



Microsoft Windows XP Professional Customer Solution

Healthcare Provider Uses Windows XP Professional to Help Standardize and Secure the Desktop and Prepare for HIPAA



Solution Overview

Customer Profile

Centura Health is a nonprofit, faith-based healthcare system formed in 1996 and employing 12,000. It is the largest healthcare system in the state of Colorado, encompassing more than 20 facilities.

Business Situation

Centura needed a simplified, standardized, and more secure operating system environment for its 4,800 desktop and portable PCs.

Solution

The company deployed Microsoft® Windows® XP Professional as part of a standardized-platform initiative.

Benefits

- Vastly simplified deployment through tools such as Remote Installation Services and Windows Preinstallation Environment
- Help secure application delivery through Active Directory®, Group Policy, Microsoft Installer, IntelliMirror®, and File Replication System
- Help Create a secure clinical environment through Group Policy
- Seventy to ninety percent reduction in help-desk calls through improved stability
- Ability to run legacy and state-of-the-art applications alike
- Built-in security capabilities for anticipated savings of tens of thousands of dollars yearly in third-party licensing fees

Software and Services

Microsoft Windows 2000 Server
Microsoft Windows XP Professional
Microsoft Consulting Services
Active Directory

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Through a deployment of Microsoft Windows XP Professional on desktop and portable PCs at facilities throughout the state of Colorado, Centura Health is running both legacy and state-of-the-art clinical applications in a more stable, standardized, and secure environment. Consequently, the organization is seeing a 70–90 percent drop in help-desk calls and anticipates saving tens of thousands of dollars yearly in licensing fees for third-party security software. Moreover, Centura is enjoying a broad and flexible array of security options for meeting and exceeding HIPAA compliance for records security and patient privacy.

Situation

Colorado-based Centura Health is a nonprofit, faith-based healthcare system employing 12,000 and comprising nine hospitals, four full-service medical/surgical centers, nine senior-living facilities, and a statewide home-care and hospice division. Since the organization's founding in 1996, Centura has devoted considerable effort to consolidating and simplifying a complex, mixed-platform computing environment that resulted from the company's origins as a merger of two of the state's larger healthcare providers and of the company's geographical and functional diversity. As part of that effort, Centura launched an initiative in early 2001 for the creation of a standardized client platform for its 4,000 desktop and 800 portable PCs and the widescale deployment of the Microsoft® Windows® XP Professional operating system. Also part of the initiative were the goals of lowering IT costs and providing physicians, nurses, administrators, and other users with an environment that is easy to use and access and fully compliant with HIPAA, the U.S. Health Insurance Portability and Accountability Act providing for federally mandated security policies effective in mid-2003.

Solution

Centura tackled the task of implementing the initiative with a team consisting of nine internal IT staff members and one Microsoft Consulting Services representative and using the Microsoft Solutions Framework, which provides best practices for project management. As of November 2002, slightly more than 1,000 of Centura's desktop PCs and all 800 of its portable PCs were

running Windows XP Professional. Centura plans on completing its deployment by the end of 2003.

Implementation Tools Make Big Difference

Because Centura had already deployed Windows 2000 Server, the team relied heavily during implementation on that operating system's client deployment and management services and the support in Windows XP for those technologies. According to Senior Program Manager Ross Drennan, one of the most extensively used technologies was Remote Installation Services (RIS).¹ By design, RIS enables deployment professionals to install a new operating system on a remote boot-enabled client computer by connecting the client computer to the network, starting the client computer, and logging on with a valid user account. This gave Centura a fully automated, network-based mechanism for the deployment of Windows XP on 95 percent of its PCs. For the remaining PCs, those residing at facilities with slow dial-up connections to the central network, the team used CD-based installation with the Windows Preinstallation Environment. Windows Preinstallation Environment (WinPE) is a minimal operating system based on the Windows XP kernel and containing the functionality needed to run a scripted custom installation of Windows XP Professional and applications.²

According to Drennan, both RIS and Windows Preinstallation Environment were indispensable. "Without RIS, it could easily have taken us two and a half hours to install a build, but with RIS it took just 30 minutes," he says. "As for WinPE, it was ideal for the PCs located in Centura's half-dozen rural facilities, enabling local staff members to boot into a preexecutable environment and build their PCs without having to depend on a feed across the network. As a result, WinPE enabled us to reduce desk-side visits to install PCs at these facilities by more than 90 percent"

The Value of Active Directory, Group Policy, and IntelliMirror

Centura also makes extensive use of the Active Directory® directory service³, Group Policy⁴, and IntelliMirror®⁵ management technologies. For two years preceding its deployment of Windows XP, Centura used Active Directory for managing information about its network resources and users, handling a good bit of its network security, acting as an integration point for diverse systems, and consolidating management tasks. Today, Centura IT professionals are using Active Directory in conjunction with IntelliMirror and Group Policy for software-exclusive delivery from the server.

According to Director of Strategic Technologies Kraig Sullivan, a standardized platform can be maintained only if applications are installed exclusively from the server. So team members assigned certain applications to certain user groups, assembled the applications as Microsoft Windows Installer (MSI) packages⁶, and then loaded them on the servers. By using the Windows 2000 Server Distributed File System and File Replication System, the team ensured that all distribution servers were mirrored.

"Since these MSI packages now reside on the servers and are connected to the Active Directory group that holds their respective applications rights, all that's needed to grant access to applications is the assignment of a user to the appropriate group," Sullivan says. "The next time the user logs on, the application is automatically 'pushed' to the PC on which he or she is working."

Another use of Group Policy in this deployment is to help create a secure clinical-user environment targeting about 200 users. What differentiates this environment is that on startup it launches a major patient-care application and Microsoft Internet Explorer, taking the user directly (and exclusively) to the Centura portal. The environment is deployed on a handful of PCs and

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Centura Health

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accessed by doctors and nurses who need a highly stable and secure system. In one facility, these PCs also are used as print servers, thereby making security all the more vital.

As for other security concerns, Centura IT executives are looking forward to the day when blank passwords will no longer be allowed, thanks to introduction of strong password support in Windows XP. Similarly, the organization will help secure network access with the smart card⁷ login and will implement credential management and software restriction using Group Policy.

Running the Applications They Need

Having a stable environment for running applications is essential at Centura, which cares for patients with the help of more than 300 applications. Among them are a couple of dozen patient-charting and medical-record lookup systems and a half-dozen major Microsoft Access databases originally developed for MS-DOS® and Windows 3.1 environments. Simultaneously, Centura relies on a sophisticated set of state-of-the-art applications for medical imaging, advanced security, and collaboration, and must be confident that these high-end systems also can run smoothly in the new environment.

As Sullivan points out, “Relying on applications from both ends of the performance and complexity spectrum makes it vital to have a desktop system that can run what we need—and for this Windows XP comes through. For three or four older applications, Centura is using Windows Application Compatibility mode⁸, and for the rest of them we are using native mode where, surprisingly, they often require no significant tweaking to work.”

Benefits

Standardization, Remote Assistance Drive Ease of Use and Major Savings

By the time Centura had deployed Windows XP Professional to about one-third the targeted PCs, users began experiencing a number of advantages. Chief among them is having a uniform operating system as opposed to the mix of Windows NT® Workstation version 4.0, Windows 95, Windows 98, and Windows Millennium Edition the organization was using before. As Sullivan says, “Users really appreciate being able to walk up to any of these PCs and know exactly what they’ll be facing in terms of the user interface, their interaction with applications, and the results.”

Users also appreciate the enhanced support that they are receiving thanks to Windows XP Remote Assistance.⁹ “We use Remote Assistance all the time and, since it allows for a far more interactive discussion between users and support professionals, it’s been a huge timesaver,” Drennan says. “This is especially noticeable in our shared-PC environment since users typically remain at their PCs for only a limited period of time, a practice that makes scheduling or waiting for a desk-side visit especially difficult. With Remote Assistance, nobody has to wait, because the help-desk person can work directly with the user’s PC while the user is on it, fixing the problem and helping the user to avoid the problem in the future, all in one phone call.”

As Sullivan puts it, “This boils down to simply having the support users need more readily available so they can better focus their time on patient care.” And how much additional time does that come to? Sullivan estimates that two-thirds of help-desk calls traditionally require a “ticket”—an extended conversation or desk-side visit—and Remote Assistance is reducing the length of a ticket from 30–50 minutes down to 5–10 minutes. “So even if a user requires a help-desk ticket just once a week, that’s 20 to 45 additional minutes they’re able to spend on patient care instead of trying to figure out what’s wrong with their PC,” he adds.

There's even better news on the support front at Centura. With the greater stability that Windows XP is providing for running the organization's myriad applications, users find themselves needing to call the help desk a lot less often than they did before. As Drennan explains, "For users on the PCs that have been installed with Windows XP, help-desk calls are down anywhere from 70 to 90 percent. Couple this with the dramatic time reduction required for resolving help-desk tickets, and we anticipate that once the deployment is complete we'll be cutting operating costs for user support and related services by a significant margin."

Security is a paramount concern in any healthcare organization, and Centura is no exception. For this reason, the IT staff began deploying Encrypting File System¹⁰ (EFS) in late 2002 and were eager to deploy other advanced security features available in Windows XP Professional, including a public key infrastructure¹¹ (PKI) and Internet Protocol Security (IPSec).¹²

- **Encrypting File System.** Centura is recommending EFS to its 800 administrative, executive, and IT users who rely on portable PCs to get their jobs done, allowing users to decide whether they want EFS running on their systems. As Sullivan explains, this approach provides a useful test bed for the ultimate deployment of EFS on the desktop. "Being able to implement EFS on portable PCs so it's running at the user's discretion gives us an ideal way to see how best we can use EFS in the larger, desktop environment," he says.
- **Public key infrastructure.** Drennan believes that PKI will open many doors for Centura into biometric and other emerging authentication methods. For example, he and his colleagues envision deploying PKI-based solutions to encrypt all data leaving the organization, to support biometrics functionality including retina scanning and thumbprint recognition, and to play a role in a wireless networking environment that Centura is planning to deploy in 2003. Drennan says the cost of such solutions would be prohibitive if Centura had to obtain them on the open market or develop them internally. "But with PKI available through Windows 2000 Server and supported by Windows XP, we have a fully enabled platform, which will save us easily tens of thousands of dollars yearly in licensing fees," he says.
- **Internet Protocol Security.** Centura eventually will use IPSec to help secure network communications at the packet level, which the organization couldn't do before because the traditional way of implementing IPSec—in hardware—was not appropriate to Centura's needs. "An organization using a network supporting large and frequent data loads could justify the cost of implementing hardware-based IPSec, but for our environment that just wouldn't make sense," Drennan says. "So it's a real plus to be able to implement IPSec in software, which we can now do because both Windows 2000 Server and Windows XP support it."

Ideally Positioned for HIPAA Compliance

As Drennan explains, the Windows XP security capabilities are proving to be essential in helping Centura to reach the goals it set when initiating the overall standardized-platform initiative early in 2001. "The security capabilities are working for us not only at an individual level but also as an integral part of the new standardized platform and in Centura's work toward compliance with HIPAA privacy rules." (The U.S. Health Insurance Portability and Accountability Act, or HIPAA, provides for federally mandated security policies that will go into effect in mid-2003.)¹³

For his part, Sullivan further commends the security capabilities of Windows XP: "With the security advantages of the Windows XP desktop and the consistency benefits of having our standardized platform, we anticipate a smooth path toward compliance with HIPAA privacy rules,"

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Kraig Sullivan
Director of Strategic Technologies
Centura Health

he says. “Even more important, we’ll be ideally positioned to build and maintain a level of security above and beyond HIPAA, and to support our ongoing commitment to patient safety and confidentiality.”

Microsoft Windows XP Professional gives you the freedom to do what you want at home and at work—simply, reliably, and securely.

For more information about Microsoft Windows XP Professional go to:
<http://www.microsoft.com/windowsxp/pro/>

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¹ For more information on Remote Installation Services (RIS), visit (TechNet)
<http://www.microsoft.com/technet/treeview/default.asp?url=/TechNet/prodtechnol/windows2000serv/deploy/deploy/remotepop/remotepop.asp>

² For more information on Windows Preinstallation Environment (WinPE), visit
<http://www.microsoft.com/licensing/programs/sa/sam/winPe.asp>

³ For more information on Active Directory, visit
<http://www.microsoft.com/windows2000/technologies/directory/ad/default.asp>

⁴ For more information on Group Policy, visit
<http://www.microsoft.com/windows2000/techno/hw/howitworks/management/grouppolwp.asp>

⁵ For more information on IntelliMirror, visit
<http://www.microsoft.com/windows2000/techno/hw/howitworks/management/intellimirror.asp>

⁶ For more information on Microsoft Windows Installer (MSI), visit
<http://www.microsoft.com/windows2000/techno/administration/management/wininstaller.asp>

⁷ For more information on smart cards, visit
<http://www.microsoft.com/hwdev/tech/input/smartcard/default.asp>

⁸ For more information about application compatibility with Windows XP, visit
<http://www.microsoft.com/windowsxp/pro/techno/planning/appcompat/default.asp>

⁹ For more information on Remote Assistance, visit
<http://www.microsoft.com/windowsxp/pro/using/howto/gethelp/remotearr/default.asp>

¹⁰ For more information on Encrypting File System (EFS), visit
<http://www.microsoft.com/windows2000/techno/hw/howitworks/security/encrypt.asp>

¹¹ For more information on public key infrastructure, visit
<http://www.microsoft.com/windows2000/techno/planning/security/pki.asp>

¹² For more information in Internet Protocol Security (IPSec), visit
<http://www.microsoft.com/windows2000/techno/planning/security/ipsecsteps.asp>

¹³ For more information on Microsoft and HIPAA, visit
<http://www.microsoft.com/solutions/HIPAA/techno/healthinformation.asp>