

Remote Administration for Macintosh Computers

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Overview

- CLC Labs & Tech Pod Environments
- Remote Admin
 - Requirements
 - Solutions
- System Infrastructure

Environment

- 556 Total CLC managed Macs
- 18 Macintosh Labs
- 60 Tech Podiums
- 6 Teaching Classrooms

Environment

- 10 Kiosks in the HUB
- Many Network Printers
- 10 Servers
- 3 Top Notch Macintosh Sys Admins/
Programmers :-)

Requirements

- Quickly Erase and Restore Hard Disk
- Automate File System Updates
- Restrict Concurrent Use of Software

Requirements

- Remotely Observe/Control Desktop
- Remotely Control via Secure Shell (SSH)
- Enable users to get their work done as fast as possible

Solutions Overview

- PSU Blast Image Config for Initial Build
- Umich's "Radmind" server/client utility for File System Updates
- KeyServer for controlling concurrent use of applications, and deter piracy

Solutions Overview

- Apple's Remote Desktop 2 for Remote Observe/Control, obtain hardware data, etc.
- Secure Shell (SSH) for command line remote admin
- Custom scripts at login and logout for quick user response time

PSU Blast Image Config

- Quickly Erase and Restore Hard Disk
 - PSU Blast Image Config solves this problem specific to PSU's needs
 - Use external FireWire hard disk or bootable DVD for restores
 - <http://clc.its.psu.edu/Labs/Mac/Resources/blastimageconfig/>



File System Updates

- Automate File System Restores & Updates
 - Radmin : Open Source and free project from the University of Michigan's Research Systems Unix Group
 - Client Pull (Mac downloads files)
 - Tripwire mechanism - detect changes in permissions, file size, file contents



Radmind Process

- Install Radmind Server on dedicated server
- Install Radmind client tools on “Master” lab Mac
- Make “creatable” transcript of local file system

Radmind Process

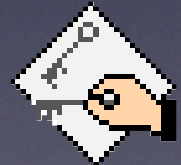
- Upload transcript and files to Radmind server from client
- Verify files were uploaded as intended, move into production area
- Other clients download transcript(s), compare to local file system, then apply or download the differences

Radmind Resources

- University of Michigan's official Radmind site:
 - <http://www.radmind.org>
- University of Utah's Radmind FAQ:
 - http://www.macos.utah.edu/documentation/system_deployment/radmind/faqs.html
- Radmind Discussion List:
 - <https://lists.sourceforge.net/lists/listinfo/radmind-users>

Software License Control

- Restrict Concurrent Use of Software
 - Sassafras KeyServer provides excellent software metering and control
 - Helps deter theft of software
 - Can limit number of concurrent use of and where applications are allowed to run
 - Works with mobile users too, if connected to network via Ethernet addr



Remote Observe/Control

- Remotely Control Desktop
 - Apple Remote Desktop 2.2
 - Full fledged remote management
 - Does a lot more than just screen control
 - Virtual Network Computing (VNC)
 - Free, but very limited in features
 - Screen control, mouse and keyboard control only

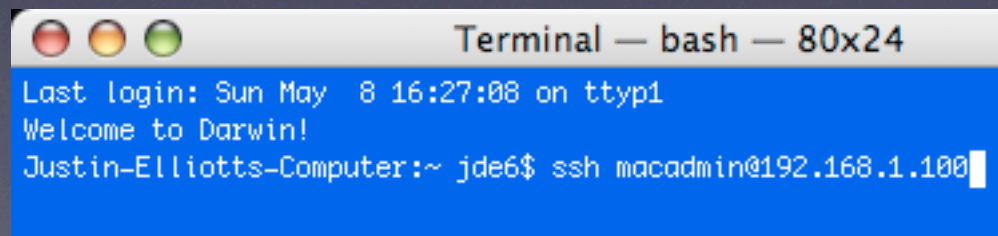


Remote Desktop Resources

- Official Apple Remote Desktop site:
 - <http://www.apple.com/remotedesktop/>
- Apple Remote Discussion list:
 - <http://lists.apple.com/mailman/listinfo/remote-desktop>

Remote SSH

- Remotely Control via Secure Shell (SSH)
 - Connect via terminal console
 - Secure connection
 - Restrict IP address and user IDs that are allowed to ssh in with
 - Can also copy files securely with scp

A screenshot of a macOS Terminal window. The title bar reads "Terminal — bash — 80x24". The terminal output shows the last login time, a welcome message for Darwin, and the current shell prompt with an SSH command being entered.

```
Terminal — bash — 80x24
Last login: Sun May  8 16:27:08 on ttty1
Welcome to Darwin!
Justin-Elliotts-Computer:~ jde6$ ssh macadmin@192.168.1.100
```

Command Line Resources

- Mac OS X Server Command-line Administration:
 - http://images.apple.com/server/pdfs/Command_Line.pdf
- Advanced Bash Scripting Guide:
 - <http://www.tldp.org/LDP/abs/html/>

System Infrastructure

- Apple XServe Servers
 - Rack Mountable, “real” server hardware
 - Pros: Low form factor, easy drive swapping
 - Con: No Dual/Redundant Power Supply
 - But, you CAN get an APC dual Power Circuit Strip that solves this elegantly



System Infrastructure

- 1 Gb links to servers, most labs at 100 Mb
- 10 Servers For:
 - KeyServer (software metering)
 - WebServer (Hardware stats, NewsFlash)
 - Radmind Master and clones
 - Spares - for migration, testing

Additional Resources

- <http://www.macenterprise.org/>
- <http://listserv.cuny.edu/archives/macenterprise.html>
- CLC Home Page
 - <http://clc.its.psu.edu/>
- CLC Mac Admins
 - Ken Rosenberry, Justin Elliott, Michael France
 - 'clcmac' at penn state (psu.edu)