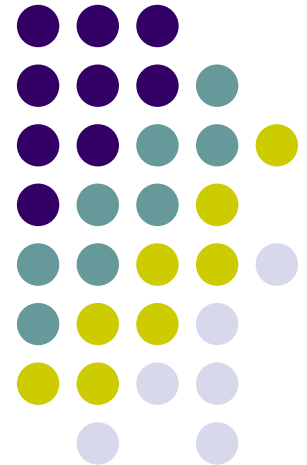


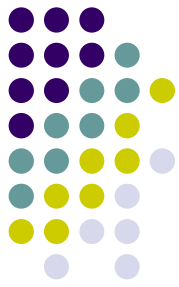
Desktop Migration and Deployment Strategies for Windows XP

Jeffery Hicks MCSE, MCT
Principal Consultant
JDH Information Technology
Solutions



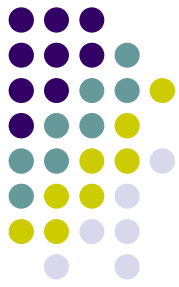
Agenda

- Desktop Migration Tools
- OS Installation Tools and Techniques
- Demonstrations
- Questions & Answers



Migration Tools

- File & Settings Transfer Wizard
- User State Migration Tools
 - Scanstate.exe
 - Loadstate.exe





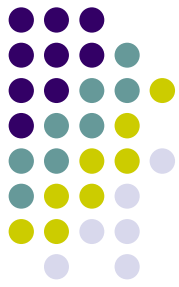
File & Settings Transfer Wizard

- GUI-based Wizard
- Good for SOHO environments
- Migrate files via floppy
- Migrate files via network share
- Migrate files via direct cable connection
- Customizable – migwiz.inf

USMT Requirements



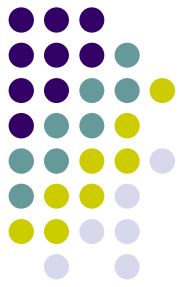
Type of system	Requirements
Source system	Windows 95, Windows 98, Windows NT Workstation 4.0, or Windows 2000 Professional. Access to the intermediate store
Intermediate store	Storage based on data to be migrated. (50 MB is often enough for typical users, but this can vary.)
Target system	Windows XP Professional Access to the intermediate store Appropriate amount of drive space to receive the user state data



What Gets Migrated

- Settings
 - Appearance
 - Action
 - Internet
 - Mail





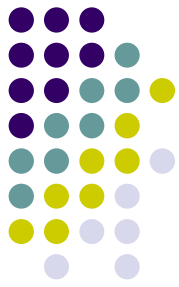
What Gets Migrated

- Files
 - My Documents
 - By Location (c:\claims)
 - By file type (*.doc)
 - Re-mapping locations



Customized Migrations

- Migapp.inf
- Migsys.inf
- Miguser.inf
- Sysfiles.inf



Migsys.inf



Accessibility Options

- Fonts
- Mouse and Keyboard
- Internet Options
- Localization / International Settings
- Sounds and Multimedia

Outlook Express

- Display Properties
- Screen Saver Selection
- Folder Options
- Taskbar
- Classic Desktop (pre-Luna look & feel)

Miguser.inf



Desktop

- Shared Desktop
- Start Menu Items
- Shared Start Menu Items
- Favorites

Shared Favorites

- My Pictures
- My Documents
- Shared Documents

Migapp.inf



<ul style="list-style-type: none">Acrobat Reader 4.0• Acrobat Reader 5.0• Adobe Photoshop Suite 6• AIM• Command Prompt• Netmeeting• Windows Media Player• MSN Messenger• Windows Messenger• Money 2001• Windows Movie Maker• Microsoft Office• Access XP	<ul style="list-style-type: none">Access 2000• Excel 2000• FrontPage 2000• Outlook 2000• PhotoDraw 2000• PowerPoint 2000• Publisher 2000• Word 2000• Access 97• Excel 97• Sonique• And many, many more
--	---

Sysfiles.inf



- OS files that must NOT be migrated
- Do NOT modify this file, except to add more file exclusions

USMT



- Run ScanState.exe on the client workstation, copying the user state data to an intermediate store.
- Reformat the disk and install Windows XP Professional and applications as needed.
- Run LoadState.exe as the local administrator on the client workstation to restore the user settings.

Scanstate.exe



```
scanstate [/c /i input.inf]* [/l scanstate.log] [/v  
verbosity_level] [/f] [/u] [/x] migration_path
```

For Example:

```
scanstate \\fileserver\migration\elizabeth /i  
.\migapp.inf /i .\migsys.inf /l .\miguser.inf /i  
.\sysfiles.inf /i .\files.inf
```

Scanstate.exe



Flag	Resulting Action
/c	Continues past filename_ too_long errors. Log files in Longfile.log.
/i	Specifies an INF file containing rules that define which user state data to collect. Multiple INF files can be specified.
/l	Specifies a file in which to log errors.
/v	Enables verbose output. The syntax is /v # where # is 1 to 7, with 1 being the least verbose, and 7 the most.
/u	Specifies that user settings will be migrated. This is a switch for troubleshooting only.
/f	Specifies that files will be migrated. This is a switch for troubleshooting only.
/x	Specifies that no files or settings should be migrated.

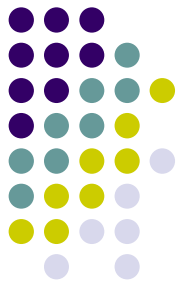
Loadstate.exe



```
loadstate [/i input.inf]* [/l loadstate.log] [/v  
#] [/f] [/u] [/x] migration_path
```

For Example:

```
loadstate \\fileserver\migration\elizabeth /i  
.\miguser.inf
```



Loadstate.exe

Flag	Resulting Action
/i	Specifies an INF file containing rules to define what state to migrate. Multiple INF files can be specified.
/l	Specifies a file in which to log errors.
/v	Enables verbose output. The syntax is /v # where # is 1 to 7, with 1 being the least verbose, and 7 the most.
/x	Specifies that no files or settings will be migrated. This is a switch for troubleshooting only.
/u	Specifies that user settings will be migrated. This is a switch for troubleshooting only.
/f	Specifies that files will be migrated. This is a switch for troubleshooting only.

User State Migration Demo





Windows Deployment Tools

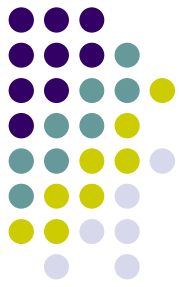
- RIS – for bare metal setup or bare metal system image deployment (PXE-based), or both
- Sysprep – for creating image-deployable systems
- RIPrep – RIS-based version of Sysprep
- Unattend files
 - Unattend.txt (unattended installation)
 - RISndrd.sif (RIS unattended installation)
 - Sysprep.inf (automate Sysprep mini-setup)

Windows Deployment Tools (2)



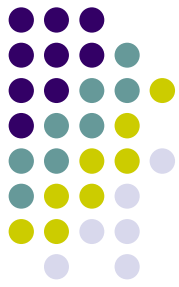
- Group Policy/SMS – distribution of new Windows upgrades/updates
- Cmdlines.txt/GUIRunOnce – setup/post setup scripts

Imaging vs. Scripted



- Image-based installations – file/disk-based duplication
 - RIPrep (RIS “imaging”)
 - Sysprep (Xcopy or capture with third-party imaging software)
- Unattended installations – standard Windows setup that is automated
 - RISetup (RISrndrd.sif) ~Unattend.txt
 - Unattend.txt
 - CD-based Install or Network

Unattend and Setup Manager



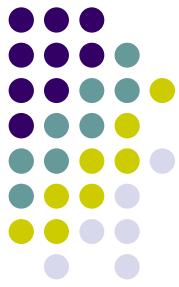
- Setup Manager creates and modifies unattended setup answer files (unattend, Sysprep, RISetup)
- Can be found with other deployment tools and guides in Deploy.cab on the Windows product CD (`\Support\Tools\`)

Unattend and Setup Manager – Enhancements



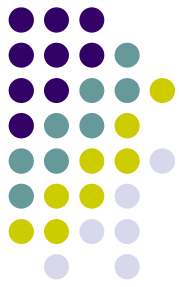
- Administrator password encryption
- Setup Manager – improved interface
- Improved .chm file on the product CD for unattended setup and deployment

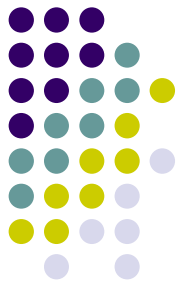
Unattended Demo



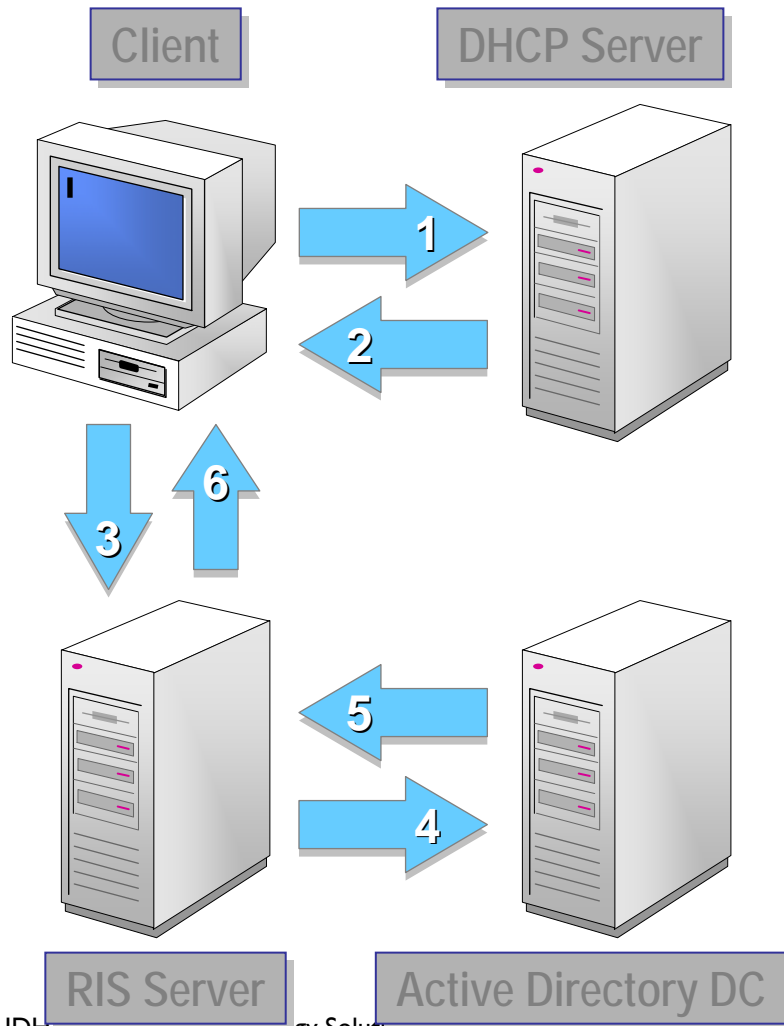
RIS

- Remote Installation Services (RIS)
 - Permits network-initiated setup
 - Clean scripted installation (RISetup)
 - Clean imaged installation (RIPrep)
 - Uses PXE network cards to initiate setup with minimal user interaction
 - Boot floppy disk supports certain additional PCI network cards that are not PXE capable





RIS – How it Works

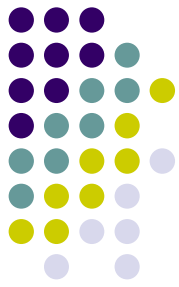


- 1 The client requests an IP address
- 2 The IP address is supplied by a DHCP server
- 3 The client contacts the RIS server
- 4 The RIS server checks Active Directory to see if the client has been prestaged
- 5 RIS responds or forwards the request to another RIS server
- 6 The RIS server sends Startrom.com to the client – launches OSChoice

RIS – Windows 2000



- Native support for Windows 2000 Professional only
- Can support XP Pro with patch (Q287546 & Q313069))
- No support for RIS installations of servers



RIS – Windows 2003

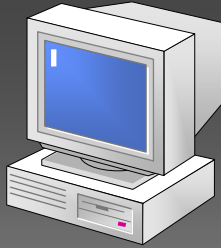
- Support for deploying:
 - All versions of Windows 2000
 - Windows XP Professional
 - All 32-bit versions of the Windows 2003 Server family
 - All 64-bit versions of the Windows 2003 Server family*
- Significant performance increase over Windows 2000 RIS Server

***RISetup only, not RIPrep-based images**

RIS Client System Requirements

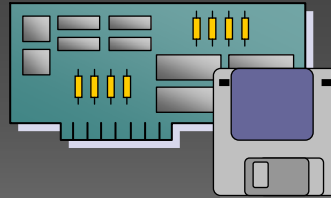


Computer



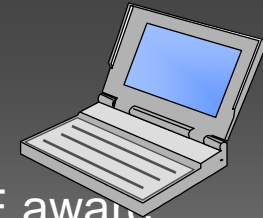
PC that meets PXE
1.0 or 2.0 specifications

Network Adapter



Network adapter that
supports PXE or is
supported by the RIS
boot floppy (RBF)

Mobile Systems



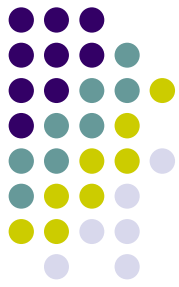
PXE aware.

- Docking stations
- PXE CardBus NIC
- Internal PXE NIC
- Mini-PCI NIC
(may require BIOS support)

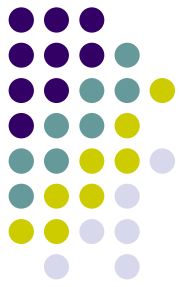
RIS clients must also meet minimum hardware requirements for the version of Windows being installed.

Not supported: USB, 1394, USB 2.0 NICs, CardBus NIC via boot floppy

RIS and RIP-prep Demo



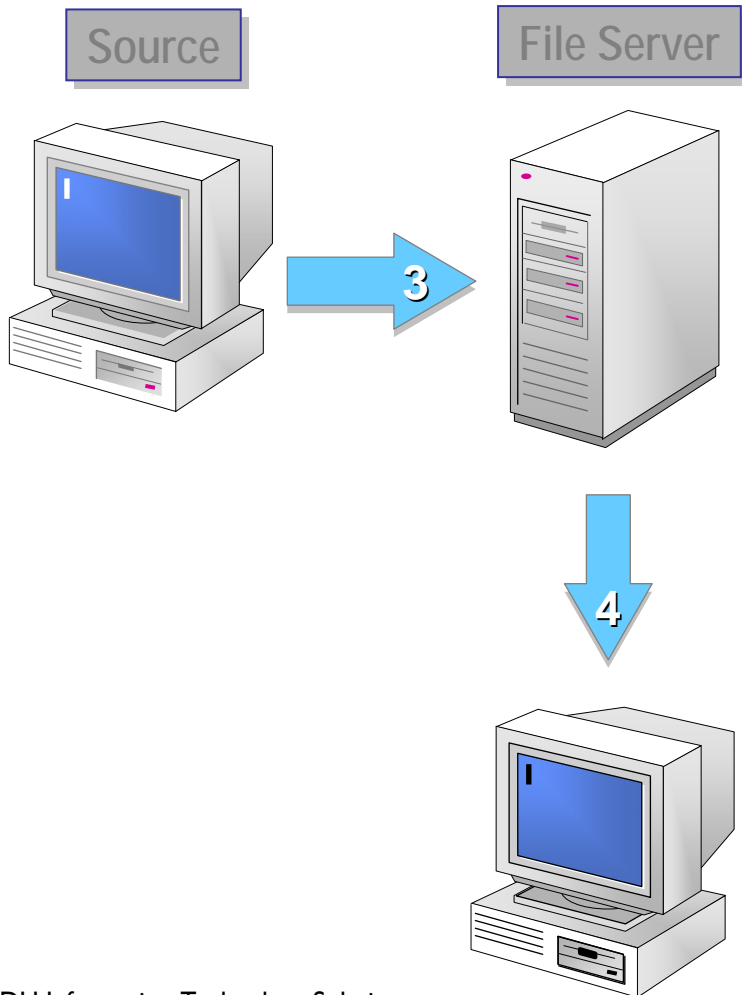
Sysprep



- System Preparation tool
 - Prepares a reference system for disk-based duplication (using Xcopy or a third-party imaging tool)
 - Similar to RIPrep, used for RIS imaging
 - Requires relatively similar hardware
 - Hardware abstraction layer (HAL)
 - Runs mini-setup instead of full setup

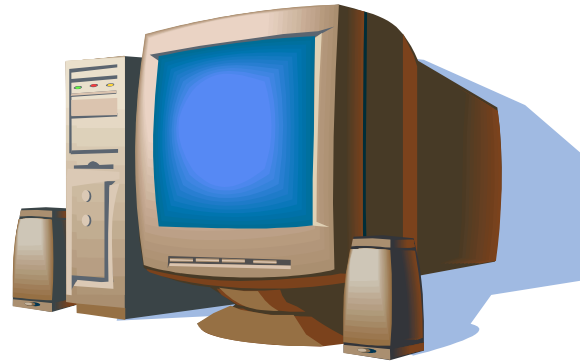


Sysprep – How It Works

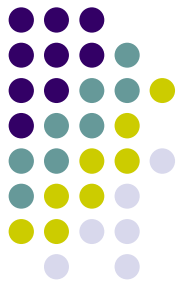


- 1 Source computer is prepared as desired – Windows and applications
- 2 Sysprep is run on the computer, which then powers off
- 3 Using WinPE or an imaging tool, the image is stored (here, to a server)
- 4 New computer is booted using WinPE or an imaging tool, image is installed
- 5 New computer is powered on, mini-setup runs
- 6 New computer is powered off and ready to redistribute
- 7 Steps 4-6 are repeated as needed for each new computer

Sysprep Demo

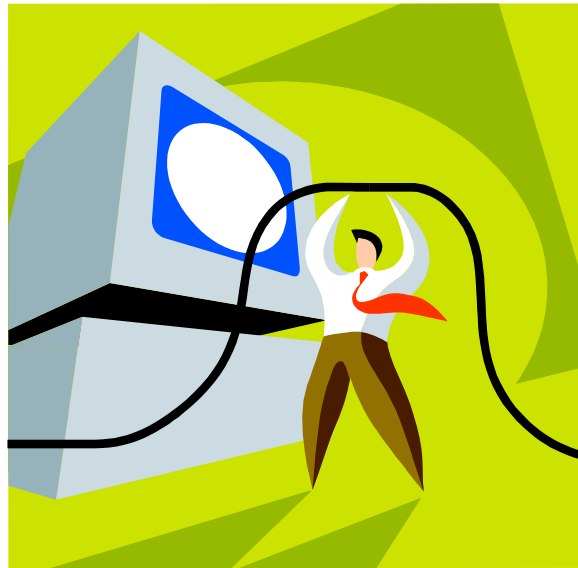
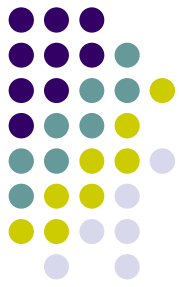


Group Policy

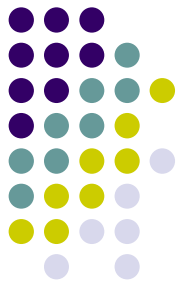


- I386\Winnt32.msi
- Filter by Groups or use OUs
- Assign to computer objects (Q314953)
- Use MSI transforms to pass key and other settings (Q246617)
- Windows 2000 and XP upgrades only

Group Policy Install Demo

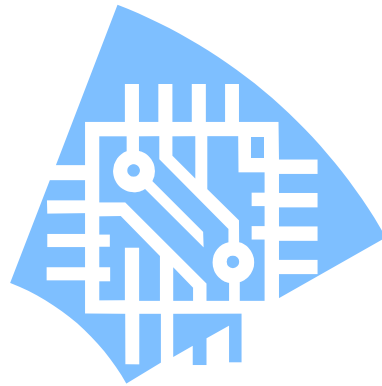
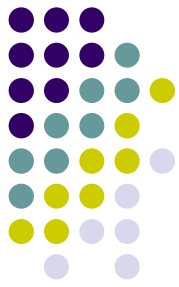


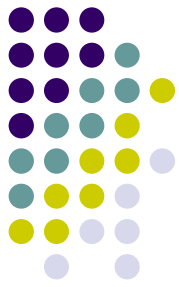
Ghost



- Recommend using with Sysprep
- Multicast option
- Long term maintenance and management costs higher

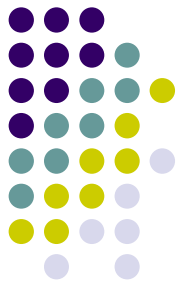
Ghost Demo





Deployment Factors

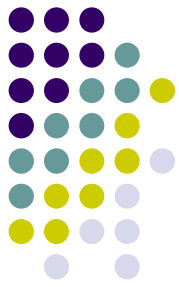
- Be aware of how the following can affect deployment:
 - Geography and time zones
 - Bandwidth (or lack of) to sites
 - Hardware homogeneity and lifespan
 - Existing hardware (PC, router, network) infrastructure
 - Existing software (for example, third-party system management software)
 - Support infrastructure



Windows Product Activation

- Volume licensed media
 - No activation required
 - Common product key across installations
 - Encryptable for Windows 2003
- Retail media
 - Activation required
 - Unique product key per installation
 - Can be scripted using WMI and WSH

WPA methods – Answer File

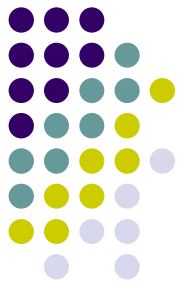


- **[Unattended]**
Unattendmode = FullUnattended
Filesystem = LeaveAlone
TargetPath = *
Win9XUpgrade = No
NtUpgrade = Yes
AutoActivate = Yes
ActivateProxy = Proxy
- **[userdata]**
ProductKey = PXRQ3-7VPMV-CQWXR-8Y4KX-RD786
- **[Branding]**
BrandIEUsingUnattended = Yes
- **[Proxy]**
Proxy_Enable = 1
Use_Same_Proxy = 1
HTTP_Proxy_Server = myproxyserver:80
Proxy_Override = <local>

WPA methods – WMI Script



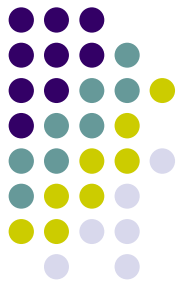
```
for each Obj in GetObject("winmgmts: { impersonationLevel=impersonate}").
    InstancesOf ("win32_WindowsProductActivation")
    if Obj.ActivationRequired <> 0 then
        'If necessary, save/set proxy
        Obj.ActivateOnline()
        'If necessary, restore proxy
    end if
next
```



Miscellaneous

- Suppress Windows Tour Prompt (Q311489)
- Slipstream Service Packs
- Product Activation Information
(<http://www.microsoft.com/piracy/basics/activation/>)
- Customized RIS Screens (Q268325)
- Use DFS to replicate RIS Images (Q273594)
- Specify OU for computer account (Q226315)

Summary

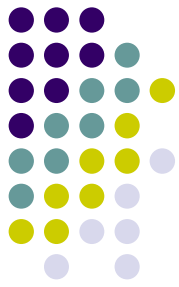


- Use the tool that works best for your needs
- There is no predetermined “right” solution
- Create a deployment strategy that works for you
- Test, Re-Test and Document
- There are huge improvements in Windows XP and the Windows 2003 Server family for deployment



Additional Resources

- Windows Deployment Web site:
 - <http://www.microsoft.com/WindowsXP/deployment/>
- Deploy.cab on Windows product CD
- *Deploying Windows 2000 with Support Tools* (ISBN: 1-928994-12-1)
- *Windows 2000* magazine RIS series
- TechNet
- Microsoft Knowledge Base



Additional Resources

Labmice.net

<http://labmice.techtarget.com>

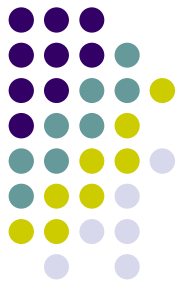
Bart's Boot Disk <http://www.nu2.nu>

MOC Courses:

#2275 Implementing & Supporting MS
Windows XP Professional (3 days)

#2520 Deploying Microsoft Windows XP
Professional (1 day)

Questions & Answers



Thank You



- Questions welcome at jhicks@jdhitsolutions.com

<http://www.jdhitsolutions.com>

