

Windows Optimized Desktop

Product Guide



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Overview

In today's environment, knowledge workers expect to be able to access data and applications from a wider array of PCs and from an increasing range of locations. This often causes concern for IT professionals, who are responsible for the integrity of the corporate network and business data. The Windows® Optimized Desktop can help relieve the tension between end users and IT professionals by providing the tools to balance the needs of both groups.



The Windows Optimized Desktop encompasses the technologies in the following Microsoft products: Windows® 7 Enterprise Operating System, Forefront™ Client Security, the Microsoft® Desktop Optimization Pack (MDOP), Windows Server® 2008 R2, and Microsoft® System Center.

This whitepaper will discuss the trends leading enterprises to consider new ways of managing their PCs. It will then show how the Windows Optimized Desktop can help organizations support their end users by helping IT make people productive anywhere, manage risks through enhanced security and control, and reduce costs by streamlining PC management.

Critical to success in achieving desktop optimization is a roadmap that defines and prioritizes concrete steps to advancement. The Microsoft Core Infrastructure Optimization (Core IO) model provides that roadmap. The Core IO model helps organizations to evaluate their placement on a progression of four IT maturity levels from Basic to Dynamic and provides a complete set of guidance, tools, and resources to help advance through the levels toward greater desktop optimization.

Today's IT Trends and Challenges

Five trends in client computing increasingly affect the way enterprises do business: Cost, Consumerization, Compliance, Contingency, and Carbon-neutrality (or "Green IT"). Responding to these trends requires an increased focus on end user flexibility while maintaining security and manageability of an organization's client PCs.

Cost

Rapid cost savings are essential given today's economic environment. On average, large companies spend between \$230 and \$1,320 per PC per year just in PC labor¹. User support costs alone can represent up to \$200 per PC per year. Adopting the Windows Optimized Desktop to help empower users, manage desktop resources and ensure flexibility can significantly reduce these costs.

¹ IDC

Consumerization and Mobility

The wide availability of affordable and powerful consumer electronic devices has given end users an influential role in enterprise technology adoption. Many knowledge workers now have more computing power and bandwidth at home than they have in the office. As the “digital native” generation – those currently in their teens and early 20s – enters the workforce, they will expect to have the flexibility of anywhere access to applications and data across a range of devices. This expectation of mobility is one of the most direct outcomes of this consumerization. Most employees now have laptops, but laptops can be more expensive to manage than desktops because they can present increased data and application security risks. The Windows Optimized Desktop includes technologies and management tools that reduce the risks posed by mobile devices, whether they are laptops, portable USB devices, or smartphones.

Compliance

Businesses spent \$32B in 2008 on governance, risk management and compliance, and the number and complexity of governance, risk management, and compliance mandates is on the rise. Ensuring the manageability of desktops and automation of processes is the best way to ensure compliance activities are repeatable, sustainable, and cost effective². The Windows Optimized Desktop provides IT professionals with visibility into possible risks and exposure of corporate data and helps organizations meet compliance expectations responsibly.

Contingency

For many companies, responding to unexpected business disruptions would involve several days or weeks of downtime while infrastructure is changed reactively. However, to be competitive, companies must be able to adapt almost immediately when business disruption happens. The Windows Optimized Desktop provides end users with the flexibility to access their applications and data from multiple PCs, so that if an emergency prevents them from coming into the office, they can access work data and applications from home.

Carbon-neutral (“Green IT”)

Companies are learning to adapt to the political, social, economic and fiscal drive toward a global low-carbon economy. Businesses that can turn this challenge into an opportunity will be in a stronger position to thrive in a world dealing with the impacts of climate change. Forrester predicts that spending on Green IT will increase to almost \$5B by 2013. The Windows Optimized Desktop includes tools that help companies save power through energy efficiency, improved management of desktop PCs, and increased productivity that reduces the time PCs must be online.

These five trends amplify the existing tension between the end user’s desire for flexibility and the IT professional’s need to enhance security and maintain control. End users expect anytime, anywhere

² AMR Research: “The Governance, Risk Management and Compliance Landscape” 2008

access and device independence to get their work done. However, IT professionals demand predictable configurations and tight data, application, and network security.

End User Needs: One Size Does Not Fit All

In addition to responding to challenges around cost, consumerization, compliance, contingency, and carbon-neutrality, enterprises must also address the diverse needs of different types of users in today's organization. Mobile and Office workers need to securely access data and applications from anywhere, contractors need access to their applications while the data inside those applications is secured and controlled. Task workers need access to a limited set of applications and functionality, but need the same applications from any workstation, since they often use a different workspace during each shift. And all types of workers may occasionally need to access their workspace from home when they cannot get to the workplace. For many organizations, these scenarios are difficult to achieve. However, some have made them a reality through desktop optimization and adopting the Windows Optimized Desktop.

The Windows Optimized Desktop: A New Computing Paradigm



Figure 2: Dependencies create complexity

Supporting diverse end user scenarios has been difficult and expensive in the past because the desktop computing model has traditionally been one where the operating system, applications, and user data are bonded to a single computer (See Figure 2). In this model, changes to any part of the computing stack require extensive testing to ensure compatibility with other parts of the stack. For example, application upgrades could require several weeks of testing

to ensure full compatibility with the operating system and other installed applications.

The Windows Optimized Desktop represents an entirely new and different way of thinking about the computing stack. Rather than binding the parts of the stack to a specific hardware device, the Microsoft Optimized Desktop breaks them apart and allows each to be managed independently (see Figure 3).

The layers can then be brought together dynamically on physical or virtual PCs and IT can manage each layer separately from the others using the management technologies in MDOP and System Center, which present a consistent management view across physical and virtual clients. This allows applications, data, and user settings to follow the user rather than the device – all while ensuring a



Figure 3: Separation through virtualization creates flexibility

balance between flexibility and control.

The Windows Optimized Desktop encompasses all the technologies in Windows 7 (such as Internet Explorer™ 8), the Microsoft Desktop Optimization Pack (MDOP), Windows Server, and System Center. These technologies support the combined value of the Windows Optimized Desktop in helping IT make people productive anywhere, manage risks through enhanced security and control, and reduce costs by streamlining PC management.

Windows Optimized Desktop Enterprise Value

When developing the Windows Optimized Desktop, Microsoft interviewed more than 4000 enterprise customers worldwide. These customers described their challenges with serving users that are in different locations around the world and providing the same level of access to branch users as those located in the corporate headquarters. They also described their challenges with controlling applications and data and keeping control of costs both in the datacenter and on the desktop.

The Windows Optimized Desktop helps make people productive anywhere by providing access to data and applications from anywhere, and by helping end users complete everyday tasks faster and easier. The Windows Optimized Desktop helps IT manage risks through enhanced security and control by protecting desktop and mobile resources, enforcing compliance with corporate policies, and providing more secure Web browsing. The Windows Optimized Desktop helps reduce costs by simplifying desktop and application lifecycle management, improving automation, keeping PCs running smoothly, and allowing IT to manage physical and virtual assets from one place. The next section details which Windows Optimized Desktop technologies provide value in these areas and how the Windows Optimized Desktop addresses the stated customer challenges.

Make People Productive Anywhere

“My enterprise is becoming more dispersed. How do I keep people connected to what

Customer Challenge 1: Make People Productive Anywhere

Provide Seamless access to data from anywhere

Accessing corporate resources from the Internet with DirectAccess
The most common method to access intranet resources is through a Virtual Private Network, or VPN. VPN clients can be hard for mobile users because it takes time and multiple steps to initiate the VPN connection and wait for the PC to be authenticated from the network. Because of this, many remote users avoid the process and

remain disconnected from the corporate network for long periods of time. This becomes a problem not only for the end user, but also for IT, since the disconnected PCs cannot be managed remotely: updates

cannot be installed, and policies cannot be refreshed. This means the computers of remote users stay more out of date and it gets harder and harder to access corporate resources over the VPN.

DirectAccess™, delivered through Windows 7 Enterprise and Windows Server 2008 R2, provides mobile workers seamless access to corporate networks without using VPN. With DirectAccess, users who have Internet access are automatically connected to their corporate network: A user who is sitting in a coffee shop can open his laptop, connect to the internet using the wireless access of the coffee shop and start working as if he were in the office and have full access to corporate resources. And, since users are on the corporate network whenever they have Internet connectivity, the process of distributing updates and refreshing Group Policies is simplified.

It is important to note that deploying Windows 7 alone will not automatically enable DirectAccess. DirectAccess requires at least one server running Windows Server 2008 R2 at the edge of your network. The solution takes advantage of Microsoft's investments in IPSEC and IPv6 to provide secure connectivity even when not on the physical corporate network.

Faster access to data in Branch Offices with BranchCache

More than 90 percent of employees work in branch offices, away from their corporate headquarters. The overall number of branch offices is predicted to go up by about 7 percent each year³. This trend generates new challenges for both end users and IT Professionals.

The challenges revolve around network latency and bandwidth. Branch Offices are usually connected to enterprises with a low-bandwidth link. Hence, accessing corporate data from a branch location is often slow for end users. To resolve customer pain points and increase user productivity, IT Professionals are constantly looking for ways to improve network performance.

BranchCache™, another technology delivered via Windows 7 Enterprise and Windows Server 2008 R2, reduces download time of files to branch office workers. BranchCache keeps a local copy of downloaded files on the branch server, so when other users in the branch access the file, there is no wait for the file to download from the corporate data center again.

This increases user productivity and reduces strain and costs of network resources.

Search Federation and Enterprise Search Scopes

Information workers spend 15 to 30 percent of their time searching for data – documents, spreadsheets, Web sites, and presentations. Their productivity is negatively affected when they have to search

"BranchCache™ is a very good, cost-effective way to accelerate information exchanges without having to buy more bandwidth,"

-David Feng

Technical Director, SYSTEX

SYSTEX
making it happen 精誠資訊

³ Nemertes Research

multiple places for the information they need to do their jobs. In Windows 7, Search Federation lets users search across PCs, internal document portals, including SharePoint sites, and external Web sites that support the OpenSearch protocol directly from Windows Explorer. This gives end users a consistent view of search results, regardless of where the data comes from. The results are identical to those that Windows 7 presents results from searching on the user's PC.

With Enterprise Search scopes in Windows 7 Enterprise, IT administrators can populate links to internal or external on the Start Menu or in Windows Explorer. These links simplify access to select data sources on the network. This makes content on intranet portals in particular more discoverable and accessible. IT administrators can deploy Enterprise Search Scopes on users' machines using Group Policy. This increases usage of intranet portals and maximizes the return organizations get on those investments.

User State Virtualization (Folder Redirection, Offline Files, and Roaming User Profiles)

More than 12,000 laptop computers are lost in U.S. airports each year. Aside from the obvious security threat this poses, lost laptops also can mean hours of lost productivity as user data and settings are painstakingly recreated on a new device. User State Virtualization -- consisting of Folder Redirection, Offline Files, and Roaming User Profiles -- centrally stores user data, making reconnecting with this data as easy as logging into another laptop.

Windows 7 remembers user profile information throughout the day, eliminating the need for end-of-day server synchronization. Folder Redirection and Offline Files features provide a convenient way for users to access files stored on a central server when not connected to the corporate network.

Give people access to the right applications from anywhere

The Microsoft Desktop Optimization Pack (MDOP) is available as a subscription for Client Software Assurance customers. It consists of a suite of six technologies that enhance application deployment and compatibility, increase IT responsiveness, and can help reduce the total cost of ownership (TCO) of desktop management.

Microsoft Application Virtualization, part of the Microsoft Desktop Optimization Pack

When users upgrade their PCs or use different computers throughout the day, it can become complicated to install and manage all the applications different users may need wherever they are. Microsoft Application Virtualization (App-V) ensures that every user has on-demand access to the right applications regardless of which PC the user logs in to. App-V reduces the end-user impacts associated with application upgrades or termination by streaming applications to the PC at login. This ensures that every user only has access to their own set of applications and dramatically reduces the time it takes to provision or decommission applications for individual end users. App-V also centralizes application management, enabling easy application delivery to any client device from a single management console or through easy integration with System Center Configuration Manager.

Microsoft Enterprise Desktop Virtualization, part of the Microsoft Desktop Optimization Pack

“Not only did Microsoft® Enterprise Desktop Virtualization meet all of our needs, it integrates well with our other Microsoft® solutions and is extremely cost-effective.”

*-Frank Boerger
Head of Client Management
TUV Nord*



Incompatibility of legacy applications with newer versions of Windows can delay enterprise upgrades to the latest version of Windows. Testing and migrating applications can be time consuming, and while this is happening users are unable to take advantage of the new capabilities and enhancements offered by the new operating system. Microsoft Enterprise Desktop Virtualization (MED-V) accelerates the upgrade path to new desktop operating systems because legacy applications continue to run in a virtual environment with a previous version of Windows. MED-V gives users seamless access to older applications that do not run on the new operating system but is still required to perform their job.

Windows Server 2008 R2 RemoteApp

Concerns over security, continual cost pressures, and the need to support remote users are leading some companies to look for ways to host client applications centrally on servers in their data centers. For many years, Microsoft Remote Desktop Services technology and RemoteApp have enabled IT professionals to do just that. Windows 7 provides a better user experience when connecting to Remote Desktop Services in Windows Server 2008 R2. Users can more easily connect to remote applications and remote desktop sessions from any Windows 7-based PC, whether in the office or on the road.

Everyday Tasks are Faster and Easier

Windows 7 UI Enhancements and Multi-Touch

A key focus for Windows 7 has been to streamline and simplify the things people do every day. With Windows 7, the user interface is nimbler and more responsive, with navigation that gets people where they want to go faster than ever before. In response to customer feedback and usability research, it includes an improved taskbar that better helps them switch between applications, while also adding “jumplists” for easy access to the programs and files they use most often while reducing clutter on the desktop.

Windows 7 Libraries

Libraries make it easier to view, organize, manage, and find files that are stored in more than one place. They provide a consolidated view of files, even when they’re stored in different folders, on different disk drives, or on other PCs in the corporate network. End users can reference all those locations in a Library

and then browse and search across them as one. Files in Libraries can be viewed in different ways without the hassle of organizing the files into folders.

Windows Internet Explorer 8 Search Accelerators and Web Slices

Windows® Internet Explorer® 8 includes new features that help users reach beyond the page they are currently browsing to monitor information on other Web sites, look up the definition of a word, find a map, search for more information, or merely find other interesting content. Accelerators make it easier to take action on information on Web pages, and Web Slices enable users to instantly monitor changes on sites of interest. In addition, the Search box in Windows Internet Explorer 8 has been improved to allow search providers to deliver rich, visual search suggestions in real time, as you type a query.

Manage Risks through Enhanced Security and Control

“How can I enable the software and devices my users require and minimize their risk?”

Customer Challenge 2: Manage Risks Through Enhanced Security and Control

The Windows Optimized Desktop provides IT with the security and control it needs to protect your business. The technologies provided by the Windows Optimized Desktop help protect desktop and mobile resources, enforce compliance with corporate policies, government regulations, and software licenses, and ensure more secure Web browsing.

Protect Desktop and Mobile Resources

Windows 7

Windows 7 builds on the security foundation of Windows Vista®, making it the most secure Windows Operating System to date.⁴ Like Windows Vista, Windows 7 was developed in compliance with the Microsoft Security Development Lifecycle from the start. In addition to being designed for security from the ground up, Windows 7 includes built-in security features such as BitLocker To Go™ and the ability to control what users can do with their computers through Group Policy.

BitLocker and BitLocker To Go

Analysts predict that there will be over 1 billion USB flash drives by 2010, with the average USB flash drive holding almost 4 GB of data and costing less than \$10. In a Gartner survey conducted in 2007, 52 percent of respondents have lost confidential data through removable media such as USB flash drives in the past two years. Theft and loss of proprietary data from mobile devices in 2007 tallied to \$2.3B in related costs⁵. Windows 7 provides the ability to encrypt removable storage devices, such as USB drives, via BitLocker

“Our employees use mobile storage devices, and Windows 7 gives us the ability to do all that we can to ensure we’re securing our corporate data, no matter what type of device it’s on.”

-Ryan McCune

Director of Global Solutions

Avanade



⁴ Security Intelligence Report

⁵ FBI Computer Crime and Security Survey

To Go, making sure the data is secure in the case if device is lost or stolen. IT administrators can enforce data encryption on removable drives in their company via Group Policy, requiring user to encrypt USB drives anytime user attempts to copy data there from a corporate PC. Windows 7 also includes improved key management and deployment tools for BitLocker Drive Encryption, which encrypts the entire hard drive.

Protection from Malware: Microsoft Forefront Client Security

Forefront Client Security provides unified virus and spyware protection for business desktops, laptops, and server operating systems that is easy to manage and control. By delivering simplified administration through central management and providing critical visibility into both threats and vulnerabilities, Forefront Client Security helps you protect enterprises with confidence and efficiency. Through a single agent, Forefront Client Security provides real-time detection and removal of viruses, spyware, and other emerging threats.

Enforce Compliance with Corporate Policies, Government regulations, and Software Licenses

AppLocker

Rogue applications installed by end users can degrade the stability of PCs and cause a reduction in productivity. Windows 7 Enterprise enhances application control policies with AppLocker™, a flexible

and easily administered mechanism that enables IT professionals to specify exactly what is allowed to run on user PCs. AppLocker provides simple, powerful, rule-based structures for specifying which applications can run, providing IT professionals with the flexibility to allow users to run the applications, installation programs, and scripts they need to be productive.

Microsoft Asset Inventory Service, part of the Microsoft Desktop Optimization Pack

Asset Inventory Service, part of MDOP, shows which software licenses have been deployed in an environment and helps IT Professionals tell whether all software is compliant with license agreements and corporate policies. IT Professionals can gather data on all software assets in a single query that takes just seconds per system and doesn't interrupt people using their computers. The service also analyzes how Microsoft volume license agreements are deployed to help you easily manage true-ups, renewals, and license reallocation. Since it is deployed as a service delivered over the Web, there are no servers to manage or infrastructure to

maintain.

“Microsoft® Asset Inventory Service is a simple yet comprehensive solution for managing software assets.... And with the licensing component for Microsoft® products, it provides an easy, quick way to assess compliance with Microsoft® programs.”

-Jason McGhee

General Manager

Universal Management Solutions



UNIVERSAL MANAGEMENT SOLUTIONS

System Center Configuration Manager Desired Configuration Management

System Center Configuration Manager helps ensure that computers comply with a defined desired state, enhancing availability, security, and performance features while supporting systems compliance efforts. This allows IT administrators to assess the compliance of computers with regard to a set of established configurations, such as whether the correct Microsoft Windows operating system version is installed and configured appropriately, all required applications are installed and configured correctly, optional applications are configured appropriately, and whether prohibited applications are installed.

Service Manager, through its connector to System Center Configuration Manager, identifies drift from the desired configuration state and automatically generates and assigns incidents to the appropriate IT analyst. Through Service Manager's integrated configuration management database, related history and integrated knowledgebase, the IT analyst can quickly and efficiently resolve the compliance incident.

More Secure Web Browsing

Windows Internet Explorer 8 SmartScreen Filter

The browser is one of the most common ways for malware to enter computing environments: Users click on links that can contain harmful threats. Windows Internet Explorer 8 helps protect against the inadvertent installation of malicious software which can compromise your data, privacy, and identity while also damaging your computer and valuable data, with the new SmartScreen Filter. The SmartScreen Filter protects from phishing attacks, which attempt to trick users into divulging personal data and passwords by redirecting them to counterfeit Web sites.

Windows Internet Explorer 8 Cross Site Scripting Filter

Cross-site scripting attacks, which attempt to exploit vulnerabilities in Web sites, are among the leading online threats on the Web today. In a cross-site scripting attack, users might receive an email that contains a tampered website address. Once users click on the link, they are directed to a legitimate website that has been compromised to contain malicious content that can capture keystrokes and record login and password information. To protect users from these threats, Windows Internet Explorer 8 includes the Cross-Site Scripting Filter, which detects these types of attacks and disables the harmful scripts. Unlike other web browsers, Windows Internet Explorer 8 offers this protection right out of the box, and it is turned on by default.

Windows Internet Explorer 8 Data Execution Prevention

Data Execution Prevention in Windows Internet Explorer 8 helps prevent damage to computers from viruses and other security threats. Data Execution Prevention (DEP), on by default in Windows Internet Explorer 8, is a security feature that can help prevent damage to your by preventing certain types of code from writing to executable memory space.

Reduce Costs by Streamlining PC Management

The Windows Optimized Desktop helps companies manage costs by enabling IT to adopt best practices more easily. The technologies provided by the Windows Optimized Desktop simplify application and desktop lifecycle management, improve control and automation, keep PCs running smoothly, and allow IT to manage physical and virtual assets from one place.

Simplify application and desktop lifecycle management

Microsoft Application Virtualization (App-V), part of the Microsoft Desktop Optimization Pack

Microsoft Application Virtualization, part of MDOP, transforms the way applications and updates are

tested and deployed, making application management simpler and faster, and reduces the TCO for application deployment life cycle. With Application Virtualization (App-V), IT professionals can deploy software applications, making them available to users on-demand without installing them locally and performing regression testing. Windows-based applications are turned into centrally managed services that are delivered to any desktop or laptop.

"Using Windows 7 and App-V together gives us an optimized desktop environment that is tuned to users and easy to manage. We have reduced help-desk costs by 26 percent with application streaming, which frees our staff for more valuable activities."

-Anders Gronlund

Marketing and Alliance Manager

Zipper/Enfo



Microsoft Enterprise Desktop Virtualization (MED-V), part of the Microsoft Desktop Optimization Pack

Incompatible applications stall enterprise deployments of new operating systems. Microsoft Enterprise Desktop Virtualization (MED-V) helps enterprises upgrade to the latest version of Windows even when some applications are not yet compatible. MED-V builds on top of Microsoft Virtual PC to run two operating systems on one device, adding virtual image delivery, policy-based provisioning, and centralized management. By delivering applications with a virtual PC that runs a previous version of the operating system (e.g., Windows XP or Windows 2000), administrators can remove

the barriers to operating system upgrades.

Windows 7 Advanced Image Management and deployment tools

Advanced image management and deployment tools enable IT Professionals to ease operating system deployments and the reduce cost and complexity of managing PCs day-to-day while keeping them up to date. New scripting and automation capabilities, based on Windows PowerShell™ 2.0, reduce the costs of managing PCs. For businesses making the leap to client virtualization, Windows 7 helps maintain virtual machine images, and provides a richer user experience over remote connections.

"How can I reduce costs and take advantage of new technologies like virtualization?"

Customer Challenge 3:
Reduce Costs by Streamlining
PC Management

Improve Control and Automation

Windows 7 Group Policy and Advanced Group Policy Management, part of MDOP

Group Policy helps keep enterprise-wide desktop configurations up to date, enabling compliance with corporate policies. Windows 7 includes new Group Policy Objects that give IT Professionals the ability to manage removable devices, firewall settings, and applications. Microsoft Advanced Group Policy Management provides greater control over Group Policy Objects change process by applying a structured process to develop, review, and modify GPOs without affecting employee desktops.

Windows Powershell 2.0

Windows PowerShell™ 2.0 enables IT professionals to easily automate repetitive tasks, helping them increase consistency and be more productive. With Windows 7, IT professionals can use Windows PowerShell and its graphical scripting editor to write comprehensive scripts that access underlying technologies within Windows 7, whether on the local PC or on remote computers across the network.

Internet Explorer Administration Kit (IEAK)

The Internet Explorer Administration Kit simplifies the creation, deployment and management of customized Internet Explorer installations. IT professionals can use the IEAK to configure the out-of-box Internet Explorer experience or to manage user settings after Internet Explorer deployment and is an efficient way to deploy and manage Web-based applications. It provides administrators with the ability to establish version control across the organization, centrally distribute and manage browser installations, configure automatic connection profiles for users' machines, and customize virtually any aspect of Internet Explorer, including features, security, communications settings, and other important elements.

Keep PCs Running Smoothly

Microsoft Diagnostics and Recovery Toolset, part of the Microsoft Desktop Optimization Pack

A fundamental responsibility of enterprise IT departments is to protect corporate and employee data. Although many take a proactive approach to backing up network data, they tend to be reactive in planning for desktop system failures. Unfortunately, the cost of not having an effective diagnostics and recovery plan in place can be devastating.

Microsoft Diagnostics and Recovery Toolset (DaRT) can save significant time and reduce the headaches associated with repairing and troubleshooting common system failures. With DaRT, system administrators can run powerful recovery tools on unbootable systems, and can quickly restore failed systems with minimal manual effort — in much less time than is required when restoring PCs from backup or reinstalling operating systems. This also helps keep the users' state and personalization settings intact. IT managers can ensure they will recover failed systems whenever the need arises, and end users will realize faster, more accurate resolutions with minimized downtime. DaRT complements the capabilities provided by the Windows Troubleshooting Platform in Windows 7, and helps IT

professionals save time and reduce the costs and lost productivity associated with troubleshooting and repairing system failures.

System Center Desktop Error Monitoring, part of the Microsoft Desktop Optimization Pack

One of the most severe and difficult-to-resolve problems for users of desktop PCs is when an operating system or application stops responding. End users typically deal with this by rebooting their systems: in 90 percent of the cases, they don't tell anyone in IT about the problem. Because of this, IT personnel have limited visibility into these issues and, as a result, no way to proactively resolve them.

Microsoft System Center Desktop Error Monitoring provides insights into application and operating system failures that cause PCs to hang or crash. Through agentless crash monitoring technology, this tool identifies the impact, probable cause, and resolution of failures — helping to make desktop PCs more stable and reliable. This allows helpdesk staff to solve PC problems proactively, before they become major drains on productivity. It makes desktops more stable and reduces the cost of Windows desktop ownership by enabling your IT team to manage these failures through a scalable, low-cost deployment solution for granular error filtering and alerting.

Windows Troubleshooting Platform and the Problem Steps Recorder

Windows 7 includes technologies to avoid or reduce the length of calls to the help desk. Windows 7 delivers a comprehensive, extensible troubleshooting platform that uses a PowerShell-based mechanism to troubleshoot and resolve common issues automatically. The Problem Steps Recorder can aid IT professionals in troubleshooting application failures. It allows end users to reproduce and record their experience with an application failure, with each step recorded as a screen shot along with accompanying logs and software configuration data. Problem Steps Recorder then produces a compressed file that can be sent to support staff to troubleshoot the problem.

Manage physical and virtual assets from one place

System Center Configuration Manager

System Center Configuration Manager assesses, deploys, and updates Windows clients, servers, and devices across physical, virtual, mobile, and distributed environments. Built on key Microsoft technologies, such as Microsoft Windows Server Update Services (WSUS), Windows Server Active Directory, and the Windows architecture, System Center Configuration Manager enhances insight into and control over IT infrastructure. System Center Configuration Manager provides integrated

“We used to experience a substantial number of crashes and the cost of not having an effective diagnostics and recovery plan in place was devastating ... All of this has been resolved and we reduced overall costs by 10 percent by using a unified tool suite.”

*-Ram Reddy
Manager of IT
Aurobindo Pharma Limited*



management across the client lifecycle including operating system deployment, asset intelligence, desired configuration management, software distribution, and updates. Configuration Manager integrates with Service Manager to provide self-provisioning of physical and virtual software as well as integrated incident, problem and change management.

System Center Operations Manager

System Center Operations Manager provides an easy-to-use set of capabilities to monitor the health and performance of organization's infrastructure, services and applications across environments and operating systems. Operations Manager delivers a unified view of that infrastructure for physical and virtual platforms. System Center Operations Manager monitors virtual machines that are managed by System Center Virtual Machine Manager (VMM).

Hosting Virtual Machines: Windows Server 2008 R2 Hyper-V

The fundamental problem in hardware virtualization is how to create virtual machines in software. The most efficient way to do this is to rely on a thin layer of software known as a hypervisor, running directly on the hardware. Windows Server 2008 R2 features Hyper-V, a hypervisor that provides hardware virtualization for servers in the datacenter. Hyper-V can be used to host virtual desktops.

Managing Virtual Client Desktops: System Center Virtual Machine Manager

Implementing a VDI solution shifts responsibility for management of the desktop experience to the data center. System Center provides management across your environment from the desktop to the data center so you can use the same familiar tools for all of your client management. System Center Virtual Machine Manager (VMM) enables IT professionals to configure and deploy new virtual machines and centrally manage physical and virtual infrastructure from one console. VMM includes multi-vendor virtualization platform support, Performance and Resource Optimization (PRO), and enhanced support of "high availability" host clusters. PRO, in conjunction with System Center Operations Manager 2007, uses administrator-set rules and policies to help dynamically react to poor performance or failure of virtualized hardware, operating systems, or applications.

"The biggest benefit we get from Configuration Manager is that it enables us to do the things we know we need to do, but that didn't get done for lack of time or money"

-Noah Johnson

*Senior Systems Engineer
Freightliner*

FREIGHTLINER
LLC

How Windows Optimized Desktop Technologies Support Common End User Scenarios

Companies must address the complex needs of different types of end users in their organizations. To assist organizations with defining these needs, Microsoft has identified five common end-user scenarios that illuminate the key challenges and opportunities for IT professionals to support business users in their organization.

Windows Optimized Desktop Scenarios



Mobile Worker



Task Worker



Contract Worker



Office Worker



Work From Home

The next section describes how the Windows Optimized Desktop technologies combine to support each of these scenarios and the benefits end users and IT Professionals will derive from adopting these technologies.



Mobile Workers

Description: Mobile Workers travel most of the time and are frequently outside the corporate network. They require a rich, thick-client computing experience due to the variety of resource-intensive applications they use such as the Microsoft Office system or CRM applications. Since they are frequently on the road without Internet access, they need the ability to access applications and data offline.

Example Job Titles: Management consultants, sales force staff,

corporate executives

Challenges these workers present to IT: Mobile workers need access to their data and applications anywhere, anytime. IT needs all of this to be secure and manageable. In addition, both end users and IT share the concern about easily having a “replaceable PC” that gets the user back up and running with applications and personal data with no downtime.

Mobile Worker Solutions Table

Mobile workers need to:

- Be able to connect to the corporate network easily -- wherever they are
- Ensure security of corporate data on mobile devices
- Get up and running quickly on a new laptop in the case of loss

The Optimized Desktop provides:

- Connect to the Corporate Network: Direct Access
- Encrypting Corporate Data: BitLocker To Go
- Replaceable PC: App-V, Folder Redirection, Offline Files

IT Professional Benefits:

- Compliance with data security policies on encryption of sensitive data
- Manage desktop and mobile resources through the same set of policies
- Ensure business continuity when hardware assets are lost or damaged

Managing the Office Worker Scenario

- Windows Server 2008 R2 and IPv6 and IPsec to support Direct Access
- Windows Server 2008 R2 Folder Redirection, Offline files, and Roaming User Profiles to ensure access to user data after laptop loss
- Microsoft Application Virtualization to immediately deliver applications after laptop loss
- System Center Configuration Manager and System Center Mobile Device Manager to manage laptops and mobile devices



Office Workers

Description: Office Workers are connected to the corporate network most of the time, and expect a rich client experience that can handle a broad range of tasks. They use applications such as the Microsoft Office system, CRM and ERP Line of Business (LOB) applications, as well as Web and project management tools. Office Workers sometimes move from one workstation to another and want their settings to travel with them.

Example Job Titles: Physicians, CAD engineers, graphic designers

Challenges these workers present to IT: To provide high levels productivity to these workers, it is important that organizations enable them to have access to their highly personalized set of applications and data locally on their PCs. It is equally important to provide the same list of applications from different PCs across organization, for situations where the workers need to continue uninterrupted work from a different office in case of a corporate move, bad weather, or any other event.

Office Worker Solutions Table

Office Workers need to:

- Access personalized applications, data, and user settings no matter where they log in from
- Download files and data quickly, even with limited bandwidth
- Find necessary information easily
- Ensure the integrity of their PCs by not compromising them with unnecessary applications

The Windows Optimized Desktop provides:

- Access to applications and data: App-V, User State Virtualization
- Quick file download: BranchCache™
- Finding files: Search Federation
- Ensure application integrity: AppLocker

IT Professional benefits:

- Enforce compliance with corporate policies, government regulations, and software licenses
- Simplify software delivery and desktop access
- Desktop-to-data center oversight

Managing the Office Worker Scenario

- MDOP Application Virtualization and Enterprise Desktop Virtualization to manage the entire application lifecycle
- System Center Configuration Manager deploy virtual application packages
- Windows 7 Enterprise search scopes to make it easy to discover and search intranet sites
- Windows Server 2008 R2 to support a Hosted Cache server for Branch Cache



Task Workers

Description: Task Workers have more focused and narrower responsibilities than Office Workers and Mobile Workers. Task Workers are often focused on data entry duties. They tend to use a small number of applications and are always connected to the corporate network. They need the ability to move from one workstation to another since they often use a different workspace each shift.

Example Job Titles: Call center agents, bank tellers, factory workers, retail point of sale (POS) cashiers

Challenges these workers present to IT: From the organization's standpoint, the most important capabilities for the Task Worker scenario are ensuring a secure, low-cost solution and enabling free-seating so users can work productively from shared client devices while data is stored securely and centrally.

Task Worker Solutions Table

Task Workers need to:

- Access file server data to perform tasks quickly and accurately
- Ensure the integrity of their PCs by not compromising them with unnecessary applications
- Connect to applications from any terminal in a free-seating environment

The Optimized Desktop provides:

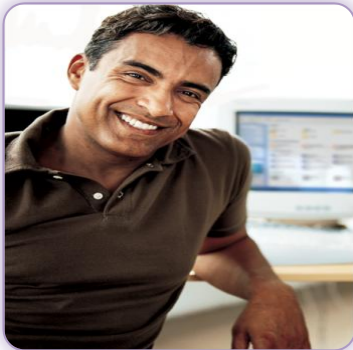
- Download files quickly: BranchCache
- Ensure application integrity: AppLocker
- Access to centralized Applications and data: Remote Desktop Services

IT Professional benefits:

- Data and application security
- Centralized management of terminal services

Managing the Task Worker Scenario

- Windows Server 2008 R2 to support a Hosted Cache server for BranchCache
- Windows 7 AppLocker to ensure PC integrity
- System Center Configuration Manager Desired Configuration Management to assess compliance
- Windows Server 2008 RemoteApp and Remote Desktop Services to deliver shared LOB applications



Contract Workers

Description: Contract workers need access to their client's corporate applications and data to make sure they can get their jobs done. However, they often work on unmanaged PCs that are either personally owned or belong to their employer.

Example Job Titles: Offsite software developers, accountants, other contingent project-based professional staff

Challenges these workers present to IT: Organizations that hire outside developers, accountants, or other professionals must address the problem of unmanaged, non-corporate PCs on their network and the need to protect sensitive source code or financial data.

Contract Worker Solutions Table

Contract Workers need to:

- Have access to their highly personalized set of applications and data on-demand
- Fully control their desktops if they are power users, such as developers or designers
- Have the latest Windows desktop experience, regardless of local hardware specs

Enterprises employing contract workers need to:

- Provide a managed desktop to users who have unmanaged PCs
- Ensure contract workers do not copy or share data outside of the organization

The Optimized Desktop provides:

- Full access to personalized applications and data and end-user control of managed up-to-date Windows desktops on unmanaged PCs: Virtual Desktop Infrastructure (VDI)
- Ensuring data security: Group Policy

IT Professional benefits:

- Reduced security concerns about sensitive data being stored on contractor PCs
- Control physical and virtual assets from a single console
- Ability to manage previously unmanageable desktops

Managing the Contract Worker Scenario

- Windows Server 2008 R2 Hyper-V to host virtual client machines
- System Center Virtual Machine Manager to manage virtual clients



Access From Home From an Unmanaged PC

Description: Sometimes office workers need to connect to their corporate environment from a non-company managed PC. This occurs during a weather emergency or family situation where the employee must work from home.

Challenges these workers present to IT: Workers who access their corporate desktops from home present network and data security risks. Since they are accessing corporate desktops from unmanaged PCs, it's important that the connection to the corporate desktop be

secure and managed separately from the personal computer itself.

Access From Home Solutions Table

Home users need:

- Increased productivity when they cannot get to the office by connecting to the corporate environment from an unmanaged PC
- Access to all data, applications, and settings from an unmanaged PC
- Ensure data and network security when connecting from an unmanaged PC

The Optimized Desktop provides:

- Connecting to the Corporate environment: Remote Desktop Protocol
- Access to Applications: Microsoft Application Virtualization
- Secure Full desktop control: Virtual Desktop Infrastructure (VDI)

IT Professional benefits:

- Security and productivity of centralized management

Managing the Work form Home Scenario

- Windows Server 2008 R2 Hyper-V to host virtual desktops
- System Center Virtual Machine Manager to manage virtual clients

Conclusion

Meeting both IT and end user needs in today's business environment can be challenging. Microsoft currently offers a range of desktop computing options — from traditional PCs to thin clients and from remote desktop services to hosted virtual machines — that give large organizations the flexibility

needed to meet their diverse user and IT requirements. These computing options were designed to help simplify and lower the costs of desktop management and enable a much more agile, secure, and satisfying computing experience. Each of these solutions has its own management characteristics, allowing desktop-to-data center oversight and management of both physical and virtual assets. This provides enterprise customers with the ability to choose from a range of client computing options based on their particular needs.

Take the Next Steps: Begin the Journey Toward Desktop Optimization

1. Assess Your Current IT Environment – Download the “Windows Optimized Desktop Scenarios” Infrastructure Planning and Assessment guide at <http://technet.microsoft.com/en-us/library/dd334417.aspx>.
2. Contact your Microsoft or Partner account representative to get your Core IO assessment, or take the Core IO Self-Assessment at <http://www.microsoft.com/IO>.
3. Plan for Success – Explore joint planning with your Microsoft or Partner account representative to identify projects, prioritize them by level of impact, and develop your PC lifecycle strategy.
4. Utilize Guidance and Resources – Provide project implementation guides and other resources to your IT professionals so that they may review and assess areas of opportunity. (These are referenced in the IO step rate boxes on each of the best practice pages.)
5. Tap into Available Expertise – Consult with the experts at Microsoft Services or your Microsoft Partner who are well-trained to help you optimize your infrastructure. These expert guides will work with your IT staff to take your PC strategy to the next level and realize the maximum benefits from your Microsoft technology.
6. Create a Proof-of-Concept – To assist you on your journey to optimization, the experts at Microsoft Services or your Microsoft Partner can help you develop a Proof-of-Concept to demonstrate the value of IO progression in your organization.

Resources

Windows Optimized Desktop Web Site

<http://www.Microsoft.com/windows/enterprise/optimized-desktop/default.aspx>

Microsoft Desktop Optimization Pack for Software Assurance

<http://www.Microsoft.com/windows/enterprise/products/mdop.aspx>

Microsoft System Center

<http://www.Microsoft.com/systemcenter/>

Windows Optimized Desktop Scenarios Assessment Guide

<http://technet.Microsoft.com/en-us/library/dd334417.aspx>

Windows 7 for IT Professionals

<http://technet.Microsoft.com/en-us/windows/dd361746.aspx>

Windows 7 Homepage

<http://www.Microsoft.com/windows/enterprise/>

Windows Server 2008 R2 Homepage

<http://www.Microsoft.com/windowsserver2008/>