Managing an Xserve from 1000 miles away

Session M234

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ITInstruction.com

Apple Certified Trainer, ACSA 10.3

Apple Certifications for 10.3.x

Course Names	Certification Level	Length (days)
Mac OS X Help Desk Essentials	ACHDS	3
Mac OS X Server Essentials	ACTC (with Help Desk Essentials)	4
System Administration of Mac OS X Clients	Apple Certified System Administrator	5 days each course
System Administration using Mac OS X Server		

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Goal

- To ship the Xserve where it lives and setup, install, manage, and backup your Xserve with no video card and no local access

- Administration by remote control

    - Other Macs

    - PCs

    - Palm Devices

What We'll Cover

- Hardware

- Setup

- Backup

- Control

What should you know?

- Someone at that location who likes you

- ssh

- ARD

- Server Tools

- crontab

- All MAC Addresses

- Server Hardware Serial Number

- Server Software Serial Number

Hardware

- Apple currently ships Mac OS X Server on two CDs

- Apple has an option to buy a DVD reader

  - US$100 upgrade

- I wonder what Tiger Server will bring to the table?

More Hardware

- Apple has an optional hardware RAID card for the Xserve

- Two built-in Ethernet ports

- Fiber Channel cards are also an option

- "What's in *YOUR* Xserve?"

- Goal, some software may need to be backed up immediately

Networking

- Apple currently pre-configures the Xserve to boot into Server Assistant

- Can you find it?

  - If you are local, no fair - you cheated (Rendezvous)

  - Obtain a public IP from your ISP

    - Easier said than done, but let's ask anyway

Groveling for an IP

- Ask ISP to setup DHCP server and give out specific IP address to your Xserve

  - This is done by ISP matching the Xserve MAC address to an IP address

  - Easy to do if another Mac OS X Server is already installed

  - If your Xserve is destined to have another IP address, that's ok too

    - This one is temporary

DEMO

- Give an IP to only specific MAC addresses with Mac OS X Server

Locating your Xserve

- Using Server Assistant

  - Enter your IP and hardware serial number or 12345678 for older equipment

- Using command line

  - `/System/Library/ServerSetup/sa_srchr IP_Address`

Server Assistant

Install Now?

- No.

- Be patient.

- Conquer and divide.

- Partition disk, many disks, or RAID

  - Commit at least 10G to a spare volume

- use diskutil from CLI

But I Can't Partition

- Out of the box, no.
  - Have pal at other end boot from Server CD1
    - This obtains a DHCP address, enables ssh daemon, and has a variety of CLI tools available, all from booting off CD
    - Explain...

So Far

- CD boots Xserve at other end

- Obtains public IP

- You use `ssh root@public_ip` to connect

  - Password is hardware serial # or 12345678

- `diskutil` can now be used to prepare disks and volumes
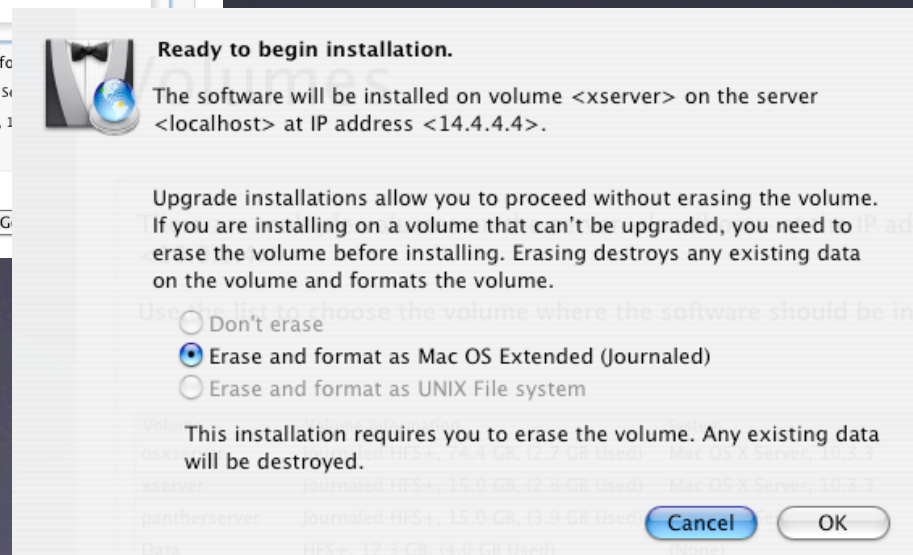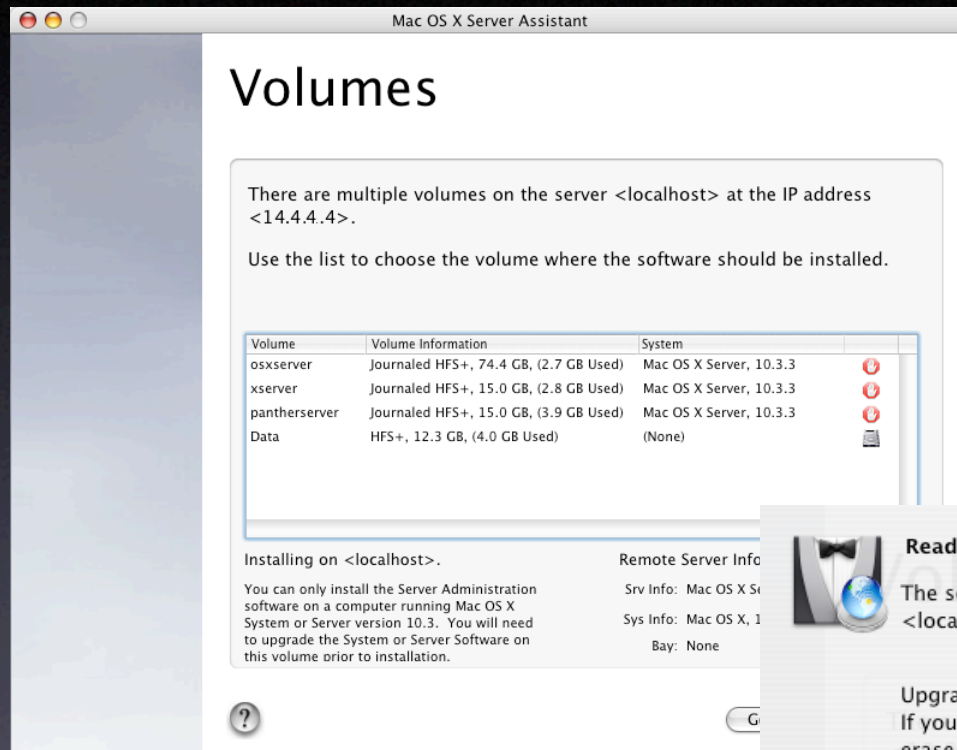
  - At LEAST two partitions, one 10G

diskutil

- `df -hl`
  - Shows device names

- `diskutil partitionDisk /dev/disk0s3 2 JourneledHFS+ xserver 150G JourneledHFS+ backuphd 10G`

- Partitions disk into 2 HFS+ partitions called xserver and backuphd which are 150G and 10G respectively
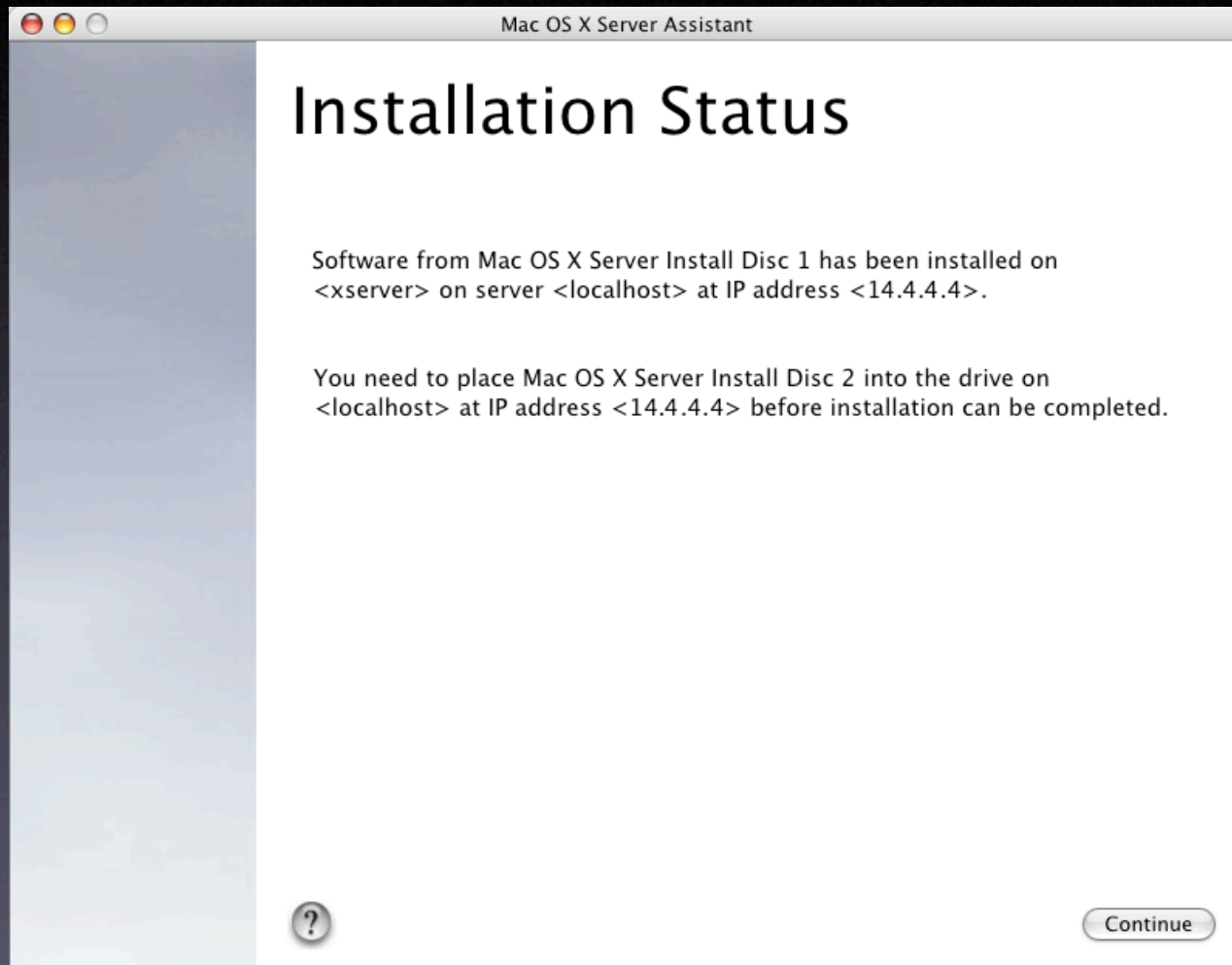
- Brave souls can also use `pdisk`

Now Install

- Now install via Server Admin or CLI

- When installing remotely, there is no GUI method to customize the installation

- Choose volume and (re)format if necessary

  - Might give you that warm fuzzy feeling

- CLI `installer` command will work too

Volume Pickings

Time to call the pal

Mac OS X Server Assistant

Installation Status

Software from Mac OS X Server Install Disc 1 has been installed on
<xserver> on server <localhost> at IP address <14.4.4.4>.

You need to place Mac OS X Server Install Disc 2 into the drive on
<localhost> at IP address <14.4.4.4> before installation can be completed.
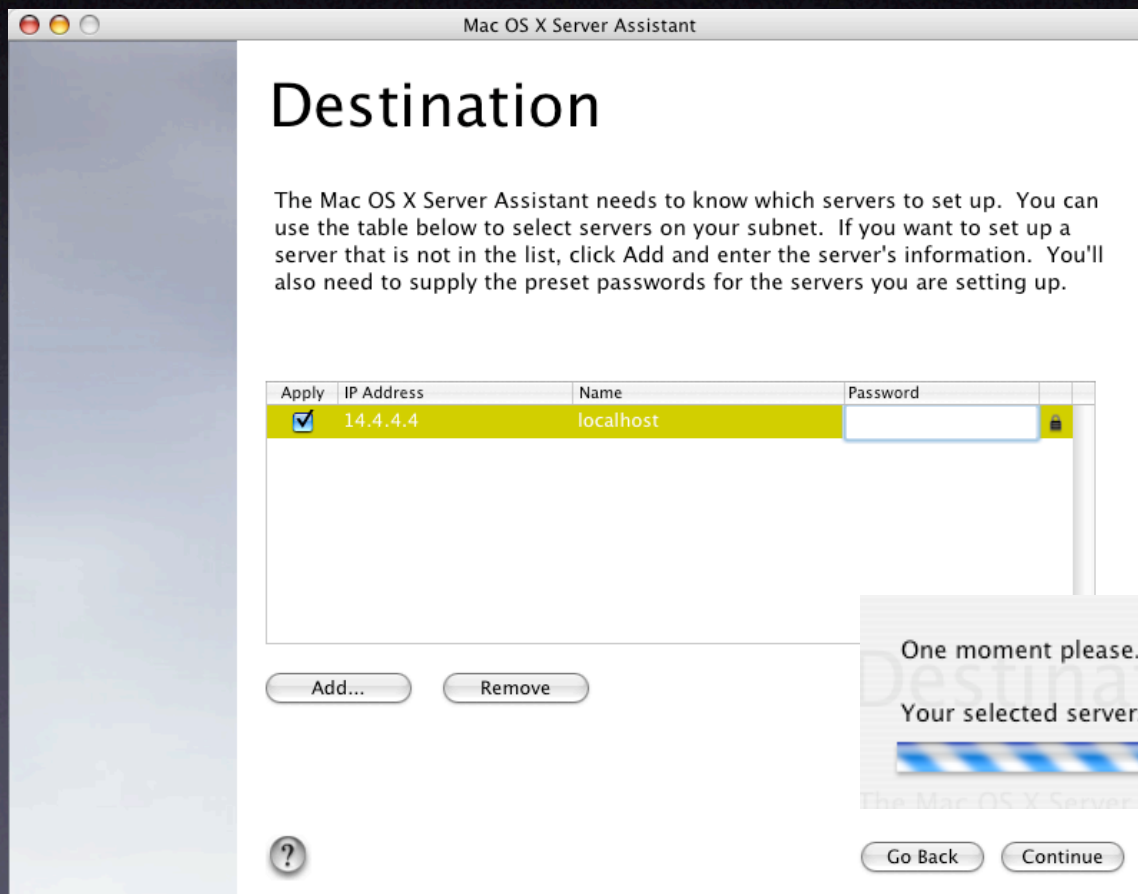
Continue

Installation Complete

- Time to setup server

- Use Server Assistant because the alternative is a lot of typing
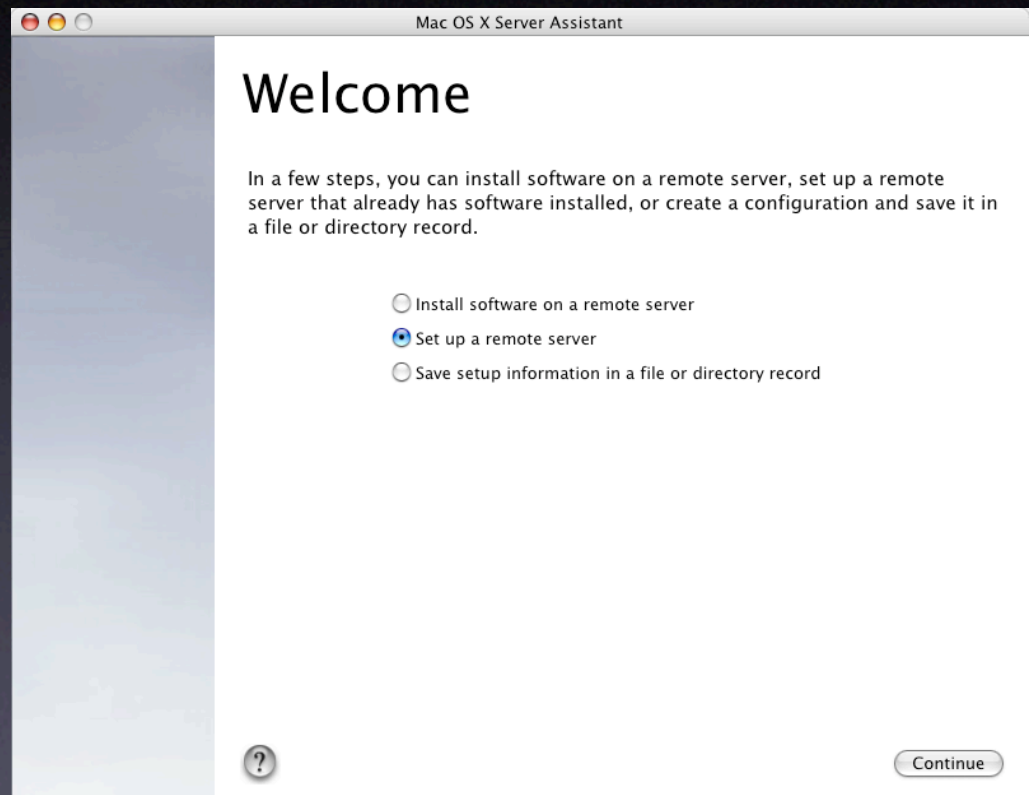
Hardware Serial # Again

Setup Panes

- Language

- Keyboard

- Serial Number

- Administrator account

  - Do NOT use capitol letters in short name

  - Best practice do not use short name admin

More Setup Panes

- Naming

  - Hostname

    - Should be FQDN of system

      - Can be changed later but not best idea

        - `changeip`

  - Computer Name is AFP name

  - Rendezvous Name
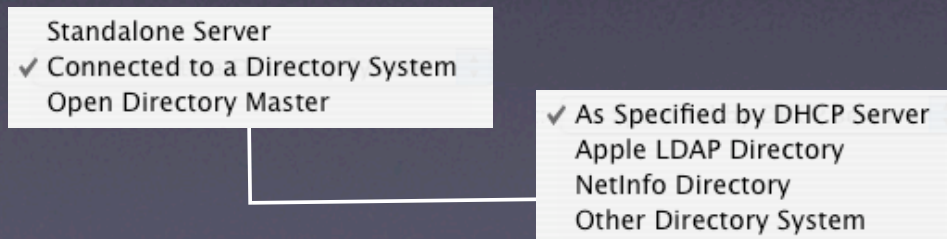
Naming

Network

- Chose active network interfaces

  - AppleTalk can only be active on one interface

- If the Xserve is far away, why do you even need it active?

- Select IP address(es) for interface(s)

  - Can be changed later with `changeip`

    - Not best practice though

- Understand that after you apply all settings, this will be the new IP address for your server

Directory Usage

- Be careful here

- Do NOT make an Open Directory Master yet

  - Standalone Server for now

- Can connect to other Directory System

Standalone Server
✓ Connected to a Directory System
Open Directory Master

✓ As Specified by DHCP Server
Apple LDAP Directory
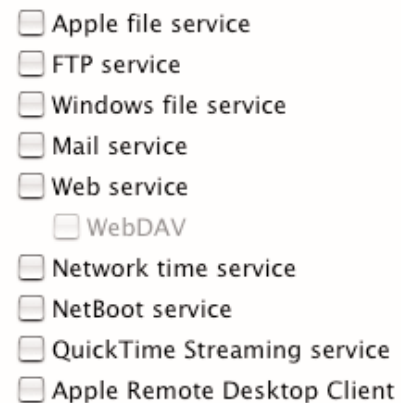NetInfo Directory
Other Directory System

Connected to Directory System

- As Specified by DHCP Server

  - Riiiiiiiiight. I want a Mac OS X Server to get a different address each time

- Apple LDAP Directory

  - This server obtains all directory information from another Mac OS X Server running as a Master

- NetInfo Directory

  - Backwards compatible with Jaguar

- Other Directory System

  - UNIX, LINUX, Open LDAP

✓ As Specified by DHCP Server
Apple LDAP Directory
NetInfo Directory
Other Directory System

Still MORE Setup Panes

- Services

  - Initially start only ARD (more secure)

- Time Zone

- Network Time

☐ Apple file service
☐ FTP service
☐ Windows file service
☐ Mail service
☐ Web service
☐ WebDAV
☐ Network time service
☐ NetBoot service
☐ QuickTime Streaming service
☐ Apple Remote Desktop Client

Now Save It

- Before applying the settings, save them
  - Create folder on second partition
    - Auto Server Setup
  - Save settings with default name inside this folder
  - Default name is MAC address.plist

Save

Now Apply

- Once file is saved in Auto Server Setup folder on second partition, settings can be applied

- Server Assistant will no longer respond after pressing the Apple button

- Remove ssh key from your client machine, it will not match after the IP is changed

One moment please...
Your server is being configured.

Your remote server has been successfully configured.
Click Continue Now to restart the server.
The remote server will restart in 25 seconds.

Continue Now
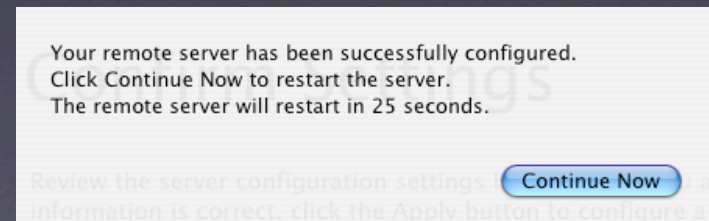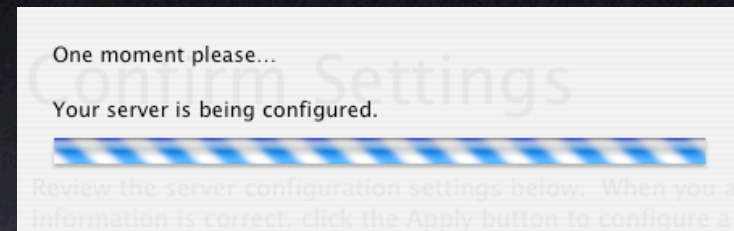
Update

- Update ARD first

  - Running `softwareupdate` from CLI can cause issues with QuickTime update if you update all (choose to not run that update yet)

  - Or locate and kill QT installer with another ssh connection

- Once ARD is updated and you can connect properly, then run Software Update via GUI

Additional Installs

- Install Developer Tools and your diagnostic/repair/maintenance tools

- Do not edit services or add data at this point

Client Install

- Client?!?

- Install Mac OS X Client on local machine and use same admin name and pwd as server (if you want)

  - Enable ssh, ARD, and update to current

- Image and copy over image to server and use `hdiutil` from CLI or CCC with ARD to clone Mac OS X Client on backup partition

Client Setup

- Do NOT boot from Client partition yet

- Copy over `/Library/Preferences/SystemConfiguration/preferences.plist` from Server to Client

  - This moves IP configuration information over

    - Remove or edit DNS and Search domain info

- Know `/etc/xinted.d/ssh` to `disable=no`

- Know ARD command to reactivate ARD

  - sudo /System/Library/CoreServices/RemoteManagement/ARDAgent.app/
    Contents/Resources/kickstart -activate -configure -access -on -restart
    -agent -privs -all

Time To Test

- Use GUI or `systemsetup` to change startup disk from server to client

  - ```
    sudo systemsetup -setstartupdisk
    /Volumes/backuphd/System/Library/
    CoreServices
    ```

- If successful, you should be able to ARD into Mac OS X Client with same credentials as server

More Client Setup

- Don't forget Auto Server Setup folder was already there

  - Keep it there

- Install Developer Tools and your diagnostic/repair/maintenance tools

- Configure to your liking - firewall, permissions, etc...

Image Time

- Use your favorite disk imaging tool to create image of current server partition in pristine, updated, non-configured state

  - Repair permissions beforehand and clean up to liking

- This is your image 1.0 and can be restored at any time in the future

- Change startup disk back to server

Back In Server

- Use your favorite disk imaging tool to create image of current client partition in case client side needs to be restored in the future

  - Repair permissions beforehand

- You now have two bootable partitions that allow for easy swapping and restoring without calling for help

Server Configuration

- Server Admin tool time

- Decide on DNS method

  - Off/On/Local Only

- Promote to Master if necessary

DNS

- If you're going to need DNS, at least have the server see itself

- Both forward and reverse records

- Double-check Network Preferences DNS and search domain settings
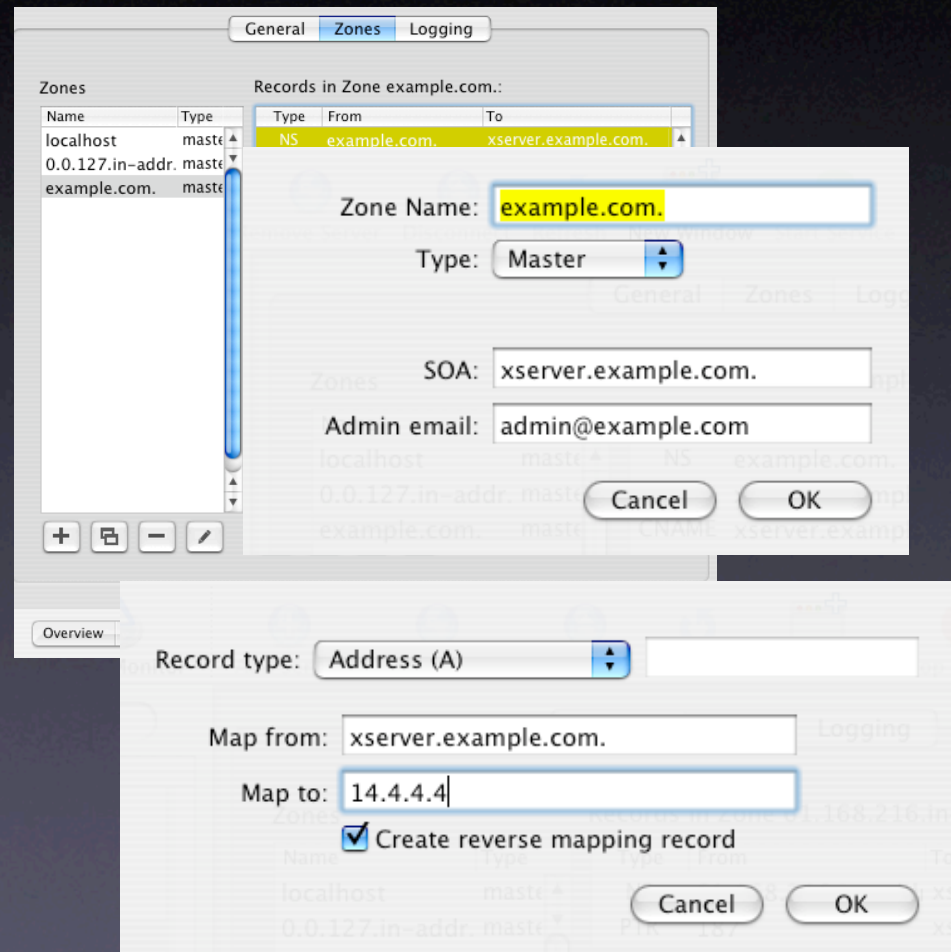
Master

- Once DNS is resolving, promote to Master
  - Use `hostname` and `host` CLI to test
- Open ssh connection and tail slapconfig log to insure proper promotion

Firewall

- Enable Firewall first

- Shut everything down except what is already shown

  - ssh, server tools

- Use Firewall GUI wisely

- Create cron job to kill firewall every 30 minutes while you test

  - If you goof, then you wait and it fixes itself

Firewall

- Delete all IP Address groups except the one named *any*

- Create new group for each interface if using more than one

- One interface use the *any* configuration

Tear-offs

- Each service's Settings tab has a tear off
  - This creates a small plist of all that service's settings

- Use tear off with Firewall often while tweaking it

- Save ALL tear offs to encrypted disk image saved on client partition

Firewall

Other Services

- Just Say No! to FTP
    - Use SFTP instead
- Use SMB with care
- Tear offs Tear offs Tear offs
    - When tweaking and making changes, save Tear offs in versioned folders on the client volume in case you need to get back to a given state

Server Perfecto

- Your server setup the way you want and you have entered all the appropriate user data and service data

- Time to create another image on client, image 2.0

- This is your configured server prior to any real usage

Daily Usage

- Monitor logs closely

- Cron jobs to:
  - Move archived log files to client volume
  - Repair permissions
  - Backup various databases such as mail, ldap, mysql, and scripts

Security

- Data can be transferred in clear text

- Use certificates to encrypt data transfers

- Use open ssh to create keys

Synopsis

- When properly planned and configured, only a serious network or hardware failure is cause for contacting the ISP

- Use clone/sync tools to mount image on client and synchronize server volume on regular basis via crontab

Thank You!

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