Xserve Configuration via Remote Management

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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

- launchd

- All MAC Addresses

- Server Hardware Serial Number

- Server Software Serial Number

Hardware

- Apple currently ships Mac OS X Server on one DVD

- Older Xserves may not have a DVD reader

- CDs are available via Apple

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 (Bonjour)

  - 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

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 DVD w/no keyboard attached

    - This obtains a DHCP address, enables ssh daemon, and has a variety of CLI tools available, all from booting off DVD

    - Explain...

So Far

- DVD 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/disk0 2 JournaledHFS+ xserver 150G JournaledHFS+ backuphd 10G

- Partitions disk into 2 HFS+ partitions called xserver and backuphd which are 150G and 10G respectively

- Brave souls can also use `pdisk`

Better Still

- 3 disks in Xserve

- First two are software mirrored and that's where the install will take place

- Third disk will be used shortly

Now Install

- Now install via Server Assistant 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

If using CDs, time to call the pal
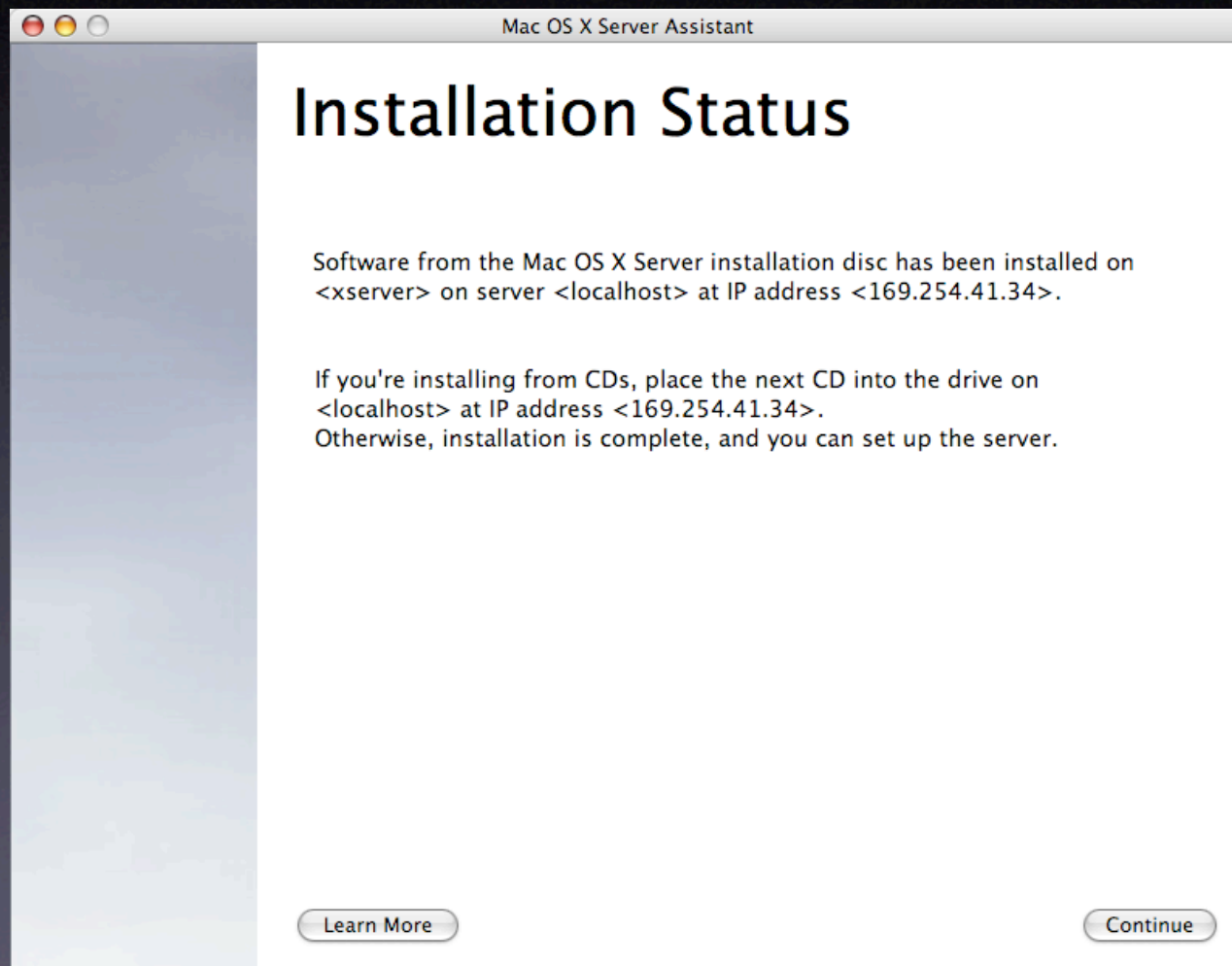
Installation Complete

- Time to setup server

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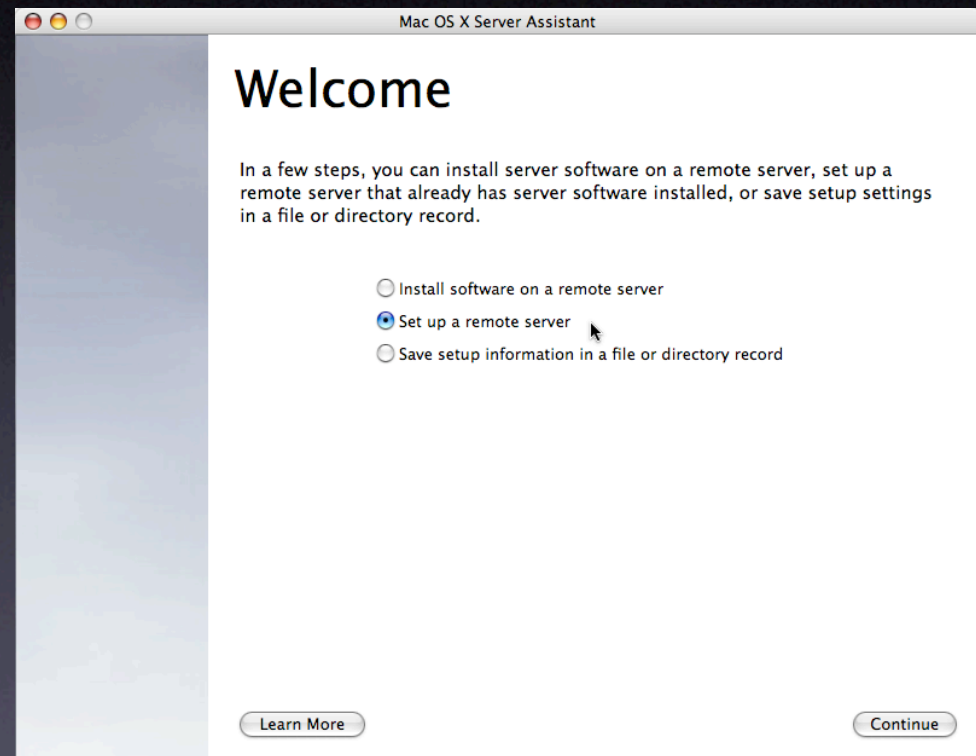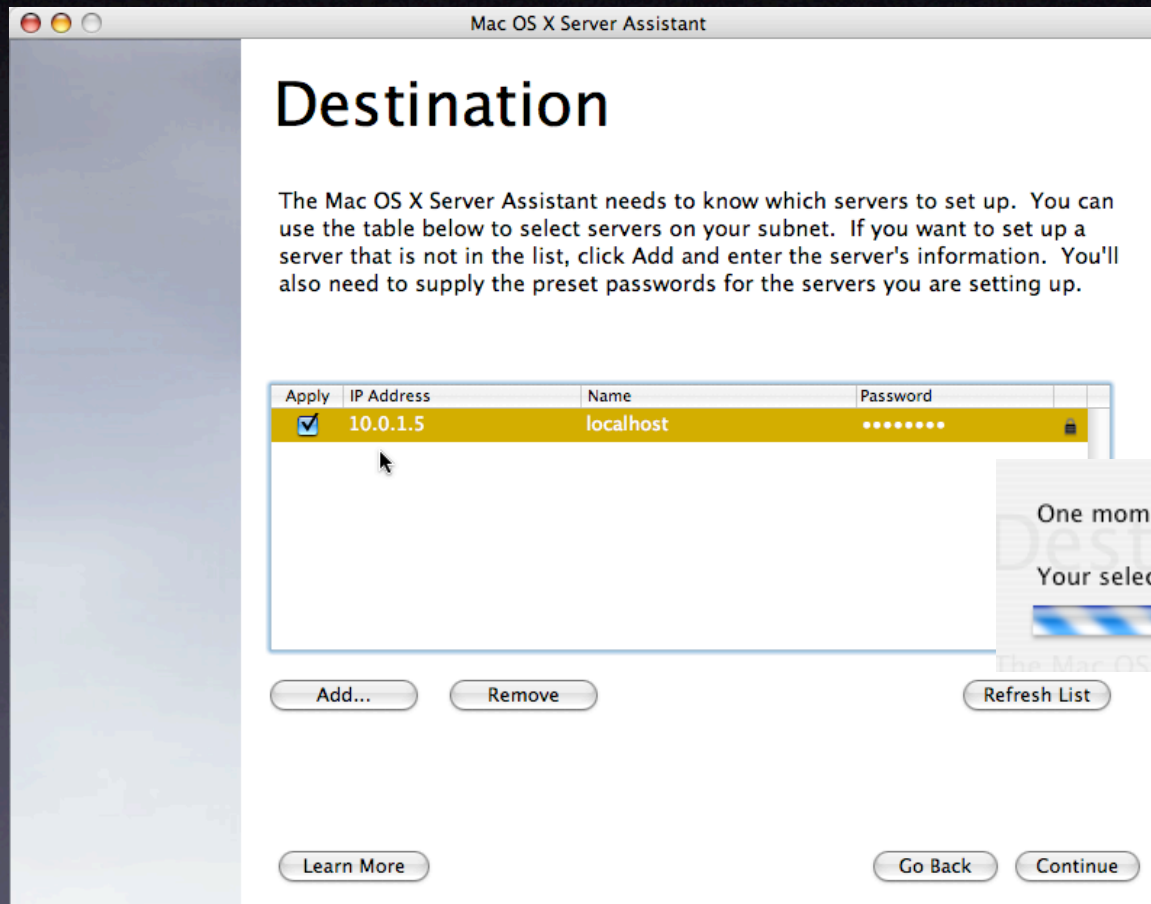
Hardware Serial # Again

Setup Panes

- Language

- Keyboard

- Serial Number

- Administrator account

  - Best practice do not use short name
    admin

More Setup Panes

- Naming
  - Hostname
    - Cannot be set initially
  - Computer Name is AFP name
  - Bonjour Name

Naming

Mac OS X Server Assistant: 10.0.1.5

Network Names

This information is needed to configure your server to be accessed over the network.

Host Name: Set dynamically
Click Learn More button for details.

Computer Name: Guitar Shop Server
Examples: My Server or Web Server

Local Hostname: Guitar-Shop-Server
Examples: MyServer or WebServer

Computers on the server's local subnet will be able to reach it at <Guitar-Shop-Server.local>.

Learn More   Go Back   Continue

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 `networksetup`

    - 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
Open Directory Server
NetInfo Server
Other Directory Server

Connected to Directory System

- As Specified by DHCP Server

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

- Open Directory Server

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

- NetInfo Server

  - Backwards compatible with Jaguar

- Other Directory Server

  - UNIX, LINUX, Open LDAP

✓ As Specified by DHCP Server
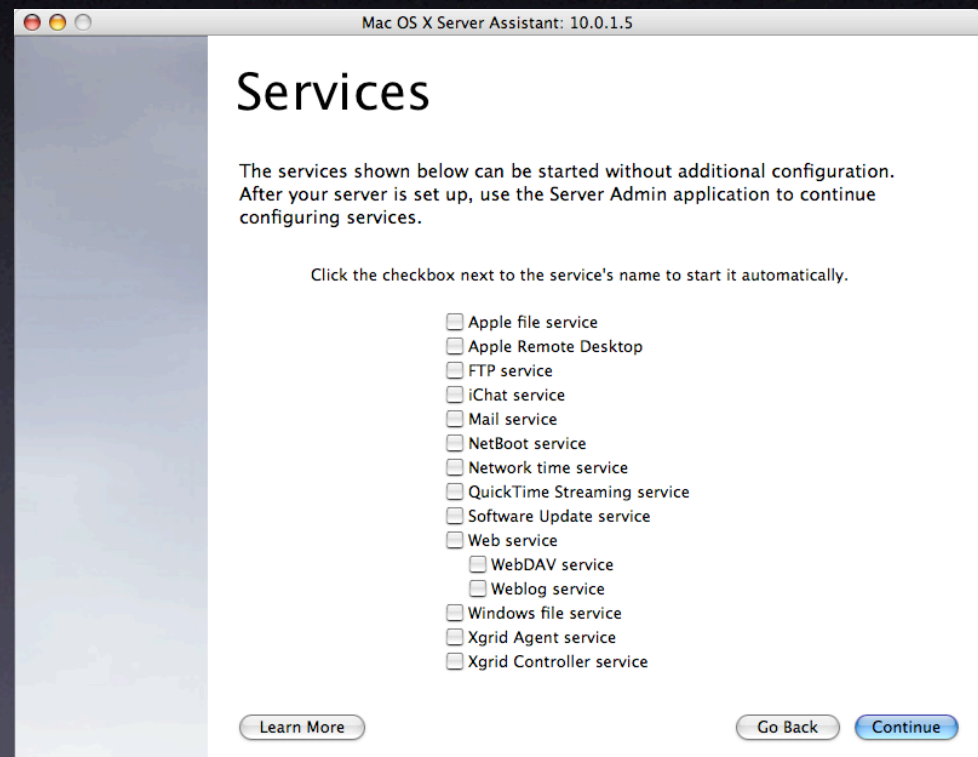Open Directory Server
NetInfo Server
Other Directory Server

Still MORE Setup Panes

- Services

  - Initially start only ARD

- Time Zone

  - Fix Time Zone after reboot

- Network Time

Now Save It

- Before applying the settings, save them

  - Create folder

    - 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 may not match after the IP is changed

One moment please...

Your server is being configured.
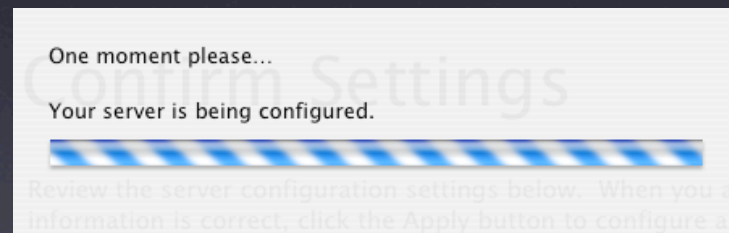
Update

- Update ARD first if necessary

- 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 on local machine and use same administrator 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 DiskUtility with ARD to clone Mac OS X Client on backup partition

Huh?

- You have a Server boot volume

- You have a Client boot volume

- They both have the same...

  - ARD, ssh, administrator name & pwd

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 if necessary

- Know ARD command to reactivate ARD just in case

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 and ssh into Mac OS X with same credentials as server

More Client Setup

- Don't forget Auto Server Setup folder was created on other volume

  - Move it to Client volume

- 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 r/w image of current server partition in pristine, updated, non-service 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

- 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 launchd 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

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 in case you need to get back to a given state

Server Perfecto

- Your server is then 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

Now The Fun Part

- Create a script to mount the server 2.0 disk image and then sync it one way with the server volume (while booted from the server of course)

- The script unmounts the disk image when finished

- Have this run whenever you want

Daily Usage

- Monitor logs closely

- launchd 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 launchd

Thank You

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