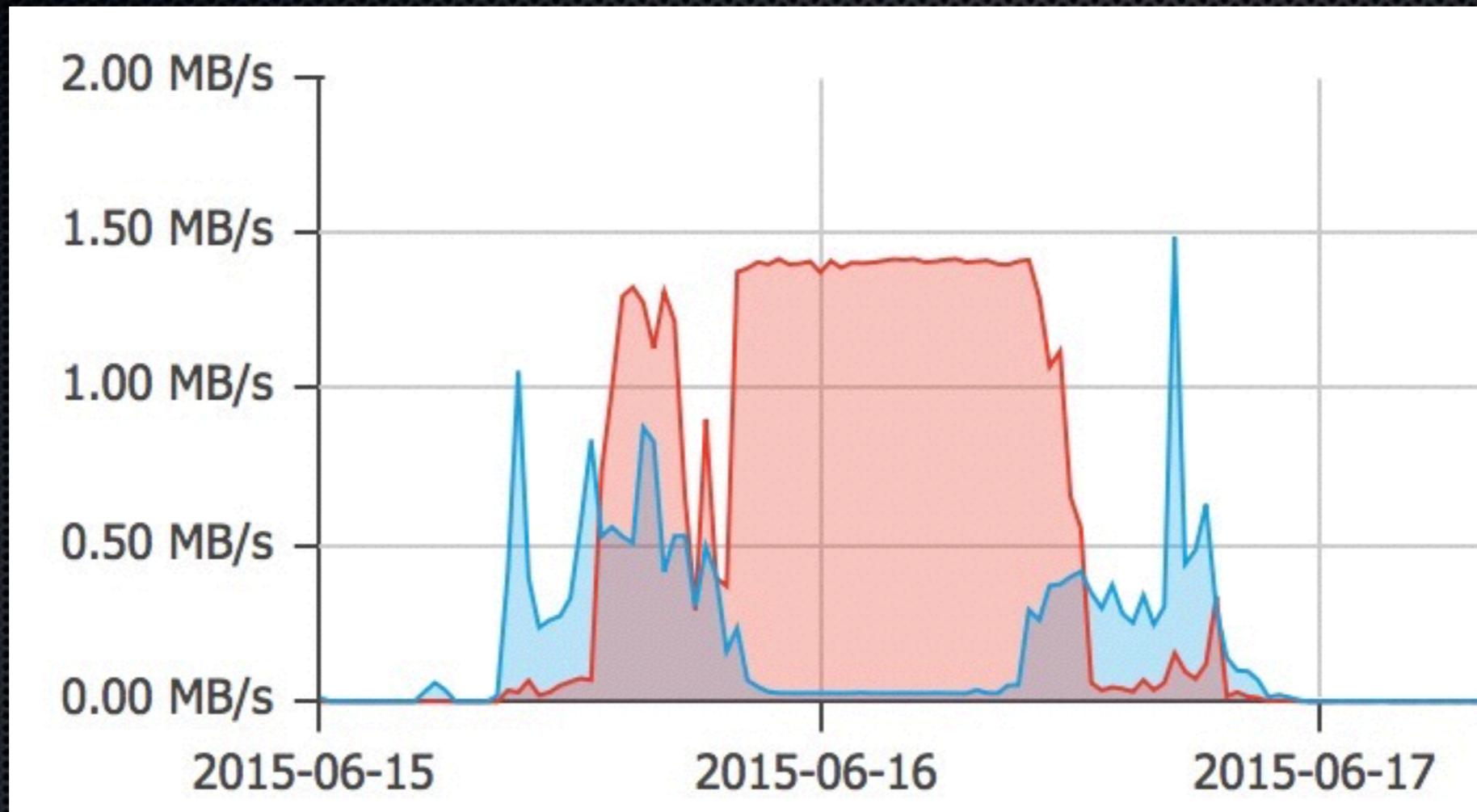


# Caching Servers, DNS Tricks, & More

# What Is Caching Service?

- Caches a local copy of any App Store Download, iOS or Apple TV Software Update, iBooks Download, iTunes U Content, and Internet Recovery Image
- Distributes them to clients on the same local network
- Or to any clients on a series of IPs you designate with special SRV Records
- Requires Server 4.0.3 or later, will serve iOS 7 or later, Mac OS X 10.8.2 or later, and iTunes 11.0.2 or later (Mac or Windows)

# Why Caching Service?



This is Ten Yosemite Downloads

# What Is Caching Service?

	OS X $\geq$ 10.8.2	iOS $\geq$ 7	Apple TV
Software Updates	✓	✓	✓
App Store	✓	✓	NA
iBooks	✓	✓	NA
Internet Recovery	✓	NA	✓
iTunes Media	✓	✓	NA

# How Caching Server Works...

- The 1st download is always from Apple and is cached to the server
- Later downloads *may* come from the server
- The server *may* have peers
- Clients *always* fallback to download directly from Apple when the client can't get to the server or any peers
- Clients tend to stick with the 1st good download source

# How Caching Server Works...

- Stores data in a specified local volume.
- Stores it until it runs out of space to do so, then cannibalizes the oldest content for more space.
- Best Practice: Dedicated external volume

# Load Balancing

- What if you have multiple subnets?
- What if you have multiple public IPs?
  - Redundant connections or
  - A Real Big Public Network
- What if you have a ton of local clients?

No Problem.

You can have many  
Caching Servers.



# New in Yosemite...

- New in Yosemite is the ability to have caching servers outside of your private network
- Or as Apple says, “caching content in non-NAT networks”
- Requires a Public IP address for the server
- Requires a manual edit of DNS records to add a DNS-SD TXT record

# New in El Capitan

- Caching Service can now hold iCloud Drive data for your users.
- You're going to need a bigger boat. Er. Drive.
- If you're not storing your service data on a dedicated drive, now would be a real good time.

# Easy Setup



## Caching



### Access

Status: ● Available - Devices on your local network will automatically use this service  
[Learn about configuring this service](#)

Permissions: All Networks

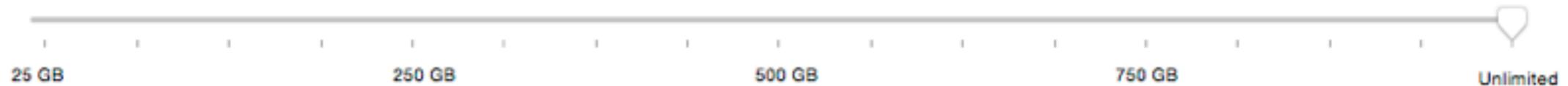
Edit...

### Settings

Volume: Data

Edit...

Cache Size: Unlimited



### Usage

Cache Used: 5.58 GB used

Reset...



# Caching in non-NAT networks

- Configure server to use public IP address
- Configure caching service with public range of IP
- Copy TXT record from Server app
- Add TXT record to db zone file per...
  - caching.apple.com zone (Server Essentials)
    - create a www host A record
    - `_aaplcache._tcp.caching.apple.com` TXT entry
  - your own domain zone (Advanced Server Help)
    - `_aaplcache._tcp.<domain name>` TXT entry
  - “`prs=<start IP>-<end IP>`”

# Caching in non-NAT networks

The screenshot displays a web-based configuration interface for a caching server. A modal dialog is open, titled "Caching", with the subtitle "Configure how devices use this caching server." The dialog contains the following elements:

- A dropdown menu for "Cache content for clients connecting from:" set to "all networks".
- A dropdown menu for "Serve clients with public addresses:" with "matching this server's network" selected and "on other networks" as an alternative.
- A large empty box with the text "Click (+) to add networks".
- A "Create a new network" button with a "+" icon.
- A "Client Configuration..." button.
- A "Cancel" button and an "OK" button.

In the background, the main interface shows a toggle switch for "Caching" set to "ON". Below the dialog, there is a "Usage" section with a bar chart showing "Cache Used: 5.58 GB used". The bar chart is divided into "Mac Software" (blue) and "Other" (orange). A "Reset..." button is also visible.

# Caching in non-NAT networks

Copy the TXT record below and enter it into your network DNS configuration.

```
aaplcache._tcp 259200 IN TXT "prs=10.0.0.1-10.0.0.254"
```

Done

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

Cache Used: 5.58 GB used

Mac Software Other

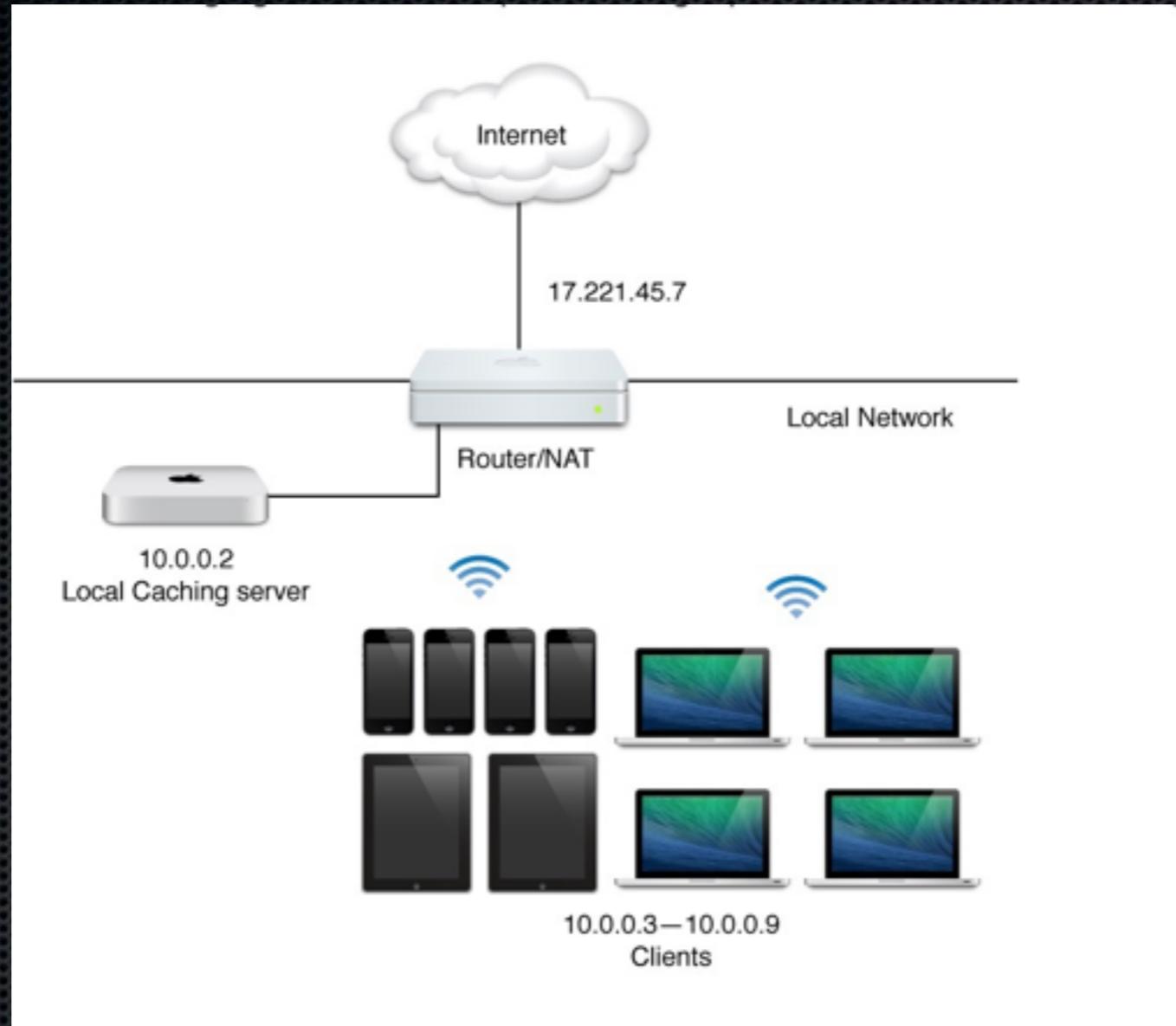
# Proper configuration of DNS

- Settle on HD name (rename it first)
- Server IP reserved in DHCP
- Set it static (even if reserved)
- FQDN and Local Host name
- Decide: What's the naming system, are there multiple servers, do you want to name based on geo location?

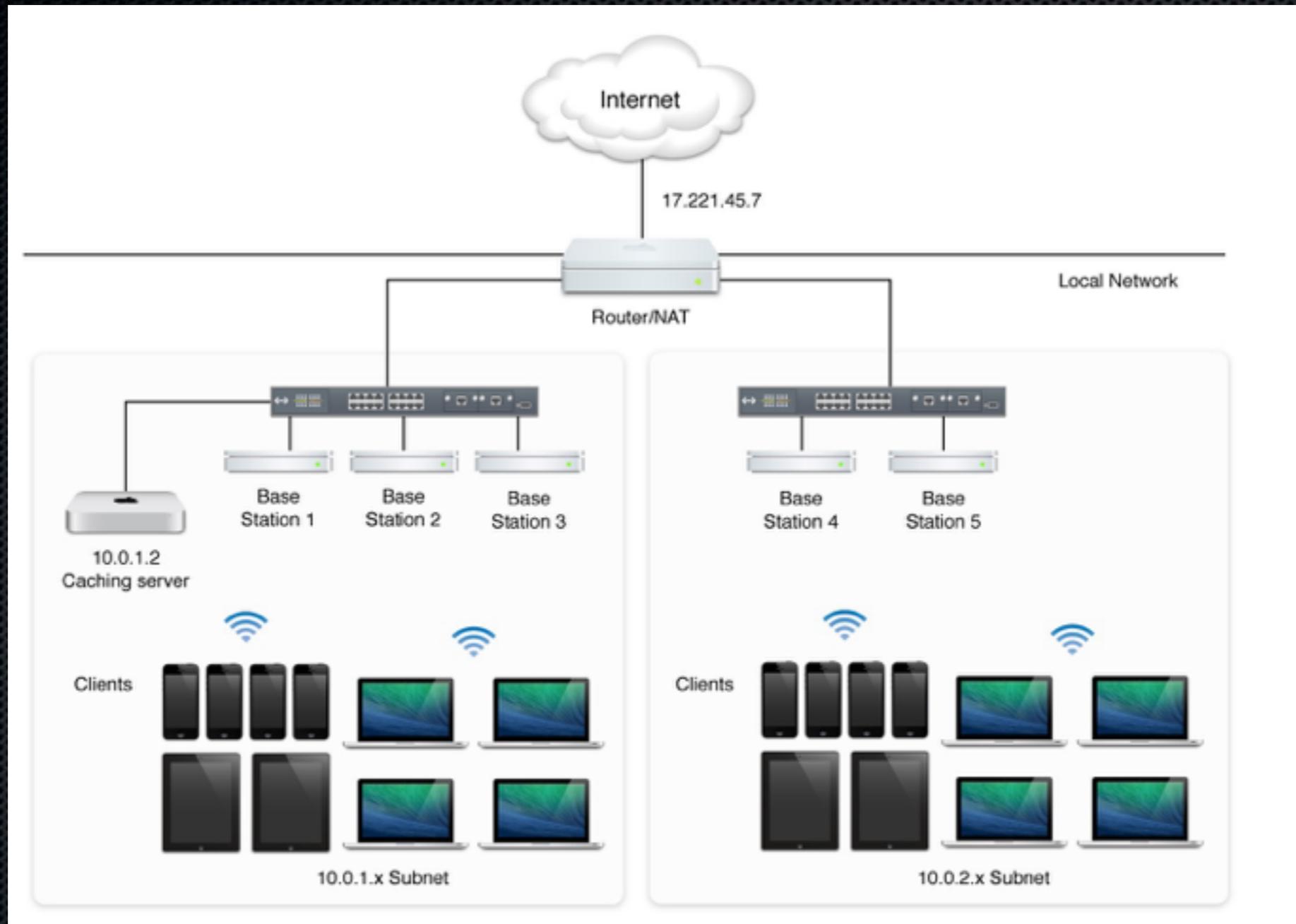
# Proper config of DNS (cont)

- WAN DNS record set
- Set DNS records (A, CNAME, MX, etc...)
- Run change hostname tool (or there will be issues if you change things).
- DNS on the outside as well (don't forget about this!)
- Adding and comparing internal and external DNS

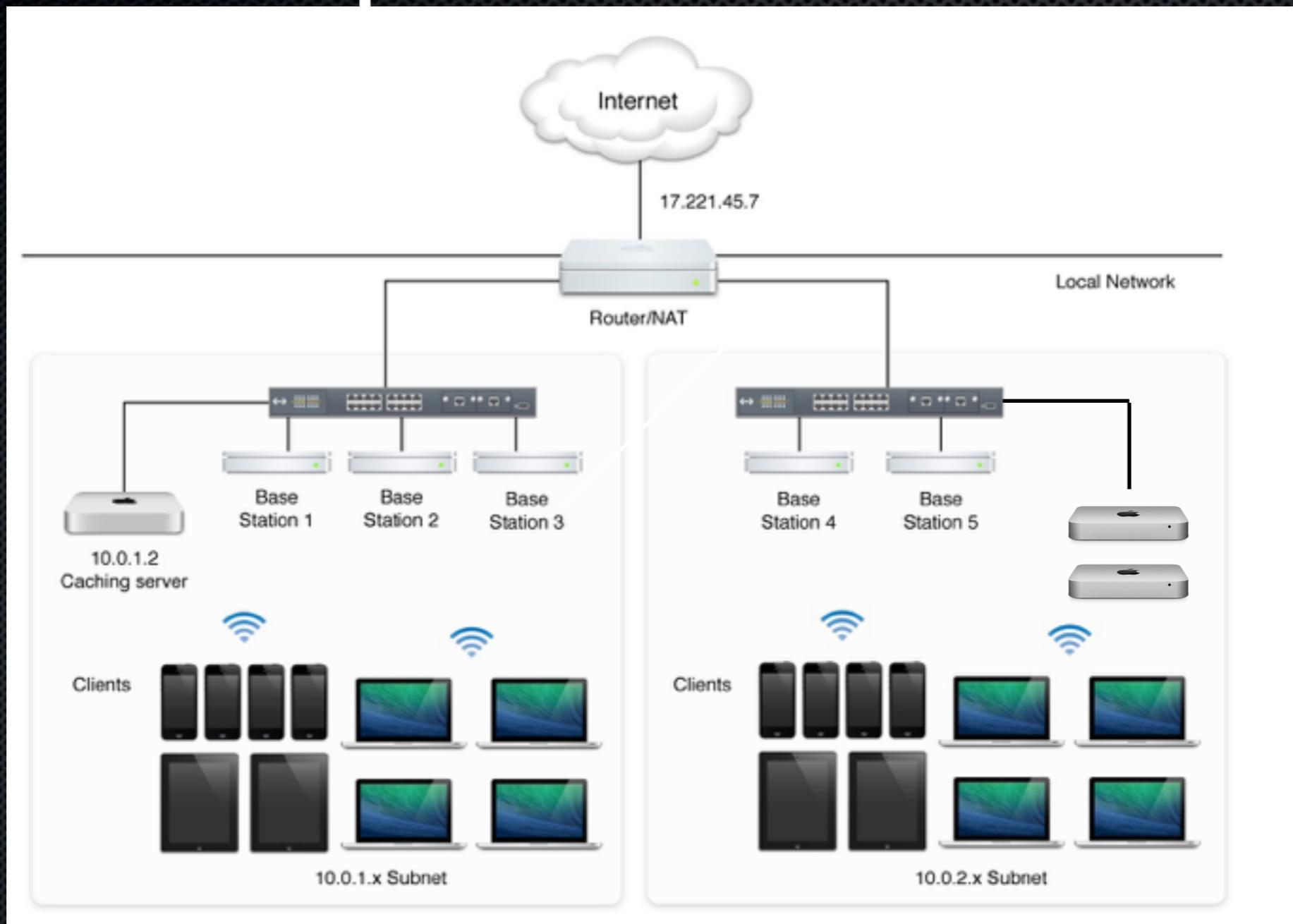
# Example: SOHO Network



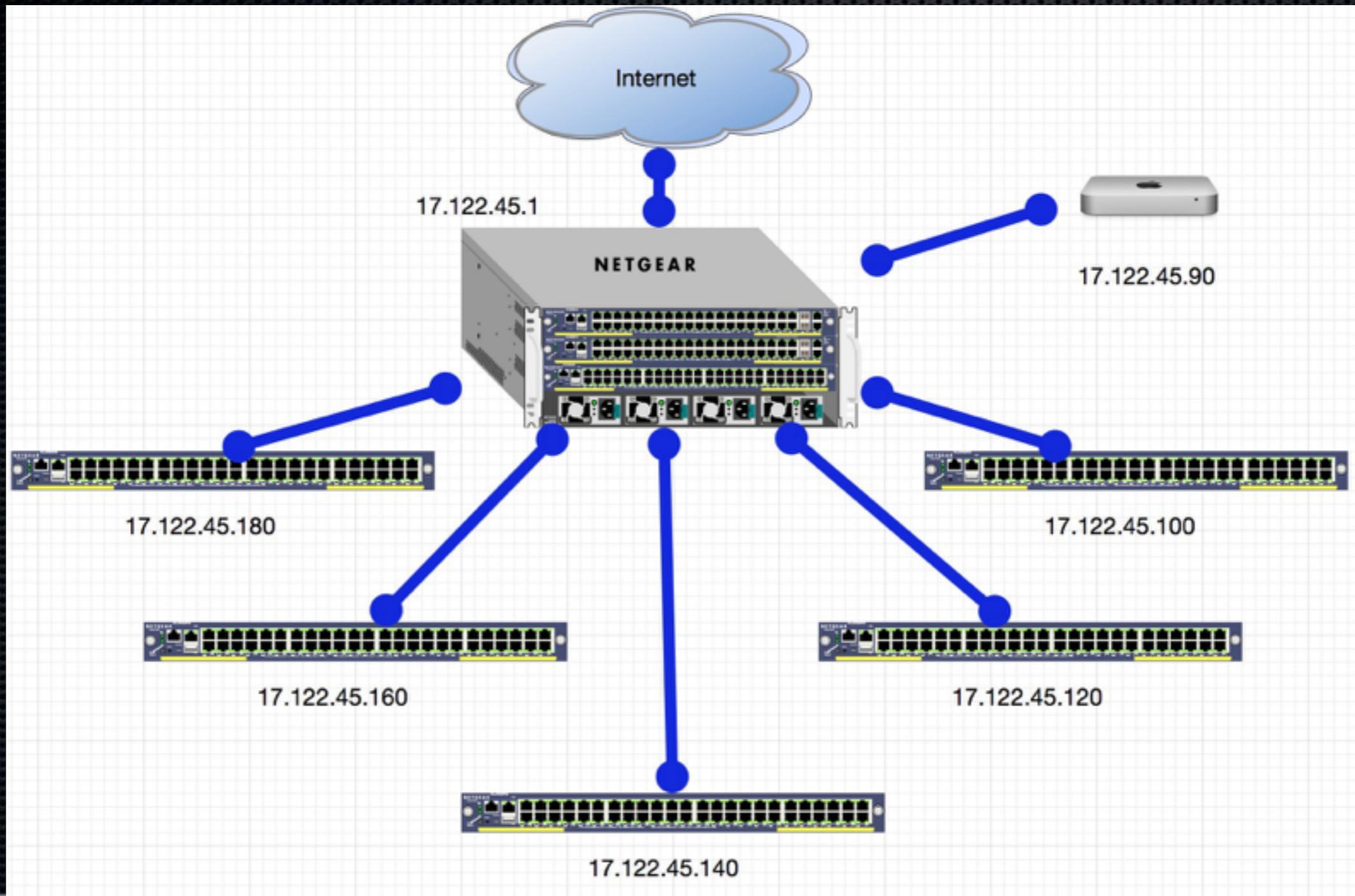
# Example: Corporate Network



# Example: Better Corporate Network



# Example: A Big Quasi-Public Network



# More Resources

- Built in Server app help (links in every service)
- <http://help.apple.com/advancedserveradmin/mac/4.0>
- Support Articles: HT200231, HT202657, PH15567
- <https://www.yesdevnull.net/tag/caching/>
- <http://blog.fraserhess.com/2014/10/caching-server-enterprise-edition.html>

# Products

- CacheWarmer (\$4.99) by Glencode LLC - <http://blog.fraserhess.com/2014/12/introducing-cachewarmer.html>
- Learning Apple OS X Mavericks Server Training Video (\$99.95 or subscribe) by Chris Tarnowiecky (New Yosemite version available from InfiniteSkills/O'Reilly Media shortly)
- OS X Server Essentials 10.10 (\$55-60 on Amazon) By Arek Dreyer, Ben Greisler from Pearson

# Questions?



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<http://tinyletter.com/technobits>