

The Virtues of Total  
Management or:  
*How I Learned to Stop Worrying  
and Love Radmind*

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# The Job

- Software Developer
- UNIX guy
- No end users

# The *Actual* Job

- Software Developer, System Administrator, Help Desk, Application Expert, Problem Solver
- Unix, Windows, AIX, Linux
- Many end users
- The new guy

# The Year of the Laptop

- Mac OS X
- Mobile office
- SubEthaEdit

# Diversity

- Hardware and Machine Classes
- User Needs and expectations
- Locations and Network

# The Worry

# Support

- Complexity
- Troubleshooting
- Not My Job

# Security

- Untrusted Wires
- Untrusted Users
- Automated

# User Buy in

- Administrator access
- Application selection
- Minimal interference

# Observations

- Some users *need* admin access
- Commonalities
- Easy trouble shooting

# Existing Solutions

# NetBoot

- Pull
- Image Based
- MAC address access control

# NetInstall

- Pull
- Apple package based
- Automated software installations

# ARD 2

- Push
- Apple package based
- MAC address access control

# Apple Packages

- Installation only
- Unverifiable
- Not universal



# Ideal Solution

# Total System Management

- Total Filesystem Verification
- OS Upgrades
- Tripwire

# Client initiated updates

- Hardware provisioning
- Minimal interruption
- User retains control

# Security

- No passwords
- End to end encryption
- Authentication and Authorization

# Total Management

- Manage every filesystem object
- Allow for exceptions
- Return system to a baseline

# Radmind

- Pull
- File level maintenance
- Network optimized
- TLS certificates

# Deployment

# NetRestore & NetBoot

- Initial image
- Speed
- Single image



# RadWeb & Radmind

- User Configuration
- Certificate Creation
- System Update



# ARD 2.0

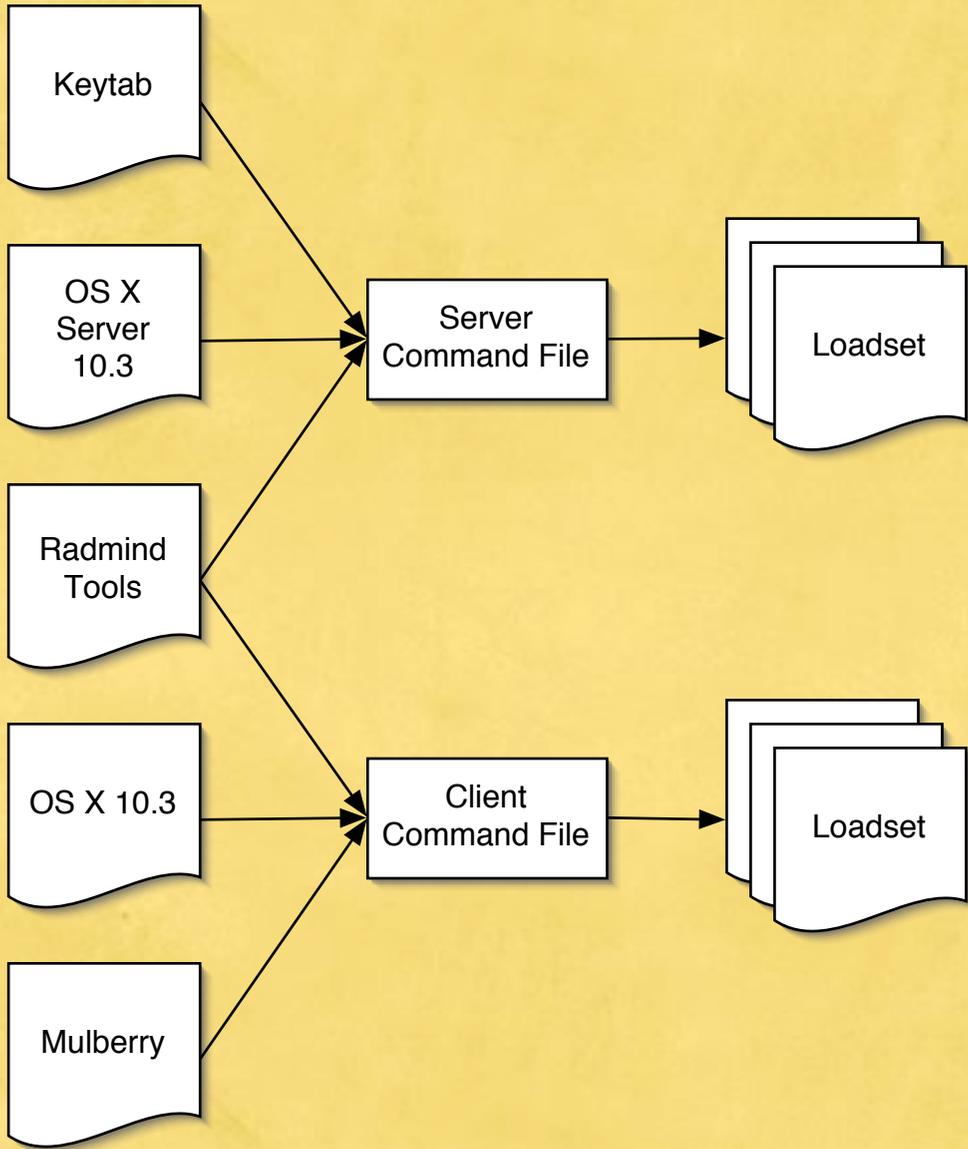
- Direct Client Support
- Remote Access
- Hardware Analysis

# User Buy-in

- All users can have admin access
- Updates can be automatic or user initiated
- User selects applications

# Sharing

- Each client gets a unique certificate
- Common configurations are stored in shared base
- Applications separated from OS



# New Client

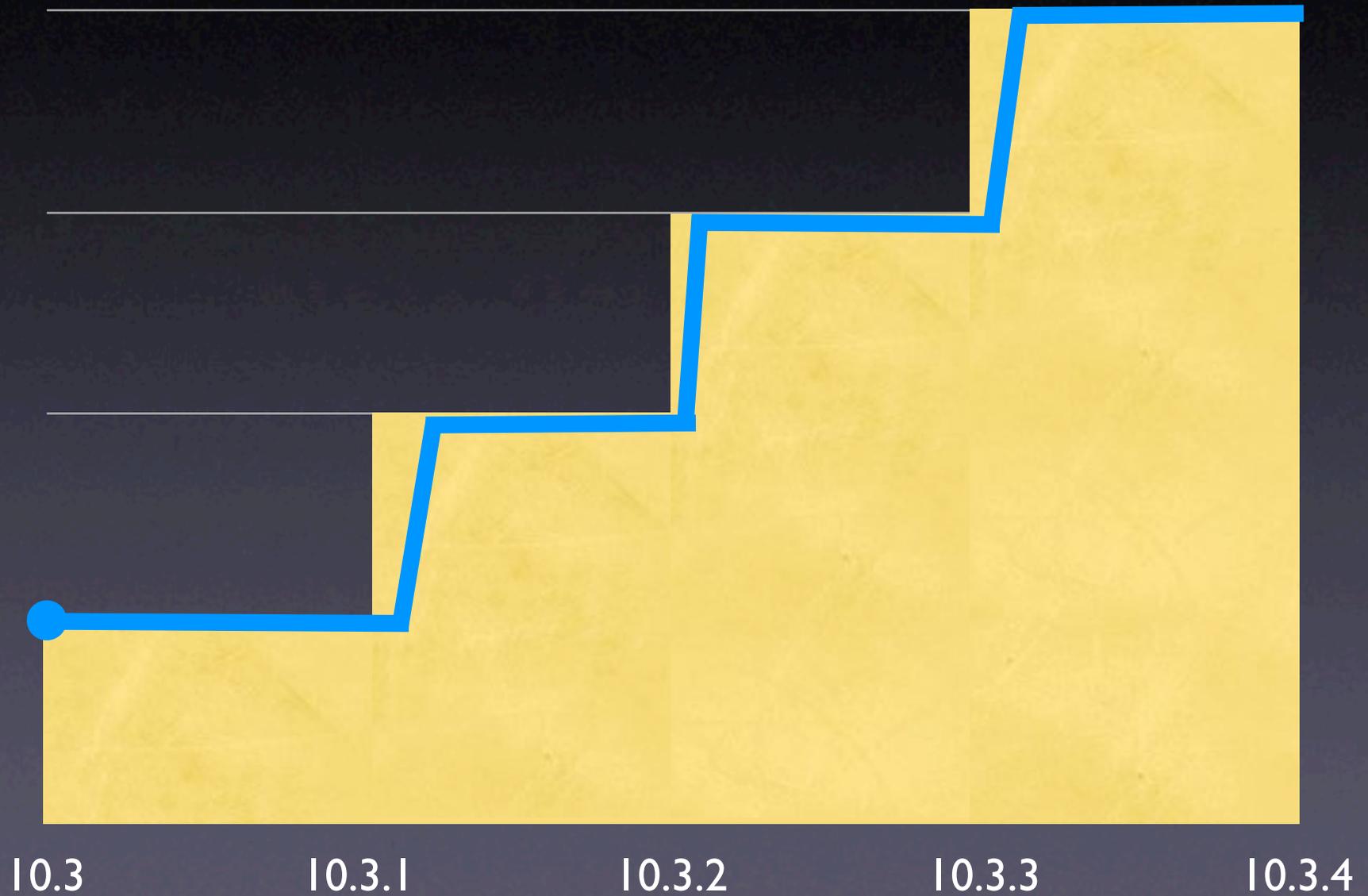
- Bootstrap
- Select software
- Install certificate
- Run Radmind

# New Client Demo

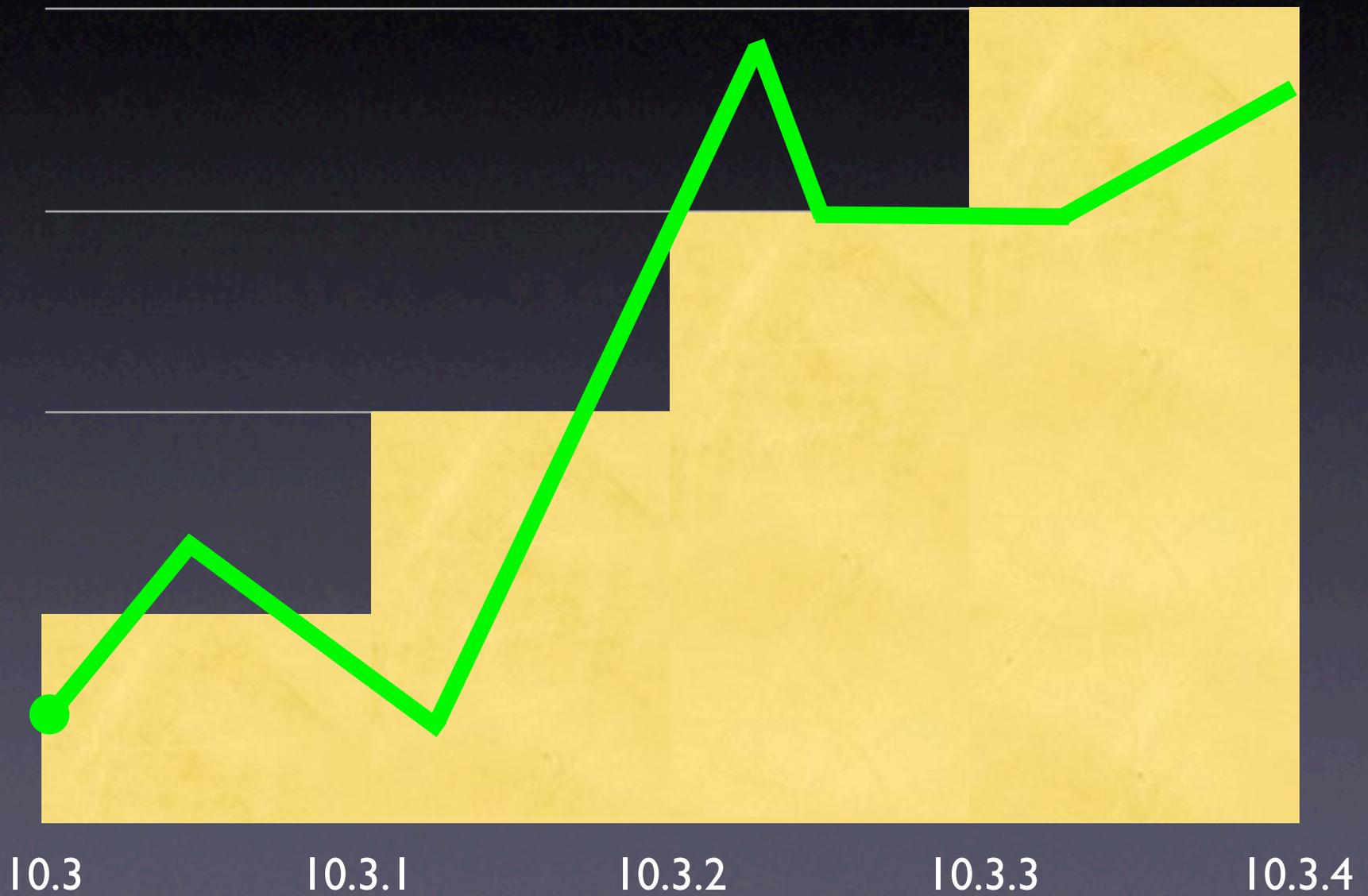
# Update Process

- Check server for new policy description
- Compare filesystem to policy
- Modify filesystem to match policy

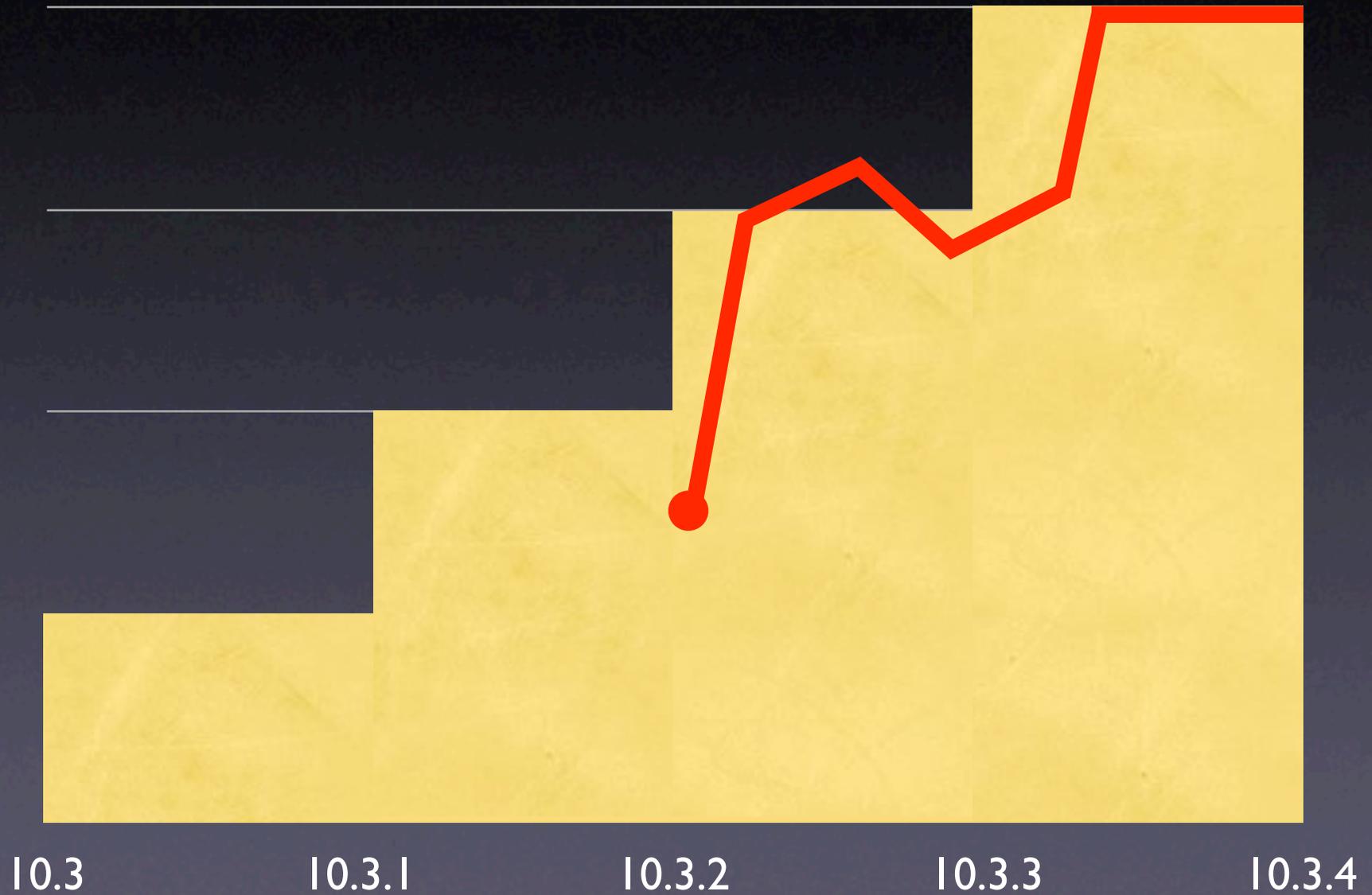
# Automatic Updates



# Power User



# New Hardware



# Update Demo

# Benefits

- “I just want it to work”
- “I might break things”
- “I’m too good for that”

# Benefits

- No need to redo factory load
- Allows user to install custom applications
- Easy way to select and install applications
- No difference between managing clusters, desktops and laptops

# Future Work

- Windows Port
- Further network optimizations
- Package translation
- Radmind 2.0?

# More Information

- <http://radmind.org>
- [radmind@umich.edu](mailto:radmind@umich.edu)
- <http://macenterprise.org>

# Q & A