

Mac OS X Accounts

Session M235

Macworld San Francisco 2005

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University of Michigan

Apple Certified System Administrators 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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You think it's all about
the username and
password. Think again.

What We'll Cover

- What are accounts, where they live, and their care and feeding
- When to use NetInfo Manager
- Going to town with Workgroup Manager
- Some command line goodies

Why You Need To Know This

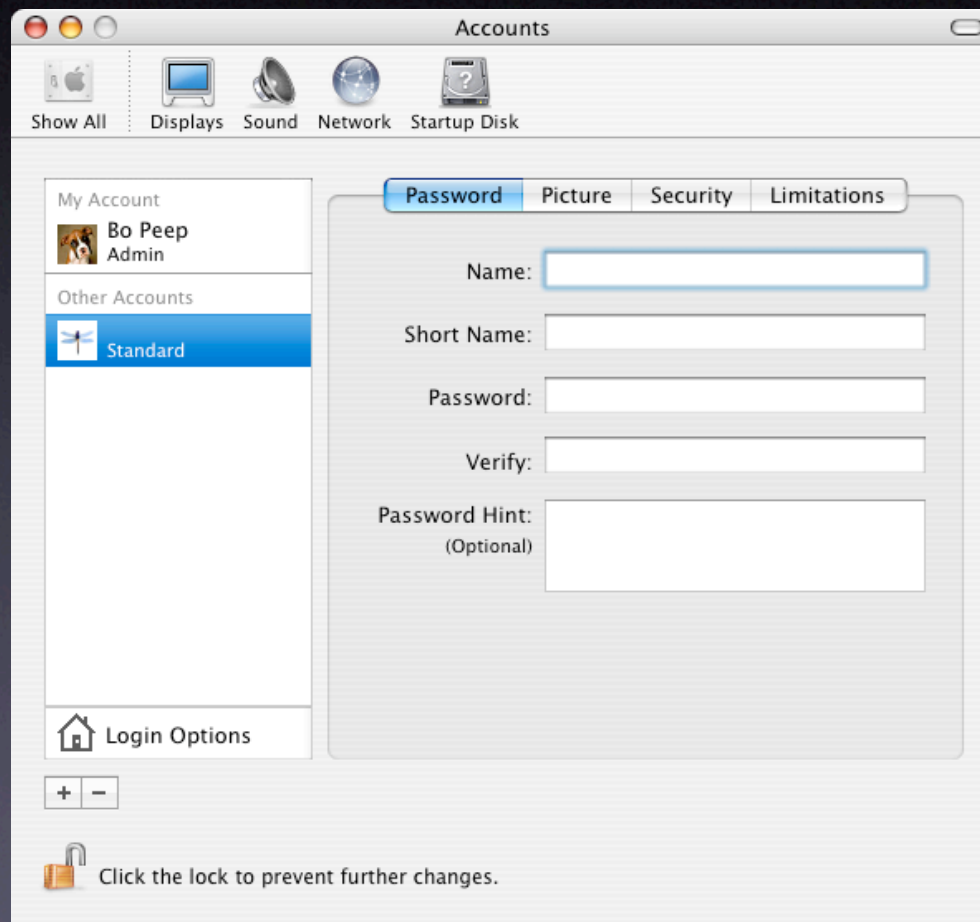
- With this information, you can provide management over a single Mac, or a deployment of many Macs with a deeper level of control

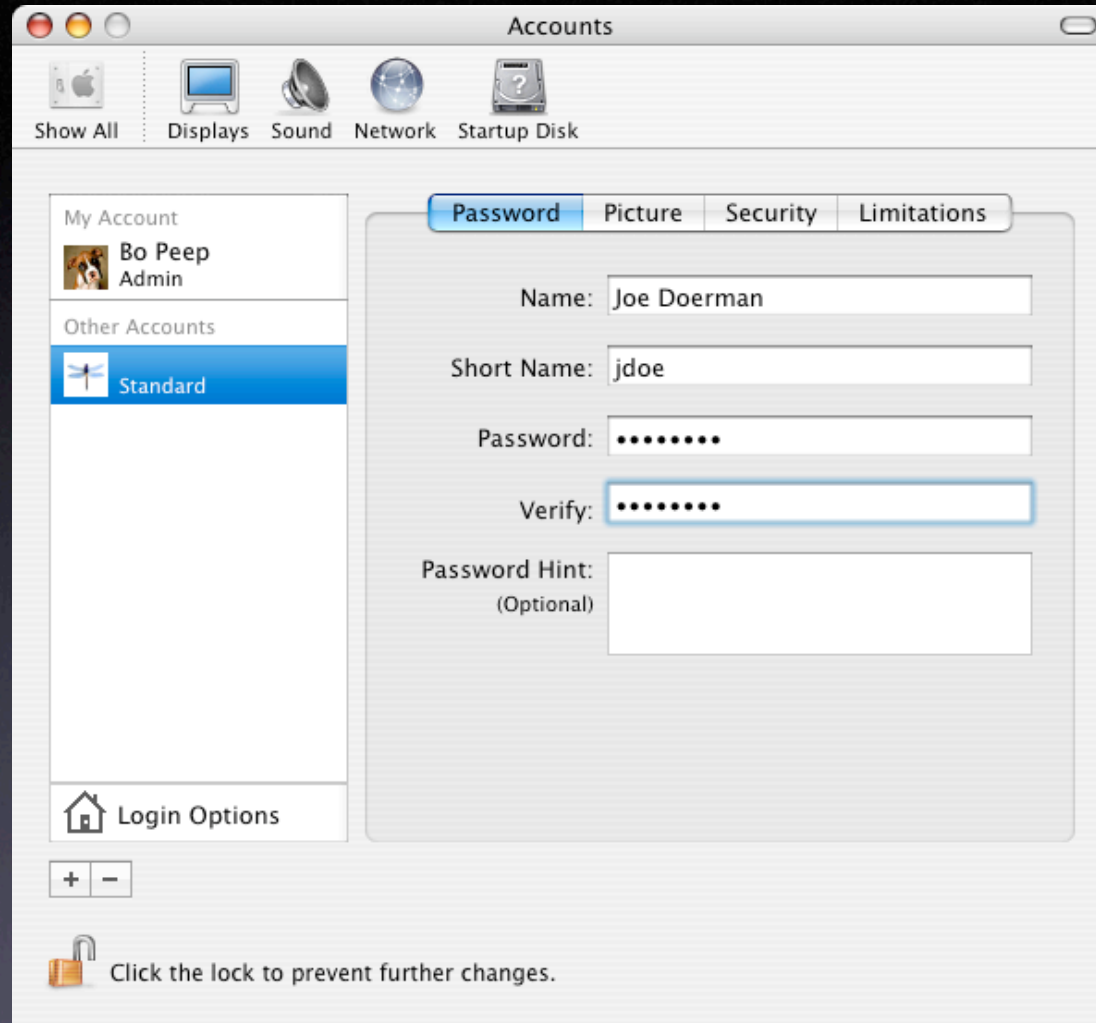
Where this is useful

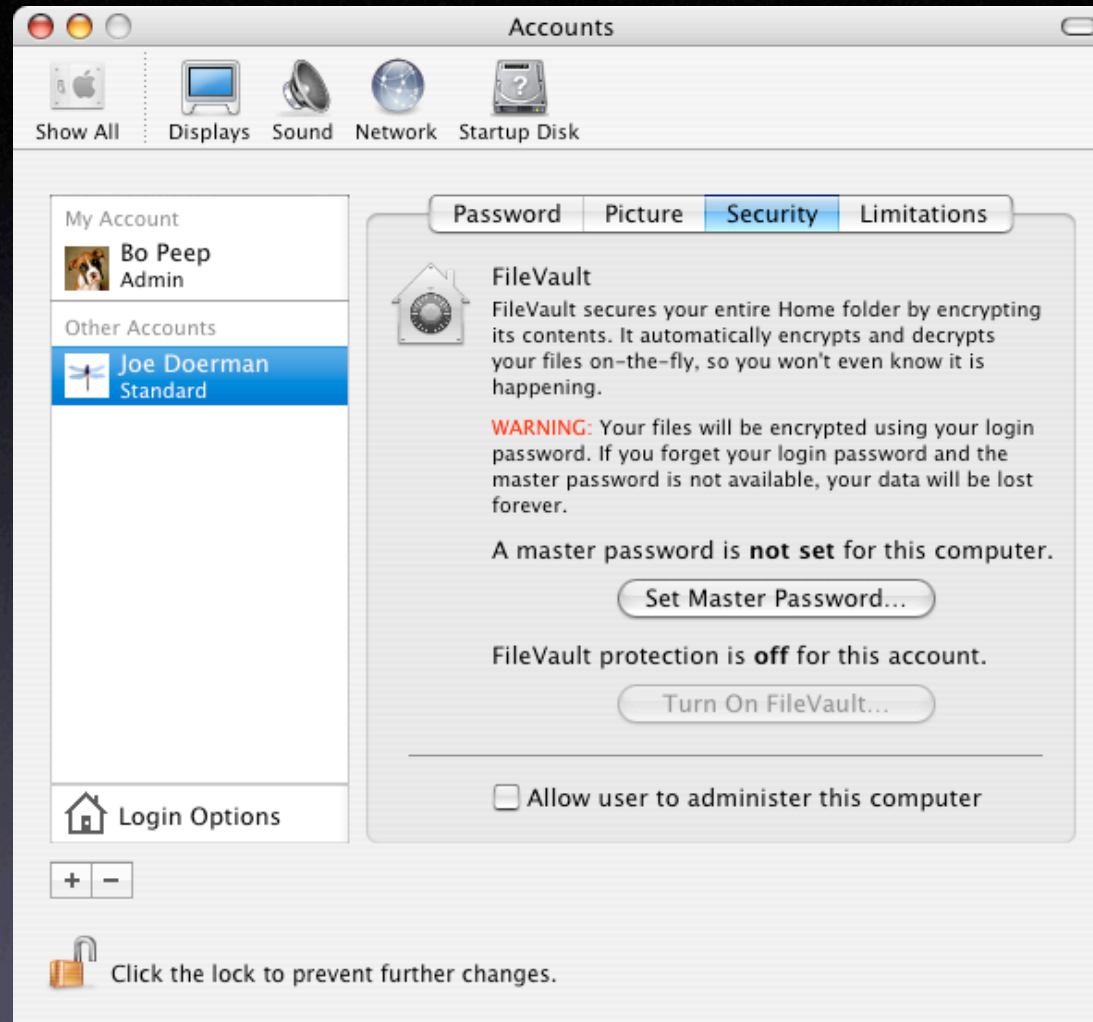
- Managing non-networked machines (notebooks)
- Small-scale lab or workplace deployments that don't have OS X Server
- Macs at home

Accounts

Creating an Account the “Normal” way









A master password must be created for this computer to provide a safety net for accounts with FileVault protection.

The master password can be used by the administrator of this computer to unlock any FileVault account on this computer. This provides protection for users who forget their login password.

Master Password:

Verify:

Hint:

Choose a password that is difficult to guess, yet based on something important to you so that you never forget it. Click the Help button for more information about choosing a good password.



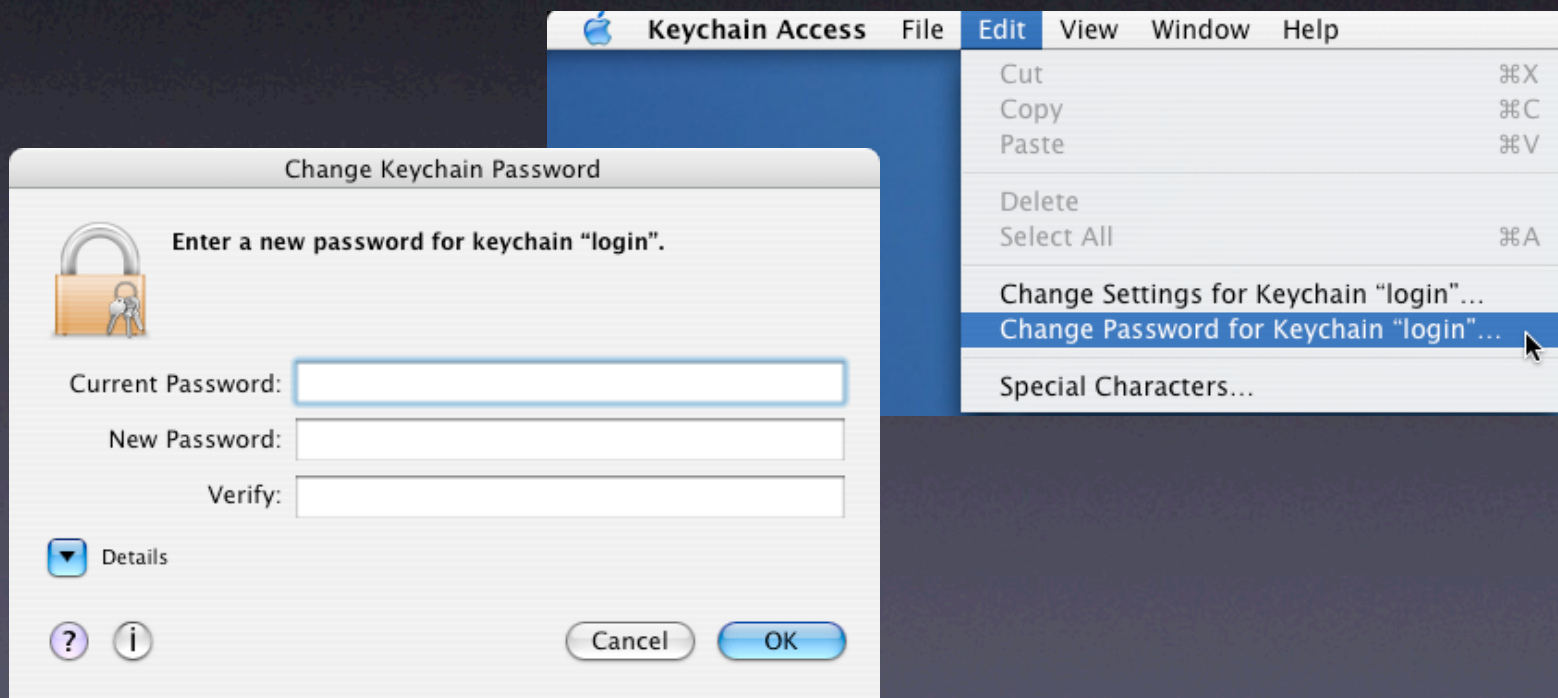
Cancel

OK

Should I set the Master Password?

Reasons for	Reasons against
Setting the Master Password enables you to reset a forgotten password.	You can still recover a lost password using the install disk.
NOT setting the Master Password will allow another admin user to set it.	There is no recovering a lost master password. You must reformat the disk to set a new master password.

How do I set a “safe” password (and how do I check it)?



Change Keychain Password

 Enter a new password for keychain "login".

Current Password:

New Password:

Verify:

☐ Details

Password Assistant

Quality: 1.3

- ⚠ This is in the dictionary
- ⚠ This is too short
- ⚠ Try to mix upper and lower case, punctuation, and numbers

Change Keychain Password

 Enter a new password for keychain "login".

Current Password:


New Password:


Verify:


☒ Details

Password Assistant

 Quality: 37.6

 Try to mix upper and lower case, punctuation, and numbers

 This is too simplistic or systematic

Change Keychain Password

 Enter a new password for keychain "login".

Current Password:

New Password:

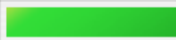
Verify:

 Details

Cancel OK

Password Assistant

 Quality: 98.2

Where are passwords stored?

- The password hash is stored in a shadow file at `/var/db/shadow/hash/generateduid`
- Crypt passwords are no more (since 10.3.0)

In case you're wondering what a “generated uid” is...

A guaranteed-to-be-unique identifier that appears in a user's NetInfo database record

- e.g.: 68753A44-4D6F-1226-9C60-0050E4C00067
- for more, read the `uuidgen` manpage

Creating an Account from the Command Line (For the Deliberate Contortionist)

```
sudo nicl . -create /users/jdoe uid 12000
sudo nicl . -create /users/jdoe gid 20
sudo nicl . -create /users/jdoe shell /bin/tcsh
sudo nicl . -create /users/jdoe home /Users/jdoe
sudo nicl . -create /users/jdoe realname "Jason Doerman"
sudo nicl . -create /users/jdoe passwd "*"
sudo nicl . -create /users/jdoe picture "/Library/User Pictures/Animals/Jaguar.tif"
sudo nicl . -create /users/jdoe hint ""
sudo nicl . -create /users/jdoe sharedDir Public
sudo nicl . -create /users/jdoe _writers_passwd jdoe
sudo nicl . -create /users/jdoe _writers_tim_passwd jdoe
sudo nicl . -create /users/jdoe _writers_hint jdoe
sudo nicl . -create /users/jdoe _writers_picture jdoe
sudo nicl . -create /users/jdoe _shadow_passwd ""
/usr/bin/ditto -rsrc "/System/Library/User Template/English.lproj" "/User/jdoe"
/usr/sbin/chown -R 12000:20 /Users/jdoe
```

Creating a “hidden” account

- Assign or change the UID to a value less than 500 that ISN'T already being used -- it's a good idea to number DOWN from 500.

Where do the accounts live?

You can authenticate locally or to a remote server, because your account may be...

- in the local NetInfo database
- in a remote NetInfo database
- in BSD flat files
- in an LDAP directory
- in Active Directory

What does 'being an administrator' mean from an account level?

- Membership in the “admin” group (80)
- Membership in the sudoers “group”
(/etc/sudoers)
- Unlock anyone's screen saver
- Run the Installer application
- Feel really important
- (for more, attend session M255)

What's the difference between "admin" and "wheel"

- wheel (GID 0) is like the “root” group -- so even as an admin, you'll need to sudo to modify with these -- in other words, messing these up is really gonna cost you.
- Files are owned by the wheel group so that you can't inadvertently modify or delete them (the use of sudo is required)

admin vs. wheel cont.

- admin group is GID 80
- Files owned by the admin group can be modified by admins without extra safeguards

Creating a group from the command line

- Create the group *newgroup* with a gid that doesn't conflict with existing groups (10,000-64,000)

```
sudo nicl . -create /groups/newgroup gid 12345
```

- Disable *newgroup*'s password

```
sudo nicl . -create /groups/newgroup passwd "*" 
```

- Add user *johndoe* to *newgroup*

```
sudo nicl . -merge /groups/newgroup users johndoe
```

NetInfo Database

NetInfo Database

- What is the NetInfo Database (and why should I back it up RIGHT NOW!)?

DEMO

Backing up a NetInfo Database

```
cd /var/db/netinfo/  
sudo /usr/bin/nidump -r / . >  
local.nidb.back
```


Restoring a “NetInfo-hosed” machine

```
cd /var/db/netinfo/
```

```
sudo /usr/bin/niload -d -r
```

```
/ local.nidb.back .
```

- Reboot `/sbin/reboot`

Okay, so what is a NetInfo Database?

The database that holds the local account information, machine configuration, and some other things commonly found in the /etc directory of other Unix systems (such as hosts and mounts)

NetInfo Database

"I don't like NetInfo - can I use flat files like any other unix OS?"

- Yes, but you shouldn't. Apple and third-parties will expect it to be there, and need to place things there.

NetInfo Database Best Practices:

- Backup your NetInfo database before you modify it.
- Do NOT manipulate the NetInfo database with more than one tool at a time!

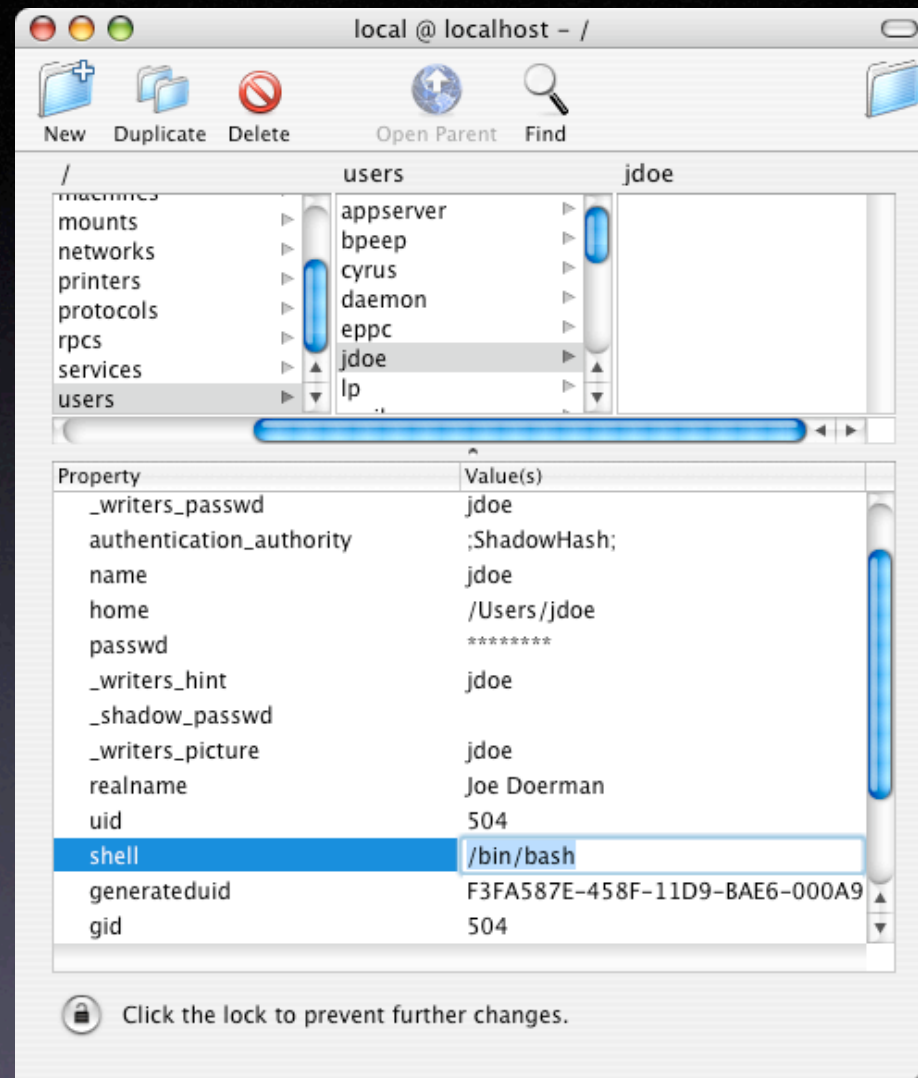
TOOLS

Generally speaking...

- To restrict existing access:
- Modify MCX settings through the “Limitation” tab on the Accounts preference pane, or with the “Preferences” tab in Workgroup Manager
- To open up access:
- Modify /etc/authorization (see session M255)

NetInfo Manager





NetInfo Manager

What do I absolutely need the NetInfo Manager for that I can't do any other way?

- Enable and Disable root login
- (see `dsenableroot`)
- Dig deeper into the NetInfo Database
- Pretty much everything else can be done using the Workgroup Manager

Should I enable the root account?

Why?

- Feel like a cool Unix sys admin (Mac background)
- Tradition (Unix background)
- Don't have to sudo all the time

Why Not?

- Cannot brute-force attack root account
- Encourages the use of sudo, which provides a log entry for each administrative action taken

What actually happens when you enable root?

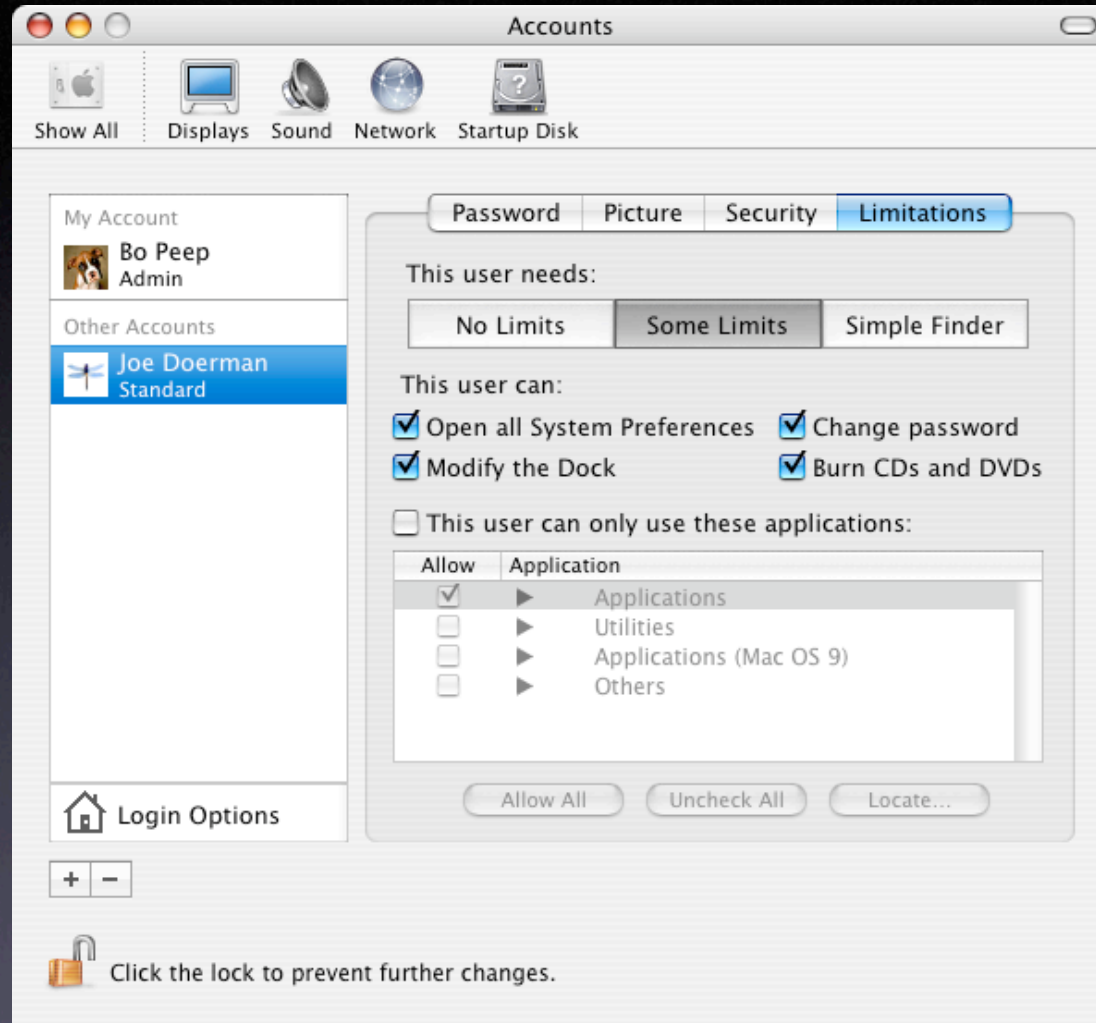
- Shadow password for root is set
- Removes `;DisabledUser;` tag, if present, from `authentication_authority` property

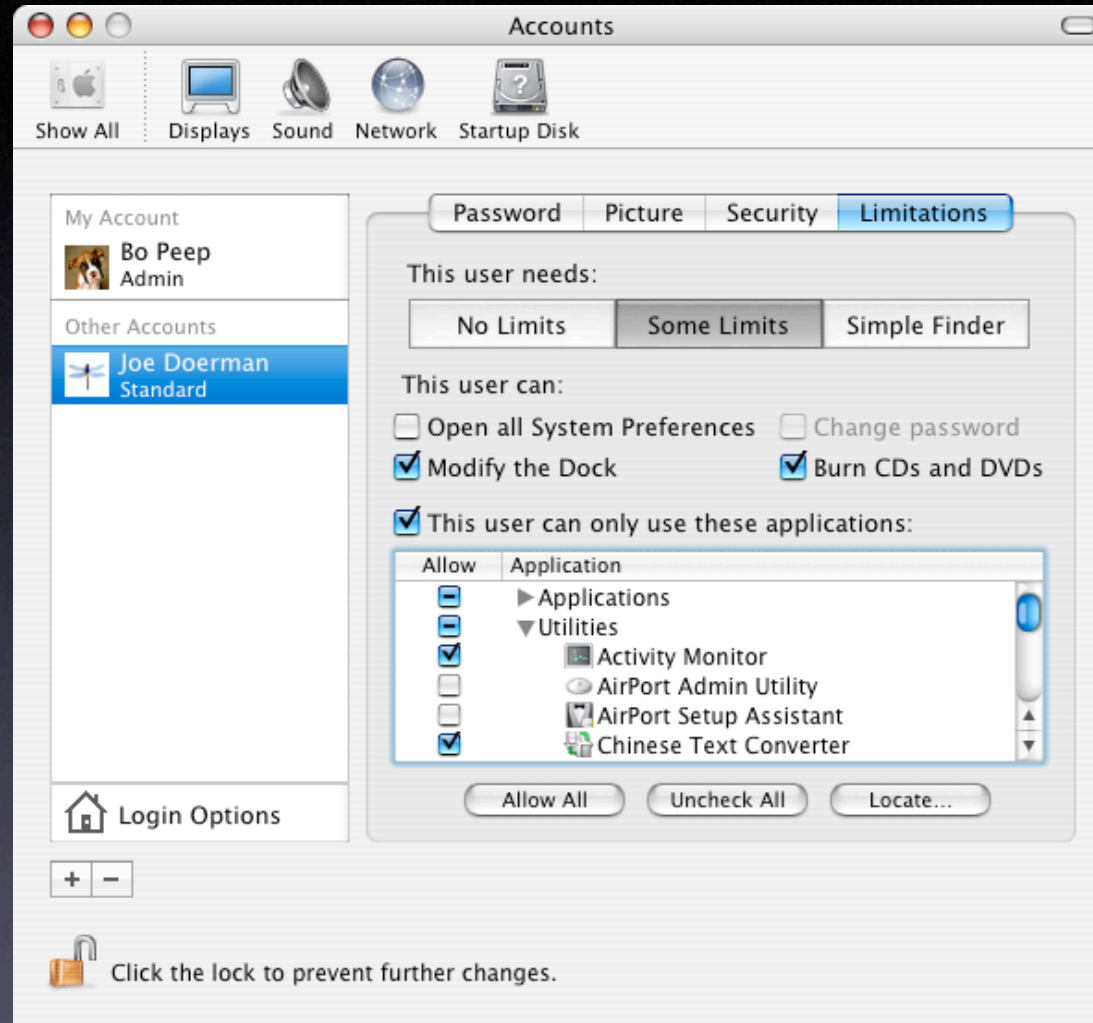
System Preferences Accounts Pane



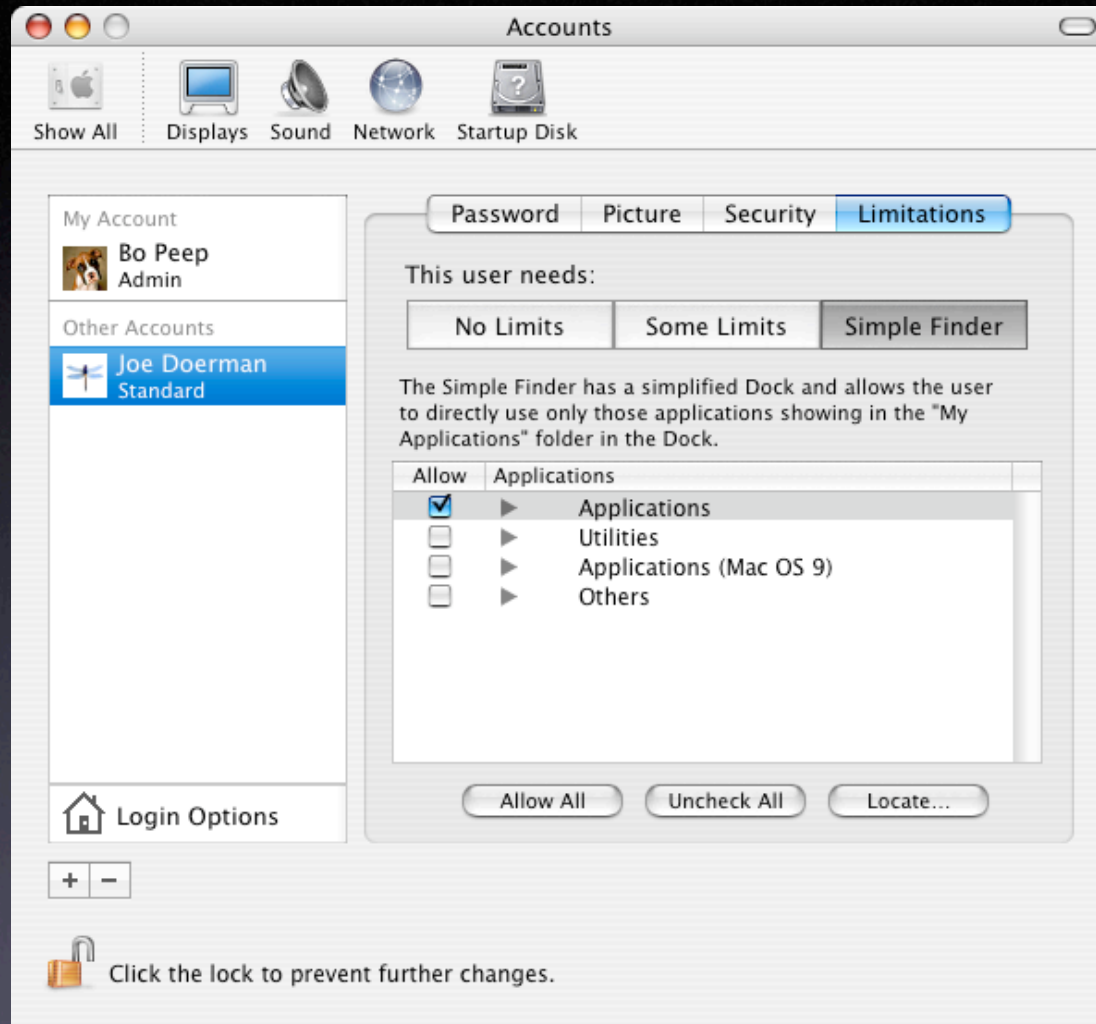
System Preferences Accounts Pane

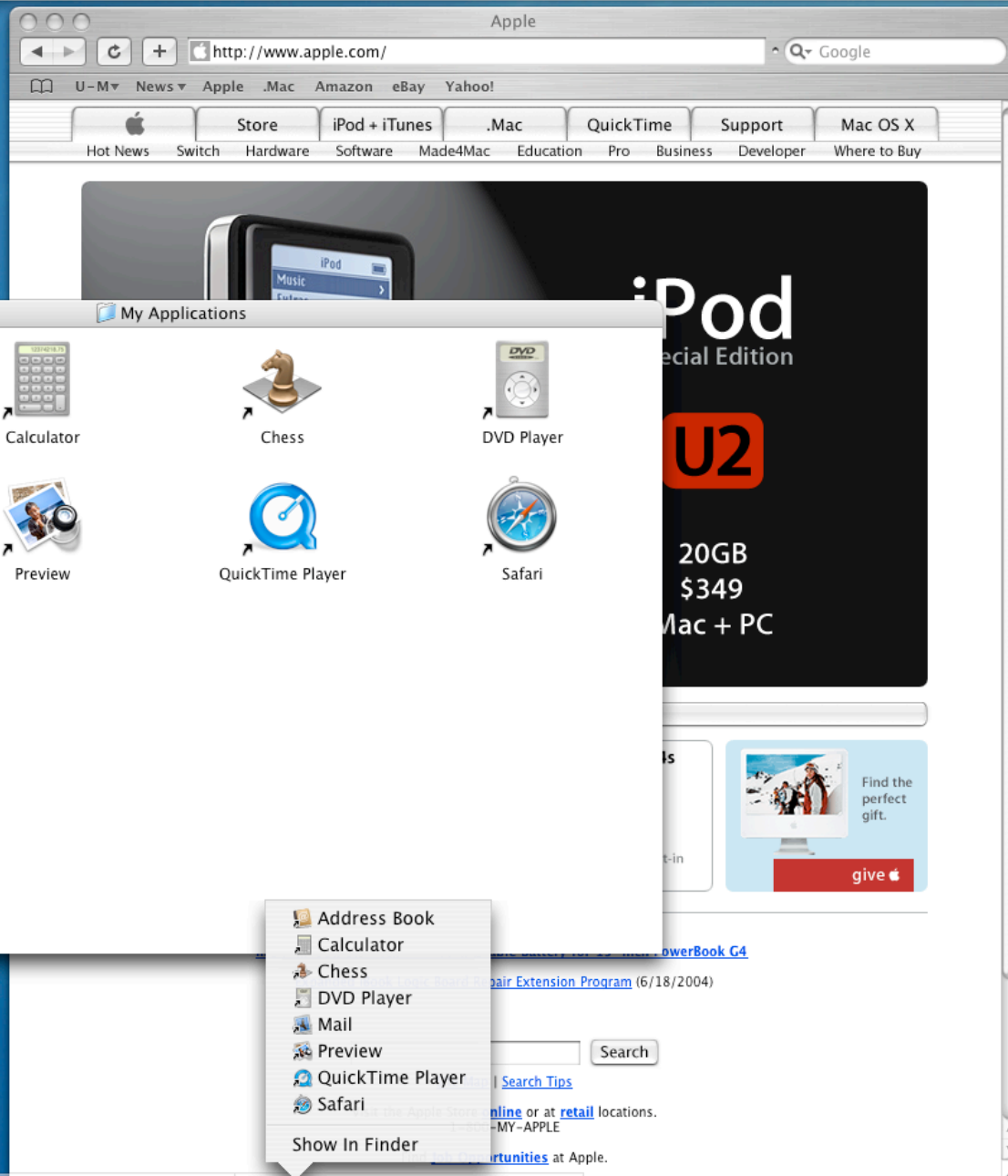
- Provides a fair amount of control over account capabilities
- That control is in big chunks...





DEMO





Workgroup Manager



"An administrator's
dream"

...can be satisfied by MCX
settings

What can we do with MCX Settings?

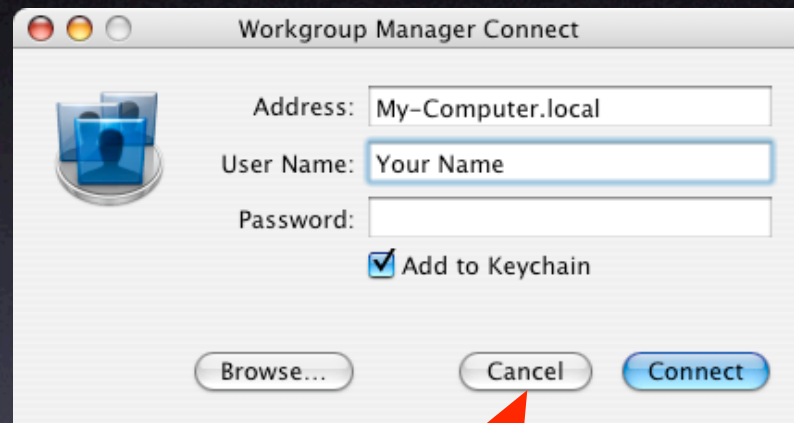
- MCX Settings = “Managed User” Settings
- Set overriding preferences such as dock behavior, screen saver behavior, etc.
- Limit application access
- All without a server -- these are all attributes of the USER ACCOUNT!

Getting Workgroup Manager

- <http://www.apple.com/downloads/macosx/apple/macosxserveradmintools.html>



Connecting



A screenshot of a macOS 'Workgroup Manager Connect' dialog box. The window has a title bar with standard macOS window controls (red, yellow, green buttons). On the left is an icon of a person at a computer. To the right of the icon are three text input fields: 'Address:' with 'My-Computer.local', 'User Name:' with 'Your Name', and 'Password:'. Below these fields is a checkbox labeled 'Add to Keychain' which is checked. At the bottom are three buttons: 'Browse...', 'Cancel', and 'Connect'. A large red arrow points from the bottom towards the 'Cancel' button.

Workgroup Manager Connect

Address: My-Computer.local

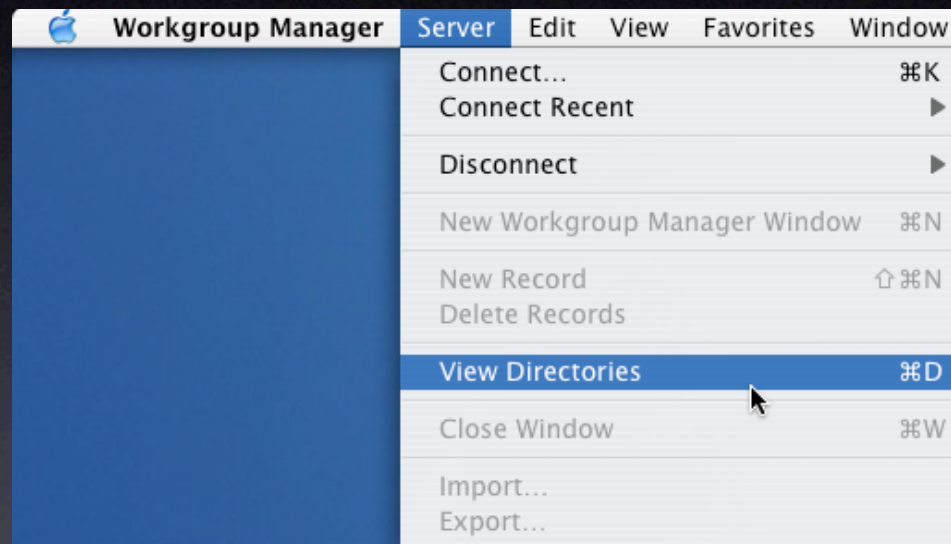
User Name: Your Name

Password:

☒ Add to Keychain

Browse... Cancel Connect

Getting into YOUR NetInfo database



Whuh? Don't worry... but don't ignore, either



You are working in a directory node that is not visible to the network.

Accounts created in the local directory node will be restricted to this server. To create network accounts, click OK then use the popup menu below the toolbar to go to a network-visible directory node.

☐ Do not show this warning again

OK

Creating a group from the command line

- Create the group *newgroup* with a gid that doesn't conflict with existing groups (10,000-64,000)

```
sudo nisl . -create /groups/newgroup gid 12345
```

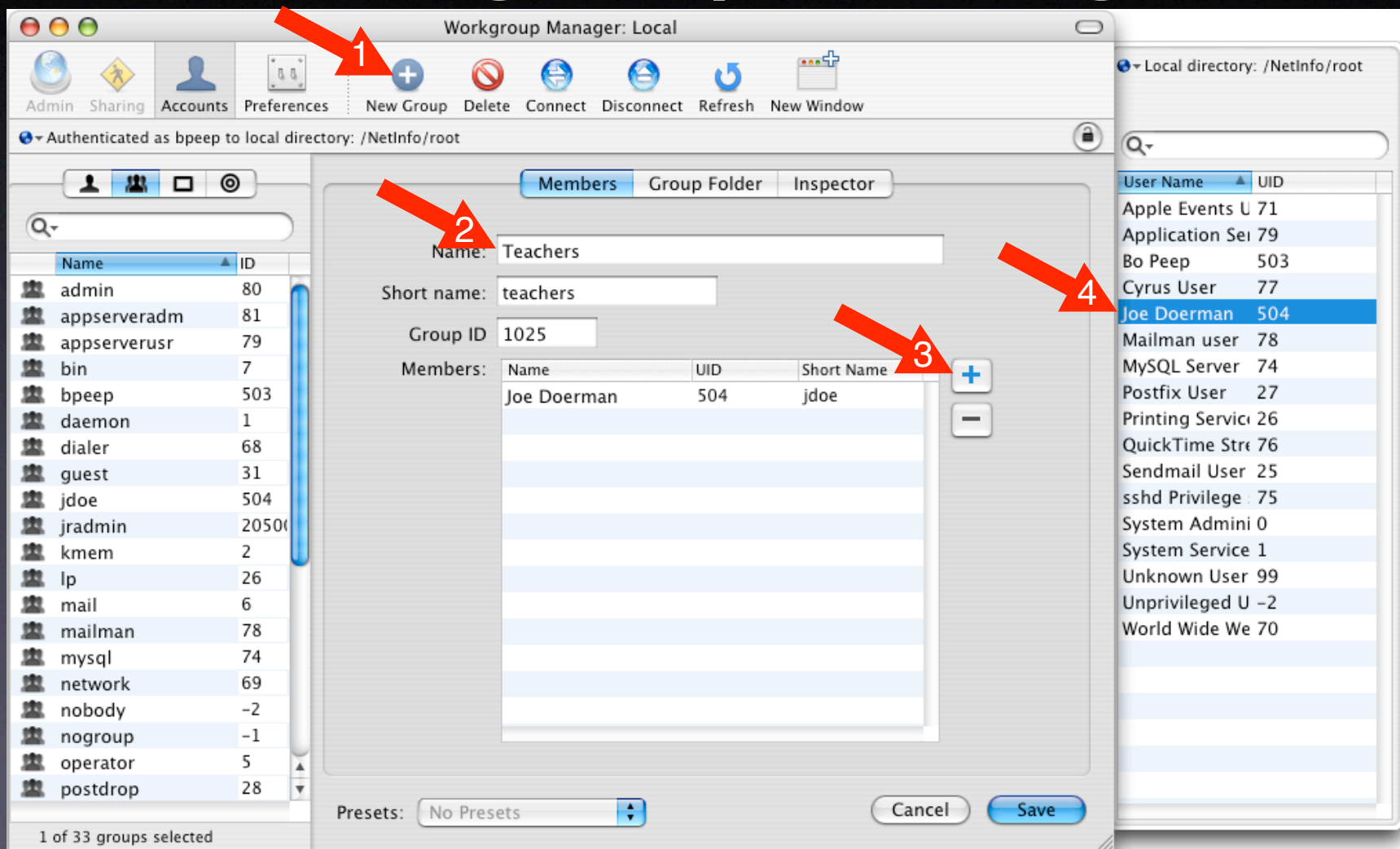
- Disable *newgroup*'s password

```
sudo nisl . -create /groups/newgroup passwd "*" 
```

- Add user *johndoe* to *newgroup*

```
sudo nisl . -merge /groups/newgroup users johndoe
```

Creating a group in Workgroup Manager

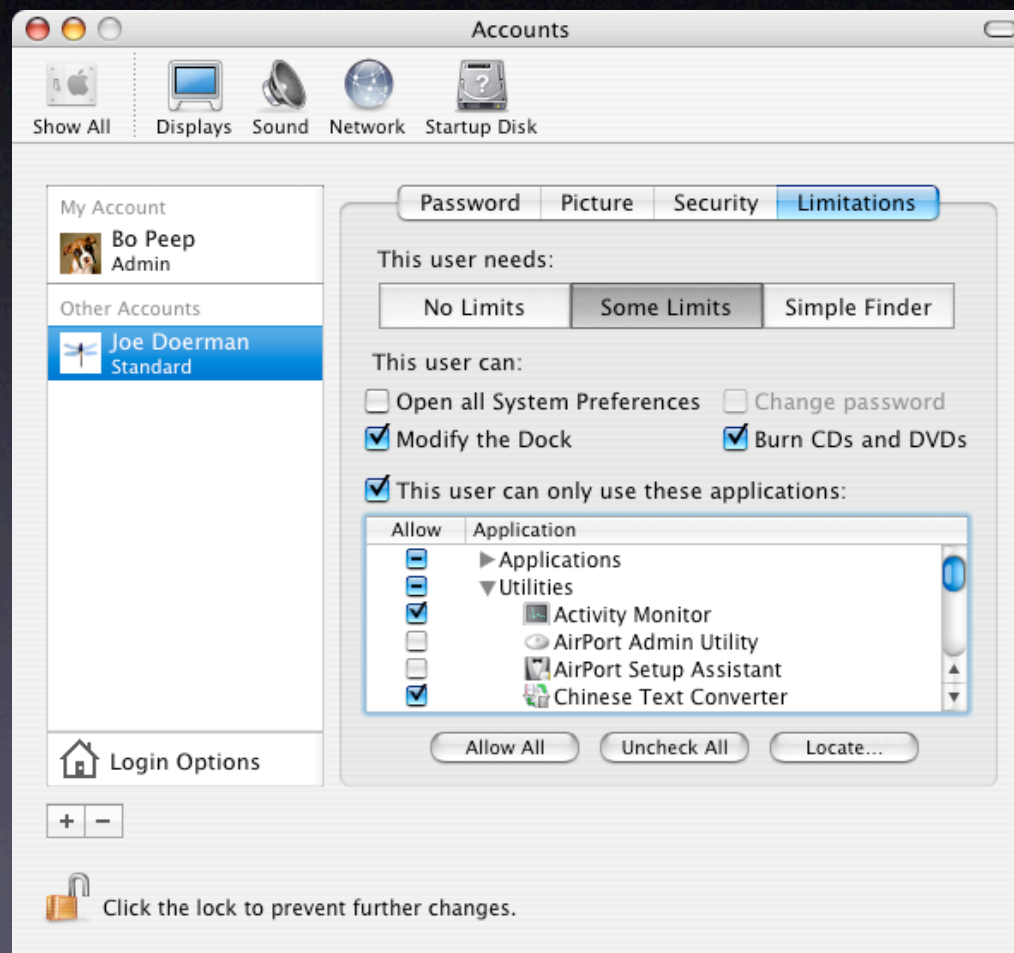


Create Groups

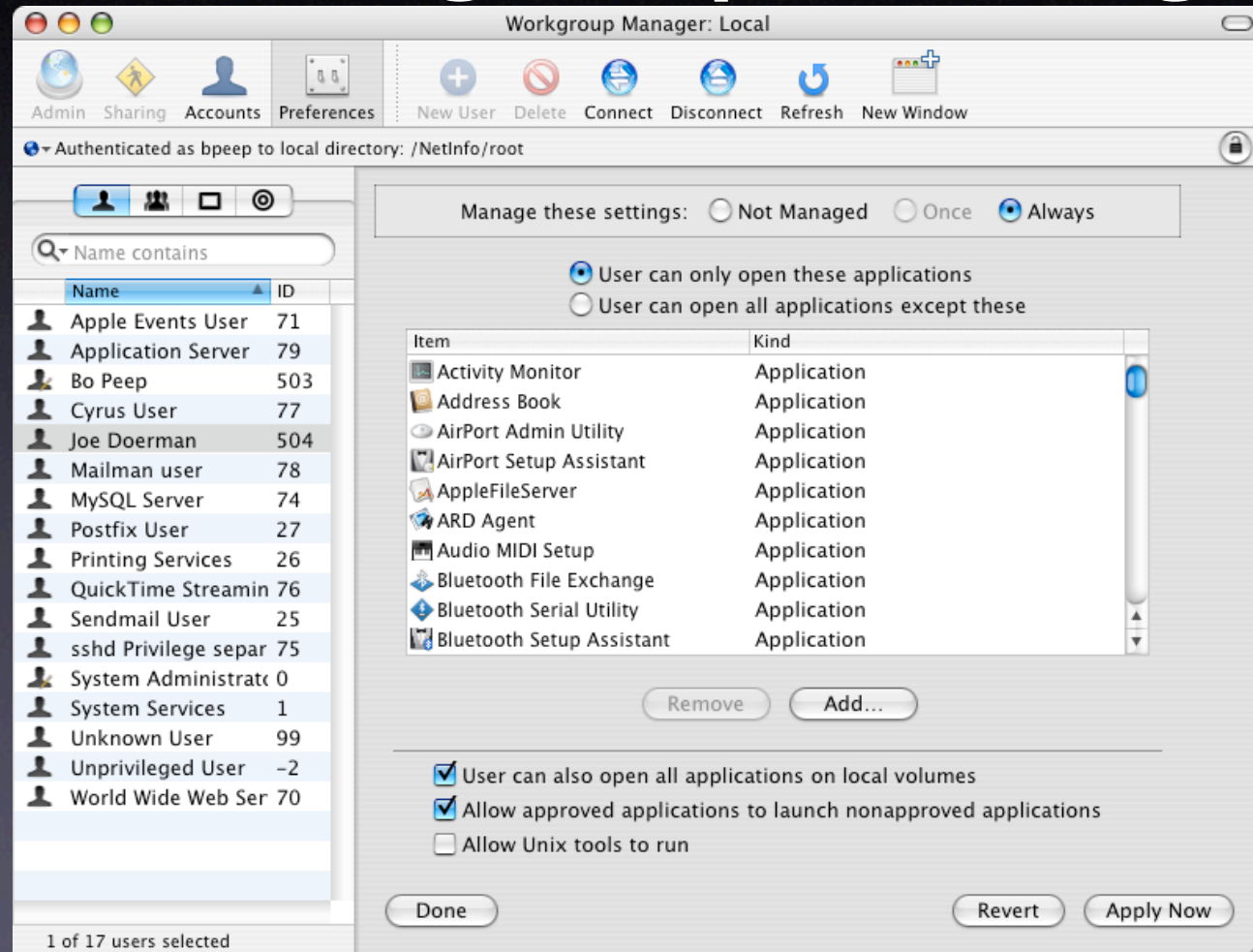
- For file access or refining authorization policies (see session M255)
- You can set group ownership through the Finder



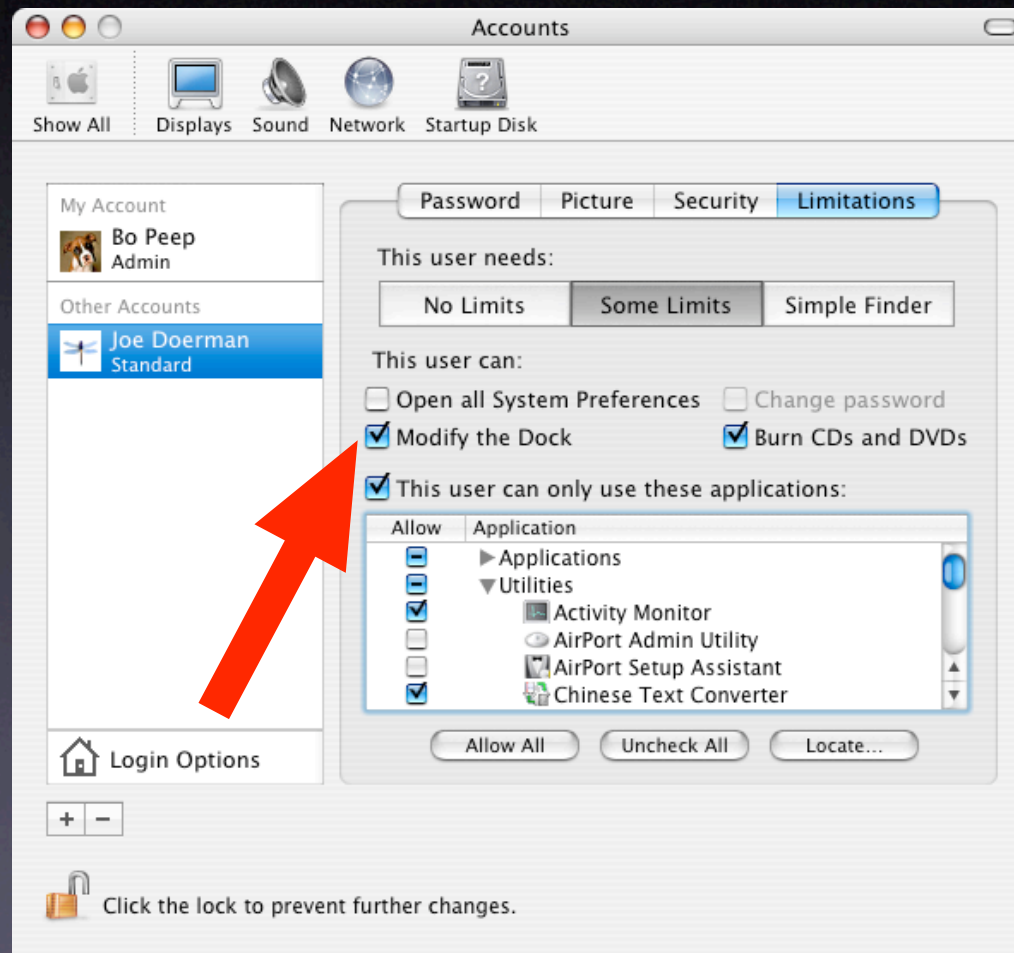
Application Limitations in System Preferences



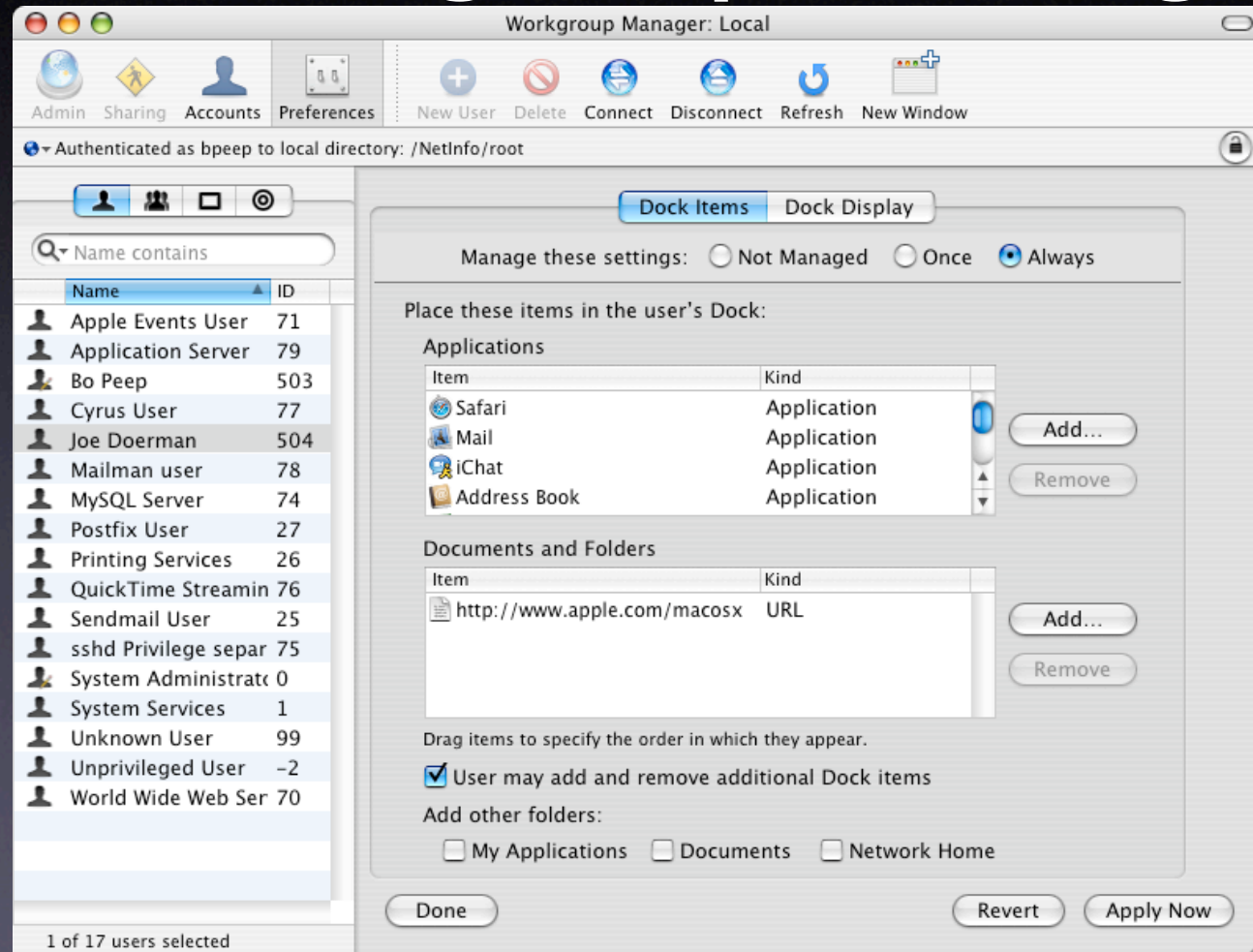
Application Limitations in Workgroup Manager



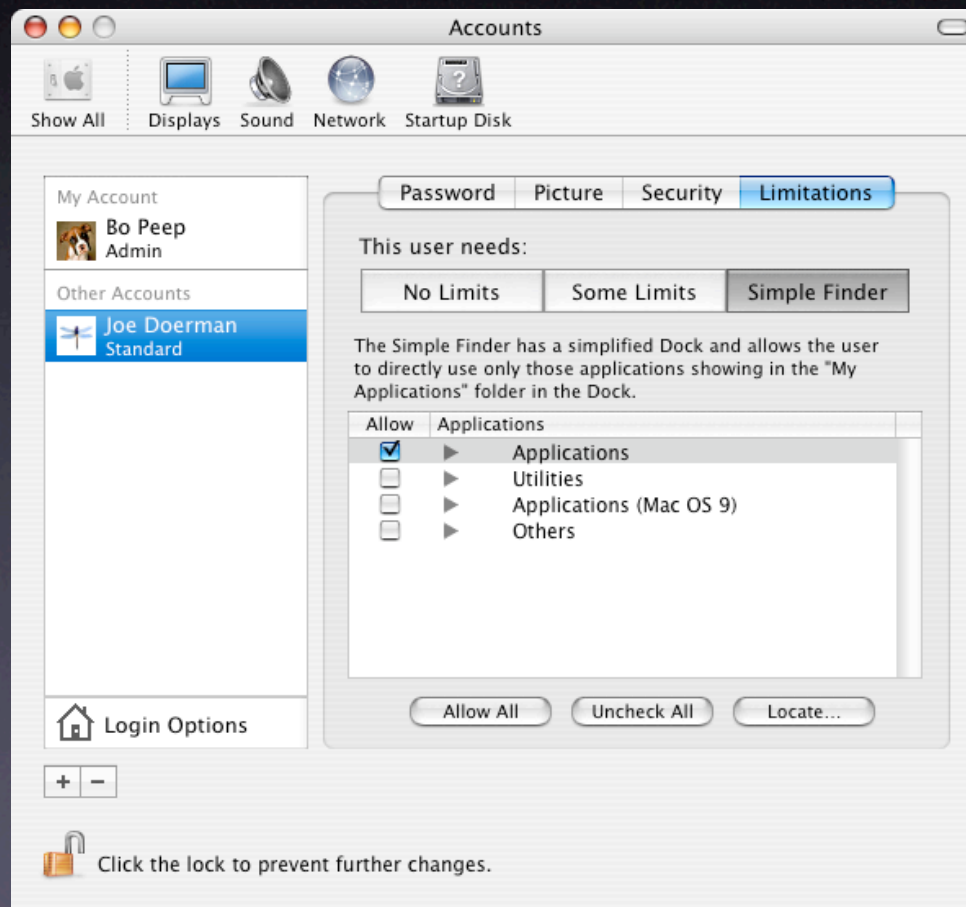
Controlling the Dock in System Preferences



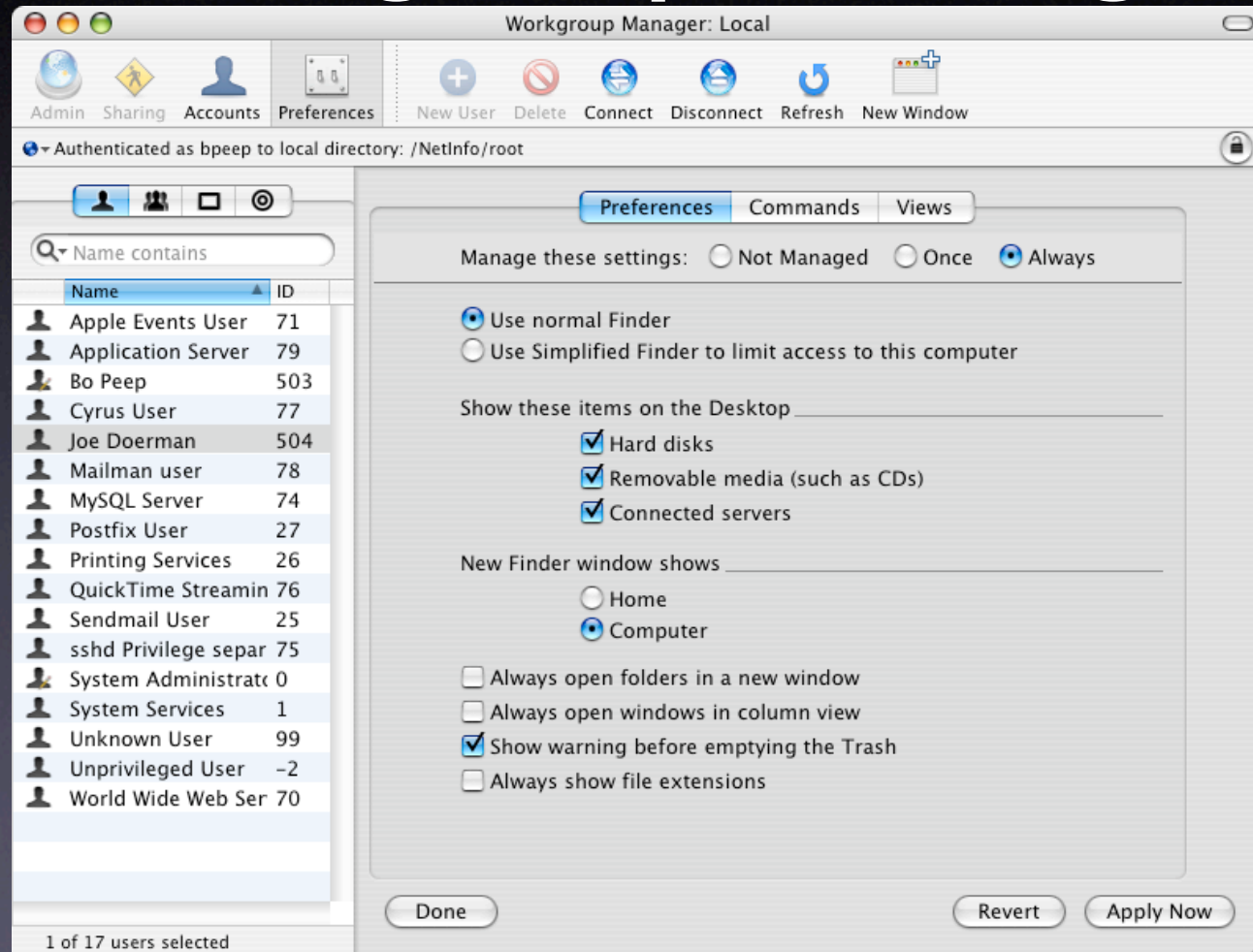
Controlling the Dock in Workgroup Manager



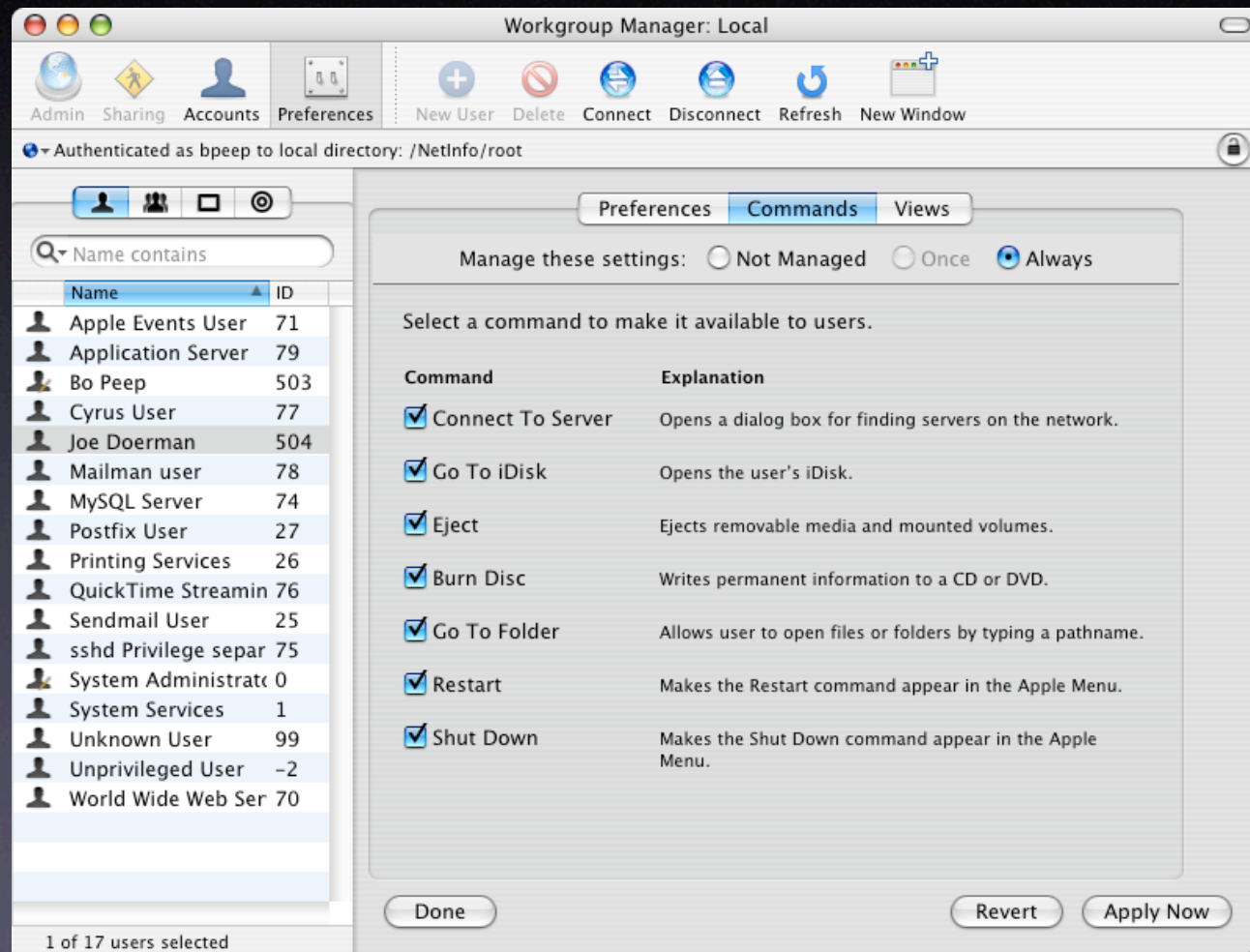
Simple Finder in System Preferences



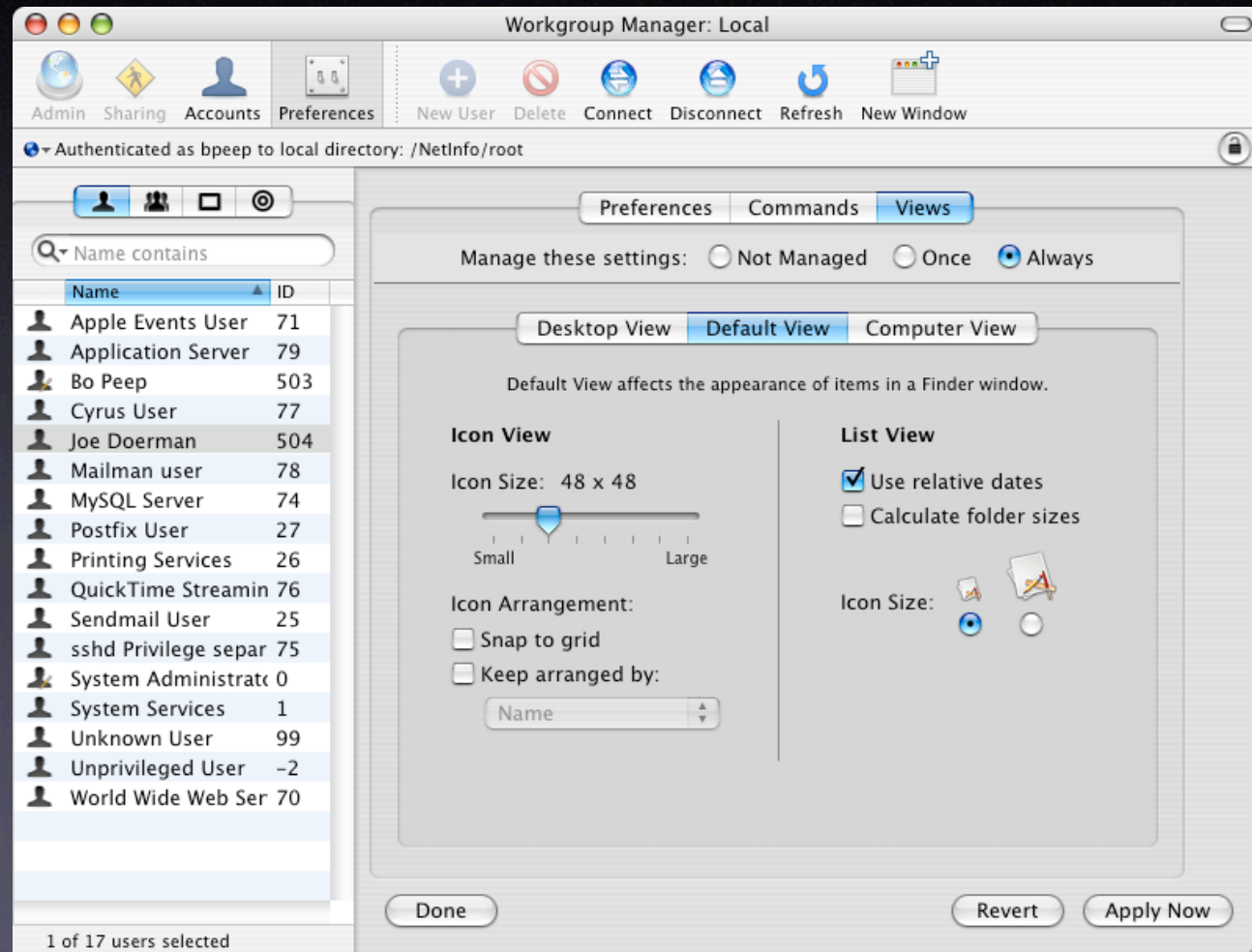
Simple Finder in Workgroup Manager



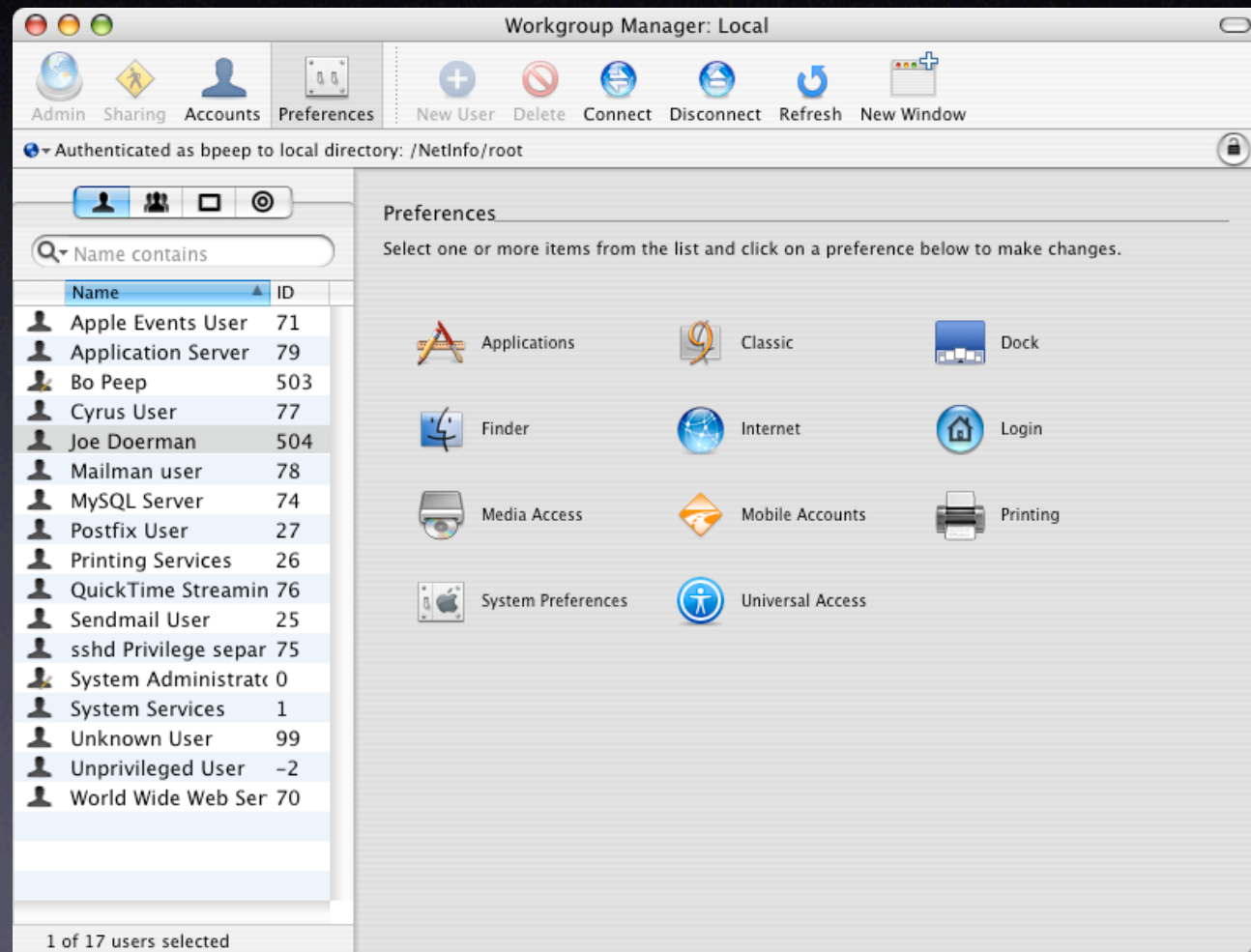
Limiting Finder Menus



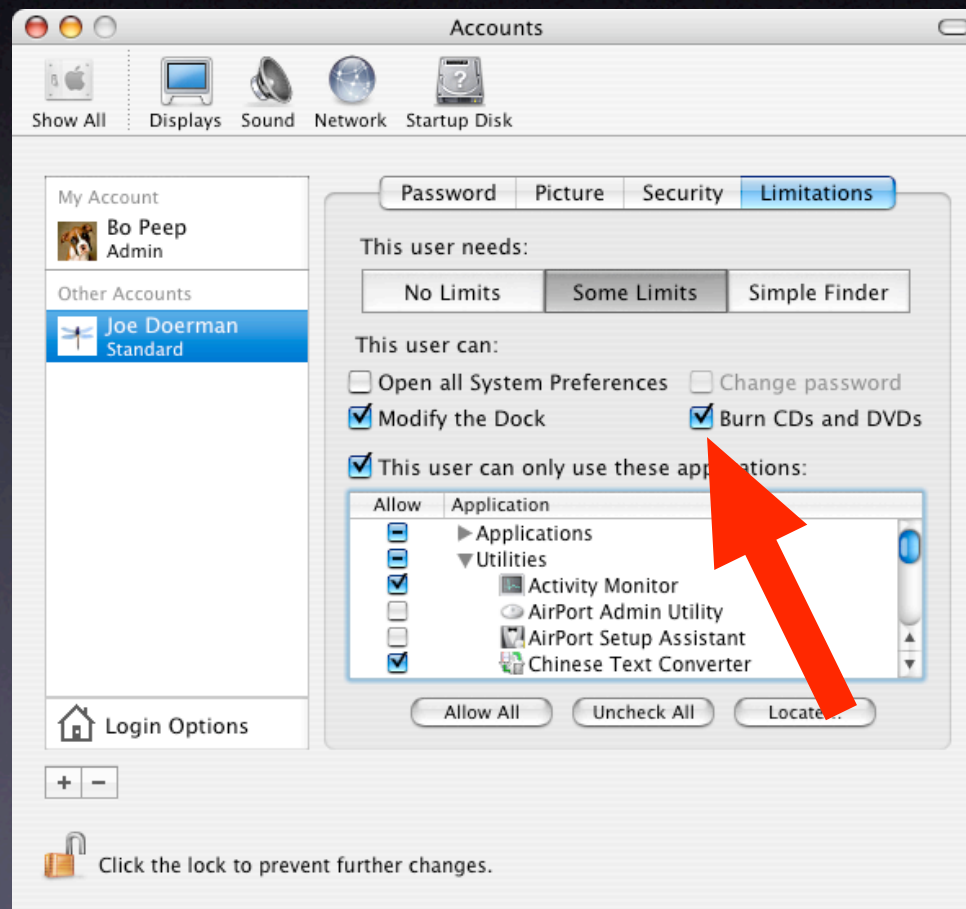
Defining Finder Views



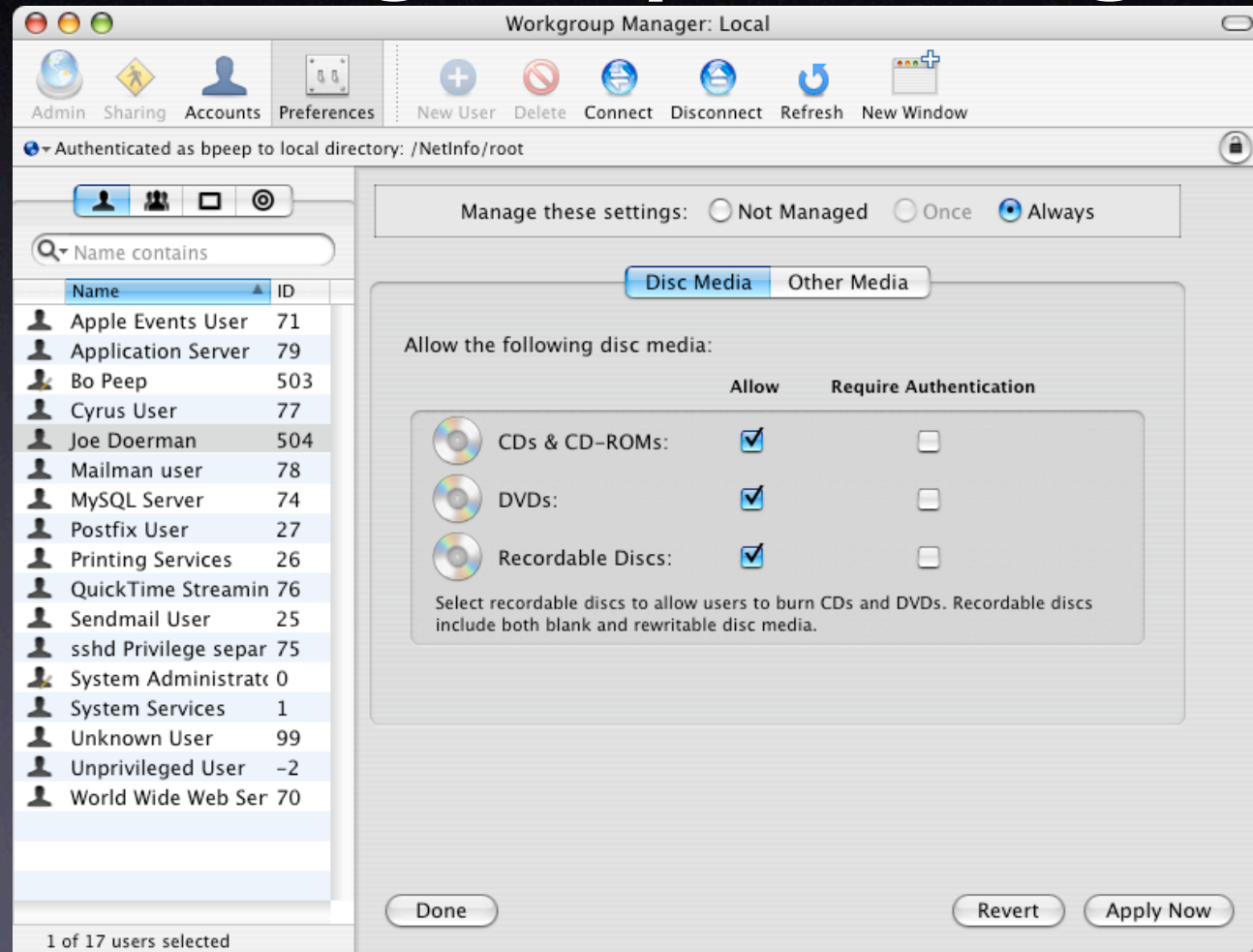
The Preferences Overview



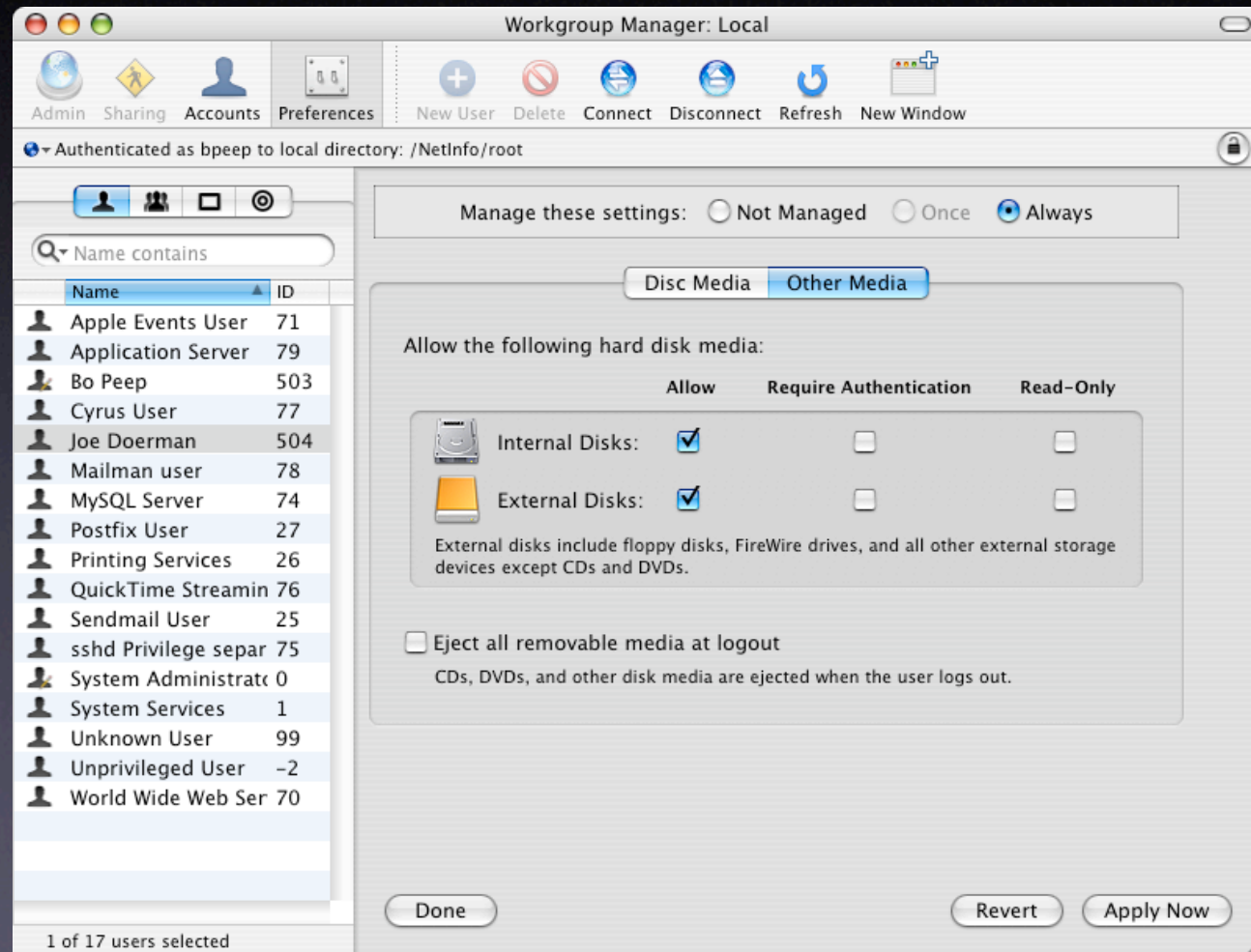
Disk Media in System Preferences



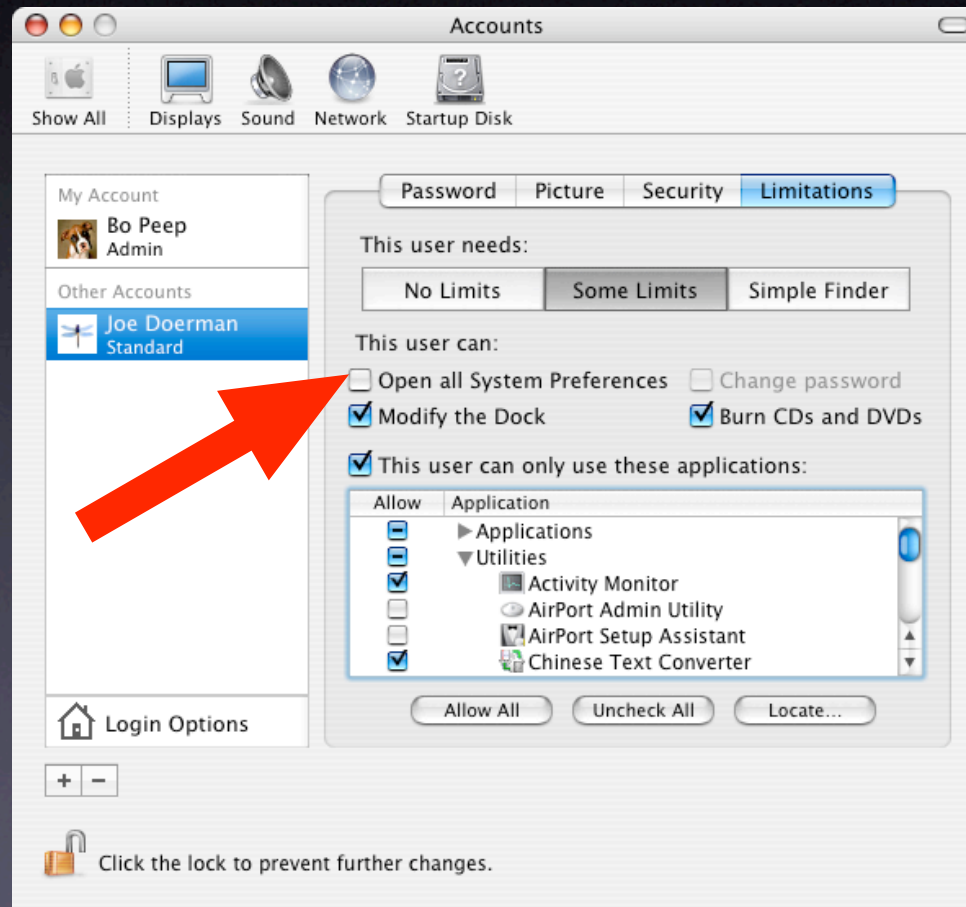
Disk Media in Workgroup Manager



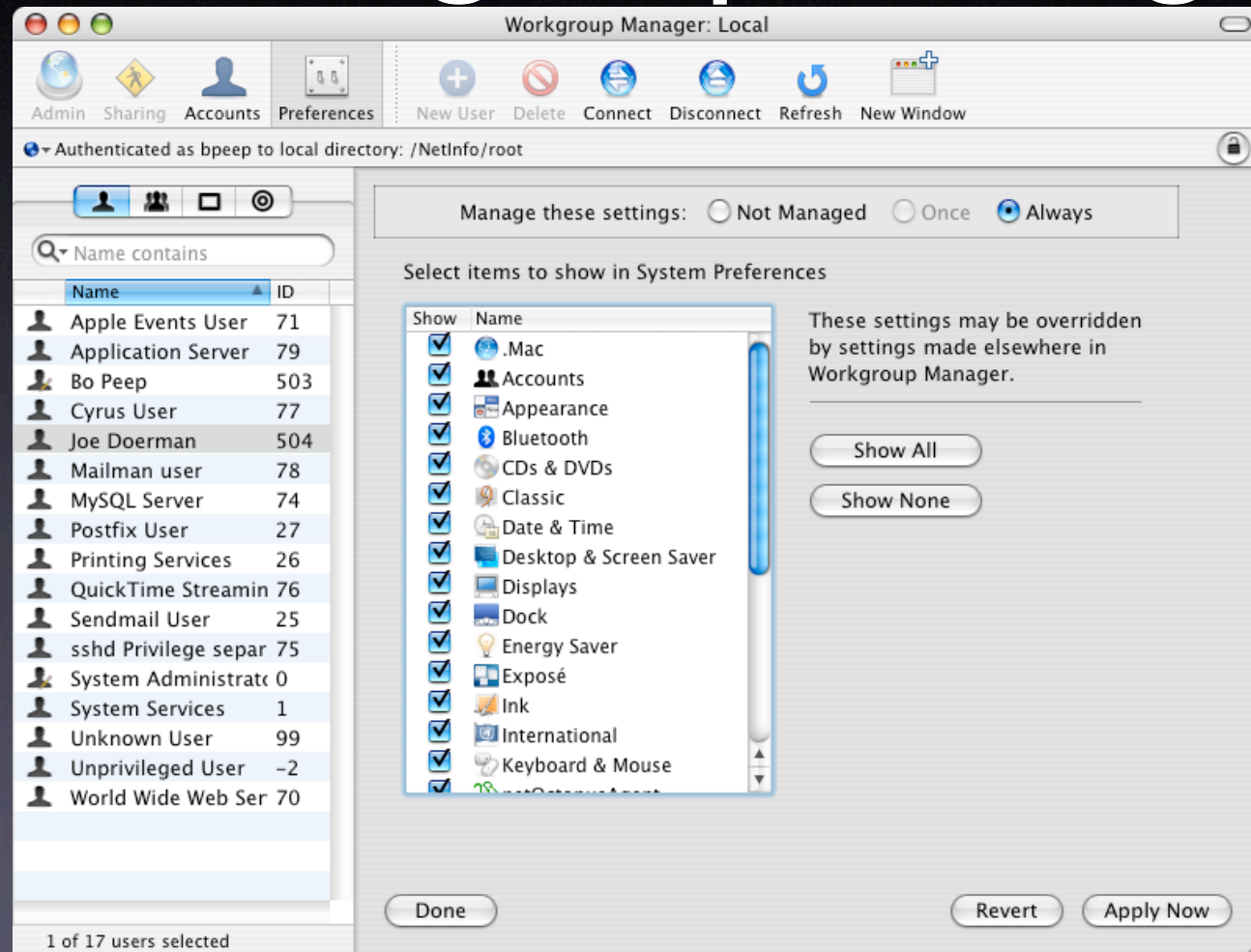
Other Media



Controlling Preferences in System Preferences



Controlling Preferences in Workgroup Manager

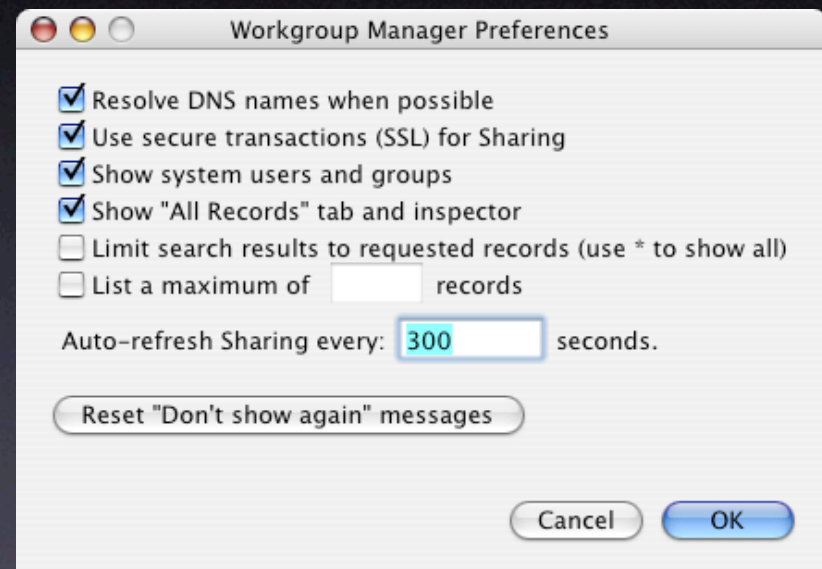


The Inspector

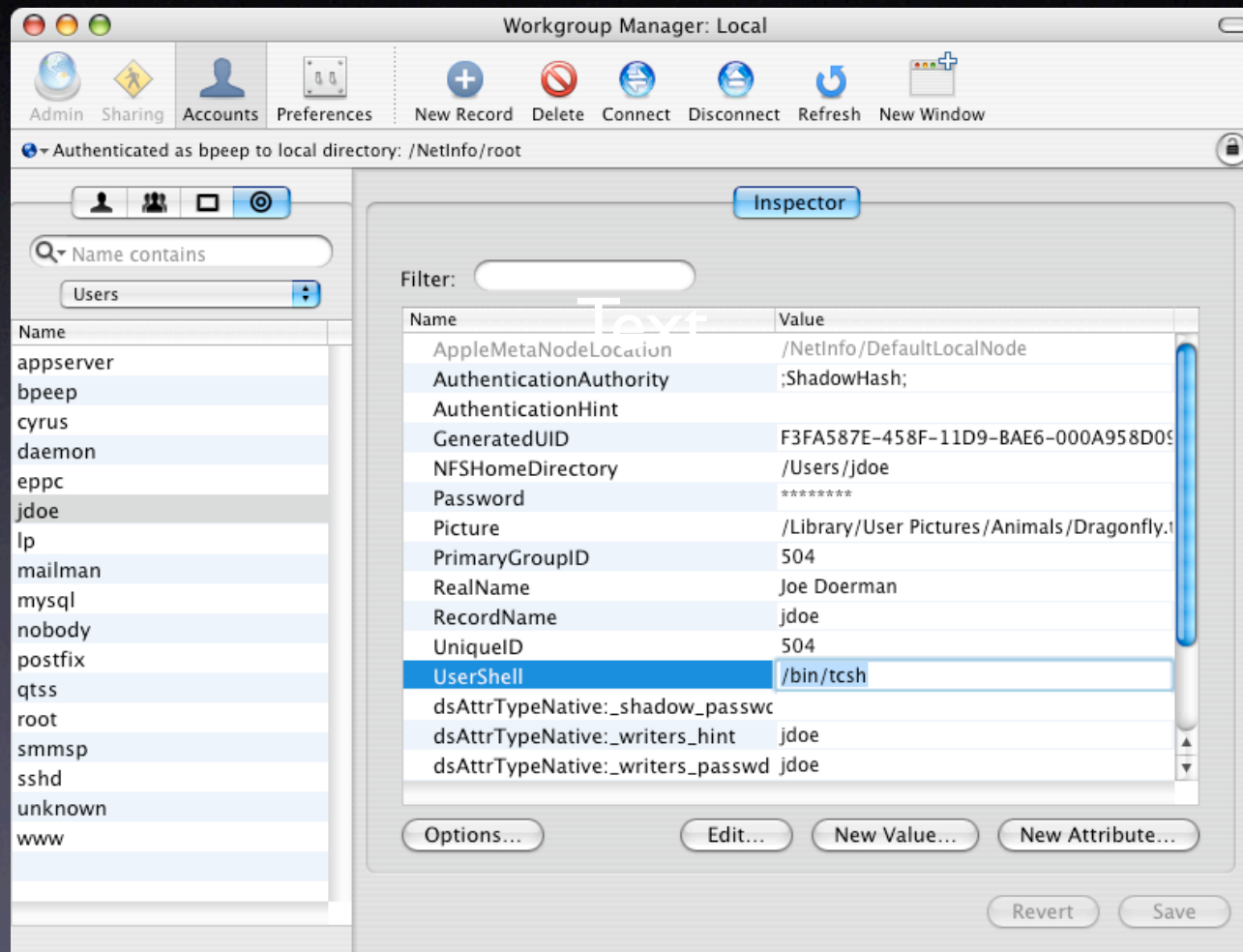
- The inspector button lets you view the NetInfo database in a way that looks like the NetInfo Manager

Getting it going

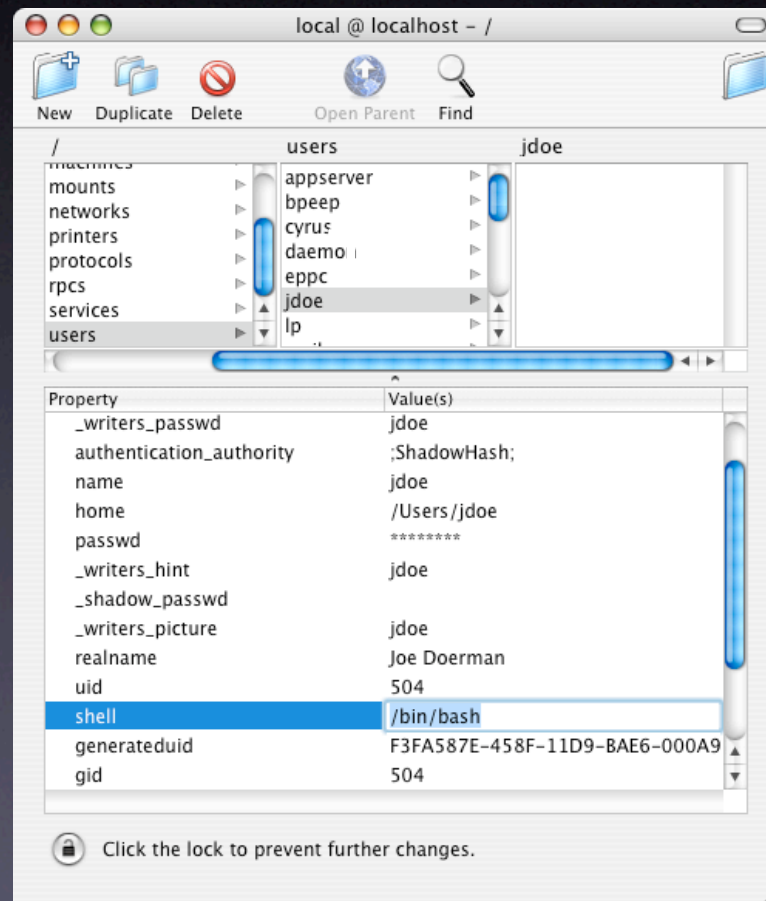
- Start Workgroup Manager, cancel the 'connect' dialog and open the Workgroup Manager Preferences
- Select 'Show system users and groups'
- Select 'Show "All Records" tab and inspector'
- Ignore subsequent warning message own peril...



The Inspector



...as compared to the
NetInfo Manager



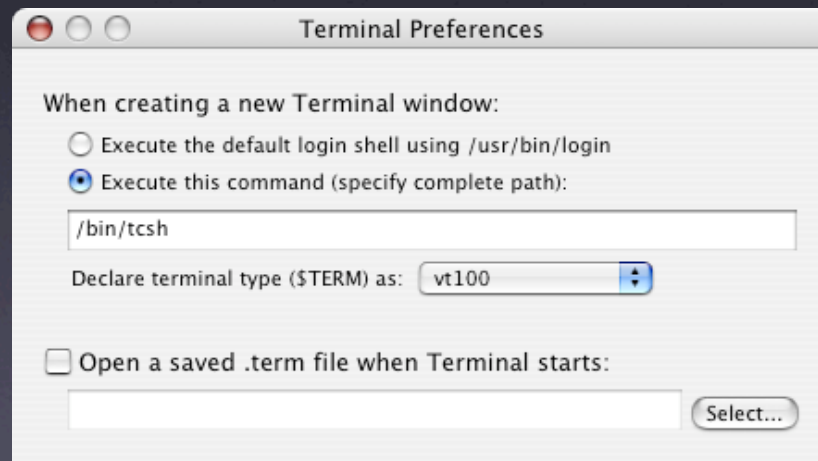
Example Uses

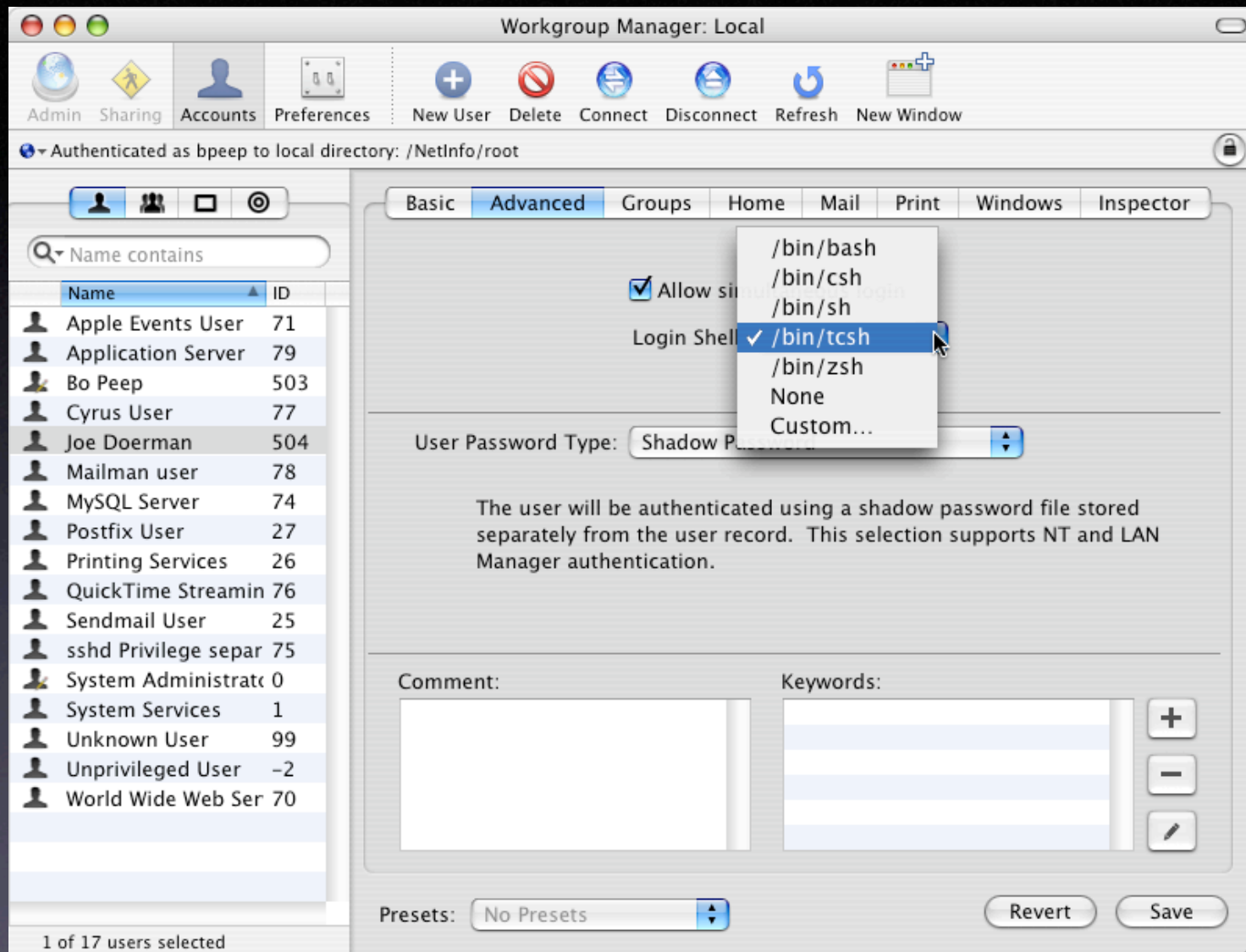
So what are some useful things I can do with my new-found powers?

DEMO

Set the Default Shell

- Users can also do this on their own through the Terminal Preferences or by using the `chsh` command.

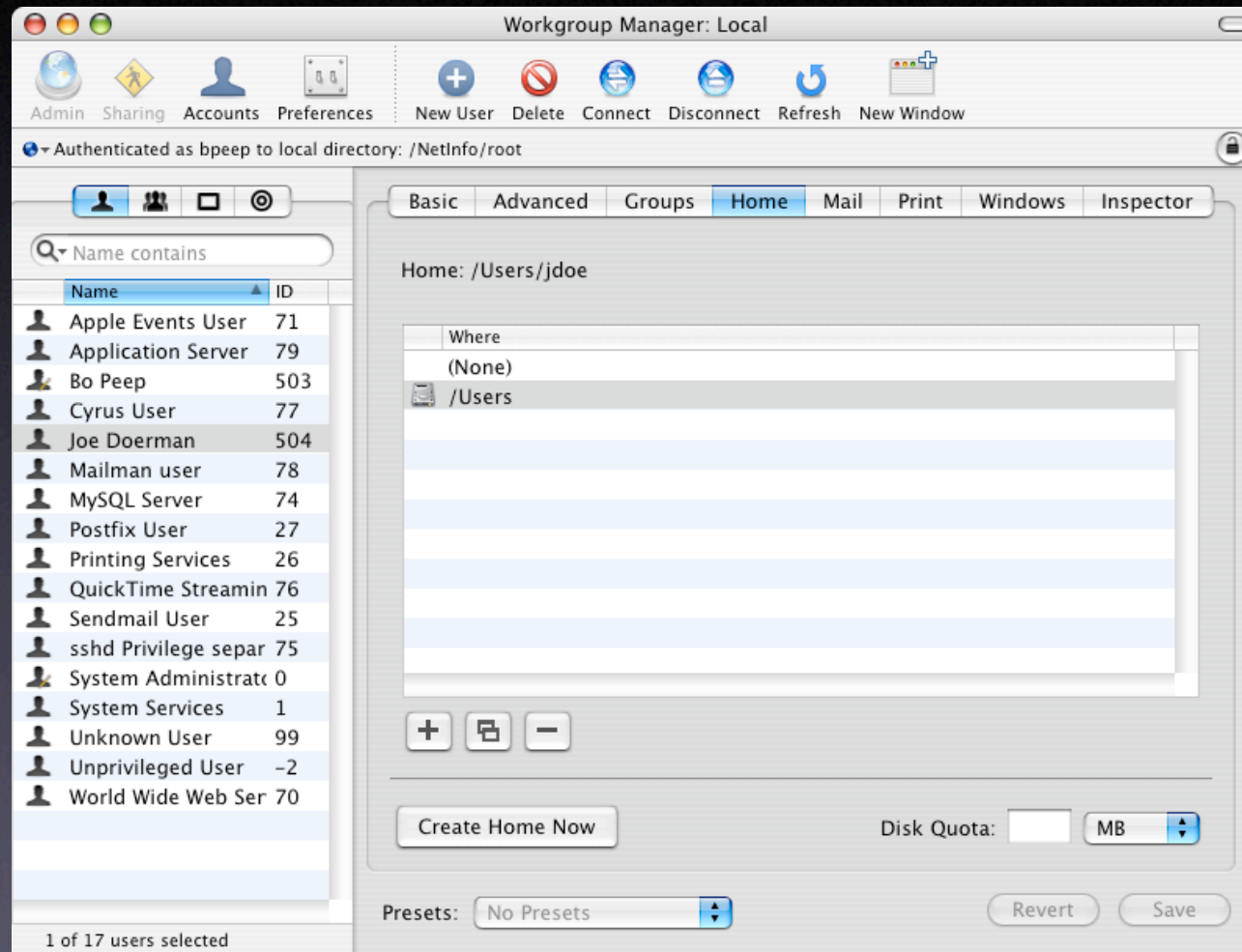




There's another place like home

- Click ruby slippers three times, and...
- Set user home directory to something other than default -- must be one or the other

The Current Home



Setting the Home Directory

Specify a Mac OS X Server on which to create home directories.

Mac OS X Server/Share Point URL:

Example: afp://realtime.apple.com/Users

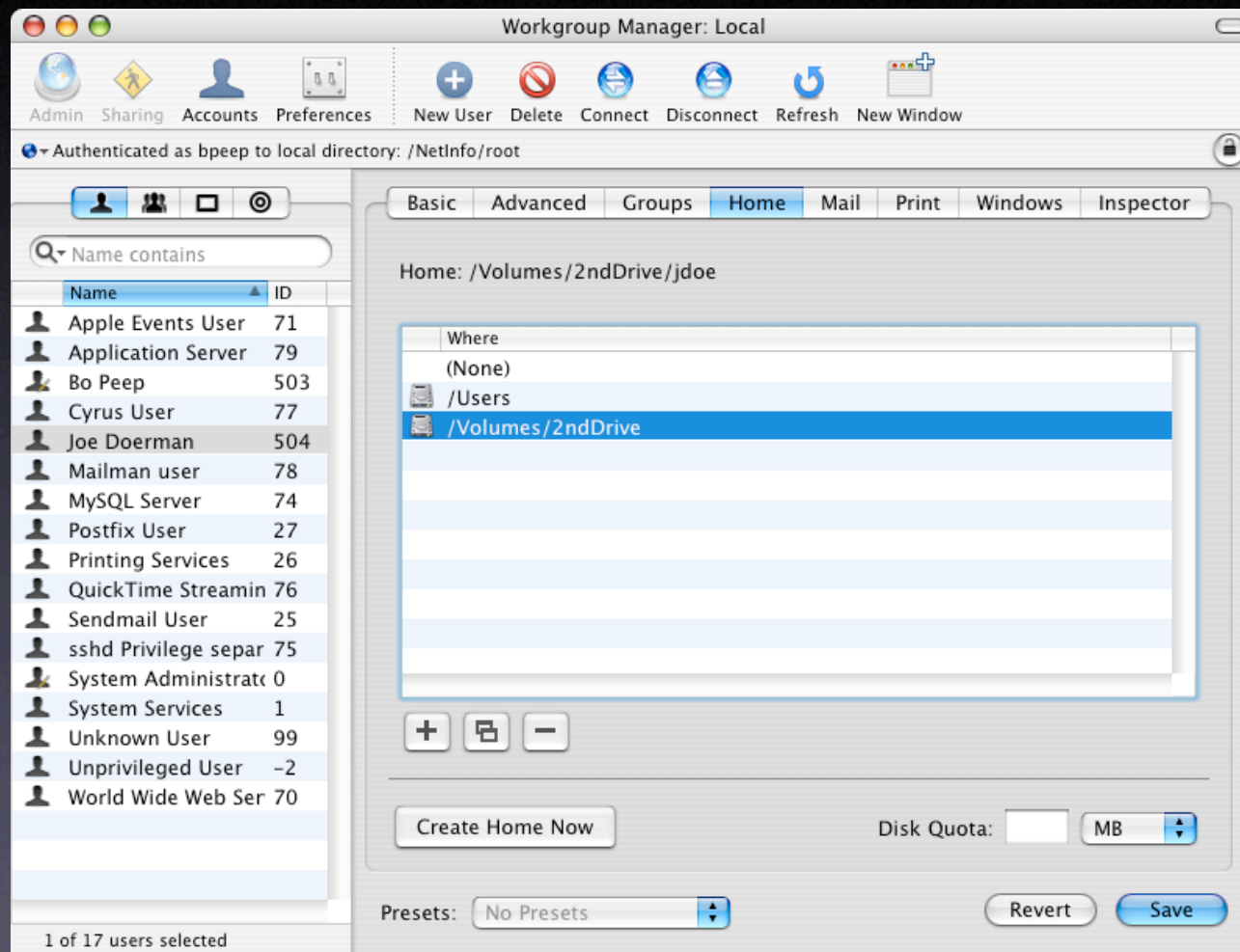
Path:

Example: psmith

Home:

Cancel OK

Your New Home



Application Limitations

Disallow the following:

- Installer.app
- Burn optical disks
- Disk Utility.app
- Terminal.app
- Use external media

Kiosk

- Allow only one application: Safari for a web browser station or Mail.app for a mail station

Take-away Points

Accounts

- Check your password strength with Keychain Manager info button
- Set that Master Password!
- Accounts can be managed on remote servers or locally
- Local accounts have many hidden but manageable attributes

NetInfoDatabase

- Holds all information about everything
- BACK IT UP!

NetInfo Manager

The only tool that can:

- Enable/disable root login
- Dig deeper into the NetInfo Database

System Preferences Accounts Pane

- Offers a fair amount of control over user accounts
- Is “ready to go” on your machines right now
- Is the simplest way to modify MCX settings

Workgroup Manager

- Can do almost everything NetInfo Manager can, but with a nice GUI
- Manage “hidden” user account attributes without running a server
- Offers a greater degree of control over MCX settings than System Preferences

UNIX commands for account manipulation

- `users` and `groups`
- `id`
- `dscl`
- `nicl`
- `nidump` and `niload`
- `passwd`
- `dseenableroot`

Synopsis

- What are accounts, where they live, and their care and feeding
- When to use NetInfo Manager
- Using System Preferences for accounts
- Going to town with Workgroup Manager
- Some command line goodies

Resources

- Server Admin software, including Workgroup Manager: <http://www.apple.com/downloads/macosx/apple/macosxserveradmintools.html>
- Workgroup Manager Technology Brief http://images.apple.com/server/pdfs/L31753A_Workgroup_TB_final.pdf
- Mac OS X: Account Capabilities - How to Allow Use of Unbundled Applications <http://docs.info.apple.com/article.html?artnum=107672>

Thank You!

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