Windows 7 Migration
The Automation Driven Approach

WHITE PAPER

EXECUTIVE SUMMARY

Microsoft® Windows® 7 comes in times of uncertainty when businesses are looking towards IT to be an enabler of productivity. Despite the apparent advantages that the new OS brings, the seemingly onerous task of migration looms large in the mind space of CIOs and IT Managers alike. The question is how do you harness the promise of Windows 7 productivity, security, and control enhancements while at the same time keeping the migration efficient, cost-effective, sustainable, and protecting end-user productivity at the same time?

This white paper explores these issues in-depth while introducing GSS Infotech's versatile and complete set of migration management methodology for Windows 7 along with the automated application compatibility testing approach. Together with a smart, automation-driven strategy, these tools are ready to help you make a quick and efficient move to Windows 7.

WHY MIGRATE TO WINDOWS 7?

If your organization is one of those that did not migrate to Windows Vista and lived to tell the tale, there are other issues to keep in mind before you take the call on Windows 7. Industry analyst IDC estimates that by the end of 2010, 19% of the global IT workforce will be running Windows 7 — and it is likely to be the preferred business platform in a very short time.

- Productivity features like Libraries and Federated Search accelerate routine tasks so users can focus on things that really matter.

- Security enhancements such as BitLocker and AppLocker isolate and protect critical information and system assets from theft, loss, and corruption.

- Connectivity improvements such as DirectAccess and BranchCache deliver on Microsoft's promise of secure, trouble-free access across the network.

For mission critical legacy applications that have proven stability on XP, Microsoft provides XP Mode, a virtual instance of Windows XP, to run on top of Windows 7 as a temporary "island" for such applications. It would appear that Microsoft has taken enough care to avoid migration and deployment issues that compromised earlier OS releases as Windows 7 runs well on most Vista-ready hardware.

But perhaps the most compelling argument for migrating is that Microsoft is planning to taper off support to the ageing, decade old Windows XP. In fact a Gartner report predicts that organizations that delay their Windows 7 migration plans may have trouble completing deployment before Windows XP support ends.

The move to Windows 7 is occurring on a faster and a larger scale than any OS migration in recent memory for the reasons stated above. The challenges for the IT team are obvious—from hardware readiness, application compatibility, and ongoing management issues to end user training and productivity concerns.
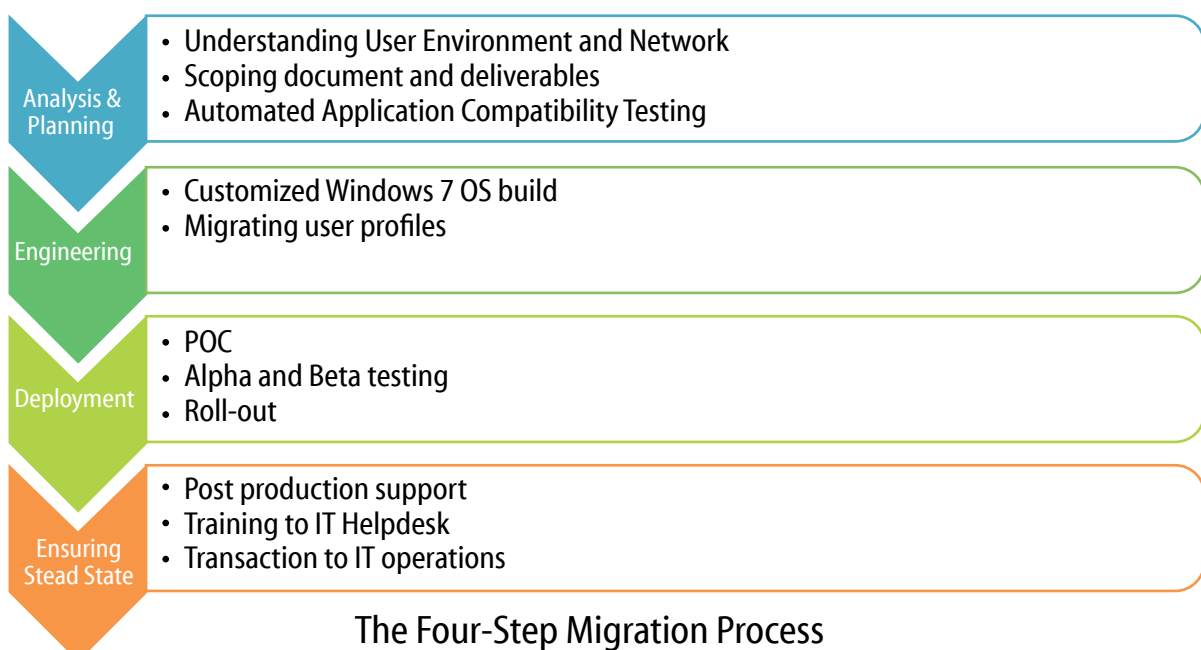
THE AUTOMATION DRIVEN APPROACH

Migrating a handful of desktops is one thing, but if you are a mid-to-large sized company with operations spread over multiple geographies, the prospect of migrating the few thousand machines that form the backbone of your business is probably giving you sleepless nights. The answer lies in the automation of certain elements in the process which involves minimum human interaction as assets are remotely accessed and migrated in an end-to-end process that ensures there is minimum system down-time for the employee. In the sections that follow the paper demonstrates proven capabilities of how automation is a prompt answer to many problems that migration poses, However, the flip-side is that automation also means more meticulous preparation that ensures that there are no hitches when the process begins.

The top questions on the CIO's mind

- How do I accurately determine what hardware should be migrated, upgraded or replaced?

- How can I make sure that all the applications will work as is on Windows 7?

- How can I reduce the testing time cycle for all the applications to move to Windows 7?

- How can I make sure users have continuous, reliable access to the applications they depend on—before, during and after a major Windows 7 migration?

- What are the fastest, most efficient and least disruptive way to actually deploy Windows 7 to hundreds or thou sands of machines?

- After the migration is complete, how can I make sure all my Windows 7 machines stay secure, patched and compliant from the moment they're up and running?

- How will I maintain our Windows 7 environment and lower service and support costs before, during and after the Windows 7 migration?

THE FOUR STEP PROCESS TO SUCCESSFUL MIGRATION

A four-step process that is aimed at a seamless Windows 7 migration has been proven to be effective in almost all scenarios. [See also, Automarion360 GSS Approach]

Analysis & Planning
- Understanding User Environment and Network
- Scoping document and deliverables
- Automated Application Compatibility Testing

Engineering
- Customized Windows 7 OS build
- Migrating user profiles

Deployment
- POC
- Alpha and Beta testing
- Roll-out

Ensuring Stead State
- Post production support
- Training to IT Helpdesk
- Transaction to IT operations

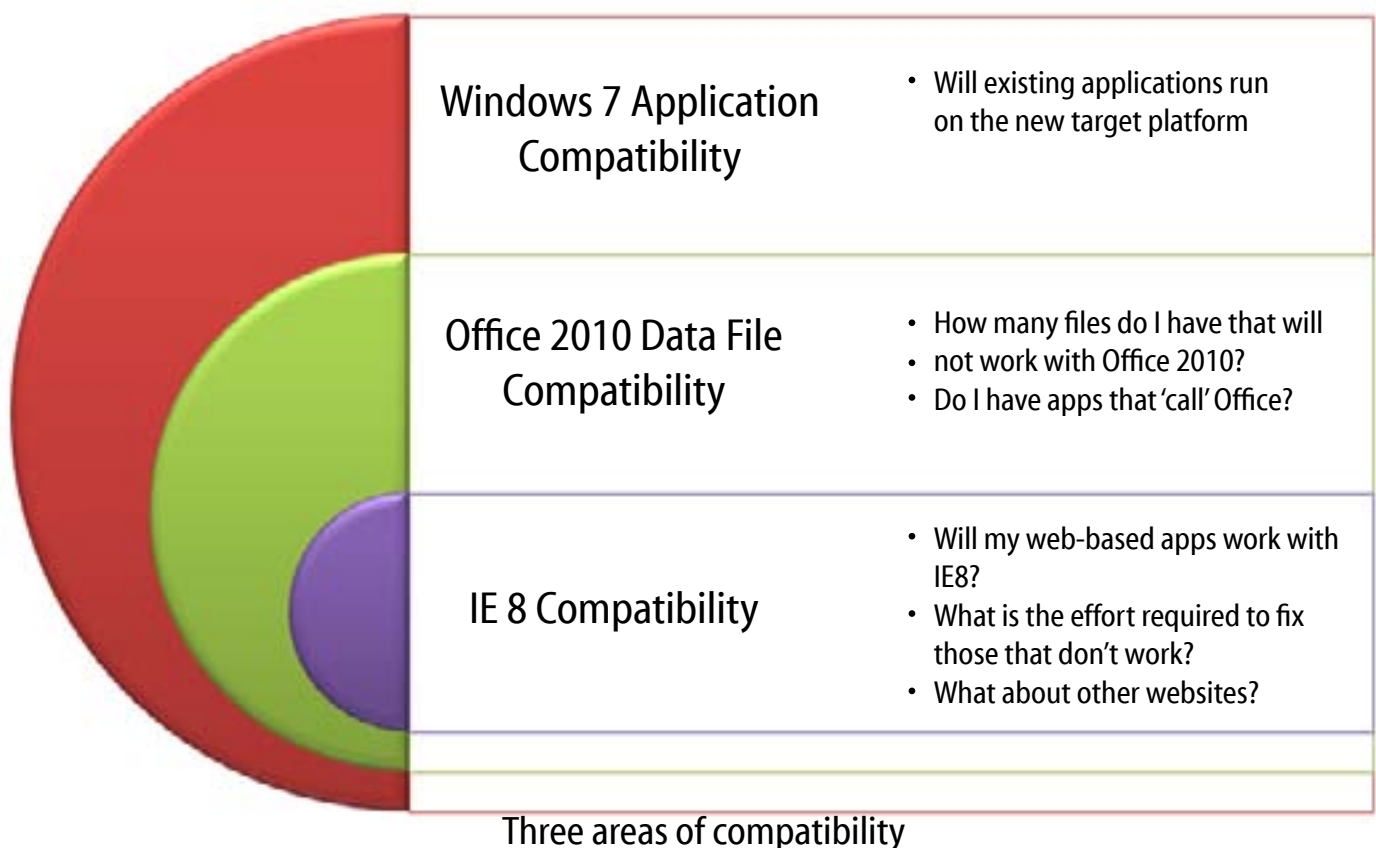The Four-Step Migration Process

ANALYSIS AND PLANNING

The first step involves exploring and evaluating patterns of hardware, software, and application use in your end-user environment, and identification of network and management issues you plan to address. The solutions driven by this methodology come with tools that help you determine hardware readiness and overcome infrastructure barriers for a smooth migration. This phase also involves creating an exhaustive scoping document that sets expectations and outlines deliverables at the outset of the process. The importance of effective communication cannot be overemphasized as successful migrations are often dependent on coordination across an organization. It is important to identify who needs to see or approve components of the plan, and then to plan when and how they will be kept in the loop. Setting of expectations sets the bar as even a good result can seem like a failure if expectations are undefined or unrealistic. It is critical to work with key stakeholders to understand their objectives and agree on achievable goals and milestones.

Application Compatibility Testing

The key question in the mind of a CIO at any company attempting a large scale migration is "Will my applications work in the new environment?" Surprisingly the accepted practice in past migrations has been quite ad-hoc in approach. However, without a process-driven roadmap, things could go wrong.

Windows 7 Application Compatibility	• Will existing applications run on the new target platform
Office 2010 Data File Compatibility	• How many files do I have that will • not work with Office 2010? • Do I have apps that 'call' Office?
IE 8 Compatibility	• Will my web-based apps work with IE8? • What is the effort required to fix those that don't work? • What about other websites?

Three areas of compatibility

Scenario Analysis To better understand the costs and in efficiencies built into the traditional approach, we create a scenario below:

Effort Snapshot:

Number of applications: 1000 | Basic compatibility testing effort per application: 4-5 hours | Effort translates to a team of 5-10 working up to 6 months | Estimated costs as high as $ 500,000 | Costs may escalate for larger organizations with more applications

The non-automated approach does not earmark too much effort in analyzing the level of criticality to applications [see illustration on the Traditional Approach to Application Compatibility Testing]. About 20% of the applications are re-developed, re-packaged and re-provisioned, while the rest of them are deployed in the new environment with a 'Fix on Fail' approach. This could result in costly delays defects are detected in the new environment. They key disadvantage of this approach is that the risk mitigation takes a long time, as kinks in the system are ironed out on a case-by-case basis.

## Traditional Approach to Application Compatibility Test-
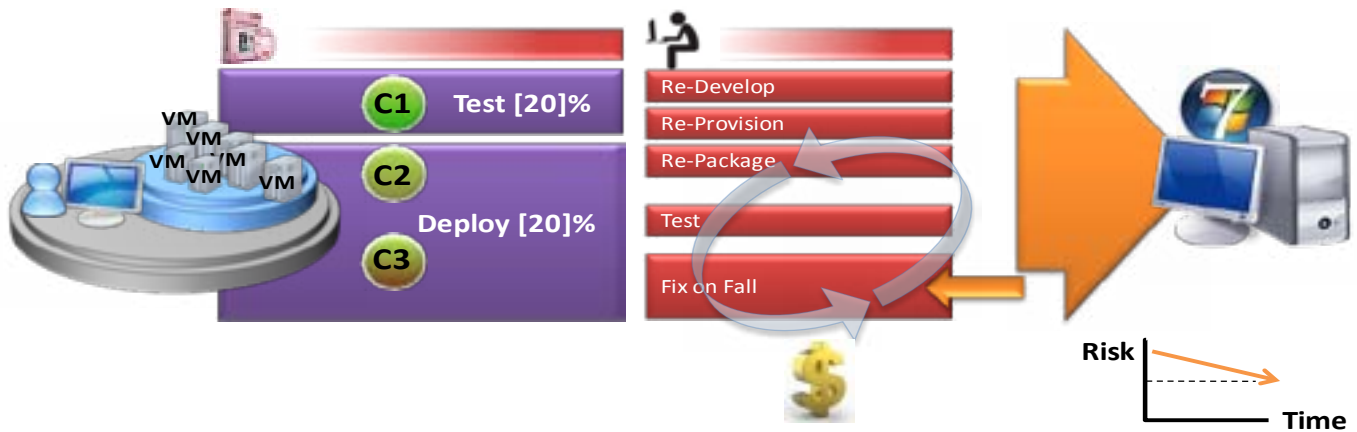
The GSS approach to compatibility testing focuses on an automated assessment of the applications (100% analysis) and segregating the applications under the following three categories as mentioned below

- Red: Needs code change; will not work on Windows 7
- Amber: Some functionalities might not work and need a thorough testing – likely to work on Windows 7
- Green: Will definitely work on Windows 7 and no testing is required

The first critical step in this approach is the determination of how critical an application is to the organization and evaluating the impact of Windows 7 environment on its functionality. When the segregation into Red, Amber and Green is made it becomes that much simpler and more intuitive to break the effort to address each of these application types. While code Red application go through heavy code-change and subsequent Detailed Testing phase, the Amber code application needs re-packaging to address those functionalities which could fail in the Windows 7 environment. Green code applications go straight through but are monitored with a series of minor tests, coupled with user testing for unexpected failures. The mitigation of risk over time is a steeper fall than in the traditional approach.

GSS Approach to Application Compatibility Testing
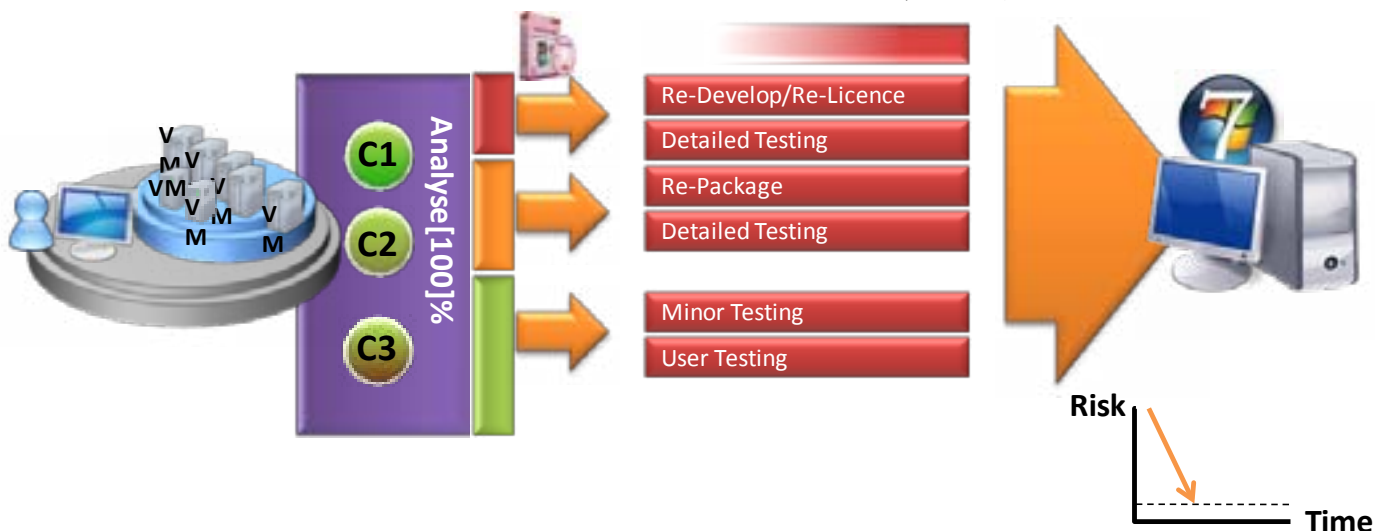
Preparing for migration: The inventory phase

With complete and accurate inventory information, you can begin the process of making decisions about your upcoming migration. Most organizations have plenty of obsolete content, outdated applications and even unnecessary hardware components sitting on desktop systems and user networks. Migrating these unnecessary components over to Windows 7 is an obvious waste of time, money and resources, so it is important to trim the fat before you begin your move. And of course, you need a reliable way to determine which systems and applications are compatible with Windows 7.

The process begins with a scan of devices across your network to create a hardware inventory. Analyze applications usage and their trends to identify dead weight, applications that your workforce can live without. Monitor actual application use for license optimization and re-harvesting opportunities. This is where significant cost savings can be made, as companies can avoid renewing licenses for applications that they will no longer need. The migration effort offers an opportunity to perform this exercise.

Hardware Analysis and Testing

It is important to keep in mind that changes may be required to system hardware to be able to support the Windows 7 environment. The Windows 7 Hardware Assessment Report provides detailed information about each inventoried computer in the organization's network, allowing you to perform analysis of existing computer hardware.

This assessment indicates which computers in environment are ready to upgrade to Windows 7 Enterprise. While those computers running on Windows Vista® should be ready to upgrade to Windows 7 Enterprise with little intervention, those that are running on earlier versions of Windows (XP, 2000) might require hardware upgrades before upgrade them to Windows 7.

A quick sanity check reveals that the following parameters are preferred for a Windows 7 migration

- 1 GHz 32-bit (x86) or 64-bit (x64) processor
- 1 GB of system memory (32-bit)/ 2 GB (64-bit)
- 16 GB available disk space (32-bit)/20 GB (64-bit)
- DirectX 9 graphics processor with WDDM 1.0 or higher driver

ENGINEERING:

There is no real way to perform a successful Windows 7 migration without conducting a complete, accurate and up-to-date inventory first. This means gathering detailed information about the hardware configuration of every machine, creating a complete picture of the software running on each of those PCs and then using that information to make smart, informed migration decisions. Without the right tools, this can be a highly time-consuming and labor-intensive process. However, software inventory capabilities are available that greatly simplify and automate it. It is a question of using the tools that best fit your organizational needs.

The automation advantage

This is where the automated compatibility testing comes in to address these needs. Reliable and up to date information about hardware, software deployment and use, and network assets helps you plan when to migrate, and assemble the resources you will need. Once you know your network's physical requirements and topology, you can build a deployment plan that minimizes coverage gaps and unpleasant surprises.

Hardware and software readiness assessment concludes when you create and analyze reports to assess requirements. Plan how you will use multicasting, streaming, local file shares and package servers to position files and manage data transfer. You also need to prioritize application testing prior to the migration.

Building the OS image

Though deploying standard hard disk images is the fastest, most consistent way to install a new operating system, it is important to keep individual user group requirements in mind, and building in an element of customization. You can also choose to create a single hardware-independent image or a small set of base images. A best practice is to keep images as small and generic as possible, adding only applications that must be installed on all computers with that base image. In complex environments, a small set of base images may be more effective, although this approach requires more image maintenance. In either case, the result of the assessment phase will give the migration team an indication as to the level of customization required.

DEPLOYMENT

In an ideal world, there would be a fast, easy upgrade option for moving from any recent version of Windows to Windows 7. However, the reality is that potential upgrade paths to Windows 7 are almost non-existent. In fact, there is absolutely no in-place upgrade options available for any legacy versions of Windows— other than Windows Vista with service pack 1 or service pack 2 installed. Even in cases where you are upgrading directly from Vista, there are additional upgrade limitations that can cause problems in many situations. For example:

- You cannot upgrade from one core language to another core language
- You cannot upgrade from a 32-bit version to a 64-bit version

These limitations are enough to rule out in-place upgrades as an option for most organizations, which leaves clean installs as the only viable choice. Clean installs also have the added advantage of creating a pristine OS environment without all the extra baggage in-place software upgrades can leave behind.

GSS Migration Approach
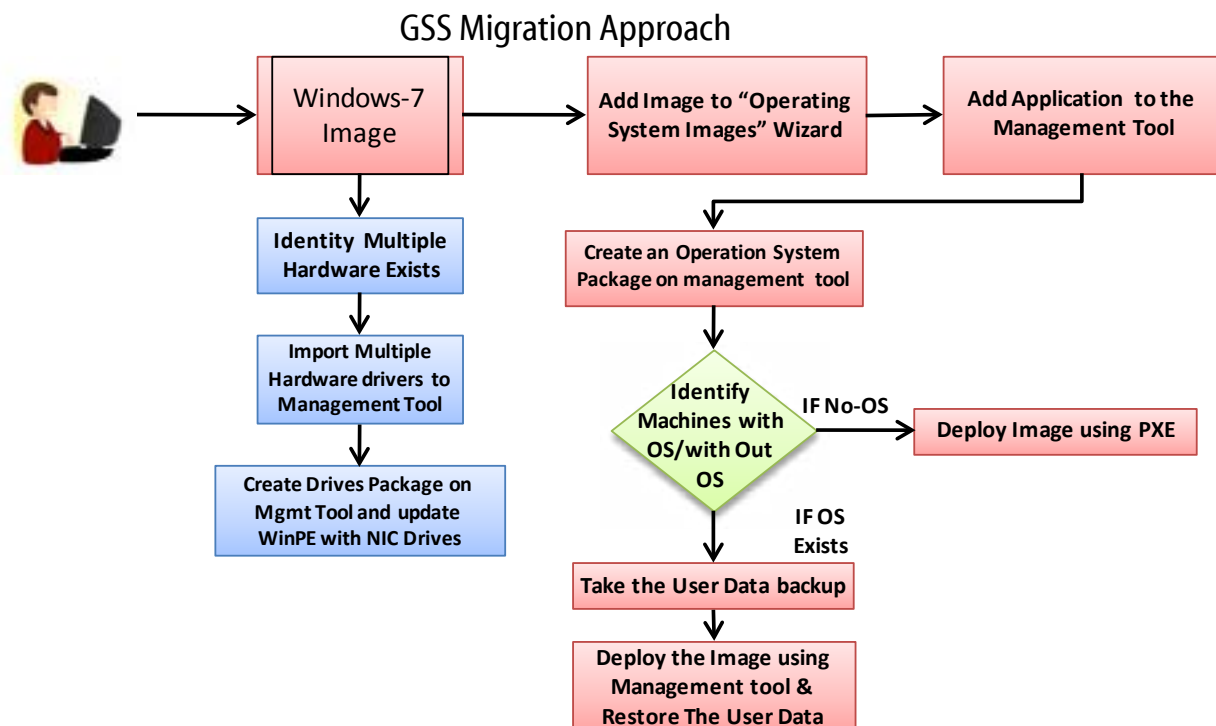
Seamless Migration of User Personalities

Migrating the overwhelming number and variety of user data, desktop and application settings—along with all the other details that make up a typical user's desktop "personality"—can be one of the most difficult and troublesome aspects of a major OS migration, especially when you are performing clean installs on hundreds or thousands of machines. This is one area where advanced migration tools are particularly important. The GSS methodology employs personality migration capabilities that can dramatically simplify and automate the process of preserving and migrating user data and settings to a new Windows 7 environment. Without these kinds of advanced personality migration tools, you run the risk of eating up countless IT resources and creating major disruptions as users struggle to restore their desktop environments.

A successful large-scale migration requires knowing what is in front of you. A pilot project is the best way to simulate each step of the migration process for thorough testing and evaluation to ensure a smooth transition. For best results, preselect specific users, run the pilot, and then analyze the overall operation of the process.

Once pilot test results have been analyzed and any teething troubles ironed out, you will be ready to throw the switch and begin the automated migration process that ensures that all desktops are remotely migrated with a view to keep user down-time at an absolute minimum.

ENSURING STEADY STATE

The migration process is only the first step in what will be a committed, long-term relationship with Windows 7. From the moment the new operating system is up and running, you need to find a reliable and efficient way to keep the entire environment patched and compliant, while dealing with issues that your workforce may face while adapting to the new environment. Committed post-production support becomes critical in this phase. GSS' methodology ensures that you have the power to reduce your mean time to repair (MTTR) and improve your overall service-management environment by streamlining and automating a complete range of service-desk functions. By applying industry-acknowledged best practices, GSS' fully integrated service management tool allows you to solve, submit, track and manage requests.

Training of IT Helpdesk staff becomes critical once the hand-over is complete, because at GSS it is our belief that you need to hit the ground running. An integrated training module will ensure that your in-house IT staff is fully equipped with the knowledge and resources to tackle any issues that may arise post-migration.

Automation360 - The GSS Migration Methodology

Automation360 is an approach to migration that builds on the installation capabilities of zero human intervention deployment using Microsoft Tools like System center Configuration Manager and Microsoft Deployment Toolkit 2010.
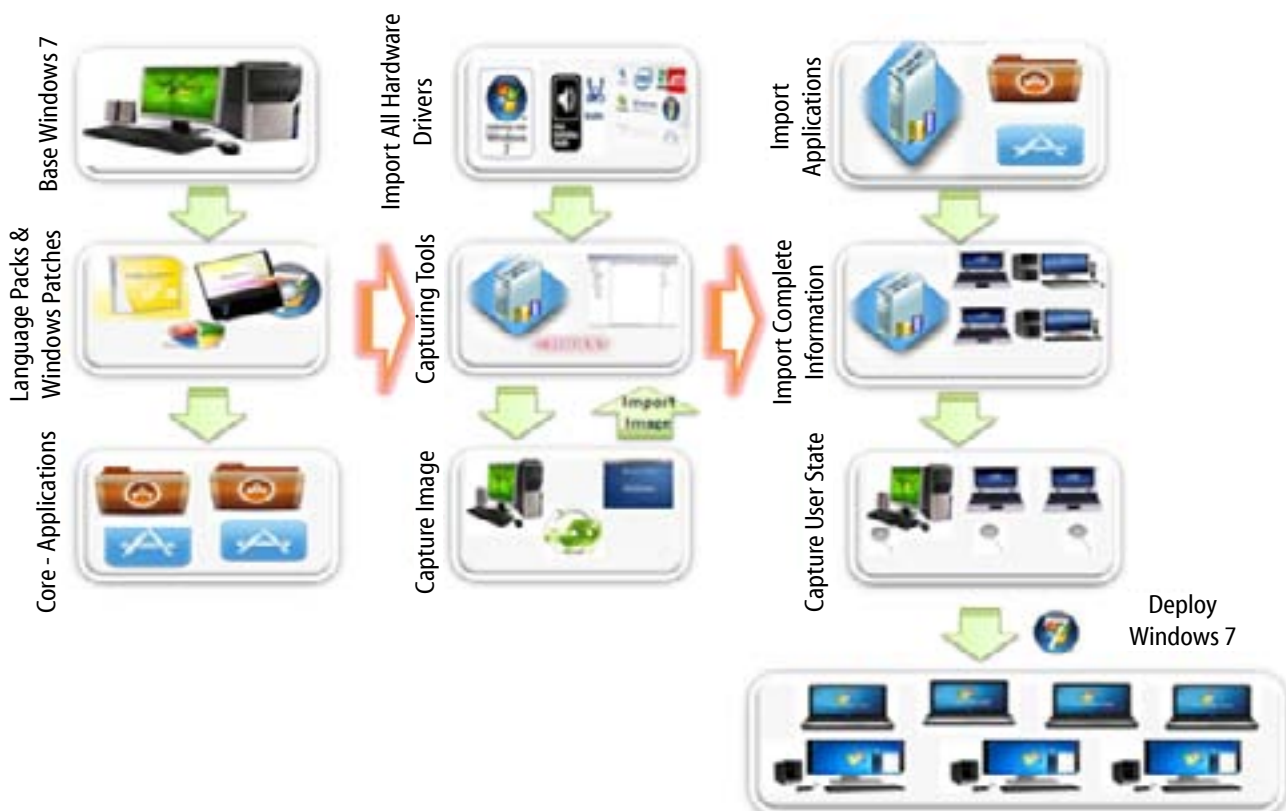
GSS Migration Approach

Here's how Automation360 from GSS adds value:

- You leverage the knowledge and experience of our consultants who will help you deploy quickly, cost effectively and without business disruption

- You significantly reduce migration costs, allowing deploying operating systems and software upgrades across the network with Automation360.

- You bring down key resources (hardware, software and people) necessary to manage operating system deploy ments, while maintaining scalability.

- You can execute the final stages of migration out-of-hours to limit any impact on user or business productivity

- You have access to best-in-class post-migration support and remote desktop management to address exigen cies if any.

Business Benefits of the GSS Migration Methodology

How does Windows 7 assist your business? Here are some quick pointers.

- *Drive Down Costs:* Automation cuts the cost of deployment by more than two-thirds, reduces the total cost of ownership (TCO) of a desktop PC more than 40%, and then pays back even more by supporting Green Computing, license management, and other cost-reduction initiatives.

- *More efficient user profile management.* User-manageable workspaces maintain productivity high without com promising OS standardization; profile virtualization supports backup and restoration of personality and profile settings across machines, environments and operating systems.

- *Stay safe in an uncertain world.* The global threat environment has changed dramatically: the focus is now on mitigating risks associated with targeted or surprise attacks, threats to data and applications, and with insider errors or misdemeanors. Your migration is an ideal time to replace patchwork legacy security measures with powerful, integrated solutions, featuring centralized management according to clear, enforceable policies.

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CONCLUSION

Major desktop operating system migrations are never easy. But with a smart strategy, a best practices approach and the right migration, maintenance, security and service management tools, you can take advantage of everything Windows 7 has to offer with minimal disruptions to your business. GSS is ready to support and enhance your migration efforts with full support for Windows 7 and a comprehensive range of advanced discovery, inventory, packaging, deployment and desktop management capabilities. With GSS' proven methodology, you can make the transition to Windows 7 as smooth and efficient as possible—and create a robust, policy-based foundation for managing your whole desktop environment before, during and after your Windows 7 migration.

ABOUT GSS

GSS Infotech is a pioneer in providing Managed IT Services to over 200 Fortune customers worldwide. GSS' customers are leaders in the areas of Telecom, Banking and Financial Services, Insurance, Healthcare, Retail and Governance. Powered by a pool of highly qualified professional workforce, GSS Infotech offers world class services that have propelled it into the *Forbes' list of Asia's 200 Best Under $1 Billion Companies for three consecutive years, 2008, 2009 and 2010.* Finance Asia listed GSS Infotech as the *"Best Small Cap" in "Asia's Best Managed Companies" n 2008.* GSS, with its demonstrated excellence in Remote Infrastructure Management Services, Virtualization solutions and Application Management Services, is a partner of choice for Infrastructure optimization solutions. It provides customized and cost-effective solutions to customers with strong commitment to quality. Founded in 1999, GSS is headquartered in Hyderabad, India with operations worldwide through its offices in India, Singapore, Middle East, and the USA.