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Windows® 2000: Are You Truly Ready?

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The knowledge behind the network

Microsoft®

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Introduction: State of the NOS

Since Microsoft® released Windows® 2000 in February, chances are that you have been reviewing this network operating systems (NOS) for your organization. More corporate reviewers and beta testers participated in reviewing Windows 2000 than any other Microsoft operating system, demonstrating the hope many organizations have that Windows 2000 will, at last, make good on Windows NT's promise to be truly enterprise-class.

Even if your organization has not made a formal commitment to Windows 2000, somewhere within your organization, people may be planning to bring up that critical "first server" because their division cannot wait for broader corporate acceptance. Or maybe, the corporate event that will mandate your department's quick and well-reasoned migration to Windows 2000 will come from nowhere—created by an unexpected merger, or by a new "killer app" that will require the Active Directory™ Windows 2000 provides.

Regardless of your organization's position on Windows 2000, or of any pending plans to evaluate its functionality or migrate, the undeniable fact is that the OS has been receiving favorable press, and it's currently moving through corporate networks like a juggernaut.

Any operating system this pervasive inevitably raises the question, "what does it mean to our organization?" At first, Windows 2000 seems like an expensive investment—have you devoted the time to evaluate the business case? What does implementing Windows 2000 mean to your organization in terms of improved business processes? Most importantly, how truly ready are you for Windows 2000?

A number of customers that have deployed Windows 2000 or are in the process of deployment began by developing the business case for Windows 2000 through Rapid Economic Justification (REJ) and Return On Investment (ROI) analysis. According to Microsoft, over 80% of these customers expect payback in less than 12 months. This real-life data provides a compelling business motive to begin evaluating Windows 2000 today.

This whitepaper will outline some of the considerations surrounding Windows 2000 readiness, and share some of the lessons Lucent NetworkCare consultants have learned as a result of their close involvement with both the operating system and with Microsoft itself. These lessons can help you stay ahead of the juggernaut, and they indicate the importance of partnering early with a team of experienced network consultants who can help you leverage this groundbreaking operating system to your greatest corporate advantage.

What is True Windows 2000 Readiness?

Being truly ready for Windows 2000 will most likely take more time, effort, money, and planning than you've put into any single upgrade or migration to date. This is because Windows 2000 is unlike any of its competitors or predecessors. In order to leverage the Windows 2000 Active Directory™ service and the myriad aspects of its new functionality, you need to accept that Windows 2000—both server and workstation—represents an entirely new paradigm. This is not simply an upgrade—in many very tangible

ways, realizing maximum benefits from Windows 2000 requires you to re-think your concept of enterprise operating systems from the ground up.

The costs of migrating to Windows 2000 are high, yet a well-planned and executed migration that leverages a design customized for your specific organization will also provide great benefits. Thus planning, and also an honest assessment of your readiness today, are critical to your future success.

To achieve the greatest success, you need to examine readiness on several levels.

1. System Readiness

Assessing system readiness for Windows 2000 encompasses hardware analysis, software inventory and compatibility testing, and global network infrastructure analysis. A number of tools are available to help gather this information, supplied by Microsoft as well as third-party vendors. Many organization leaders are surprised by the amount of time and resources required to gather thorough and accurate data, but the simple fact is that you cannot begin evaluating what Windows 2000 means to your organization until you have a comprehensive inventory of your organization's systems, services, and infrastructure.

2. Organizational Readiness

As system and infrastructure data are being gathered or refreshed, it's time to ask yourself: how prepared are your people? Organizational readiness needs to start at the top. Are your CEO and senior executive team aligned in support of Windows 2000? If not, how can you begin building the business case to assess cost/benefit for your organization?

Lucent NetworkCare utilizes a variety of methods to help companies analyze the business case for Windows 2000. For companies looking for quick feature-map analyses, our consultants are trained in Microsoft's Rapid Economic Justification (REJ) methodology, which provides a non-technical report outlining the Windows 2000 features that support your key business objectives. Companies requiring a more comprehensive analysis turn to our Business Solutions Consulting Group for Windows 2000 cost/benefit studies as part of broader corporate process analysis or reengineering.

Beyond the boardroom, organizational readiness must also include preparing your IT department, myriad and perhaps geographically separate administrative groups, and silo organizations who might not have had occasion to collaborate in the past.

3. Cultural Readiness

This may be the trickiest of all: once your people are ready, is your culture ready to support the new model of Windows 2000? Active Directory carries with it a new administrative model, and gives organizations vastly increased control over the end-user experience. The question is: how much of this new administrative capability is appropriate for each part of your organization? And who will have control?

Windows 2000 enables a new set of applications and interfaces that will leverage Active Directory as a single store for many directory-enabled systems. Eventually, you may store information about every application, network router and switch, and employee in Active Directory. How ready will each of these teams be to yield administrative control?

To achieve the best cultural readiness, you need to be a "Windows 2000 missionary" in your organization, making efforts early and often to bridge the gap between disparate departments, encouraging everyone to see the value of migrating to the new operating system—even if the groups involved do not view themselves as "Microsoft operating system" people today. When the time comes that they do see value in leveraging Active Directory, will they agree that your design is optimal, or that your administrative procedures are sound?

Involving these groups now, and empowering a consensus team to manage such key Active Directory roles as Enterprise Administrator and Schema Administrator, will pay great dividends later. Unlike with Windows NT 4.0, do not assume that the "server group" will be the sole key holders in your Active Directory kingdom.

4. The Risks of Not Being Ready

If you fail to achieve readiness on all levels as outlined above, for years to come you could be faced with a number of problems that will preclude full realization of all the benefits Windows 2000 offers.

At best, you may encounter corporate silos that refuse to migrate, resulting in the lingering need to support multiple operating systems (and their associated management tools). At worst, you run the risk of deploying an Active Directory design that is inappropriate for your organization, or a design that does not keep pace with the rate of change in your organization or industry.

Any way you view it, lack of readiness increases overall cost exponentially, reducing or eliminating any benefits you hoped to glean from Windows 2000.

5. How Do You Mitigate the Risks?

In addition to the readiness activities outlined earlier, here are some steps you can take today to maximize your Windows 2000 readiness:

Assess Your Current Environment.

Gain a complete picture of your servers, workstations, network, and supporting services. Before moving to Windows 2000, stabilize your existing network, optimize your existing Microsoft architecture, and consolidate or remove what you don't need going forward. Ask yourself: if I had my entire Microsoft infrastructure to design from scratch, would I design it to look like what I have today?

Design for Flexibility and Growth.

Be sure to consider flexibility and potential growth, both in your network planning and your Active Directory planning. Extra effort spent designing to accommodate future changes will be rewarded many times over. Ask yourself: will the Active Directory I design today withstand a corporate merger or divestiture?

Establish Procedures

Windows 2000 will impact every facet of your enterprise network, everything from the desktop to the data center. It is thus critical to design procedures for every element of Active Directory and Windows 2000 management.

Get Buy-in from All Groups

Because Windows 2000 features have global impact, get cooperation from all business units in the planning and migration process. The costs of managing two or more separate ("multi-forest") Active Directory systems is exponentially higher than a single system, so strive for all groups agreeing to coexist in a single system.

View Migration Realistically

Migrating a large enterprise to Windows 2000 takes time—longer than you probably think, especially the planning phase. Be aware of migration costs vis-à-vis your own TCO and ROI goals. And most importantly, don't expect Active Directory to be a silver bullet for your organization: while it introduces

excellent and robust functionality, many large organizations will eventually need to leverage some sort of metadirectory system to broker inter-directory communication.

Work with a Network-Savvy Partner

Don't try to go it alone—work with a partner that understands your network. Because of the way it handles user authentication, security, and replication, designing Windows 2000 with the network in mind is critical. Microsoft realized this early in its own planning for Windows 2000, and turned to Lucent NetworkCare for help in designing its own global Active Directory site structure.

Design and Migration Considerations

Once you've assessed your organization's true readiness for Windows 2000, you need to consider how best to appraise the value of its new features, select the functionality most appropriate to your organization, and integrate the new features into your existing network environment.

The following section examines some major areas to consider when planning for Windows 2000. These "lessons learned" can help produce the Windows 2000 design that best meets your business and technology needs.

1. Design/Deployment Complexity

Designing and deploying the right Active Directory design takes longer than most companies expect. Industry estimates indicate that it will take 6-9 months to plan for a typical (1,000-user) migration, and an additional 9-15 months for deployment. If Windows NT 4.0 domain consolidation is required, these timeframes will likely be extended.

Because of the complexity of the effort, no matter when you plan to deploy Windows 2000, begin planning now. Look at your existing Windows NT 4.0 domains, develop a business plan, begin testing your applications, and assess your network readiness.

2. Technology Integration & Interoperability

Windows 2000 is not an isolated operating system—it impacts every aspect of your network. As a result, you must know your entire wide area network structure in order to appropriately design sites; you will also need to enter all or most of your IP network subnets into Active Directory.

While Windows 2000 addresses the shortcomings of Microsoft's previous WINS network naming service, it also introduces an additional level of complexity by mapping Windows 2000 domains to DNS domains. The challenge for many organizations will to be to integrate their Active Directory domains with an existing DNS infrastructure and namespace.

In addition to namespace integration challenges, many organizations will also face directory integration challenges if multiple corporate directories exist that cannot be migrated to Active Directory. Products that provide this "directory-brokering" are called metadirectory services, and Microsoft is currently working on its own offering in this market, Microsoft Metadirectory Services (MMS). However, because full integration of MMS into the native Windows 2000 product is months or years away, many companies have begun evaluating competing products. As with all Windows 2000 interoperability issues, lab testing in your specific environment prior to deployment is critical.

3. Windows 2000 Network Impact

Because Windows 2000 has a completely different "network footprint" than did Windows NT 4.0, as your Windows 2000 team is designing the Active Directory structure, you will need to invest time in analyzing and stabilizing your existing network. As you roll out Windows 2000, you will begin to see completely

new network traffic patterns, so the planning phase is the best time to look at your entire supporting network infrastructure with an eye toward optimization.

Lucent NetworkCare's Performance Engineering practice has partnered with our Windows 2000 consultants to develop a service offering that helps companies assess the impact proposed Active Directory designs will have on their networks. Understanding the true impact replication will have on your network takes special tools and special skills, and Lucent NetworkCare leads the industry in network readiness analysis skills. We have the largest body of multivendor networking knowledge in the world. Who better to help assess the network impact of Windows 2000 than the consulting group that over half of the Fortune 500 rely on to design, manage, and evolve their complex, global, multi-vendor networks?

While you're examining your overall network, also take a look at your Windows NT 4.0 infrastructure. Many companies currently support a less-than-ideal Windows NT 4.0 infrastructure that grew organically over the years as departments and divisions added servers supporting Microsoft Exchange Server, Microsoft SQL Server™, or began using other applications that required Windows NT.

Don't assume that you can wait until migrating to Windows 2000 to clean up or consolidate your existing Windows NT infrastructure—there may be significant administrative costs involved with cleaning up at the same time you're planning for migration. Similar to cleaning house prior to moving, you want to carry forward as little "legacy" infrastructure as possible. In the long term, your organization will be best served by an infrastructure that's as clean and scalable as possible.

4. Active Directory Design

To take full advantage of Windows 2000, you need to develop an Active Directory design and infrastructure that reflects your organization's unique requirements. Proper directory design and planning is critical for optimizing access to Active Directory services while also maintaining a clear migration path and co-existence plan for other non-Windows 2000 resources.

Planning for Active Directory will be more complex, and require more resources, than planning for any previous Microsoft product. According to Gartner[1] Group, Active Directory planning will comprise at least 40%of the total Windows 2000 migration effort.

Because Active Directory will impact so many areas of your organization, "getting it right the first time" is critical. Gartner Group predicts that "user inexperience with directory services and the nuances of Active Directory will cause 60% of Active Directory installations to be redesigned within 18 months of deployment." To mitigate these risks, Gartner Group suggests that organizations partner with external service providers (ESPs), such as Lucent NPS, early in the planning phase.

As stated earlier, Active Directory is a paradigm shift, so don't design or manage it like NT 4 or Netware NDS. It's important to understand the incremental costs of additional forests and domains. An ideal design has a single forest and a single domain—multiple forests prohibit a single global catalog, making administration difficult (and if your organization plans to use Exchange 2000, multiple forests will also prohibit a single Global Address Book).

5. Plan Network Infrastructure for Growth

Because Active Directory is so dynamic and organic, implementing it is an iterative process. Your network should be designed to accommodate change over time to minimize problems associated with growth. Even if your current activity is centered mainly around desktop migration, future activity could well involve expanding your network to include Microsoft Exchange 2000, directory-enabled networking (DEN) products, or other applications that leverage or require Active Directory.

[1] All references to Gartner Group refer to: "Windows 2000: Was It Worth the Wait?," Report 5700 © 2000 Gartner Group, Inc.

A scalable TCP/IP network infrastructure is mandatory to be ready for future growth and change. In your analysis, be sure to assess utilization on your local- and wide-area network links, and allow room for additional traffic as your network expands and access patterns change.

Lucent NetworkCare: Your Preferred Windows 2000 Partner

Whatever your plans for Windows 2000, Lucent NetworkCare has the experience and services to ensure your greatest success. Microsoft realized this two years ago, when they formed a Global Alliance Partnership with us, and when our consultants began working with the authors of Windows 2000 itself to improve its security, network performance, and interoperability. You can leverage this same experience by choosing Lucent NetworkCare as your Windows 2000 partner.

Our Windows 2000 offerings extend our already comprehensive array of Microsoft Technologies Consulting offerings to encompass planning, design, pilot testing, deployment, and optimization. We offer:

- Business Case Preparation
- Network Readiness Assessments
- Windows NT 4.0 Domain Re-Design/Consolidation
- Active Directory Planning and Design
- DNS Integration/Migration Analysis (including a one-day DNS Workshop that uses your company's specific namespace and DNS applications currently in use to help set a roadmap for Windows 2000 integration)
- Active Directory Network Impact Assessment
- Windows 2000 Pilot Project Planning and Management
- Windows 2000 Implementation/Deployment Planning, Management, and Execution

Regardless of the type of engagement, you have the security of knowing that our consultants are guided by our Network Engagement Methodology (NEM), a process-oriented management approach developed during more than 10,000 engagements that is proven effective for translating business objectives into successful results. Beyond NEM, our consultants also access our KnowledgeNet data warehouse, the industry's largest collaborative information resource, with over 10,000 networking solutions, an on-line discussion forum, and a comprehensive library of industry data and publications.

NEM and KnowledgeNet truly set us apart—they ensure rapid and reliable results, no matter where our team is based or what resources are required. They are the glue that bonds our consultants worldwide into a unique, agile, and informed community.

Wondering how to effectively design and deploy Windows 2000 for a global organization, or in a multilingual environment? Like your organization, the Lucent NetworkCare team is global, meaning that we can execute anywhere your business is located, using local resources where appropriate that understand the nuances and protocols of specific communities and regions.

Already working with someone to evaluate Windows 2000? We can still help. Many of our services, such as our one-day DNS Workshop and our Windows 2000 Network Impact Assessment, are unique in the industry.

Companies are also bringing in Lucent NetworkCare to review existing networks and Active Directory designs, to give the final stamp of approval and make sure the designs your team has crafted will function correctly on your enterprise network. After all, Microsoft licensed our own Active Directory Planning and Design methodology for inclusion in their Microsoft Solutions Framework (MSF), which means that Microsoft Consulting Services consultants worldwide now use the structure, approach, and Windows 2000 planning methodologies our engineers developed.

Windows 2000 is indeed a juggernaut—one that stands poised to revolutionize the way your organization operates. How ready will you be to succeed? How can you help realize maximum business benefit for your investment? As in any business venture, much of your success will depend on the partners you choose. Companies around the world are choosing Lucent NetworkCare as their partner to help get the most out of Windows 2000, just as they have been choosing us for almost a decade to help get the most out of their global networks.

Regardless of your plans, regardless of your timetables, the time to start Windows 2000 planning and analysis is now. When your organization aligns behind Active Directory, when your users begin leveraging directory-enabled applications, and when your network managers call for Quality of Service and other enhancements that will benefit greatly from a well-designed Windows 2000 infrastructure, we can help you be truly ready.

For further information, see Lucent NPS 's website at http://www.lucent-networkcare.com or call 1-888-767-2988 in the U.S. or 1-727-217-2303 outside the U.S.



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