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CASE STUDY

A Quest for Zero Touch Deployment

The Fairfax County government provides essential services to its citizens, including public transportation, day-care programs, health clinics, recreation centers, senior centers, libraries, disposal facilities, as well as police, fire and rescue. The mission of the Department of Information Technology is to deliver quality and innovative information technology solutions to provide citizens, the business community, and County staff with convenient access to appropriate information and services. Supporting a mission like this requires the use of modern information technologies that are capable of improving the level of service the county provides its citizens.

As the government began its migration towards Microsoft Vista, it sought a way to complete the migration in the most efficient way possible. What began as a manually intensive process, resulted in an efficient, zero-touch deployment approach that extended beyond the immediate need towards a long-term deployment solution.

Business Challenge

In 2007, the Fairfax County Department of Information Technology kicked-off an important initiative to migrate to Microsoft® Windows Vista™. The migration effort required the department to standardize on a "base image" that could be deployed to approximately 12,000 computers, comprised of desktops, laptops, including public-facing kiosks.

Because the migration would include more than 80 governmental departments, the Department of IT found the number and variety of hardware and software configurations overwhelming. An extensive amount of work would be required to collect and compile a master inventory of hardware-specific drivers, business applications, and other configuration settings.

The migration strategy also required flexibility in that the various departments could opt-in or opt-out of the Vista migration. This required the IT department to continue support of existing configurations and older operating systems while moving forward with the Vista migration. In essence, the government had created a "push/pull" migration strategy.

The Fairfax County IT Department is renowned for their application of innovative technology solutions and their level of quality. To support the "pull" process, the IT department developed a deployment shopping cart application that resides on their Intranet. To make a deployment request, users simply logged into the deployment application, selected the applications they desired to initiate a formal deployment request.

Customer Profile

Fairfax County, Virginia

Government: County

Profile: Fairfax County is the most populous jurisdiction in both Virginia and the Washington metropolitan area. With a population of over one million people, Fairfax County's population exceeds that of seven states. The Fairfax County Department of IT supports over 80 agencies.

Armed with the knowledge of the business requirements and task at hand, the IT Department set out on a journey to find the appropriate technology solution to support the "push" aspect of the migration effort.

The migration solution ultimately chosen would need to be flexible enough to support a variety of configurations, to simplify the migration effort, integrate with existing support processes, and support the overall strategy.

The next page discusses the journey Fairfax County followed to make zero-touch deployment a reality…

Desktop and Server Management Solutions

The Journey

Initially, the county selected a popular deployment approach that leveraged proven tools and common practices. Although the approach was not a complete zero-touch deployment solution, it did lead them down the path of automation. A large effort commenced to plan, write, and test the necessary migration scripts. However, the diverse array of computer platforms and custom configurations still presented challenges in keeping the various base images current and up-to-date.

Armed with the deployment media, technicians were dispatched to various locations to execute the migration scripts. The technician would follow a series of prompted configuration questions, and attend the deployment through its completion. Upon completion, additional applications were installed via Microsoft Systems Management Server (SMS).

Although the approach enabled IT professionals to work more efficiently, it still required a large degree of configuration and manual intervention for each deployment. It also required continued script development which tied up valuable technical resources. Because they were not able to support the script writing effort full-time development timelines began to slip, thus affecting the deployment schedule.

Discovery

As Fairfax County progressed down the migration path, it became readily apparent that the complexity of the deployment effort was larger than once believed. The government contacted Intrinsic Technologies to assist in "scripting" the deployment requirements using the deployment approach selected.

Although Intrinsic was capable of assisting in the manual development of custom deployment scripts, there was no hesitation on our part to demonstrate how Fairfax County could achieve their ultimate goal more quickly and easily, and with greater flexibility. The solution was Intrinsic's award-winning[1] zero-touch deployment offering, SWIMAGE. Not only would SWIMAGE simplify the deployment process, it would also integrate with the deployment process already in use.

Intrinsic demonstrated how SWIMAGE eliminates the need for custom scripting and makes zero-touch deployment a reality. By using SWIMAGE to support their deployment strategy, Fairfax County could not only address the immediate deployment needs, but it could automate and accelerate the overall deployment effort. And with SWIMAGE's zero-touch capabilities, technical resources could focus more time and effort on their core support responsibilities.

Solution

SWIMAGE provided single, zero-touch deployment solution that the county sought. As a pre-packaged solution, SWIMAGE not only integrated easily into their environment, but also provided the code, scripts, and processes necessary to deploy Microsoft Vista.

Fairfax County engaged Intrinsic for an initial eight-week effort to get SWIMAGE properly configured for the Vista deployment, including:

- Setting up a lab environment; complete with deployment and imaging servers
- An inventory of all hardware device drivers
- Compatibility testing to mitigate compatibility issues during the deployment process
- Creation of a single base image (hardware-independent)
- Creation of custom packages, hardware layers, and configuration state settings for several departments
- Automated desktop image creation and deployment
- Management of all deployment processes through a single web console

Realizing the benefits of SWIMAGE as a zero touch deployment solution, Fairfax County increased the scope of the effort to include existing operating systems, including Microsoft XP SP2 and XP Tablet Edition. The county extended the engagement another four weeks to accommodate the breadth of scope for the deployment effort.

A single instance of SWIMAGE supported Fairfax County's Vista deployment, as well as their XP, XP Tablet Edition OS's. Additionally, Fairfax County plans on setting up another instance of Swimage on their public facing network to facilitate the deployment of those systems. SWIMAGE would serve as their sole deployment solution.

[1] Microsoft Deployment Service Partner (DSP) Program Airlift Award - Recognized as generating the most deployment business value in the US of all Partners in the Enterprise space.

Results

Fairfax County's selection of SWIMAGE resulted in these specific benefits:

Single-Base Image: SWIMAGE drastically reduced the number of base images the county was managing from 28 custom base images to a *single base image per O/S* (including Microsoft Vista, XP SP2, and XP Tablet PC Edition). The base image *included* the latest o/s patches, security template, and core applications, but *excluded* special business applications, unique hardware drivers, user data, and other unique configuration settings. All government agencies, including public-facing kiosk computer, used a single, binary base image.

Hardware Independence: As a hardware-independent platform, SWIMAGE simplified the way hardware-specific deployments handled. The county was able to easily incorporate new hardware types to the scope of deployment without modification to the base image.

Zero-Touch Deployment: Provides ability to perform true zero-touch deployments

Simplified Rollback: SWIMAGE offers the ability to "roll-back" to the previous state/operating system quickly and easily.

Reduced Time-To-Deploy: SWIMAGE reduced the required deployment time by as much as a third. SWIMAGE cut the deployment effort from approximately 3-4 man-hours to about 0.5 man-hours per deployment.

Fewer Resources: Another reduction pertained to the number of personnel required to support the deployment effort. Long-term, the IT Department would handle deployments more as a service versus a technically intensive effort.

Future State Configuration: Fairfax County has the ability to more easily manage future deployment configurations on a per machine deployment basis. New hardware configurations are added easily to the configuration—with no impact to the base image—through SWIMAGE's layered deployment technique.

Attended Deployments: Fairfax County has improved their ability to support "Light-Touch" deployments for remote locations. SWIMAGE provides ability to manage/create deployment media for an attended install, but maintains the automation. SWIMAGE's DVD deployment feature allows deployment to remote locations with no (or insufficient) network connectivity.

> *"Intrinsic, with their SWIMAGE® solution, has developed a solid reputation within Microsoft and our Partner communities as a 'go-to' for helping customers deploy and maintain their infrastructure. Their focus and technical expertise in this area has resulted in their name being mentioned alongside much larger companies time and time again."*
>
> Chris Ross, Microsoft Senior Product Manager
> Office Deployment

More Benefits

Accelerated Deployment – SWIMAGE was able to reduce the amount of time required to execute and complete deployments, often reducing deployment times by as much as one-third compared to the previous deployment process.

Accuracy – Having a standardized, centralized base image and a distributed deployment model gave the company greater confidence in the accuracy of the base images deployed.

Lower Total Cost of Ownership – The total cost of ownership for computer software/hardware is often reduced up to 15% due mainly to the number of resources and amount of time required to deploy.

Improved Patch Management – SWIMAGE simplifies patch management within the company by allowing access to each layer in the build: the hardware layer, client settings and application packages. Today, Fairfax County has a single image to manage, versus the 28 they previously managed.

Greater Stability – The standardization of images and system management processes increases the stability and reliability of deployed desktop and laptop operating systems and applications.

Greater Control & Security – Increased automation provides the IT organization greater control and management of IT systems and user functionality.

Leverage Existing Deployment Tools – SWIMAGE leverages the investment made in other deployment tools, such as Microsoft's OS Deployment Feature Pack for SMS 2003 and Microsoft BDD.

About Intrinsic

Intrinsic Technologies is a privately held, technology service provider and thought leader for Microsoft Infrastructure solutions. We help our customers improve business performance through the alignment of business processes and technology solutions.

Intrinsic offers best-of-breed solutions, proven methodologies, qualified consulting staff, strong industry partnerships, and outstanding reference customers. Intrinsic is a Microsoft Gold Certified Partner with competencies in Advanced Infrastructure Solutions, Information Worker Solutions, Mobility Solutions, Network Infrastructure Solutions, and Security Solutions.