

# SO, YOU ARE NEW TO OS X SERVER ...

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[HTTP://TECHRECESS.COM](http://techrecess.com)

# TOPICS

- ✻ Best Practices for setting up your server
- ✻ Exploring OS X Server services
- ✻ Basic Introduction to Directory Services
- ✻ Introduction to User Management
- ✻ Imaging, Deployment, and Updates
- ✻ Techniques for keeping things running

# ASK YOURSELF ...

- ✻ What is currently providing network services?
- ✻ Where do user accounts currently exist?
- ✻ Who will maintain OS X Server?
- ✻ Do others outside our network need access?
- ✻ Did I download the server manuals?

# SERVER SETUP

☀ Manually set  
time-zone


☀ Establish  
secure  
password

## Administrator Account

Create a local account that will be used to administer this server. After setup, use Server Preferences to create users and administrators for use with your services.



Name:

Short Name:   
This will be used as the name for the administrator's home folder and cannot be changed.

Password:  

Verify:

Password Hint:   
(Recommended)

-  Enable administrators to log in remotely using SSH
-  Enable administrators to manage this server remotely

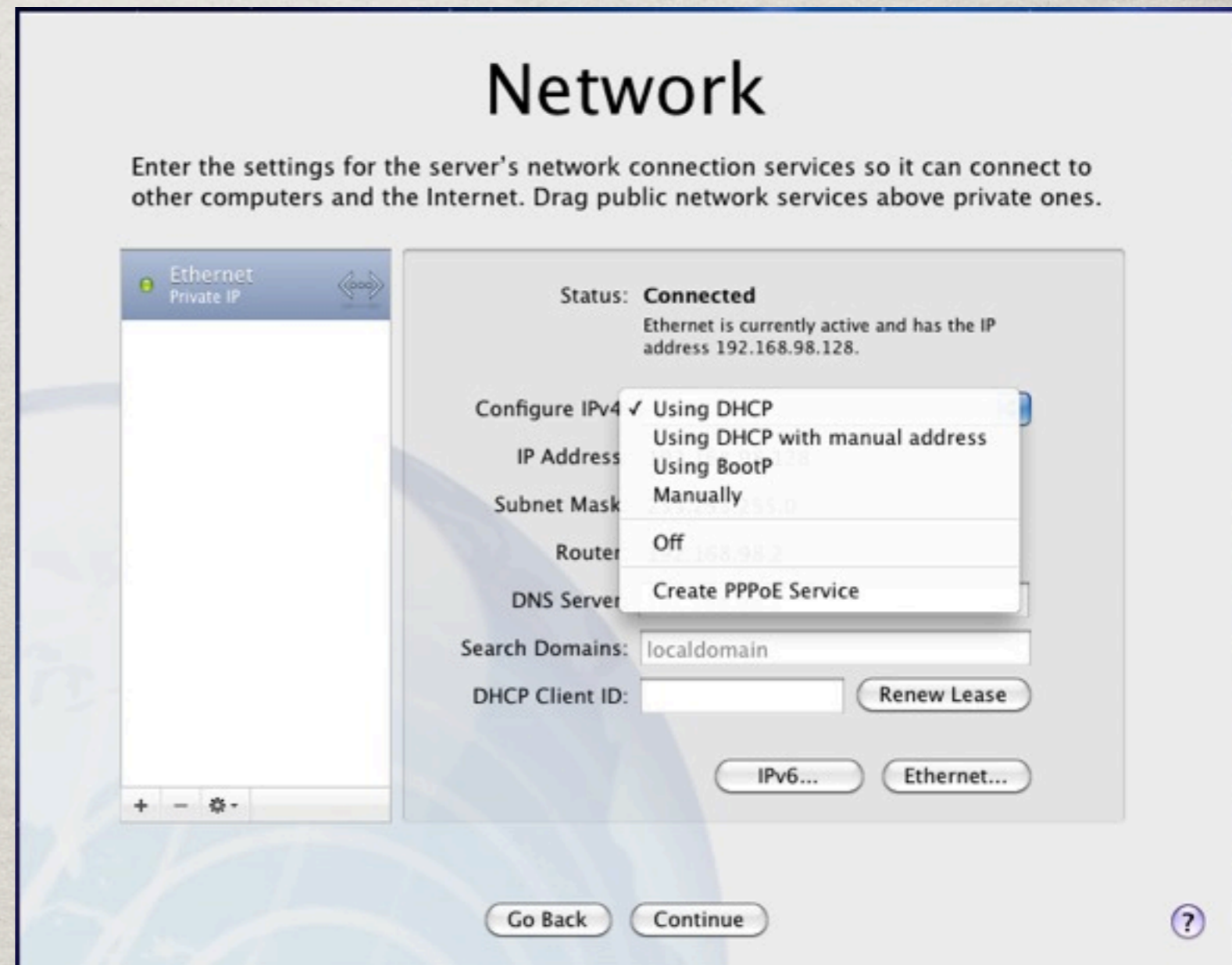
Go Back

Continue



# NETWORK SETTINGS

☼ Set IP Address manually



# NETWORK SETTINGS

- ✿ Set IP Address manually
- ✿ DNS
- ✿ Search Domain
- ✿ Network Name

## Network

Enter the settings for the server's network connection services so it can connect to other computers and the Internet. Drag public network services above private ones.

**Ethernet**  
Private IP

Status: **Connected**  
Ethernet is currently active and has the IP address 192.168.204.128.

Configure IPv4:

IP Address:

Subnet Mask:

Router:

DNS Server:

Search Domains:

# NETWORK SETTINGS

☼ Set IP Address manually

☼ DNS

☼ Search Domain

☼ Network Name

## Network Names

Enter the names that other computers on the network will use to identify your server.

Primary DNS Name:   
Examples: myserver.example.com or myserver.private

Computer Name:   
Examples: My Server or Web Server

Computers on your local network can access your server at:  
ocelot.local

No DNS name was found for this computer. This server will provide its own limited name resolution so that services operate properly.

# USERS AND GROUPS

## Users and Groups

Select how you would like to manage users and groups on your server.

- Create Users and Groups**  
Use Open Directory to create users and groups for a small business or home office.
- Import Users and Groups**  
Import users and groups from a directory server on an existing network.
- Configure Manually**  
View more advanced options for configuring directory services.

Go Back

Continue





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Continue




# CONFIGURE MANUALLY

## ☼ Setup Directory Services

### Connect to a Directory Server


Configure the server to access users and groups from an existing Open Directory or Active Directory server. Or don't select this option, and configure directory usage after setup.

 Connect to a directory server

Server Address:

### Directory Services

Set up an Open Directory master to provide network users and groups, as well as other directory services from your server.

 Set up an Open Directory master

Directory Administrator

Name:

Short Name:  UID:

Password: <same as local administrator>

Restrict individual user and group access to services

Service access can be changed using Server Admin or Server Preferences.  
Users added in Server Preferences will initially be granted access.

# SETUP TIPS

The screenshot shows the Disk Utility RAID configuration window for a volume named "Data". The window title is "Data" and it has standard macOS window controls. The top toolbar includes buttons for Verify, Info, Burn, Mount, Eject, Enable Journaling, New Image, Convert, Resize Image, and Log. The left sidebar shows a list of disks and RAID slices, with "931.4 GB Data" selected. The main panel has tabs for "First Aid" and "RAID", with "RAID" selected. It displays the RAID Set Name as "Data", Volume Format as "Mac OS Extended (Journaled)", RAID Type as "Mirrored RAID Set", and RAID Set Size as 931.4 GB. Below this, a table lists the RAID set and its constituent slices, all with a status of "Online". At the bottom, there are buttons for "+", "-", "Options...", "Delete", and "Update". A status bar at the very bottom provides a disk description and total capacity.

931.5 GB WDC WD1002...  
RAID Slice  
931.5 GB WDC WD1002...  
RAID Slice  
76.7 GB Maxtor 6L080M0  
Wexserver2  
**931.4 GB Data**  
Data  
MATSHITA CD-RW CW-...

First Aid RAID

RAID Set Name: Data  
Volume Format: Mac OS Extended (Journaled)  
RAID Type: Mirrored RAID Set  
RAID Set Size: 931.4 GB

To delete a selected RAID set, click Delete.

931.4 GB - "Data" - Mirrored RAID Set	Online
931.4 GB - RAID Slice (disk0s3)	
931.4 GB - RAID Slice (disk1s3)	

+ - Options... Delete Update

Disk Description : Apple RAID  
Set Name : Data  
Type : Mirrored RAID Set  
Version : AppleRAID version 2.0

Total Capacity : 931.4 GB (1,000,070,610,944 Bytes)  
RAID Status : Online  
Number of Slices : 2

# SETUP TIPS

- ✻ Avoid configuring services until network parameters are permanent
- ✻ Configure Boot Volume RAID before Install
- ✻ Document important information
- ✻ Create secondary admin account

# POST INSTALL

- ✻ Run Software Update
- ✻ Check Server Admin Tools version
- ✻ Review Spotlight Settings
- ✻ Configure Network Settings

# NETWORK SETTINGS CONSIDERATIONS

# LOM

- ✻ Lights Out Management
- ✻ Allows for remote shutdown / restart
- ✻ Does not work with 802.3ad (LinkAgg)
- ✻ Configure secondary IP via Server Monitor
- ✻ More information: <http://support.apple.com/kb/ta24506>



# LINK AGGREGATION (AKA 802.3AD)

- ✻ Virtually bond multiple ports
- ✻ Configuration switch side and server side
- ✻ Use different switch modules if possible
- ✻ Make sure physical interface is set inactive

# DNS

- ✪ This is **crucial** to having a stable setup!
- ✪ Make sure forward and reverse DNS match!
- ✪ Test via host command on client and server
- ✪ Check via changeip -checkhostname command
- ✪ Check via scutil --get HostName

```
Terminal — bash — 80x24
ocelot:~ preso$ host ocelot.example.com
ocelot.example.com has address 192.168.98.128
ocelot:~ preso$ host 192.168.98.128
128.98.168.192.in-addr.arpa domain name pointer ocelot.example.com.
ocelot:~ preso$
```

```
Terminal — bash — 80x24
ocelot:~ preso$ sudo changeip -checkhostname

WARNING: Improper use of the sudo command could lead to data loss
or the deletion of important system files. Please double-check your
typing when using sudo. Type "man sudo" for more information.

To proceed, enter your password, or type Ctrl-C to abort.

Password:

Primary address      = 192.168.98.128

Current HostName    = ocelot.example.com
DNS HostName        = ocelot.example.com

The names match. There is nothing to change.
dirserv:success = "success"
ocelot:~ preso$
```

```
Terminal — bash — 80x24
ocelot:~ preso$ scutil --get HostName
ocelot.example.com
ocelot:~ preso$
```

# SERVER MANAGEMENT APPLICATIONS

- ✻ Located in /Applications/Server
- ✻ Download current versions from Apple
- ✻ Can be installed on client machines for server administration

# SERVER MONITOR



# SERVER MONITOR

- ✿ Focused on server hardware
  - ✿ View physical stats of server
  - ✿ Set hardware notifications



# SERVER MONITOR

Server Monitor

Add Server Edit Server Delete Server

Search

Choose a server to monitor:

Name	IP Address	Status Summary
localhost	127.0.0.1	

Show warnings and failures only  Show detailed status

Show Log Edit Notifications

Info Memory Drives Power Network Temperature Blowers Security

IP address: 127.0.0.1  
Name: maxserverdistrict30k12ilus  
Kind: Xserve3,1  
Up time: 18 days 12:56:58  
Last update: 1/7/11 10:58:21 PM

OS version: Mac OS X Server 10.6.5 (10H575)  
Processor: 2 x 2.26 GHz Quad-Core Intel Xeon  
Memory: 9 GB  
Boot ROM: XS31.0081.B06  
Serial number: H00252JA6H5  
LOM version: 1.1.9

System identifier light

Update every: 10 seconds Update Now

Get Apple System Profiler Report  
Restart... Shut Down...



# SERVER MONITOR

Server Monitor

Add Server Edit Server Delete Server

Search

Choose a server to monitor:

Name	IP Address	Status Summary
	127.0.0.1	

Show warnings and failures only  Show detailed status

Show Log Edit Notifications

Info Memory **Drives** Power Network Temperature Blowers Security

Drive: Drive 2

Kind: disk1  
Manufacturer: Western Digital  
Model: WDC WD1002FBYS-43P180  
Bus: ATA  
Drive Bay: Internal (Bay 2)








Capacity: 931.51 GB  
Bytes Written: 28.77 GB  
Bytes Read: 534.69 GB  
RAID Status: Online (Mirror)  
Pre-failure Warning: No Warnings





# SERVER MONITOR

**Enabled Notifications**

Devices:        All On  
Memory, Drives, Power, Network, Temperature, Blowers, Security All Off

**Email Settings**

From:

To:  Add  
 Delete

Subject:

SMTP Server:

Sending:  Remote server sends notification email directly  
 This application sends notification email on server's behalf

Cancel OK



# SERVER ADMIN



# SERVER ADMIN

- ✻ Application Manages:
  - ✻ Service availability and configuration
  - ✻ File Sharing
  - ✻ Access to services
  - ✻ Service logging and diagnostic information



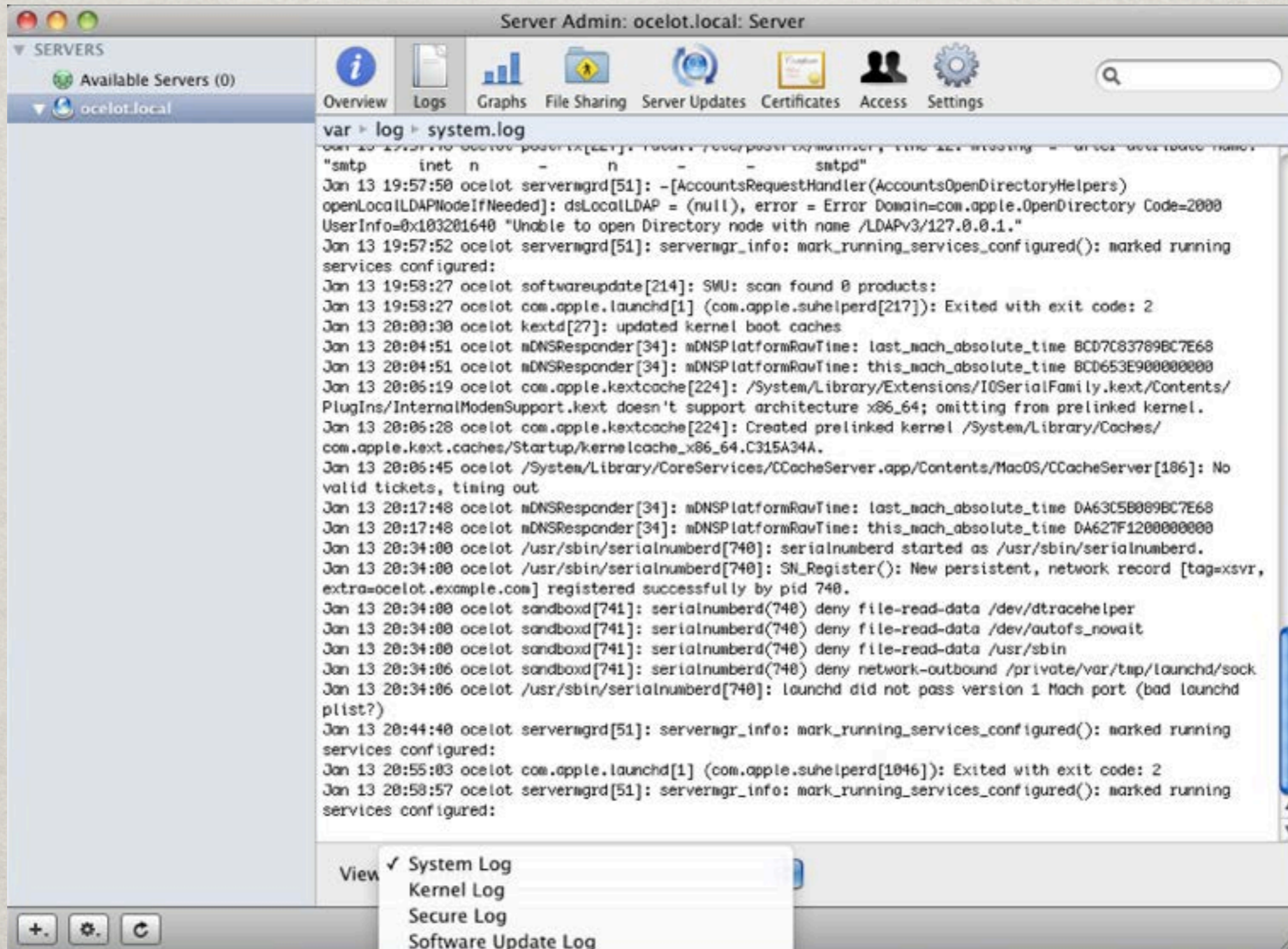
# SERVER - OVERVIEW

The screenshot displays the Server Admin application window titled "Server Admin: ocelot.local: Server". The interface is divided into several sections:

- Left Sidebar:** Shows a tree view under "SERVERS" with "Available Servers (0)" and "ocelot.local" selected.
- Top Navigation:** Includes icons for Overview (selected), Logs, Graphs, File Sharing, Server Updates, Certificates, Access, and Settings.
- Hardware Section:** Features a monitor icon and the following details:
  - Name: ocelot
  - Model: Mac
  - Processor: 2 x 1.77 GHz (unknown)
  - Serial Number: VMWVk2Vvo5w
  - Memory: 2.0 GB
  - Storage: 42.61 GB
- Software Section:** Lists system information:
  - Server License: Unlimited-client license
  - Boot Volume: Macintosh HD
  - Kernel Version: Darwin 10.6.0
  - System Version: Mac OS X Server 10.6.6 (Build 10J567)
- Services Section:** Currently empty.
- Status Section:** Shows "Connected Users: 0" and "Uptime: 1 hour, 3 minutes".
- Bottom Left:** A menu with options: "Add Server...", "Add Group...", "Add Smart Group...", and "Add Service...".
- Bottom Bar:** Contains icons for adding (+), settings (gear), and refreshing (refresh).



# SERVER - LOGS



The screenshot shows the Server Admin application window for 'ocelot.local: Server'. The 'Log' tab is selected, displaying the contents of the system log. The log entries include:

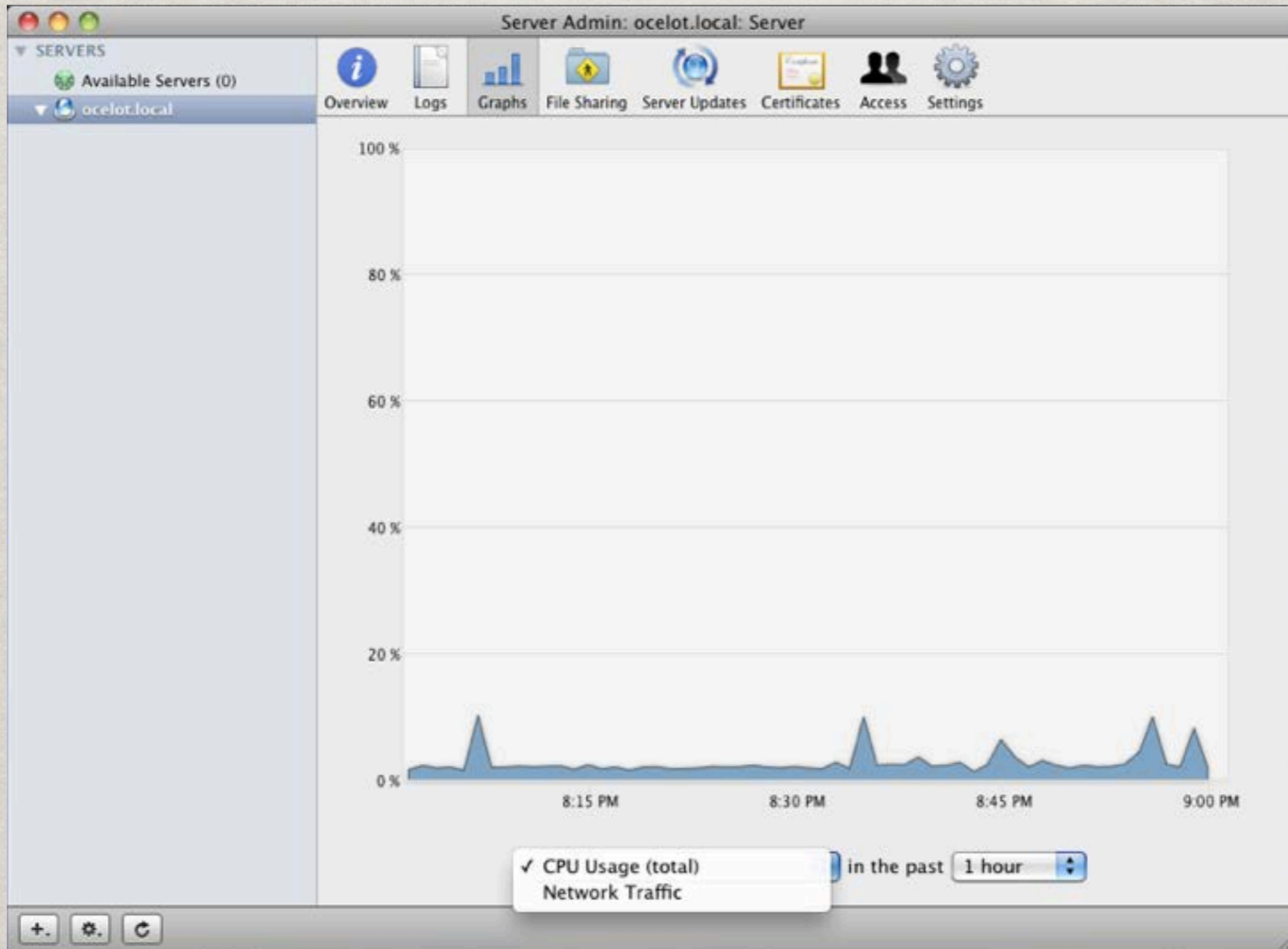
```
var > log > system.log
Jan 13 19:57:50 ocelot servermgrd[51]: --[AccountsRequestHandler(AccountsOpenDirectoryHelpers)
openLocalLDAPNodeIfNeeded]: dsLocalLDAP = (null), error = Error Domain=com.apple.OpenDirectory Code=2000
UserInfo=0x103201640 "Unable to open Directory node with name /LDAPv3/127.0.0.1."
Jan 13 19:57:52 ocelot servermgrd[51]: servermgr_info: mark_running_services_configured(): marked running
services configured:
Jan 13 19:58:27 ocelot softwareupdate[214]: SMU: scan found 0 products:
Jan 13 19:58:27 ocelot com.apple.launchd[1] (com.apple.suhelperd[217]): Exited with exit code: 2
Jan 13 20:00:30 ocelot kextd[27]: updated kernel boot caches
Jan 13 20:04:51 ocelot mDNSResponder[34]: mDNSPlatformRavTime: last_mach_absolute_time BCD7C83789BC7E68
Jan 13 20:04:51 ocelot mDNSResponder[34]: mDNSPlatformRavTime: this_mach_absolute_time BCD653E900000000
Jan 13 20:06:19 ocelot com.apple.kextcache[224]: /System/Library/Extensions/IOSerialFamily.kext/Contents/
PlugIns/InternalModemSupport.kext doesn't support architecture x86_64; omitting from prelinked kernel.
Jan 13 20:06:28 ocelot com.apple.kextcache[224]: Created prelinked kernel /System/Library/Caches/
com.apple.kext.caches/Startup/kernelcache_x86_64.C315A34A.
Jan 13 20:06:45 ocelot /System/Library/CoreServices/CCacheServer.app/Contents/MacOS/CCacheServer[186]: No
valid tickets, timing out
Jan 13 20:17:48 ocelot mDNSResponder[34]: mDNSPlatformRavTime: last_mach_absolute_time DA63C5B009BC7E68
Jan 13 20:17:48 ocelot mDNSResponder[34]: mDNSPlatformRavTime: this_mach_absolute_time DA627F1200000000
Jan 13 20:34:00 ocelot /usr/sbin/serialnumberd[740]: serialnumberd started as /usr/sbin/serialnumberd.
Jan 13 20:34:00 ocelot /usr/sbin/serialnumberd[740]: SN_Register(): New persistent, network record [tag=xsvr,
extra=ocelot.example.com] registered successfully by pid 740.
Jan 13 20:34:00 ocelot sandboxd[741]: serialnumberd(740) deny file-read-data /dev/dtracehelper
Jan 13 20:34:00 ocelot sandboxd[741]: serialnumberd(740) deny file-read-data /dev/autofs_novait
Jan 13 20:34:00 ocelot sandboxd[741]: serialnumberd(740) deny file-read-data /usr/sbin
Jan 13 20:34:06 ocelot sandboxd[741]: serialnumberd(740) deny network-outbound /private/var/tmp/launchd/sock
Jan 13 20:34:06 ocelot /usr/sbin/serialnumberd[740]: launchd did not pass version 1 Mach port (bad launchd
plist?)
Jan 13 20:44:40 ocelot servermgrd[51]: servermgr_info: mark_running_services_configured(): marked running
services configured:
Jan 13 20:55:03 ocelot com.apple.launchd[1] (com.apple.suhelperd[1046]): Exited with exit code: 2
Jan 13 20:58:57 ocelot servermgrd[51]: servermgr_info: mark_running_services_configured(): marked running
services configured:
```

At the bottom, a 'View' menu is open, showing the following options:

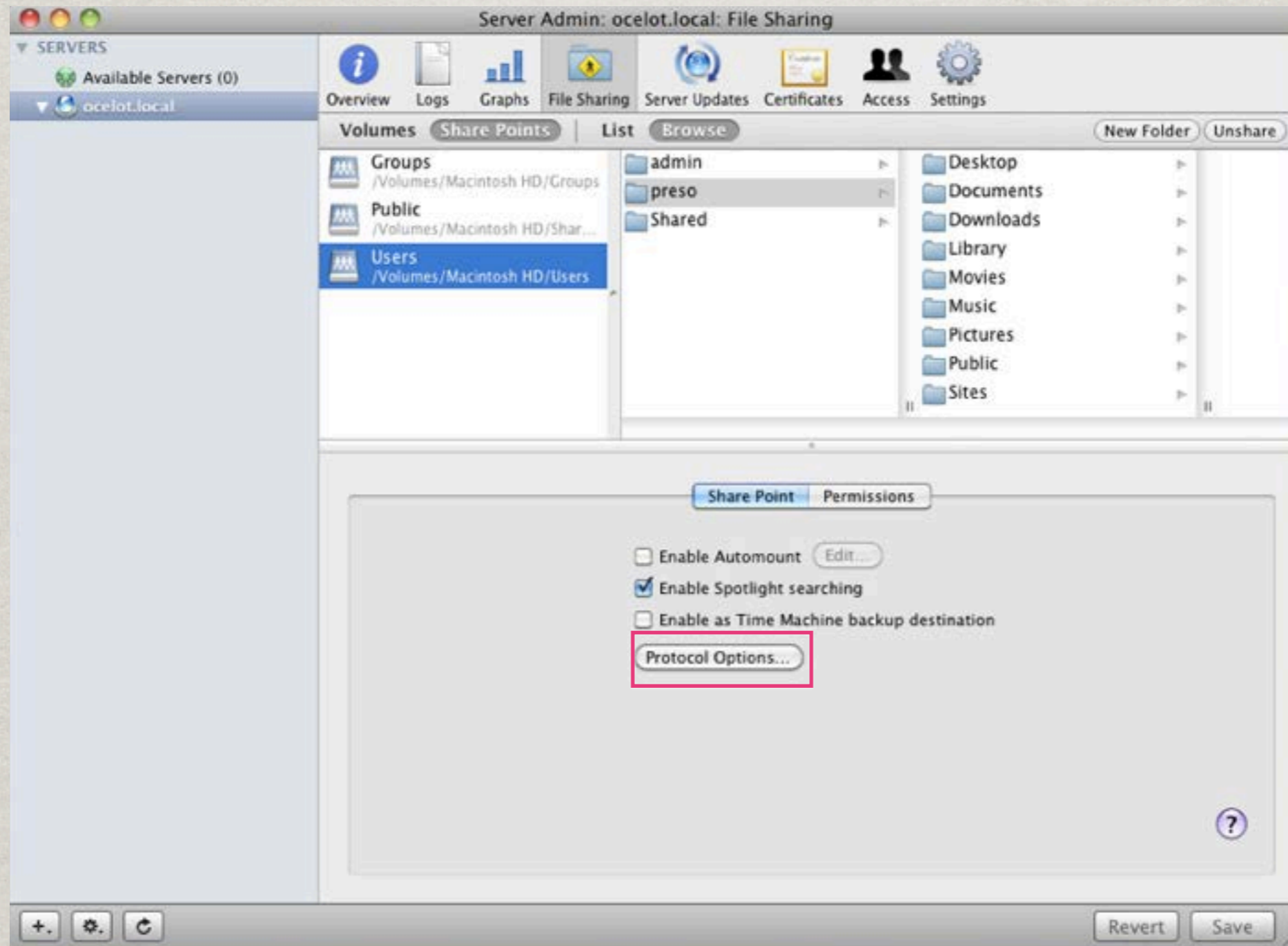
- ✓ System Log
- Kernel Log
- Secure Log
- Software Update Log



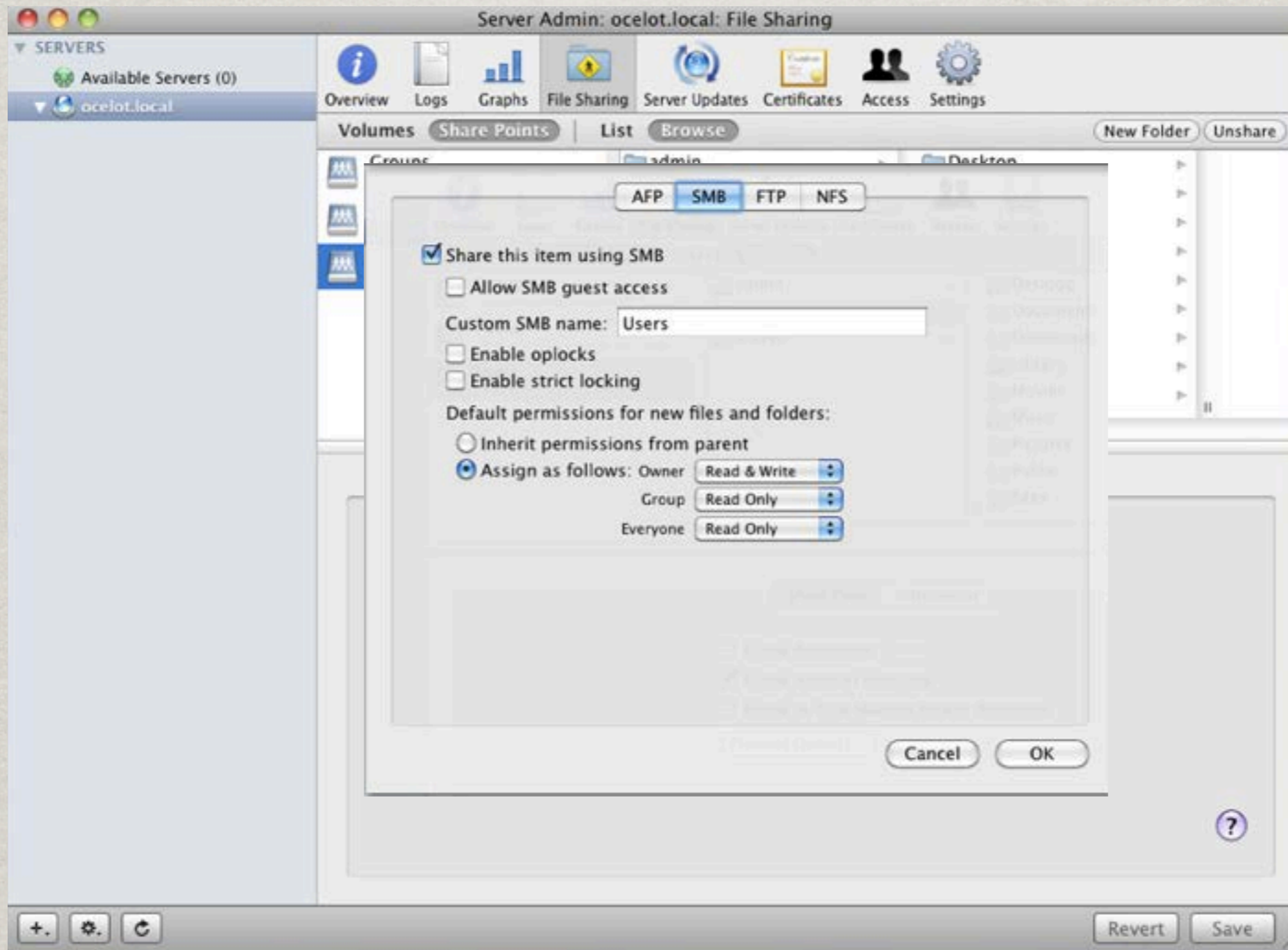
# SERVER - GRAPHS



# SERVER - FILE SHARING



# SERVER - FILE SHARING





# SERVER - CERTIFICATES

Server Admin: ocelot.local: Certificates

SERVERS

- Available Servers (0)
- ocelot.local

Overview Logs Graphs File Sharing Server Updates Certificates Access Settings

A certificate identity consists of a public certificate and a private key. These certificate identities can be used to secure network communications for your services.

Name	Expires
ocelot.example.com	1/3/12

+. - \*

**ocelot.example.com**  
Self-signed root certificate  
Expires: Tuesday, January 3, 2012 10:55:04 AM CT  
**This root certificate is not trusted**

**Details**

Subject Name \_\_\_\_\_

Common Name ocelot.example.com  
Country US

Issuer Name \_\_\_\_\_

Common Name ocelot.example.com  
Country US

Serial Number 1  
Version 3

Signature Algorithm SHA-1 with RSA Encryption ( 1 2 840 113549 1 1 5 )  
Parameters none

+. . ?



# SERVER - ACCESS

Server Admin: ocelot.local: Server

SERVERS

Available Servers (0)

ocelot.local

Overview Logs Graphs File Sharing Server Updates Certificates Access Settings

Services Administrators

For all services

For selected services below:

Service
Address Book
AFP
DHCP
DNS
File Sharing
Firewall
FTP
iCal
iChat
Mail
Mobile Access
MySQL
NAT
NetBoot
NFS
Open Directory
Podcast Producer
Print
Push Notification

Allow to administer or monitor:

Name	Permission
Address Book	Only members of the Admin group can administer this service. Click the add button and drag users and groups into this list to allow additional administrators or monitors.

Service access is restricted

+ -

Revert Save



# SERVER - SETTINGS

The screenshot displays the Server Admin application window for 'ocelot.local: Server'. The interface includes a sidebar with a list of services, a top navigation bar with icons for Overview, Logs, Graphs, File Sharing, Server Updates, Certificates, Access, and Settings. The main content area is divided into tabs: General, Network, Date & Time, Alerts, and Services. The 'General' tab is active, showing a 'Protocols' section with several checked options: Network Time Server (NTP), Network Management Server (SNMP), Remote Login (SSH) (with a note 'Required while creating an Open Directory replica'), Remote Management, Server Side File Tracking for Mobile Home Sync, and Client Binding Discovery With Bonjour. Below this is a 'Serial Number' section with a license key 'XSVR - 106 - 000 - R - 6PQ - 893 - FBZ - HGF - HQR - ... - .' and a note 'Unlimited-client license. Never expires'. There are input fields for 'Registered to: SD30' and 'Organization:'. At the bottom right, there are 'Revert' and 'Save' buttons.

Server Admin: ocelot.local: Server

SERVICES

- Available Servers (0)
- ocelot.local
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

Overview Logs Graphs File Sharing Server Updates Certificates Access Settings

General Network Date & Time Alerts Services

Protocols

Enable:  Network Time Server (NTP)  
 Network Management Server (SNMP)  
 Remote Login (SSH)  
Required while creating an Open Directory replica  
 Remote Management  
 Server Side File Tracking for Mobile Home Sync  
 Client Binding Discovery With Bonjour

Serial Number

XSVR - 106 - 000 - R - 6PQ - 893 - FBZ - HGF - HQR - ... - .

Unlimited-client license. Never expires

Registered to: SD30

Organization:

Revert Save



# SERVER

The screenshot displays the Server Admin application window for 'ocelot.example.com'. The window title is 'Server Admin: ocelot.example.com: Server'. The interface is divided into several sections:

- Left Sidebar:** A tree view under 'SERVERS' showing 'Available Servers (0)' and 'ocelot.example.com'. Below this is a list of services with status indicators (green circles): Address Book, AFP, DHCP, DNS, Firewall, FTP, iCal, iChat, Mail, Mobile Access, MySQL, NAT, NetBoot, NFS, Open Directory, Podcast Producer, Print, Push Notification, QuickTime Streaming, RADIUS, SMB, Software Update, VPN, Web, and Xgrid.
- Top Navigation:** A row of icons for Overview, Logs, Graphs, File Sharing, Server Updates, Certificates, Access, and Settings.
- Sub-headers:** A row of tabs for General, Network, Date & Time, Alerts (selected), and Services.
- Main Content Area:**
  - Section: 'Send an email to the addresses below when'
  - Options:
    - A disk has less than  % free space available
    - New software updates are available for the server
    - A certificate is expired or about to expire
  - Section: 'Addresses to notify:'
  - A text area with horizontal blue and white stripes, currently empty.
  - Buttons: '+ -' for adding or removing addresses.
- Bottom Bar:** Contains '+', a gear icon, a refresh icon, and 'Revert' and 'Save' buttons.



# SERVER

The screenshot shows the Server Admin application window for 'ocelot.local: Server'. The interface includes a sidebar with 'SERVERS' and 'Available Servers (0)'. The main content area is divided into tabs: 'General', 'Network', 'Date & Time', 'Alerts', and 'Services' (which is selected). Below the tabs, there is a section titled 'Select the services to configure on this server:' followed by a list of services, each with an unchecked checkbox:

- Address Book
- AFP
- DHCP
- DNS
- Firewall
- FTP
- iCal
- iChat
- Mail
- Mobile Access
- MySQL
- NAT
- NetBoot
- NFS
- Open Directory
- Podcast Producer
- Print
- Push Notification
- QuickTime Streaming
- RADIUS
- SMB
- Software Update

At the bottom of the window, there are buttons for '+', a gear icon, a refresh icon, 'Revert', and 'Save'.



# SERVICES

Podcast Producer

Mobile Access

Push

Firewall

iCal

XGrid

Mail

NAT

NFS

Software Update

AFP

DHCP

Web

MySQL

VPN

NetBoot

OpenDirectory

QuickTime Streaming

RADIUS

Print

Address Book

iChat

SMB

DNS



# NETWORK SERVICES

Firewall

NAT

DHCP

DNS



# DHCP

- ✱ Dynamic Host Configuration Protocol
- ✱ Provides network information to clients
- ✱ Service shows current clients and leases
- ✱ Ability to set static leases

Do not duplicate this service if  
already running on your network!



# DHCP

The screenshot shows the 'Server Admin' interface for 'ocelot.example.com' with the 'DHCP' service selected. The interface includes a sidebar with various services, a top navigation bar with icons for Overview, Log, Clients, Subnets, Static Maps, and Settings, and a search bar for 'Subnet Name'. A table lists the DHCP subnets, with one entry selected: '192.168.98 Ethernet' on interface 'en0', with a starting address of '192.168.98.2' and an ending address of '192.168.98.253'. Below the table, the configuration details for the selected subnet are shown in a form with tabs for 'General', 'DNS', 'LDAP', and 'WINS'. The 'General' tab is active, showing fields for Subnet Name, Starting IP Address, Ending IP Address, Subnet Mask, Network Interface, Router, and Lease Time.

Server Admin: ocelot.example.com: DHCP

SERVICES

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP**
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

Overview Log Clients Subnets Static Maps Settings

Enable	Name	Interface	Starting Address	Ending Address
<input type="checkbox"/>	192.168.98 Ethernet	en0	192.168.98.2	192.168.98.253

+ -

General DNS LDAP WINS

Subnet Name: 192.168.98 Ethernet

Starting IP Address: 192.168.98.2

Ending IP Address: 192.168.98.253

Subnet Mask: 255.255.255.0

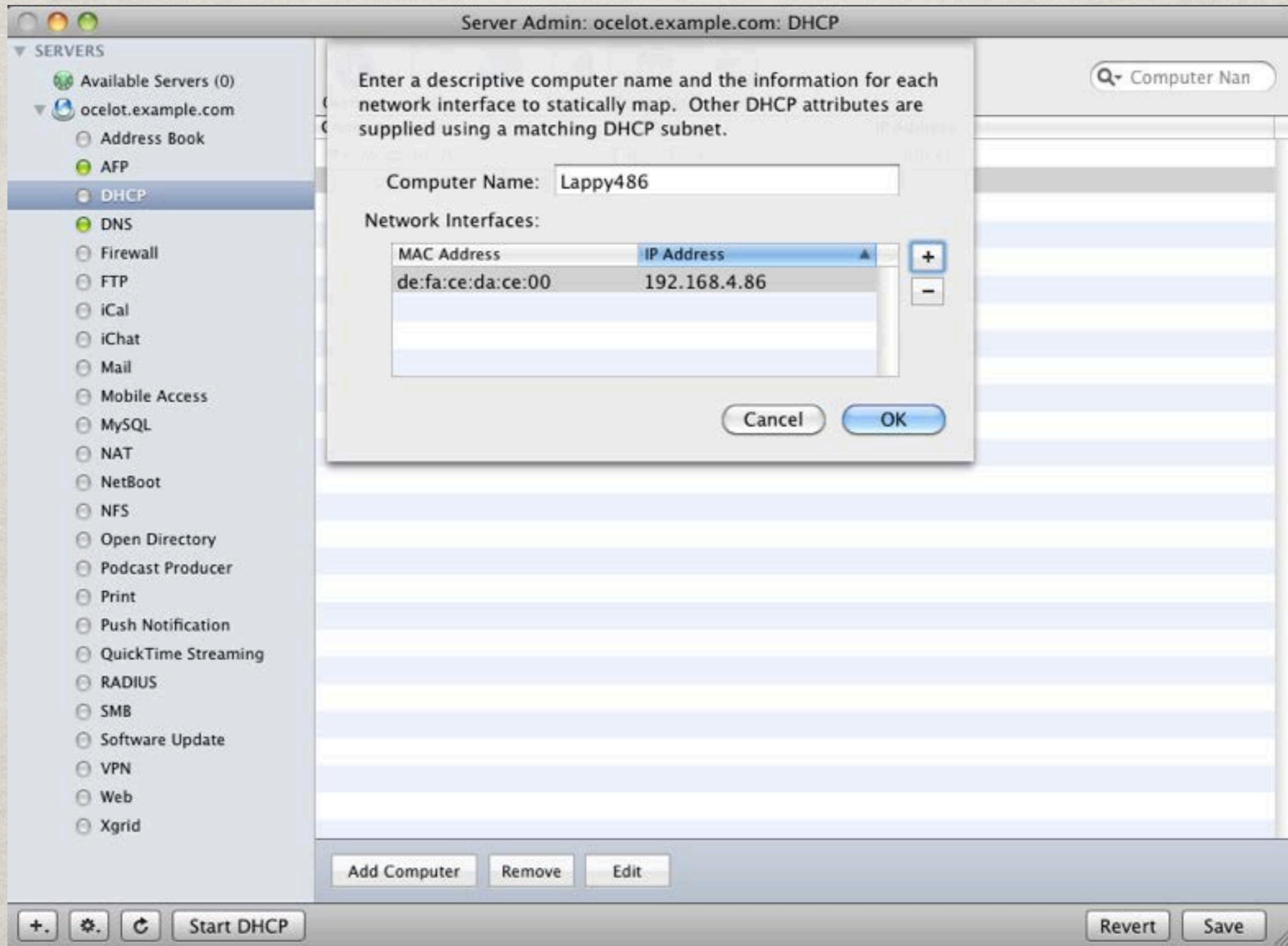
Network Interface: en0

Router: 192.168.98.2

Lease Time: 1 hours

+ . Start DHCP Revert Save

# DHCP



# DNS

- ✱ Provides name-to-IP resolution
- ✱ CRITICAL for OS X
- ✱ DNS forwarders server as upstream

# DNS

The screenshot shows the Server Admin interface for DNS configuration on a server named 'ocelot.example.com'. The window title is 'Server Admin: ocelot.example.com: DNS'. On the left, a sidebar lists various services, with 'DNS' selected. The main area shows a table of DNS zones and records. Below the table are buttons for 'Add Zone', 'Add Record', and 'Remove'. The 'General' tab is active, showing fields for 'Primary Zone Name' (example.com.), 'Admin Email' (admin@example.com.), and a checked 'Fully Qualified' option. There is also an unchecked 'Allows zone transfer' checkbox. A table of 'Nameservers' is shown with one entry: 'example.com.' pointing to 'ocelot.example.com.'. A 'Mail Exchangers' table is also present but empty. At the bottom, there are buttons for '+', a gear icon, a refresh icon, 'Stop DNS', 'Revert', and 'Save'.

Name	Type	Value
▼ 98.168.192.in-addr.arpa.	Reverse Zone	-
192.168.98.128	Reverse Mapping	ocelot.example.com.
▼ example.com.	Primary Zone	-
ocelot	Machine	192.168.98.128

Buttons: Add Zone, Add Record, Remove

Tabs: General, Expiration

Primary Zone Name:   Fully Qualified

Admin Email:

Allows zone transfer

Zone	Nameserver Hostname	
example.com.	ocelot.example.com.	+ -

Mail Exchangers:

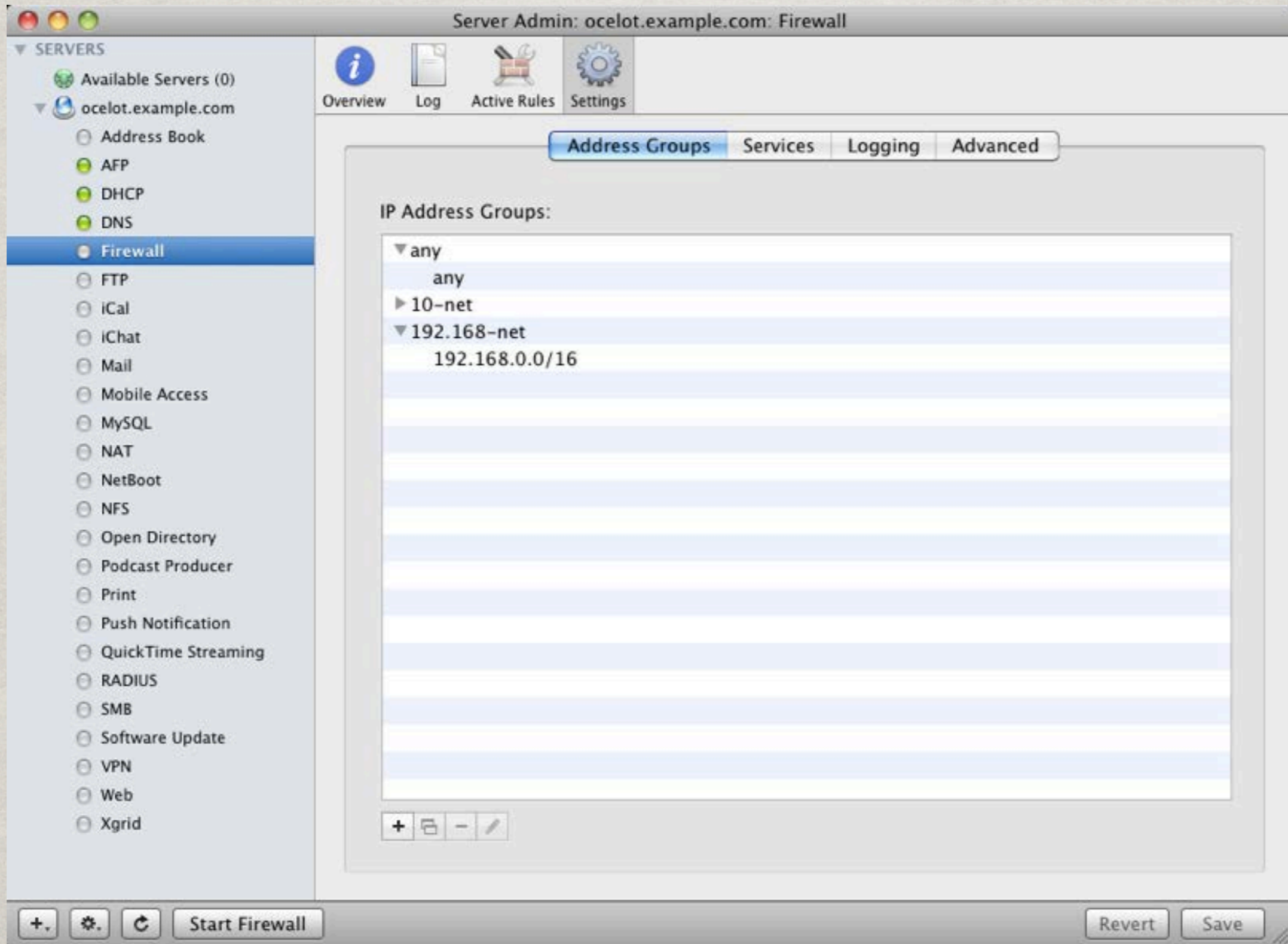
Hostname	Priority	
----------	----------	--

Bottom buttons: +, [gear], [refresh], Stop DNS, Revert, Save

# FIREWALL

- ✻ Prevents access to specific ports related to service
- ✻ Built on a granting permission style
- ✻ Permissions based on network addresses
- ✻ Customizable

# FIREWALL



# FIREWALL

Server Admin: ocelot.example.com: Firewall

SERVERS

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall**
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

Overview Log Active Rules Settings

Address Groups Services Logging Advanced

Editing services for  any  
 10-net  
 192.168-net

Allow all traffic  
 Allow only traffic to these ports:

Allow	Description	Ports	Protocol
<input checked="" type="checkbox"/>	TCP (outgoing)		TCP UDP
<input checked="" type="checkbox"/>	TCP (established)		TCP UDP
<input checked="" type="checkbox"/>	UDP Fragments		TCP UDP
<input checked="" type="checkbox"/>	UDP outbound and responses to same port		TCP UDP
<input type="checkbox"/>	UDP inbound and responses to same port		TCP UDP
<input type="checkbox"/>	VPN PPTP: GRE - Generic Routing Encapsulation protocol		GRE
<input type="checkbox"/>	VPN L2TP: ESP - Encapsulating Security Payload protocol		ESP
<input checked="" type="checkbox"/>	IGMP - Internet Group Management Protocol		IGMP
<input type="checkbox"/>	ICMP - all messages		ICMP
<input type="checkbox"/>	Password Server	106,3659	TCP UDP
<input type="checkbox"/>	WebObjects	1085	TCP UDP
<input type="checkbox"/>	Remote RMI and RMI/IIOP access to JBoss	1099,8043	TCP UDP
<input type="checkbox"/>	Mail: POP3	110	TCP UDP
<input type="checkbox"/>	RPC - Remote Procedure Call (rpcbind)	111	TCP UDP
<input type="checkbox"/>	Authentication service	113	TCP UDP
<input type="checkbox"/>	SFTP - Simple File Transfer Protocol	115	TCP UDP
<input type="checkbox"/>	NNTP - Network News Transfer Protocol	119	TCP UDP

+ [lock icon] - [edit icon]

Start Firewall Revert Save

# NAT

- ✻ Network Address Translation
- ✻ Translates public addresses to private addresses.
- ✻ Watch out for double-NAT



# NAT

The screenshot shows the Server Admin interface for the NAT service on the server ocelot.example.com. The window title is "Server Admin: ocelot.example.com: NAT". On the left, a sidebar lists various services, with "NAT" selected and highlighted. The main content area shows the NAT service status as "Stopped" and "Start Time: Not Available". It also displays "TCP Links: 0", "UDP Links: 0", and "ICMP Links: 0". At the bottom right, there is a button labeled "Gateway Setup Assistant...". At the bottom left, there are three icons: a plus sign, a gear, and a refresh symbol, followed by a "Start NAT" button.

Server Admin: ocelot.example.com: NAT

SERVERS

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT**
  - NetBoot
  - NFS
  - Open Directory
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

Overview Settings

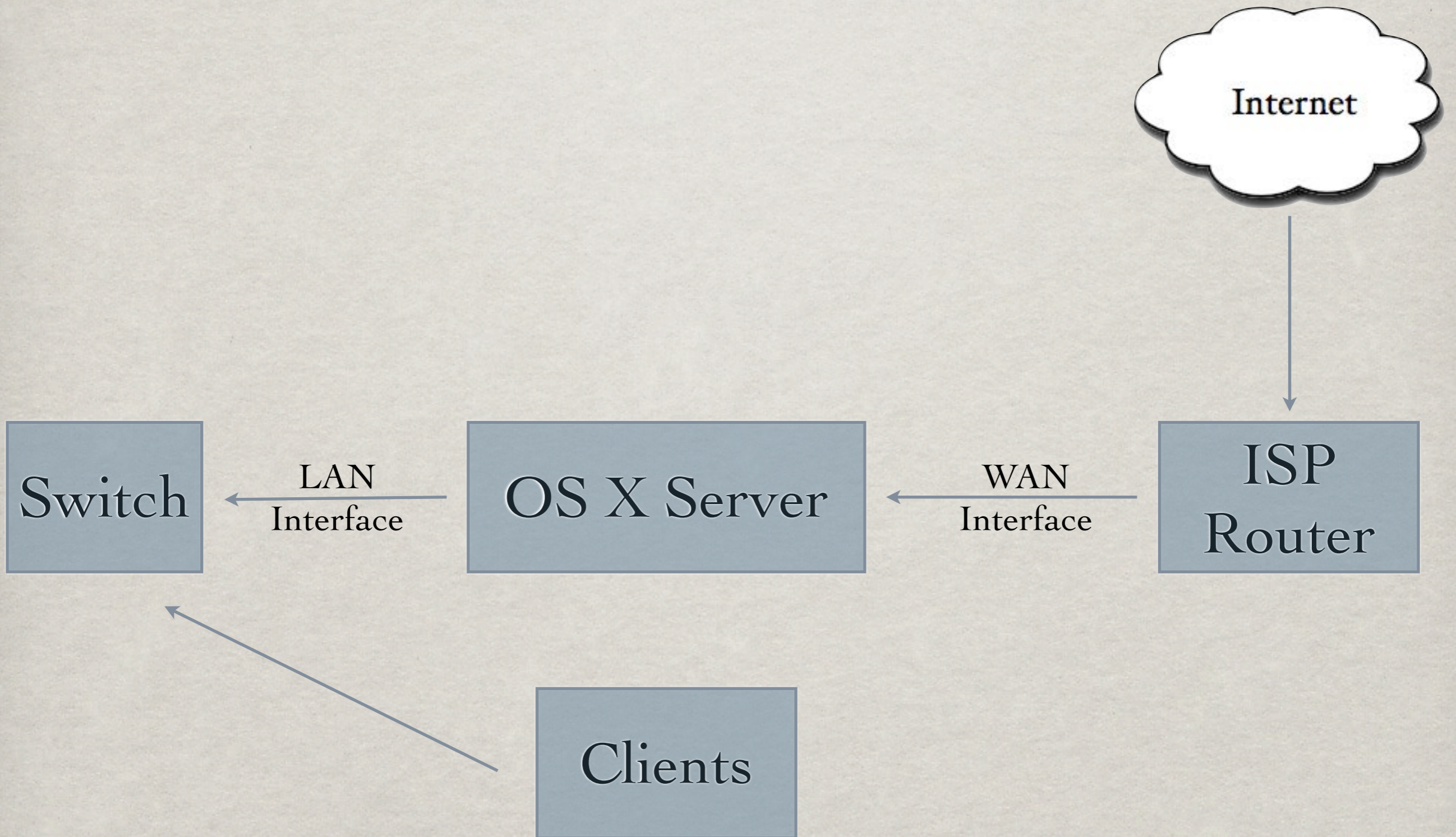
NAT Service is: Stopped  
Start Time: Not Available

TCP Links: 0  
UDP Links: 0  
ICMP Links: 0

Gateway Setup Assistant...

+, ⚙️, ↻ Start NAT

# TYPICAL SETUP



# FILE AND DIRECTORY SERVICES

AFP

OpenDirectory

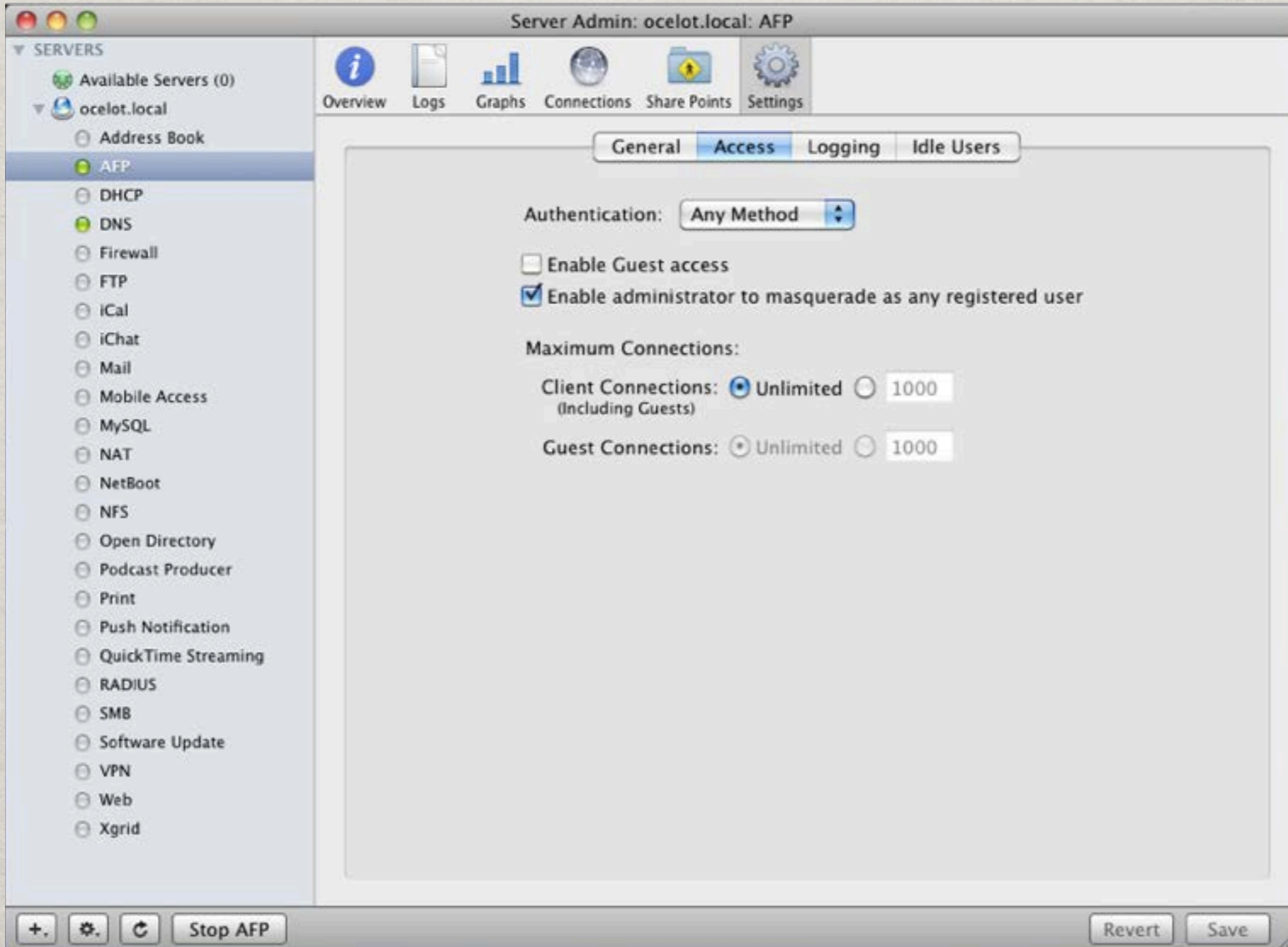
SMB



# AFP

- ✻ Apple Filing Protocol
- ✻ One method for providing file services to OS X computers
- ✻ Administrator can set authentication method, Guest Access, connections & idle timeout

# AFP

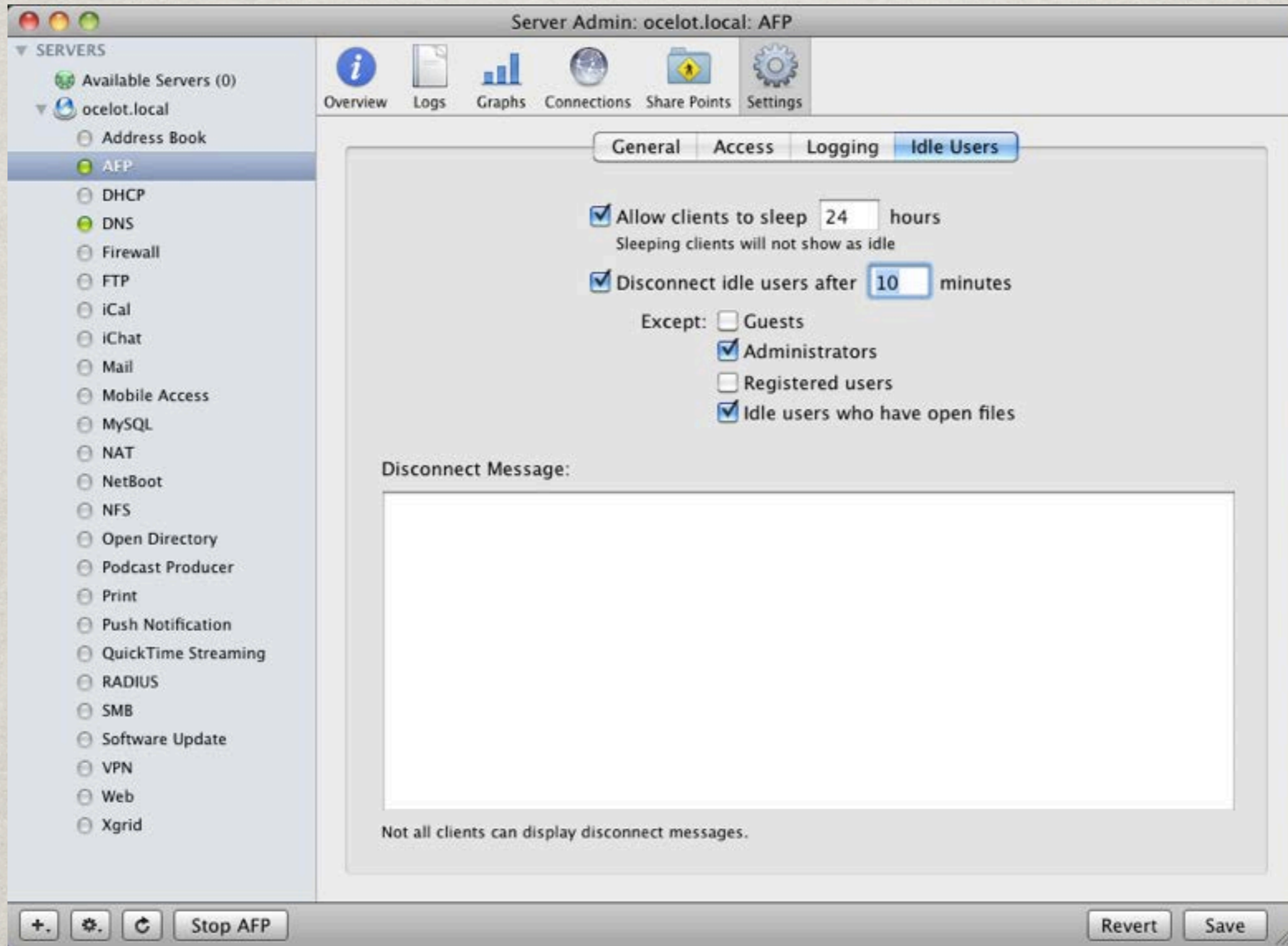


# AFP

The screenshot shows the Server Admin application window titled "Server Admin: ocelot.local: AFP". The window is divided into several sections:

- Left Sidebar (SERVERS):** A list of services including Available Servers (0), ocelot.local, Address Book, AFP (selected), DHCP, DNS, Firewall, FTP, iCal, iChat, Mail, Mobile Access, MySQL, NAT, NetBoot, NFS, Open Directory, Podcast Producer, Print, Push Notification, QuickTime Streaming, RADIUS, SMB, Software Update, VPN, Web, and Xgrid.
- Top Navigation Bar:** Contains icons for Overview, Logs, Graphs, Connections, Share Points, and Settings.
- Tabbed Interface:** The "Logging" tab is active, with other tabs being General, Access, and Idle Users.
- Access Log Configuration:**
  - Access Log:** Includes a checked "Enable access log" checkbox and a checked "Archive every 7 days" checkbox.
  - Select events to include in the access log:** A grid of checkboxes for Login, Logout, Open File, Create File, Create Folder, and Delete File/Folder. Login, Logout, and Delete File/Folder are checked.
- Error Log Configuration:** Includes a checked "Archive every 7 days" checkbox.
- Bottom Bar:** Contains buttons for "+", "Stop AFP", "Revert", and "Save".

# AFP



# AFP

- ✻ If using AFP for home directories, make sure to enable the AutoMount record!

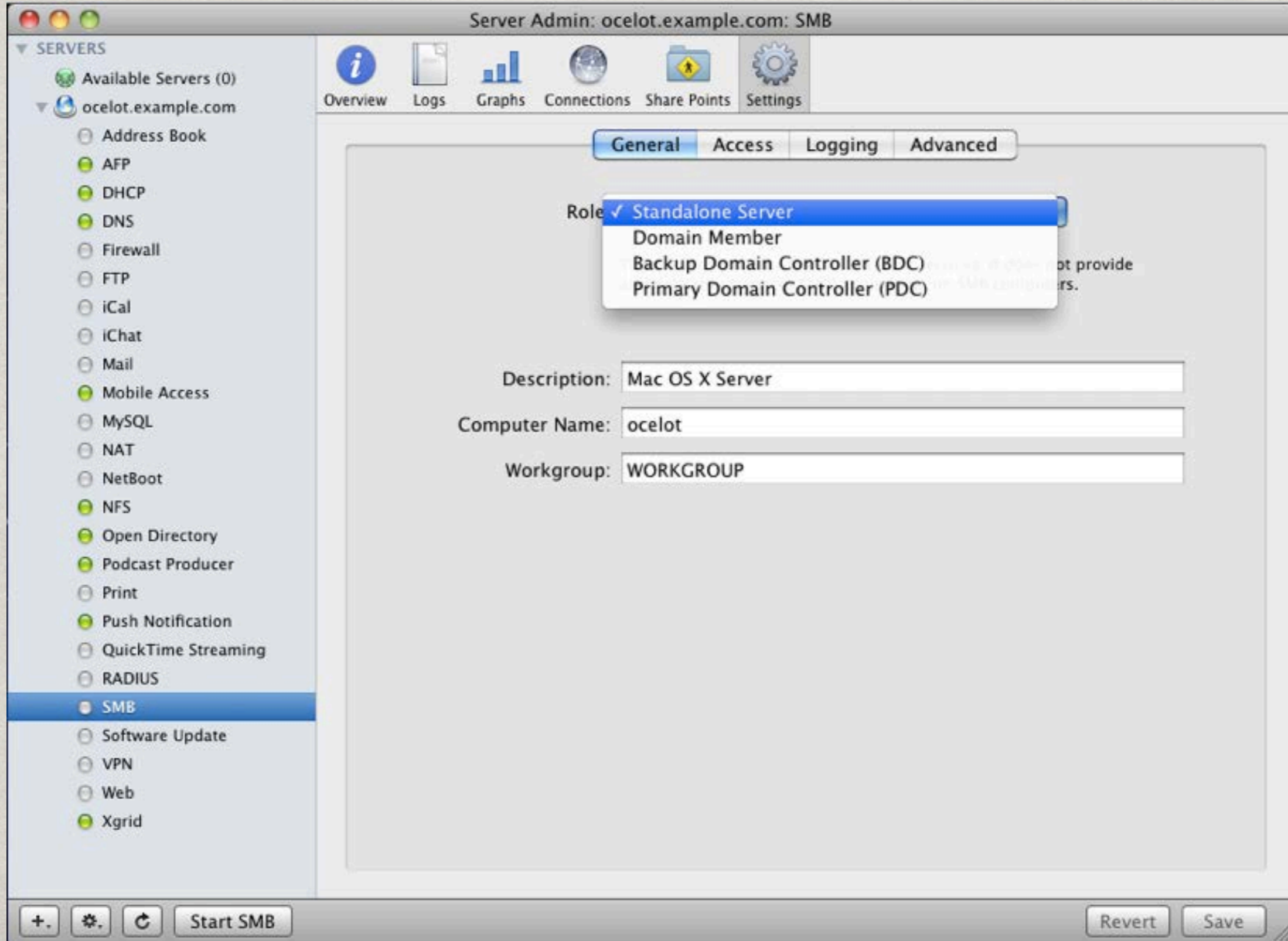




# SMB

- ✻ File-sharing for Windows Clients
- ✻ OS X Client can mount SMB shares

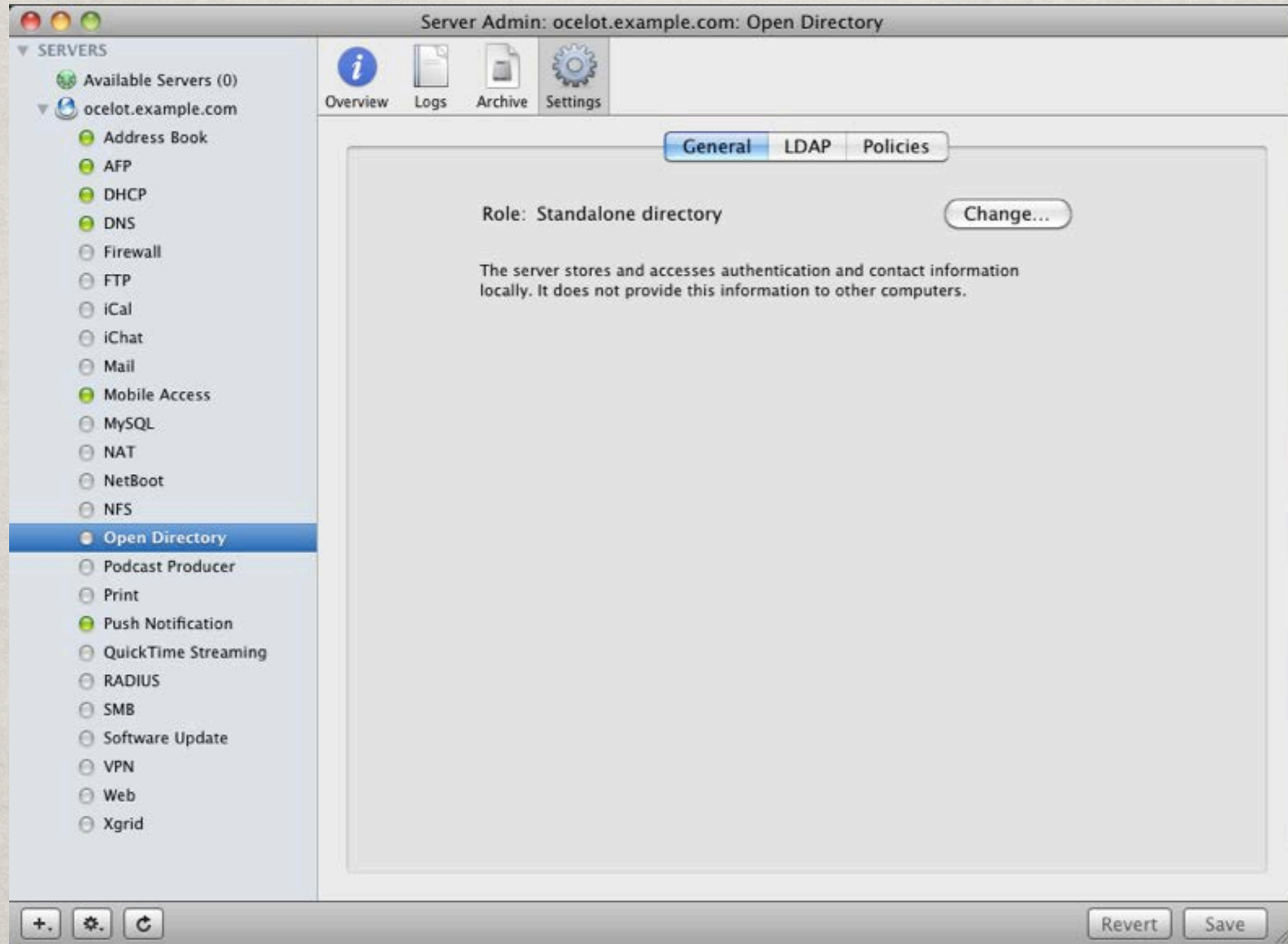
# SMB



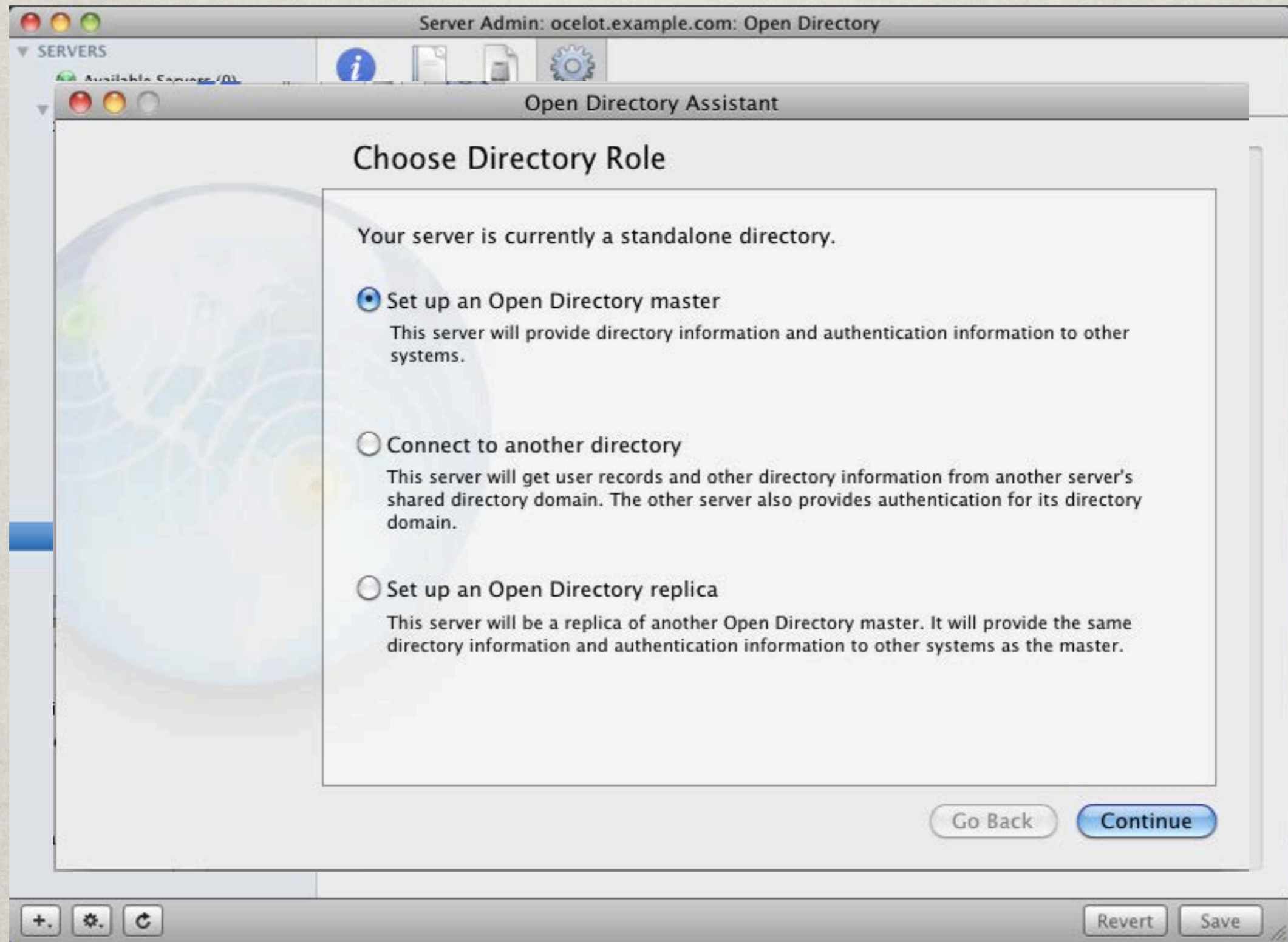
# OPENDIRECTORY

- ✻ Apple's implementation of OpenLDAP
- ✻ Provides centralized repository of user info
- ✻ Consists of Masters, Replicas and Tiered Replicas
- ✻ Set password policies
- ✻ Leverages LDAP
- ✻ Join client computers via Directory Utility

# OPENDIRECTORY



# OPENDIRECTORY



# OPENDIRECTORY

Server Admin: ocelot.example.com: Open Directory

SERVERS

Available Servers (0)

Open Directory Assistant

### Directory Administrator

Please enter account information for the new directory administrator account. This user account will have administrative privileges for the master's domain.

Name:

Short Name:  User ID:

Password:

Verify:

# OPENDIRECTORY

The screenshot shows the Server Admin application window titled "Server Admin: ocelot.example.com: Open Directory". The interface is divided into a left sidebar and a main content area.

**Left Sidebar (SERVERS):**

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory**
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

**Main Content Area:**

Navigation tabs: Overview (selected), Logs, Archive, Settings.

Open Directory is: Open Directory master

LDAP Server is: Running  
Password Server is: Running  
Kerberos is: Running

LDAP Search Base: dc=ocelot,dc=example,dc=com  
Kerberos Realm: OCELOT.EXAMPLE.COM

Bottom toolbar: +, ⚙️, ↻

# OPENDIRECTORY

Server Admin: ocelot.example.com: Open Directory

SERVERS

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory**
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

Overview Logs Archive Settings

General LDAP Policies

Role: Open Directory master [Change...](#)

This server provides directory information to other computers.

Replica Status Replica Tree

Address	Result
10.15.4.22	OK
10.19.4.22	ERROR PasswordService - Warning: The most recent re
10.20.4.22	OK



# OPENDIRECTORY

The screenshot shows the 'Server Admin' window for 'ocelot.example.com: Open Directory'. The left sidebar lists various services, with 'Open Directory' selected. The main content area is divided into tabs: 'Overview', 'Logs', 'Archive', and 'Settings'. Under 'Settings', there are sub-tabs for 'General', 'LDAP', and 'Policies'. The 'Policies' tab is active, and within it, the 'Passwords' sub-tab is selected. The 'Passwords' section contains several configuration options:

- Disable login:**
  - on specific date: 1/14/2011
  - after using it for: 180 days
  - after inactive for: 180 days
  - after user makes: 5 failed attempts
- Passwords must:**
  - differ from account name
  - contain at least one letter
    - contain both uppercase and lowercase letters
  - contain at least one numeric character
  - contain a character that isn't a letter or number
  - be reset on first user login
  - contain at least: 8 characters
  - differ from last: [ ] passwords used
  - be reset every: 6 months

A note at the bottom states: "The global password policies above do not apply to administrators and may be overridden by user account settings in Workgroup Manager." At the bottom right, there are 'Revert' and 'Save' buttons.

# WORKGROUP MANAGER



# WORKGROUP MANAGER

- ✻ Application for managing network objects such as users, groups, computers, and computer groups
- ✻ User management
- ✻ Supports account templates

# WORKGROUP MANAGER

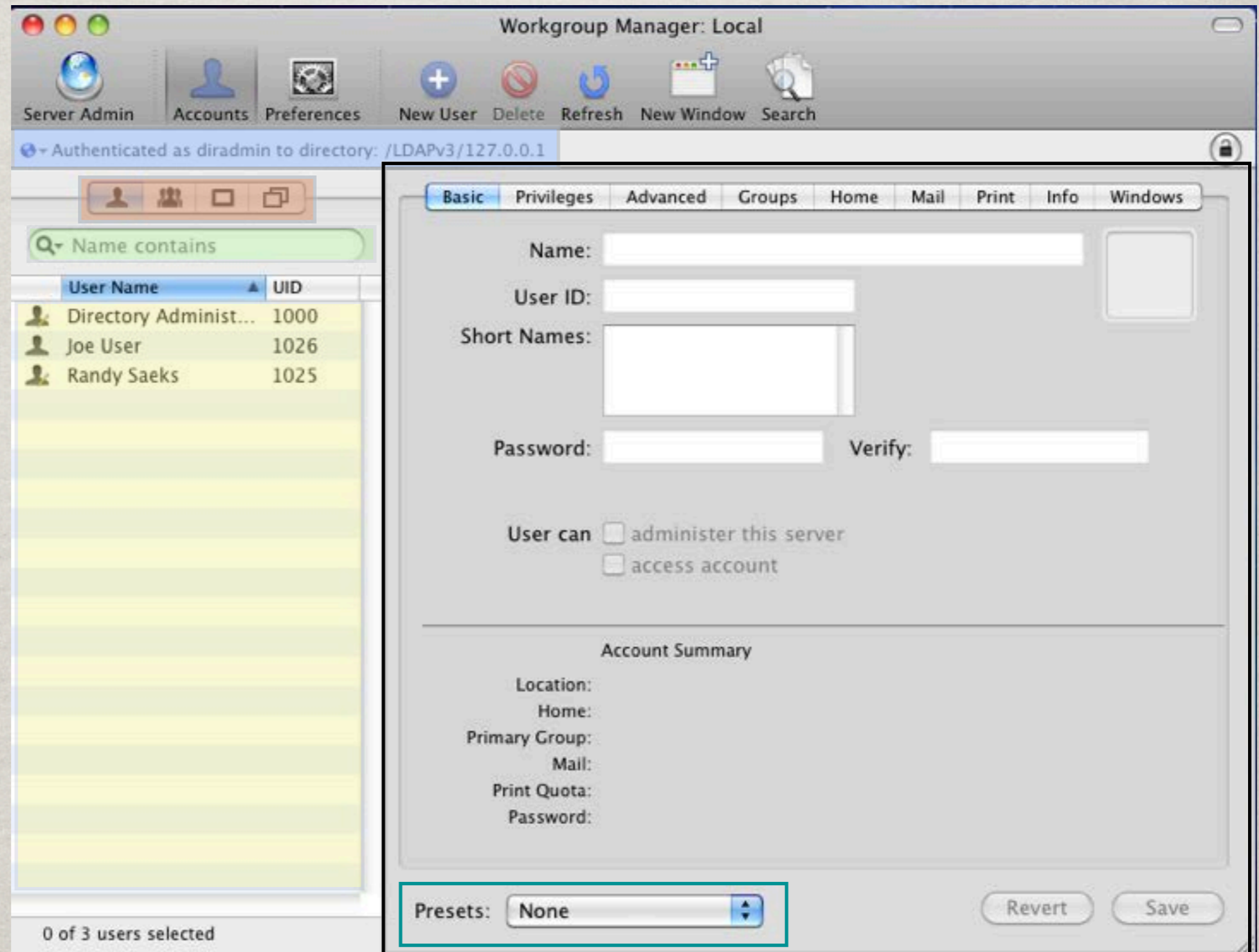
Node  
Selector

Object type  
Selector

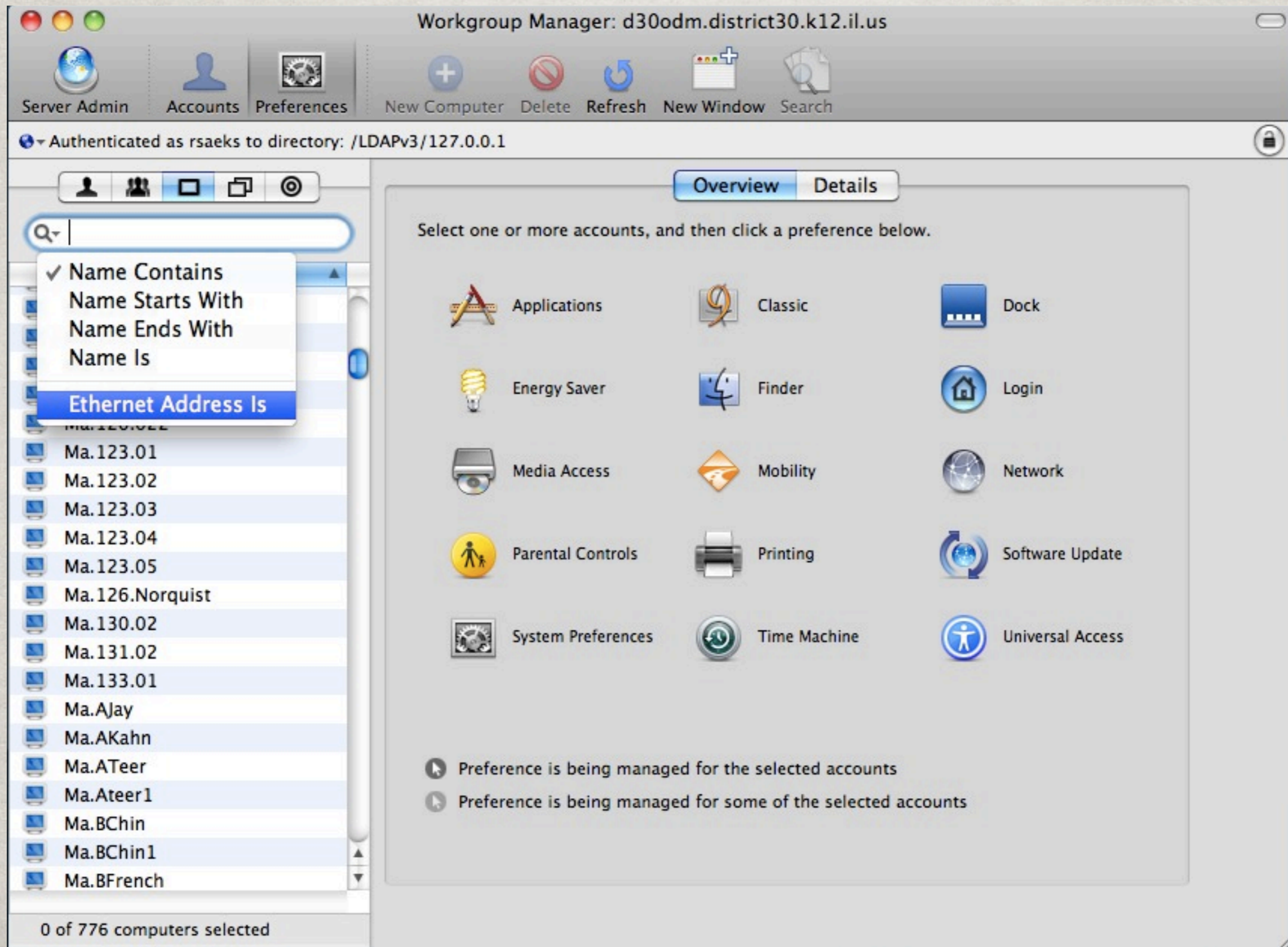
Display  
Filter

Object  
Picker

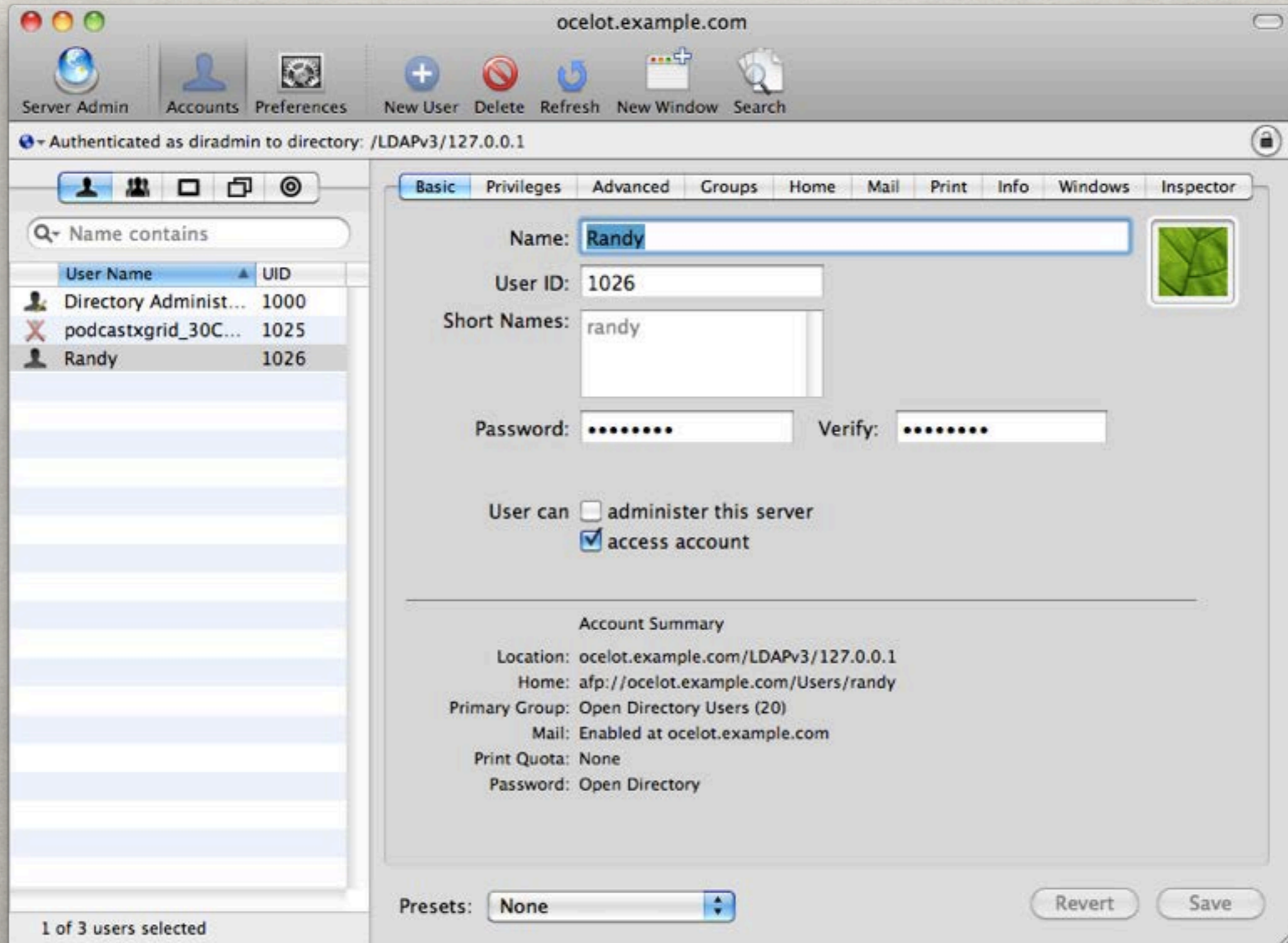
Information  
Pane



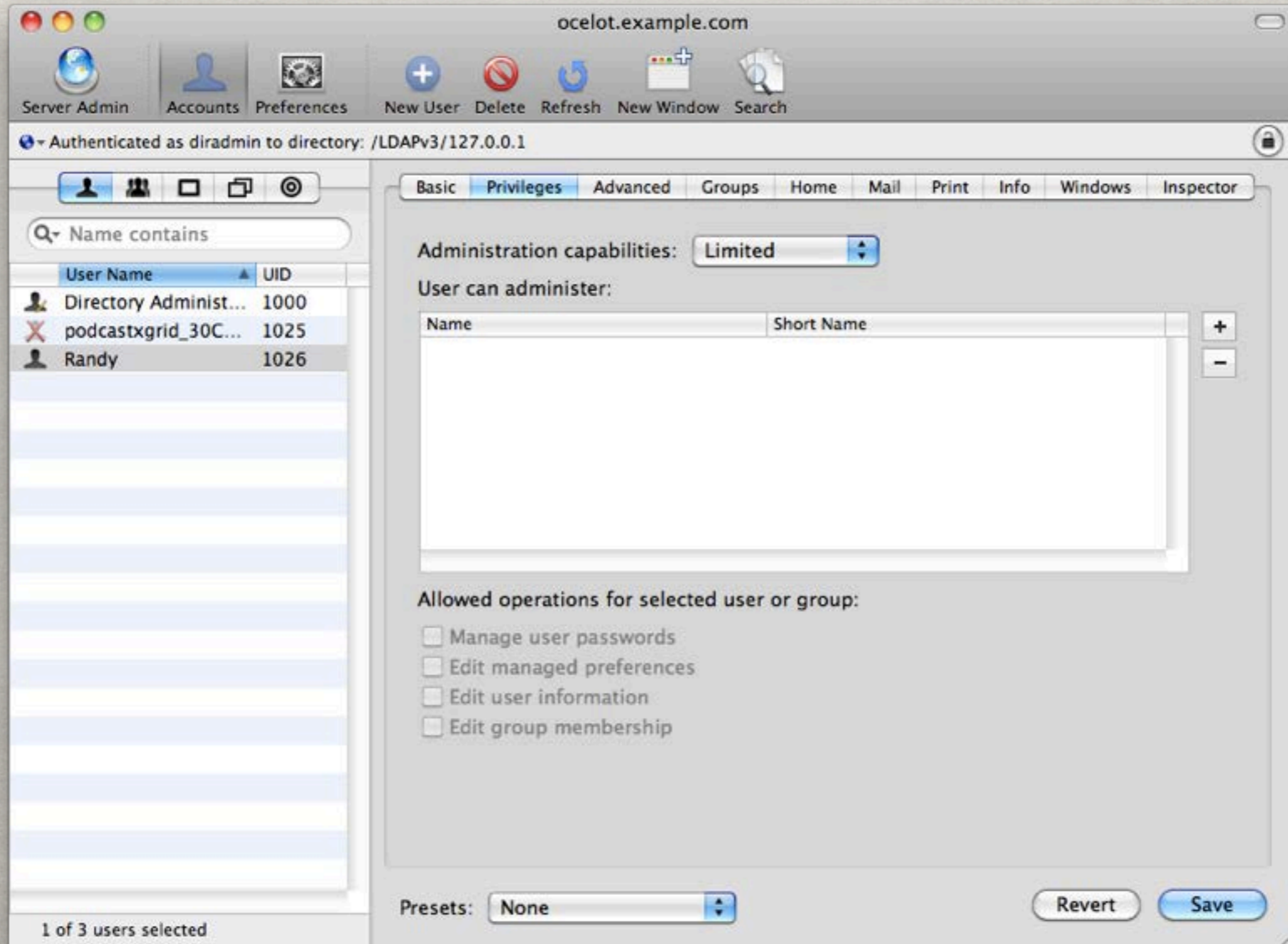
# WORKGROUP MANAGER



# WORKGROUP MANAGER



# WORKGROUP MANAGER



# WORKGROUP MANAGER

Workgroup Manager: d30odm.district30.k12.il.us

Authenticated as rsaeks to directory: /LDAPv3/127.0.0.1

Basic Privileges Advanced **Groups** Home Mail Print Info Windows Inspector

Primary Group ID: 80 Short Name: admin

Name: Open Directory Administrators

Other Groups:

Name	GID
<i>Developer Tools</i>	204
<i>Print Administrators</i>	98
<i>Print Operator</i>	100
Open Directory Administrat	80
Administrators	80
ard_admin	1042
Blog Users	1107
<i>Screen Sharing ACL</i>	401
<i>Remote Login Group</i>	500
<i>com.apple.local.ard_admin</i>	501
<i>com.apple.local.ard_interact</i>	503
<i>com.apple.local.ard_manage</i>	504
<i>com.apple.local.ard_reports</i>	502
<i>Users</i>	402
<i>Groups</i>	403
DO Staff	1092
LSadmin	1145
Maple Teachers	1028
Tech Staff	1031
VPN Users	1038
Wescott Teachers	1029
Willowbrook Teachers	1030

Inherited group memberships are shown in italics.

Updated on 01/16/11, 04:31 PM

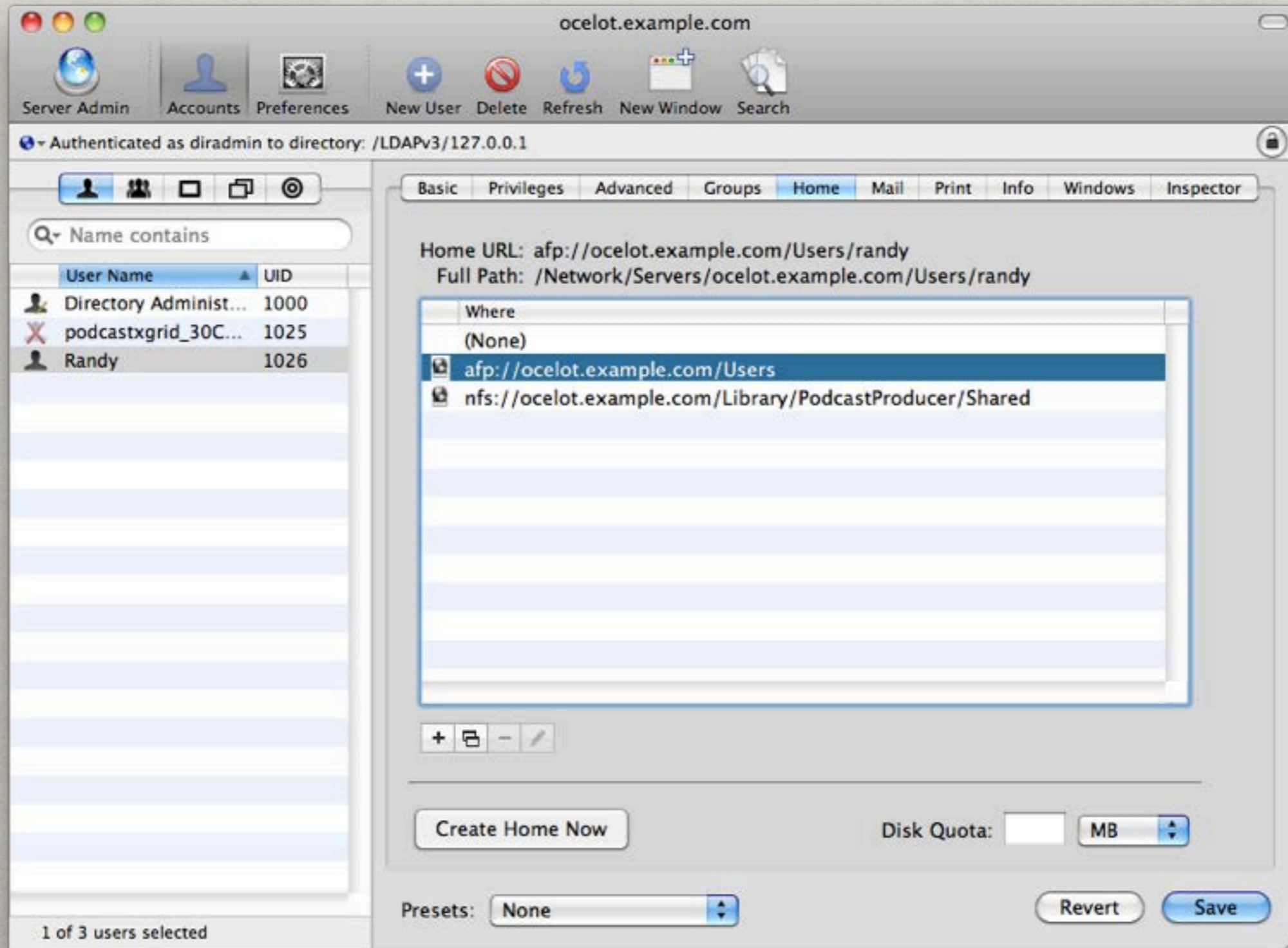
Presets: Wescott Staff

1 of 1 user selected

Revert Save



# WORKGROUP MANAGER



# WORKGROUP MANAGER

The screenshot displays the Workgroup Manager application window for 'ocelot.example.com'. The interface is divided into a left sidebar and a main right pane. The sidebar contains a search bar with the text 'Name contains' and a table of users. The main pane shows the 'Info' tab for the selected user 'Randy', with various fields for personal and contact information.

**Server Admin** | **Accounts** | **Preferences** | **New User** | **Delete** | **Refresh** | **New Window** | **Search**

Authenticated as diradmin to directory: /LDAPv3/127.0.0.1

**Basic** | **Privileges** | **Advanced** | **Groups** | **Home** | **Mail** | **Print** | **Info** | **Windows** | **Inspector**

**Name:** Prefix | First | Mid | Randy | Suffix

**Address:** Street | City | State / Province | Zip

**Company:** Company | Job Title | Department

**Phone:** [Field] + -

**Email:** [Field] + -

**Chat:** [Field] + -

**Homepage:** [Field]

**Weblog:** [Field]

Presets: None [Dropdown] [Revert] [Save]

User Name	UID
Directory Administr...	1000
podcastxgrid_30C...	1025
Randy	1026

1 of 3 users selected

# WORKGROUP MANAGER

The screenshot shows the Workgroup Manager application window for 'ocelot.example.com'. The interface includes a top toolbar with icons for Server Admin, Accounts, Preferences, New User, Delete, Refresh, New Window, and Search. Below the toolbar, a status bar indicates authentication as 'diradmin' to a directory at '/LDAPv3/127.0.0.1'. The main area is divided into a left sidebar and a right pane. The sidebar contains a search field 'Name contains' and a table of users. The right pane shows the configuration for the selected user, 'Randy', with tabs for Basic, Privileges, Advanced, Groups, Home, Mail, Print, Info, Windows, and Inspector. The 'Windows' tab is active, displaying fields for User Profile Path, Login Script, and Windows Home Directory. A 'Presets' dropdown is set to 'None', and 'Revert' and 'Save' buttons are at the bottom right.

User Name	UID
Directory Administr...	1000
podcastxgrid_30C...	1025
Randy	1026

1 of 3 users selected

Basic Privileges Advanced Groups Home Mail Print Info **Windows** Inspector

This information gives the user a profile and home directory when logging in from a computer running Microsoft Windows.

User Environment Profile

User Profile Path:   
Example: \\abel\profiles\marketing\jsmith

Login Script:   
Example: rdlogon.bat

Windows Home Directory

Hard Drive:   
Path:   
Example: \\abel\jsmith

Presets:  None  Revert  Save

# WORKGROUP MANAGER

The screenshot shows the Workgroup Manager application window for 'ocelot.example.com'. The interface includes a top toolbar with icons for Server Admin, Accounts, Preferences, New Group, Delete, Refresh, New Window, and Search. Below the toolbar, a status bar indicates authentication as 'diradmin' to a directory at '/LDAPv3/127.0.0.1'. The main area is divided into a left sidebar and a right pane. The sidebar contains a search field 'Name contains' and a list of groups: 'All Employees' (GID 1027), 'Tech People' (GID 1026), and 'Workgroup' (GID 1025). The right pane is currently in the 'Members' tab, displaying a table with columns for Name, ID, Type, and Short Name. The table contains one entry: 'Tech People' with ID 1026, Type Group, and Short Name techpeople. At the bottom, there is a 'Presets' dropdown set to 'None', and 'Revert' and 'Save' buttons.

ocelot.example.com

Server Admin Accounts Preferences New Group Delete Refresh New Window Search

Authenticated as diradmin to directory: /LDAPv3/127.0.0.1

Basic Members Group Folder Inspector

Name contains

Group Name	GID
All Employees	1027
Tech People	1026
Workgroup	1025

Name	ID	Type	Short Name
Tech People	1026	Group	techpeople

1 of 3 groups selected

Presets: None Revert Save

# HOME DIRECTORIES

- ✻ Default location for user generated data
- ✻ Local drives shared via AFP, SMB, NFS

# HOME DIRECTORY TYPES

Type	Location	Typical Environment
Local	Local workstation	<ul style="list-style-type: none"> <li>- Slow / no network connectivity</li> <li>- Users responsible for data backup</li> </ul>
Network	Network Server	<ul style="list-style-type: none"> <li>- High-speed wired network</li> <li>- Users use multiple machines requiring access to data</li> </ul>
Mobile	Local workstation with synchronization to server	<ul style="list-style-type: none"> <li>- Mobile users with dedicated laptop</li> <li>- Blend of Network / Local setup</li> </ul>
External	Removable media with synchronization to server	<ul style="list-style-type: none"> <li>- Mobile users without dedicated laptop</li> <li>- Users move between machines</li> </ul>

# HOME DIRECTORY CONSIDERATIONS

Type	Advantages	Considerations
Local	Requires no network resources.	<ul style="list-style-type: none"><li>- Data only exists on machine</li><li>- Tough to backup</li></ul>
Network	User data accessible from any computer on network. Easy to backup.	<ul style="list-style-type: none"><li>- Requires constant RELIABLE network connectivity</li></ul>
Mobile	Speed of local account. Redundancy from network-based user data.	<ul style="list-style-type: none"><li>- Requires time to perform sync</li><li>- Can be confusing to users</li><li>- Requires server CPU overhead</li></ul>
External	Portability of account. Synchronization.	<ul style="list-style-type: none"><li>- Users can easily lose account</li><li>- Security!</li></ul>

# MOBILE ACCOUNT CREATION

- ✱ Configurable in WorkGroup Manager
- ✱ Also configurable via Accounts System Preference Pane



# MANAGED CLIENT BASICS

- ✻ Frequently called MCX (Managed Client for OS X)
- ✻ Equates to GPOs & Policy Packages
- ✻ Applicable at the user, group, computer, and computer list level
- ✻ Nesting of groups is allowed
- ✻ XML formatting plists are the actual files
- ✻ Most of this is accomplished with WorkGroup Manager (WGM)

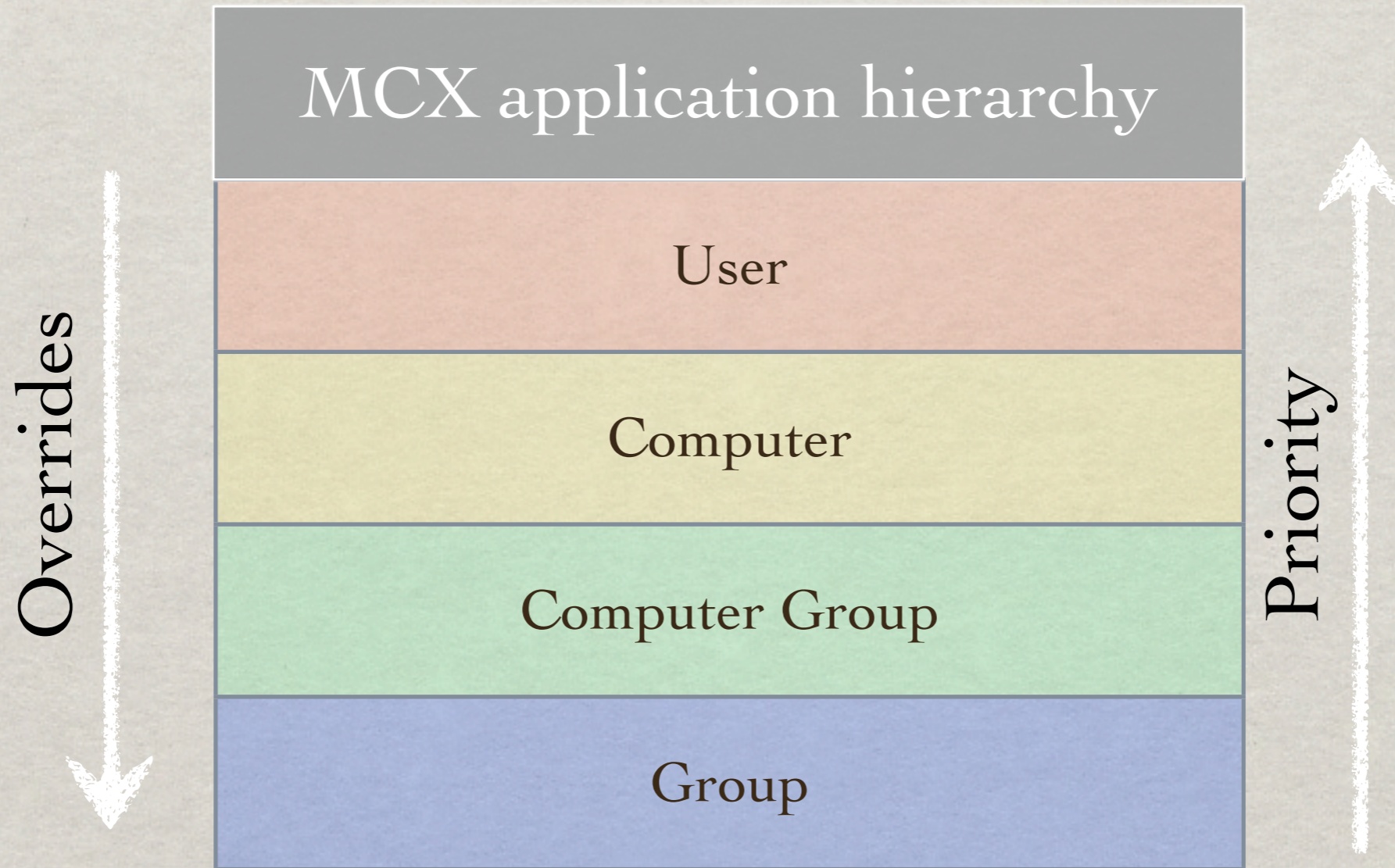
# MCX BEST PRACTICES

- ✻ Leverage (create) organizational policies
- ✻ Common issues
  - ✻ Should our users be administrators?
  - ✻ Access to System Preferences?
- ✻ Avoid individual user / computer settings
- ✻ test, Test, TEST, TEST

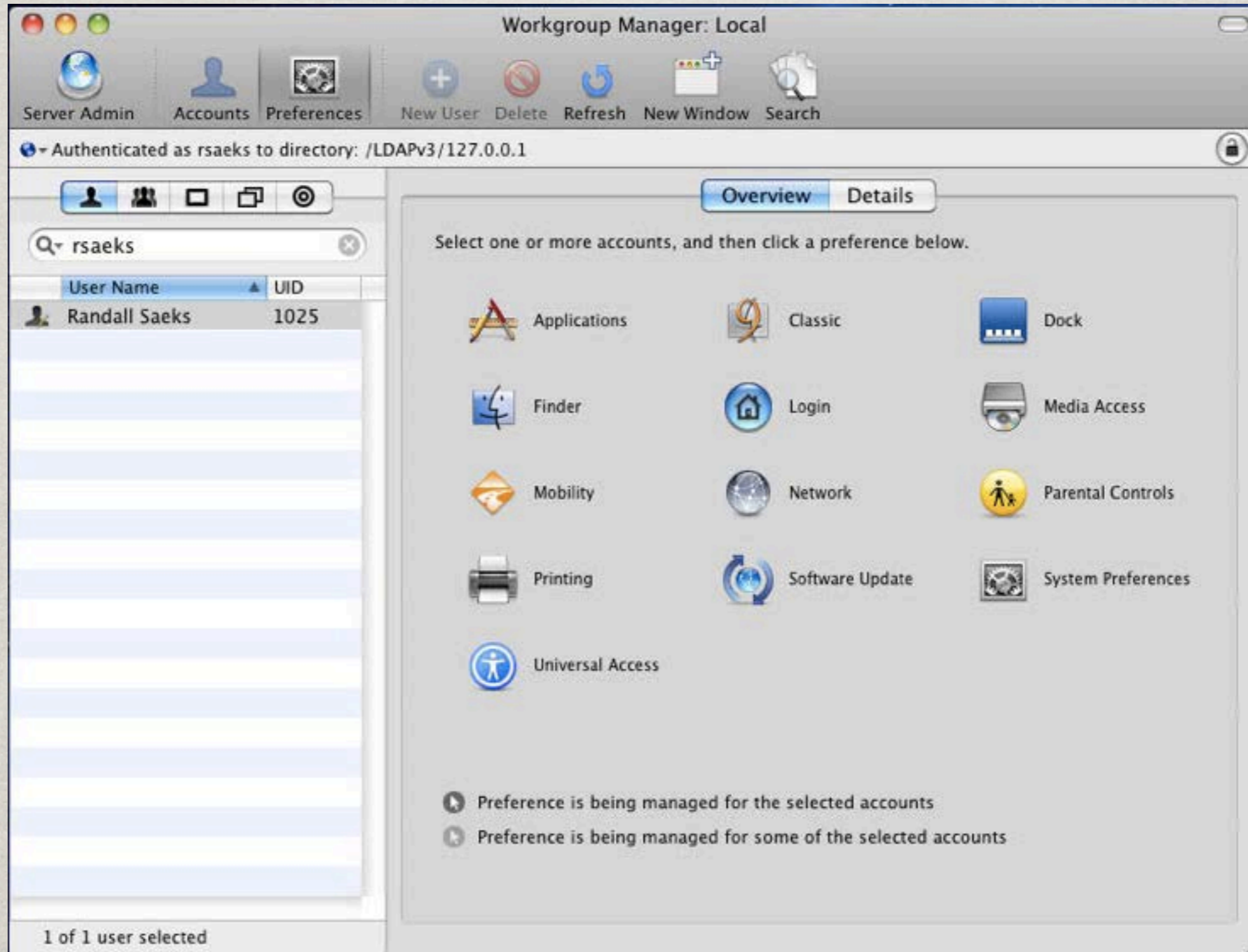
# MANAGEABLE ITEMS

- ✻ Apple Supplied GUI preferences
- ✻ Apple Supplied “Advanced” preferences
- ✻ User defined plists
- ✻ Community created preference manifests

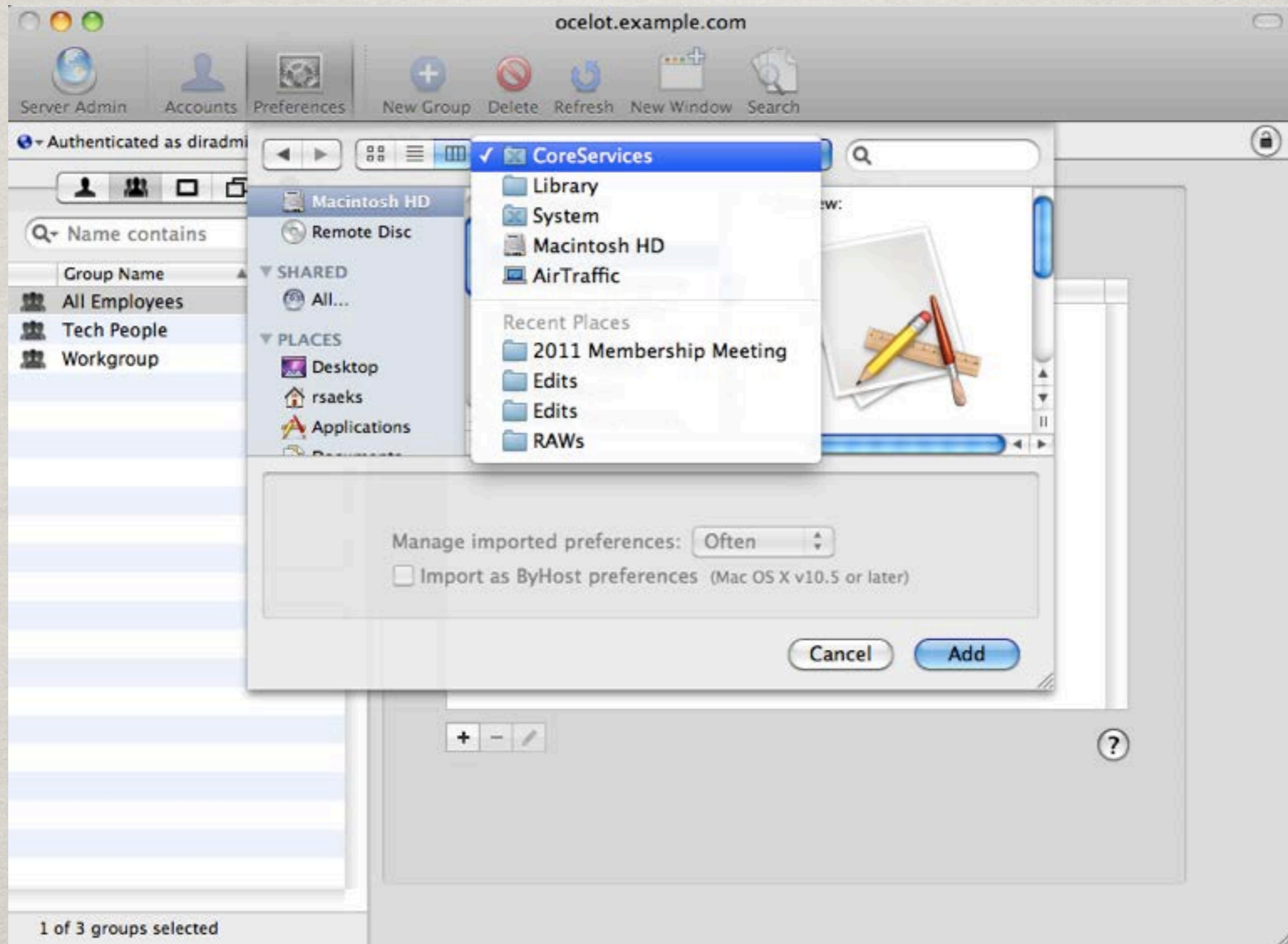
# LEVERAGING OBJECTS



# MANAGEABLE ITEMS



# ADVANCED PREFERENCES



# ADVANCED PREFERENCES

The screenshot shows the 'Workgroup Manager: Local' window. The top toolbar includes 'Server Admin', 'Accounts', 'Preferences', 'New User', 'Delete', 'Refresh', 'New Window', and 'Search'. The status bar indicates 'Authenticated as diradmin to directory: /LDAPv3/127.0.0.1'. The left sidebar shows a search for 'Name contains' and a list of users: 'Directory Administr...', 'podcastxgrid\_30C...', and 'Randy'. The main pane is in 'Details' view, showing a table of application preferences to be modified.

Authenticated as diradmin to directory: /LDAPv3/127.0.0.1

Overview Details

Modify application preferences in the preference editor:

Name	Preference ID
Dock	com.apple.dock
Folder Redirection	com.apple.MCXRedirector
Home Sync	com.apple.homeSync
iCal	com.apple.iCal.managed
iCal-10.6	com.apple.iCal
iChat	com.apple.iChat.Managed
iChat-10.6	com.apple.iChat
iChat-10.6	com.apple.iChat.AIM
iChat-10.6	com.apple.iChat.Jabber
iChat-10.6	com.apple.iChat.SubNet
Internet Configuration	com.apple.internet
iTunes	com.apple.iTunes
iWork Registration	com.apple.iWork08
Kerberos Login	edu.mit.Kerberos.KerberosLogin

1 of 3 users selected

# CHECKING SETTINGS

- ▼ Software
  - Applications
  - Developer
  - Extensions
  - Fonts
  - Frameworks
  - Logs
  - Managed Client
  - Preference Panes
  - Startup Items
  - Sync Services
  - Universal Access

Name
▶ .GlobalPreferences
▶ com.apple.applicationaccess.new
▶ com.apple.Bluetooth
▶ com.apple.dashboard
▶ com.apple.Dictionary
▶ com.apple.DiscRecording
▶ com.apple.familycontrols.contentfilter
▶ com.apple.finder
▶ com.apple.homeSync
▶ com.apple.internet
▶ com.apple.iTunes
▶ com.apple.loginwindow
▶ com.apple.MCX
▶ com.apple.MCXAirPort
▶ com.apple.MCXBluetooth
▶ com.apple.mcxMenuExtras
▶ com.apple.mcxprinting
▶ com.apple.Safari
▶ com.apple.screensaver
▶ com.apple.sidebarlists
▶ com.apple.SoftwareUpdate

**com.apple.SoftwareUpdate:**

**CatalogURL:**

Value: <http://alerts.district30.k12.il.us:8088/>  
State: always  
Source: maplestudentcomputers (Computer Group)



# DEPLOYMENT AND UPDATE SERVICES

Software Update

NetBoot



# RESTORE TYPES

- ☼ NetBoot

  - ☼ Bootable system image

- ☼ NetInstall\*

  - ☼ Install Software / OS on client computers

- ☼ NetRestore

  - ☼ Restores system configuration

\* Requires install media



# NETBOOT

- ✻ Live-boot machine from pre-configured image
- ✻ Useful for diagnostics
- ✻ Good for testing build across hardware configurations



# NETINSTALL

- ✱ Installer media starts NetInstall process
- ✱ Customize experience via SIU modules
- ✱ Includes hard drive partitioning scheme, user accounts, installed software (via .pkg) and other items
- ✱ .pkgs can be made optional or required
- ✱ Utilizes modular imaging approach.



# NETRESTORE

- ✻ Deploys a pre-configured build / image to client machines.
- ✻ Can use a monolithic approach or modular, or a blend of the two.



# NETBOOT

Server Admin: alerts.district30.k12.il.us: NetBoot

Overview Log Connections Clients Settings

NetBoot Service is: Running  
Start Time: Nov 29, 2010 4:26:08 PM CST

Last Client Update: Jan 14, 2011 6:53:12 PM CST

Images and Related Services

Running Stopped

Image Type	Enabled	AFP	NFS	HTTP	DHCP
NetBoot Mac OS X	1				
NetBoot Mac OS X (diskless)	1	●	●		
NetInstall Mac OS X	1		●		
NetBoot Mac OS 9	0				

Mac OS X diskless NetBoot and Mac OS 9 images require AFP. Mac OS X images require either HTTP or NFS. DHCP is required only if this server assigns IP Addresses.

SERVERS

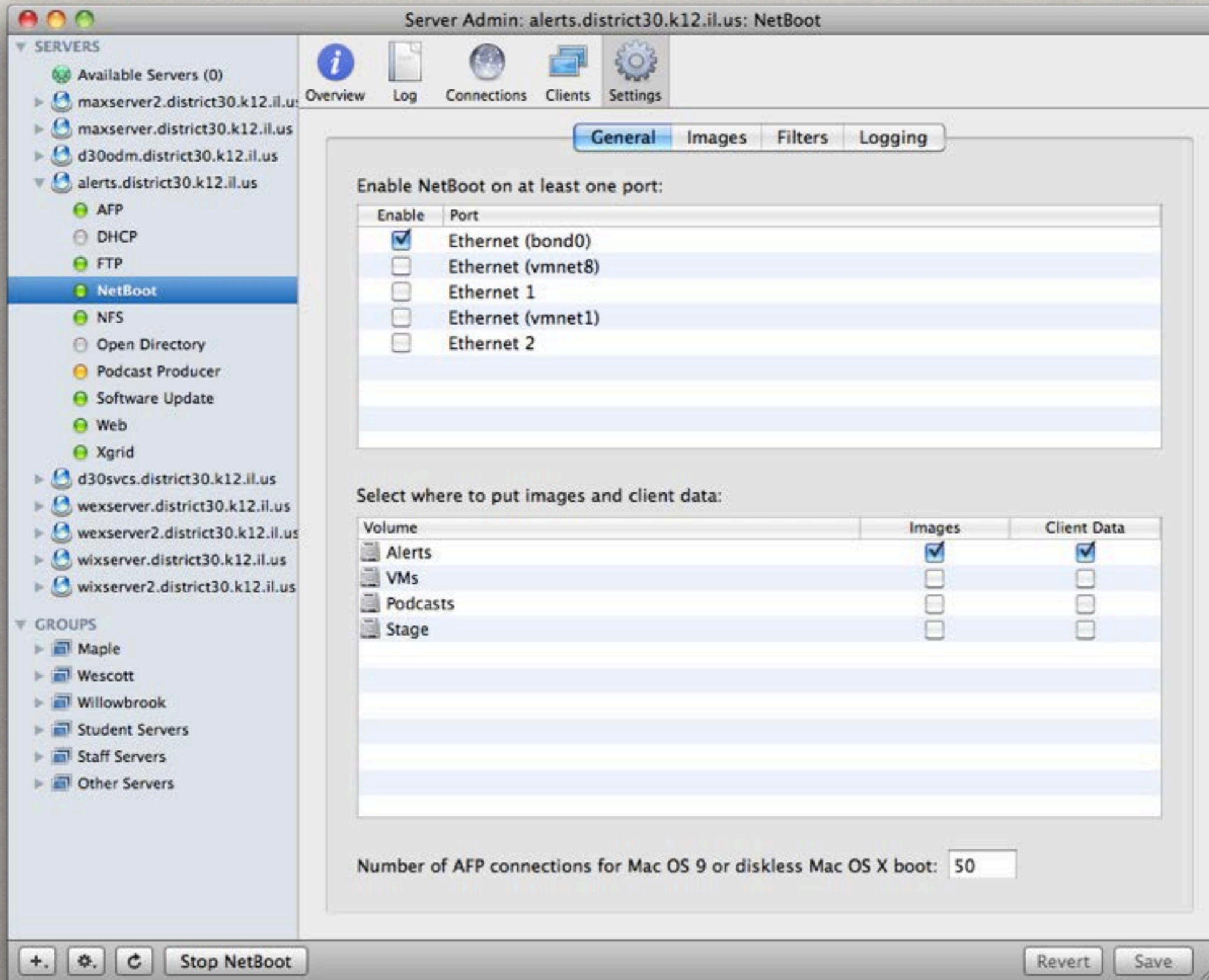
- Available Servers (1)
  - maxserver2.district30.k12.il.us
  - maxserver.district30.k12.il.us
  - d30odm.district30.k12.il.us
  - alerts.district30.k12.il.us
    - AFP
    - DHCP
    - FTP
    - NetBoot**
    - NFS
    - Open Directory
    - Podcast Producer
    - Software Update
    - Web
    - Xgrid
  - d30svcs.district30.k12.il.us
  - wexserver.district30.k12.il.us
  - wexserver2.district30.k12.il.us
  - wixserver.district30.k12.il.us
  - wixserver2.district30.k12.il.us

GROUPS

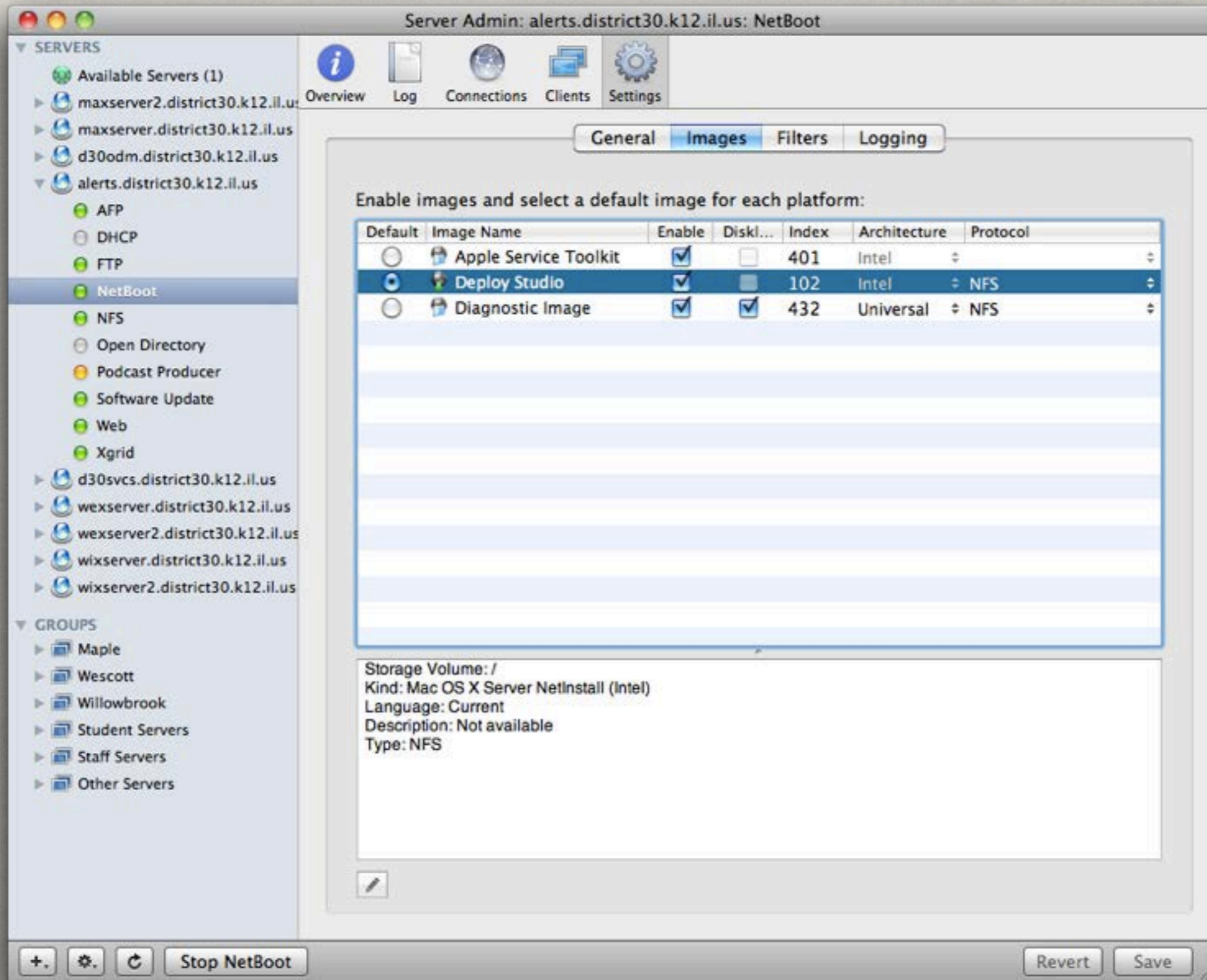
- Maple
- Wescott
- Willowbrook
- Student Servers
- Staff Servers
- Other Servers

+. ⚙️ ↻ Stop NetBoot

# NETBOOT



# NETBOOT





# NETBOOT

The screenshot shows the NetBoot Server Admin interface for the server alerts.district30.k12.il.us. The interface is divided into several sections:

- SERVERS:** A tree view on the left showing the server hierarchy. The 'NetBoot' service is selected under the 'alerts.district30.k12.il.us' server.
- Navigation:** A top bar with icons for Overview, Log, Connections, Clients, and Settings.
- Client List:** A table with columns for Host Name, IP Address, and Hardware Address. The table lists 20 clients, most of which are 'Client not currently booted'. Two clients are marked as 'Not currently booted or booted over HTTP'.
- Additional Info:** A section at the bottom right for detailed client information, including System Type, Client Name, Index, Last Boot Time, and Image Name.
- Summary:** A line at the bottom indicates 'Number of clients: 307'.
- Bottom Bar:** A control bar with buttons for '+', a gear icon, a refresh icon, and a 'Stop NetBoot' button.

Host Name	IP Address	Hardware Address
Client not currently booted	10.15.12.135	1,34:15:9e:22:4f:12
Client not currently booted	10.15.11.112	1,34:15:9e:3b:92:ce
Client not currently booted	10.15.11.199	1,0:19:e3:40:e7:7a
Client not currently booted	10.15.11.182	1,0:19:e3:40:eb:e1
Client not currently booted	10.15.11.162	1,0:19:e3:40:e6:bc
Client not currently booted	10.15.12.107	1,34:15:9e:3b:1b:80
Client not currently booted	10.15.11.28	1,34:15:9e:3b:82:e6
Client not currently booted	10.15.12.130	1,34:15:9e:3b:1f:a8
Client not currently booted	10.15.12.113	1,34:15:9e:3b:3c:10
Client not currently booted	10.15.12.118	1,34:15:9e:3b:1d:a8
Client not currently booted	10.15.12.127	1,34:15:9e:3b:89:d8
Not currently booted or booted over HTTP	10.15.12.106	1,34:15:9e:3b:94:d8
Client not currently booted	10.15.12.125	1,34:15:9e:3b:11:62
Not currently booted or booted over HTTP	10.15.11.165	1,0:25:0:48:b3:43
Client not currently booted	10.15.12.136	1,34:15:9e:3b:97:c4
Client not currently booted	10.15.11.74	1,58:b0:35:6a:61:b5
Client not currently booted	10.15.12.117	1,34:15:9e:3b:86:b4
Client not currently booted	10.15.12.39	1,34:15:9e:22:53:6a
Client not currently booted	10.15.11.25	1,34:15:9e:3b:b:ae
Client not currently booted	10.15.11.197	1,0:19:e3:40:e7:98
Client not currently booted	10.15.11.193	1,0:19:e3:40:e6:fe
Client not currently booted	10.15.11.195	1,0:19:e3:40:e7:9d

# SYSTEM IMAGE UTILITY

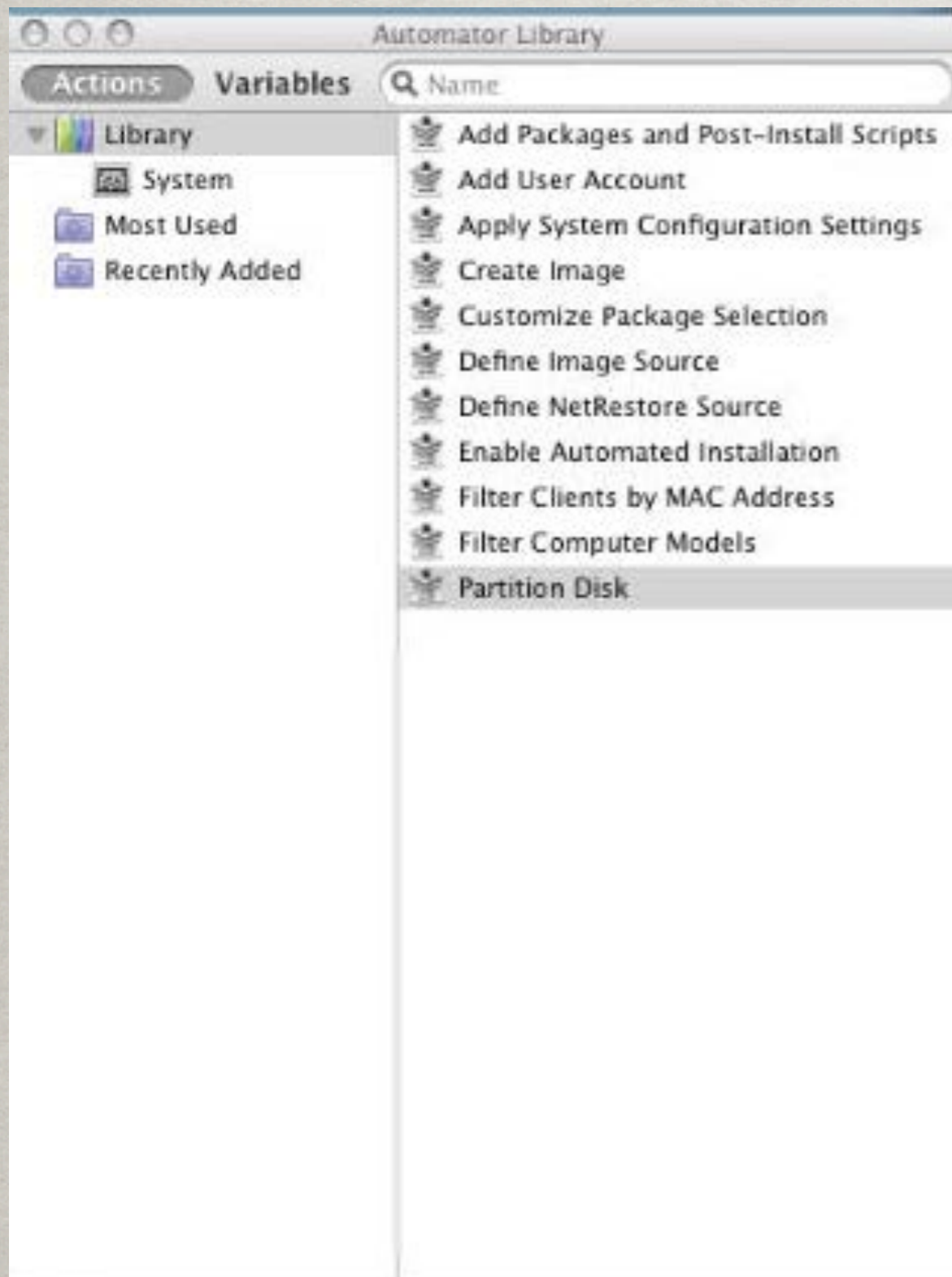


# SYSTEM IMAGE UTILITY (SIU)

- ✻ Apple-provided tool for system deployment
- ✻ Images Created from connected sources
  - ✻ Install DVD
  - ✻ Pre-configured machine



# SIU OPTIONS



## Partition Disk

This action configures the installation to automatically partition a destination drive before installing.

**Input:** Network Disk image reference

**Options:** Select a disk to target. Define the number of partitions. Set the name, format, and size of the partitions.

**Result:** Network Disk image reference

**Related Actions:** Create Image

---

**Version:** 1.1

**Copyright:** © 2007–2009 Apple Inc. All Rights Reserved.



# SIU OPTIONS

The screenshot shows the System Image Utility (SIU) window with the following sections:

- Define Image Source:** Source: Mac OS X Install DVD
- Add Packages and Post-Install Scripts:** A table listing packages and their sizes.
- Add User Account:** Fields for Name, Short Name, and Password, with a checkbox for "Allow user to administer the computer".
- Apply System Configuration Settings**
- Customize Package Selection**

Name	Size
Language Software.pkg	29.13 MB
ComicLife.pkg	11.39 MB
Install RM Easiteach.pkg	150.27 MB
Read naturally.pkg	54.43 MB
clear_users.sh	679 bytes



# SIU OPTIONS

**Apply System Configuration Settings**

Connect computers to directory servers:

Server	Ethernet Address	User Name	Password

Apply Computer Name and Local Hostname settings from a file:  
[Text Field] Select File...

Generate unique Computer Names starting with:  
SomeHost (ex. -0a2b3c4d5e6f)

Change ByHost preferences to match client after install

Results Options Description

---

**Customize Package Selection**

	Default	Visible	Size
Mac OS X	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10.42 GB
Essential System Software	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.27 GB
▶ Printer Support	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.03 GB
Additional Fonts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	64.37 MB
▶ Language Translations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	939.02 MB

Select to install printer drivers and PostScript Printer Description files (PPDs) for some printers.

Space required: 10.93 GB

Results Options Description

---

**Enable Automated Installation**





# SIU OPTIONS

The image shows two overlapping windows from a software application. The top window, titled "Filter Computer Models", allows users to select computer models compatible with a Network Disk image. It features a search bar and a list of models with checkboxes. The bottom window, titled "Partition Disk", shows a disk partitioning scheme with two partitions: "OS X" and "Untitled 2". It includes options for partitioning, volume information (name, format, size), and a warning message.

**Filter Computer Models**

Select computer models that can start up using this Network Disk image:

Enable	Model Name
<input checked="" type="checkbox"/>	11-inch MacBook Air
<input checked="" type="checkbox"/>	13-inch MacBook Air
<input type="checkbox"/>	21.5" iMac (mid 2010)
<input type="checkbox"/>	27" iMac (mid 2010)
<input checked="" type="checkbox"/>	iMac Intel Core 2 Duo
<input type="checkbox"/>	iMac Intel Core 2 Duo (aluminum enclosure)

Flat-panel iMac Intel Core 2 Duo.

Results Options Description

**Partition Disk**

2 Partitions

Partitioning Options:

- Partition the disk containing volume
- Display confirmation dialog before partitioning

Volume Information:

Name: Untitled 2

Format: MS-DOS File System

Size: Percentage of available disk 25.00 %

- Minimum 0.00 GB
- Locked for editing

**This configuration is not supported on the PowerPC architecture.**

Click each partition represented in the scheme and specify a name, format, and size. The image will be installed to the first partition.

Split Delete

Results Options Description





# SIU OPTIONS

**Create Image**

Type:  NetBoot  
 NetInstall  
 NetRestore

Installed Volume:

Save To:

Image Name:

---

Network Disk:  Image Index:

Description:

Results Options Description

Back Save Run



# OTHER IMAGING UTILITIES

- ☼ DeployStudio (IT582 - Friday, 3:30p - 5:00p)
- ☼ JAMF Software
- ☼ Absolute Manage
- ☼ Carbon Copy Cloner
- ☼ SuperDuper
- ☼ SneakerNet



# SOFTWARE UPDATE

- ✻ Locally cached instance of Apple Software Update Server
- ✻ Provides ability to enable selected updates
- ✻ Conserves bandwidth

# SOFTWARE UPDATE

The screenshot shows the 'Server Admin' interface for 'ocelot.example.com' with the 'Software Update' section selected. The left sidebar lists various services, with 'Software Update' highlighted. The main content area displays the status of the software update service, including its current state (Running), start time, last check for updates, and update statistics. The bottom of the window features a 'Stop Software Update' button.

Server Admin: ocelot.example.com: Software Update

SERVERS

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update**
  - VPN
  - Web
  - Xgrid

Overview Log Updates Settings

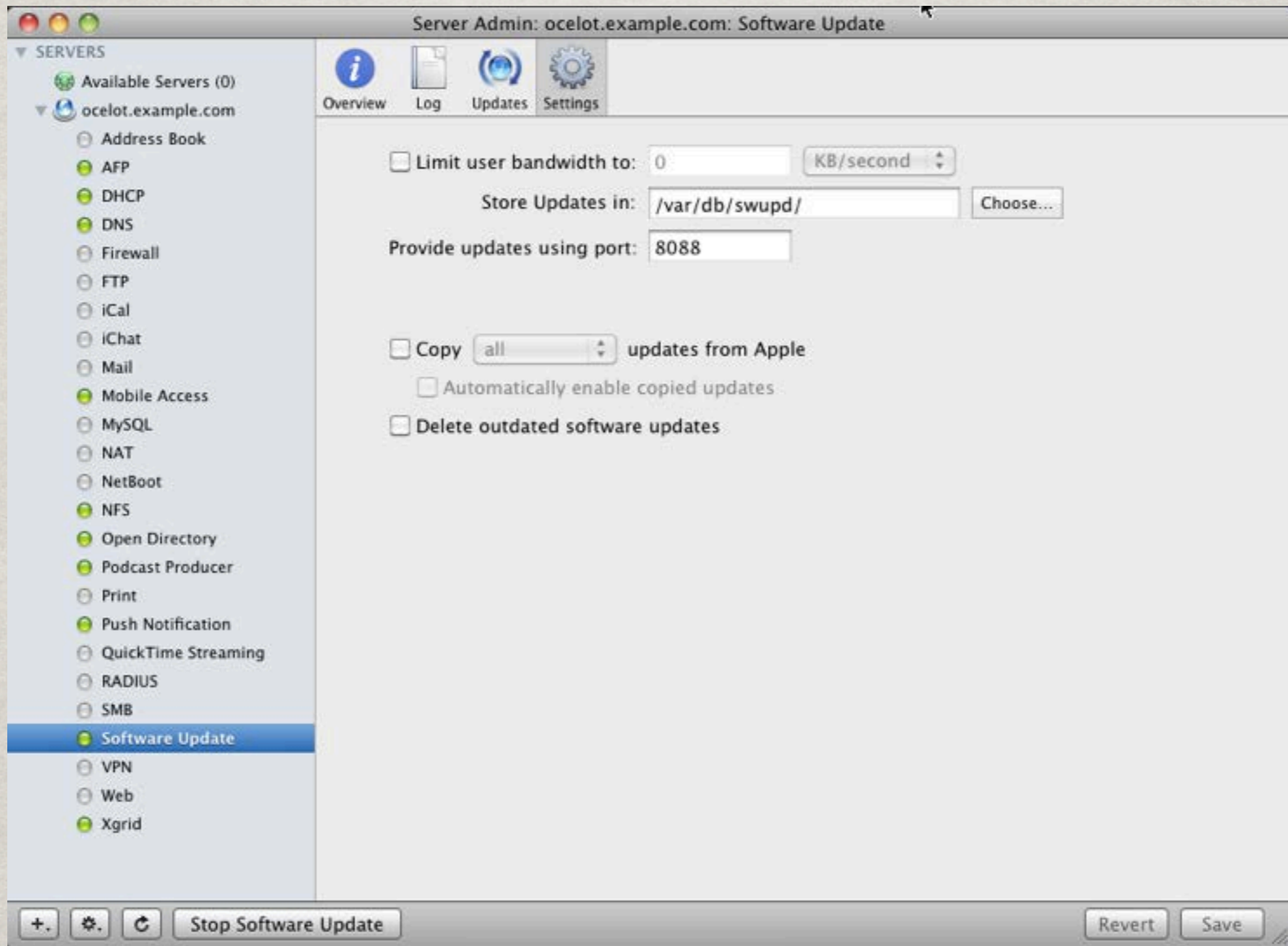
Software Update Service is: Running  
Start Time: Jan 14, 2011 8:32:02 PM CST

Last Check for Updates: Jan 14, 2011 8:32:02 PM CST  
Updates Copied: 0  
Updates Enabled: 0

Automatically copy new updates: Off  
Automatically enable new updates: Off

+, ⚙️, ↻, Stop Software Update

# SOFTWARE UPDATE



# SOFTWARE UPDATE

Server Admin: ocelot.example.com: Software Update

SERVERS

- Available Servers (0)
- ocelot.example.com
  - Address Book
  - AFP
  - DHCP
  - DNS
  - Firewall
  - FTP
  - iCal
  - iChat
  - Mail
  - Mobile Access
  - MySQL
  - NAT
  - NetBoot
  - NFS
  - Open Directory
  - Podcast Producer
  - Print
  - Push Notification
  - QuickTime Streaming
  - RADIUS
  - SMB
  - Software Update
  - VPN
  - Web
  - Xgrid

Overview Log Updates Settings

Copied	Enable	Name	Version	Size	Post Date
	<input type="checkbox"/>	EPSON Printer Software Update	2.5.1	823 MB	01/13/11
	<input type="checkbox"/>	iWork Update 5	9.0.5	72.9 MB	01/07/11
	<input type="checkbox"/>	Remote Desktop Admin Update	3.4	58.3 MB	01/06/11
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Remote Desktop Client Update	3.4	5.8 MB	01/06/11
	<input type="checkbox"/>	Mac OS X Server Update Combined	10.6.6	1.2 GB	01/06/11
	<input type="checkbox"/>	Mac OS X Server Update	10.6.6	253 MB	01/06/11
	<input type="checkbox"/>	Mac OS X Update Combined	10.6.6	1011 MB	01/06/11
	<input checked="" type="checkbox"/>	Mac OS X Update	10.6.6	253 MB	01/06/11
	<input type="checkbox"/>	iMovie 9.0.1	9.0.1	27.2 MB	01/04/11
	<input type="checkbox"/>	GarageBand Update	6.0.1	45.2 MB	01/04/11
	<input type="checkbox"/>	iPhone Configuration Utility	3.2	10.0 MB	12/21/10

Total: 217 updates Last Check: Jan 14, 2011 8:32:02 PM

The Mac OS X 10.6.6 Update is recommended for all users running Mac OS X Snow Leopard and includes general operating system fixes that enhance the stability, compatibility, and security of your Mac. It also includes the Mac App Store, the best way to discover and buy new apps for your Mac. The Mac App Store, a new application you'll find in the Dock, includes the following features:

- Discover Mac apps: Browse featured apps, top charts, and categories, or search for something specific. Read detailed app descriptions and user reviews, and flip through screen shots.
- Buy and install: Easily purchase apps with your iTunes account. Apps install in one step and are quickly available from the Dock.
- App updates: The Mac App Store keeps track of all your purchased apps and notifies you when free updates are available.

To learn more about the Mac App Store, visit: <http://www.apple.com/mac/app-store>.  
For detailed information on this update, please visit this website: <http://support.apple.com/kb/HT4459>.  
For information on the security content of this update, please visit: <http://support.apple.com/kb/HT1222>.

Product ID: zzz061-9625 (Mac OS X Update) Copy Now Choose Version...

Stop Software Update Revert Save

# SOFTWARE UPDATE

The screenshot shows the 'Server Admin: ocelot.example.com: Software Update' window. A modal dialog titled 'Choose which version of the product will be offered to users:' is open, displaying a table of available updates. The table has columns for Version, Name, Size, Copied, and Post Date. The version 9.1 is selected. Below the table are 'Cancel' and 'Save' buttons. To the right of the dialog, a search box contains 'ipho' and a partial table shows 'Size' and 'Post Date' columns with values like '10.0 MB' and '12/21/10'. Below the dialog, a text area provides details about the update, including a list of features and a recommendation for all users. At the bottom, there are buttons for 'Copy Now', 'Choose Version...', 'Revert', and 'Save'. The background shows the 'Software Update' section selected in the left sidebar of the Server Admin interface.

Version	Name	Size	Copied	Post Date
9.1	iPhoto Update	177 MB		11/06/10
8.1.2	iPhoto Update	12.9 MB		03/30/10
8.1	iPhoto Update	161 MB		08/18/09
7.1.5	iPhoto Update	10.9 MB		10/27/08
7.1.4	iPhoto Update	77.1 MB		07/22/08
7.1	iPhoto Update	61.8 MB		09/26/07
6.0.6	iPhoto Update	7.3 MB		03/13/07
6.0.5	iPhoto Update	57.7 MB		09/28/06
6.0.4	iPhoto Update	36.4 MB		09/28/06
5.0.4	iPhoto Update	41.0 MB		07/26/05

This update adds several new print product options to iPhoto '11. It also improves overall stability and addresses a number of other minor issues.

- Provides the ability to create and order calendars in iPhoto.
- Additional letterpress holiday greeting card themes are now available.
- Fixes an issue that prevented videos downloaded from MobileMe or Flickr from importing correctly into iPhoto events.

The update is recommended for all users of iPhoto '11.

Product ID: 061-9442 (iPhoto Update)

Buttons: Copy Now, Choose Version..., Revert, Save

# SCREENSHARING.APP

- ✻ /System/Library/CoreServices/
- ✻ Make sure Remote Management Enabled
- ✻ Connect via IP for basic screen control.





# SCREENSHARING.APP

Computer Name:

Computers on your local network can access your computer at:  
ocelot.local Edit...


On	Service
<input type="checkbox"/>	DVD or CD Sharing
<input type="checkbox"/>	Screen Sharing
<input type="checkbox"/>	Scanner Sharing
<input checked="" type="checkbox"/>	Remote Login
<input checked="" type="checkbox"/>	Remote Management
<input type="checkbox"/>	Remote Apple Events

Remote Management: On

Other users can manage your computer using the address  
ocelot.example.com. Computer Settings...

Allow access for:  All users  
 Only these users:

+ - Options...

 Click the lock to prevent further changes. ?

# REMOTE DESKTOP

- ✻ Apple created tool for remote management
- ✻ Includes, .pkg distribution, remote control, reporting and screen sharing.
- ✻ Ability to schedule .pkg installs
- ✻ Spotlight Searching
- ✻ Best feature: Send UNIX Command
- ✻ Task Server



# REMOTE DESKTOP

The screenshot shows the Remote Desktop application window. The title bar reads "Remote Desktop". The top toolbar includes icons for Observe, Control, Curtain, Copy, Install, UNIX, Reports, Spotlight, and Get Info. The left sidebar shows a tree view of computer groups: All Computers, Servers, and a folder named "Maple" which is expanded to show a list of computers including Maple, 108, Room 111, Room 118, Maple Staff, Maple LMC, Cart A, CartB, CartC, Cart D, Science Cart, Wescott, Willowbrook, untitled list 2, untitled list 3, Windows, Scanner, Task Server, Active Tasks, and History.

The main area displays a table of computers within a network range of 10.15.11.1 to 10.15.12.255. The table has the following columns: Name, IP Address, ARD Version, Network Interface, Ethernet ID, and Machine Model. Two computers are selected: Ma.108.06 and Ma.CartD.13.

Name	IP Address	ARD Version	Network Interface	Ethernet ID	Machine Model
Maple	10.15.12.65	-	ppp0	00:00:00:00:00:00	-
108	10.15.12.68	-	ppp0	00:00:00:00:00:00	-
Room 111	10.15.12.69	-	ppp0	00:00:00:00:00:00	-
Room 118	10.15.12.71	-	ppp0	00:00:00:00:00:00	-
Maple Staff	10.15.12.75	-	ppp0	00:00:00:00:00:00	-
Maple LMC	10.15.12.80	-	ppp0	00:00:00:00:00:00	-
Cart A	10.15.12.139	-	ppp0	00:00:00:00:00:00	-
Ma.106.01	10.15.12.50	3.3.2	ppp0	00:16:cb:9a:89:0b	-
Ma.108.06	10.15.12.130	3.3.2	ppp0	34:15:9e:3b:1f:a8	iMac
Ma.108.15	10.15.12.141	3.3.2	ppp0	34:15:9e:3b:18:1c	iMac
Ma.CartD.13	10.15.12.210	3.3.2	ppp0	00:1f:f3:ce:cd:74	MacBook

The status bar at the bottom indicates "11 computers 2 selected".



# REMOTE DESKTOP

The screenshot displays a 'Remote Desktop' application window. On the left is a sidebar with a tree view of servers, including 'Maple' and 'Wescott'. The main area shows a 'Send UNIX Command' dialog box with the following content:

Send UNIX Command  
Template: None

```
# Repair disk permissions on main volume  
diskutil repairPermissions /
```

Enter a UNIX command to run using /bin/bash.

Run command as:  Current console user on target computer  
 User:

Command results:  Display all output

Name	Status
Ma.108.06	Available
Ma.108.15	Available

2 computers

Buttons: Schedule..., Save, Send

Status bar: 11 computers 2 selected



# REMOTE DESKTOP

The screenshot displays a 'Remote Desktop' application window. On the left is a sidebar with a tree view of servers, including 'Maple', 'Wescott', and 'Willowbrook'. The main area shows a 'Send UNIX Command' dialog box with the following details:

- Template: None
- Command: `softwareupdate -i -a`
- Run command as:  Current console user on target computer,  User:
- Command results:  Display all output

Below the dialog is a table of server status:

Name	Status
Ma.108.06	Available
Ma.108.07	Idle (6h 5m)
Ma.108.15	Available

At the bottom of the dialog, it indicates '3 computers' and includes 'Schedule...', 'Save', and 'Send' buttons. The background window shows a terminal with the IP address '10.15.12.255' and a 'look' command.



# REMOTE DESKTOP

Remote Desktop

Observe Control Curtain

All Computers  
Servers  
Maple  
Maple  
108  
Room 111  
Room 118  
Maple Staff  
Maple LMC  
Cart A  
CartB  
CartC  
Cart D  
Science Cart  
Wescott  
Willowbrook  
untitled list 2  
untitled list 3  
Windows  
Scanner  
Task Server  
Active Tasks  
History

10.15.12.255

line Model

look

3 computers

Schedule... Save Send

Name	Status
Ma.108.06	Available
Ma.108.07	Idle (6h 5m)
Ma.108.15	Available

11 computers 2 selected



# REMOTE DESKTOP

Spotlight Search

186 Results

Open Selected Copy To This Computer Delete Selected

Computer	Startup Disk	Home	Folder
Name	Current Status	Search Results	
Ma.108.15	Available	52	
Ma.108.07	Idle (6h 7m)	69	
Ma.108.06	Available	65	

Name	Computer	Date Modified	Size	Kind
places.sqlite	Ma.108.06	1/14/11 11:31 AM	176 KB	Document
places.sqlite-journal	Ma.108.06	1/14/11 11:31 AM	--	Document
places.sqlite	Ma.108.06	1/14/11 9:16 AM	368 KB	Document
places.sqlite-journal	Ma.108.06	1/14/11 9:16 AM	--	Document
places.sqlite	Ma.108.07	1/13/11 4:32 PM	160 KB	Document
places.sqlite-journal	Ma.108.07	1/13/11 4:32 PM	--	Document
places.sqlite	Ma.108.06	1/13/11 4:30 PM	308 KB	Document
places.sqlite-journal	Ma.108.06	1/13/11 4:30 PM	--	Document
places.sqlite-journal	Ma.108.07	1/13/11 3:30 PM	--	Document
places.sqlite	Ma.108.07	1/13/11 3:30 PM	252 KB	Document
places.sqlite	Ma.108.06	1/13/11 3:29 PM	340 KB	Document
places.sqlite-journal	Ma.108.06	1/13/11 3:29 PM	--	Document
places.sqlite	Ma.108.06	1/13/11 2:10 PM	584 KB	Document
places.sqlite-journal	Ma.108.06	1/13/11 2:10 PM	--	Document
places.sqlite	Ma.108.06	1/13/11 12:49 PM	240 KB	Document
places.sqlite-journal	Ma.108.06	1/13/11 12:49 PM	--	Document
places.sqlite	Ma.108.07	1/13/11 12:09 PM	264 KB	Document
places.sqlite-journal	Ma.108.07	1/13/11 12:09 PM	--	Document
places.sqlite	Ma.108.15	1/13/11 8:24 AM	536 KB	Document
places.sqlite-journal	Ma.108.15	1/13/11 8:24 AM	--	Document
places.sqlite	Ma.108.15	1/12/11 2:04 PM	176 KB	Document

/Users/clarkreinfranck/Library/Application Support/atomicdesktop/Profiles/rt05tevj.default/places.sqlite

3 computers 1 selected

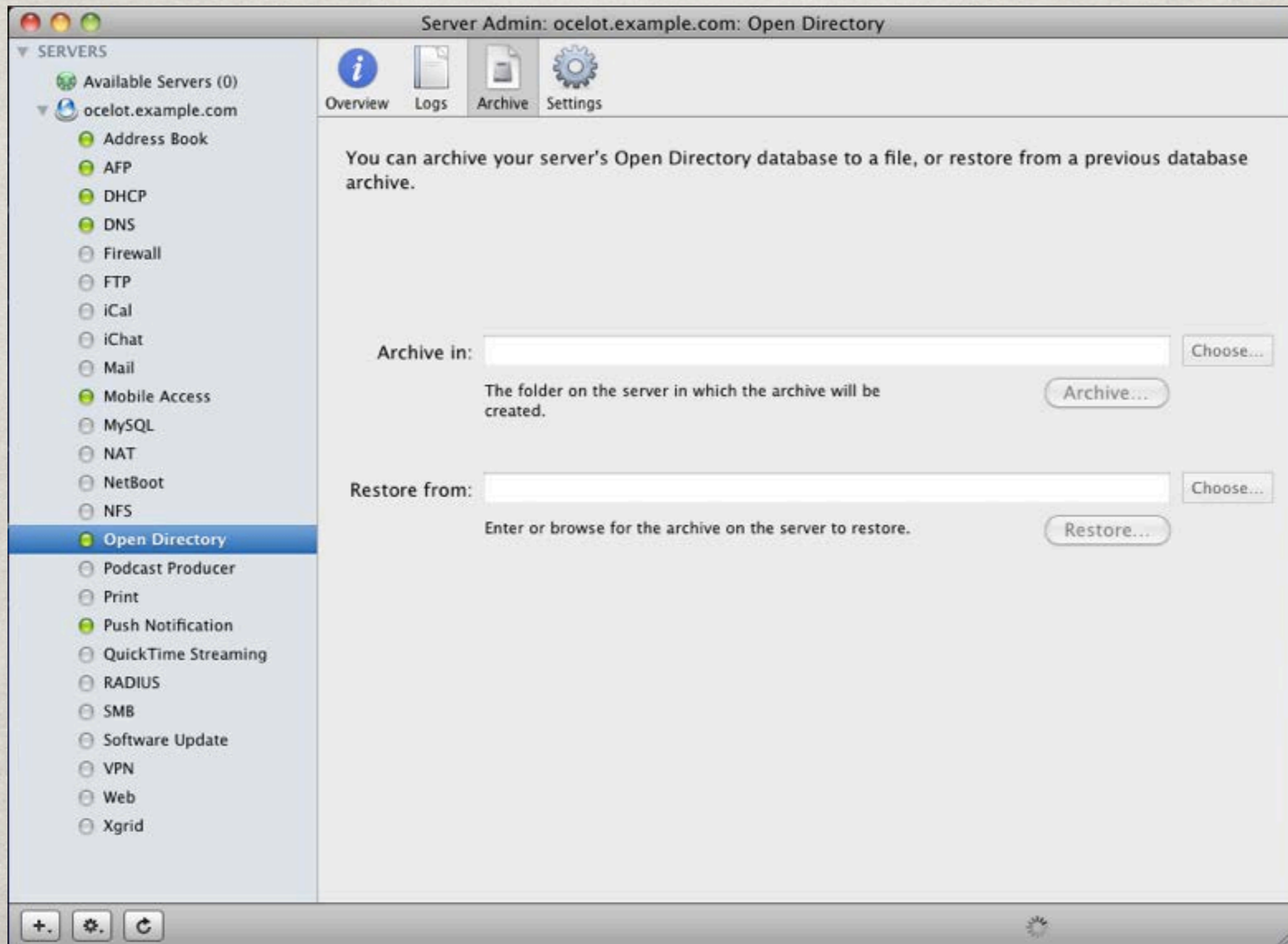


# NOW THAT IT IS RUNNING ...

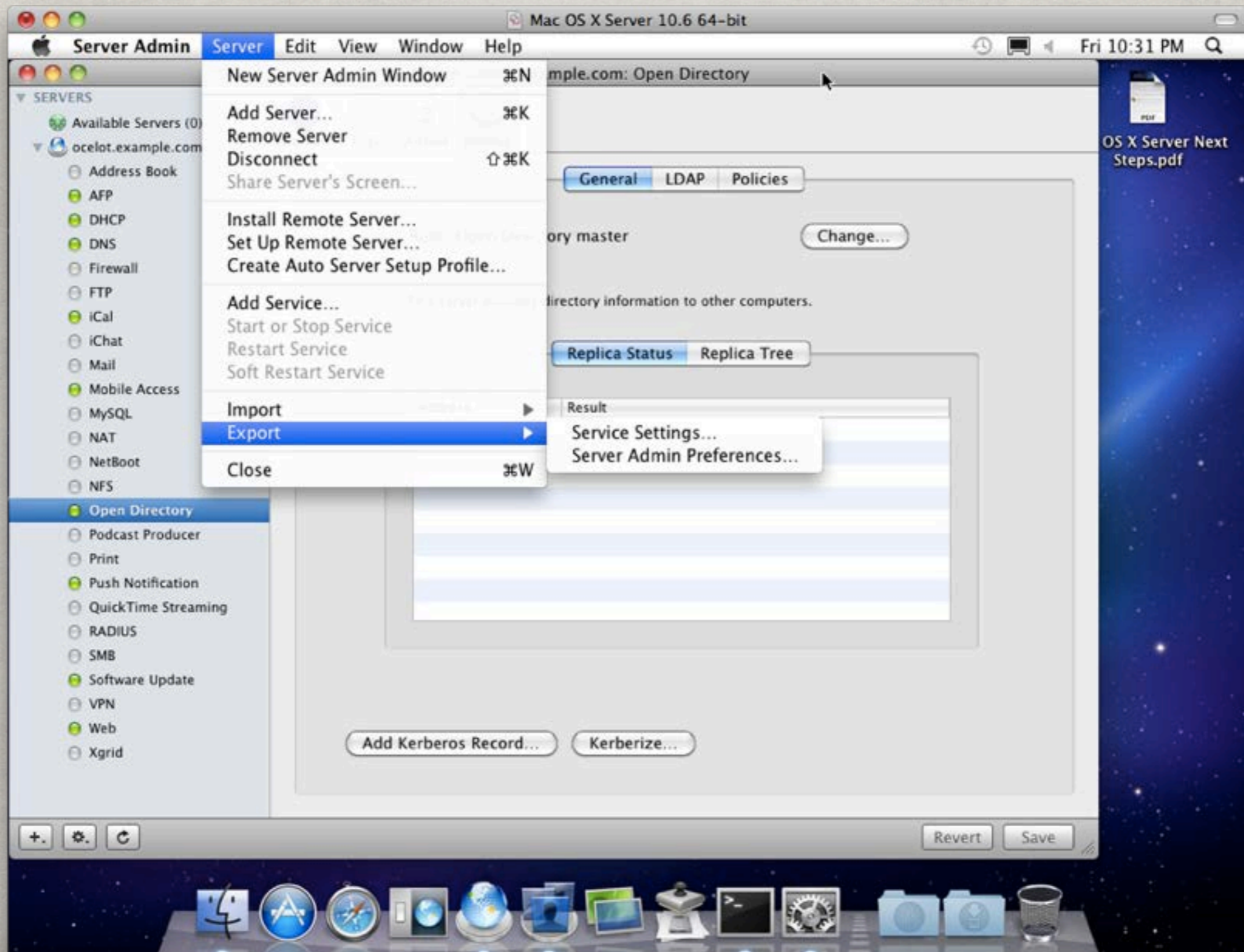
- ✻ Create tested directory backups
- ✻ Create service configuration backups



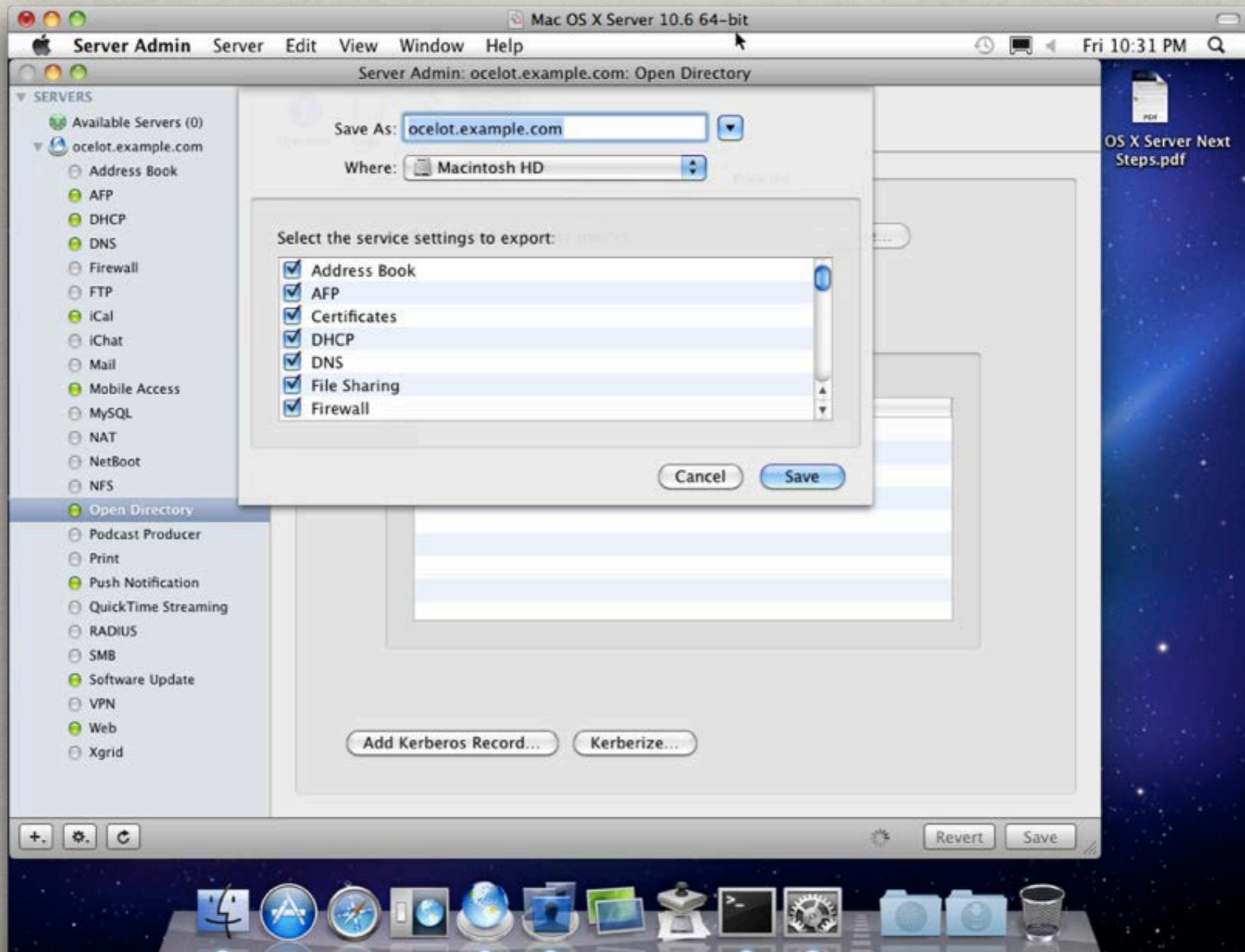
# OPENDIRECTORY BACKUPS



# SERVICE BACKUPS



# SERVICE BACKUPS



# FILE SYSTEM BACKUP

- ✻ Make sure you have a method in place for backing up user data!
- ✻ FireWire Hard Drives, Tape, Off-site, Cloud
- ✻ Test these backups to make sure they work!

# SUPPORT RESOURCES

- ✻ Apple Product Manuals
- ✻ Apple Mailing Lists
  - ✻ OS X Server
  - ✻ Client Management
  - ✻ Imaging
- ✻ MacEnterprise
- ✻ Social Networks!