Who really knows Windows 8?

olivnie **11 Dec 2012 8:33 AM** | **2**

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Windows 8 is FAR more than simply a new UI

Windows 8 "under the covers!"

Picking out the differences between Windows XP and Windows 8, improvements have been enormous and have remained unnoticed by a lot of people. So here's a glimpse of new features that are all in Windows 8. In sum, the following three unsorted (net even complete) lists of new Features give an impressive insight into the innovation thrusts of the different versions starting with Windows Vista to Windows 8. Naturally, the list would be much longer - especially if we considered Windows Server as well, which we won't in this article. Windows Server 2012 on its own provides so many new features that an own list would even be more extensive than the ones provided herein.

It is definitely worth to have a look on the documentation since Windows is simply unbeatable regarding security, manageability,automation and customization.

New features within Windows Vista

User Account Control	User Interface Privilege Isolation	Live Icons
Restart Manager	Session 0 Isolation	Quick Search
Aero	Credential Providers	Cancelable I/O
Sidebar	Secure Startup	WPF
Network Access Protection	Windows Feedback Services	Presentation Settings
Sync Center	MMC 3.0	Windows Imaging Format (WIM)
Protected Mode IE	Parental Control	High Resolution/High DPI
Mandatory Integrity Control	IPv6 Dual Stack	Desktop Hardware Acceleration
Resource Exhaustion Diagnostics	Shell Property System	Peer Name Resolution Protocol
Stacks	Crypto Next Generation	Search Folders
Single Binary	Glass	Workflow Foundation

Power Management	Windows Display Driver Model	Flip3d
Windows Service Hardening	Transactional Registry	Windows Defender
SuperFetch	Windows Desktop Manager	Windows Filtering Platform
New Explorers	WCF	Writeable SIDs
Winlogon Rearchitcture	Registry/File Virtualization	Bitlocker and MBAM
Monad Scripting Shell	XAML and Segoe UI Font	Enhanced Group Policy Scenarios
Ink Analysis	Info Card	Enhanced Reliability Monitor
Windows Sideshow	Startup Repair Toolkit	Internet Explorer 7-9
Windows Resource Protection	RSS Platform	IE Hardware Accelaration (IE 9)
Ad-hoc Meeting Networks	New Event Viewer	Java-Script native code Jit- Compilation (IE9)
WS-Management	Eventing and Intrumentation	Process Elevation
Windows Installer 4.0/4.5	XML Paper Specification	Protected Processes
Function Discovery API	.Net Framework 3.0	Hidden Per-User-COM (Elevated Processes)
New Open/Save Dialog	Process Dump in Taskmanager	Improved Compiler Defenses (GS, ASLR, DEP, SAFESEH, robust, etc.)
User Mode Driver Framework	Open Package Specification	UI Access Application
Windows Disk Diagnostic	Wizard Framework	TrustInfo - Application Manifest
New Direct Access	New Security Model	> 320 Shims
Directory Junctions	NTFS English language	Separation of OS and MUI
Automatic Compat. Mitigations (>5.500 Applications)	New Firewall (Profiles, etc.)	New Security Center

| IIS 7.0 | Data Protection API | ACT 5.0 |

New features within Windows 7

User Account Control Slider	New Explorers	Enhanced MBAM
New Taskbar	Scenic Ribbon Control	BuiltIn Touch Platform
Taskbar Thumbnails	Process Cloning for Debugging	BranchCache ™
Pinned Icons	Display Driver Model (WDM 1.1)	DirectAccess ™
Thumbnail Buttons	Customized Troubleshooting	AppLocker ™
Thumbnail Preview	Sensors and Locations	Sensors and Locations
Thumbnail Jumplists	Desktop Gadgets	New, Richer Support Tools
Thumbnail Overlay Icons	Memory Diagnostics	Shell Rearchitecture – Search, Explorer, CMD-Shell
Preview Pane	Network Location Awareness	Windows Installer 5
Reading Pane	Network Connection Timeout Event	Customized Troubleshooting
Folder/Document Library	VPN Reconnect	Internet Explorer 8-9
Metadata Pane	Bitlocker to go	IE Hardware Accelaration (IE 9)
People Near Me	Powershell BuiltIn	Java-Script native code Jit- Compilation (IE9)
Search Providers	.Net Framework 3.5	Improved Compiler Defenses (GS, ASLR, DEP, SAFESEH, robust, etc.)
Aero Snap / Shaking	IE 9 Smart Screen and Tracking Protection	Event Viewer Tracing capabilities
Compatibility - Application Manifest (OS Switch Points)	Direct Access	RPC changes, Asynchronous I/O changes
Start Menu Search	New Search Engine	New Logo Certification

DaRT 7.0	NUMA	New Task Scheduler
Concurrency Runtime	Background Services	WERR
CPU Multi Processing and Core Parking	Task Parallel Library (TPL)	New Windows Update - Less Reboots
>360 Shims	Automatic Compat. Mitigations (> 6.500 Applications)	Visibility of Firewall Port configuration in Resource Monitor
Compatibility Assistant	Boot Performance Improvements	Kernel Changes for Flexibility and Extensibility
New Firewall	New BITS service	Server RemoteFx Support
VHD Boot	XP Mode	Windows Backup
New RDP	Action Center	WERR - Third Party App Update
IIS 7.5	ACT 5.6	New MDT and WAIK
Credential Manager	SecurityCompliance Manager	High Contrast Mode

New features within Windows 8

User Account Control changes	Hyper-V on Client (almost the same as Server 2012 Hyper-V)	CHKDSK improvements with zero downtime (NTFS health)
Internet Explorer 10 with Enhanced Protected Mode	Virtual Network Switch	Powershell v3 In-Box, Powershell Intellisense, Powershell API Help- and Command Generator, New Powershell ISE
Virtual Fibre Channel	SMB 3.0 Attached Storage	Explorer VHD/ISO mount
Guest NUMA Direct	Direct Attached FC HBA	Dynamic Memory
64 TB Dynamic Virtual Disk	64 Logical CPU	VM 10-finger Touch
Extensible Virtual Switch	New Performance Tools	Fast and Fluid UI

Low Power Busses	VM NIC VMQ	VM NIC Teaming
OS BuiIln Smart Screen Filter (Has blocked >1.5B malware and >150M phishing attacks)	New Explorer with Ribbon	IIS 8.0
Do Not Track (DNT) capability	SmartScreen Filter protects third-party browsers	IE10 ASLR Support for none-ASLR aware AddIns
Secure Boot	New Task Manager	Powershell Web Interface
Trusted Boot	Windows to go	New MDT, WAIK, MDOP
Measured Boot	Offline Domain Join	WMI 2.0
Remote Attestation Service	New Activation Model	New App Certification
Remote Applications	Connected Standby	Virtual Smartcards
Windows RT (Windows on ARM)	BuiltIn USB 3.0 Support	Direct Access improvements
TPM 2.0	BuiltIn Bluetooth 4.0 Support	Branch Cache Improvements
UEFI 2.3.1	New Driver Model (WDM 1.2)	DaRT 8.0
Storage Spaces – Thin/Thick Provisioning	Hunderte neuer Powershell CMDLets (z.B. 162 für Hyper-V)	New VDI
New Windows Defender (Forefront Scan Engine)	New Firewall with Packet Filtering	Internet Explorer 10 64-Bit with 32-Bit Support
Fast Boot	PS ISE integrated CMD List	.Net Framework 4.5 SP1
Hybrid Shutdown	Improved, comprehensive Compiler Defenses (GS, ASLR, DEP, SAFESEH, SEHOP, Heap Spray, robust, etc.)	Async APIs (85% of WinRT APIs and included in .Net 4.5)
High Contrast Mode changes	Office 2013 RT (Word, Excel, PowerPoint, OneNote included in Windows RT edition)	Windows RT APIs and new Kernel Services (e.g. Background Tasks, Suspended Apps)

Maintenance Tasks	Suspended Desktop Application (Windows RT)	Suspended Apps
Shared Kernel – Phone, Tablet, Notebook, PC	Offloaded File/Folder Operation (ODX Protocol)	New Application Model – Platform neutral (Intel/AMD/ARM)
Windows to go parse-through VM	Windows Store App Resource Protection	OPP Brokered API Isolation
Live Tiles	App Contracts – Secure App Data exchange (Search, Share, FilePicker, PlayTo)	Office 2013 Student (Windows RT)
RICH Touch Support 10-finger Touch Support	Secure Device Access – App Capabilities	Process Isolation – Low Integrity App container
VM 3D graphic support	Sidebar Removal	HTML 5 Support
Search throughout apps	New Windows 8 OS Switch Point via App Manifest	StartScreen Mouse- and Keyboard Support
File History	Windows Refresh / Reset	Windows 7 Backup included but deprecated
Optical Disk Power Management	Windows Store App Forward Compatibility	Flat Desktop Design and Improvements
Windows Store (Link to certified Desktop Apps possible)	Windows Store Apps using JavaScript and HTML	Device Encryption and Bitlocker
Windows Store Installer	Sideloading Installation	Windows Intune Support
WACK, WADK, WSDK, WDK	ACT 6.0	New Compatibility Assistant
New Windows Update – Less Reboots	Startup Application Diagnostics	Enhanced Cloud Integration – Linked Microsoft Account
Surface RT Ports for HDMI, USB, Bluetooth 4.0, SDCard	Convertible Devices Support	Support for almost infinite number of Hardware Formfactors
> 385 Shims	Automatic Compat. Mitigations (>7.500 Applications)	PowerShell Web Service Interface
Remote Attestation Service	Settings Roaming	Huge number of different Device-Formfactors

Web Setup (ESD)	No Installation without NX (DEP)	Silent (automatic) Activation
UEFI CSM Boot (Class 2)	Connected Account	Automatic Startup Repair UI
Assessment Execution Engine	Compression API	Data Deduplication API
App Packaging and Deployment	DirectComposition	Direct Manipulation
DirectXMath	Help API	iSCSI Software Target API
Operation Recorder	Steps Recorder Changes	SMB Management API
User Access Logging	User State Management API	Web Socket Protocol Component API
Windows Connection Manager	Windows Storage Management API	XAudio2
XInput	Event Tracing	IP Helper changes
MIB changes	Native Wifi changes	Network Management changes
UEFI CSM Boot (Class 2)	Connected Account	Automatic Startup Repair UI
Direct2D changes	DirectWrite changes	Printing changes
UI Automation changes	Windows Sockets changes	Software Input Panel
Assessment Execution Engine	Compression API	Data Deduplication API
Surface Pro with ultra thin digitizer		
Start Button replaced by link to new Start-Screen	**Technical Start Menu**	**Windows Style UI – New Start Screen**

By the way, Windows 8 has a new start-button which references to the new Start Screen. If you counted the number of required clicks or keystrokes to start a program in Windows 7, you will see you won't need more rather less clicks when using Windows 8.

Incidentally, the most important technical features are still accessible in the "Technical Start Menu" with a right mouse click (bottom left corner).

Just looking at the touch ability of Windows 8 in the new Start Screen and in the new Windows Store applications is impressive and for this I'm likely adapting on a new operation system, which is in my opinion to learn easily within a few minutes.

In addition, the new type of handling opened an unprecedented comfort. Here a quote of a colleague, who appreciates

the new Start Screen as much as I do:

„My personal Highlight is the ability to interact in totally new ways compared to other Operation systems.

I simply enter a term and Windows 8 lets me know all possible alternatives for it. So it shows you the results Windows 8 finds for the term in "Apps", "Files" and "Settings". What is even more interesting is that Windows 8 tries to process across apps. "Tie" for example is being looked for in Bing and eventually you might see what different types of ties and knots exist. Using an app might lead me to a shop where I find offers. Otherwise I can just search through an auction app for auctions. The "Share" function is just amazing: I may easily share the found ties with my wife and find out, whether she likes the tie as well."

Looking at how many powerful features inside Windows 8 are we can definitely call it an impressive operating system which hadn't been seen by the world before. It's the most feature rich client operating system so far (Windows Server 2012 has much more than the client).

First of all, Windows itself benefits from these features and therefore reaches a new dimension concerning security, manageability, usability, performance and much more. Furthermore it is extremely energy saving so even with older hardware battery life has been raised a lot.

Also administrators profit by substantial increases Windows 8 had in terms of manageability, automation and security, which results in potential reduction of operating costs.

Additionally, software developer benefit from those features since many of them may directly be addressed or integrated in their own projects and thereby increasing the quality, safety and performance. Also, development costs can substantially be reduced.

Finally, all users profit from the new Features – no matter if they use Windows 8 at home or at work. If the operating System and related apps are secure, reliable and fast, users are the ones to really make use of it. Not to mention that many features are of course available to the user – if he is aware of them.

There is one question remaining: "Who really knows Windows 8?"

It would be a pity if the entire discussion about Windows 8 would be reduced on a new type of user interface or usability.

Therefore, I to highlight my favorite Top-10 Features in Windows 8 as a separate blog series.

Oliver Niehus, Microsoft.

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Comments

kinokijuf
30 Dec 2012 3:23 PM

I like how "Sidebar Removal" is a "feature". ☺

tonicer
22 Oct 2013 6:53 AM

I like how less customizeability is a feature. How can i get rid of the volume toaster indicator popup? **http://i.imgur.com/xQqqMyc.jpg** That ugly thing.