

Getting Your Macs Under Control with System Center Configuration Manager 2007. Really?

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White Paper

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INTRODUCTION

Apple's Mac computers are becoming more and more popular in organizations. In some cases, users who have Macs at home claim that they are simply more productive when they can use the same kind of computer at work; in other cases, the Macs perform tasks, such as graphic design, for which they're an industry standard. In still other cases, Macs are a way of diversifying the network to reduce the impact that a single virus attack can have on the client computer base. In any case, brand loyalty for Macs is high—in fact, users are often cult-like in their professed support.

Regardless of why there are Macs in your environment, you need to manage them in much the same way you do your Windows machines, including supplying patches, inventorying hardware and software, and installing and updating applications, and so on.

Ideally, you'd maximize your existing investment by managing your Macs using Microsoft's System Center Configuration Manager 2007 (Configuration Manager), allowing your administrators to use their existing systems management infrastructure, console and administrative skills.

Unfortunately, Configuration Manager was designed to work only with Windows machines. Right?

QMX EXTENDS CONFIGURATION MANAGER TO MACS

Actually, with Quest Management Xtensions—Configuration Manager 2007 Edition (QMX), you can use Configuration Manager to manage Mac OS X, as well as Linux, Unix and VMware ESX servers and clients. Using a standards-based non-Windows client agent similar to Microsoft's Advanced Client for Configuration Manager, QMX uses your existing, *unmodified* Configuration Manager infrastructure to deploy software patches; inventory software and hardware; and even provide integration for context-based remote-control tools for your Mac OS X computers.

QMX extends the existing infrastructure of Configuration Manager, including its console, management and distribution points, and database. All you need to do is install the QMX console extensions and deploy the QMX agent, and Configuration Manager becomes a cross-platform systems management solution.

The QMX Agent

The QMX agent sends discovery data records to Configuration Manager, pulls down and executes defined policies that may include capturing hardware and software inventory; deploys and installs scheduled Mac applications and patches; and captures software usage data from metered Mac applications.

Agent Installation Methods

With QMX, you can identify which systems that you want to manage by specifying them manually or by importing them from a Quest Authentication Services-integrated Active Directory (formerly known as Vintela Authentication Services or VAS).

Alternatively, QMX can auto-discover your non-Windows systems and, when provided with the proper credentials, can remotely push the QMX agent to each discovered system (see Figure 1). Of course, you can also include the QMX agent in your base OS X image.

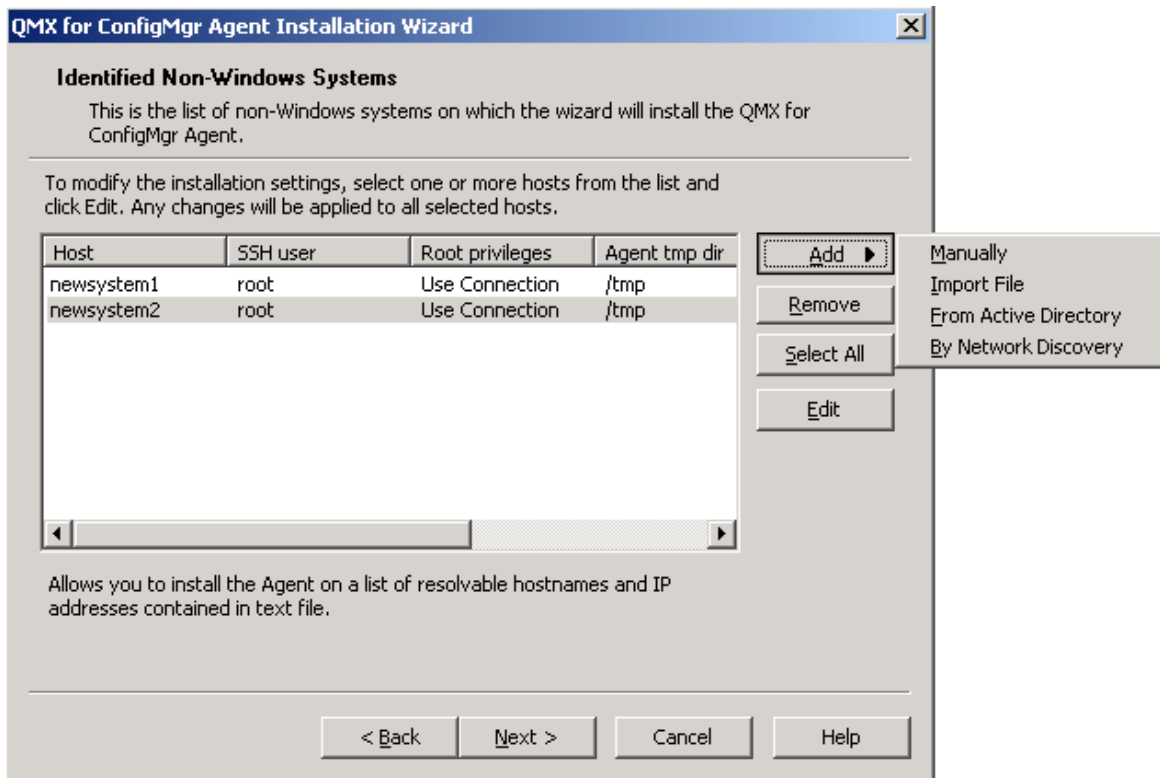


Figure 1. Identify, discover and deploy agents to Mac systems in a variety of ways with the help of the Agent Installation Wizard.

Integration with Quest Authentication Services (QAS)

Optional integration with a limited version of Quest Authentication Services (QAS) allows Mac systems to be joined to Active Directory during the agent installation. Once the Macs are joined, key benefits include the following:

- Additional security, since management point certificates are pulled from Active Directory
- Domain information is captured with hardware inventory scans, which can be viewed in the Resource Explorer views as well as Reports
- QMX can discover Macs from Active Directory, if the fully licensed version of QAS was previously installed and Mac systems were joined to Active Directory
- The full licensed version of QAS also provides Group Policy management from Active Directory, which can configure the Mac's desktop settings

Together, QMX and QAS can provide a total solution for managing Mac systems.

Non-Windows Collections and Queries

Many features in Configuration Manager work the same for Macs and for Windows. Administrators can easily create computer groups in Configuration Manager that let them target deployments to specific types of Mac computers—just as they create groups for Windows computers. Many pre-defined collections and queries are provided to meet your environment's needs, as shown below. Separate dialogs are provided for installing non-Windows collections and queries.

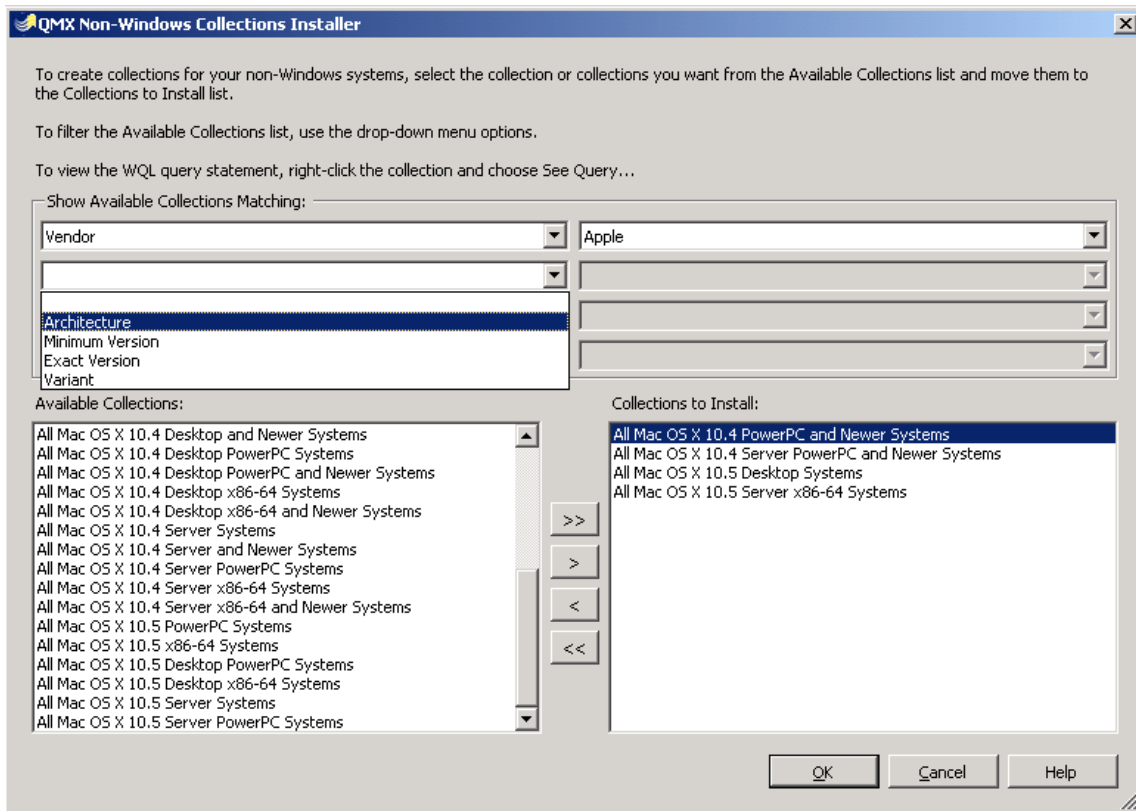


Figure 2. Select from a large list of pre-defined Mac collections and queries to install to jump-start your Mac systems management.

Because so many features in Configuration Manager work the same for Mac systems, administrators require minimal additional training. QMX takes care of the differences between Windows and non-Windows systems, and helps administrators configure everything properly (although the defaults are often sufficient).

Non-Windows Inventory

Comprehensive hardware and software inventory is captured and placed into the same database fields as the Windows inventory. This means that native Configuration Manager data-viewing features, such as the Resource Explorer and many of the default reports, will automatically display your heterogeneous inventory data as well (see Figures 3 and 4).

Report Name: Count operating systems and service packs		
Category: Operating System		
Comment: Displays the number of computers inventoried by operating system and service pack combinations		
Parameters:		
9/2/2008 4:02:57 PM		(Number of Records: 37)
Operating System	CSD Version	Count
<input type="checkbox"/> AIX 5.2 (POWER)		2
<input type="checkbox"/> AIX 5.3 (POWER)		1
<input type="checkbox"/> cat: /etc/CENTOS-release: No such file or directory		1
<input type="checkbox"/> HP-LUX 11i v1 (PA-RISC)		1
<input type="checkbox"/> HP-LUX 11i v2 (Itanium)		1
<input type="checkbox"/> HP-LUX 11i v2 (PA-RISC)		1
<input type="checkbox"/> Linux (x86)		1
<input type="checkbox"/> Mac OS X 10.3.9 (PowerPC)		1
<input type="checkbox"/> Mac OS X 10.4.11 (PowerPC)		1
<input type="checkbox"/> Mac OS X 10.4.11 (x86)		1
<input type="checkbox"/> Mac OS X 10.5 (x86)		1
<input type="checkbox"/> Mac OS X 10.5.3 (x86)		1
<input type="checkbox"/> Mac OS X Server 10.5.1 (x86)		1
<input type="checkbox"/> Mac OS X Server 10.5.2 (x86)		1
<input type="checkbox"/> Novell Linux Desktop (NLD) 9 (x86)		1
<input type="checkbox"/> Red Hat Enterprise Linux AS 2.1 (x86)		1
<input type="checkbox"/> Red Hat Enterprise Linux AS 3 (x86)	Update 8	1
<input type="checkbox"/> Red Hat Enterprise Linux AS 4 (x86)	Update 4	1
<input type="checkbox"/> Red Hat Enterprise Linux AS 4 (x86-64)	Update 4	1
<input type="checkbox"/> Red Hat Enterprise Linux Desktop 5 (x86-64)		1
<input type="checkbox"/> Red Hat Enterprise Linux ES 3 (x86)	Update 7	1
<input type="checkbox"/> Red Hat Enterprise Linux ES 4 (x86)	Update 4	1
<input type="checkbox"/> Red Hat Enterprise Linux Server 5 (x86-64)		1
<input type="checkbox"/> Red Hat Enterprise Linux WS 2.1 (x86)		1
<input type="checkbox"/> Red Hat Enterprise Linux WS 3 (x86)	Update 7	1
<input type="checkbox"/> Red Hat Enterprise Linux WS 4 (x86)	Update 4	1
<input type="checkbox"/> Solaris 10 (SPARC)		1
<input type="checkbox"/> Solaris 8 (SPARC)		1
<input type="checkbox"/> Solaris 9 (SPARC)		1
<input type="checkbox"/> SUSE Linux Enterprise Desktop (SLED) 10 (x86-64)		1
<input type="checkbox"/> SUSE Linux Enterprise Server (SLES) 10 (x86)		1
<input type="checkbox"/> SUSE Linux Enterprise Server (SLES) 10 (x86-64)		1
<input type="checkbox"/> SUSE Linux Enterprise Server (SLES) 9 (x86)	Patchlevel 2	1
<input type="checkbox"/> SUSE Linux Standard Server (SL5) 8.0.0 (x86)		1
<input type="checkbox"/> VMware ESX Server 3.0.1 (x86)		1
<input type="checkbox"/> VMware ESX Server 3.0.2 (x86)		1
<input type="checkbox"/> VMware ESX Server 3.5.0 (x86)		1

Figure 3. Get a comprehensive view of all the OS platforms in your enterprise, including all versions of Mac OS X with their associated architectures.

Custom inventory can also be added based on the smsdef.mof concepts in Configuration Manager. Static data such as asset tags, geographic location, or user information can be placed on each system to be collected during inventory scans. Additionally, scripts can be written to gather more dynamic hardware or informational data, which are run during each inventory scan to incorporate new data into Configuration Manager.

Getting Your Macs Under Control with System Center Configuration Manager 2007. Really?

Copy || Export || Print || E-mail

Report Name: Computer information for a specific computer
Category: Hardware - General
 Comment: Displays summary information for a single computer
 Parameters: Computer Name mac105i-2

9/29/2008 2:25:26 PM (Number of Records: 2)

	Netbios Name	User Name	User Domain	Computer Domain	Operating System	Version	Total Physical Memory (MB)	IP Addresses	Manufacturer	Model	Name	Max Clock Speed
<input checked="" type="checkbox"/>	mac105i-2	unknown			Mac OS X 10.5.3 (x86)	10.5.3	2097152	10.5.61.24	Intel	Macmini2,1	Intel Core 2 Duo	1830
<input checked="" type="checkbox"/>	mac105i-2	unknown			Mac OS X 10.5.3 (x86)	10.5.3	2097152	10.5.61.24	Intel	Macmini2,1	Intel Core 2 Duo	1830

Computer Details

Computer Name
(Reduce Values set with wildcards: He%lo W_id%)
 mac105i-2 Values...

Reports

- Asset Intelligence
- Hardware - CD-ROM
- Hardware - Disk
 - Disk information for a specific computer - Logical disks
 - Disk information for a specific computer - Partitions
 - Disk information for a specific computer - Physical disks
 - History - Logical disk space history for a specific computer
- Hardware - General
 - Computer information for a specific computer
 - Computer information for a specific computer (drill down)
- Hardware - Memory
 - Memory information for a specific computer
- Hardware - Modem
- Hardware - Network Adapter
- Hardware - Processor
- Hardware - SCSI
- Hardware - Sound Card
- Hardware - Video Card
- Network
- Operating System
- SMS Site - Discovery and Inventory Information
- Software - Companies and Products
 - Products on a specific computer
 - Software registered in Add Remove Programs on a specific computer
- Software - Files
 - All inventoried files on a specific computer
- Software Distribution - Advertisements
 - All advertisements for a specific computer

Copy || Export || Print || E-mail

Report Name: Computer information for a specific computer
Category: Hardware - General
 Comment: Displays summary information for a single computer
 Parameters: Computer Name mac105i-2

9/29/2008 2:25:26 PM (Number of Records: 2)

	Netbios Name	User Name	User Domain	Computer Domain	Operating System	Version	Total Physical Memory (MB)	IP Addresses	Manufacturer	Model	Name	Max Clock Speed
<input checked="" type="checkbox"/>	mac105i-2	unknown			Mac OS X 10.5.3 (x86)	10.5.3	2097152	10.5.61.24	Intel	Macmini2,1	Intel Core 2 Duo	1830
<input checked="" type="checkbox"/>	mac105i-2	unknown			Mac OS X 10.5.3 (x86)	10.5.3	2097152	10.5.61.24	Intel	Macmini2,1	Intel Core 2 Duo	1830

Figure 4. Web reports can display both summary and detailed inventory category information, including disk, operating system, memory, network information, system type, software versions and more.

QMX provides separate software inventory collection settings for non-Windows systems, since those systems don't use the same Microsoft installer technology that a Windows Configuration Manager client would look for. QMX searches through several Mac folders where applications can be installed to ensure both standard applications and Microsoft applications are captured. File pattern, file collection scans and custom software inventory can also be defined. Software inventory reports can be run on a collection of systems or on a specific computer, as displayed below:

Report Name: Products on a specific computer					
Category: Software - Companies and Products					
Comment: Displays a summary of the inventoried software products and their manufacturers on a single specified computer					
Parameters: Computer Name: Macro2-10-5					
11/4/2008 4:49:13 PM					(Number of Records: 82)
Netbios Name	Computer Domain	Company Name ▼	Product Name	Product Version	
<input checked="" type="checkbox"/>	Macro2-10-5	vmware	VMware Fusion	2.0.2.0	
<input checked="" type="checkbox"/>	Macro2-10-5	Unknown Company	X11	2.1.5	
<input checked="" type="checkbox"/>	Macro2-10-5	Unknown Company	Firefox	3.0.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Word	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Setup Assistant	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Remove Office	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Project Gallery	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	PowerPoint	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Organization Chart	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Office Reminders	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	My Day	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Microsoft Sync	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Messenger	7.0.0	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Language Register	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Graph	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Excel	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Equation Editor	12.1.0	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Entourage	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Database Utility	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Database Daemon	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Clip Gallery	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Chart Converter	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	Microsoft Corporation	Cert Manager	12.1.3	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	VoiceOver Utility	2.1	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	TextEdit	1.5	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	Terminal	2.0.1	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	System Profiler	10.5.0	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	System Preferences	5.0	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	Stickies	6.0	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	Script Editor	2.2.1	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	Safari	3.1.2	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	Remote Install Mac OS X	1.0	
<input checked="" type="checkbox"/>	Macro2-10-5	apple	RAID Utility	1.0.2	

Figure 5. Software inventory from Mac systems is collected and can be displayed using standard Configuration Manager Web reports, such as the “Products on a Specific Computer” report.

Distributing Applications, Patches, etc. with QMX

Distribution of Mac applications and patches (including formats such as .app, .mkpg, .dmg and scripts) is natively handled by QMX, using a non-Windows software distribution wizard that parallels the Windows distribution wizard. The wizard enables you to deploy to collections of Mac systems, and then schedule and track their installation progress (see Figures 5 and 6). Deploying scripts from the standard Configuration Manager Program, Package and Advertisements interface provides the flexibility needed for many unique patch deployments and for the distribution of custom or line-of-business applications.

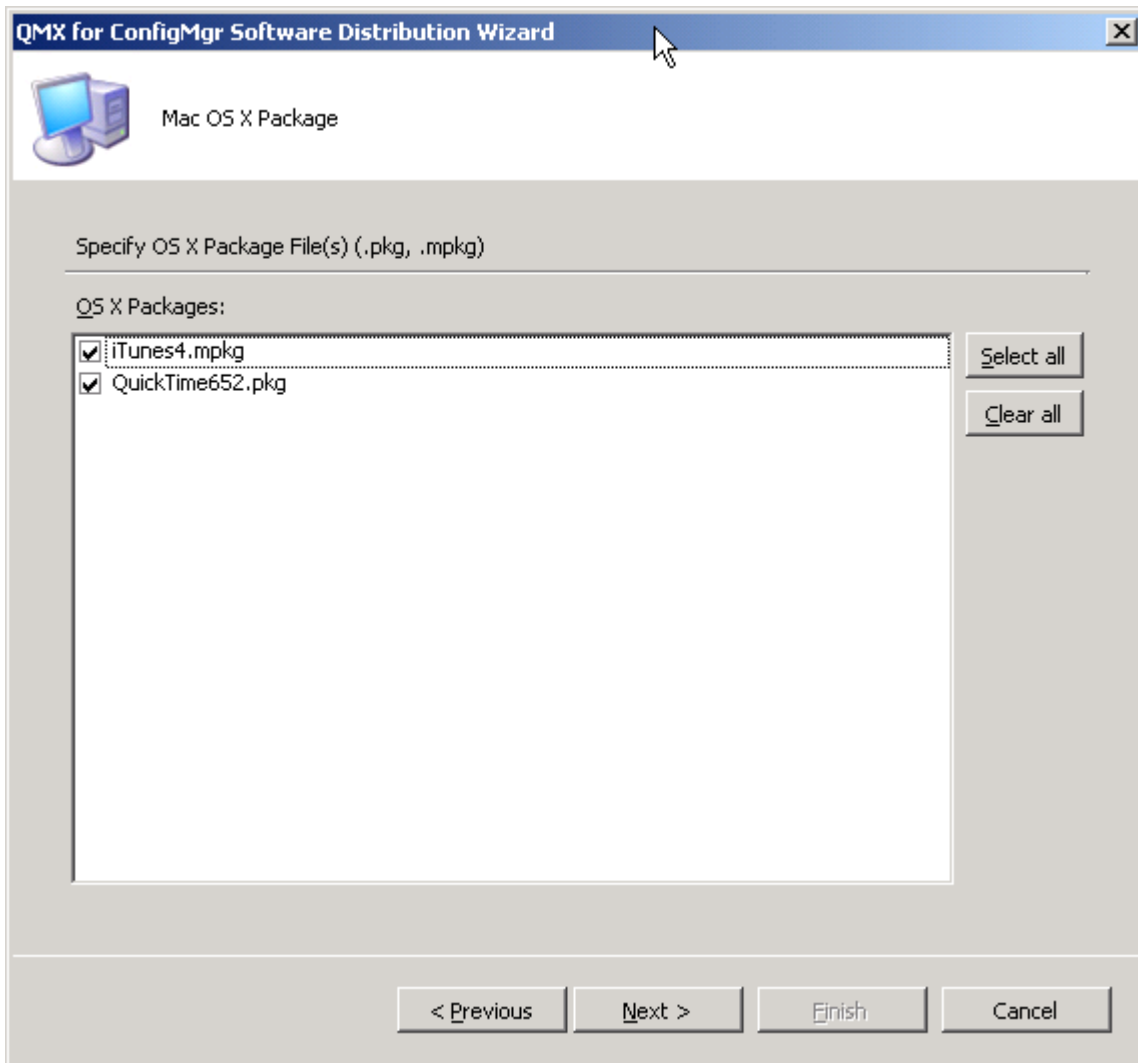


Figure 6. One or more standard Mac OS X packages with formats such as .pkg and .mpkg can be selected, scheduled and installed to a collection of Mac systems.

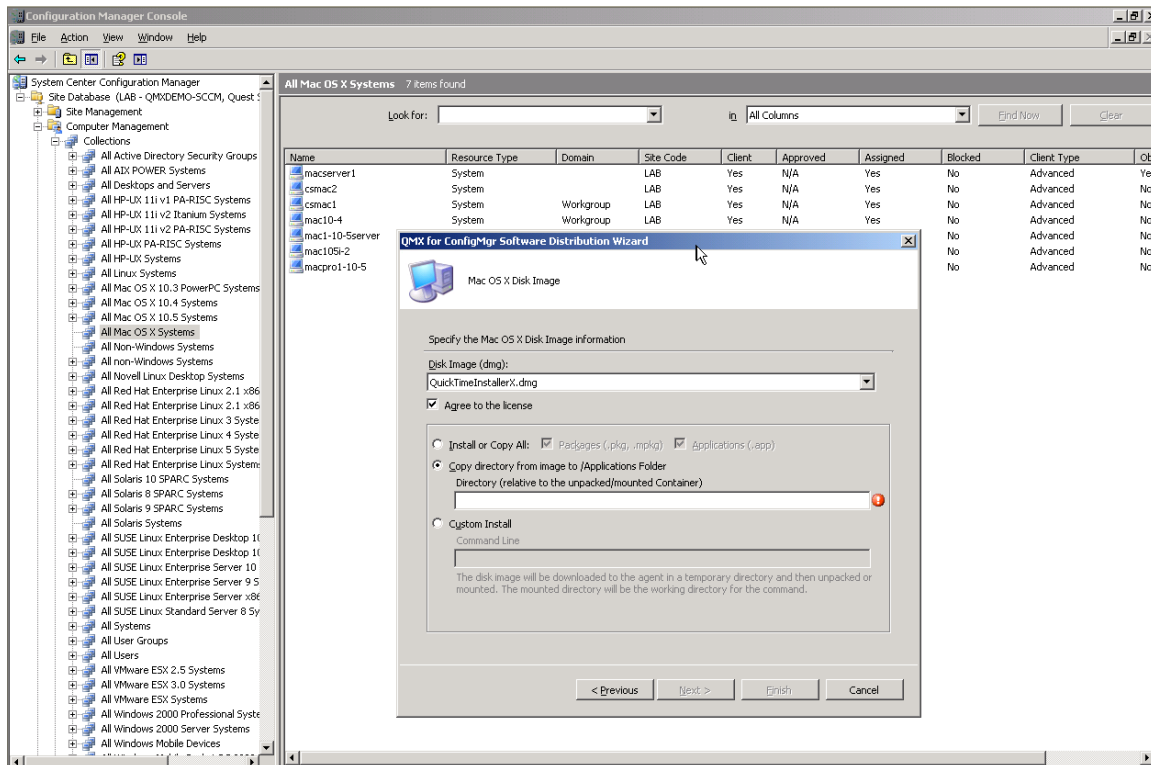


Figure 7. Mac disk images (.dmg files) can be deployed to Mac collections and then scheduled for installation. This figure shows the flexibility offered for customizing the deployment of .dmg files. Commands and scripts can also be distributed and run.

Once a distribution is scheduled for deployment, administrators can take advantage of the many tracking mechanisms within Configuration Manager because of the detailed status messages that are captured for the Programs, Packages and Advertisements interface. The Software Distribution homepage provides an excellent summary of advertisement status, including successes, failures and percent complete. Many default Web reports for tracking distributions can be used for Mac systems (see Figure 8).

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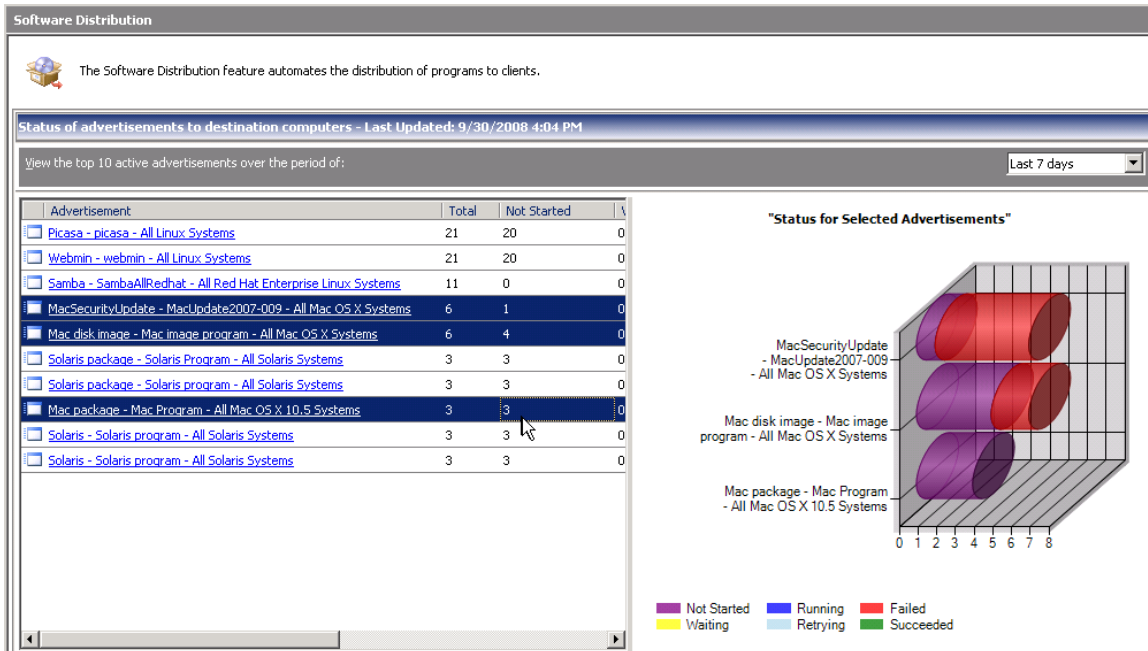


Figure 8. Mac application and patch advertisements can be tracked using existing Configuration Manager features, such as the Software Distribution home page.

Non-Windows Remote Access and Control

Being able to remotely access Mac systems without visiting them can improve efficiency, reduce travel costs and save time. QMX simplifies remote management through its contextual-based Remote Tools feature. You can launch applications, utilities, and terminal windows, and even remotely control Macs from within your Configuration Manager console (see Figure 9). VNC-based remote control tools, such as RealVNC, have a pre-defined Remote Tools option that can be customized to launch a Remote Control session.

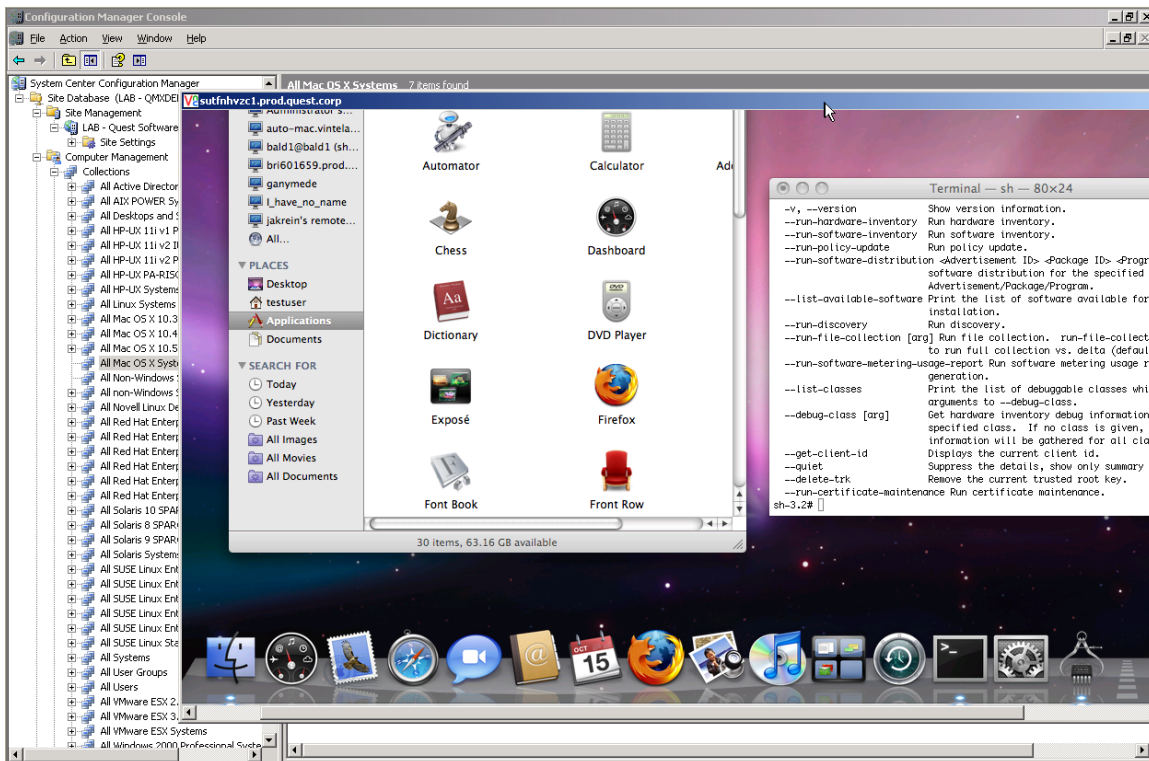


Figure 9. Remote control of Mac systems from within Configuration Manager is easy with pre-defined integration with VNC-based solutions.

Non-Windows Software Usage Tracking and Software Metering

Understanding which applications are being used throughout the environment is an important component in ensuring compliance with software licenses and usage requirements. Software metering on Mac applications is done with metering rules, just as on Windows applications. Usage information, such as who is using the application and when and how long it is used, is tracked and stored for reporting. Combining software metering with software inventory and reporting provides a clear picture of the software license status for your organization.

THE AGENTLESS APPROACH—ANOTHER OPTION FROM QUEST

There are times when a rich, advanced agent isn't desired. This is especially true for network devices that simply don't offer a rich operating system that can support an agent, but it's also true for older operating systems for which a specific agent isn't available or supported.

Quest Management Xtensions for Device Management (QMX for Device Management) brings agentless inventory capabilities to a vast array of systems—more than 115 distinct non-Windows systems and devices in all, including:

- Linux, including Debian, Fedora, Ubuntu, etc.
- Legacy versions of Solaris, HP-UX and AIX
- Network devices from 3Com, Nortel, F5, etc.
- Storage devices, from HP, EMC, NetApp, etc.
- Applications, such as BackupExec, Citrix, etc.
- Hardware, such as IBM BladeCenter, Stratus, etc.
- Printers, by Canon, HP, Xerox, etc.
- Power devices, from APC, Tripp Lite, etc.
- Security devices, by BlueSocket, IronPort, TendMicro, etc.
- Telecom systems, from Avaya, Memotec, etc.

While Quest's agent-based QMX offering is often preferred for its powerful capabilities and rich user-experience, the agentless QMX for Device Management offering certainly provides a much-needed supplement (or an alternative if distributing an agent is not desired). QMX for Device Management offers the following benefits:

- It can inventory non-Windows systems that absolutely cannot have additional software, such as the QMX agent, installed
- Network devices can be inventoried and included in Configuration Manager reports
- Legacy systems can be inventoried and included in Configuration Manager reports

SUMMARY

With QMX, Mac computers cease to be second-class citizens on your network, because you can work with them and manage them in exactly the same way you work with and manage Windows machines. That's right: now your Macs can be brought into and managed from your Configuration Manager console, so you'll enjoy a centralized, single pane of glass view for managing your heterogeneous environment, including Windows, Mac, Unix, Linux and VMware ESX.

And if your architectural approach or other constraints prohibit the use of agents, QMX for Device Management enables you to still use Configuration Manager for your non-Windows systems without an agent being deployed. Simply stated, you can have it your way.

BEYOND CONFIGURATION MANAGEMENT

With a comprehensive set of offerings that extend the capabilities of the System Center suite to heterogeneous environments, Quest enables System Center to centrally manage desktops, servers and devices in both physical and virtual environments—beyond just Configuration Manager. Quest:

- Extends System Center Operations Manager 2007 to non-Microsoft systems and workloads
- Provides granular recovery capabilities for Active Directory, Exchange, SharePoint and non-Windows systems from a Data Protection Manager backup
- Manages VDI, Terminal Services and Blade PC sessions from a single console, while improving the user experience over WAN and LAN deployments

In every case, Quest simply enhances and extends your existing Microsoft System Center investment—amplifying what System Center can do for your business.

For more information about the offerings delivered by Quest that enhance the value of the System Center suite, please visit www.quest.com/system-center.

APPENDIX: SUPPORTED MAC VERSIONS

The following versions of Mac operating systems are supported with an advanced QMX client for System Center Configuration Manager 2007:

- 10.3 (PowerPC and Intel)
- 10.4 (PowerPC and Intel)
- 10.5 (PowerPC and Intel)

The following additional operating systems are supported by Quest with an advanced QMX client for System Center Configuration Manager:

- RedHat Enterprise Linux: AS/ES/WS 2.1, 3.0 i386, 4.0*, 5.0*
- SUSE Enterprise Server 8, 9*, 10*; Enterprise Desktop 10*
- Solaris 8, 9 and 10 (SPARC); Solaris x86 9, 10*
- AIX 5.1, 5.2, 5.3, 6.1
- HP-UX 11i (11.11) and v2 (11.23), v3 (11.31) – PA-RISC/Itanium
- Asianux 2.0
- VMware ESX Server 2.53, 3.01+, 3.5
- CentOS 4 and 5
- Agentless support is provided for older versions and for network devices, and includes only inventory capabilities

QMX is also fully integrated with the Quest Authentication Services v3.5 offering.

*indicates support for 64-bit, as well as 32-bit

ABOUT THE AUTHOR

Don Jones is a co-founder of Concentrated Technology (ConcentratedTech.com). His consulting practice specializes in making the connection between technology and business, helping businesses realize more value from their IT investment, and helping IT align more closely to business needs and values. Don is also a Microsoft "Most Valuable Professional" (MVP) Award recipient, and the author of more than 30 books on information technology. He has been an IT journalist for more than eight years, and is currently a contributing editor for Microsoft TechNet Magazine. Don is a sought-after speaker at industry conferences and symposia, including Connections conferences, Microsoft TechEd and TechMentor events.

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Quest Software, Inc., a leading enterprise systems management vendor, delivers innovative products that help organizations get more performance and productivity from their applications, databases, Windows infrastructure and virtual environments. Through a deep expertise in IT operations and a continued focus on what works best, Quest helps more than 100,000 customers worldwide meet higher expectations for enterprise IT. Quest Software helps organizations deliver, manage and control complex database environments through award-winning products for Oracle, SQL Server, IBM DB2, Sybase and MySQL. Quest Software can be found in offices around the globe and at www.quest.com.

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- Download patches and upgrades.
- Seek help from a Support engineer.
- Log and update your case, and check its status.

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