LANDesk Management Suite 8 and Microsoft SMS 2003

Comparison of two management technologies in the enterprise

White Paper

Abstract

Both LANDesk® Management Suite 8 and Microsoft® Systems Management Server (SMS) make promises to manage systems, deploy software, and maintain control in an otherwise chaotic environment. Both solutions can do the job, and both work as advertised. However, in a head-to-head comparison under real-world management situations, LANDesk® Management Suite 8 can provide more management features, better heterogeneous management capabilities, and streamlined day-to-day management of the product itself.

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Introduction

If your environment is mostly a "Microsoft shop," it might seem like picking a management solution for your clients and servers would be an easy one. Microsoft's Systems Management Server (SMS) adds abilities that are missing by simply running Windows NT domains or Active Directory by itself.

Specifically, Microsoft's SMS brings the following core features to the table:

- Hardware and software inventory
- Software distribution
- Remote control
- Software metering
- Patch management

On the surface, choosing SMS might appear to be a straightforward decision. As expected, Microsoft's own product integrates with both Windows NT and Active Directory, and increases overall control of Windows client and server systems.

However, charging forth and implementing SMS without analysis of additional management technology options could end up being a costly decision in the long run for many modern environments. As we'll discover in this whitepaper, SMS can be more difficult to set up, manage, and maintain. Additionally, SMS might not have the key features your team would need to fully manage the clients and servers to be as agile as possible.

Inside this paper, we'll explore how LANDesk Management Suite 8 brings an equivalent set features as SMS (exclusive of an optional Patch Management addition), plus additional technologies and features that add further day-to-day management efficiency.

This paper will help IT professionals and business decision makers learn about LANDesk Management Suite 8 and Microsoft SMS by describing the overall feature set of each, highlighting key distinctions, and drawing some conclusions about where LANDesk Management Suite 8 would be a better fit than SMS for many environments.

Inside this paper, you will discover how LANDesk Management Suite 8 is easier to implement, requires less hardware, is easier to use, controls more client types out of the box, and requires much less ongoing maintenance.

Legend:

✓ - Feature inside the product

✓+ - Feature is markedly better in this area than other products listed here

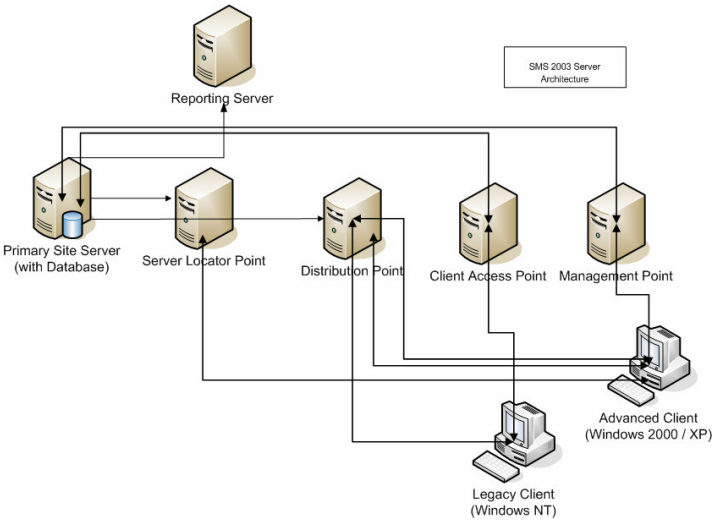
✓- - Feature is included in product, but needs improvement

✓* - Feature is available through Windows Group Policy. Requires participation within Active Directory domain to be most effective

Product and Feature Overview			
Feature	**Active Directory (without additional tools)**	**SMS 2003**	**LANDesk Management Suite 8**
Remote control tools	XP Only	✓	✓
Software monitoring/metering		✓-	✓+
Gathering of software inventory		✓	✓
Gathering of hardware inventory		✓	✓
Distributing software	✓*	✓	✓
"Bare Metal" OS installs	✓*	Due with service pack	✓
Wake-on-LAN for software distribution			✓
Certificate-based security for management			✓
Patch Management		✓	Optional
Inventory may be stored in SQL Server database		✓	✓
Inventory may be stored in Oracle database			✓
Hardware inventory may be used for software distribution		✓	✓
Software inventory stored in SQL Server database for queries		✓	✓
Deploy service packs by central mechanism	✓*	✓	✓
Deploy hotfixes by central mechanism		✓	✓
Deploy .msi files by central mechanism	✓*	✓	✓
Deploy .exe files	✓-	✓	✓
Deploy non-.exe files (e.g., anti-virus update .dat files)		✓	✓
Targeted software distribution (based on time of day)		✓	✓
Targeted software distribution (based on logon of user)		✓	✓
Supports Mac OS X			✓
Supports Linux			✓
Supports Windows 95			✓
Supports Windows 98		✓	✓
Supports Windows NT		4.0 SP6 Only	✓
Supports Windows 2000 and Windows XP		✓	✓
Supports Windows and NetWare clients			✓

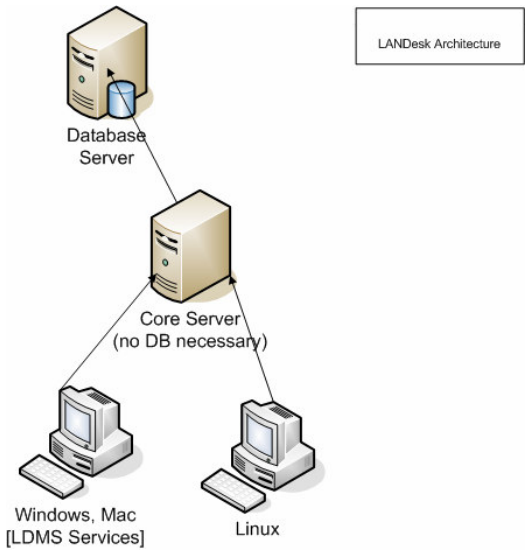
Architecture Overview

Deploying a management infrastructure should not be undertaken lightly. The number of servers needed to service the proposed environment must first be calculated and "right sized" for the amount of available bandwidth, the number of client computers to be managed, and the number of administrators who will perform the administration.



When faced with an SMS deployment, determining precisely how many servers to purchase, provision, and install can be tricky for even the most experienced of SMS consultants. The difficulty arises because SMS has many required components and moving parts. In the smallest of environments (with few client computers), these components can be consolidated on a specific server or servers. However, when the node count increases, the design will be forced to grow, more servers will need to be purchased, or other architecture changes will be required. In addition, true optimization of the components can be daunting. Microsoft's recommendation for server sizing and optimization is to continually take measurements of CPU, disk, and memory thresholds as well as key SMS performance counters. If these values veer off your company's set standards, it might be time for an architecture review. (Source: Chapter 9, "Capacity Planning for SMS Component Services," *Concepts, Planning, and Deployment Guide for Microsoft Systems Management Server 2003* at page 294.)

The LANDesk Management Suite 8 architecture is much more streamlined. Instead of being tied to services like SMS, there is a great deal of freedom in installation. Instead of worrying about which services are running on what servers, LANDesk Management Suite 8 makes it easy, and has just two types of infrastructure servers: those that provide "core" services to clients, and those that hold the data in databases. With this structure, it's easy to plan for and add capacity as well as optimize server loads as needed without hassles. Expansion is as easy as adding another core server.



Client Functions and Operations

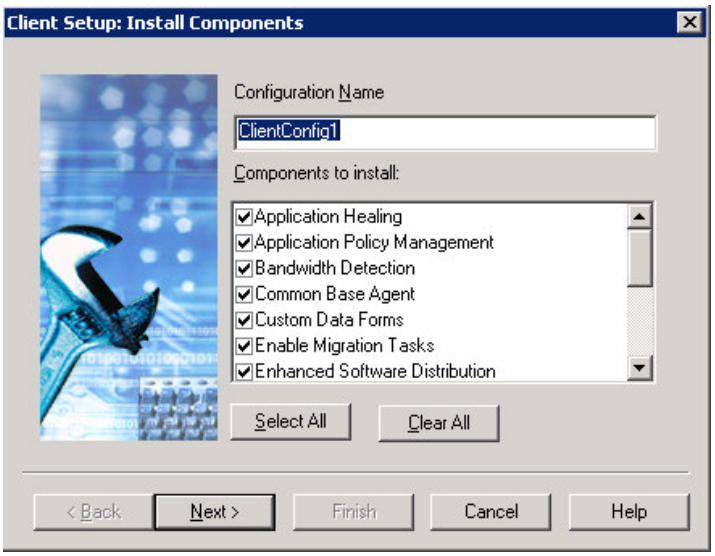
To reiterate, both SMS and LANDesk Management Suite 8 contain the following principal functions:

- Hardware and software inventory
- Software usage monitoring
- Remote control and remote assistance
- Software deployment

Both SMS 2003 and LANDesk Management Suite 8 rise to the challenge to meet these goals. However, when you choose to manage the client computers on a day-to-day basis, you'll see that only LANDesk Management Suite 8 has some additional client management features that streamline the daily client management process, saving time and hassles.

Indeed, only LANDesk Management Suite 8 goes further to provide seven additional critical management functions. In the first figure, we can see the full complement of functions that the SMS client provides.

The second figure shows the additional LANDesk Management Suite 8 client functions available for client management. Space limitations prevent us from exploring every option. So, key examples of client efficiency are explored on the next several pages.

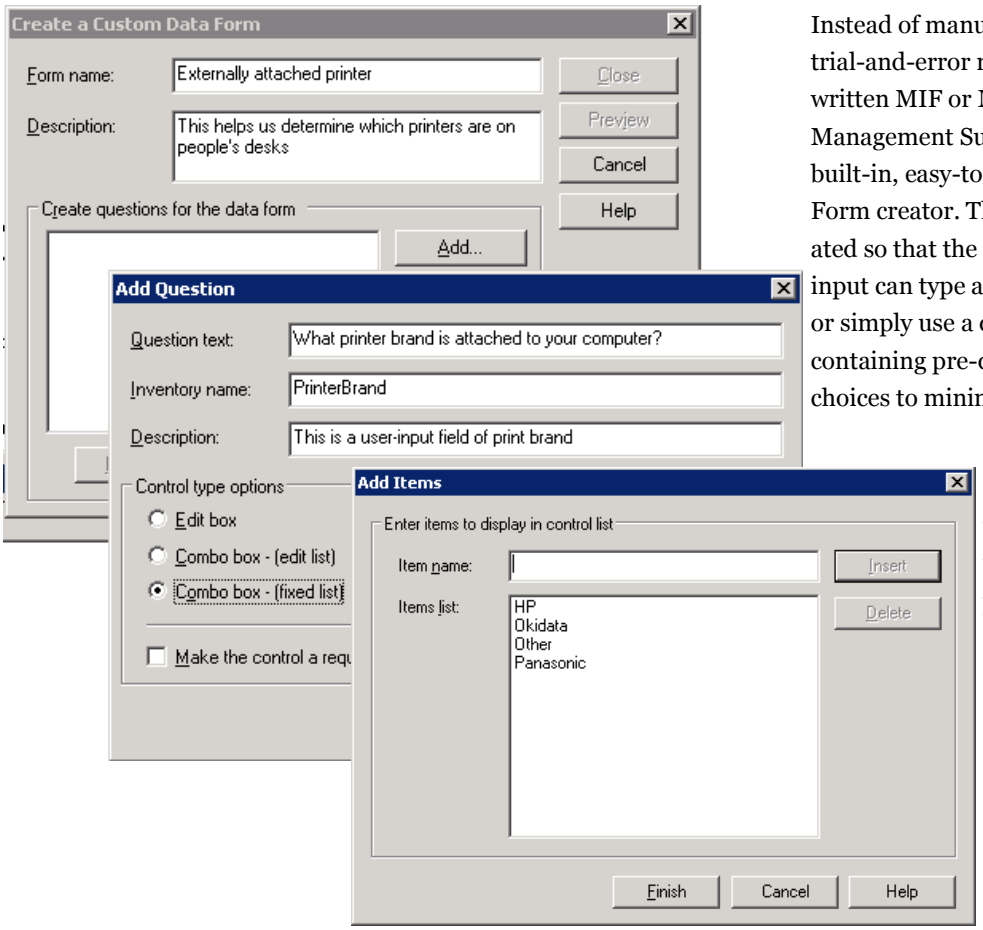


Client Functions and Operations

Knowing precisely which hardware components are attached to a desktop or portable computer is critical. And, for some hardware items, there is simply no way to automatically gather precise hardware inventory about them. To that end, both SMS and LANDesk Management Suite 8 have a mechanism for capturing such information.

Although SMS is capable of collecting additional information, the process is performed by manually creating "custom Management Information Format (MIF) forms." Alternatively, the systems administrator can specify a special SMS system file named SMS_DEF.MOF that leverages the "Managed Object Format (MOF)." In either case, you use a text editor like Notepad. Specific knowledge and understanding of the syntax is required, and the file must be created without any errors for it to be successful. After the file is created or modified, trial-and-error testing is the only way to see if it worked properly.

If the creation of the MIF file (with the .mif extension) is incorrect, then the database is now likely filled with bad data that must be manually purged before trying again. An excellent article to further understand the process of creating custom MIF files for SMS can be found at http://www.winnetmag.com/Article/ArticleID/74/74.html.



Instead of manually working with the trial-and-error nature of custom-written MIF or MOF forms, LANDesk Management Suite 8 comes with a built-in, easy-to-use Custom Data Form creator. The forms can be generated so that the person performing the input can type an answer in a text box, or simply use a drop-down combo box containing pre-determined answer choices to minimize data-entry errors.

Once created, the form can simply be scheduled to be delivered to users at client computers at any time.

Managing Client Systems

Once a company has invested in a management tool, the goal is to gain control of the client systems in the environment in the shortest amount of time possible. However, SMS 2003 simply does not address many different types of client computers that might be on today's modern networks.

Specifically, SMS 2003 completely drops all support for Windows 95 clients. This means that SMS 2003 has no way to discover or manage these clients. The same is true for Windows NT without Service Pack 4. The upshot is that if you wanted to use SMS 2003 to upgrade these older clients to a newer operating system, it would simply be impossible without a manual touch to these computers for a "pre-upgrade" before SMS would address them.

When SMS is ready to be installed on clients, the administrator must choose between two client installation types:

- Legacy Client: This installs about 10MB of executables and support files on each computer. Used when Windows NT client computers are present.
- Advanced Client: This installs about 4MB of executables and support files on each computer. Used when Windows 2000 or higher computers are present.

The Advanced Client is new to SMS 2003 and is better at dealing with software deployment. These software deployment enhancements are explored a bit later in the section entitled "Software Distribution Efficiency." However, it should be noted that only the Advanced Client has these efficiencies, which are not available in the Legacy Client that must run on Windows NT.

It should also be noted that setting up considerations for clients, such as security or deciding which agent components will be loaded, can only be specified for all clients in the entire SMS site. In other words, if you have different security requirements for some clients and/or different agent requirements for other clients, you might need to split up your SMS site into multiple sites, necessarily requiring additional server hardware and infrastructure.

Managing Client Systems (continued)

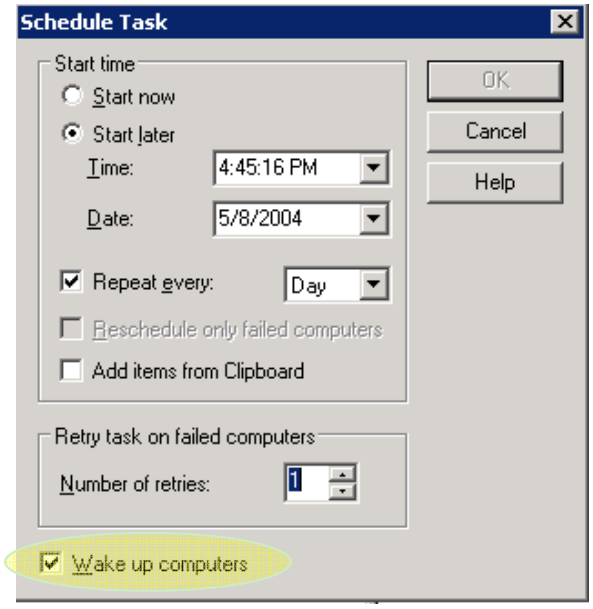
LANDesk Management Suite 8 has a very flexible mechanism for client configuration consideration. Indeed, you can specify different security and agent requirements for your client groups at will. Therefore, different security and/or client agent requirements needn't necessitate breaking apart a LANDesk Management Suite 8 site and require additional hardware.

LANDesk Management Suite 8 controls those same Windows clients, in addition to Macintosh OS X clients, Linux, UNIX, and NetWare clients. LANDesk Management Suite 8 can provide inventory and remote control to Linux, UNIX, and NetWare clients, and additionally adds software distribution to Windows and Macintosh clients.

Moreover, all management is performed by using the same centralized management console with a consistent user interface. In order to achieve even a percentage of additional client types, third-party add-on utilities for SMS must be purchased.

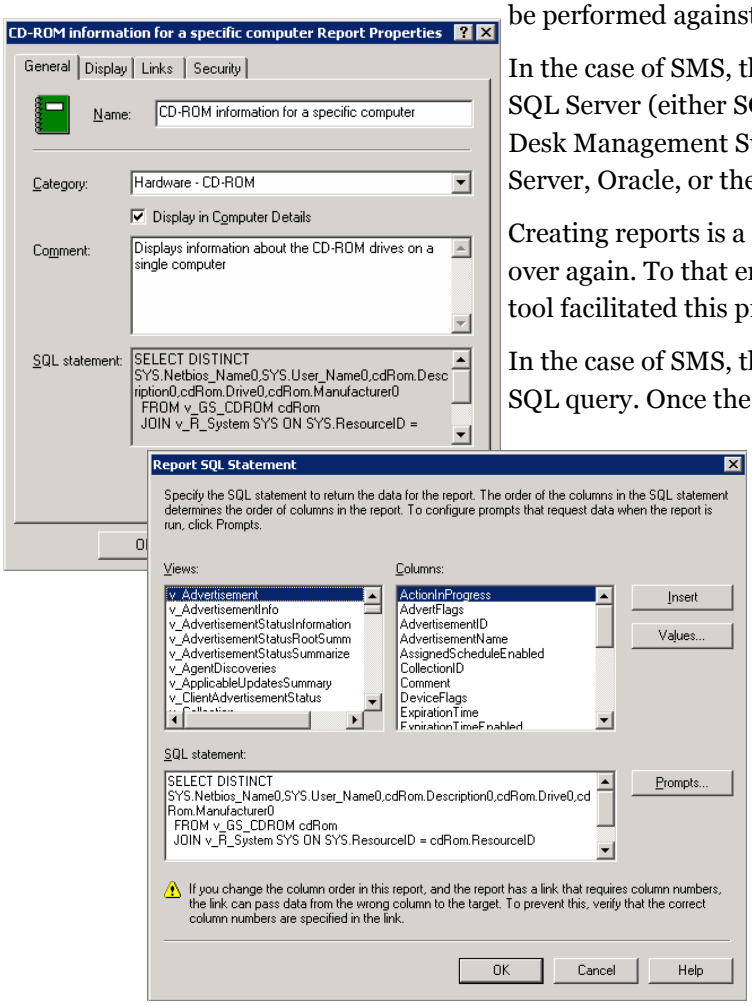
All client communication between LANDesk Management Suite 8 clients and servers is digitally encrypted, which guarantees that transmissions between clients and servers is not compromised.

Lastly, unlike SMS 2003, LANDesk Management Suite 8 clients are compatible with the "Wake-on-LAN" technology. If the computer is turned off, a signal can be delivered to the network card to "wake up" the client computer to perform scheduled tasks (as seen in the figure). Then, any of the management functions may be performed, such as software distribution.



Reporting

A common task for administrators is gathering informational reports about client systems. To get a report of the right criteria, a query must be performed against the database repository.

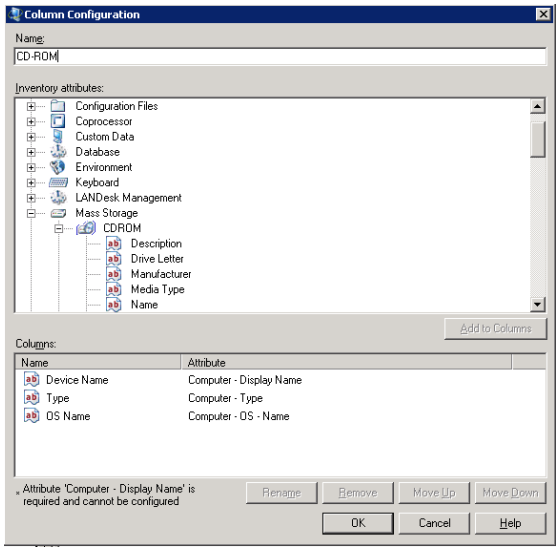


In the case of SMS, the repository must always be Microsoft SQL Server (either SQL 7 or SQL 2000). In the case of LANDesk Management Suite 8, the database can be Microsoft SQL Server, Oracle, or the included, free, MSDE engine.

Creating reports is a task that administrators will do over and over again. To that end, it would be ideal if the management tool facilitated this process to make it as easy as possible.

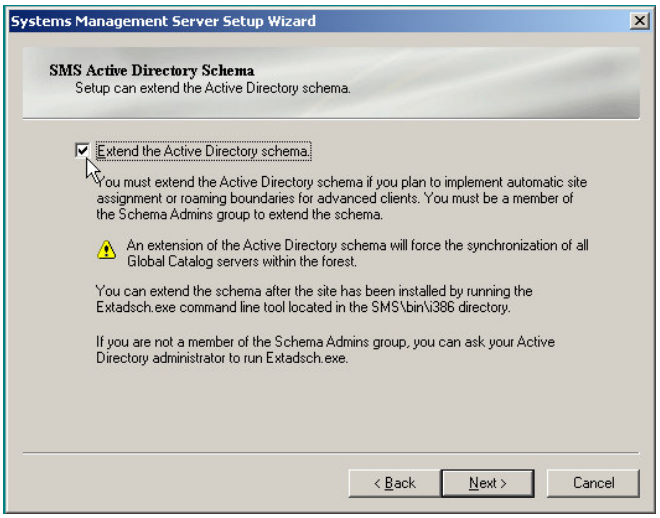
In the case of SMS, the administrator needs to first create a SQL query. Once the SQL query is generated, it can be leveraged into a report, which then can be added to a report Dashboard. However, creating these SQL queries is not always easy. Oftentimes, direct SQL knowledge of the underlying database is required in order to generate even the most simple of reports. In this first set of dialog boxes, we can see the representation of the built-in report to gather CD-ROM information.

On the other hand, LANDesk Management Suite 8 makes it easy to see all of the options available to report on. This is presented in an easy to use, graphical, clickable format, as shown in the next dialog box. The time to generate reports is cut down immediately. No underlying knowledge of the database structure is required.



Software Distribution Efficiency

When deploying software to your users or computers, you want it to take the most efficient route possible. Any management tool will take the difficult task of software distribution and make it easier. However, the decision point should not just be about easing the chore, but rather, examining the ongoing efficiency of the process.



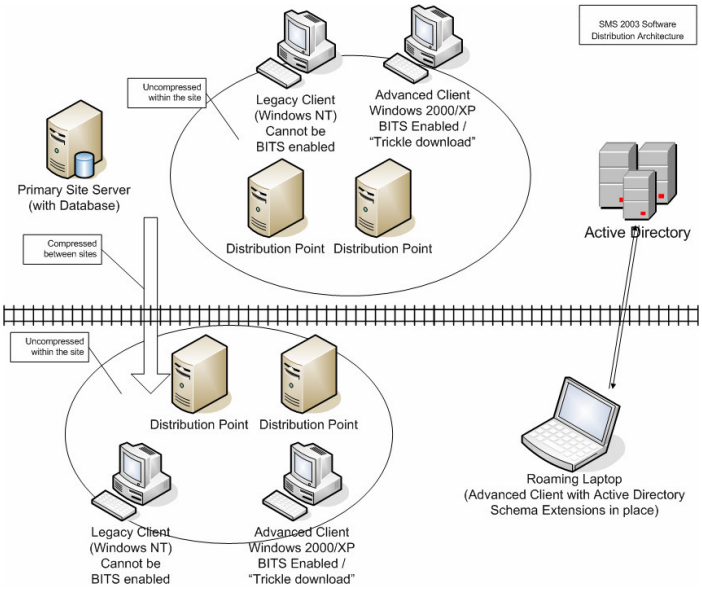
In the case of software distribution, Microsoft's SMS takes a rather straightforward approach to working out the problem of getting packages distributed to clients. Specifically, special SMS "distribution servers" receive a local copy of the package.

There can be multiple distribution servers within a "site" (defined as a place with a fast IP network). There is only one major software distribution optimization with SMS. First, if a distribution server lies in another site, SMS takes a best-effort approach to first compressing the data before transmitting it to the target distribution server.

The goal is for clients to locate the closest SMS distribution server from which to pull the package. Unfortunately, in order to always be able to do this with a roaming laptop client, the Active Directory schema needs to be populated with location data. To do this, SMS must first extend the Active Directory schema with a non-reversible and permanent change. You can see this requirement in the SMS installation page.

After the client locates the distribution server, the software is downloaded. Recall that there are two client types: the Legacy Client (for Windows NT) and the Advanced Client (for Windows 2000 and higher). Only the Advanced Client is capable of throttling the bandwidth use when downloading a software distribution package. Additionally, only the Advanced Client is capable of performing a "checkpoint restart," which is meant to resume the download where it left off should the connection suddenly become unavailable. Both actions are facilitated by the Advanced Client on the client system, which leverages Microsoft's Background Information Transfer Service (BITS.) However, in order to make use of BITS, the SMS distribution server needs to have Microsoft Internet Information Services (IIS) installed and enabled. Additionally, the WebDAV extensions for IIS for Windows Server 2003 must be enabled. These two criteria might make for an unacceptable security risk in some environments.

The distribution architecture is illustrated in the diagram.



Software Distribution Efficiency (continued)

The SMS approach to software distribution is straightforward, but not the most efficient. For a client computer to receive a package, it needs to have a distribution server set up in advance within the local site boundary. If a distribution server isn't found within the client's local site boundary, the system will not download the software over a slow link. Therefore, the SMS software distribution mechanism is at its most optimal only when a distribution server is set up in advance at every location that has fast connectivity.

Of course, LANDesk Management Suite 8 can support simple downloads between a server and a client. However, it can leverage additional built-in technologies to ensure that the software distribution process is streamlined and efficient when there is a need to service many clients. In both cases, the need to set up specific servers in advance is removed.

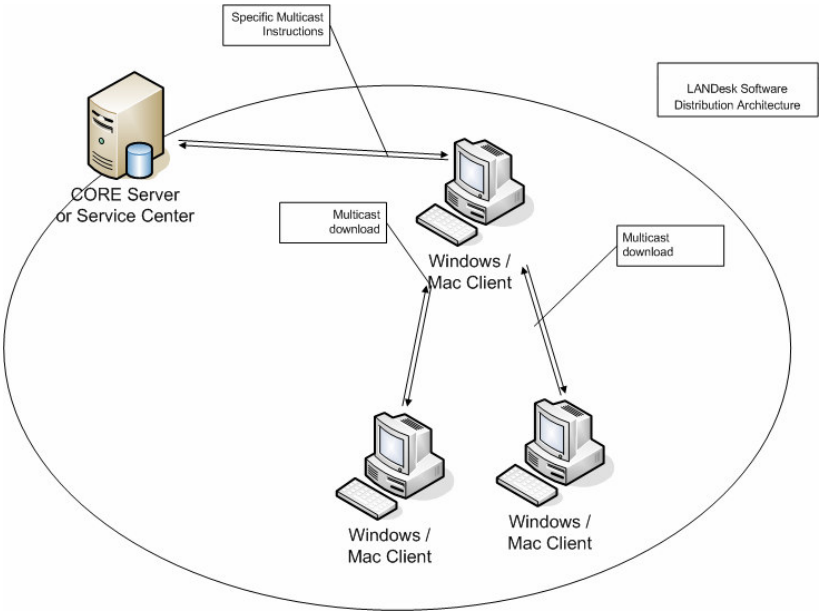
Why download the package again and again for each client?

With **LANDesk Targeted Multicast technology,** you can use a temporary subnet representative to function as a multicast server. This machine receives the package download and then multicasts it to target clients on the subnet. This subnet representative can be selected either manually or automatically (based on load).

Why download across a subnet, if your neighbor has what you need?

With **LANDesk Peer Download technology,** you can leverage cached installations of software from a peer client computer on the same subnet. Administrators can instruct clients to look first for packages in the cache of computers on the local subnet. If the package is not found, then the client pulls it from a distribution point.

Both technologies represent an enormous bandwidth savings over traditional Unicast downloads where each client needs to download a copy of the data from a distribution server, which could be either on the same subnet or on different subnets.



The best news of all is that absolutely no router reconfiguration needs to occur in order to take advantage of LANDesk Management Suite 8's multicasting technology. The target software is delivered by Unicast to the subnet, then simply multicast from there.

The architecture is illustrated in the figure.

Ongoing Maintenance

One of the responsibilities of a systems administrator is to perform ongoing maintenance. Ideally, you'll want the time spent on these chores to be minimized so that you can move on to more important tasks. Therefore, when considering a management solution, you'll want to consider the amount of ongoing maintenance involved.

The ongoing maintenance of Microsoft SMS is a considerable effort. There are multiple categories of maintenance to consider for any SMS deployment:

- Daily and ongoing maintenance tasks performed automatically
- Daily maintenance tasks performed manually
- Daily monitoring tasks performed manually
- Weekly maintenance tasks performed automatically
- Monthly maintenance tasks performed manually

The SMS Administrators Guide has 37 pages devoted to understanding the nuances of these tasks. Many of the tasks require a manual "check up" to see if the tasks ran successfully during their appointed time. Other tasks require manual interaction directly with the SQL Server database. In all, keeping SMS maintained can be a job in and of itself.

In contrast, LANDesk Management Suite 8 has only one automated maintenance task. This is a basic inventory cleanup utility that removes outdated entries. It simply runs every night to automatically scan the database and clean it up. Other than that, only normal database maintenance should be performed as recommended by the manufacturer of the database program, such as Microsoft or Oracle.

System Extensibility

When making a decision about a management technology, the business decision maker should consider all aspects of the business that could leverage management.

Specifically, you'll want to be sure that the management technology you standardize on today is flexible enough provide additional functionality to solve the additional challenges you may face. Additionally, you'll want to ensure that the technology seamlessly integrates into the overall management tool you've chosen. You don't want to have multiple management consoles to address when you can have everything you need all in one place.

Right now, SMS has only third-party tools to enhance its core abilities. However, LANDesk Management Suite 8 has a full complement of technologies available to solve real-world management challenges today. And, they all integrate into the central LANDesk Management Suite 8 console with the same, familiar user interface.

LANDesk Patch Manager	Patch Manager provides automated vulnerability assessment, patch download, patch research, custom vulnerability/patch definitions, policy-based patch maintenance, and patch status reporting.
LANDesk Asset Manager	Asset Manager provides extended asset tracking and control for non-discoverable and non-computer assets.
LANDesk System Manager	System Manager provides real-time performance monitoring and alerting performance monitoring, as well as security alerting.
LANDesk Handheld Manager	Handheld Manager adds inventory and software distribution support for PocketPC handheld computers, and inventory support for Palm computers using the same tools and UI as other clients.
LANDesk Connectors	Connectors integrate LANDesk inventory and remote control features from your current Management Suite installation directly into enterprise management and helpdesk consoles from HP OpenView, IBM Tivoli, Peregrine, and Remedy.

Conclusions

The costs of planning, implementing, maintaining, and interacting with the tool are all the true reoccurring costs associated with a management infrastructure. To that end, the decision makers and the ongoing maintenance staff should take a hard look at what it will cost for hardware, ongoing maintenance, and the day-to-day usage of your chosen management technology.

LANDesk Management Suite 8 lets you get started right away without requiring an intense amount of planning. You can simply grow into it as needed. Don't forget that the sooner you can get started managing your systems, the sooner your overall costs will be reduced.

This paper demonstrates several key avenues where LANDesk Management Suite 8 has both process and efficiency improvements over the competition. Here's a quick summary of the discussed points where LANDesk Management Suite 8 succeeds over SMS:

- Feature set: Same core feature set as SMS (minus the Patch Management). However, LANDesk Management Suite 8 adds multiple client types, Wake-on-LAN technology, bare-metal installs, software deployment efficiency, and more.
- Architecture: Streamlined to enable the implementer to get started right away and grow as needed. Easy planning model for growth eliminates the guesswork for expansion.
- Client operations: Ongoing operations with your clients should be a simple process. You shouldn't have to learn intricate details of your management tool to gain client control.
- Managing client systems: If you have more than just Windows NT, Windows 2000, and Windows XP clients—for example, if you have Macintosh, Linux, Windows 9x, or even modern Windows clients with the NetWare client—you'll need a platform that can handle these systems.
- Reports and queries: You'll want your interactions with your common tasks to be as efficient as possible. You don't want to have to learn SQL just to create a custom report.
- Software deployment efficiency: Instead of pre-planning and placing costly software distribution servers, you can utilize client systems to do the same job. Then, use multicasting technology to deliver the package once to many clients.
- Maintenance: Ongoing maintenance tasks should be self-governing and require as little manual interaction as possible.
- Expansion: Your management tool should grow with you as your needs expand.

These process and efficiency areas will generate an overall higher utilization of a management tool and an overall lower total cost. In all, you'll have a more manageable enterprise with a robust feature set for growth.

Download and evaluate a trial version of LANDesk Management Suite 8 — and see for yourself that enterprise management doesn't have to be difficult to be powerful.

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He can be found speaking at IT conferences and inside corporations all over the world. He has authored or co-authored six books, including *Teach Yourself Windows 2000 Server in 24 Hours* (SAMS) (translated into a dozen languages), the highly acclaimed *Group Policy, Profiles, and IntelliMirror* (Sybex), and *Windows 2003: Active Directory Administration Essentials* (Windows & .Net Magazine).

Since becoming one of the world's first MCSEs on both Windows NT and Windows 2000, he has performed Active Directory, Group Policy, and Windows infrastructure planning for some of the nation's largest organizations.

Jeremy frequently contributes to both *Windows and .Net Magazine (soon to be Windows IT Pro Magazine)* and *Microsoft Certified Professional Magazine (soon to be REDMOND Magazine).*