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Automating Planned and Unplanned Desktop Migrations

Laural Gentry
CA CLIENT AUTOMATION



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Executive Summary

Challenge

Every time Microsoft releases a new operating system or drops support for an older operating system, decisions must be made on how and when to migrate the corporate desktop and laptop install base to the new release. This is particularly relevant today with Microsoft dropping mainstream support for Windows XP in April of 2014. The migration from XP to a newer Windows operating system becomes an imperative, not a decision point, which carries greater risk of disruption to your business. If you are already on an operating system that is still in current support, you are able to more thoughtfully plan your migration by replacing older systems through attrition by deploying the new operating system as computers are replaced.

Additionally, there are daily and unplanned lifecycle configuration management events that precipitate the need for a migration and these events occur along a spectrum of scales. From the single user whose computer has been lost, stolen or broken, to the possibly hundreds of computers whose lease or warranty has expired and must be replaced.

An operating system migration, independent of the lifecycle event that triggers it, is complex. When a migration event occurs, there is a risk of decreasing the productivity of the user and ultimately the success of the business. The integrity of a user's system cannot be compromised by losing data, configurations and settings, productivity applications or access to corporate resources.

Opportunity

In order to be efficient and decrease the disruption of these ongoing lifecycle management migration events, a tested, repeatable and fully automated operating system migration process can be implemented.

The implementation must be designed to scale from a single user migration to a migration of 1000's without the need to reconfigure the process by creating standards and logic to deal with the sometimes unique and dynamic nature of end-user computing. The process also takes into consideration upgrading software versions and preserving the user's unique settings and data.

Benefits

The Automated Migration function of CA Client Automation guides administrators through the process of planning, configuring and building a run book driven automated migration process that is comprehensive, scalable and reusable. By leveraging such an automated process, the management of not only the large scale migration events, but the everyday lifecycle configuration management events are optimized, reducing the impact of change and disruption for end users and increasing the effectiveness of the level of service provided to the business by IT.

Section 1: Challenge

Automating Operating System Migrations for all Lifecycle Events

In order to successfully and efficiently manage not only the large enterprise wide operating system (OS) migrations, but also the everyday lifecycle configuration management events, IT must streamline and automate a process that is:

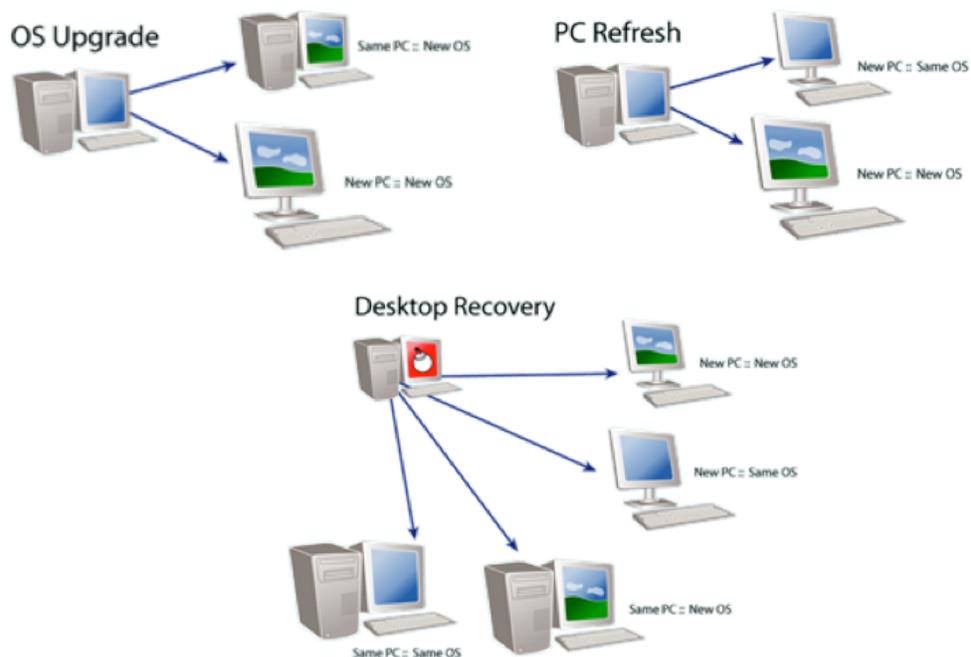
- **Scalable** – From a migration of one to a migration of hundreds or even thousands of systems.
- **Flexible** – Especially around the migration process as different departments have different needs and individual users in those departments can also be unique.
- **Simple** – To maintain as new applications, new standard images and new hardware are constantly being released.

To that end, CA Technologies developed a solution leveraging the technology available in CA Client Automation to assist our customers in creating a comprehensive migration methodology based on industry best practices.

With CA Client Automation you are able to plan, define, and create your automated migration process in a way that best suits your migration strategies and goals, and monitor the execution of the process through to completion.

In the lifecycle of a desktop system, there are three main events that will result in the need to perform a migration: an operating system upgrade, a PC refresh or a desktop recovery.

Figure 1:
Lifecycle
Migration Events



Section 2: Opportunity

Automate for Scalability and Reuse

Even though operating system migrations are complex events, there are five fundamental steps to create a comprehensive and reusable migration process. The Automated Migration feature of CA Client Automation guides you through these steps.

Whenever you have a lifecycle event that triggers the need for an operating system migration, you simply need to select the system or systems that need to be migrated to a new operating system and activate your pre-built migration process that fits the scenario for the life-cycle event.

The Automated Migration process uses various components and functions of CA Client Automation combined with out-of-the-box preconfigured CA Process Automation workflows to automate the migration process. The process uses hardware inventory data, software packages, OS images and DNA files to perform the automated end-to-end migration.

Using the Automated Migration web-based user interface, you are guided through the following phases of creating an automated migration process:

- **Plan and Prepare:** A hardware assessment will evaluate the computers in your enterprise based on the hardware criteria you specify, and classify the computers into groups. This step is primarily for large scale migrations and is not necessarily required for a single PC refresh or one-off migration.
- **Build:** Create the OS images and software packages, configure CA Desktop Migration Manager, and create a machine mapping file if machines will be renamed after the migration. Then create your automation templates, which will map the OS images and the software that will be deployed. The final step is to create the migration job in which you define the computers or groups of computers to be migrated.
- **Validate:** The Automated Migration function will verify that all the required OS images, software packages and machine mapping files are available and ready to use.
- **Activate and Deploy:** Once you have validated and tested the configured automated migration process, simply activate the migration job.
- **Monitor and Analyze:** Track the progress of the migration job using the CA Business Intelligence reports provided.

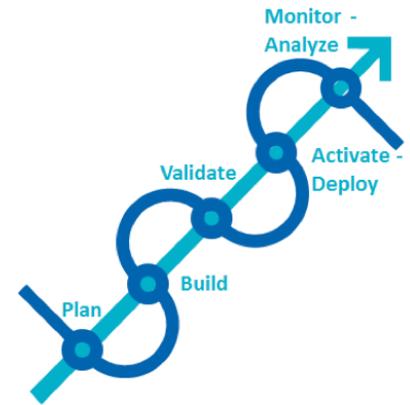


Figure 2:
Automated Migration Process Flow

Plan and Prepare

In the event of a large-scale, enterprise-wide operating system migration, it is crucial to spend time up front planning and creating the process. You must understand which computers in the environment have the necessary hardware configuration for the new OS, which computers will require upgrades to specific components, and which computers must be replaced. To assist with the planning phase of a large scale migration, CA Client Automation provides the ability to create hardware assessment templates to specify the hardware criteria that will help determine the readiness of the computers for the new OS.

Create The Building Blocks

The planning and preparation phase requires the creation of OS images and software delivery packages that will be used in the automated process. CA Client Automation provides the functionality to create boot images, OS images and software delivery packages to deploy the software not already installed on the base images.

CA Desktop Migration Manager (included in CA Client Automation) must be configured and the OS settings, application settings and user data (DNA) to be migrated specified. Software delivery jobs can then be created to initiate the storing and application of the user's settings and data.

If the computer names will be changed during the migration, a machine mapping file should be configured. This file specifies the old computer name and the name of the reconfigured or replacement computer.

When you have these building blocks of the migration complete, you will use the Automated Migration web-based functions to create your automated migration process.

CA Desktop Migration Manager

When a PC is replaced or upgraded, the user's unique desktop environment, including data and settings, must be preserved and transferred to help ensure uninterrupted user productivity. When performed manually, this process is time-consuming, labor-intensive, error-prone and costly, and can greatly impede the adoption of new technology. CA Desktop Migration Manager provides desktop migration capabilities that help you to create an efficient, cost-effective and controlled change management process for specific PC events. This helps to reduce the total cost of ownership, increase technician productivity, decrease user downtime, reduce help desk calls and accelerate your return on investment. CA Desktop Migration Manager offers comprehensive desktop migration features that help alleviate the challenges associated with PC change initiatives. It is one of the most comprehensive, integrated and extensible desktop migration solutions in the industry.

Build

CA Client Automation provides the ability to create migration templates that enable the automation of the migration jobs. The automation templates are an important concept and are key to enable flexibility, reusability and scalability.

Automation Templates

The creation of the automation templates is part of the build phase. There are three automation templates:

- **Assessment templates** – Are defined and used in the planning and preparation phase and was discussed earlier in this paper
- **OS templates** – Define which OS image will be used as part of the migration
- **Software templates** – Define the software packages to be used as part of the migration

Optimizing a Large Scale Migration

Capturing a user's operating system, application settings and data (desktop DNA) can be a time consuming part of any migration process. Using CA Desktop Migration Manager, you can optimize the capture of the user's desktop DNA by taking advantage of delta capture capabilities. Using the Store DNA software delivery job you have configured, schedule the execution of that software package to the computers a few days or so prior to the actual deployment of the automated migration. Then, when the automated migration is deployed, only the settings and data that have changed during those few days will need to be captured, saving time during the actual migration. Because Desktop Migration Manager supports the migration of open files, this job can even be scheduled during business hours.

Create a Migration Job

Once you have created your OS and software templates, you are ready to create and validate a migration job. Creating the migration job is very easy because you've already created the migration templates.

There are two types of migration jobs; a wipe and reload using the existing hardware, or a computer replacement. When you select which type of migration to be performed during the migration job, also specify if the migration job will be run on a selected group or if you are going to individually select the computers to be migrated.

You can select a group that was created as part of the migration assessment job or leverage the groups already created in CA Client Automation. You will also select which OS and software templates are to be used during the migration job.

When you finish defining the migration job, the system will guide you through a validation of the migration job.

Validate a Migration Job

The validation step ensures that the migration job doesn't violate any current CA Client Automation policies you have configured and that the computers defined to be migrated are available. It also validates the OS images, software packages, and if necessary determines that the machine mapping file defined in the templates are available to the system.

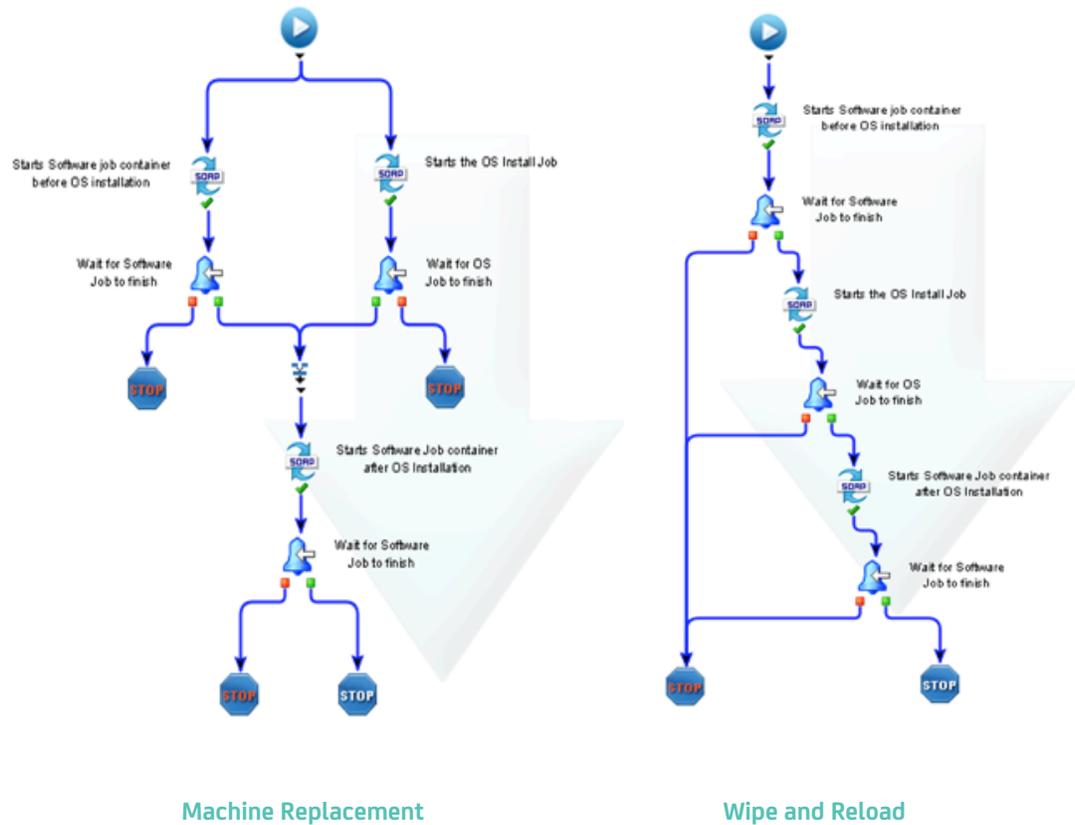
Validation and testing of the defined migration job is a crucial step in creating your automated migration process. A migration is an enormous event whether you are doing a migration of one or a migration of hundreds or thousands of computers. A migration essentially takes a user's main productivity tool, wipes it away and recreates it. Mistakes cannot be made.

Activate a Migration Job

When you created the migration job, computers or groups to include in the migration were defined. By default all computers that have passed validation will be included in the migration job. Once activated, the automated migration process will proceed on all computers assigned to the migration job. However, you may want to exclude some computers from the migration job if the timing is inconvenient for individual users or for any other reason. For example, if one of the users targeted for a migration has an important presentation to give when the migration is scheduled, you can disable the user from the migration job prior to activating the job to address any timing or exception issues.

Activating the migration job is as simple as selecting the migration job and clicking 'Activate' and the automated migration will begin. CA Client Automation leverages the capabilities of CA Process Automation to provide the automated migration workflows. The workflows use the software and OS templates defined for the migration job to automate the entire migration process, which will capture the user settings and data, deploy the new OS, install the defined software application and restore the user's settings and data.

Figure 3:
CA Process
Automation
Workflows



CA Process Automation

CA Process Automation enables organizations to design, deploy and administer automation of manual, resource-intensive and often inconsistent IT operational procedures.

You are able to use the full capabilities of CA Process Automation specifically with the automation objects and content provided by CA Client Automation for the Automated Migration functionality. You are able to customize and adapt the automated workflows provided to include any other steps that you need to orchestrate within the CA Client Automation functionality. By purchasing a full CA Process Automation license you can expand the workflows provided for Automated Migration to include integration with other CA Technologies or third party products. For instance you may want to extend the workflows to include integration to a service catalog, service desk and/or a procurement system.

Reporting and Monitoring

CA Client Automation provides CA Business Objects reports to view the assessment jobs that have been run, monitor the status of individual migration jobs, view the computers that are part of each migration and view all migration jobs that have been created and their status.

Section 3: Benefits

Orchestrate and Automate the Entire Desktop Migration Process

To minimize costs, downtime and disruption to business operations, CA Client Automation provides the ability to configure and manage a comprehensive automated migration. This equips IT with the means to dynamically and consistently manage all aspects of operating system deployments by creating a service-oriented process that can be leveraged for any migration lifecycle event.

Section 4: Conclusions

Create a Comprehensive, Scalable and Reusable Automated Migration Process

Desktop migrations take place on a continuous basis, and independent of the scale or type of migration event, it's a complex process. Automating an end-to-end, no-touch desktop migration takes the IT administrator out of managing everyday lifecycle events and focuses instead on providing services to the business in the most effective way possible.

CA Client Automation provides all the functionality necessary to create a comprehensive, scalable and reusable automated migration process. This will help increase technician productivity, reduce risk during change initiatives, ensure business continuity by maintaining end-user productivity, and reduce the overall costs of any scale of OS migration.



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