

# Making the Transition (& Surviving)

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# Current Apple Certifications

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	ACSA	5 days/each course
System Administration of Mac OS X Server		

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# Why This Is Important

- Mac OS X is totally new environment. “Unexpected results” may occur during, and after, transition
- Problems in this new environment generally user-related. Administrators need tools and knowledge to stay ahead of the curve and the users
- Planning ahead isn’t just a good idea; it is critical to your success

# Why This is Useful

- Help system administrators understand what pieces of Mac OS 9 did not make it into Mac OS X
- Communicate what users find MOST frustrating about the transition
- Suggest ways of making the transition as smooth and trouble-free for your users
- Provide resources for further research

# I - Primary System Differences

- Before You Begin
- File System Differences
- Missing System Items
- System Preferences
- User Account Types
- User Limitations
- Ownership and Permissions

# Before You Begin

- Understand “real life” system requirements
  - Built-in USB
  - 512 MB of RAM
  - 5 GB drive
  - 16 MB video card
- Test applications for compatibility
- Find replacements for missing system features and applications
- Plan ahead for user training!

# Missing System Items

- Desktop Database
- Pop-up Folders
- Locations Manager
- Extensions Manager
- Launcher
- Control Strip
- Window Shade
- Chooser
- Memory Management
- RAM Disks
- Apple Menu Modifications
- File Exchange Control Panel
- Annoying Sounds
- Finder Menu

# File System Differences

- Mac OS 9
  - Short file names: 31 ASCII characters
  - Resource forks saved as part of most files
  - Files transferred to other systems were often stripped of resource forks often failed to open
- Mac OS X
  - Long file names: 255 UNICODE characters
  - Some applications support resource forks, others strip them off, but most could care less
  - Newer applications prepared as packages
  - HFS+ Journaled by default

# System Preferences

- Personal
- Hardware
- Internet & Network
- System
- Other



# System Preferences

- Replacement for Control Panels
- Used to make modifications
- Access to individual items based on account type (standard vs. admin)
- May be moved to further restrict access
  - Future system updates may break
  - Symbolic links may be necessary
- Uses root user id (UID) to make changes

# User Accounts

- User accounts have limited permissions
  - May read and write to their Home folder
  - May only read other users' Public Folders
  - May only write to other users' Drop Boxes
- Users may only read folders inside:
  - /Applications
  - /System
  - /Library
  - /Users

# Administrator Accounts

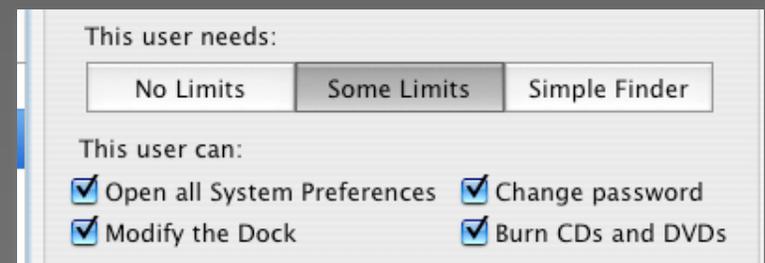
- Administrator accounts have all permissions of User accounts PLUS...
- Read and write access to:
  - /Applications
  - /Library
  - Base (root) level of the hard disk
- Access to change all System Preferences
- Access to change all file and folder ownership, and thus permissions

# System Administrator

- Unix convention, new role in Mac OS X
- Root account or “super-user” - sees all, goes anywhere, deletes anything
- Disabled by default - NetInfo Manager (/Applications/Utilities) is used to enable the root account
- Administrators may become root user temporarily in command line interface

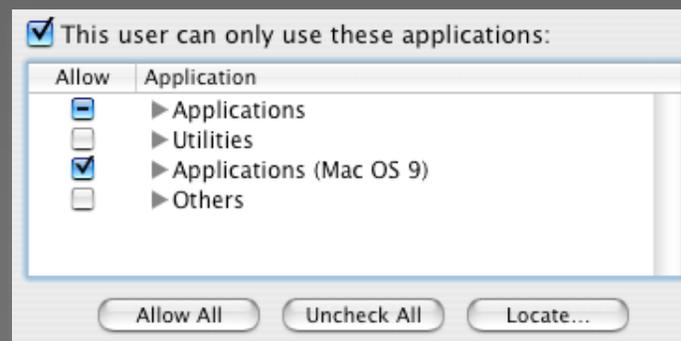
# User Limitations

- Standard users can be further restricted using Accounts Limitations:
- Opening specific System Preference panes
- Modifying the Dock
- Changing their password
- Burning CDs and DVDs
- Simple Finder interface



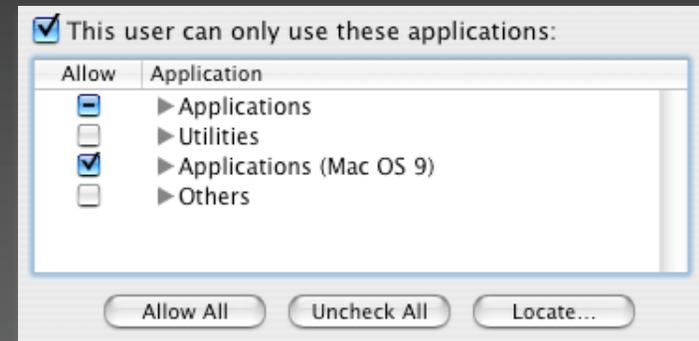
# Application Access

- Administrators may set limitations to restrict access to applications
- Click the Locate button to add applications that do not appear in list
- Configuring application limitations DOES NOT modify file permissions



# Simple Finder

- Sole functionality options in Simple Finder:
  - Sleep
  - Logout
  - Trash Can
- Folder access restricted to:
  - Shared
  - Their Documents
  - Their Applications
- “One-click” opens any item in the Finder
- If user tries to access Full Finder from Apple Menu they need admin.’s name and password



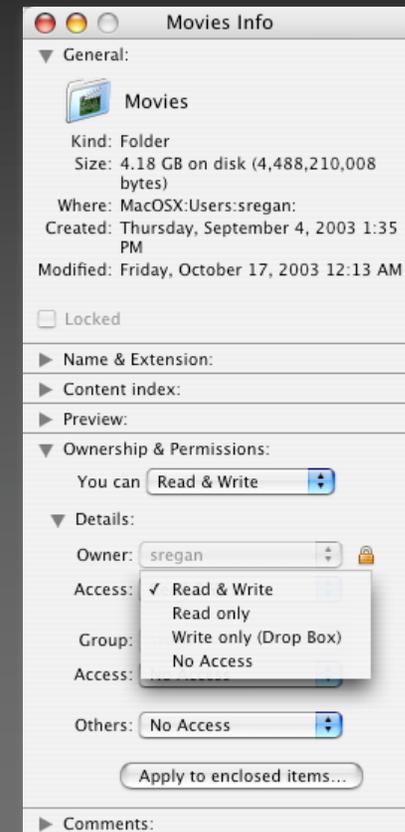
# Ownership

- Every file and folder belongs to only one owner and only one group
- An owner can be any user
- A group is simple a list of users
- Groups cannot be modified on Mac OS X client (most user accounts have their own group)
- Only owner, administrative users, or root user can change ownership of file/folder
- Ownership changes can be made:
  - in the Finder using the Get Info (command I) tool
  - In the Terminal using the “sudo chown” commands



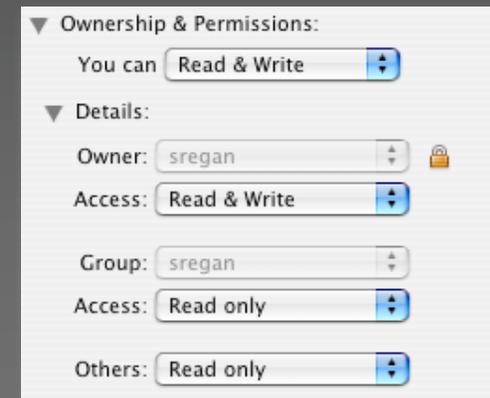
# Permissions in Mac OS X

- File
  - Read Only
  - Read/Write
  - No Access
- Folder
  - Read Only
  - Read/Write
  - No Access
  - Write Only (Drop Box)



# Permissions

- Ownership and permissions define read and write access to file and folder content
- File permissions are defined separately for owner, group, and others
- Others - anyone who can access your computer (including guests)
- Only the owner or the root user can change permissions
- Permission changes can be made:
  - in the Finder using the Get Info tool
  - in the Terminal using “chmod” as owner or root user

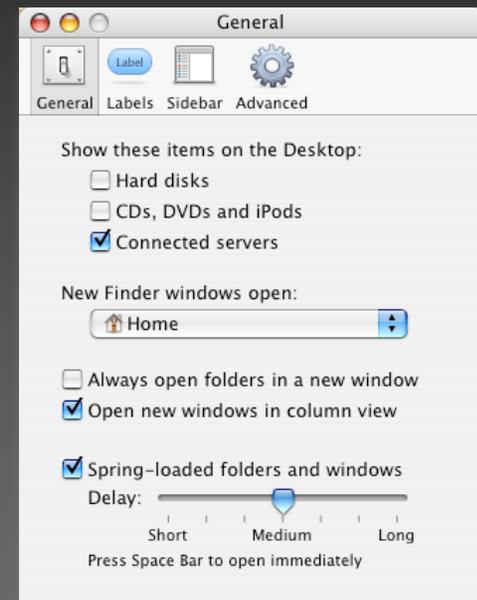


# II - Interface Differences

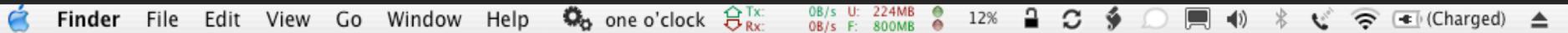
- Finder
- Menu Bar
- Windows
- Toolbar
- Sidebar
- Sheets
- Dock
- Search and Find
- Get Info
- Permissions

# Finder

- Access to folders and files
- Labels are back!
- Check your preferences
- Secure Empty Trash



# Menu Bar



- Think different (from left to right)
  - Apple menu - system items that are always available from any application
  - Application menu - application items
  - File menu - file items
- Extra menu items located in:  
`/System/Library/CoreServices/Menu Extras/`
- Third Party menu extras available
- SystemUIServer process handles menu bar

# Windows

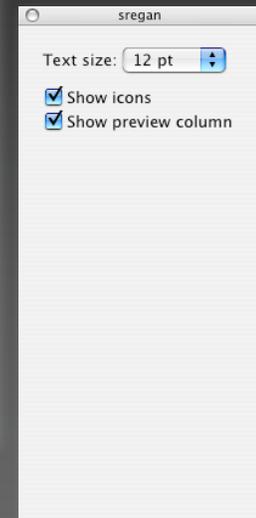
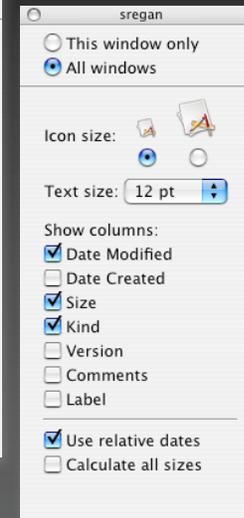
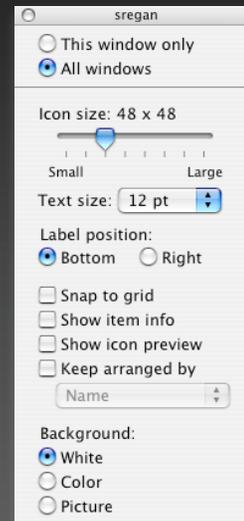
- Variety of views 

- Icon
- List
- Column

- View Options include background color or picture

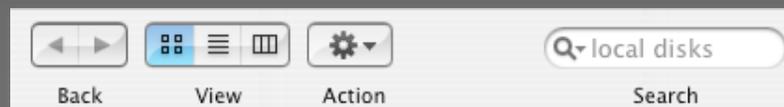
- Buttons minimize, maximize, and close 

- Actions menu 



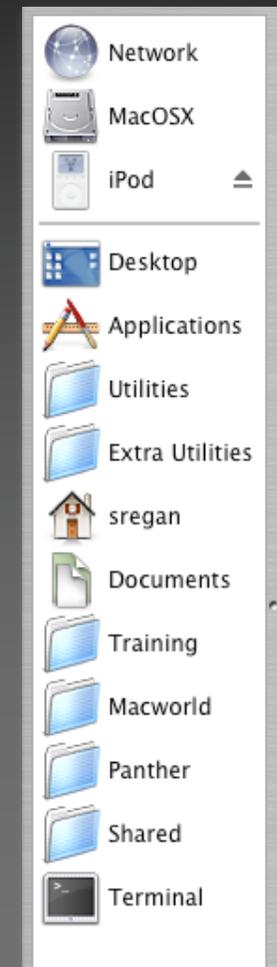
# Toolbar

- Toolbar may contain frequently used items
- Consider customizing the Finder Toolbar in advance for your users
- Drag and drop items such as folders, files, network drives, applications
- Variety of view options with Toolbar



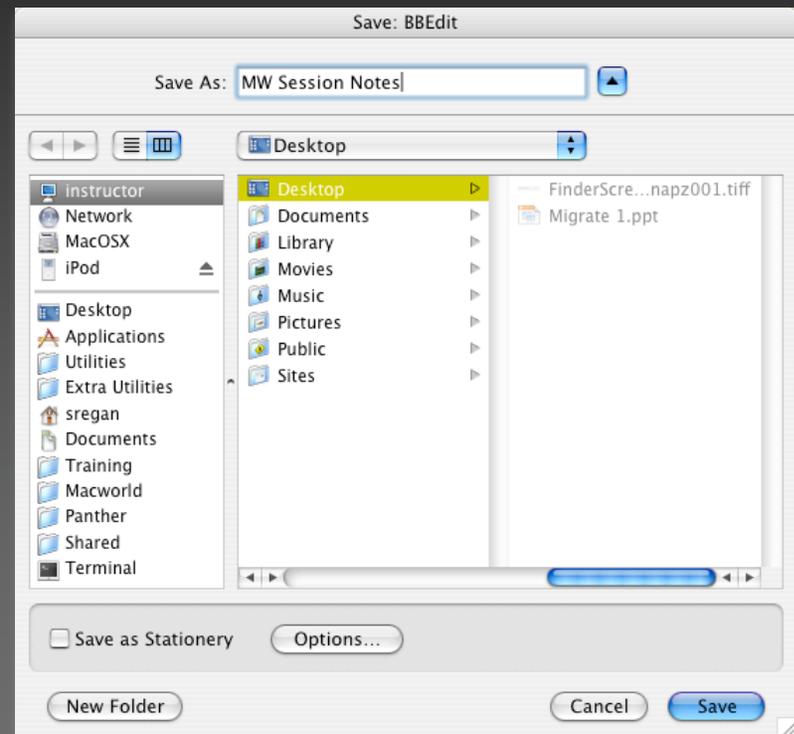
# Sidebar

- Another location for frequently used files and folders
- Set various system items from Finder Preferences
- Drag and drop items such as folders, files, network drives, or applications
- Again, consider setting items for your users in advance



# Sheets

- Sheets replaced Open/Save dialogs
- Does not take System hostage like “modal” Mac OS 9 dialog windows
- View options and Sidebar make navigation through system “tree” easier

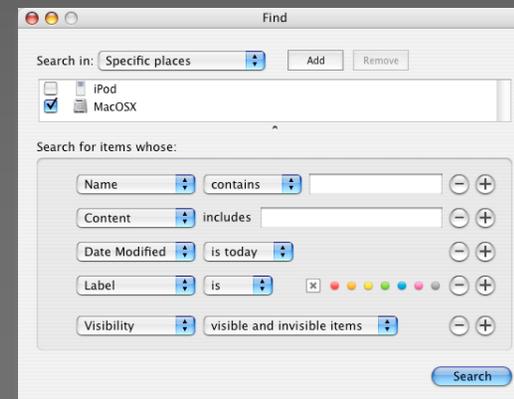
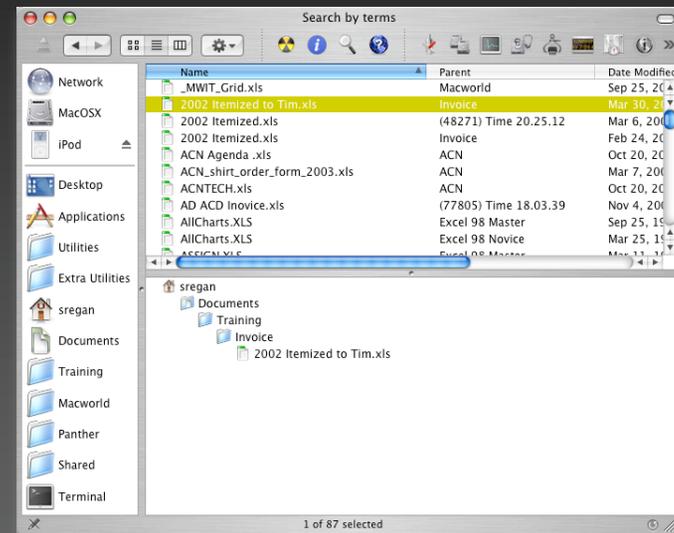


# Dock

- Location for all running applications, minimized windows, volume shortcuts and the trash
- Also holds any applications, file, folder, or drive
- Apps positioned by default on left/top of the divider, all others on the right/bottom
- Several whizz-bang options available in the Apple Menu and the Dock System Preference Pane
- Many hidden time-saving tricks with mouse and keyboard shortcuts

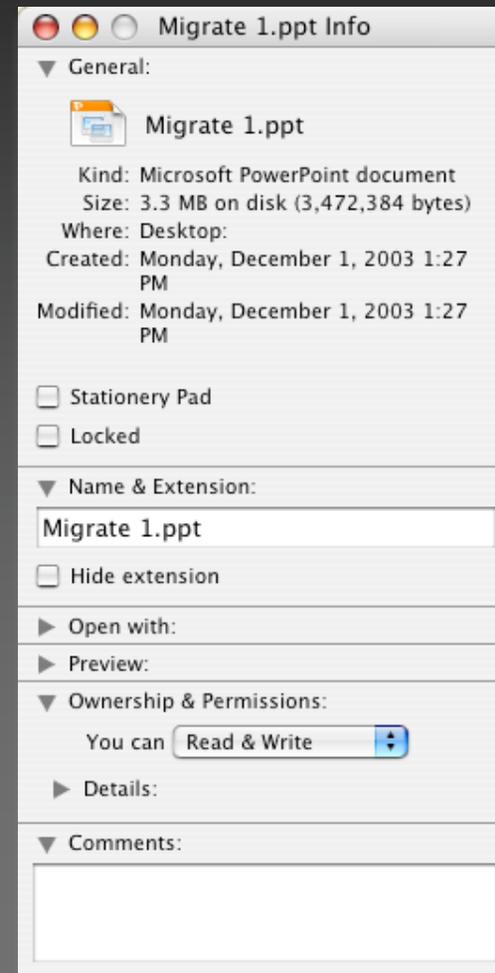
# Search & Find

- Search quickly by name of folder or file:
  - Search on right side of the Finder's Toolbar
  - Use "Back" button to return to normal view
  - Fast search algorithm
- Find has many more search options:
  - Search specific areas
  - Additional criteria can be applied to narrow the scope of search



# Get Info

- Shows variety of information for an item or set of items:
- Name & extension
- Open with
- Preview
- Ownership & Permissions
- Comments



# Open With

- Documents are opened with their preferred application
- Advice: Don't modify global changes unless it's necessary
- Can be done from the Open menu



# III - Service Support

- File Sharing
- FTP Access
- Network Connections
- Web Sharing
- Printer Sharing
- Remote Access - SSH & ARD
- Firewall
- Network Address Translation

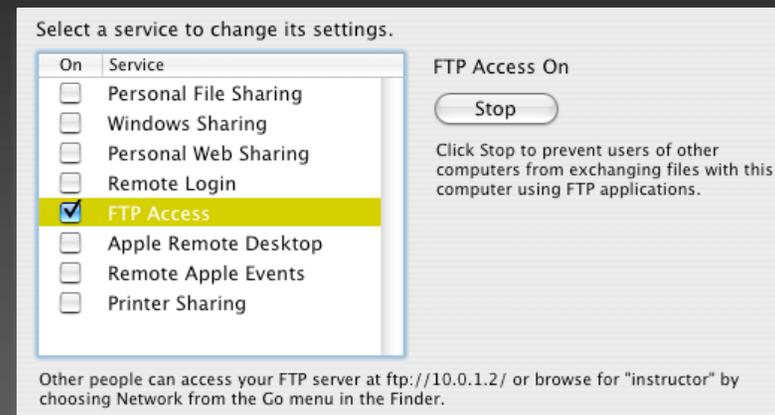
# File Sharing

- Set Computer Name first
- “Personal” file sharing is the Apple File Protocol using port 548
- Windows sharing is the SMB protocol using ports 137,138,139
- Active for all users
- Share points are predetermined



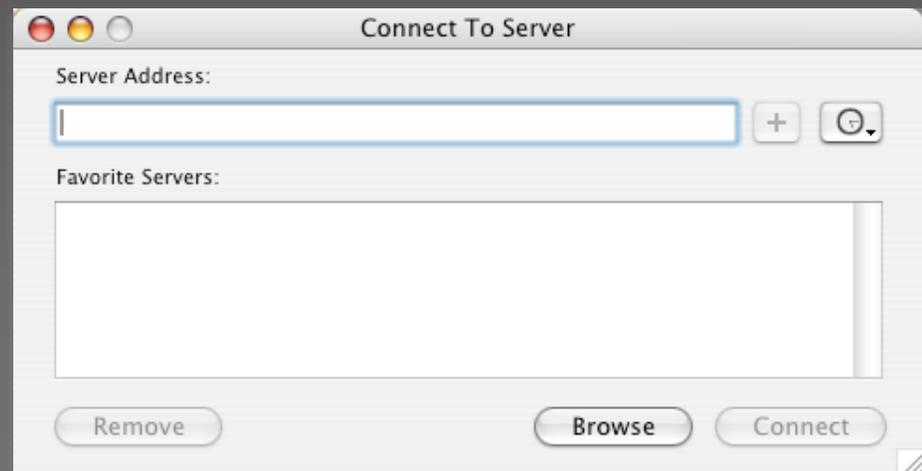
# FTP Access

- Sharing via FTP uses ports 20 and 21
- Users can access their home folders
- NOT secure
- FTP on Mac OS X is now browseable
- SFTP (via SSH) is a much more secure file sharing option



# Network Connections

- Connect To Server dialog (command K)
  - Enter specific addresses
  - Add favorite servers
- Use Network globe icon in Finder to browse network



# Web Sharing

- Mac OS X uses popular and secure open-source Apache web server
- Computer's default website
  - `/Library/WebServer/Documents/`
  - `http://<computername>/`
- User site(s)
  - `/Users/<username>/Sites/`
  - `http:// <computername>/~ <username>/`
- By default uses port 80; you may change port number in Apache config files

# Printer Sharing

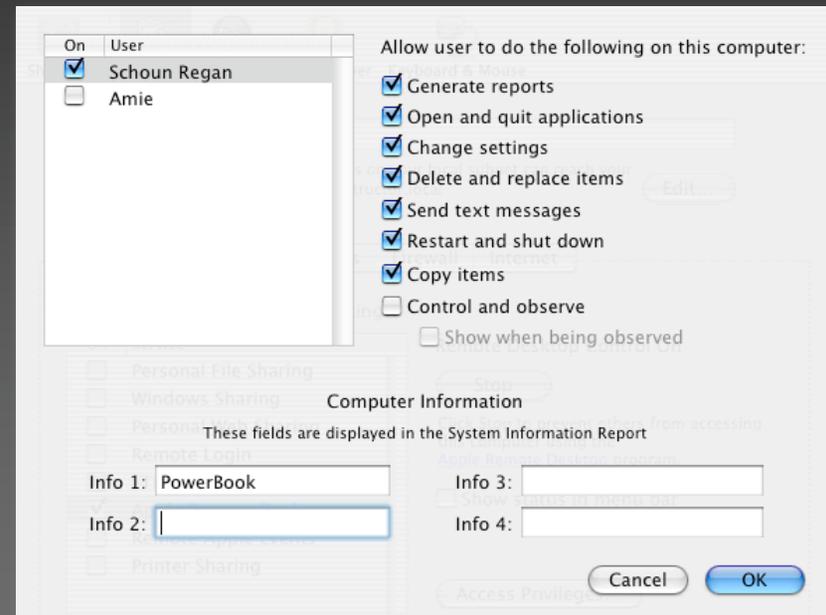
- Shares any printers previously set up
- Configured from Sharing or Print/Fax System Preferences panes  Printer Sharing
- Uses the open-source Common UNIX Printing System (CUPS)  Share my printers with other computers
- Can be confusing for others:  
“I see two identical printers”
- Uses ports 631 and 515
- Administration via <http://127.0.0.1:631>

# Remote Access via SSH

- Allows user to access other machines via the command line: `ssh <username>@<hostname>`
- All authentication and commands all take place on the remote computer
- All communications are encrypted
- Requires understanding command line tools
- Enabled via Sharing pane in System Preferences
- Also enables SFTP and SCP
- Enabled by default on Mac OS X Server

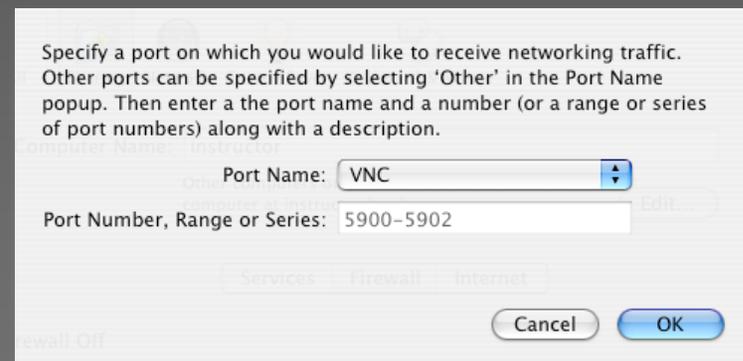
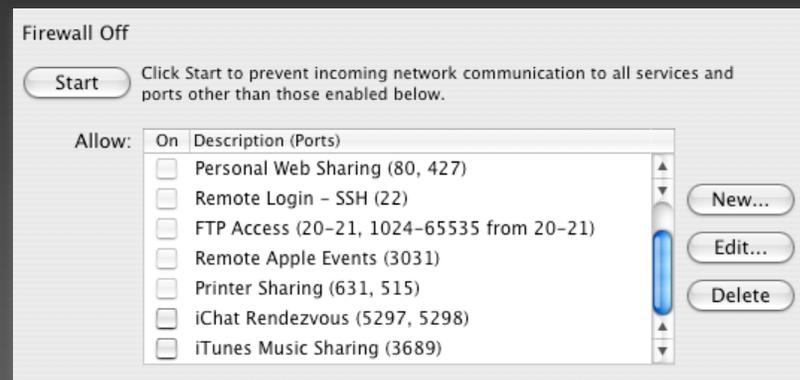
# Remote Access - ARD

- Apple Remote Desktop provides many control and reporting options
- Choose user allowed to access remotely
- Select permissions for each individual user
- Status menu can be shown in menu bar
- No need to run around to users' desks!



# Built-in Firewall

- Firewall protects computer from unauthorized access by restricting access to specific ports
- Located in Sharing pane of System Preferences
- Uses standard UNIX ipfw rules; can be administered via command line



# Network Address Translation

- Takes existing Internet connection and shares it via another network interface
- IP range is 192.168.2.X
- Starts DHCP server on client



# Hints for Easier Transition

- You can customize the standard help files that are supplied by Apple (they're basic HTML) and modify it to meet your users' needs
- Learn to love Disk Utility (/Applications/Utilities/ and on installation disk #1) create images especially for your needs - can also be encrypted and compressed
- Gain agreement on a standard image with management and/or user representatives and test - then test again
- Talk to Apple about one-day training courses for your users and advanced courses for your technical team (any course can be delivered at your facility too)

# Synopsis

- Introduction
- System Differences
- System Preferences
- User Accounts
- User Limitations
- Ownership & Permissions
- Interface Differences
- Interface Differences
- Finder & Search
- Dock & Toolbars
- Get Info Options
- Sharing Services
- Remote Access
- Final Thoughts
- More Resources

# Further Information

- Websites:
  - <http://www.apple.com/macosx/>
  - <http://www.macosxhints.com/>
  - <http://www.osxfaq.com/>
  - <http://www.macosxlabs.org/>
- Books: O'Reilly, Peachpit, SAMS, etc.
- Training:
  - <http://train.apple.com/>
  - <http://www.itinstruction.com/>

Thank You!

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