WHITEPAPER

Deploying PCmover® Enterprise within Microsoft System Center Configuration Manager®

Executive Summary

Microsoft System Center Configuration Manager (SCCM) is a comprehensive solution for IT professionals and enterprise service teams to efficiently deploy, manage, and maintain desktops, servers, and other devices across an entire company's Microsoft ecosystem. When coupled with PCmover Enterprise, Microsoft SCCM can execute PC migrations and OS upgrades from a central management console, linking automated OS deployment procedures with an automated migration process that includes installed applications.

PCmover Enterprise includes the capability to automatically transfer user accounts, installed applications, application settings, data, and other "PC personality" components, offering the most complete migration experience available. In addition, PCmover Enterprise includes advanced policy management capabilities that allow a non-technical user to create and maintain customizations to the migration experience.

This whitepaper is intended to be a technical resource for enterprise IT service professionals interested in automating their PC migration process from within an SCCM environment, and have a base understanding of PCmover Enterprise Policy Manager.

Recommended Prerequisites

"**PCmover** is the World's #1 PC Migration Software and has been selected by Microsoft® as their Recommended Migration Solution"

In order to proceed with the integration work in System Center Configuration Manager Console, and to begin implementing an automated PC migration sequence with PCmover Enterprise, the following requirements must be met:

- All SCCM required software for both client and server installed, configured and operational

- Intermediate knowledge of PCmover Enterprise is highly recommended

- Intimate knowledge of Microsoft Configuration Manager recommended

Overview - PCmover Enterprise

PCmover Enterprise is Laplink Software's business-class Windows migration solution, which supports Light-touch and Zero-touch migration procedures over several connection methods (network, crossover Ethernet cable, file storage device, and Laplink USB cable). Comprised of two independent modules, the PCmover Client and the PCmover Policy Manager, PCmover Enterprise provides flexibility in how it can be implemented and maintained in the SCCM environment

To install PCmover Enterprise, run the PCmover Enterprise setup on a target system. This will install both the PCmover Client and Policy Manager locally by default, making it easy to review policy changes before moving the PCmover Client to the location from which it will be run. For detailed instructions on the install process, please review the PCmover Enterprise User Guide.

- PCmover has the ability to migrate installed applications natively between non-like OSs and non-like hardware!

- No XML expertise required managing the PCmover Enterprise policies and workflow

- PCmover offers a simple "undo migration" option

- Supports bot managed and unmanaged users, including remote workers

The PCmover Enterprise "Client"

The PCmover Enterprise Client acts as the migration workflow engine, or "wizard", executing migration related tasks on the source and target machines. The PCmover Client runs on both machines to create snapshots, compares snapshots, creates a "Moving Van" for transport, governs connectivity between machines, unpacks the "moving van", and can also undo a migration. Additionally, the PCmover Client can run locally on a machine, from a corporate network share, external drive, USB stick, or connected via cable.

What can the PCmover Client Migrate?

PCmover Enterprise uses an inclusionary logic to identify items for transfer, working to capture everything on a PC while applying a set of advanced filters, rules, and logic. The result of the inclusionary logic is a more fully supported migration procedure, including the migration of installed applications. It's also important to consider the rules and logic PCmover plays during the unpack process, as intelligent mapping of Windows "Groups and Categories" and the filter of items already on the PC offer a high level of protection against unwanted items.

PCmover supports the following migration:

- Installed applications and the associated settings/registry entries

  User Accounts (domain and local)

- Entire drives, folders, files (all file types)

- Application add-ons

- ODB connections

- Wallpaper

- Screensaver

- IE settings

- Cookies

- .INI files are migrated and merged

  Control panel icons

- Music, video, pictures, etc

PCmover will not migrate the following:

- Anti-Virus/Anti-Spyware products

- Hardware device elements and operating system files

- Files, applications, and settings the logged in user doesn't have rights to access

- Data and registry keys currently in use and "locked for editing" (must shut down applications)

"We see an increasing amount of our resellers providing upgrade and migration as a service to their customers.

Whether it is a purchase of a new PC or an upgrade / update of existing hardware and Operating System, eliminating or significantly reducing the effort and time invested in migrations provides great value for customers."

-Thomas U. Koll
CEO Laplink Software

The PCmover Enterprise Policy Manager

PCmover features the ability of an administrator to set policies for users of the PCmover software. That is, the administrator can control the user selectable options of PCmover, either choosing a value or leaving the choice up to the user. Every option can be pre-set or left to the user to select, according to the administrator's wishes.

In addition, some policy settings control some internal PCmover algorithms and how it displays in ways that are not normally available to the end user. Thus, the administrator can control to a great degree how the migration looks and is performed without sitting at the computer or directly driving the migration remotely.

Policy Manager Features

- Create a migration "policy" to define what the end users are allowed to migrate to the new desktop

- Streamline the migration procedure by removing migration "decisions"

- Improve migration filtering and "black list" management

- Easily modify PCmover "rule set" to override default configurations

- SMS Alerts

- Environment variables

- Migrate directly from a physical drive or VHD with "Image Assistant"

- Using the PCmover Enterprise Edition Policy Manager Module, generate enforceable migration policies for use with the PCmover wizard and ensure migration compliance

  Edit and "clone" migration policies for role-specific or department-specific migration requirements

- Suppress screens and enforces migration selections in the PCmover wizard workflow

- Pre-activates serial numbers ahead of the migration for off-line migrations

- Includes application profiles for an improved migration experience

- Includes option for saving migration reports (Detailed/Summary) to specified directories

PCmover®
Enterprise Edition

has been designed to support PC migrations in larger enterprises.

Laplink's corporate sales team is selling this edition using a specific licensing program.

If you (Reseller) identify an opportunity for PCmover Enterprise, please contact our corporate sales team to discuss how to best approach this together.
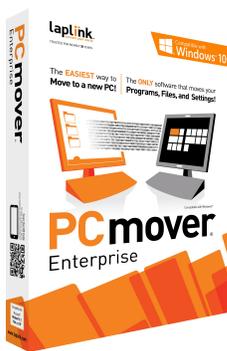
Migration Procedure Design

Remotely Assisted Migrations in Configuration Manager

In cases where only a few machines are being migrated at any given time, Administrators of PCmover may elect to process migrations by triggering the migration task sequence manually on the machine using a remote connection enabled through SCCM. This process is favored by administrators that use an OSD sequence and custom task sequence on machines one-by-one as they are requested by end-users, and allows direct access to the PC before a migration takes place in case pre- and post-migration ad-hoc tasks are required.

To remotely control an end-user's PC and walk through pre-migration steps before running PCmover as if you were there physically, select the machine name and use a right-click on your mouse. If connectivity is not available, RDP and Remote Access options should be enabled through group policy (or other means) to allow remote connectivity from the Configuration Manager Console.

Establishing a Remote Connection from Configuration Manager Console: Assets and Compliance > Devices and locate your collection containing your clients > Right click on the client machine you want to remote control and hover over Start then click on Remote Control

Remote Access: Provides shared access to the end user's desktop, and allows both the technician and end user to go through the pre-migration steps together. This is similar to a desk-side visit, as there will likely be interaction with the end user.

Remote Desktop: Commonly known as "RDP", this option will provide full remote admin access to the PC but log the end user out completely. This option used when no user input is required.
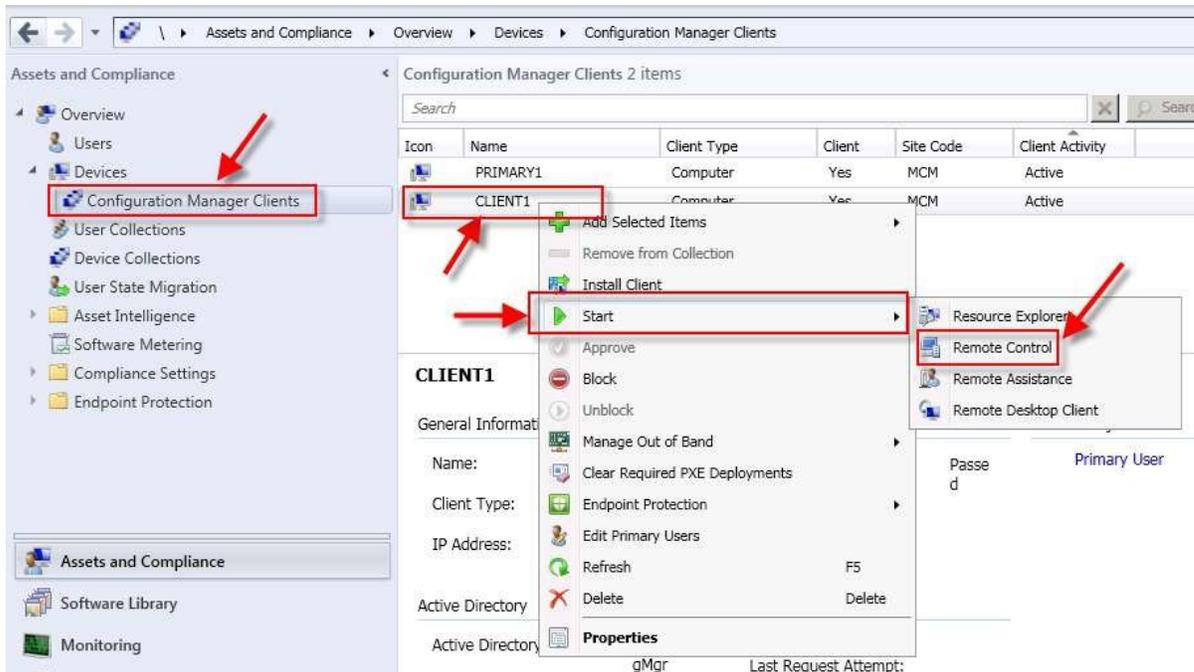

1-1: Starting a Remote Session from a Collection

As a best practice, technicians should review general PC hygiene with the user, and share training or reference materials on the new hardware and OS to ensure smooth adoption. Reducing post-migration support tickets in a PC refresh or OS upgrade project is key to projects finishing on time and under budget, and service teams that meet SLA thresholds.

Command Line Arguments for Custom Task Sequencing

The PCmover Client supports the use of command line arguments to launch the migration process from within a task sequence in SCCM. The elements of the command line argument include the executable, the identification tag, file name or ID, and optional variable tags. (See below)
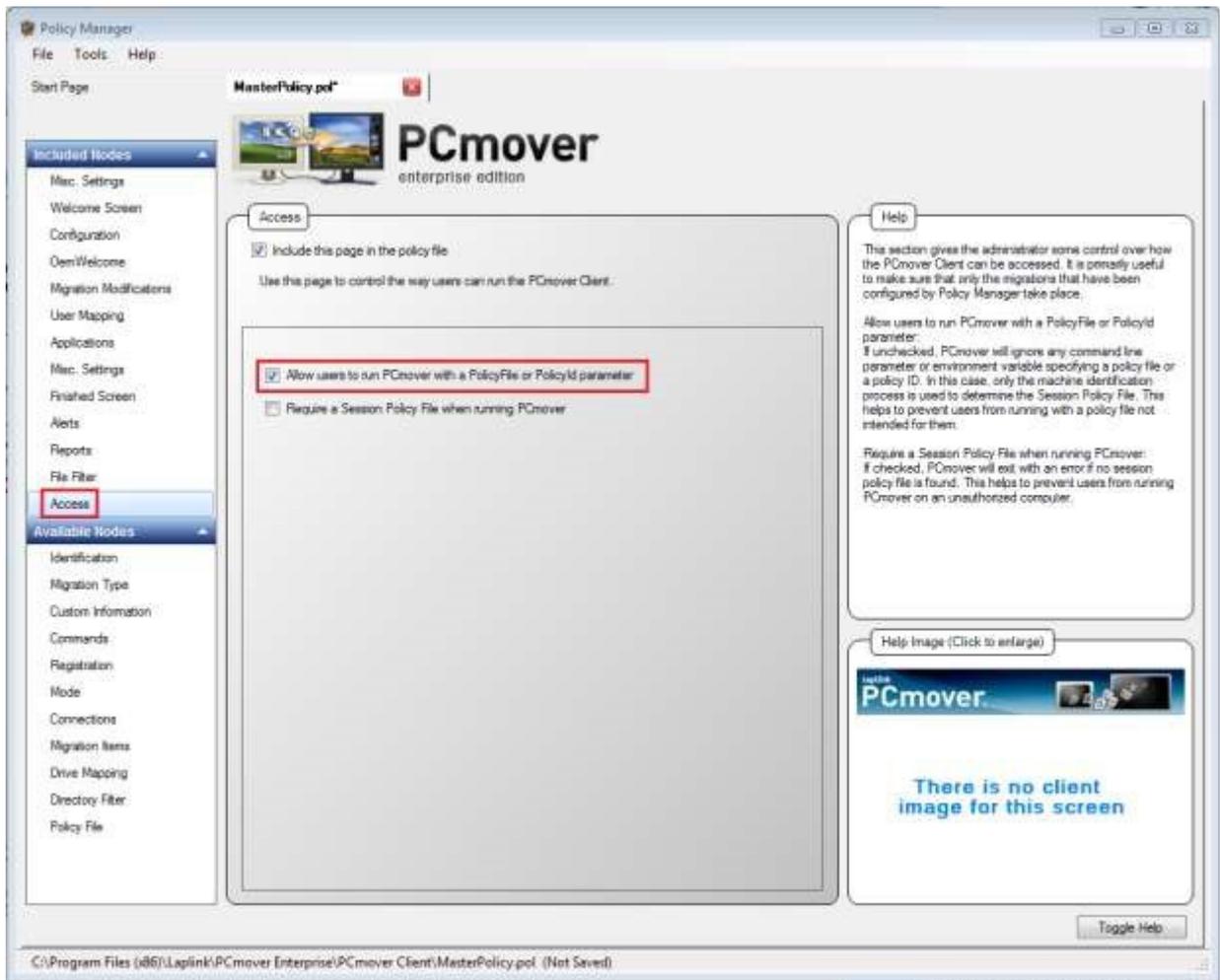
/policyfile filename: This parameter specifies the full path of the Session Policy File to be used by PCmover, if the Master Policy File permits this parameter. If this is present, it is used instead of any identification process in the Master Policy File.

- Example Sytax: PCmover.exe /policyfile <policyfilename.pol>

- Production Example: PCmover /policyfile OLD.pol

In this example, the PCmover executable is being run with correct command line syntax for use within the SCCM task sequence editor. There is no need to use terms like "start" and "run" in quotes, as would be done within a traditional batch file. In the command line syntax, the term "policyfile" invokes PCmover to

use a session policy instead of the default master policy, providing greater flexibility in managing branches of the migration policies defined for capturing a user, restoring a user, and any pre-definitions on filters, rules, and automation.

TThe name of the session policy being used, in this case "OLD.pol" is being used to guide PCmover's capture process on the old PC. This can be further broken down to "OLD Marketing.pol" or "OLD Remote USB.pol" to invoke further defined session policies.

Additionally, the location of the PCmover executable must be defined in the task sequence editor in order to run properly, including the user account the task will run under should admin permissions be needed. Because the PCmover client can be run from a remote location, such as a network share, it is suggested to avoid installing PCmover locally using a traditional packaged software delivery protocol.

/policyid ID: This parameter specifies an ID that is used to specify the Session Policy File according to the <Identification> section of the Master Policy File.

- Example Syntax: PCmover.exe /policyid <PolicyID>
- Production Example: PCmover.exe /policyID MarketingUSA
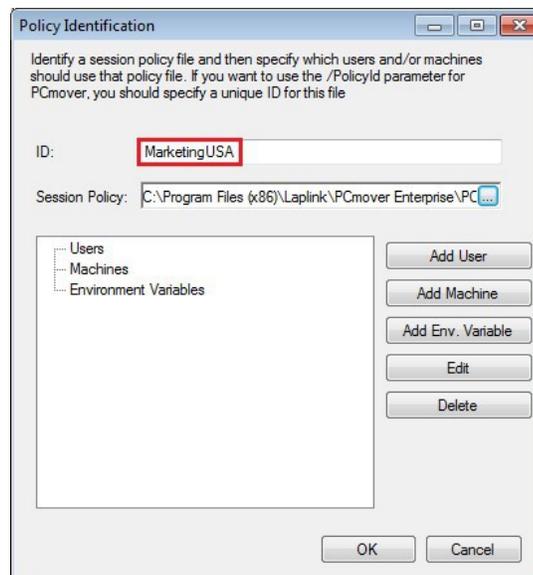
/env VAR=VAL: This parameter sets new environment variables in the environment that is used to parse the policy files. Thus, this command line parameter can be used to feed data into a policy file that uses environment variables. This is helpful when attempting to automate connectivity over the network, as PCmover may not know the name of the machine into which it will be connecting to make the transfer. Inserting the value into the command line statement can be done manually, through a custom UI developed for a VBscript, or created as part of a custom task sequence in the ConfigMgr Console.

- Example Syntax: PCmover.exe /policyid <FILENAME.pol> /env VAR=<VAL>
- Production Example: **PCmover.exe /policyfile OLD.pol /env VAR=ComputerNameGoesHere**

After navigating to the "Connections" tab in Policy Manager and inserting %VAR% into the Laplink Ethernet cable configuration field, click save to update changes to the policy file. After saving the changes to the policy file, you can open the policy file in notepad and view the syntax to ensure the %VAR% field has been published properly.
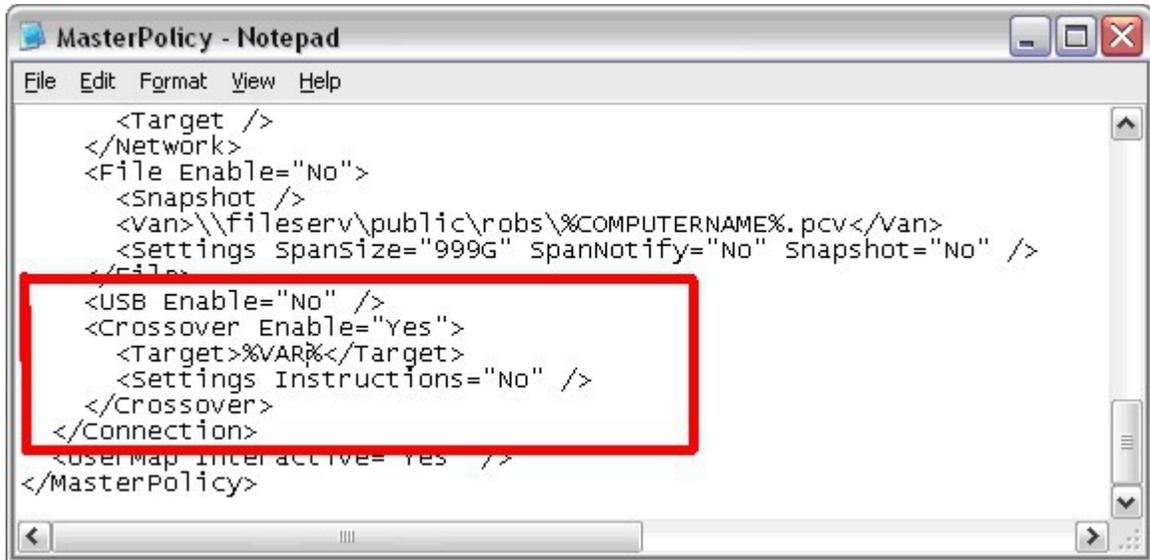
```
MasterPolicy - Notepad
File  Edit  Format  View  Help
        <Target />
    </Network>
    <File Enable="No">
        <Snapshot />
        <Van>\\fileserv\public\robs\%COMPUTERNAME%.pcv</Van>
        <Settings SpanSize="999G" SpanNotify="No" Snapshot="No" />
    </File>
    <USB Enable="No" />
    <Crossover Enable="Yes">
        <Target>%VAR%</Target>
        <Settings Instructions="No" />
    </Crossover>
</Connection>
    <UserMap Interactive="Yes" />
</MasterPolicy>
```

Once the policy file is updated and the command line argument is set up to automate the connectivity of PCs over the network or Ethernet cable, a test of the process is recommended. When testing automation steps, it is recommended to use the "Move Nothing" advanced setting in the Migration Modifications tab in Policy Manager. Enabling this feature will allow PCmover to complete a migration, but will not include any information in the moving van file.

SCCM can be used to refresh the operating systems on hardware and typically do this by remotely rebooting the machine, taking a backup, rebooting to install a base OS, which may have some base applications included and then install any missing applications. For more information on how to use SCCM for Operating System Deployment please go to the Microsoft Library.

PCmover is just another task in the process that needs to be inserted at the correct point in the task sequence.

Automation: Creating and advertising task sequences to a collection

The steps involved in creating a custom task sequence will vary from site to site, and testing will reveal modifications needed before PCmover Enterprise is used in production. The length of time spent testing the

process is a function of the scale and complexity of the migration project, so careful planning and forecasting is required.

Steps for creating an automated migration:

After completing the install and configuration process for PCmover Enterprise, the following steps can be followed to create an automated migration routine.

Step 1: Create and test a custom task sequence governing the capture process on the "OLD" machine

Step 2: Create and test a custom task sequence governing the install process on the "NEW" machine

Step 3: Assign test machines to do a test collection

Step 4: Create an advertisement for the load and unload custom task sequences

Step 5: Assign the "load" advertisements to the "OLD" collection to automate the capture process

Step 6: Assign the "unload" advertisement to the "NEW" collection to automate the unload process*

*Note: When using advertisements to automate the "unload", it's important to consider how PCmover will identify the proper source PC (peer-to-peer methods, like network, USB drive, or Laplink USB or Ethernet cable) or Moving Van (file-based). When PCmover is running on the "NEW" machine, it can select the appropriate file or machine name using environment variables if appropriate. If environment variables will not support the level of automated connectivity required, then using the VAR=VAL command line argument (see

"Command line arguments for custom task sequencing" for more information on setting variable values in a policy file).

The file-based method of migration is recommended for full automation strategies, as environment variables can be used when saving the file and offer means to correctly link PCs involved (assuming the end user is logged in during the migration on both machines). The %COMPUTERNAME% environment variable is most commonly used in the saving of a file (%COMPUTERNAME%).

Organizations with PC policies allowing end-users to have admin rights and self-manage desktops can use the %USERNAME% variable, which

opens the possibility of an end-user-driven procedure that requires little involvement from IT.

Once the policy file is updated and the command line argument is set up to automate the connectivity of PCs over the network or via cable, a test of the process is recommended. When testing automation steps, it is recommended to use the "Move Nothing" advanced setting in the Migration Modifications tab in Policy Manager. Enabling this feature will allow PCmover to complete a migration, but will not include any information in the moving van file.

Task Sequence Editor

To edit the task sequence in SCCM Console:

- Navigate to Software Library > Operating Systems > Task Sequences
- Right click the task sequence that will be responsible for triggering PCmover and select Edit
- Enter the Command line and other task sequence details needed Evaluate any "if, then" conditions that need to apply to task sequence

Task sequences must account for user permissions of the logged-in user at the time of migration, as the user permissions will be adopted by PCmover during the migration process. When migrating, installed applications and domain user accounts, for example, domain admin permissions will be required. A "files and settings" only migration is supported in limited access mode; however, SCCM can be scheduled to run PCmover with a specific user account assigned.

In some cases, administrators may find benefits from linking PCmover tasks within the OSD task sequence; however, PCmover Enterprise is not required to run in the OSD.

After a task sequence is edited, it is time to test the workflow by advertising it to a test user. Before initiating the test, however, the advertisement scheduling the task sequence should be assigned to a PC or collection. Creating a "Migration Test" collection is the recommended first step, as you can confirm the proper execution of the sequence before applying it to production PCs.
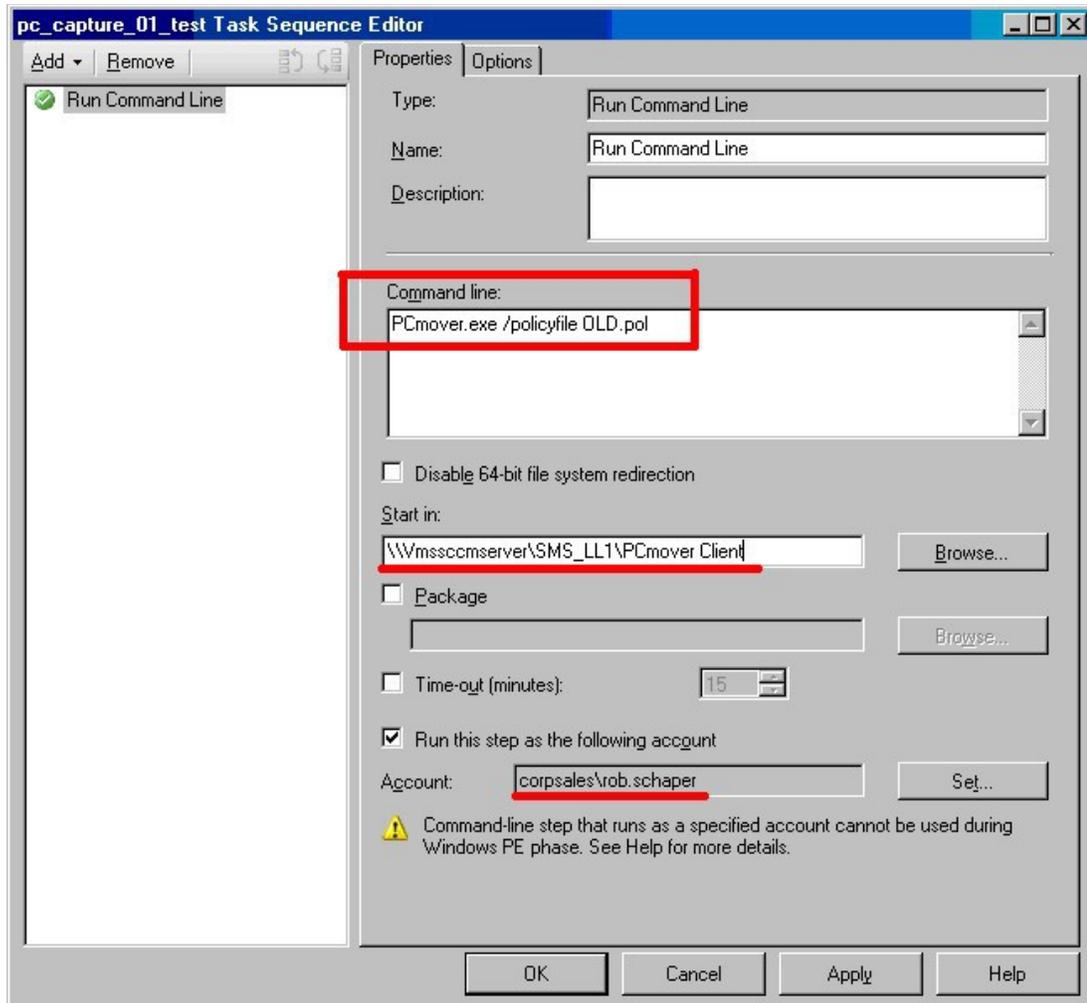
Conclusion:

Today, organizations are accelerating investments in SCCM to control costs, improve policy adherence, reduce risk, and elevate employee morale. PCmover Enterprise greatly enhances the process, driving additional value for Configuration Manager customers by streamlining policy management and migration capabilities to non-technical IT analysts, including standard and non-standard application migration, and linking into automated sequences or methodologies.

To get started with PCmover Enterprise in your Configuration Manager environment, please contact your Laplink Account Executive at corpsales@laplink.com or 1.800.LAPLINK.