

GIVING DISKS THE BOOT

THE BASICS OF NETBOOTING MACS

BRANDON PENGLASE

MAY 11TH, 2011

PENN STATE MACADMINS CONFERENCE

WHO IS BRANDON?

- Pennsylvania College of Technology
- Working on Macs for 4 years now
- DeployStudio & “Recovery” Netboot

PREFACE

WHAT IS NETBOOTING?



NETBOOTING DEFINED

(BY WIKIPEDIA)

- Network Booting: is the process of booting a computer from a network rather than a local drive
- Netboot: is a technology from Apple which enables Macs with capable firmware to boot from a network, rather than a local hard disk or optical disc drive

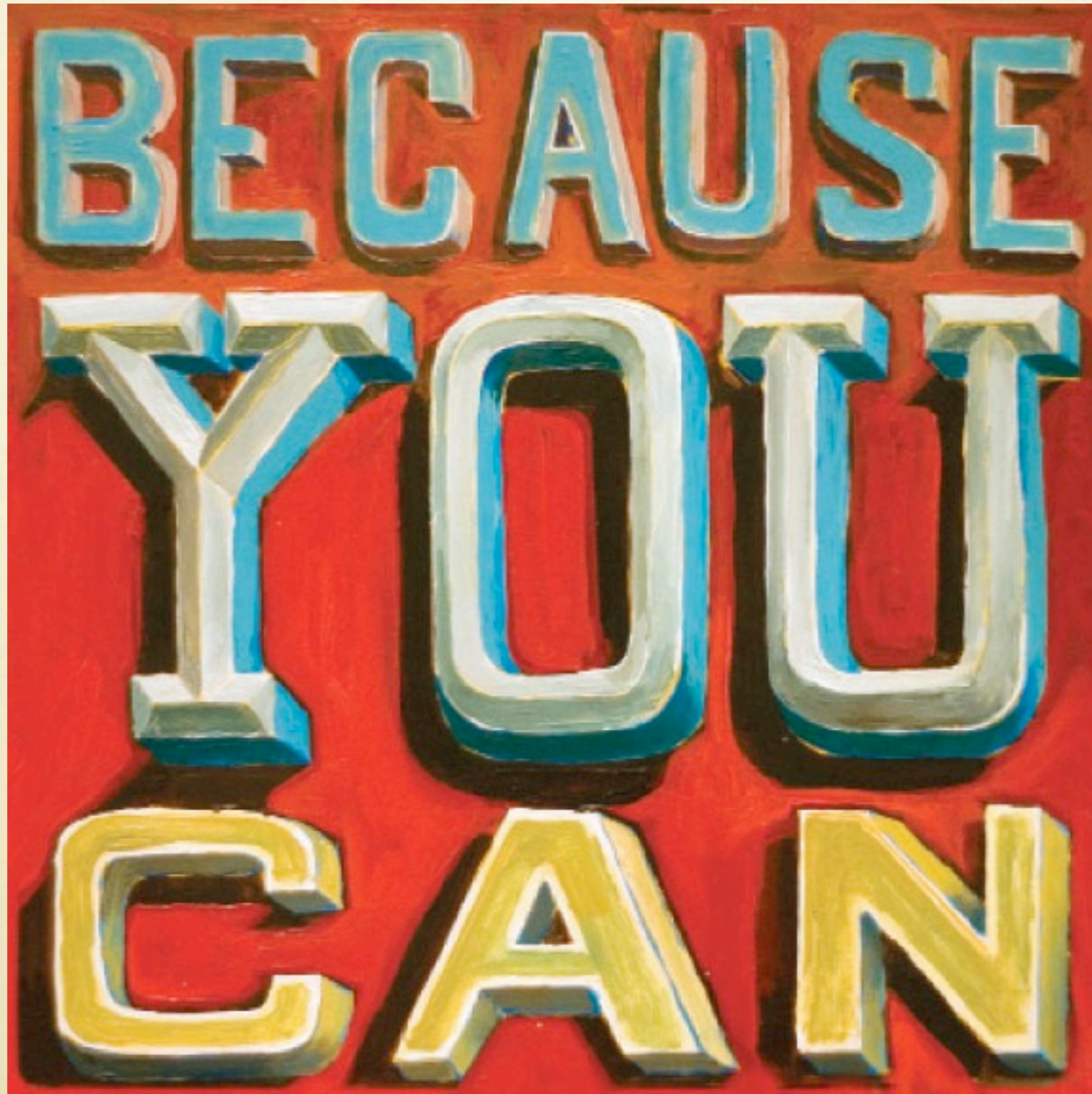
THE APPLE NETBOOT PROCESS

- The (technical) Basics:
 - Bootstrap Protocol (BOOTP)
 - TFTP
 - HTTP/NFS/AFP

THE APPLE NETBOOT PROCESS

- The Chime! (Machine Posts)
- Firmware loads, starts DHCP and BSDP (boot service discovery protocol), and presents a spinning globe
 - This is the process of actually looking on the network for a boot server
- Apple Logo, with Spinning Globe
 - The machine has downloaded the files needed to boot from the server, and starts to boot.
- Turns into normal progress indicator and boots

REASONS TO NETBOOT



DISKLESS SYSTEMS

- Kiosks
- Ability to change the image on reboots
- Force users to use network storage

OS INSTALLATION

- Turn Up New Servers Quickly
- Get Clients Up Quickly

MACHINE IMAGING

- DeployStudio
- PSU Blast Image Config
- System Image Utility
- And Others

HOW TO NETBOOT

HOW TO TIE A TIE

①



②



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STEPS TO NETBOOT

- Enable Netboot Service
- Build Your Netboot Image
- Enable Your Netboot Image
- Boot Your Macs Holding “N”, Or Bless Them
- ???
- Profit!

(Really, thats it!)
(ok, except maybe no profit...)

NETWORK CONFIGURATION



DHCP

BSDP BROADCASTS

- UDP Broadcasts
- Lists Images That Can Be Netbooted

HANDS-OFF NETBOOTING



BLESSED BE

- `sudo bless --netboot --server bsdp://server.test`
 - Recommend To Use IP Address
- Or More Specifically:
 - `sudo bless --netboot --booter tftp://server.test/NetBoot/NetBootSP0/NetInstall.nbi/i386/booter --kernel tftp://server.test/NetBoot/NetBootSP0/NetInstall.nbi/i386/mach.macosx --options "rp=nfs:server.test:/private/tftpboot/NetBoot/NetBootSP0:NetInstall.nbi/NetInstall-Restore.dmg"`

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DEMO

LINKS

- Bombich's How Netboot Works as a starting point, and anything else on his site (mirrored): <http://www.afp548.com/netboot/mactips/bootpd.html>
- ComputerWorld's Hands On Configuring Apple's Netboot (Dated, but good information): <http://www.computerworld.com/s/article/9035268/>
[Hands on Configuring Apple s NetBoot service Part 1](#)
- Creating a Netboot using Apple's SIU: <http://www.jamfsoftware.com/kb/article.php?id=239>