Vista, Take Two:
what's new in Vista SP1

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Outline

- Getting and deploying Vista
- Vista changes to deployment in general
- Removing Irritations
- Speeding Up Vista
- And more…

SP1 Requirements

- As with XP SP2, will not install on battery
- There are separate SP1 versions for 32 bit and 64 bit
- 32 bit requires 7 GB free, 64 bit requires 13 GB free to install
- No Internet connection required with SP1 Update (which we'll meet soon)
- Biggest requirement: patience! Can take hours and *four* reboots

SP1 Install Options

- Microsoft calls them
  - Express
  - Stand-alone
  - Slipstream
- Here's what they mean…
  - Express: delivered via Update
  - Stand-alone: an EXE like the old SP updates
  - Slipstream: rebuilt installation ISOs w/SP1

Express

- Delivered by Microsoft Update
- Only sends the changes required for the update
- Result: 65 MB update, not 560 MB
- WSUS needs hotfix to deploy either: KB 888303 (and two more since); delivered by Microsoft Update automatically
- No separate download to my knowledge

“What About the Drivers?”

- A number of systems running Vista RTM were blocked by Windows Update from getting SP1
- Reason: in the year that Vista’s been out, MS has discovered some systems with critical vendor-specific drivers – motherboard stuff, not just cameras or scanners – that make those systems unreliable

So What Happened?

- Problem: the vendors haven't fixed the drivers
- Result: the whole *point* – well, 95% of the point – of SP1 is to make Vista more reliable
- But the old unfixed drivers loom much larger than any SP1-fixed bugs
- Anyway, Update refuses to install SP1 until the drivers are fixed

Good Answer? Bad Answer?

- This is actually an *ancient* argument
- If Vendor M makes an OS, and Vendor D makes a PC, who's got the responsibility to create drivers for M's OS on D's hardware?
- I don't know… but I do know that this sort of thing was a serious drawback for the OS/2s, both Microsoft's and IBMs

Stand-Alone “Update”

- This is the option that lets you download the whole thing and apply the SP offline
- Called "Windows Vista SP1 RC Refresh for X86 and X64 UPD 5 Languages"
- Size: 450 MB for five-language pack (English, French, Spanish, German and Japanese), 560 MB for 36-language pack
- That's the x86 size – 64 bit is ~750 MB

Standalone Files/Packaging

- Final sub-option: the previous two files downloadable as an ISO
- File name is “Windows Vista SP1 RC Refresh for X86 and X64 UPD 5 Languages\Windows6.0-KB936330-X64-wave0.exe” in standalone, “”Windows6.0-KB936330-X64.exe” on the ISO
- Again, they’re the same files, just different packaging

Running SP1 Update
(the 450/750 MB EXEs)

- /quiet, /unattend: installs and reboots without user interface (/quiet shows no UI at all)
- /nodialog: suppresses the final "we're done!" user interface; used with /quiet or /unattend
- /promptrestart: with /quiet, asks the user if it's OK to reboot
- /forcerestart: upon reboot, forces any open apps to shut down

Slipstream

- You *cannot* do a traditional slipstream
- There's also an updated ISO that is a Vista install DVD with SP1 incorporated
- Called "Windows Vista SP1 Client for X86 and X64 English and German"
- Replaces the RTM Vista DVDs, 32 and 64 bit
- This is the way to “slipstream”

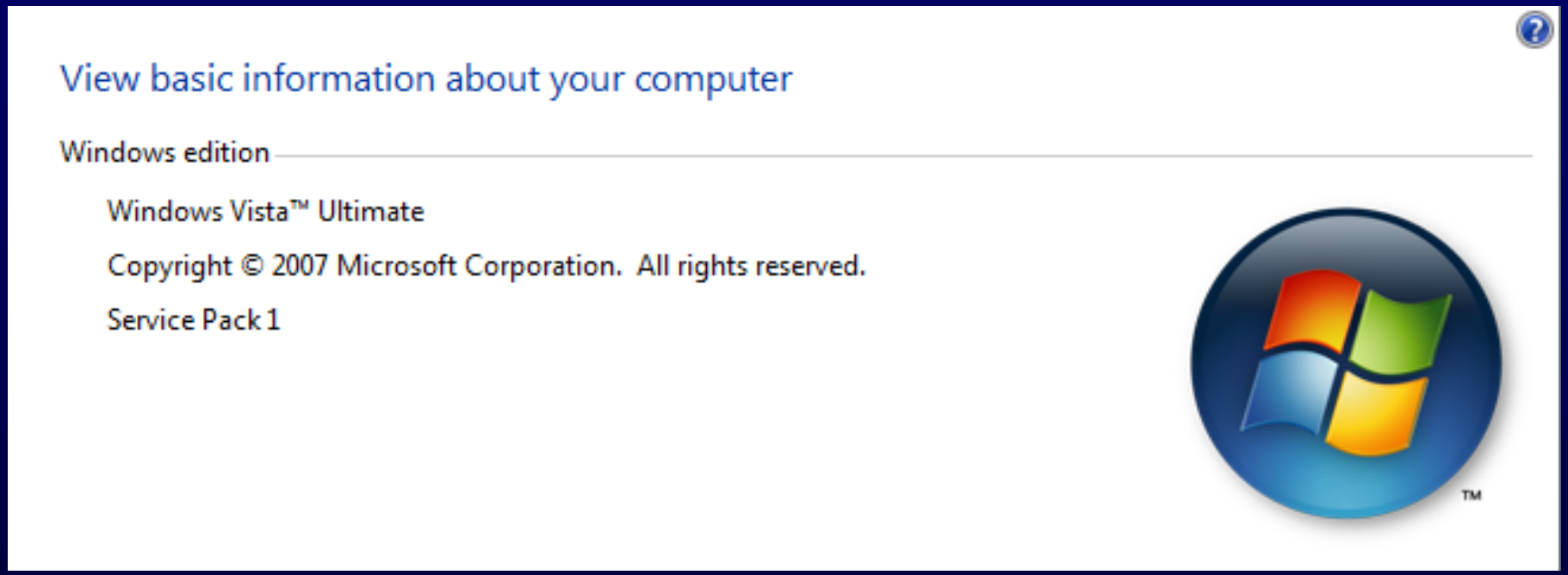
“No Slipstream?”

- The old kind of slipstreaming is gone because, if you think about it, it doesn’t make sense any more
- Pre-Vista, our install image was a bazillion little compressed files; Setup was so slow because it had to copy and expand those files
- Pre-updating each file made things smoother

“No Slipstream?”

- Vista installs, in contrast, are completely different
  - Basically Setup just copies install.wim to the target
  - You don’t create OEM folders any more on a distribution point
  - So there’s only one file to update – install.wim
  - MS’s answer: an updated install ISO

Once It's On…


View basic information about your computer
Windows edition
Windows Vista™ Ultimate
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Service Pack 1
™

Summarizing so far…

- Just wait and get it from Windows Update
- Download the stand-alone updater, install to existing systems without the need for a network connection
- Build new systems from this point on with the new install DVD ISOs
- But what about updating existing WIMs?

Updating WIMs

- There is no way to use `peimg` or `pkgmgr` to deploy SP1 to an existing image
- Instead, deploy the WIM to a physical machine, install SP1, use `PostReflect`, `VSP1CLN`, `sysprep` and `imagex` all over again (I'll explain the two new ones in a moment)
- And… it doesn't cost you a "rearm"

New Fixup for Updated WIMs

- To add SP1 to an existing image, you (obviously) would:
  - Mount the image on a PC
  - Apply the SP1 Update
  - Run Sysprep
  - Boot WinPE
  - (and you get an extra "rearm" in SP1)
- And here's where things change…

Use PostReflect

- The resulting system would not boot, as the HAL and drivers don't match SP1
- So to add them,
  - assume that the \Windows folder shows up on drive R: in WinPE, but that it'll be drive C: when the image is up and running
  - From a WinPE command prompt, type
  - **`postreflect r:\windows c:`**
- *Now* imagex, using the WAIK 1.1 imagex

Post-SP1 Cleanup Option

- New command-line tool in the WAIK, VSP1CLN, removes original Vista RTM files
- Saves space; options:
  - /quiet, /verbose
  - /o:*windows directory* removes files from an offline Windows install
- Run from WinPE command prompt before or after running postreflect

Other WAIK Changes

- Win PE is 2.1, not 2.0
- You can control the size of its RAM disk more easily
- OSCDIMG has about 40 options now, but the old ones still work, don’t worry
- 64-bit WIM images can now be delivered by a 32-bit Win PE

Managing Server 2008 with SP1

remote control: RSAT

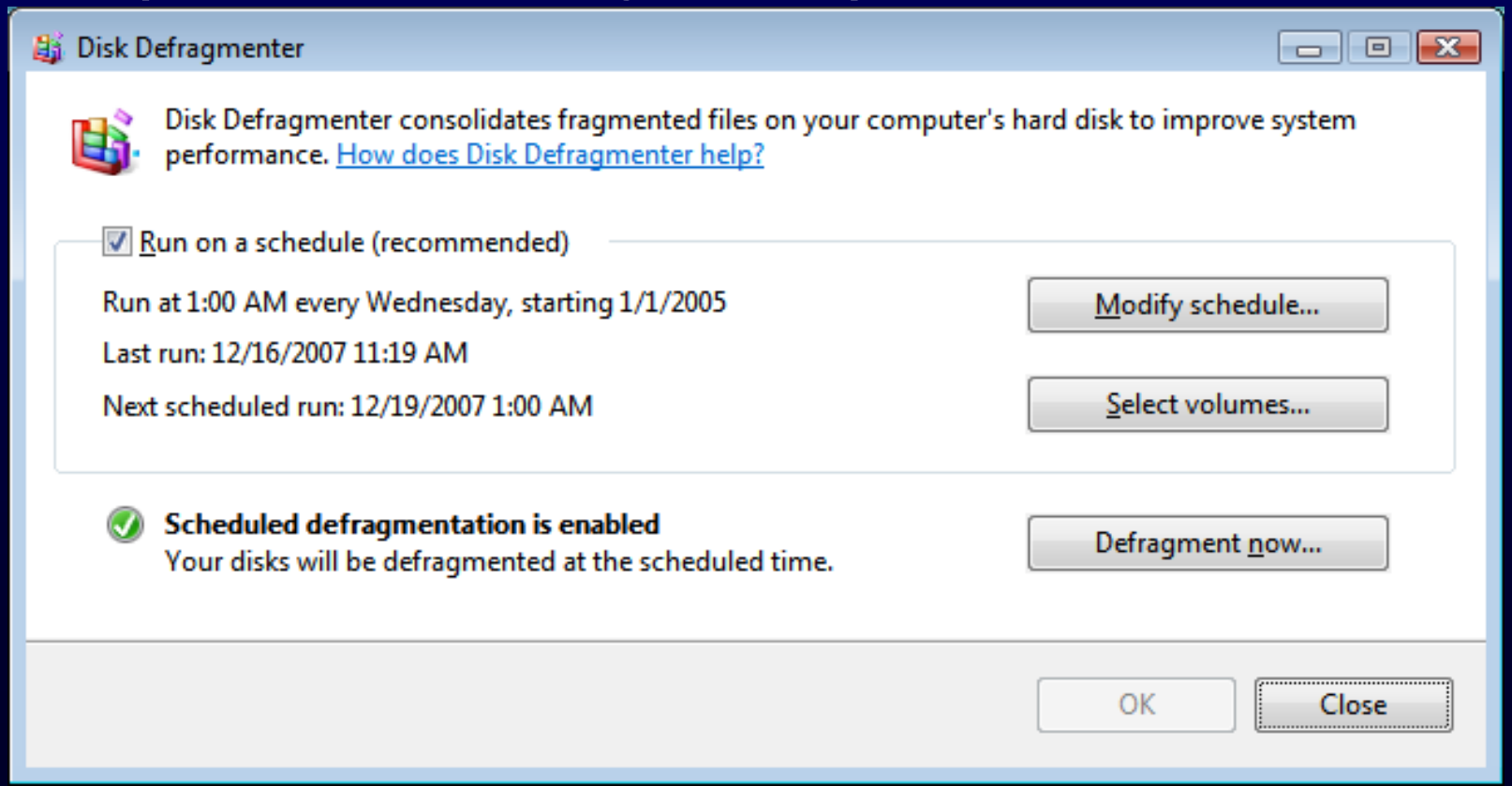
- Assuming the firewall for remote management's not an issue, you can control Server Core (and full Server) from Vista with the Remote Server Administration Tools
- Reference: KB article 941314, requires Vista SP1
- At www.microsoft.com/downloads, search for "remote server tools Vista SP1" and you'll see the links (there are 32 and 64 bit versions)

Making UAC A Bit Less Annoying

- In Vista RTM, creating or renaming some folders may cause up to 4 UAC prompts
- In SP1, it's just one!

Return-To-XP Improvements

- Defrag GUI now lets you choose volumes
- (The CLI always did!)



Fixes

- Backup's little problem (i.e., it couldn't restore) is fixed
- Backup can now back up EFS files, leaving them encrypted
- Vista now prompts to back up your EFS keys

Misc

- Allows users to rename or delete folders while working offline with redirected folders

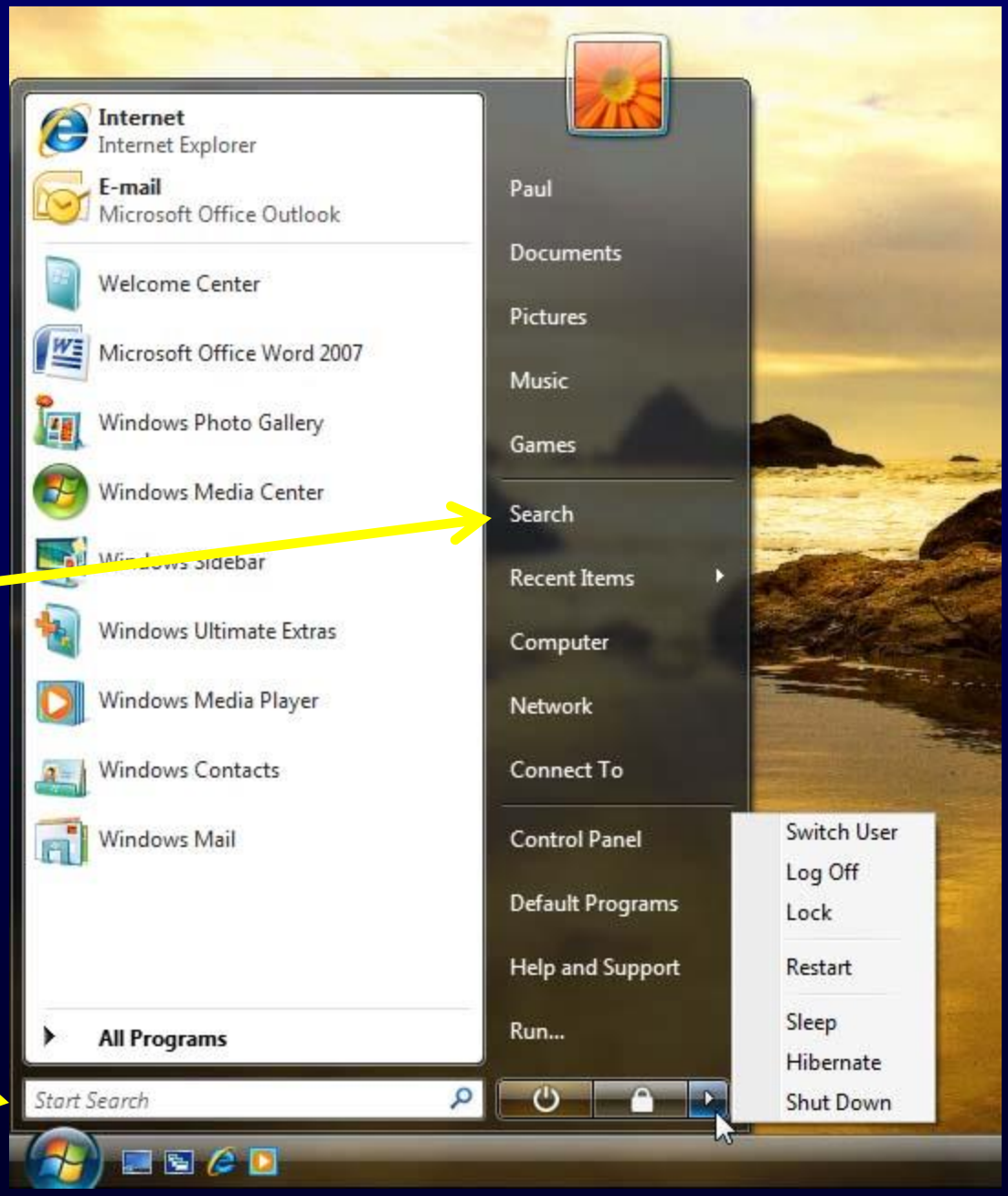
Little Annoyances

- Group Policy Management Console removed
- The MoveUser API has been rewritten and so the old Resource Kit "moveuser.exe" won't work, as will be the case with many other profile tools
- KB 930255 has a simple replacement VBscript
- If you opted out of CEIP before, it'll ask again

Big Annoyances

- Vista no longer reports how much memory it can access
- Instead, it reports the amount of memory in the system
- "Search" seems to be gone from the Start menu, so open an Explorer and use that Search

Let me explain that…



THIS isn't

This is still there

New To Setup / WGA /Updates

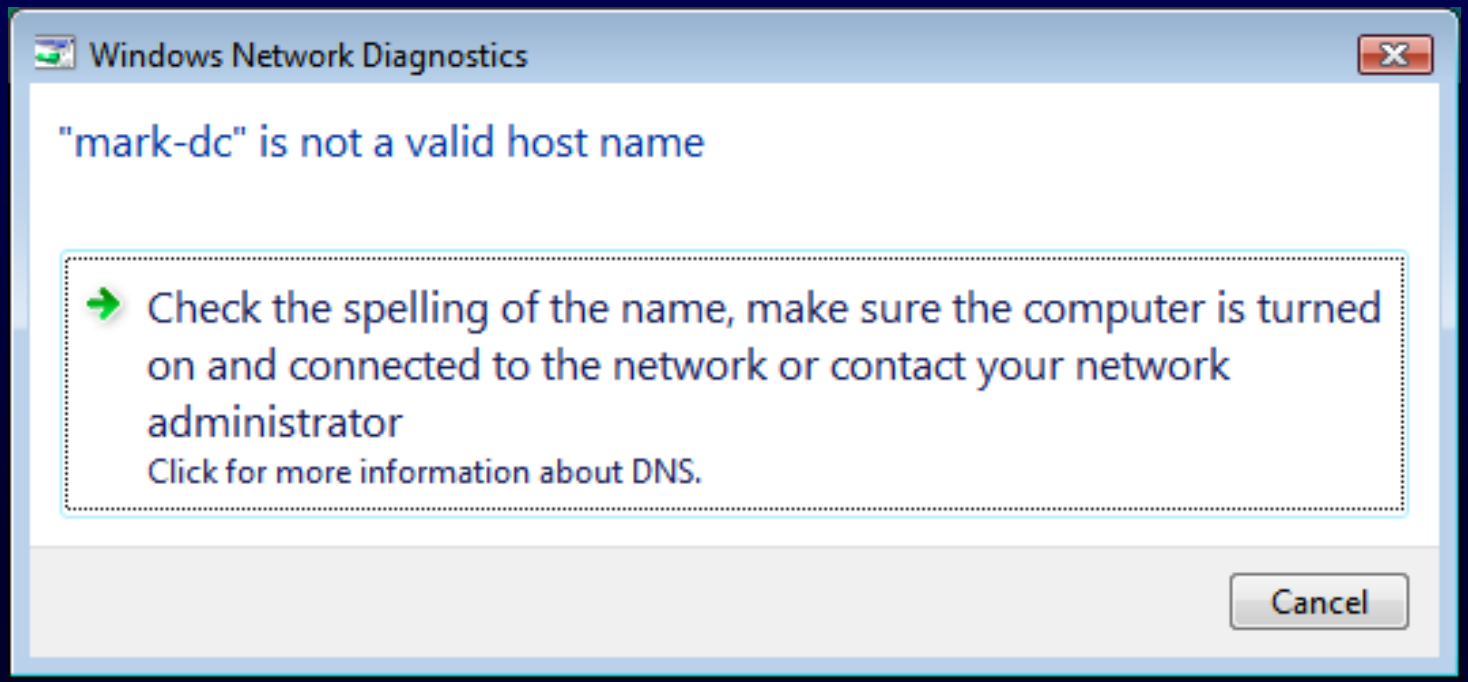
- When you exceed the grace period, it doesn't lock you out any more; it just annoys you every hour
- When you create the first user account in Vista setup, Setup REQUIRES you to create a password hint
- Yet again we're told that "hot patching" will preclude the need for many patch reboots
- "KMS can now run in a VM environment"

New Internals

- Resulting kernel is "99% 2008"
- New file system exFAT like FAT32, but supports files > 4 GB and can partition and format volumes > 32 GB
- DirectX 10.1, 3D faster for some chips, exploits new 3D verbs on some chips

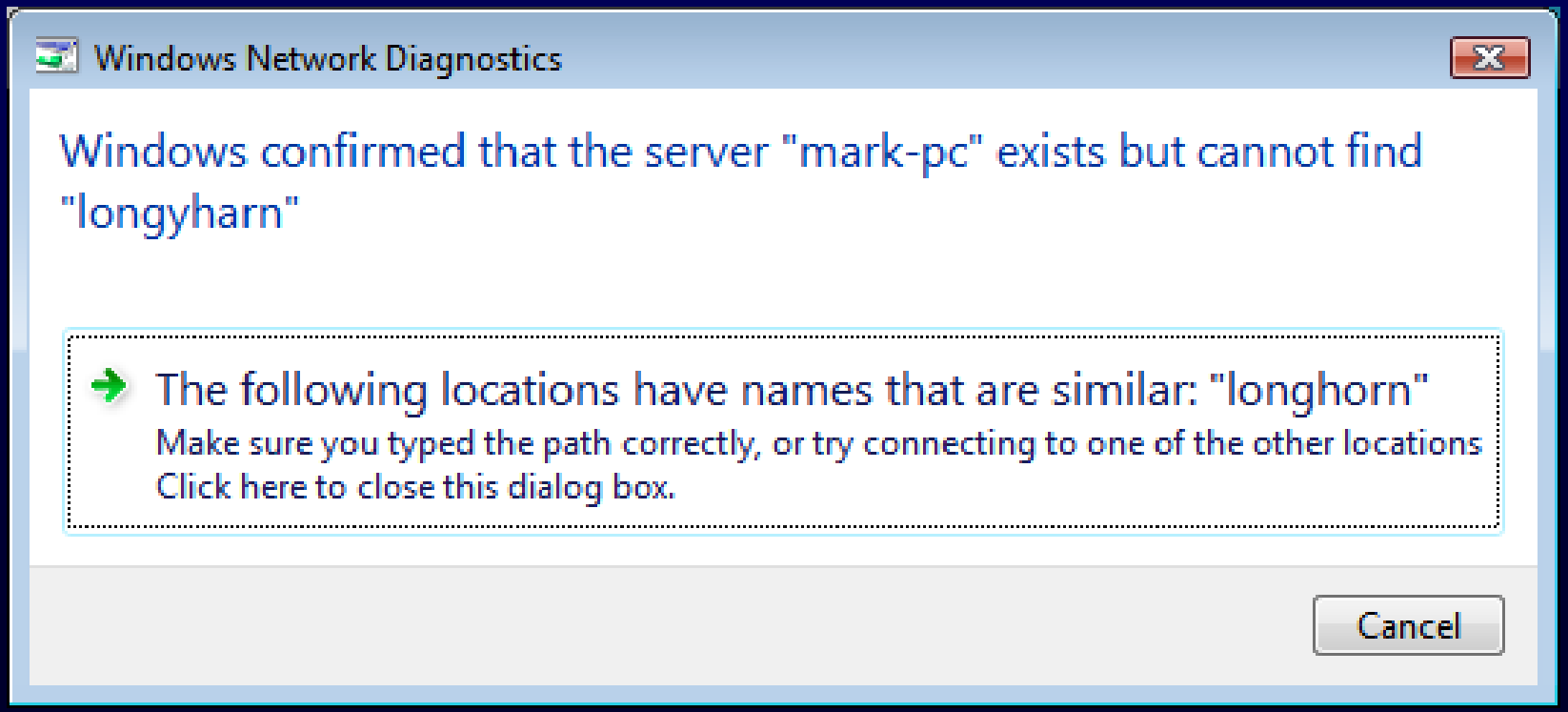
New UI

- When doing network connects from the GUI, the error messages are a bit better; called the "network diagnostic foundation"



New UI

- Not impressed? How about this?
- Only works from GUI network ops



Tags

- No one seems to have mentioned this, but SP1 seems better about picking up on existing file tags
- Type a couple of characters and it suggests existing ones that match that
- RTM did this, but much more slowly and less reliably

New to the Network

- Systems with multiple Internet interfaces pick the fastest one, *and* they take wireless's HDX nature into their reckoning
- NAP client gets smarter, finding Health Registration Authority (HRA) servers via DNS SRV records

New to the Network

- New "Secure Socket Tunneling Protocol" transports layer 2 over SSL, enabling a new VPN protocol
- Replaces PPTP, L2TP/IPsec
- Basically it's an SSL tunneling protocol that shows up as a PPP connection
- I do not think you can make this work with 2003 RRAS – 2008 needed

New to the Network

- NIC attributes like adapter names can be controlled via group policies
- "Single Sign On" extends 802.1x to wired networks

IPv6 Stuff

- Teredo tunneling algorithm preserves ports
- Teredo blocks unsolicited traffic
- IPv6 now has the ability to store a DNS suffix search list
- Solves an IPv6 problem wherein IPsec secure connections don't work because Neighbor Discovery doesn't work in some IPsec situations

BitLocker New Features

- Can encrypt non-GUI drives
- Unlocks them by default
- If using a USB key to store the volume encryption key, you can add a PIN
- If using a TPM chip, then you can now add an extra key in a USB key and you've always been able to add a PIN (*three* factor authentication?)

Terminal Services / RDP

- Opening a *consolе* session used to be "mstsc /console;" now it's "mstsc /admin"
- Printing to local printers much easier via XPS
- You can now sign RDP files, and require signing on RDP files
- Remote Assistance helpers couldn't click on UAC prompts; now "UAC: Allow Access" group policy setting lets you enable them

Terminal Services / RDP

- New compression algorithm
- Enabled in group policy setting
- Reduces RDP data size by 25-60%

Entertainment Features

- A faster, more tightly secured MPEG-2 protocol lets Vista run broadcast content over networks
- Media Center now includes "Windows Media Connectors" so MC can support things like networked DVD players and digital TVs
- "Connect to a Network Projector" can now handle non-standard resolutions

Entertainment Features

- Blu-Ray and HD-DVD drives now get their own icons
- Can now create a single DVD that boots on either BIOS-based or EFI (Extensible Firmware Interface)-based systems
- (Most common EFI systems are Intel Macs)

Reliability

- More compatibility shims built in based on error reporting data sent to Microsoft (the upside of "Problems and Solutions")
- Vista handles removable NTFS devices (thumb drives, external drives) in a somewhat more cautious fashion, making it harder to lose data on a removable volume
- Startup Repair Tool handles a wider range of types of boot failures

Reliability

- SP1 fixes a lot of "sleep-related disorders" like the ones that cause Vista to crash when entering or leaving standby
  - disk sleep often didn't work
  - NIC sleep sometimes happened in mid-transaction
  - Video interrupts on some cards kept Vista from going to sleep entirely, running down batteries
- I still see my NIC going inactive when out of sleep, but vendor drivers might be the cause

Performance

- Systems come out of sleep and hibernation faster (and more so with ReadyBoost)
- File/Open dialog faster for domain users not in a domain
- 10 second delay when you press ctrl-alt-del upon login removed
- Moving large numbers of files within a drive (>20,000) 25% faster except to Desktop or C:

Performance

- Thumbnails of objects stored on a network share are now cached per-system for all users rather than per-user
- Compressed folder expansion algorithm improved ("extract all")
- Large (>100 MB files) transfer more quickly across a LAN *unless* it's a high-latency LAN (50% improvement claimed)
- Time estimates should take < 2 seconds

Performance

- Vista (and XP) gather information about how you use your computer for the first few boots so as to tune the system; SP1 resets that data, so systems can be a bit slow for a while
- ReadyBoost now saves info to make returning from hibernation or standby faster

Performance

- 25% faster when copying files locally on the same disk on the same machine
- 45% faster when copying files from a remote non-Windows Vista system to a SP1 system
- 50% faster when copying files from a remote SP1 system to a local SP1 system

Performance

- Network browser (NET VIEW et al) bandwidth needs reduced
- BITS faster and the query algorithm for finding installed components improved, making installing updates faster
- FTP faster on high-latency networks

Hardware Support

- Wider range of drivers built in
- Support for Secure Disk Advanced DMA (ADMA)

And For More Help…

- MS is offering free support on Vista SP1 questions until 18 March 2009

Thank You!

- Thanks for attending
- I hope you found this useful
- I'm at help@minasi.com
- Please don't forget to fill out an evaluation