NUIT Tech Talk: Preview Windows Vista OS

ready for a new day

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Microsoft Office
Windows Vista
Microsoft Exchange Server 2007

Agenda

- Windows Vista Overview
- Windows Vista Security
  - Fundamentals
  - Threat and Vulnerability Mitigation
  - Identify and Access Control
  - Information Protection
- Desktop Optimization Pack for Software Assurance
- Question and Answers

Windows XP Offerings

Windows Vista Offerings

Windows Vista Overview

End Users

Find and use information

Enable mobile workforce

Improve security and compliance

Optimize desktop infrastructure

IT Pros

Windows Vista

Key Business Scenarios

- Search – start menu, control panel, document folder
- Metadata tags - easy to Search and Organize Your Data
- Tabbed browsing – IE7 and web printing
- ReadyBoost – USB extends memory
- Windows Aero – tabbed browsing
- High Performing, Reliable PC

- NAP – ensures secure state before connecting to the network (more secure)
- Easier to Connect, Collaborate, and Share
- Mobility center – puts most commonly used controls in one location
- Sync Center – data and devices switch between online and offline states

Windows Vista

Key Business Scenarios

- IE7 Protected Mode – prevents silent install of malicious code
- Services hardening – prevents windows services from being used for abnormal activity
- UAC – admin vs. standard
- Anti-phishing
- Group policy – easier desktop management
- Fundamentally Secure Platform
- Cost Effective Networking – automatically optimizes file transfers by detecting how much network bandwidth is available
- Support Costs = network diagnostics/built-in diagnostics for self healing
- Reducing Deployment Costs & Complexity

The Problem in A Nutshell

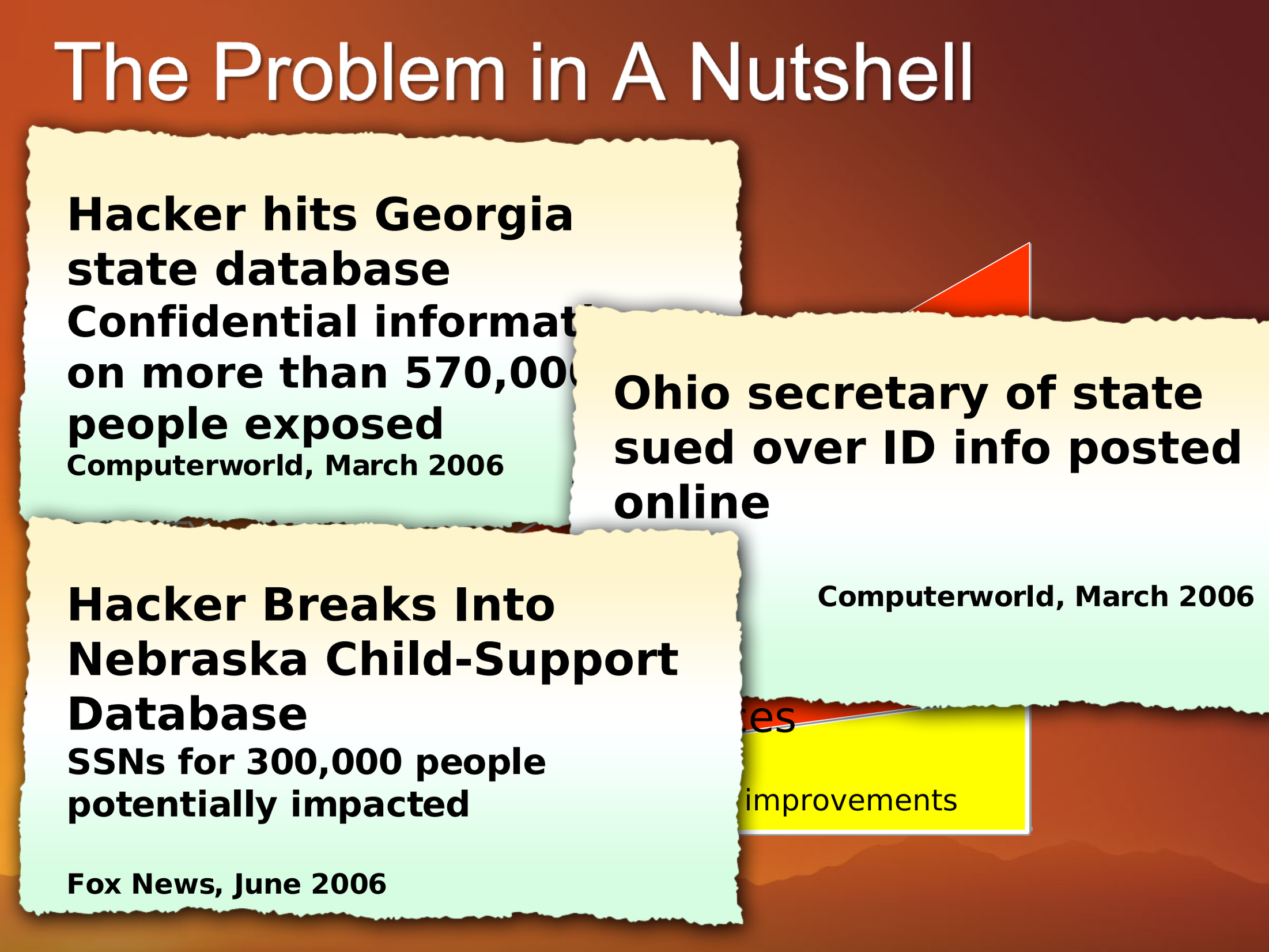
Hacker hits Georgia state database
Confidential informat
on more than 570,00
people exposed
Computerworld, March 2006

Ohio secretary of state sued over ID info posted online

Computerworld, March 2006

Hacker Breaks Into Nebraska Child-Support Database
SSNs for 300,000 people potentially impacted

Fox News, June 2006



Specific Business Challenges

- Keep systems secure from malware/spyware
  - Rootkits, keystroke loggers, bots
  - Worms, viruses
  - Phishing attacks
- Keep inside information inside
  - Lost/stolen laptops and desktops
  - Hacking
  - Accidental/intentional information leaks
  - Decommissioned/donated PCs
- Simplify identity and access management functions

Fundamentals

Securing the codebase and services

Security Development Lifecycle

Product Inception

- Assign security advisor
- Identify security milestones
- Plan security integration into product

Design

- Define security architecture and design guidelines
- Document elements of software attack surface
- **Threat Modeling**

Standards, best practices, and tools

- Apply coding and testing standards
- Apply security tools (fuzzing tools, static-analysis tools, etc)

Security Push

- Security code reviews
- Focused security testing
- Review against new threats
- Meet signoff criteria

Final Security Review

- Independent review conducted by the security team
- Penetration testing
- Archiving of compliance info

RTM and Deploymen

Security Response

- Plan and process in place
- Feedback loop back into the development process
- Postmortems

Windows Service Hardening
Defense in depth

- Services run with reduced privilege compared to Windows XP
- Windows services profiled for allowed actions to the network, file system, and registry
- Designed to block attempts by malicious software to make a Windows service write to an area of the network, file system, or registry that isn't part of that service's profile

Threat And Vulnerability Mitigation

Protect against malware and intrusions

Internet Explorer 7

Social Engineering Protections

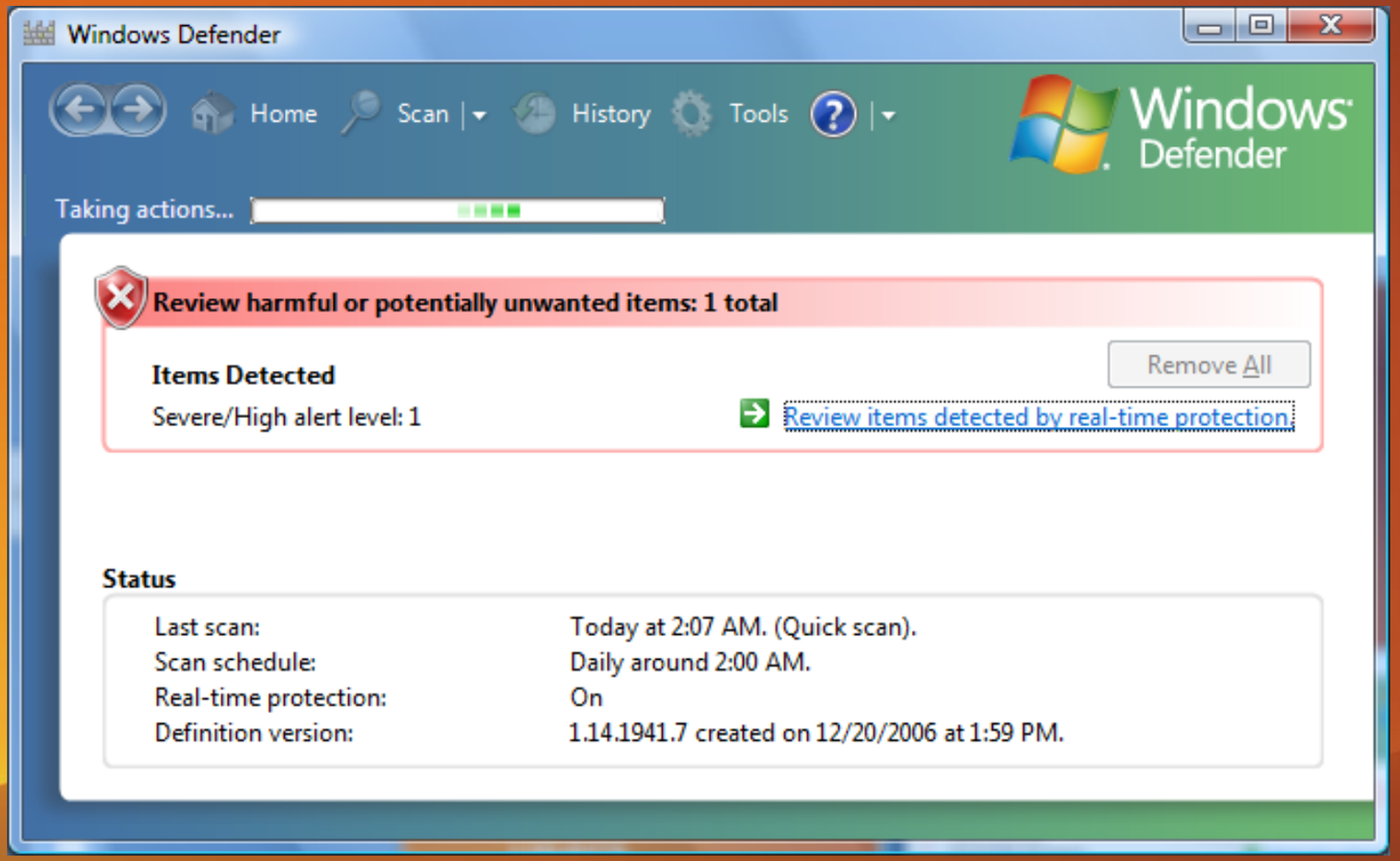
- Phishing Filter and Colored Address Bar
- Dangerous Settings Notification
- Secure defaults for IDN

Protection from Exploits

- Unified URL Parsing
- Code quality improvements (SDLC)
- ActiveX Opt-in
- Protected Mode to prevent malicious software

Windows Defender

- Improved Detection and Removal
- Redesigned and Simplified User Interface
- Protection for all users



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Thwarting Malware

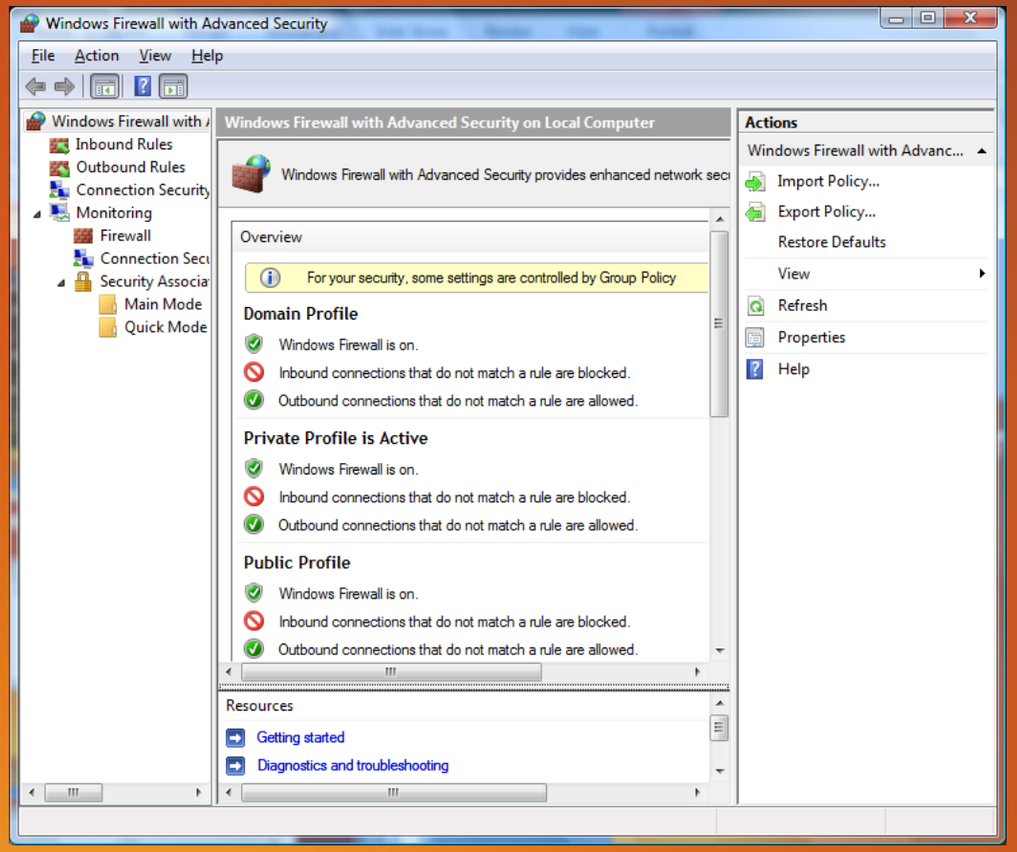
Client Anti-Malware Offerings

	MSRT	Windows Defender	Windows Live Safety Center	Windows OneCare Live	Microsoft Forefront
Remove most prevalent viruses	✓		✓	✓	✓
Remove all known viruses			✓	✓	✓
Real-time antivirus				✓	✓
Remove all known spyware		✓		✓	✓
Real-time antispyware		✓		✓	✓
Central reporting and alerting					✓
Customization					✓
Cost	No charge	No charge	No charge	$50/3 PCs	TBD

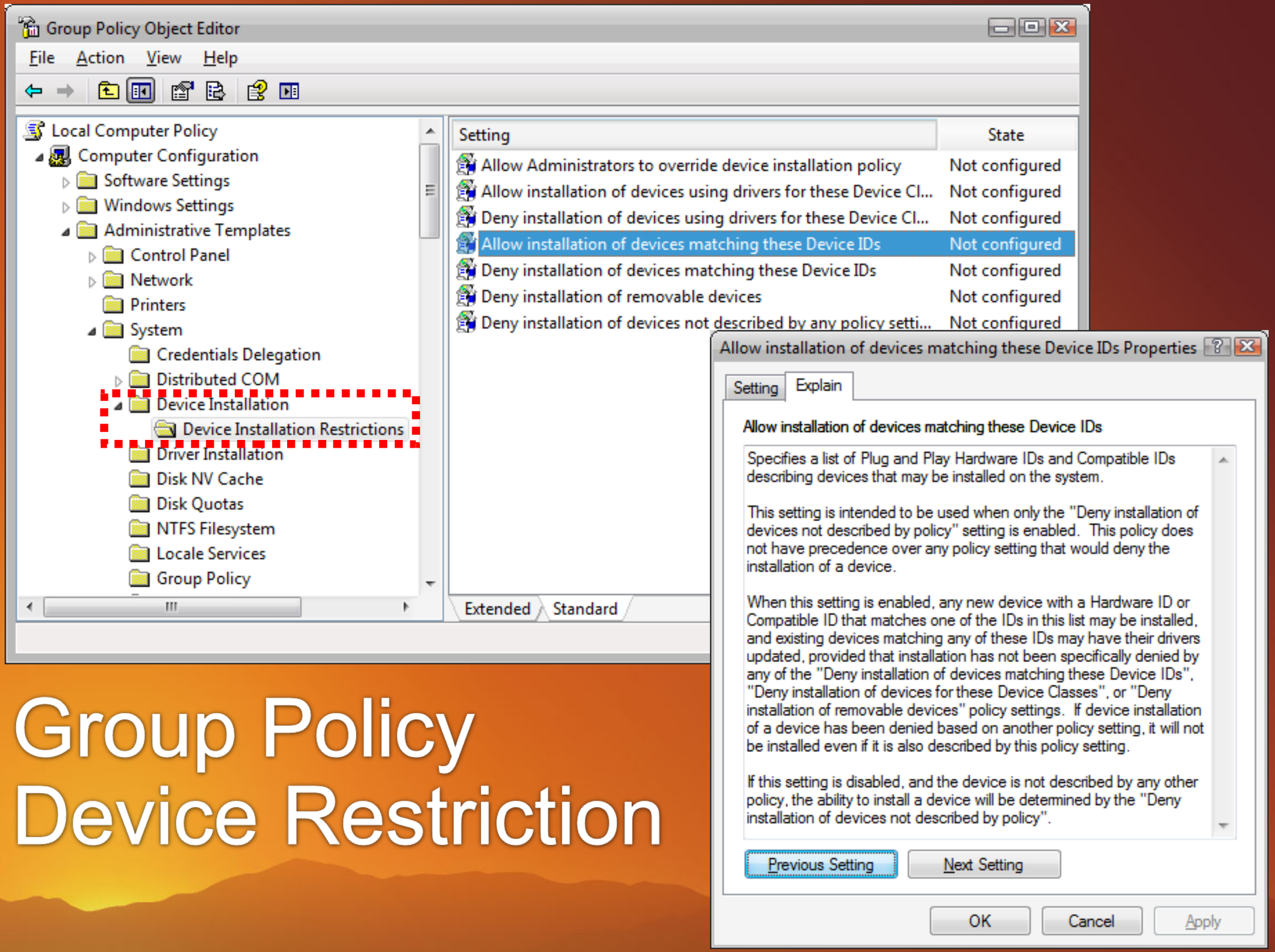
FOR INDIVIDUAL USERS

FOR

Windows Vista Firewall



- Combined firewall and IPsec management
  - New management tools – Windows Firewall with Advanced Security MMC snap-in
  - Reduces conflicts and coordination overhead between technologies
- Firewall rules become more intelligent
  - Specify security requirements such as authentication and encryption
  - Specify Active Directory computer or user groups
- Outbound filtering
  - Enterprise management feature – not for consumers
- Simplified protection policy reduces management overhead



Group Policy Device Restriction

Identity And Access Control

Enable Secure Access to Information

User Account Control

Challenges

Most users run with full administrator privileges all the time

- At risk from malware
- Can't manage desktops or enforce policy
- Expensive to support

Difficult to run a standard user

- User can't perform many tasks
- Many applications don't run

Windows Vista Solution

Easier to Run as Standard User

- Users can do more on their own
  - Change time zone, power settings, VPN, and more
  - Install approved devices
  - Admin commands clearly marked
- Higher application compatibility
  - File and registry virtualization

Greater Protection for Admins

- Software runs with lower privileges by default
- Administrator provides consent before elevation

Standard Users Can Do More

- View system clock and calendar
- Change time zone
- Configure secure wireless (WEP/WPA) connection
- Change power management settings
- Create and configure a Virtual Private Network connection
- Add printers and other devices that have the required drivers installed or allowed by IT policy
- Disk defragmentation is a scheduled background process
- Shield icon consistently marks what actio a standard user and cannot do

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User Account Control

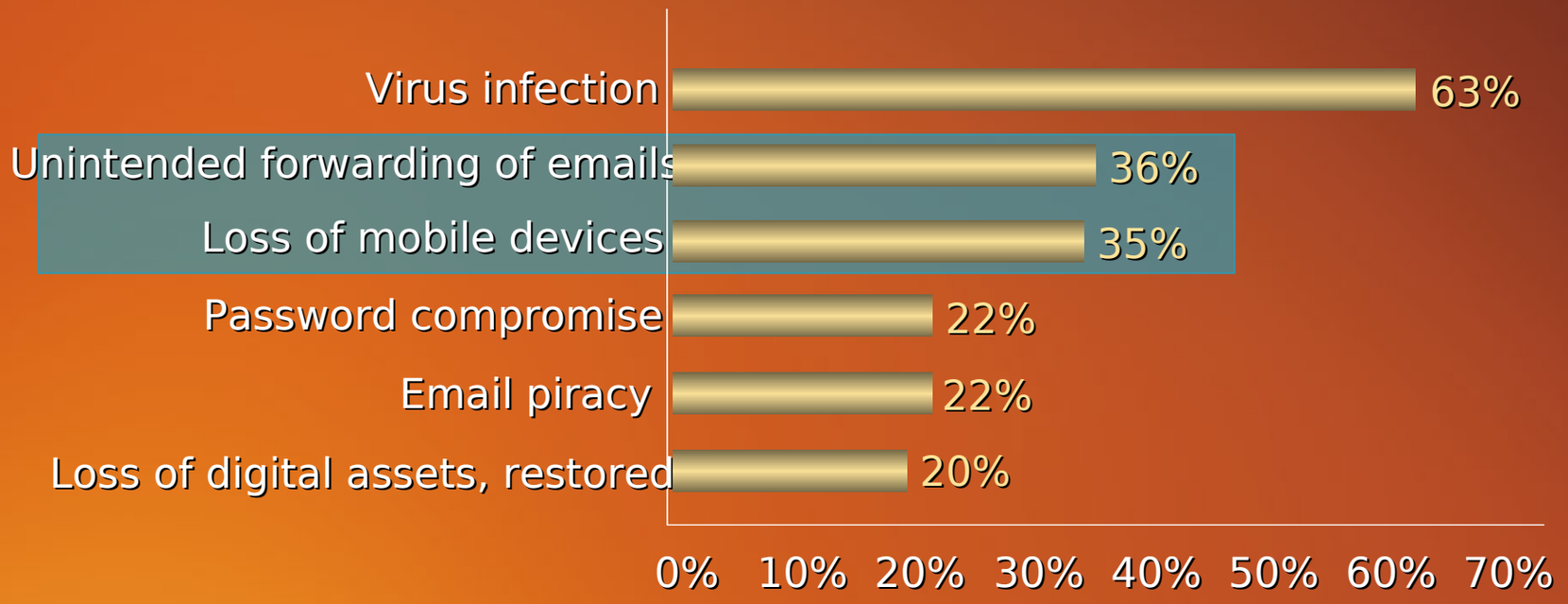
Improved Auditing

- More Granularity
  - New subcategories for Logon, logoff, file system access, registry access, use of administrative privilege
- New Logging Infrastructure
  - Easier to filter out “noise” in logs and find the event you’re looking for
  - Tasks tied to events: When an event occurs, such as administrative privilege use, tasks such as sending an Email to an auditor can run automatically

Information Protection

Protect Corporate Intellectual Property and Customer Data

Information Leakage Is Top-Of-Mind With Business Decision Makers



"After virus infections, businesses report unintended forwarding of e-mails and loss of mobile devices more frequently than they do any other security breach"

Jupiter Research Report, 2004

Information Protection Threats

Internal threats are just as prevalent as external threats

Accidental

Loss due to carelessness

- Careless forwarding of documents and Emails
- Machine disposal or repurposing without data wipe
- Data lost in transit
- Confidential data copied via USB and other mobile devices

Intentional

Data intentionally compromised

- Untrusted network administrator accesses unauthorized data
- Offline attack on lost/stolen laptop
- Forwarding of internal-only Email and documents to external parties

Targeted

Thief steals asset based on value of data

- Branch office server containing directory or database
- CxO or government official laptop or mobile device
- Thief plugs external storage device into machine to copy data

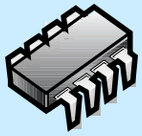
BitLocker™ Business Value

- Full Volume Encryption enhances the security value of all registry, configuration files, paging files, and hibernation files stored on the fully encrypted volume
  - Encryption of the hibernation file
    - Protects against hibernation of laptop with sensitive docs open
- Destroying root key allows for the safe re-deployment of corporate hardware by making previous data inaccessible
  - Not an end-user feature
  - Strong interest in enterprise IT
- Recovery available to any customer with access to a phone and their Administrator

Spectrum Of Protection

BDE offers a spectrum of protection allowing customers to balance ease-of-use against the threats they are most concerned with.

Ease of Use



TPM Only

"What it is."

Protects against :
SW-only attacks

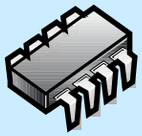
Vulnerable to : HW attacks

Dongle Only

"What you have ."

Protects against :
All HW attacks

Vulnerable to :
Losing dongle
Pre-OS attacks



TPM + PIN

"What you know ."

Protects against :
Many HW attacks

Vulnerable to : TPM breaking attacks

TPM + Dongle

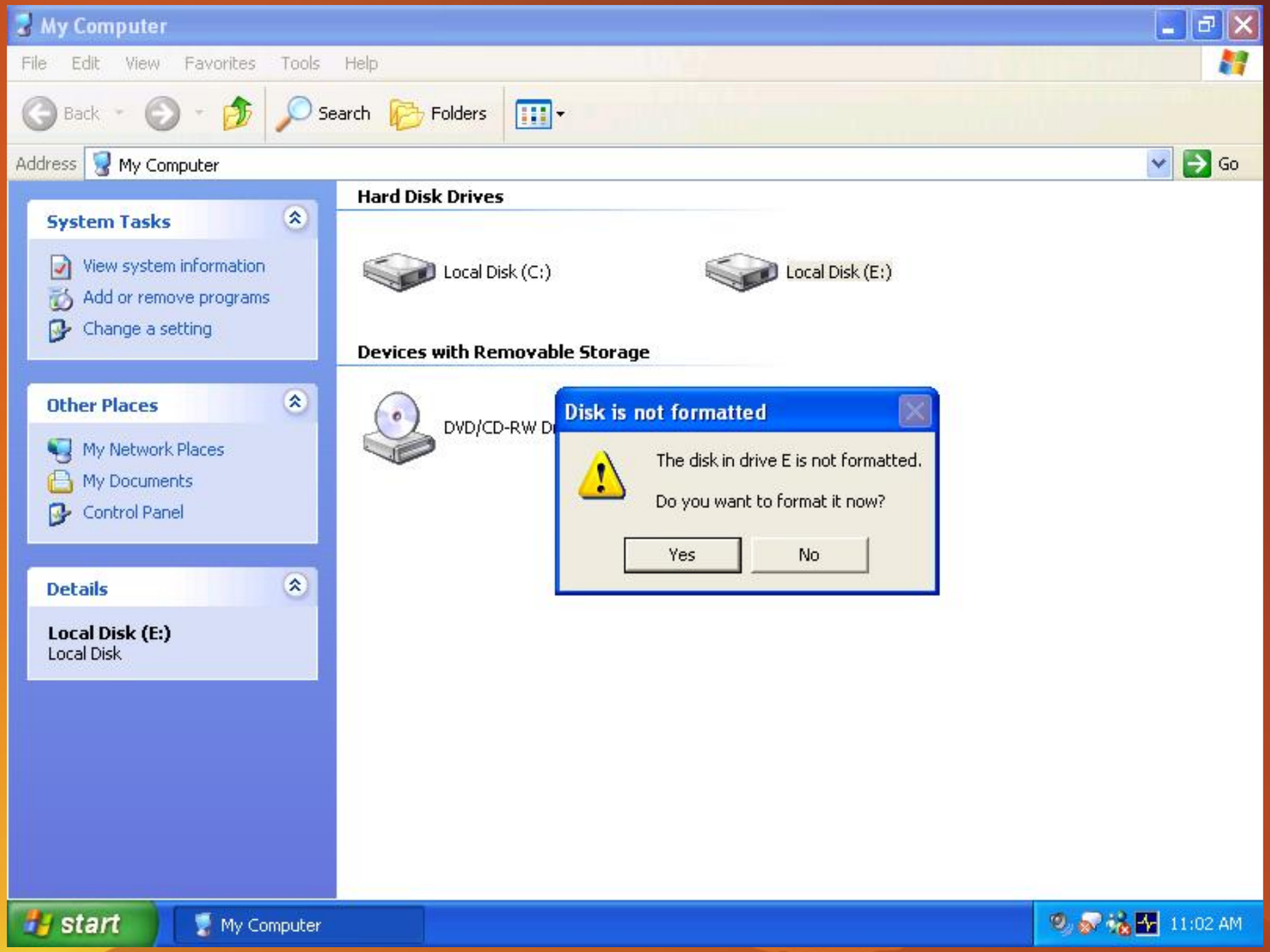
"Two what I have's."

Protects against :
Many HW attacks

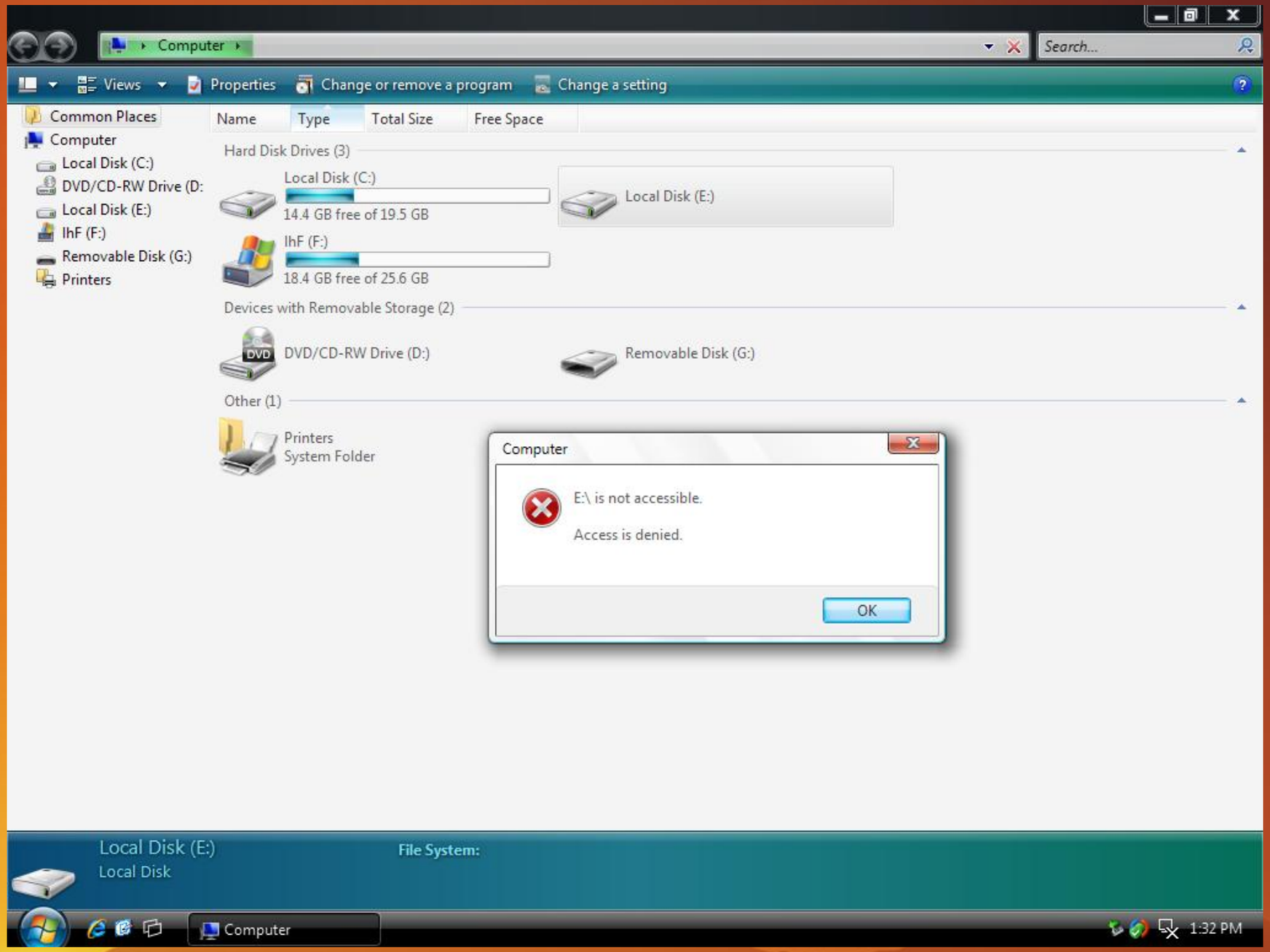
Vulnerable to : HW attacks

Security

Bitlocker™ Drive Appears In XP



Bitlocker™ Drive Appears In Vista



Bitlocker™ Drive Appears In Linux

```
fedora core 4, smp stentz
==========================================
[root@localhost douglas]# /sbin/fdisk -l

Disk /dev/sda: 80.0 GB, 80026361856 bytes
255 heads, 63 sectors/track, 9729 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

Device Boot      Start         End      Blocks   Id  System

/dev/sda1   *           1        2805    22528000    7  HPFS/NTFS

Partition 1 does not end on cylinder boundary.

/dev/sda2            2805        5677    23068672    7  HPFS/NTFS

Partition 2 does not end on cylinder boundary.

/dev/sda3            5737        8797    24576000    7  HPFS/NTFS

Partition 3 does not end on cylinder boundary.

/dev/sda4            8798        9729     7486290    5  Extended

/dev
/dev
```

1

```
Disk
/dev/sdb: 517 MB, 517521408 bytes
255 heads, 63 sectors/track, 62 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

Device Boot      Start         End      Blocks   Id  System

/dev/sdb1   *           1          63      505360+   e  W95 FAT16 (LBA)

Partition 1 has different physical/logical endings:
     phys=(61, 254, 63) logical=(62, 234, 12)

[root@localhost douglas]# mount /dev/sda2 /mnt/ntfs2 -t ntfs -r -o umask=0222

mount: wrong fs type, bad option, bad superblock on /dev/sda2,
       missing codepage or other error

ome cases useful info is found in syslog - try

g | tail  or so

t@localhost douglas]
```

3

```
# dmesg | tail

sdb: Mode Sense: 43 00 00 00

sdb: assuming drive cache: write through

 sdb: sdb1
Attached scsi removable disk
sdb at scsi2, channel 0, id 0, lun 0
usb-storage: device scan complete

SELinux: initialized (dev sdb1, type vfat), uses genfs_contexts
NTFS driver 2.1.22 [Flags: R/W MODULE].

NTFS-fs error (device sda2): read_ntfs_boot_sector(): Primary boot sector is
invalid.

NTFS-fs error (device sda2): read_ntfs_boot_sector(): Mount option
errors=recover not used. Aborting without trying to recover.

NTFS-fs error (device sda2): ntfs_fill_super(): Not an NTFS volume.

[root@localhost douglas]#
```

2

Linux Bitlocker volume errors

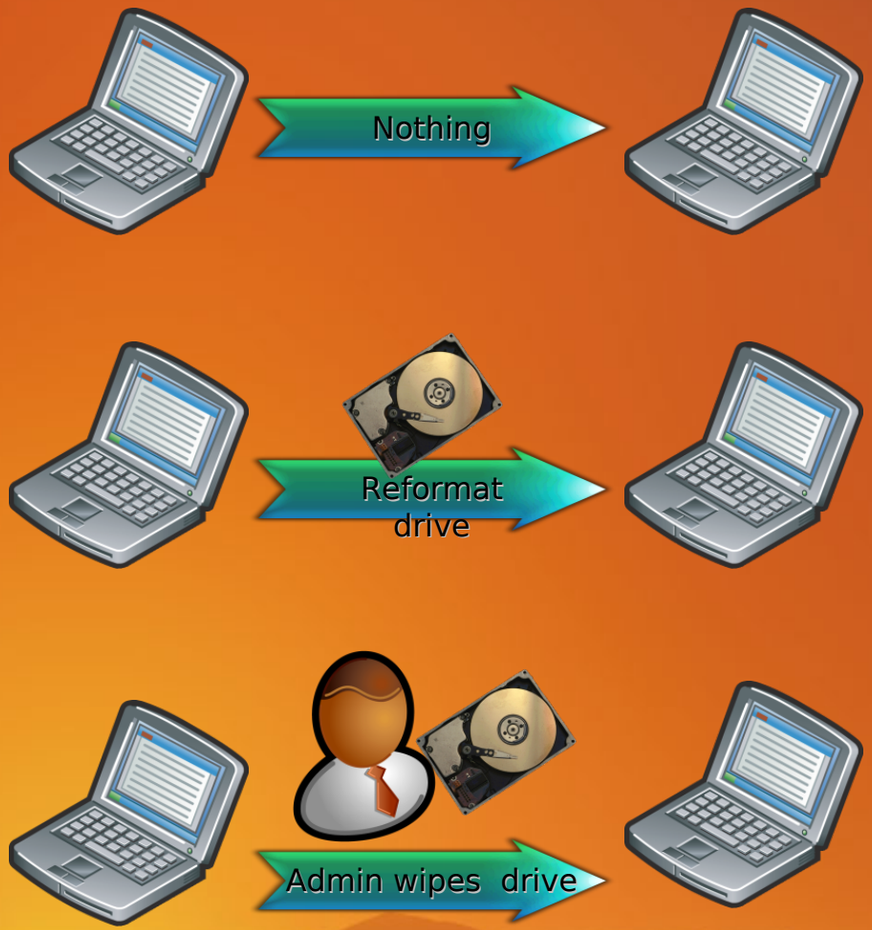
1.Fdisk reads partition table... thinks fve partition is ntfs

2. wrong fs type, bad option, bad superblock on
/dev/sda2,
missing codepage or other error

3. Primary boot sector is invalid, Not an NTFS volume

Decommissioning

Normal **versus** **“Force Recovery”**



Windows Imaging
Four major components

- The imaging format
  - The file structure that holds the image(s)
  - Install.wim and boot.wim
- Tools
  - Tools such as imageX to capture, edit the WIM files
- APIs
  - APIs to enable tools to manipulate WIM images
- Enabling technologies
  - File system filters, boot filters etc

Deployment Design Innovations

Windows Imaging

- File based format – hardware independent
- Non-destructive upgrades
- Multiple images in one WIM file – space and complexity benefits
- Single instanced and compressed – small size
- Bootable, serviceable – flexibility

Modularization

- Add/remove optional components – drivers, patches, languages
- Image customization to certain degree
- Higher reliability
- Language independence
- Consistency across phases

- Single worldwide image
- Offline image servicing

Reduce the number of images!

ImageX

demo

Windows Vista Information Protection

Who are you protecting against?

- Other users or administrators on the machine? EFS
- Unauthorized users with physical access? BitLocker™

Scenarios	BitLocker	EFS	RMS
Laptops	●		
Branch office server	●		
Local *single-user* file & folder protection	●		
Local *multi-user* file & folder protection		●	
Remote file & folder protection		●	
Untrusted network admin		●	
Remote document policy enforcement			●

Some cases can result in overlap. (e.g. Multi-user roaming laptops with untrusted network admins)

Desktop Optimization Pack

The Next Generation of SA Technologies

Dynamic Desktop Solutions

Microsoft SoftGrid: Application Virtualization

Microsoft Asset Inventory Services

Microsoft Diagnostic and Recovery Toolset

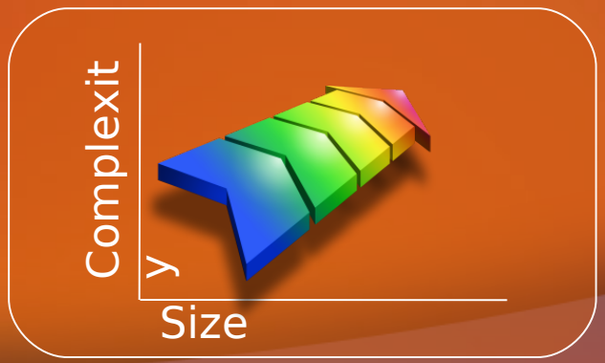
Microsoft Advanced Group Policy Management

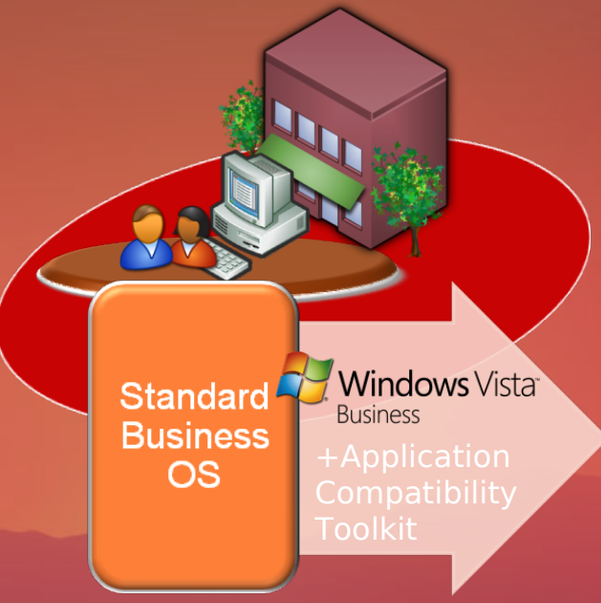
Accelerate deployment and increase manageability

- Dynamically deliver the virtual application solution
  - Minimize application compatibility issues
  - Transform applications into centrally managed services available when and where needed
- Translating Software Inventory into business intelligence
- Powerful tools to accelerate desktop repair
- Enhancing group policy with change management

Desktop and Infrastructure Optimization

Infrastructure complexity drives need for management technology





Some organizations may benefit from just using Vista Business with minimal application compatibility testing

Most Enterprise organizations require more formal procedures for application lifecycle, problem, change and asset management

Many organizations require a more robust asset, application and end to end infrastructure administration definition

Ready For A New Day

Are You Ready for a New Day?

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Thank You

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Michael.Greene@microsoft.com

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Microsoft Office

Windows Vista™

Microsoft Exchange Server 2007

Winter Quarter 2007 Tech Talks

Save the date!

February 7: *Data Security at Northwestern*

February 21: *Support with NUIT*

University Library, Forum Room, Noon – 1 p.m.

Microsoft Office Windows Vista Microsoft Exchange Server 2007