B|DNA

WHITE PAPER

Putting Windows 7 Migration on the Fast Track

Visibility, Normalization, and Actionable Information for Windows 7 Migration Planning and Implementation

For the vast majority of enterprises, migrating to the Windows 7 operating system is not an "if," but a "when" and "how" question. Migrating to a new generation of Windows operating systems is, if anything, overdue. For a variety of reasons, most enterprises decided to skip Windows Vista, originally released in 2006, giving Windows XP, originally released in 2001, an unexpectedly long life as the standard enterprise-computing platform for business and government agencies. Although Windows XP still maintains the dominant share of enterprise desktop and mobile computers, Microsoft released the final XP service pack in 2008, ceased taking orders for the operating system in October 2010, and will end support for it in April 2014. Even this 2014 end-of-life date comes three years later than expected, and stands as an exception to Micro¬soft's policy of 10-year lifecycles for operating system generations.

THE COMING WINDOWS XP SUPPORT GAP

Historically, most organizations have undertaken major operating system migrations in tandem with hardware refresh and replace cycles. Upgrading operating systems on computers currently in use is uncommon, owing to technical risks and labor costs, not to mention the added complexity in asset valuation and depreciation accounting. It's just simpler to replace operating systems and computing hardware at the same time.

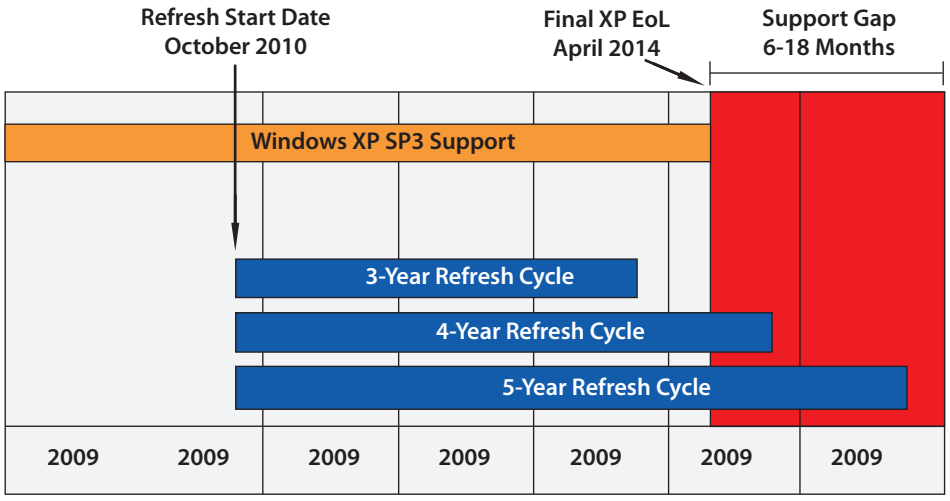

Figure 1: Many hardware refresh cycles will not completely cycle through until after Microsoft's end-of-life deadline for Windows XP.

"...an aggressive 3-year refresh cycle [starting in October 2010] will put [organizations] perilously close to the April 2014 end-of-life date for Windows XP."

Hardware refresh cycles typically run between three and five years, with longer cycles becoming more common owing to economic factors. Larger organizations are more likely to take the hardware-refresh route to Windows 7 migration. Larger populations of PCs make it easier to roll out new technology in broad-brush fashion in multiyear cycles. Larger organiza¬tions also worry that migrating on an individual PC-by-PC basis will bog them down in the details of examining and servicing individual computers across their organization. For large organizations, it's much easier to automatically retire old machines when they reach a certain age and replace them with new ones.

The downside, however, for organizations planning replacement cycle-based Windows 7 migrations now is that even if they start immediately (in this case, October 2010), an aggressive three year refresh cycle will put them perilously close to the April 2014 end-of-life date for Windows XP, while more extended four- and five-year cycles will almost certainly expose them to a support gap on their remaining Windows XP computers of anywhere between 6 and 18 months.

This leaves enterprise IT operations with two options:

A. Accelerate the refresh-and-migrate cycle to get Windows 7 on all PCs before the 2014 end-of-life deadline.

B. Install Windows 7 on compatible, currently in-service computers.

Both options have advantages and drawbacks.

Option A—accelerating the refresh cycle—has the advantage of executing the migration before the EoL deadline. Furthermore, IT departments can backload the process to make one final push to replace any remaining Windows XP computers shortly before the EoL date, thereby preserving capital in current tough times in the expectation of an eventual economic recovery. Accelerated refresh also preserves the advantages of a predictable schedule for migration to Windows 7 while eliminating the migrate/don't migrate decision process for every computer under consideration for updating to Windows 7.

Disadvantages of Option A involve bringing forward spending sooner than anticipated. Also, this approach risks unnecessarily discarding computers that could smoothly make the change to Windows 7 at minimal cost.

Option B—separating refresh and migration—has the advantages of avoiding Windows XP support gaps and extending the life of computers that are already Windows 7-ready, but currently run Windows XP.

On the downside, most organizations find it difficult to survey their infrastructures to identify good candidates for in-place migration. It's also true that hardware readiness is not the only factor influencing the ease or difficulty of an in-service migration. IT managers must also be sure that applications and other software running on a migration candidate computer are compatible with Windows 7 and that the migration makes sense from economic, depreciation and asset lifecycle points of view. Note also that making in-place migration decisions requires fine-grained

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understanding of what is going on with individual computers—potentially a painstaking process that can consume management and staff execution cycles that exceed the benefits of updating a computer to Windows 7. That, and making changes to processes that have always worked well before is never a comfortable decision to make, and may open the door to Murphy's Law execution risks.

NEED-TO-KNOW QUESTIONS FOR WINDOWS 7 MIGRATION PROGRAMS

Either path to Windows 7 migration—hardware lifecycle or in-service upgrades—requires a firm understanding of the current and desired future states of an enterprise's Windows computer population. Here, IT organizations will need to take a census of their PC inventory and classify these computers into demographic subgroups according to how the organization intends to implement Windows 7 across the organization.

The table below presents a question-based approach to classifying computers for purposes of undertaking either a lifecycle or in-service upgrade approach to migration.

HARDWARE LIFECYCLE UPGRADE	IN-SERVICE UPGRADE
Which computers are currently running Windows 7?	Which computers are currently running Windows 7?
Which computers are scheduled for replacement before the Windows XP EoL date?	Which current Windows XP and/or Vista computers are already Windows 7-ready from a hardware compatibility perspective?
Which computers are scheduled for replacement after the Windows XP EoL date?	Which are modifiable to become Windows 7-compatible?
Of these, which are already Windows 7-ready from a hardware compatibility perspective?	What would the cost be (bill of materials + labor + helpdesk/failure rate "insurance" allowance) to make them Windows 7-compatible?
Which currently non-Windows 7-ready computers either require hardware upgrades (additional memory or larger disk drives) and which computers are not upgradable at all?	Is this justified on a cost benefits basis, or would it be better to slot in a new machine?
Or, under prevailing considerations regarding depreciation, replacement costs, taxation, and/or other factors, does it make better sense to replace otherwise eligible computers before their originally anticipated replacement dates?	Do specific Windows 7 upgrade candidate computers run any applications known to have incompatibilities with the new OS?
	If so, is it cost effective to remediate incompatibilities with newer, known good, versions of these applications?

Figure 2: Comparative decision factors for lifecycle and in-service Windows 7 migration programs.

"To make informed Windows 7 migration systems, decision-makers need to integrate natively discoverable data with nondiscoverable external market and enterprise data."

DISCOVERING AND NORMALIZING WINDOWS 7 READINESS INFORMATION

Whatever migration path an enterprise takes, comprehensive visibility into IT infrastructures remains the key to success. Here, decision makers need to combine two kinds of visibility—a) natively discoverable data reported by the asset and b) externally cataloged market data such as product lifecycle, management, and support data, to make informed, actionable decisions about upgrade policies and actions.

First, asset inventory reports may subject their users to information overload. Asset inventory reports for even moderately sized infrastructures can run to millions of lines of raw data in which relevant information may be hiding in plain sight. Also, conventional asset discovery tools are blind to products' naming and packaging histories. They may not recognize that "Mercury Test Director" and "HP Quality Center" is the same product, or that individual installations of Microsoft Office might include Microsoft Word and Excel, but not Outlook.

NATIVELY DISCOVERABLE DATA	NON-DISCOVERABLE EXTERNAL MARKET DATA
Hardware and software system, subassembly, component, application product names	Normalized product names and designations
Version numbers, including patches, updates, and service packs	Product lifecycle information, including support and EoL policies and dates
Installation dates	Licensing terms, renewal dates, and number of contracted licenses
Usage logs	Asset cost and depreciation analysis
Network address	Estimated labor and bill-of-materials costs for upgrade-related service actions
	End-user ID and asset inventory tags
	Physical address of specific systems
	Energy consumption, heat dissipation and physical footprints

Figure 3: Chart showing contrasting examples of data provided through standard asset discovery tools and external market and enterprise data that may also be required to make specific asset management decisions.

Asset discovery solutions generally take a what-they-see-is-what-you-get approach to inventory reporting. They are good at telling you what computer hardware and software products say about themselves when scanned. But they often fall short in a number of areas.

Just-the-facts asset discovery products also overlook many categories of undiscoverable external information. Undiscoverable information falls into two sub-categories:

- **Market data**—Reflecting the external evolution of a given product over its lifecycle, including

"The best way to understand the value of BDNA Windows 7 migration solution, is to see it in action."

naming, packaging, vendor mergers and acquisitions, patch and update histories, service bulletins, recall notices, and the like.

- **Enterprise data**—Enterprise-specific information that can include compliance mandates (licensing contracts, industry standards, regulatory requirements, technical controls); internal financial data (prices paid for services, equipment and software, labor rates, accounting policies, depreciation), administrative (end-user information, physical location of assets,) and other factors.

BDNA Normalize™ transforms raw asset discovery data into actionable information for confident IT decision making. A full normalization cycle consists of filtering, disambiguating, enriching, analyzing and reporting asset discovery data. Not every step of the normalization cycle is mandatory. Users can choose as many or as few normalization steps as necessary to achieve desired results. The figure below summarizes what happens at each phase of the normalization process:

To make informed Windows 7 migration systems, decision-makers need to integrate natively discoverable data with nondiscoverable external market and enterprise data. Furthermore, they also need analytical tools that bring laser focus to migration management questions and enable more sophisticated analysis and better decisions with clarity, consistency and context. This is exactly what the BDNA Windows 7 Migration Solution provides.

SEVEN PHASES OF ASSET DATA NORMALIZATION	
Filtering	Eliminating data irrelevant to a specific management decision process.
Clarification	Assigning correct and agreed names to products that might have acquired multiple identities through their commercial evolution or inconsistencies in previous inventorying processes.
Enrichment—Market Data	Inclusion of external product lifecycle information that can include version history, updates/patches/ service packs, service bulletins, recalls, after-market specifications, etc.
Mashing Up	Integration of data from multiple sources— asset discovery, market data, enterprise data.
Analysis	Processing mashed up data to support management decision and reporting processes.
Reporting	Answers to specific queries, time-stamped reports, ongoing dashboards and status charts.

Figure 4: Functions available through BDNA Normalize.

BDNA WINDOWS 7 MIGRATION MADE EASY

Using BDNA for Windows 7 migration is designed to help IT decision-makers to:

- Rapidly understand the state of Windows 7 readiness of their infrastructures for more immediate value.
- Provide a view of the migration path in terms of upgrade scenarios for various sets of computers for more informed decisions.
- Lower analysis costs by drastically reducing manual efforts to understand the current state..
- Enable alternative scenarios and "What if?" analyses.

Leveraging Technopedia and Normalize, BDNA brings a focused approach to Windows 7 migration initiatives that accelerates informed decision-making.,

Initial asset discovery can be performed with BDNA Discover, or an equivalent solution of customer choice. In fact, Microsoft SCCM has become the most-used asset discovery tool in BDNA Windows 7 migration projects and the BDNA Windows 7 migration solution is perfectly compatible using it as the initial data source.

From there, the focus shifts to normalizing asset discovery, transforming and enriching market and enterprise data to create a body of actionable information for Windows 7 migration planning and execution. The key products deployed for this process consist of BDNA Normalize augmented by BDNA Technopedia, the world's largest cloud-based catalog of enterprise IT product information.

The first task of normalization involves filtering and disambiguating raw asset discovery data.

While identifying operating systems versions running on discovered computers is the main order of business for the first phase of normalization; normalization itself will take into account hardware specifications (processor, memory, disk space), application software running on candidate computers, their network addresses and other directory information that help identify them and their end users.

The next phase of normalization—data enrichment—transforms external, nondiscoverable market and enterprise data into actionable information for migration readiness analysis. BDNA Normalize and BDNA Technopedia work together to leverage Technopedia's vast stores of market data relevant to Windows 7 migration processes and enable more sophisticated analysis. Data points that could be relevant to a Windows 7 migration include product lifecycle data on Windows XP and other operating systems encountered during the discovery process; hardware specifications that indicate compatibility—or not— with Windows 7 such as processor performance, memory capacity, graphics subsystems; and even whether a specific computer's power supply has the capacity to support a full load of Windows 7-compatible hardware. Technopedia-powered enrichment can also flag application software incompatibilities with Windows 7, to support decisions as to upgrade these products to more Windows 7-friendly versions, replace them with alternatives, or accept less than polished performance in Windows 7 environments.

BDNA WINDOWS 7 MIGRATION IN ACTION

The best way to understand the value of BDNA Windows 7 migration solution is to see it in action. The following screenshots show the BDNA Windows 7 migration solution at some key phases of the migration process.

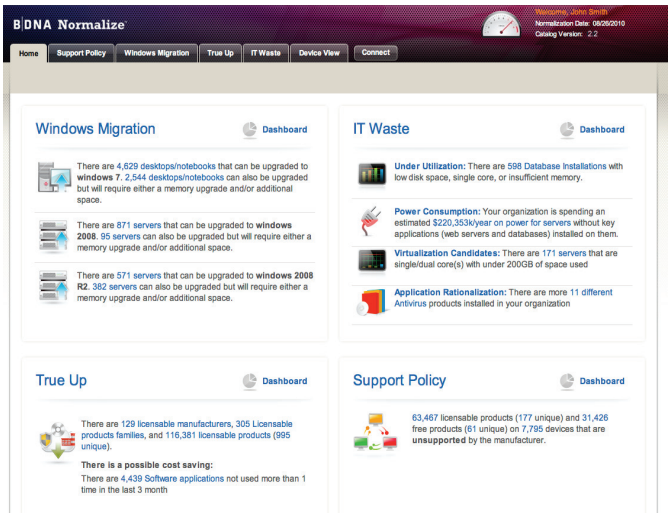

Figure 5: Windows 7 migration readiness scan from BDNA Normalize.

The first BDNA Normalize screenshot shows the results of a basic scan for Windows 7 readiness across a population of candidate PCs.

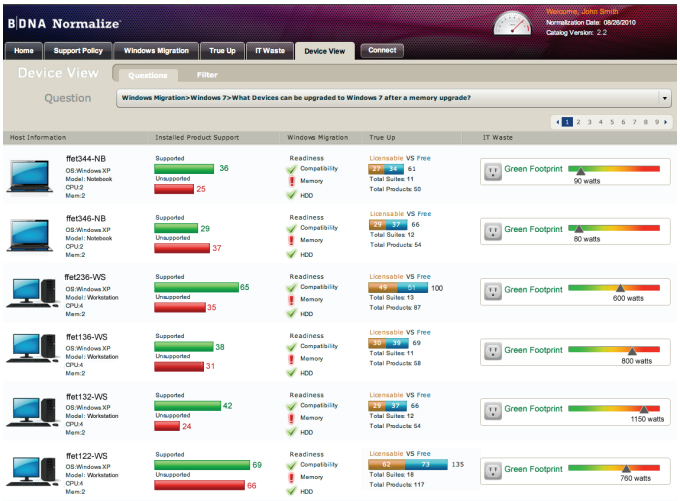

Figure 6: Windows 7 migration status of a sampling of individual PCs from BDNA Normalize.

The second screen shot drills down on this information, showing Windows 7 status of indi¬vidual machines. This also shows what issues need to be addressed on individual computers to bring them up to Windows 7 readiness standards.

The third screen provides an analysis of software application status across the infrastructure. An inset window in this view also shows potential operating cost reductions that the organiza¬tion can anticipate from a software application consolidation and rationalization program.

This last screen shot also points towards significant service improvement and cost reduction opportu¬nities enabled by a Windows 7 migration. It's a perfect time to address other cost and inefficiency issues. Better yet, IT organizations can use the same BDNA solution elements— Technopedia and Normalize— to guide this and other cost-positive initiatives such as green IT, virtualization/ consolidation, software license management and other actions. At this point, we can also mention that BDNA Normalize also has features to publish its information to third party CMDB, enterprise supply chain, database, and financial management solutions facilitating better alignment and communication of IT's value to the entire organization.

Figure 7: Dashboard of Windows 7 application compatibility from BDNA Normalize.

SUMMING UP: EMBRACING AND ENABLING CHANGE

Industry analysts, IT industry leaders, and end users agree that Windows 7 is the best new version of the Windows operating system that Microsoft has released for at least a decade. Although that case is proven beyond reasonable doubt, migrating to it at enterprise scale presents significant challenges to IT organizations. IT professionals realize their job is on the line with every change they make to business and government information technology systems.

Applying BDNA technologies not only lowers the risks and costs of Windows 7 migration while expediting adoption, but also opens the door to additional efficiencies and service improvements throughout the enterprise IT infrastructure.

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