Microsoft

Microsoft System Center

Troubleshooting Configuration Manager

Rushi Faldu · Manoj Kumar Pal · Andre Della Monica · Kaushal Pandey
Mitch Tulloch, Series Editor

PUBLISHED BY
Microsoft Press
A Division of Microsoft Corporation
One Microsoft Way
Redmond, Washington 98052-6399

Library of Congress Control Number: 2013952210
ISBN: 978-0-7356-8302-0

Microsoft Press books are available through booksellers and distributors worldwide. If you need support related to this book, email Microsoft Press Book Support at mspinput@microsoft.com. Please tell us what you think of this book at *http://www.microsoft.com/learning/booksurvey*.

Acquisitions Editor: Anne Hamilton
Developmental Editor: Karen Szall
Project Editor: Karen Szall
Editorial Production: Diane Kohnen, S4Carlisle Publishing Services
Copyeditor: Andrew Jones
Cover Illustration: Twist Creative • Seattle
Cover Design: Microsoft Press Brand Team

Contents

Foreword

Ever since the client-server computing architecture became mainstream, IT pros around the world have been challenged and required to manage these servers and clients. As more client computers were introduced in IT environments and started playing a critical role in performing day-to-day tasks, the need to manage them became even more urgent. More importantly, these clients became an integral part of any business's productivity and started to perform more mission-critical tasks.

Today, the clients are becoming more powerful, smarter, and increasingly mobile. They have now become assets. As these assets grow in number, become more portable, and store critical business data, the risk to organizations increases. Now, more than ever before, there is a need for IT pros to manage, monitor, and secure these assets.

Windows Active Directory and Group Policy were the starting points for IT pros to secure some aspects of these assets. However, they weren't sufficient and didn't give IT pros the ability to manage the lifecycle of these assets.

In 1994, Microsoft introduced Systems Management Server (SMS) 1.0. It was the beginning of client management solution, but more in the non-Active Directory era. SMS 2003 truly ushered in an era of advanced client management that leveraged Active Directory and all of its functionality. The adoption and popularity of SMS has continued to grow since SMS 2003, and Microsoft has pushed the limits of the solution and its ability over time.

Microsoft System Center Configuration Manager 2007 changed the game with the vision of an integrated solution along with other System Center products. Microsoft introduced many new features and firsts with Configuration Manager 2007 and took client management to a whole new level with System Center 2012 Configuration Manager. Now, Configuration Manager (both 2007 and 2012) is an integral part of the IT infrastructure of many companies, and expertise with Configuration Manager has become one of the most sought after IT skills around the globe.

Microsoft Press and the authors of this book have a passion for helping IT pros working with Configuration Manager enhance their knowledge and make the most of the solution. The authors of this book are Microsoft Consultants from Microsoft Consulting Services (MCS) and Premier Field Engineers (PFE) from Microsoft Global Business Support (GBS) organizations with real field experience. The authors have come together to share their collective knowledge and experiences from both consulting and support in the field.

The authors have identified and chosen topics that are used on a daily basis by all Configuration Manager administrators around the world irrespective of the size and complexity of the solution or the industry it is deployed in. The authors have made an attempt to cover topics that are usually pain points for most Configuration Manager administrators. The authors have broken these into two books: *System Center: Configuration Manager Field Experience* and *System Center: Troubleshooting Configuration Manager*.

We hope you enjoy this book and the other one as much as the authors have enjoyed writing them, and that these resources help make the most of your System Center 2012 Configuration Manager solution.

Manish Raval

Consultant, Microsoft Consulting Services (MCS)

Introduction

As the authors of this book, we have tried provide you with insights and tips on troubleshooting System Center 2012 Configuration Manager drawn from our insider knowledge and real-world field experience. While most of you who are Configuration Manager administrators are fairly comfortable with the product and can perform common management tasks, many of you still have pain points when it comes to certain aspects of how the product works. Based on our observations and interactions with customers, the biggest knowledge gaps tend to be in the following areas:

- Troubleshooting common Configuration Manager tasks such as software distribution, software updates, and deployment.
- Understanding how the various components of Configuration Manager on both the server and client side work together when such tasks are performed.
- Dealing with the enormous number of log files that are generated on both the server and client side of Configuration Manager.

This book is our attempt to address some of these gaps and pain points. Chapter 1 provides insights into the Configuration Manager architecture and deployment principles. Chapter 2 familiarizes you with some of the key components of Configuration Manager and how they interact with each other when performing common tasks by using verbose logging for tracing the actions of various components. And Chapter 3 examines how to troubleshoot various Configuration Manager functionality including software and application deployment, site-to-site replication, software update and patching, operating system deployment, and Mac client issues.

Errata & book support

We've made every effort to ensure the accuracy of this content. Any errors that have been reported since this content was published are listed on our Microsoft Press site:

http://aka.ms/SCtrouble/errata

If you find an error that is not already listed, you can report it to us through the same page.

If you need additional support, email Microsoft Press Book Support at *mspinput@microsoft.com*.

Please note that product support for Microsoft software is not offered through the addresses above.

We want to hear from you

At Microsoft Press, your satisfaction is our top priority, and your feedback our most valuable asset. Please tell us what you think of this book at:

http://aka.ms/tellpress

The survey is short, and we read every one of your comments and ideas. Thanks in advance for your input!

Stay in touch

Let's keep the conversation going! We're on Twitter: *http://twitter.com/MicrosoftPress*.

CHAPTER 3

Configuration Manager log files and troubleshooting scenarios

In Microsoft System Center 2012 Configuration Manager, client and site server components record information about the tasks and processes that take place in various log files. This client and server component logging is enabled by default and you can use these log files to help troubleshoot any issues that might occur in your Configuration Manager environment.

This chapter provides more information about some of these different log files. You can use this information when you need to examine these logs for operational details, interpreting errors, and various other troubleshooting purposes.

Software updates

Software updates in System Center 2012 Configuration Manager provide a set of tools and resources that can help manage the complex task of tracking and applying software updates to client computers in the enterprise. An effective software update management process is necessary to maintain operational efficiency, overcome security issues, and maintain the stability of the network infrastructure. However, because of the changing nature of technology and the continual appearance of new security threats, effective software update management requires consistent and continual attention.

Software update log files

Table 3-1 lists the log files that contain information related to software update points. Later in this section we'll examine how to troubleshoot various issues by using these log files.

TABLE 3-1 Log files for software update points

Log name	Description	Computer with log file
objreplmgr.log	Records details about the replication of software updates notification files from a parent to child sites.	Site server
PatchDownloader.log	Records details about the process of downloading software updates from the update source to the download destination on the site server.	The computer hosting the Configuration Manager console from which downloads are initiated
ruleengine.log	Records details about automatic deployment rules for the identification, content download, and software update group and deployment creation.	Site server
SUPSetup.log	Records details about the software update point installation. When the software update point installation completes, Installation was successful is written to this log file.	Site system server
WCM.log	Records details about the software update point configuration and connections to the Windows Server Update Services (WSUS) server for subscribed update categories, classifications, and languages.	Site server that connects to the WSUS server
WSUSCtrl.log	Records details about the configuration, database connectivity and health of the WSUS server for the site.	Site system server
wsyncmgr.log	Records details about the software updates synchronization process.	Site system server
WindowsUpdate.log	Records details about when the Windows Update Agent connects to the WSUS server and retrieves the software updates for compliance assessment and whether there are updates to the agent components.	Client

Software update workflow

The workflow for deploying software updates using Configuration Manager should follow a dynamic, interactive content model approach. The diagrams in this section provide the detailed steps to plan and configure software updates at a site.

Step 1: Prepare for software update deployment

To prepare for software update deployment, you must verify the prerequisites for software update deployment, create deployment templates, manage deployment collections, and configure maintenance windows.

Figure 3-1 shows the process flow for creating a deployment template. The SMS Provider creates the deployment template in the Configuration Manager database.

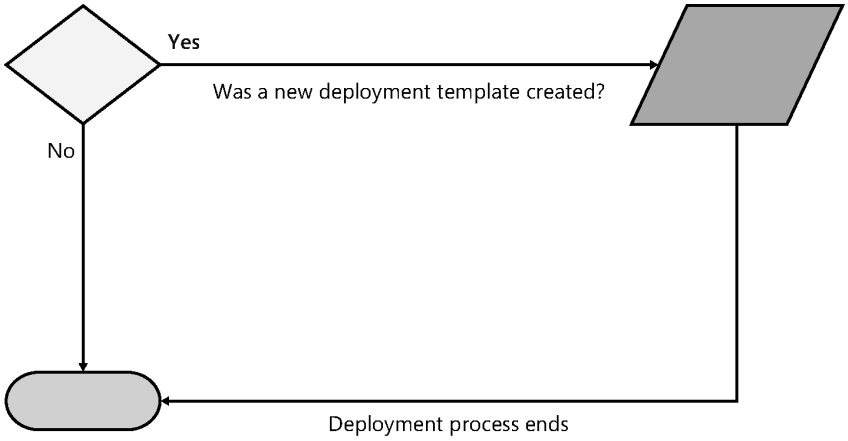


FIGURE 3-1 The process for creating a deployment template.

Step 2: Add software updates to an update list and download the update files

In this step, you create a search folder to find software updates, add software updates to an update list, and download the update files to a deployment package. The process is shown in Figure 3-2 and can be described as follows:

1. The SMS Provider creates a new configuration item for the update list in the Configuration Manager database and associates the software updates to the update list. SQL triggers create table change notifications.
2. Database notification monitors create notification files and object replication manager processes the configuration items.

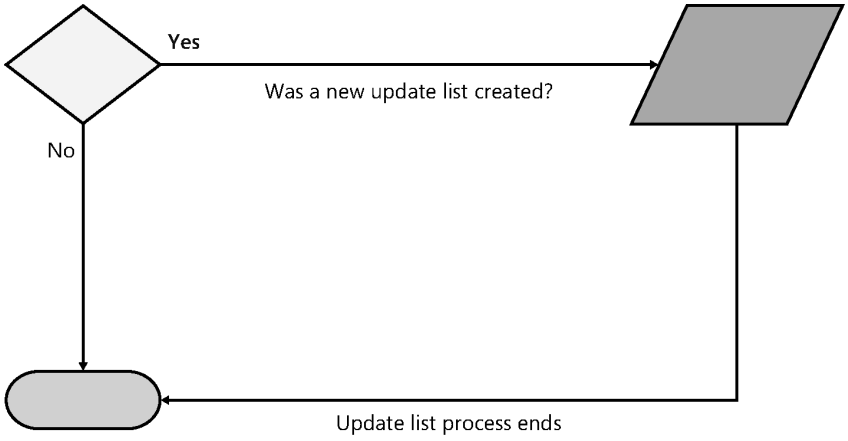


FIGURE 3-2 The process for creating an update list.

The process then continues, as shown in Figure 3-3, and can be described as follows:

1. The SMS Provider creates the deployment package in the site database and determines which software update files need to be downloaded to the source location. SQL triggers add table change notifications in the site database.
2. Database Notification Monitor then creates the deployment packages, copies the software updates to the distribution points specified in the deployment package, and creates policy notification files. Policy provider updates any associated assignment policies.
3. The SMS Provider updates the deployment packages in the database and determines which software update files need to be downloaded to the source location.
4. Software updates patch downloader downloads the update file from the configured download location, verifies the file hash, checks for certification revocation, and moves the update files to the package source share.
5. Once all the software update files that need to be downloaded have been downloaded, the SMS Provider updates the deployment packages in the database and initiates a package refresh. A SQL trigger adds a table change notification in the site database.
6. Database Notification Monitor creates a package notification file.
7. Distribution Manager updates the deployment package, copies software updates to the distribution points specified in the deployment package, and creates a policy notification file.
8. Policy Provider updates any associated assignment policies.

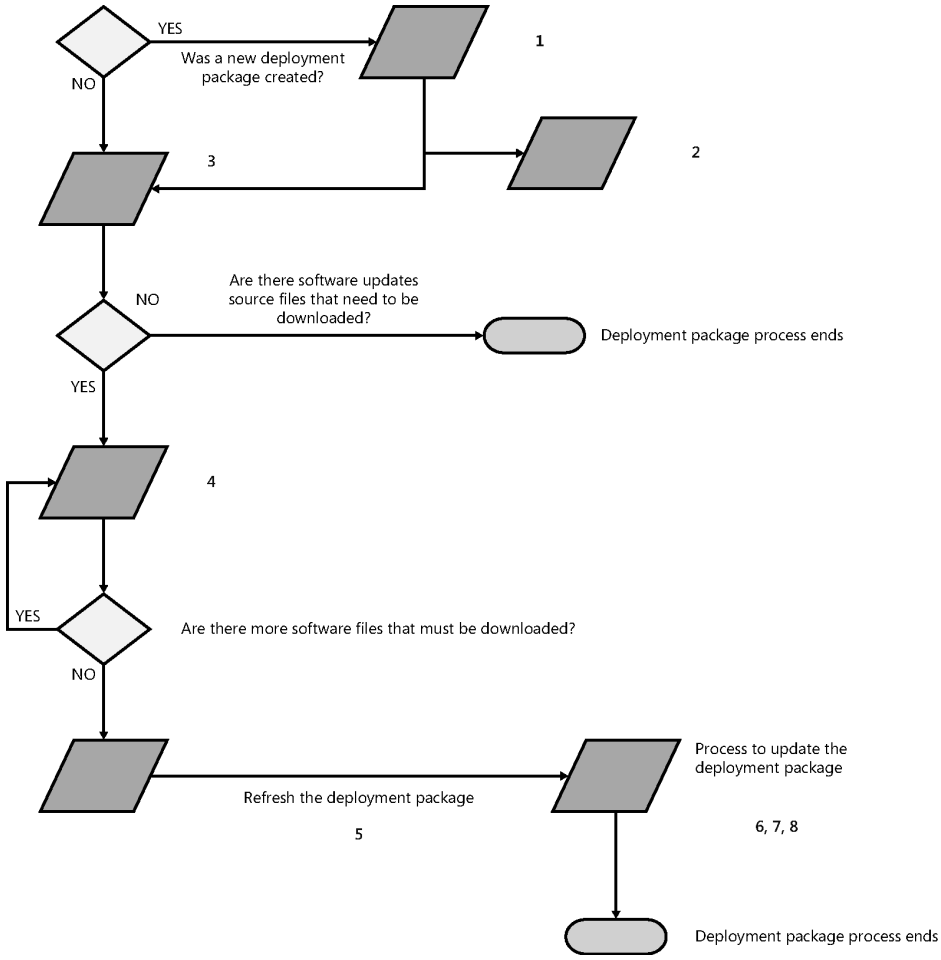


FIGURE 3-3 The process continues by downloading the update files.

Step 3: Create the software update deployment

In this step, you use the update list and deployment template to initiate software update deployment and create the deployment using the Deploy Software Updates Wizard. The process is shown in Figure 3-4 and can be described as follows:

1. The SMS Provider retrieves information about the update list, determines what software updates are in the update list, whether there are software updates that require license terms approval, and retrieves information about the deployment template and the settings stored in the template.
2. The SMS Provider inserts the deployment (assignment) information into the Configuration Manager site database. An SQL trigger adds a table change notification to the site database.

3. If Network Access Protection (NAP) evaluation is enabled in the deployment, the SMS Provider updates the software updates (configuration items) in the deployment with the NAP effective date and creates the software update deployment assignment policy.
4. If NAP evaluation is not enabled, the Database Notification Monitor creates a file notification, CI Assignment Manager creates the deployment assignment in the Configuration Manager site database, and Policy Provider creates the policy for the deployment assignment. Status message ID 5800 is created when the process completes.

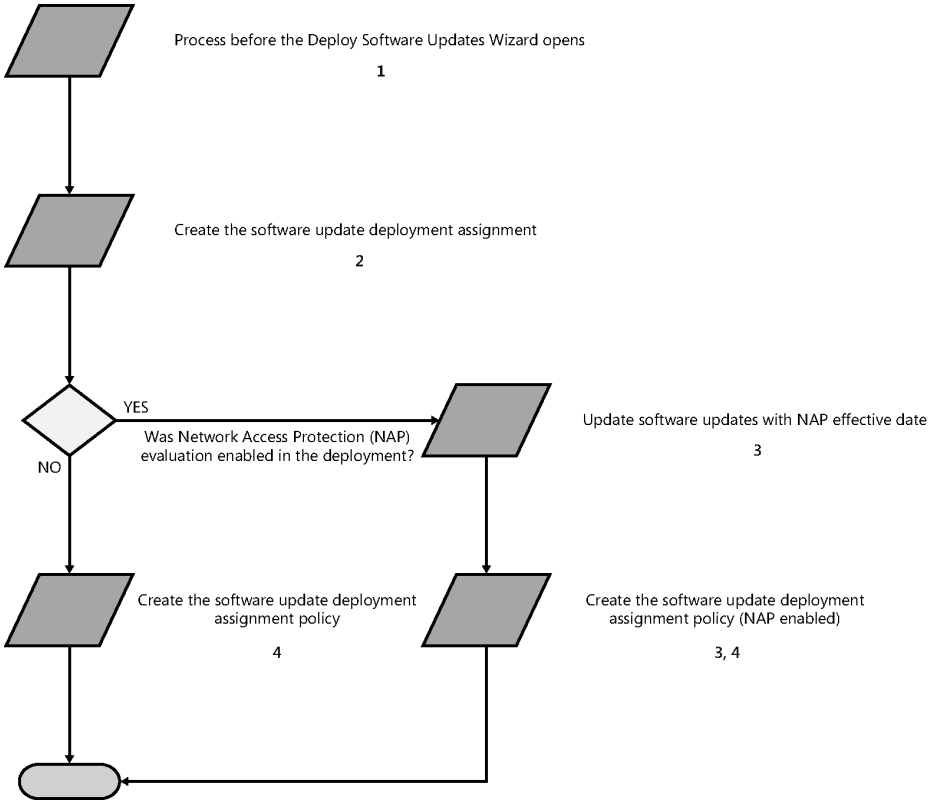


FIGURE 3-4 Software update deployment follows this process.

Troubleshooting software update issues

Errors might occur during the process of installing and configuring a software update point. This typically happens when any of the following are not configured properly:

- When the active software update point is installed on a remote site system server, the WSUS Administration console must be installed on the site server.

- The port settings configured for the active software update point must be the same as the port settings configured for the WSUS website in Internet Information Services (IIS).
- The computer and Administrator accounts must be able to access virtual directories under the WSUS website in IIS from the site server.
- When the site is running in native mode or when the software update point is configured to communicate by using SSL, the HTTPS port setting must be set correctly, specific WSUS virtual directories must be configured to require SSL, a web server signing certificate must be configured, and the WSUSUtil command-line tool must be run on the software update point.

Keeping software updated is essential in any networked, distributed computing environment. An effective software update management process is important to help maintain operational efficiency, prevent security problems, and maintain the stability of the infrastructure. However, because of the changing nature of technology and the continual appearance of new security threats, the task of effective software update management can often be challenging.

The software updates capabilities included in System Center 2012 Configuration Manager SP1 provide a set of tools and resources that can help you manage the complex task of tracking and applying software updates to client computers in the enterprise.

Troubleshooting the server side

The Configuration Manager component that takes care of software updates is called the software update point. The first step in troubleshooting software update issues is therefore to check whether your software update point is properly installed. If it is installed correctly you will see entries in your SUPSetup.log similar to those shown in this section. Specifically, you should see "SMSWSUS Setup Started" and "Installing the SMSWSUS" entries to indicate that installation of the software update point has commenced, and an "Installation was successful" entry to indicate that installation of the software update point has succeeded.

SUPSETUP.LOG

The SUPsetup.log file records details about the installation of the software update point. When the software update point installation has completed, the entry "Installation was successful" is written to the log as shown here.

```
<04-27-2013 23:51:04> ================================================================
<04-27-2013 23:51:04> SMSWSUS Setup Started....
<04-27-2013 23:51:04> Parameters: C:\PROGRA~1\MICROS~1\bin\i386\ROLESE~1.EXE /install /
siteserver:SCCM SMSWSUS
<04-27-2013 23:51:04> Installing Pre Reqs for SMSWSUS
<04-27-2013 23:51:04>   ======== Installing Pre Reqs for Role SMSWSUS ========
<04-27-2013 23:51:04> Found 0 Pre Reqs for Role SMSWSUS
```

```
<04-27-2013 23:51:04>   ======== Completed Installion of Pre Reqs for Role SMSWSUS
========
<04-27-2013 23:51:04> Installing the SMSWSUS
<04-27-2013 23:51:04> Correct and supported WSUS Server version is installed.
<04-27-2013 23:51:04> Invoking process
"C:\WINDOWS\Microsoft.NET\Framework\v2.0.50727\RegAsm.exe" "C:\Program Files\Microsoft
Configuration Manager\bin\i386\wsusmsp.dll"
<04-27-2013 23:51:30> Registered DLL C:\Program Files\Microsoft Configuration Manager\
bin\i386\wsusmsp.dll
<04-27-2013 23:51:30> Installation was successful.
```

WSUSCTRL.LOG

The WSUSctrl.log file records details about the configuration, database connectivity, and health of the WSUS server for the site. Once the software installation point has been installed, you need to make sure that it is configured properly. The logs that can be of help concerning this are WCM.log and WSUSctrl.log. If you find errors in these logs, make sure that WSUS is working properly as well. If WSUS is configured properly, the logs should display information about the WSUS role registry key information as shown here in the log excerpt for WSUSctrl.log. This log will also display information about the WSUS admin DDL, successful connection to the local WSUS server and Configuration Manager database, and the health of the WSUS server.

```
SMS_EXECUTIVE started SMS_WSUS_CONTROL_MANAGER as thread ID 3432 (0xD68).
SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:33 PM   3216 (0x0C90)
This is a WSUS Role as WSUS registry key exists.   SMS_WSUS_CONTROL_MANAGER   4/27/2013
11:51:33 PM   3432 (0x0D68)
Found WSUS Admin dll of assembly version Microsoft.UpdateServices.Administration,
Version=3.0.6000.273, Major Version = 0x30000, Minor Version = 0x17700111
SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:33 PM   3432 (0x0D68)
Found WSUS Admin dll of assembly version Microsoft.UpdateServices.Administration,
Version=3.1.6001.1, Major Version = 0x30001, Minor Version = 0x17710001
SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:33 PM   3432 (0x0D68)
Found WSUS Admin dll of assembly version Microsoft.UpdateServices.Administration,
Version=2.0.0.0, Major Version = 0x20000, Minor Version = 0x0   SMS_WSUS_CONTROL_MANAGER
4/27/2013 11:51:33 PM   3432 (0x0D68)
The installed WSUS build has the valid and supported WSUS Administration DLL assembly
version (3.1.7600.226)   SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:33 PM   3432
(0x0D68)
Successfully connected to local WSUS server   SMS_WSUS_CONTROL_MANAGER   4/27/2013
11:51:33 PM   3432 (0x0D68)
Local WSUS Server Proxy settings are correctly configured as Proxy Name  and Proxy Port
80   SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:35 PM   3432 (0x0D68)
Waiting for changes for 0 minutes   SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:35 PM
3432 (0x0D68)
```

```
Timed Out...   SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:35 PM   3432 (0x0D68)
……….
……….
……….
   SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:35 PM   3432 (0x0D68)
There are no unhealthy WSUS Server components on WSUS Server SCCM
SMS_WSUS_CONTROL_MANAGER   4/27/2013 11:51:35 PM   3432 (0x0D68)
Successfully checked database connection on WSUS server SCCM   SMS_WSUS_CONTROL_MANAGER
4/27/2013 11:51:38 PM   3432 (0x0D68)
```

WCM.LOG

The WCM.log file records details about the software update point configuration and its connections to the WSUS server for subscribed update categories, classifications, and languages.

```
This SCCM system is the Top Site where WSUS Server is configured to Sync from Microsoft
Update (WU/MU) OR do not Sync.   SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:50:36 PM
5992 (0x1768)
Found WSUS Admin dll of assembly version Microsoft.UpdateServices.Administration,
Version=3.0.6000.273, Major Version = 0x30000, Minor Version = 0x17700111
SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:50:37 PM   5992 (0x1768)
Found WSUS Admin dll of assembly version Microsoft.UpdateServices.Administration,
Version=3.1.6001.1, Major Version = 0x30001, Minor Version = 0x17710001
SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:50:37 PM   5992 (0x1768)
Found WSUS Admin dll of assembly version Microsoft.UpdateServices.Administration,
Version=2.0.0.0, Major Version = 0x20000, Minor Version = 0x0
SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:50:37 PM   5992 (0x1768)
The installed WSUS build has the valid and supported WSUS Administration DLL assembly
version (3.1.7600.226)   SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:50:37 PM   5992
(0x1768)
Successfully connected to server: SCCM.MYLAB.IN, port: 80, useSSL: False   SMS_WSUS_
CONFIGURATION_MANAGER   4/27/2013 11:51:23 PM   5992 (0x1768)
Verify Upstream Server settings on the Active WSUS Server
SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:51:23 PM   5992 (0x1768)
Successfully configured WSUS Server settings and Upstream Server to Microsoft Update
SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:51:34 PM   5992 (0x1768)
Successfully connected to server: SCCM.MYLAB.IN, port: 80, useSSL: False
SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:51:39 PM   5992 (0x1768)
……….
……….
STATMSG: ID=6617 SEV=E LEV=M SOURCE="SMS Server" COMP="SMS_WSUS_CONFIGURATION_MANAGER"
SYS=SCCM SITE=LAB PID=3040 TID=5992 GMTDATE=Tue Apr 27 18:23:49.259 2010 ISTR0=""
ISTR1="" ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8="" ISTR9=""
NUMATTRS=0   SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:53:49 PM   5992 (0x1768)
```

```
completed unpublishing previous clients   SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013
11:53:49 PM   5992 (0x1768)
completed checking for client deployment   SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013
11:53:49 PM   5992 (0x1768)
Successfully inserted the WSUS Enterprise Update Source object {A36F27F1-F657-437E-9EBF-
8531FE189A6B}   SMS_WSUS_CONFIGURATION_MANAGER   4/27/2013 11:54:03 PM   5992 (0x1768)
```

WSUSSYNCMGR.LOG

The WSUSsyncmgr.log file tracks the details of the software updates synchronization process. Once you have confirmed that WSUS has been configured properly, you next need to ensure that the software update point is able to synchronize with the Microsoft Update Catalog website. The WSUSsyncmgr.log can be used for this purpose.

```
Performing sync on local request   SMS_WSUS_SYNC_MANAGER   4/27/2013 11:59:54 PM   6112
(0x17E0)
STATMSG: ID=6701 SEV=I LEV=M SOURCE="SMS Server" COMP="SMS_WSUS_SYNC_MANAGER" SYS=SCCM
SITE=LAB PID=3040 TID=6112 GMTDATE=Tue Apr 27 18:29:54.530 2010 ISTR0="" ISTR1=""
ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8="" ISTR9="" NUMATTRS=0
SMS_WSUS_SYNC_MANAGER   4/27/2013 11:59:54 PM   6112 (0x17E0)
STATMSG: ID=6704 SEV=I LEV=M SOURCE="SMS Server" COMP="SMS_WSUS_SYNC_MANAGER" SYS=SCCM
SITE=LAB PID=3040 TID=6112 GMTDATE=Tue Apr 27 18:30:18.547 2010 ISTR0="" ISTR1=""
ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8="" ISTR9="" NUMATTRS=0
SMS_WSUS_SYNC_MANAGER   4/28/2013 12:00:18 AM   6112 (0x17E0)
Synchronizing WSUS server SCCM   SMS_WSUS_SYNC_MANAGER   4/28/2013 12:00:18 AM   6112
(0x17E0)
Synchronizing WSUS server sccm.mylab.in ...   SMS_WSUS_SYNC_MANAGER   4/28/2013 12:02:16
AM   5220 (0x1464)
sync: Starting WSUS synchronization   SMS_WSUS_SYNC_MANAGER   4/28/2013 12:02:16 AM
5220 (0x1464)
sync: WSUS synchronizing categories   SMS_WSUS_SYNC_MANAGER   4/28/2013 12:02:44 AM
5220 (0x1464)

Synchronizing update e6d5e961-e5c4-4816-b414-648feba450b7   SMS_WSUS_SYNC_MANAGER
28/04/2013 5:53:10 PM   4380 (0x111C)
Synchronizing update 35a0b603-61ce-4f1e-b2dd-3cc36cdf8b31   SMS_WSUS_SYNC_MANAGER
28/04/2013 5:53:11 PM   4380 (0x111C)
Synchronizing update 333bf753-7abb-4fce-a15f-a1862ecf838b   SMS_WSUS_SYNC_MANAGER
28/04/2013 5:53:11 PM   4380 (0x111C)
Synchronizing update 136df562-d188-4e79-8879-8d8082c97614:  Definition Update for
Windows Defender - KB915597 (Definition 1.81.438.0)   SMS_WSUS_SYNC_MANAGER   28/04/2013
5:53:12 PM   4380 (0x111C)
Done synchronizing SMS with WSUS Server sccmcen.scs.in   SMS_WSUS_SYNC_MANAGER
28/04/2013 5:53:13 PM   4380 (0x111C)
STATMSG: ID=6702 SEV=I LEV=M SOURCE="SMS Server" COMP="SMS_WSUS_SYNC_MANAGER"
```

```
SYS=SCCMCEN SITE=CEN PID=1880 TID=3256 GMTDATE=Wed Apr 28 12:23:13.745 2010 ISTR0=""
ISTR1="" ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8="" ISTR9=""
NUMATTRS=0   SMS_WSUS_SYNC_MANAGER   28/04/2013 5:53:13 PM   3256 (0x0CB8)
Updated 3072 items in SMS database, new update source content version is 2
SMS_WSUS_SYNC_MANAGER   28/04/2013 5:53:13 PM   3256 (0x0CB8)
```

Once synchronization has been successfully completed, updates should be available in the update repository. At this point you can go ahead and create your deployment template and schedule for installation. Once this has been done, and you check the status messages for your created update packages, you should find the status messages such as "Distribution Manager successfully processed package - Package name" as shown here:

```
Severity   Type   Site code   Date / Time   System   Component   Message ID
Description
Information   Milestone   CEN   28/04/2013 4:21:28 PM   SCCMCEN
SMS_DISTRIBUTION_MANAGER   2301   SMS Distribution Manager successfully processed
package "TEST" (package ID = CEN00003).
Information   Milestone   CEN   28/04/2013 4:21:27 PM   SCCMCEN
SMS_DISTRIBUTION_MANAGER   2300   SMS Distribution Manager is beginning to process
package "TEST" (package ID = CEN00003).
Information   Milestone   CEN   28/04/2013 4:21:21 PM   SCCMCEN
SMS_DISTRIBUTION_MANAGER   2330   SMS Distribution Manager successfully distributed
package "CEN00003" to distribution point
"["Display=\\SCCMCEN\"]MSWNET:["SMS_SITE=CEN"]\\SCCMCEN\".
Info
 Distribution Manager is beginning to process package "TEST" (package ID = CEN00003).
Information   Audit   CEN   28/04/2013 4:20:59 PM   SCCMCEN
Microsoft.ConfigurationManagement.dll   30068   User "SCS\Administrator" updated a
package named " TEST  " (CEN00003) to the site distribution points.
Information   Milestone   CEN   28/04/2013 4:12:14 PM   SCCMCEN
SMS_DISTRIBUTION_MANAGER   2300   SMS Distribution Manager is beginning to process
package "TEST" (package ID = CEN00003).
Information   Milestone   CEN   28/04/2013 4:12:08 PM   SCCMCEN
SMS_DISTRIBUTION_MANAGER   2301   SMS Distribution Manager successfully processed
package "TEST" (package ID = CEN00003).
Information   Milestone   CEN   28/04/2013 4:12:06 PM   SCCMCEN
SMS_DISTRIBUTION_MANAGER   2330   SMS Distribution Manager successfully distributed
package "CEN00003" to distribution point
Distribution Manager is beginning to process package "TEST" (package ID = CEN00003).
Information   Audit   CEN   28/04/2013 4:11:21 PM   SCCMCEN
Microsoft.ConfigurationManagement.dll   30125   User "SCS\Administrator" added new
distribution points to a package named " TEST  " (CEN00003).
Information   Audit   CEN   28/04/2013 4:11:20 PM   SCCMCEN
Microsoft.ConfigurationManagement.dll   30000   User "SCS\Administrator" created a
package named " TEST  " (CEN00003).
```

Once all these steps have completed, the remainder of the process happens in the client.

Troubleshooting the client side

The Software Updates Client Agent is heavily dependent upon the default software update components on the client system. Thus the Software Updates Client Agent often faces similar challenges as those seen for WSUS deployments. There are a number of log files you can use in Configuration Manager to help you troubleshoot client issues. These log files are located on both the client computer and on the site server. On the client side, the first thing you should check is the LocationServices.log to make sure that the correct software update point has been detected by the client. After that, you need to make sure that the client is correctly reporting to the site server and that the software update point has been enabled. Make sure also that the server name and port are specified correctly.

LOCATIONSERVICES.LOG

The LocationServices.log file can be used to identify client activity for locating management points, software update points, and distribution points. The LocationServices.log also shows information about which client is reporting to which management point/distribution point as shown by the entry "WSUS Path / Distribution Point path" here:

```
Calling back with the following WSUS locations LocationServices   4/29/2013 10:39:40 AM
2844 (0x0B1C)
WSUS Path='https://SCCMCEN.SCS.IN:443', Server='SCCMCEN', Version='2'   LocationServices
4/29/2013 10:39:40 AM   2844 (0x0B1C)
Calling back with locations for WSUS request {10066528-1C1B-4A0C-958B-F29ACBEDBBDF}
LocationServices   4/29/2013 10:41:31 AM  2844 (0x0B1C)
Calling back with the following distribution points   LocationServices   4/29/2013
11:27:23 AM  2552 (0x09F8)
Distribution Point='\\SCCMCEN.SCS.IN\SMSPKGC$\CEN00003\4ea80bd5-c8ac-4f98-
be8a-1c18f24a34e4', Locality='LOCAL', DPType='SERVER', Version='6487',
Capabilities='<Capabilities SchemaVersion="1.0"><Property Name="SSL"
Version="1"/></Capabilities>', Signature=''   LocationServices   4/29/2013 11:27:23 AM
2552 (0x09F8)
```

WUAHANDLER.LOG

Once the policy agent has triggered the scan cycle, the Windows Update Agent on the client will contact the WSUS server, which in the example shown here is also a software update point. Once scanning has successfully completed, a state message is sent to the site server. This can be verified in the WindowsUpdate.log or you can check the WUAhandler.log as shown here:

```
Async searching of updates using WUAgent started.   WUAHandler   4/29/2013 10:42:20 AM
3488 (0x0DA0)
```

```
Async searching completed.   WUAHandler   4/29/2013 11:24:21 AM  1496 (0x05D8)
Successfully completed scan.   WUAHandler   4/29/2013 11:24:25 AM  2752 (0x0AC0)
Its a WSUS Update Source type ({D4F72DDB-F6C4-4B05-835F-A8C23098857A}), adding it.
WUAHandler   4/29/2013 11:25:24 AM   2752 (0x0AC0)
Existing WUA Managed server was already set (https://SCCMCEN.SCS.IN:443), skipping Group
Policy registration.   WUAHandler   4/29/2013 11:25:25 AM  2752 (0x0AC0)
Added Update Source ({D4F72DDB-F6C4-4B05-835F-A8C23098857A}) of content type: 2
WUAHandler   4/29/2013 11:25:25 AM   2752 (0x0AC0)
Async searching of updates using WUAgent started.   WUAHandler   4/29/2013 11:25:25 AM
2752 (0x0AC0)
Async searching completed.   WUAHandler   4/29/2013 11:26:28 AM  2396 (0x095C)
Successfully completed scan.   WUAHandler   4/29/2013 11:26:32 AM  3756 (0x0EAC)
```

Completion of scanning is important; when the policy agent triggers the software update deployment cycle, the scan result is compared with the catalog so that only the required updates will be downloaded and installed according to schedule. More information concerning this process can be found in the updatestore.log, updatedeploymemt.log, and windowsupdate.log log files as shown in this section.

> ***TIP*** **If scanning is not successful, you can use the information in this blog post on WSUS troubleshooting for hints on troubleshooting any error codes you find:** ***http://blogs.technet.com/b/sus/archive/2009/11/17/tips-for-troubleshooting-wsus-agents-that-are-not-reporting-to-the-wsus-server.aspx.***

UPDATEDEPLOYMENT.LOG

The UpdateDeployment.log file provides information about deployment on the client, including software update activation, evaluation, and enforcement. Verbose logging will show additional information about the interaction with the client user interface.

```
Service startup system task   UpdatesDeploymentAgent   4/28/2013 7:49:39 PM   3468
(0x0D8C)
Software Updates client configuration policy has not been received.
UpdatesDeploymentAgent   4/28/2013 7:49:39 PM   3468 (0x0D8C)
Software updates functionality will not be enabled until the configuration policy has
been received. If this issue persists please check client/server policy communication.
UpdatesDeploymentAgent   4/28/2013 7:49:39 PM   3468 (0x0D8C)
Software Updates feature is disabled   UpdatesDeploymentAgent   4/28/2013 7:49:39 PM
3468 (0x0D8C)
Software Updates client configuration policy has not been received.
UpdatesDeploymentAgent   4/28/2013 7:49:39 PM   3468 (0x0D8C)
Software updates functionality will not be enabled until the configuration policy has
been received. If this issue persists please check client/server policy
communication.   UpdatesDeploymentAgent   4/28/2013 7:49:39 PM   3468 (0x0D8C)
```

```
……….
……
Evaluation initiated for (1) assignments.   UpdatesDeploymentAgent   4/29/2013 10:39:20
AM   336 (0x0150)
Deadline received for assignment ({3B1C5820-953D-4EFB-BDB7-3ABEE4C9788D})
UpdatesDeploymentAgent   4/29/2013 10:39:20 AM   3344 (0x0D10)
Enforcement trigger will be effective when the current action completes
UpdatesDeploymentAgent   4/29/2013 10:39:20 AM   3344 (0x0D10)
Message received: '<?xml version='1.0' ?><SoftwareUpdatesMessage
MessageType='EvaluateAssignments'><UseCachedResults>True</UseCachedResults></
SoftwareUpdatesMessage>'   UpdatesDeploymentAgent   4/29/2013 10:39:30 AM   3940 (0x0F64)
Evaluation initiated for (0) assignments.   UpdatesDeploymentAgent   4/29/2013 11:01:55
AM   4064 (0x0FE0)
……..
DetectJob completion received for assignment ({3B1C5820-953D-4EFB-BDB7-3ABEE4C9788D})
UpdatesDeploymentAgent   4/29/2013 11:26:59 AM   3856 (0x0F10)
……..
Added update (Site_D4F72DDB-F6C4-4B05-835F-A8C23098857A/SUM_9fb3050e-26f2-4ccc-b9b0-
b453ff58aaa9) to the targeted list   UpdatesDeploymentAgent   4/29/2013 11:26:59 AM
3856 (0x0F10)
Added update (Site_D4F72DDB-F6C4-4B05-835F-A8C23098857A/SUM_de919dec-2021-474a-8a7f-
d632c2068146) to the targeted list   UpdatesDeploymentAgent   4/29/2013 11:26:59 AM
3856 (0x0F10)
Added update (Site_D4F72DDB-F6C4-4B05-835F-A8C23098857A/SUM_d2e84b36-f0fd-4434-825d-
a753a338b0bd) to the targeted list   UpdatesDeploymentAgent   4/29/2013 11:26:59 AM
3856 (0x0F10)
……..
……
Update (Site_D4F72DDB-F6C4-4B05-835F-A8C23098857A/SUM_de919dec-2021-474a-8a7f-
d632c2068146) Progress: Status = ciStateDownloading, PercentComplete = 83, Result = 0x0
UpdatesDeploymentAgent   4/29/2013 11:27:36 AM   1068 (0x042C)
Progress received for assignment ({3B1C5820-953D-4EFB-BDB7-3ABEE4C9788D})
UpdatesDeploymentAgent   4/29/2013 11:27:38 AM   12 (0x000C)
DownloadJob completion received for assignment ({3B1C5820-953D-4EFB-BDB7-3ABEE4C9788D})
UpdatesDeploymentAgent   4/29/2013 11:27:38 AM   12 (0x000C)
EnumerateUpdates for action (UpdateActionInstall) - Total visible updates = 3
UpdatesDeploymentAgent   4/29/2013 11:27:38 AM   2960 (0x0B90)
Starting install for assignment ({3B1C5820-953D-4EFB-BDB7-3ABEE4C9788D})
UpdatesDeploymentAgent   4/29/2013 11:27:38 AM   12 (0x000C)

……..
Update (Site_D4F72DDB-F6C4-4B05-835F-A8C23098857A/SUM_de919dec-2021-474a-8a7f-d632c2068146)
Progress: Status = ciStateInstalling, PercentComplete = 100, DownloadSize = 0,
Result = 0x0   UpdatesDeploymentAgent   4/29/2013 11:31:26 AM   440 (0x01B8)
Update (Site_D4F72DDB-F6C4-4B05-835F-A8C23098857A/SUM_de919dec-2021-474a-8a7f-
d632c2068146) Progress: Status = ciStatePendingSoftReboot, PercentComplete = 0,
```

```
DownloadSize = 0, Result = 0x0   UpdatesDeploymentAgent   4/29/2013 11:31:31 AM   3568
(0x0DF0)
CTargetedUpdatesManager - Job completion received.   UpdatesDeploymentAgent   4/29/2013
11:31:32 AM   496 (0x01F0)
Job Id = {A807D023-9E41-4FE5-A528-6120C46C1134}   UpdatesDeploymentAgent   4/29/2013
11:31:32 AM   496 (0x01F0)
No pending install assignment   UpdatesDeploymentAgent   4/29/2013 11:31:33 AM   440
(0x01B8)
EnumerateUpdates for action (UpdateActionInstall) - Total visible updates = 3
UpdatesDeploymentAgent   4/29/2013 11:31:33 AM   2236 (0x08BC)
No installations in pipeline, notify reboot.   UpdatesDeploymentAgent   4/29/2013
11:31:33 AM   440 (0x01B8)
Notify reboot with deadline = Thursday, Apr 29, 2010. - 11:31:33, Ignore reboot Window =
False   UpdatesDeploymentAgent   4/29/2013 11:31:33 AM   440 (0x01B8)
```

EXECMGR.LOG

The Execmgr.log file displays information for all deployed packages (old-style) and associated programs and policies. The following log excerpt shows an advertisement and program executing for deploying software updates:

```
Mandatory execution requested for program Software Updates Program and advertisement
{3D49D216-341B-4456-B52C-A0A480C06BEC}   execmgr   4/29/2013 11:27:50 AM   2188 (0x088C)
Creating mandatory request for advert {3D49D216-341B-4456-B52C-A0A480C06BEC}, program
Software Updates Program, package {3D49D216-341B-4456-B52C-A0A480C06BEC}   execmgr
4/29/2013 11:27:50 AM   2188 (0x088C)
CExecutionRequest::Overriding Service Windows as per policy.   execmgr   4/29/2013
11:27:50 AM   2188 (0x088C)
Execution Manager timer has been fired.   execmgr   4/29/2013 11:27:50 AM   3256
(0x0CB8)
Executing program  in Admin context   execmgr   4/29/2013 11:27:50 AM   2188 (0x088C)
Execution Request for package {3D49D216-341B-4456-B52C-A0A480C06BEC} program Software
Updates Program state change from NotExist to NotifyExecution   execmgr   4/29/2013
11:27:50 AM   2188 (0x088C)
Executing program as an update.   execmgr   4/29/2013 11:27:51 AM   2188 (0x088C)
Executing Update Program   execmgr   4/29/2013 11:27:51 AM   2188 (0x088C)
Updates Installation started for the passed command line   execmgr   4/29/2013 11:27:51
AM   2188 (0x088C)
Looking for MIF file to get program status   execmgr   4/29/2013 11:31:31 AM   440
(0x01B8)
Script for  Package:{3D49D216-341B-4456-B52C-A0A480C06BEC}, Program: Software Updates
Program succeeded with exit code 0   execmgr   4/29/2013 11:31:31 AM   440 (0x01B8)
Execution is complete for program Software Updates Program. The exit code is 0, the
execution status is Success   execmgr   4/29/2013 11:31:31 AM   440 (0x01B8)
The user has logged off.   execmgr   4/29/2013 11:38:13 AM   2788 (0x0AE4)
```

REBOOTCOORDINATOR.LOG

Once the software updates have been installed, then depending on the reboot setting the system might be rebooted. You can view information about possible reboots in the RebootCoordinator.log file which provides information about the process for coordinating system restarts on client computers after software update installations:

```
Shutdown is already in progress   RebootCoordinator   4/29/2013 11:38:10 AM   3792
(0x0ED0)
Reboot initiated   RebootCoordinator   4/29/2013 11:38:10 AM   3792 (0x0ED0)
User logoff notification received   RebootCoordinator   4/29/2013 11:38:13 AM   2788
(0x0AE4)
Shutdown is already in progress   RebootCoordinator   4/29/2013 11:38:17 AM   2788
(0x0AE4)
Reboot initiated   RebootCoordinator   4/29/2013 11:38:17 AM   2788 (0x0AE4)
```

MORE INFO **For information about the other logs you can use for troubleshooting, see** ***http://technet.microsoft.com/en-us/library/hh427342.aspx*****.**

Software distribution

The software distribution feature of Configuration Manager provides a set of tools and resources that help you create and manage packages and advertisements used to distribute software to client and server systems within your enterprise. The software distribution process advertises packages, which contain programs, to members of a collection. The client then installs the software from the specified distribution points. The order in which you create the components that make up the software distribution process is important.

Software distribution log files

Table 3-2 lists the log files that contain information related to software distribution. Later in this section we'll examine how to troubleshoot various issues by using these log files.

TABLE 3-2 Log files for software distribution

Log name	Description	Computer with log file
DataTransferService.log	Records all BITS communication for policy or package access. This log is also used for content management by pull-distribution points.	A computer that is configured as a pull-distribution point
PullIIDP.log	Records details about content that the pull-distribution point transfers from source distribution points. Note: This log file is for System Center 2012 Configuration Manager SP1 only.	A computer that is configured as a pull-distribution point

Log name	Description	Computer with log file
PrestageContent.log	Records the details about the use of the ExtractContent.exe tool on a remote prestaged distribution point. This tool extracts content that has been exported to a file. Note: This log file is for System Center 2012 Configuration Manager SP1 only.	Site system role
SMSdpmon.log	Records details about the distribution point health monitoring scheduled tasks that are configured on a distribution point.	Site system role
smsdpprov.log	Records details about the extraction of compressed files received from a primary site. This log is generated by the WMI Provider of the remote distribution point.	A distribution point computer that is not co-located with the site server.

Troubleshooting software distribution

This section examines the server and client sides of software distribution separately for troubleshooting purposes.

Troubleshooting the server side

When you create a package, you need to check the status messages to see whether the package has been created. Look for entries in the logs that say "SMS Distribution Manager successfully processed package" as shown here:

```
Status ID : 30000 => User "Domain\User" created a package named " Test Package  "
(LAB00003).
Status ID : 2301 => SMS Distribution Manager successfully processed package "Test
Package" (package ID = LAB00003).
```

You will see a message ID of 2300 for the starting of packages once you add the distribution point:

```
Status ID : 30125 User "Domain\User" added new distribution points to a package named "
Test Package  " (LAB00003).
Severity   Type   Site code   Date / Time   System   Component   Message ID
Description   Thread ID   Process ID
Information   Milestone   LAB   4/26/2013 10:28:51 PM   SCCM   SMS_DISTRIBUTION_MANAGER
   2330   SMS Distribution Manager successfully distributed package "LAB00003" to
distribution point "["Display=\\SCCM\"]MSWNET:["SMS_SITE=LAB"]\\SCCM\".   4412   3040
Information   Milestone   LAB   4/26/2013 10:28:51 PM   SCCM   SMS_DISTRIBUTION_MANAGER
2329   SMS Distribution Manager copied package "LAB00003" from "C:\SOFTDUMP\" to
"MSWNET:["SMS_SITE=LAB"]\\SCCM\SMSPKGC$\LAB00003\".   4412   3040
```

```
Information   Milestone   LAB   4/26/2013 10:28:29 PM   SCCM   SMS_DISTRIBUTION_MANAGER
2342   SMS Distribution Manager is starting to distribute package "Test Package" to
distribution point "["Display=\\SCCM\"]MSWNET:["SMS_SITE=LAB"]\\SCCM\".   4412   3040
```

If you see errors, you can check the distmgr.log for error information. The distmgr.log should have the package information, package ID, and source version:

```
STATMSG: ID=2300 SEV=I LEV=M SOURCE="SMS Server" COMP="SMS_DISTRIBUTION_MANAGER"
SYS=SCCM SITE=LAB PID=3040 TID=3276 GMTDATE=Mon Apr 26 16:59:00.772 2010 ISTR0="Test
Package" ISTR1="LAB00003" ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8=""
ISTR9="" NUMATTRS=1 AID0=400 AVAL0="LAB00003"   SMS_DISTRIBUTION_MANAGER   4/26/2013
10:29:00 PM   3276 (0x0CCC)
No action specified for the package LAB00003.   SMS_DISTRIBUTION_MANAGER   4/26/2013
10:29:00 PM   3276 (0x0CCC)
No action specified for the package on server
["Display=\\SCCM\"]MSWNET:["SMS_SITE=LAB"]\\SCCM\.   SMS_DISTRIBUTION_MANAGER
4/26/2013 10:29:00 PM   3276 (0x0CCC)
Updating package info for package LAB00003   SMS_DISTRIBUTION_MANAGER   4/26/2013
10:29:00 PM   3276 (0x0CCC)
Package LAB00003 does not have a preferred sender.   SMS_DISTRIBUTION_MANAGER
4/26/2013 10:29:00 PM   3276 (0x0CCC)
The package and/or program properties for package LAB00003 have not changed,  need
to determine which site(s) need updated package info.   SMS_DISTRIBUTION_MANAGER
4/26/2013 10:29:00 PM   3276 (0x0CCC)
StoredPkgVersion (0) of package LAB00003. StoredPkgVersion in database is 0.
SMS_DISTRIBUTION_MANAGER   4/26/2013 10:29:00 PM   3276 (0x0CCC)
SourceVersion (1) of package LAB00003. SourceVersion in database is 1.
SMS_DISTRIBUTION_MANAGER   4/26/2013 10:29:00 PM   3276 (0x0CCC)
STATMSG: ID=2301 SEV=I LEV=M SOURCE="SMS Server" COMP="SMS_DISTRIBUTION_MANAGER"
SYS=SCCM SITE=LAB PID=3040 TID=3276 GMTDATE=Mon Apr 26 16:59:01.073 2010 ISTR0="Test
Package" ISTR1="LAB00003" ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8=""
ISTR9="" NUMATTRS=1 AID0=400 AVAL0="LAB00003"   SMS_DISTRIBUTION_MANAGER   4/26/2013
10:29:01 PM   3276 (0x0CCC)
Exiting package processing thread.   SMS_DISTRIBUTION_MANAGER   4/26/2013 10:29:01 PM
3276 (0x0CCC)
```

If you find any anomalies in the logs, make sure that:

- There is network connectivity between the server and the distribution point server.
- There are no DNS name resolution issues.
- The SMSPKG<DriveLettre>$ share has been successfully created and the package has been updated to the distribution point.
- The SMSPKG<DriveLettre>$ share also has the required permissions (that is, the machine account for the distribution point should belong to the ConfigMgr group which has write permission to the distribution point).

Once this has all been verified, your next step would be to verify if the advertisement has been created. When the new advertisement is ready, you can check the status of the newly created advertisement like this:

```
Information   Milestone   LAB   4/26/2013 10:44:36 PM   SCCM   SMS_OFFER_MANAGER   3900
SMS Offer Manager successfully processed new advertisement Test Advr.
Information   Audit   LAB   4/26/2013 10:44:24 PM   SCCM
Microsoft.ConfigurationManagement.dll   30006   User "MYLAB\Administrator" created an
advertisement named "Test Advr" (LAB20000) advertising program "Test Program".
```

Once the newly created advertisement (here “Test Advr”) has been received by the client, you should see the following status message:

```
Severity   Type   Site code   Date / Time   System   Component   Message ID
Description
Information   Milestone   LAB   4/26/2013 10:44:36 PM   SCCM   SMS_OFFER_MANAGER   3900
SMS Offer Manager successfully processed new advertisement Test Advr.
Information   Audit   LAB   4/26/2013 10:44:24 PM   SCCM
Microsoft.ConfigurationManagement.dll   30006   User "MYLAB\Administrator" created an
advertisement named "Test Advr" (LAB20000) advertising program "Test Program".
```

At this point, if you still haven’t resolved your issue, you should check the client logs as described next.

Troubleshooting the client side

When you make a change in the Configuration Manager console, the site server creates a policy to communicate the change to the client. The site server sends the policy to the management point and the client polls for policy at the interval configured in the Computer Client Agent properties.

Policies are created and accessed in two ways: policy assignments and policy bodies. Policy assignments can contain applicability rules so that clients download only the policy assignments that apply to them. If there is no applicability rule in a policy, the policy applies to all clients. Policy assignments contain pointers to the actual policy, which is contained in the policy body. This pointer is actually a URL to the policy body on the management point. Such URLs in a policy assignment do not actually contain the name of the management point, just a variable that the client replaces with the name of the assigned management point, or, if this is a secondary site, the proxy management point.

POLICYAGNET.LOG

The PolicyAgnet.log records requests for policies made by using the Data Transfer service. Here is an example with related information from the PolicyEvaluvator.log:

```
Download of policy CCM_Policy_Policy4.PolicyID="LAB20000-LAB00003-
9785047B",PolicySource="SMS:LAB",PolicyVersion="1.00" completed (DTS Job ID: {231E2AE2-
7ED2-4AA3-84F4-81CA1712217E})   PolicyAgent_PolicyDownload   4/26/2013 10:47:12 PM
1944 (0x0798)
Raising event:
 instance of CCM_PolicyAgent_PolicyDownloadSucceeded
{
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   DateTime = "20100426171712.258000+000";
   DownloadMethod = "BITS";
   DownloadSource = "http://SCCM.MYLAB.IN/SMS_MP/.sms_pol?LAB20000-LAB00003-
9785047B.1_00";
   PolicyNamespace = "\\\\SQL\\ROOT\\ccm\\Policy\\Machine\\RequestedConfig";
   PolicyPath = "CCM_Policy_Policy4.PolicyID=\"LAB20000-LAB00003-9785047B\",
PolicySource=\"SMS:LAB\",PolicyVersion=\"1.00\"";
   ProcessID = 3568;
   ThreadID = 1944;
};
   PolicyAgent_PolicyDownload   4/26/2013 10:47:12 PM   1944 (0x0798)
```

POLICYEVALUVATOR.LOG

```
Raising event:
 instance of CCM_PolicyAgent_PolicyEvaluationComplete
{
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   DateTime = "20100426171716.924000+000";
   PolicyNamespace = "\\\\SQL\\ROOT\\ccm\\Policy\\Machine\\RequestedConfig";
   PolicyPath = "CCM_Policy_Policy4.PolicyID=\"LAB20000-LAB00003-9785047B\",PolicySource
=\"SMS:LAB\",PolicyVersion=\"1.00\"";
   ProcessID = 3568;
   ThreadID = 1944;
};
   PolicyAgent_PolicyEvaluator   4/26/2013 10:47:16 PM   1944 (0x0798)
Policy state for [CCM_Policy_Policy4.PolicyID="LAB20000-LAB00003-
9785047B",PolicyVersion="1.00",PolicySource="SMS:LAB"] is currently [Active]
PolicyAgent_PolicyEvaluator   4/26/2013 10:47:16 PM   3488 (0x0DA0)
Updating settings in \\sql\root\ccm\policy\machine\actualconfig
PolicyAgent_PolicyEvaluator   4/26/2013 10:47:16 PM   3488 (0x0DA0)
Raising event:

instance of CCM_PolicyAgent_SettingsEvaluationComplete
```

```
{
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   DateTime = "20100426171718.827000+000";
   PolicyNamespace = "\\\\sql\\root\\ccm\\policy\\machine\\actualconfig";
   ProcessID = 3568;
   ThreadID = 3488;
};
   PolicyAgent_PolicyEvaluator   4/26/2013 10:47:18 PM   3488 (0x0DA0)
```

EXECMGR.LOG

The Execmgr log file should include the entry "Policy arrived for parent package <Package Id and Name>". The presence of such an entry helps you determine whether you have the latest policy for the new package populating the client:

```
Policy arrived for parent package LAB00003 program Test Program   execmgr   4/26/2013
10:47:19 PM   2004 (0x07D4)
Raising event:
[SMS_CodePage(437), SMS_LocaleID(1033)]
instance of SoftDistProgramOfferReceivedEvent
{
   AdvertisementId = "LAB20000";
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   DateTime = "20100426171720.299000+000";
   MachineName = "SQL";
   ProcessID = 3568;
   SiteCode = "LAB";
   ThreadID = 2004;
};
   execmgr   4/26/2013 10:47:20 PM   2004 (0x07D4)
Requesting content from CAS for package LAB00003 version 1   execmgr   4/26/2013
10:47:25 PM   1944 (0x0798)
Successfully created a content request handle {80539F34-D400-4978-95F2-9D26151C9BF8} for
the package LAB00003 version 1   execmgr   4/26/2013 10:47:29 PM   1944 (0x0798)
```

DATATRANSFERSERVICES.LOG

The DataTransferServices.log records all Background Intelligent Transfer Service (BITS) communication for policy or package access. Once the client receives the new policy for the package that needs to be installed, the package needs to be downloaded as part of the deployment. The entry "Request content from the DP" signifies the start of the download process. After a period of time has elapsed, you can see the software being downloaded in the DataTransferServices.log as shown here:

```
UpdateURLWithTransportSettings(): OLD URL -
http://SCCM.MYLAB.IN/SMS_MP/.sms_pol?LAB20000-LAB00003-9785047B.1_00
DataTransferService   4/26/2013 10:47:06 PM   3208 (0x0C88)
UpdateURLWithTransportSettings(): NEW URL -
http://SCCM.MYLAB.IN:80/SMS_MP/.sms_pol?LAB20000-LAB00003-9785047B.1_00
DataTransferService   4/26/2013 10:47:06 PM   3208 (0x0C88)
DTSJob {231E2AE2-7ED2-4AA3-84F4-81CA1712217E} created to download from
'http://SCCM.MYLAB.IN/SMS_MP/.sms_pol?LAB20000-LAB00003-9785047B.1_00' to
'C:\WINDOWS\system32\CCM\Temp\{55C3178E-C27D-4C29-AC2D-439C6E87D53D}.tmp'.
DataTransferService   4/26/2013 10:47:06 PM   3208 (0x0C88)
DTSJob {231E2AE2-7ED2-4AA3-84F4-81CA1712217E} in state 'PendingDownload'.
DataTransferService   4/26/2013 10:47:06 PM   1944 (0x0798)
DTS::AddTransportSecurityOptionsToBITSJob - Failed to QueryInterface for
IBackgroundCopyJobHttpOptions. BITS 2.5+ may not be installed properly.
DataTransferService   4/26/2013 10:47:09 PM   1944 (0x0798)
DTSJob {231E2AE2-7ED2-4AA3-84F4-81CA1712217E} in state 'DownloadingData'.
DataTransferService   4/26/2013 10:47:09 PM   1944 (0x0798)
DTSJob {231E2AE2-7ED2-4AA3-84F4-81CA1712217E} in state 'RetrievedData'.
DataTransferService   4/26/2013 10:47:11 PM   2004 (0x07D4)
DTSJob {B40BBB03-0BA0-460A-B822-3DB2535AFCF1} successfully completed download.
DataTransferService   4/26/2013 10:48:10 PM   3208 (0x0C88)
DTSJob {B40BBB03-0BA0-460A-B822-3DB2535AFCF1} in state 'NotifiedComplete'.
DataTransferService   4/26/2013 10:48:11 PM   3488 (0x0DA0)
DTS job {B40BBB03-0BA0-460A-B822-3DB2535AFCF1} has completed:
   Status : SUCCESS
   Start time : 04/26/2013 22:48:07
   Completion time : 04/26/2013 22:48:10
   Elapsed time : 3 seconds   DataTransferService   4/26/2013 10:48:11 PM   3488
(0x0DA0)
```

EXECMGR.LOG

The Execmgr.log shows download progress and completed execution of the process. If the package fails to download, make sure that the distribution point is available and that BITS is working (you can open Services.msc to check whether BITS is started or stopped). Here is an excerpt showing what the Execmgr.log should display:

```
Program Test Program change to state STATE_ADVANCED_DOWNLOAD content in progress
execmgr   4/26/2013 10:47:29 PM   1944 (0x0798)
Execution Request for package LAB00003 program Test Program state change from NotExist
to AdvancedDownload   execmgr   4/26/2013 10:47:29 PM   1944 (0x0798)
Mandatory execution requested for program Test Program and advertisement LAB20000
execmgr   4/26/2013 10:47:29 PM   3208 (0x0C88)
Creating mandatory request for advert LAB20000, program Test Program, package LAB00003
execmgr   4/26/2013 10:47:29 PM   3208 (0x0C88)
```

```
Raising event:
[SMS_CodePage(437), SMS_LocaleID(1033)]
instance of SoftDistWaitingContentEvent
{
   AdvertisementId = "LAB20000";
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   DateTime = "20100426171731.545000+000";
   MachineName = "SQL";
   PackageName = "LAB00003";
   PackageVersion = "1";
   ProcessID = 3568;
   ProgramName = "Test Program";
   SiteCode = "LAB";
   ThreadID = 3208;
};
   execmgr   4/26/2013 10:47:31 PM   3208 (0x0C88)
Successfully raised SoftDistWaitingContentEvent event for program Test Program   execmgr
4/26/2013 10:47:31 PM   3208 (0x0C88)
Execution Request for package LAB00003 program Test Program state change from
WaitingDependency to WaitingContent   execmgr   4/26/2013 10:47:31 PM   3208 (0x0C88)
Content is available for program Test Program.   execmgr   4/26/2013 10:48:18 PM   3488
(0x0DA0)
CExecutionRequest::Service Windows Manager has allowed us to run.   execmgr   4/26/2013
10:48:18 PM   3488 (0x0DA0)
Execution Request for package LAB00003 program Test Program state change from
WaitingContent to NotifyExecution   execmgr   4/26/2013 10:48:18 PM   3488 (0x0DA0)
Notify user mandatory program Test Program is about to run   execmgr   4/26/2013
10:48:18 PM   3488 (0x0DA0)
Execution Manager timer has been fired.   execmgr   4/26/2013 10:53:18 PM   2184
(0x0888)
Executing program test.bat in Admin context   execmgr   4/26/2013 10:53:19 PM   2184
(0x0888)
Execution Manager timer has been fired.   execmgr   4/26/2013 10:53:19 PM   3752
(0x0EA8)
Execution Request for package LAB00003 program Test Program state change from Running to
NotifyExecution   execmgr   4/26/2013 10:53:19 PM   2184 (0x0888)
Checking content location C:\WINDOWS\system32\CCM\Cache\LAB00003.1.System for use
execmgr   4/26/2013 10:53:19 PM   2184 (0x0888)
Successfully selected content location C:\WINDOWS\system32\CCM\Cache\LAB00003.1.System
execmgr   4/26/2013 10:53:19 PM   2184 (0x0888)
Executing program as a script   execmgr   4/26/2013 10:53:19 PM   2184 (0x0888)
Successfully prepared command line
"C:\WINDOWS\system32\CCM\Cache\LAB00003.1.System\test.bat"   execmgr   4/26/2013
10:53:19 PM   2184 (0x0888)
Command line = "C:\WINDOWS\system32\CCM\Cache\LAB00003.1.System\test.bat", Working
Directory = C:\WINDOWS\system32\CCM\Cache\LAB00003.1.System\   execmgr   4/26/2013
```

```
10:53:19 PM   2184 (0x0888)
Created Process for the passed command line   execmgr   4/26/2013 10:53:20 PM   2184
(0x0888)
Raising event:
[SMS_CodePage(437), SMS_LocaleID(1033)]
instance of SoftDistProgramStartedEvent
{
   AdvertisementId = "LAB20000";
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   CommandLine = "\"C:\\WINDOWS\\system32\\CCM\\Cache\\LAB00003.1.System\\test.bat\"";
   DateTime = "20100426172320.000000+000";
   MachineName = "SQL";
   PackageName = "LAB00003";
   ProcessID = 3568;
   ProgramName = "Test Program";
   SiteCode = "LAB";
   ThreadID = 2184;
   UserContext = "NT AUTHORITY\\SYSTEM";
   WorkingDirectory = "C:\\WINDOWS\\system32\\CCM\\Cache\\LAB00003.1.System\\";
};
   execmgr   4/26/2013 10:53:20 PM   2184 (0x0888)
Raised Program Started Event for Ad:LAB20000, Package:LAB00003, Program: Test Program
execmgr   4/26/2013 10:53:20 PM   2184 (0x0888)
Program exit code 0   execmgr   4/26/2013 10:53:24 PM   3752 (0x0EA8)
Looking for MIF file to get program status   execmgr   4/26/2013 10:53:24 PM   3752 (0x0EA8)
Script for  Package:LAB00003, Program: Test Program succeeded with exit code 0   execmgr
4/26/2013 10:53:24 PM   3752 (0x0EA8)
Raising event:
[SMS_CodePage(437), SMS_LocaleID(1033)]
instance of SoftDistProgramCompletedSuccessfullyEvent
{
   AdvertisementId = "LAB20000";
   ClientID = "GUID:76B6D180-F0B6-4689-B294-6CCE9033D7EB";
   DateTime = "20100426172324.741000+000";
   MachineName = "SQL";
   PackageName = "LAB00003";
   ProcessID = 3568;
   ProgramName = "Test Program";
   SiteCode = "LAB";
   ThreadID = 3752;
   UserContext = "NT AUTHORITY\\SYSTEM";
};
   execmgr   4/26/2013 10:53:24 PM   3752 (0x0EA8)
Raised Program Success Event for Ad:LAB20000, Package:LAB00003, Program: Test Program
execmgr   4/26/2013 10:53:24 PM   3752 (0x0EA8)
Execution is complete for program Test Program. The exit code is 0, the execution status
```

```
is Success   execmgr   4/26/2013 10:53:24 PM   2184 (0x0888)
Execution Manager timer has been fired.   execmgr   4/26/2013 10:55:29 PM   2184 (0x0888)
```

If there are any errors here you should verify the program command line and determine whether you can execute the command manually on your system. The software distribution functionality of Configuration Manager is merely a command carrier and will execute any command you specify with the specified set of files. If there is an execution error relating to a particular application, you will need to discuss the problem with the application owner or your User Acceptance Testing (UAT) team administrator.

Data replication

Replication Link Analyzer is a new feature in Configuration Manager 2012 you use to analyze and repair replication issues. Replication Link Analyzer can be used to remediate replication link failures when replication has failed or when replication stops working but has not yet been reported as failed. Replication Link Analyzer can also be used to remediate replication issues between a site server and the site database server in the Configuration Manager hierarchy and between the site database server in one site and a site database server in another site (intersite replication).

Troubleshooting data replication issues

If replication is failing to re-initialize, you will need to take steps to troubleshoot. The log excerpts in this section walk through the flow of re-initialization for a particular group. The walkthrough uses the replication group hardware_inventory_8 as an example. There are various methods you can use for re-initiating a specific group, but the safest method is to put *<Groupname>-<SITECODE>*.pub (for example, hardware_inventory_8-PR1.pub) in RCM.BOX on the site server.

To get more information that can be helpful for troubleshooting purposes, you can start by enabling enhanced/verbose logging by making the following registry changes.

- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\SMS\Components\SMS_REPLICATION_CONFIGURATION_MONITOR

  Verbose Logging = 2
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\SMS\Tracing

  Sqlenabled = 1

Configuration Manager logs information in two ways: in .log files and in the database. For troubleshooting data replication services initialization, you can use the rcmctrl.log as shown in the next section. For troubleshooting from inside the database, you can use the vLogs view. For example, you might use a query like the following:

```
Select * from vLogs where LogTime >GETDATE()-1 and ProcedureName <>
'spDRSSendChangesForGroup' ORDER BY LogTime DESC
```

RCMCTRL.LOG

To re-initialize the group, you put the .pub file in \Microsoft Configuration Manager\inboxes\RCM.BOX. After a period of time has elapsed, you should see the file vanishing from the box. Once this occurs, you should see entries like the following in the rcmctrl.log on the central administration site server:

```
Processing replication group Hardware_Inventory_8.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:02:24   1820 (0x071C)
Current status is Active.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:02:24
1820 (0x071C)
Requesting initialization for replication group Hardware_Inventory_8.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:02:24   1820 (0x071C)
Checking if initialization request is needed for replication group Hardware_Inventory_8
from site PR1.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:02:27   1820
(0x071C)
```

In rcmctrl.log on the primary site server, you should then see entries like the ones that follow which provide information concerning requests going out to global/site groups for replication:

```
Processing replication role: DrsReplicationSite, child
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:03   3364 (0x0D24)
Processing replication group Hardware_Inventory_8.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:03   3364 (0x0D24)
Current status is PendingCreation.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:03   3364 (0x0D24)
Checking if we need to create an initialization package for replication group
Hardware_Inventory_8 for site CAS. SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012
02:03:04   3364 (0x0D24)
STATMSG: ID=7802 SEV=I LEV=M SOURCE="SMS Server"
COMP="SMS_REPLICATION_CONFIGURATION_MONITOR" SYS=CMLABPRI.CMLAB.COM SITE=PR1 PID=5060
TID=3364 GMTDATE=Sat Oct 20 09:03:04.342 2012 ISTR0="CAS" ISTR1="Hardware_Inventory_8"
ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8="" ISTR9="" NUMATTRS=0
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:04   3364 (0x0D24)
Flushing DRS queue messages coming from CAS for replication group Hardware_Inventory_8.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:04   3364 (0x0D24)
Changed the status of ConfigMgrDRSSiteQueue to OFF if it exists.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:04   3364 (0x0D24)
Changed the status of ConfigMgrDRSSiteQueue to ON if it exists.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07   3364 (0x0D24)
Files will be copied to directory C:\Program Files\Microsoft Configuration Manager\
inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07   3364 (0x0D24)
Cab File to be sent will be copied to directory C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\CabFiles.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012
02:03:07   3364 (0x0D24)
XML CreateTime: 20-10-2012 09:02:31 LastModifyTime: 20-10-2012 09:02:31
```

```
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07   3364 (0x0D24)
Creating version file C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194\781708.version
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07   3364 (0x0D24)
Creating trackingGuid file C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194\d74dc244-a526-4387-86b0-
efacf67df680.trackingGuid   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07
3364 (0x0D24)
Creating pubName file C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194\Hardware_Inventory_8-PR1.
pubName   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07   3364 (0x0D24)
……….
……..
 Calling BCP out with SELECT BINFILEVERSION00, BINPRODUCTVERSION00, DESCRIPTION00,
FILENAME00, FILEPROPERTIESHASH00, FILEPROPERTIESHASHEX00, FILEVERSION00, LOCATION00,
PRODUCT00, PRODUCTVERSION00, PUBLISHER00, STARTUPTYPE00, STARTUPVALUE00, MACHINEID,
INSTANCEKEY, TIMEKEY, REVISIONID, AGENTID, ROWVERSION~FROM AUTOSTART_SOFTWARE_HIST where
(MachineID between 16777216 and 33554431), C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194\AUTOSTART_SOFTWARE_HIST.
bcp, C:\Program Files\Microsoft Configuration Manager\inboxes\rcm.box\a4ba357d-1cb4-
408c-9e89-681686974194\bcpErrors.errors.   SMS_REPLICATION_CONFIGURATION_MONITOR
20-10-2012 02:03:07   3364 (0x0D24)
……..
……..
Successfully created BCP file [C:\Program Files\Microsoft Configuration Manager\inboxes\
rcm.box\a4ba357d-1cb4-408c-9e89-681686974194\AUTOSTART_SOFTWARE_DATA.bcp] with rows
[6] based on SQL query [SELECT BINFILEVERSION00, BINPRODUCTVERSION00, DESCRIPTION00,
FILENAME00, FILEPROPERTIESHASH00, FILEPROPERTIESHASHEX00, FILEVERSION00, LOCATION00,
PRODUCT00, PRODUCTVERSION00, PUBLISHER00, STARTUPTYPE00, STARTUPVALUE00, MACHINEID,
INSTANCEKEY, TIMEKEY, REVISIONID, AGENTID, ROWVERSION~FROM AUTOSTART_SOFTWARE_DATA where
(MachineID between 16777216 and 33554431) ]   SMS_REPLICATION_CONFIGURATION_MONITOR
20-10-2012 02:03:07   3364 (0x0D24)
BCP out result is 0.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07
3364 (0x0D24)
Table XML: <TABLE NAME="AUTOSTART_SOFTWARE_HIST"><COLUMN COLUMN_ID="1"
NAME="BINFILEVERSION00" TYPENAME="nvarchar" TYPEID="231" MAX_LENGTH="510" IS_
NULLABLE="1" HAS_DEFAULTVALUE="0" />><
……..
……
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:07   3364 (0x0D24)
```

The log excerpt shows the BCP out commands being fired. It also lets you see the version file, trackinguid file, errors file, pubname file, and for each table in the group, the .bcp file and .row count file.

Once the BCP out commands have completed, compression takes place and the .pub file is stored in the CABFiles folder. The rcmctrl.log should display entries like the following:

```
Calling drs_init_send method now with parameters C:\Program Files\Microsoft
Configuration Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194 and CAS.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08   3364 (0x0D24)
Starting to compress files under folder [C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194\] to [C:\Program
Files\Microsoft Configuration Manager\inboxes\rcm.box\CabFiles\CAS_4C7EB459-2631-455B-
93C1-8C08926BAD07.cab] ...   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08
3364 (0x0D24)
Deleting all files under folder [C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\a4ba357d-1cb4-408c-9e89-681686974194].
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08   3364 (0x0D24)
Created minijob to send compressed copy of DRS INIT BCP Package to site CAS. Tranfer
root = C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\CabFiles\CAS_4C7EB459-2631-455B-93C1-8C08926BAD07.cab.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08   3364 (0x0D24)
drs_init_send returned 0.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08
3364 (0x0D24)
STATMSG: ID=7803 SEV=I LEV=M SOURCE="SMS Server"
COMP="SMS_REPLICATION_CONFIGURATION_MONITOR" SYS=CMLABPRI.CMLAB.COM SITE=PR1 PID=5060
TID=3364 GMTDATE=Sat Oct 20 09:03:08.373 2012 ISTR0="Hardware_Inventory_8" ISTR1="CAS"
ISTR2="" ISTR3="" ISTR4="" ISTR5="" ISTR6="" ISTR7="" ISTR8="" ISTR9="" NUMATTRS=0
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08   3364 (0x0D24)
Current status is PackageCreated.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08   3364 (0x0D24)
Found 1 replication roles.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:08
3364 (0x0D24)
```

Once this is done, the sender will then send the files to the central administration site server:

SENDER.LOG

```
Passed the xmit file test, use the existing connection   SMS_LAN_SENDER   20-10-2012
02:03:33   5012 (0x1394)
Package file = C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\CabFiles\CAS_4C7EB459-2631-455B-93C1-8C08926BAD07.cab
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Instruction file = C:\Program Files\Microsoft Configuration
Manager\inboxes\schedule.box\tosend\00000085.I59 SMS_LAN_SENDER   20-10-2012 02:03:33
5012 (0x1394)
Checking for remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.PCK   SMS_LAN_SENDER
20-10-2012 02:03:33   5012 (0x1394)
Checking for remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.SNI   SMS_LAN_SENDER
20-10-2012 02:03:33   5012 (0x1394)
```

```
Checking for remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.TMP   SMS_LAN_SENDER
20-10-2012 02:03:33   5012 (0x1394)
Attempt to create/open the remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.PCK
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Created/opened the remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.PCK
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Attempt to create/open the remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.PCK
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Created/opened the remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.PCK
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Sending Started [C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\CabFiles\CAS_4C7EB459-2631-455B-93C1-8C08926BAD07.cab]
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Attempt to write 1024 bytes to \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.PCK at position 0
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
……————————————.
……————————————.
S.CMLAB.COM\SMS_SITE\1003PPR1.TMP   SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Created/opened the remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.TMP
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Sending Started [C:\Program Files\Microsoft Configuration
Manager\inboxes\schedule.box\tosend\00000085.I59]   SMS_LAN_SENDER   20-10-2012 02:03:33
5012 (0x1394)
Attempt to write 650 bytes to \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.TMP at position 0
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Wrote 650 bytes to \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.TMP at position 0
SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
Sending completed [C:\Program Files\Microsoft Configuration
Manager\inboxes\schedule.box\tosend\00000085.I59]   SMS_LAN_SENDER   20-10-2012 02:03:33
5012 (0x1394)
Renaming remote file \\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.TMP to
\\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.SNI   SMS_LAN_SENDER   20-10-2012 02:03:33   5012
(0x1394)
Rename completed [\\CMLABCAS.CMLAB.COM\SMS_SITE\1003PPR1.TMP]   SMS_LAN_SENDER   20-10-
2012 02:03:33   5012 (0x1394)
Sending completed successfully   SMS_LAN_SENDER   20-10-2012 02:03:33   5012 (0x1394)
COutbox::TakeNextToSend(pszSiteCode)   SMS_LAN_SENDER   20-10-2012 02:03:33   5012
(0x1394)
We have 0 active connections  SMS_LAN_SENDER   20-10-2012 02:03:38   4784 (0x12B0)
Checking for sending capacity.  Used 0 out of 5.   SMS_LAN_SENDER   20-10-2012 02:03:38
4784 (0x12B0)
Connecting to C:\Program Files\Microsoft Configuration
Manager\inboxes\schedule.box\outboxes\LAN.   SMS_LAN_SENDER   20-10-2012 02:03:38   4784
(0x12B0)
COutbox::TakeNextToSend(pszSiteCode)   SMS_LAN_SENDER   20-10-2012 02:03:38   4784
(0x12B0)
```

```
No (more) send requests found to process.   SMS_LAN_SENDER   20-10-2012 02:03:38   4784
(0x12B0)
Waiting for new/rescheduled send requests, Maximum Sleep Time = 60 minutes
SMS_LAN_SENDER   20-10-2012 02:03:38   4784 (0x12B0)
```

Once the central administration site server has received the files, the despooler will start processing the files inside RCM.BOX\<GUID> just like on the primary site server. The despooler.log will show information about the receiving files:

DESPOOLR.LOG

```
Waiting for ready instruction file....   SMS_DESPOOLER   20-10-2012 02:03:38   3972
(0x0F84)
Decompressed C:\Program Files\Microsoft Configuration
Manager\inboxes\despoolr.box\receive\ds_fl24a.pkg to C:\Program Files\Microsoft
Configuration Manager\inboxes\rcm.box\DBAF3A0C-9FE0-4A93-B771-E2DD3784E755\  SMS_
DESPOOLER   20-10-2012 02:03:38   3376 (0x0D30)
Despooler successfully executed one instruction.   SMS_DESPOOLER   20-10-2012 02:03:38
3376 (0x0D30)
```

Once decompression has taken place, the delta records are compared with the tracking GUID. If publication matches, the old data in BCP is deleted after verifying the rowcount files:

RCMCTRL.LOG

```
Processing replication group Hardware_Inventory_8.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820 (0x071C)
Current status is PackageCreated.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012
02:03:41   1820 (0x071C)
Checking if initialization request is needed for replication group Hardware_Inventory_8
from site PR1.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820
(0x071C)
Checking if there are bcp file to apply for replication group Hardware_Inventory_8 from
site PR1.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820 (0x071C)
found a tracking guid, searching through .init files.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820 (0x071C)
Checking bcpDirectory C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\DBAF3A0C-9FE0-4A93-B771-E2DD3784E755
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820 (0x071C)
Found files for publication Hardware_Inventory_8-PR1.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820 (0x071C)
Publication names match. Checking vesrion.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-
10-2012 02:03:41   1820 (0x071C)
Found our tracking guid   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41
1820 (0x071C)
Setting deadlock priority level to high.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-
10-2012 02:03:41   1820 (0x071C)
```

```
Initializing to version number 781708.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-
2012 02:03:41   1820 (0x071C)
Publication Hardware_Inventory_8 has ID 30.   SMS_REPLICATION_CONFIGURATION_MONITOR
20-10-2012 02:03:41   1820 (0x071C)
Flushing DRS queue messages coming from PR1 for replication group Hardware_Inventory_8.
SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:41   1820 (0x071C)
Executing pre-snapshot stored procedures for group Hardware_Inventory_8.   SMS_
REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:42   1820 (0x071C)
Pre-snapshot stored procedures for group Hardware_Inventory_8 finished. Applying bcp
files.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:42   1820 (0x071C)
Removing old data for site table ... [EXEC spSMSTruncatePartitionTable 'AUTOSTART_
SOFTWARE_DATA', 1;]   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:42   1820
(0x071C)
Rowcount from file [C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\DBAF3A0C-9FE0-4A93-B771-
E2DD3784E755\AUTOSTART_SOFTWARE_DATA.bcp.rowcount] is [6].   SMS_REPLICATION_
CONFIGURATION_MONITOR   20-10-2012 02:03:42   1820 (0x071C)
Successfully bulk copied file [C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\DBAF3A0C-9FE0-4A93-B771-E2DD3784E755\AUTOSTART_SOFTWARE_
DATA.bcp] into table [AUTOSTART_SOFTWARE_DATA] with rows [6].   SMS_REPLICATION_
CONFIGURATION_MONITOR   20-10-2012 02:03:43   1820 (0x071C)
Removing old data for site table ... [EXEC spSMSTruncatePartitionTable 'AUTOSTART_
SOFTWARE_HIST', 1;]   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:43   1820
(0x071C)
Rowcount from file [C:\Program Files\Microsoft Configuration
Manager\inboxes\rcm.box\DBAF3A0C-9FE0-4A93-B771-E2DD3784E755\AUTOSTART_SOFTWARE_HIST.
bcp.rowcount] is [0].   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:43
1820 (0x071C)
''''''''''''''''''''''''
''''''''''''''''''''''''
Setting deadlock priority level to normal.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-
10-2012 02:03:45   1820 (0x071C)
Current status is Active.   SMS_REPLICATION_CONFIGURATION_MONITOR   20-10-2012 02:03:45
1820 (0x071C)
--------------
```

Once replication has completed, the status changes from initialization to active in the monitoring phase.

Using Replication Link Analyzer

Replication Link Analyzer can be launched either within the Configuration Manager console or from the command line. Launching Replication Link Analyzer through the console is easy:

1. In the Monitoring workspace, click the Database Replication node.
2. Select the replication link that you want to analyze.
3. In the Database Replication group on the Home tab, select Replication Link Analyzer.

To launch Replication Link Analyzer Wizard from the command line, use the following syntax:

```
%path%\Microsoft Configuration
Manager\AdminConsole\bin\Microsoft.ConfigurationManager.ReplicationLinkAnalyzer.Wizard.exe
<source site server FQDN> <destination site server FQDN>
```

Replication Link Analyzer saves its results in the following XML-based report file and log file on the desktop of the user who runs the tool:

- ReplicationAnalysis.xml
- ReplicationLinkAnalysis.log

Understanding the replication process

When a site is first installed, it establishes an initial synchronization with the sending site so that subsequent data changes are applied to a data set identical to the one at the sending site. By default, the first replication group processed is the Replication Configuration group—this group effectively bootstraps the receiving site with the remaining configuration for other replication groups.

The site initializes by sending an init request to the sending site for the desired replication group. When the sending site receives the init request, it uses the BCP application to extract all of the data from the tables that make up the replication group being initialized. At the same time, a rowcount of the number of exported rows is also taken and stored in a .rowcount file. This allows the receiving site to ensure it has imported the same number of rows as the sending site exported for import.

The sending site then sets the receiving site as a subscriber to the replication group and replication configuration management/monitoring begins sending any changes to tables in the replication group to the receiving site. The BCP files are replicated to the receiving site via the standard content sender. Once the BCP files have arrived at the receiving site, replication configuration management/monitoring on the receiving site is notified of the files in its inbox folder and begins a cycle of actions for each table in the replication group:

1. Any existing data in the destination table that overlaps with the received data from the sending site is deleted from the table.
2. BCP is used to import the data from the sending site into the receiving site database.
3. After the import has completed, the rowcount from the BCP process is compared to the row count in the .rowcount file. If the values match, the next table is processed.
4. Once all the tables have been processed, the group status is changed to active and the site begins processing any messages in the queue.
5. Re-initialization will be attempted if any error is returned on any specific group.

When you run Replication Link Analyzer, it will try auto-remediate once so that the particular group will be re-initialized. You can also re-initialize replication anytime by copying and pasting a .pub file into the RCM.BOX on the site server. The file *<replicationgroupname>*.

pub will work fine for this purpose for global data, in which case you would copy/paste the file into the RCM.BOX on the primary server. For site data where the central administration site is the subscriber however, you must also add the sitecode to the file name so that it looks like *<replicationgroupname>-<sitecode>*.pub in order for the central administration site to know which primary site to re-initialize from. For example, the file hardware_inventory_8-PR1.pub for site data would be copied/pasted into the RCM.BOX on the central administration site server.

Operating system deployment

Configuration Manager provides several methods that you can use to deploy an operating system. Regardless of the deployment method that you use, there are several actions that you must take. These actions include the following:

- Identify any Windows device drivers that are required to run the boot image or the operating system image that you have to deploy.
- Identify the boot image that you want to use to start the destination computer. Configuration Manager provides two default boot images.
- Capture an image of the operating system that you want to deploy by using a task sequence.
- Distribute the boot image, operating system image, and any related content to a distribution point.
- Create a task sequence that deploys the boot image and the operating system image.
- Deploy the task sequence to the collection that contains the destination computer. If there are multiple computers in the collection, the task sequence is deployed to each computer in the collection.

Operating system deployment log files

Table 3-3 lists the log files that contain information related to operating system deployment.

TABLE 3-3 Operating system deployment log files

Log name	Description	Computer with log file
CAS.log	Records details when distribution points are found for referenced content.	Client
ccmsetup.log	Records ccmsetup tasks for client setup, client upgrade, and client removal. Can be used to troubleshoot client installation problems.	Client
CreateTSMedia.log	Records details for task sequence media creation.	The computer that runs the Configuration Manager console
Dism.log	Records driver installation actions or update apply actions for offline servicing.	Site system server

Log name	Description	Computer with log file
Distmgr.log	Records details about the configuration of enabling a distribution point for pre-boot execution environment (PXE).	Site system server
DriverCatalog.log	Records details about device drivers that have been imported into the driver catalog.	Site system server
mcsisapi.log	Records information for multicast package transfer and client request responses.	Site system server
mcsexec.log	Records health check, namespace, session creation, and certificate check actions.	Site system server
mcsmgr.log	Records changes to configuration, security mode, and availability.	Site system server
mcsprv.log	Records multicast provider interaction with Windows Deployment Services (WDS).	Site system server
MCSSetup.log	Records details about multicast server role installation.	Site system server
MCSMSI.log	Records details about multicast server role installation.	Site system server
Mcsperf.log	Records details about multicast performance counter updates.	Site system server
MP_ClientIDManager.log	Records management point responses to the client ID requests task sequences initiated from PXE or boot media.	Site system server
MP_DriverManager.log	Records management point responses to Auto Apply Driver task sequence action requests.	Site system server
OfflineServicingMgr.log	Records details of offline servicing schedules and update apply actions on operating system .wim files.	Site system server
Setupact.log	Records details about Windows Sysprep and setup logs.	Client
Setupapi.log	Records details about Windows Sysprep and setup logs.	Client
Setuperr.log	Records details about Windows Sysprep and setup logs.	Client
smpisapi.log	Records details about the client state capture and restore actions, and threshold information.	Client
Smpmgr.log	Records details about the results of state migration point health checks and configuration changes.	Site system server
smpmsi.log	Records installation and configuration details about the state migration point.	Site system server
smpperf.log	Records the state migration point performance counter updates.	Site system server
smspxe.log	Records details about the responses to clients that PXE boot and details about the expansion of boot images and boot files.	Site system server
smssmpsetup.log	Records installation and configuration details about the state migration point.	Site system server
Smsts.log	Records task sequence activities.	Client
TSAgent.log	Records the outcome of task sequence dependencies before starting a task sequence.	Client

Log name	Description	Computer with log file
TaskSequenceProvider.log	Records details about task sequences when they are imported, exported, or edited.	Site system server
loadstate.log	Records details about the User State Migration Tool (USMT) and restoring user state data.	Client
scanstate.log	Records details about the User State Migration Tool (USMT) and capturing user state data.	Client

When you begin deploying any Microsoft operating system using Configuration Manager, you soon learn that things often go wrong and you don't know why. Worse still, Configuration Manager simply confronts you with arcane task-sequence errors, advising you to "please contact your system administrator or helpdesk." Since that is you, it's not much help. Fortunately, Microsoft also provides plenty of help through log files. There are two minor challenges here: First, there are lots of different log files, and second, Configuration Manager puts them in different paths depending on what phase the deployment is in.

Since the core thread of deployment is the task-sequence, you need to find the log for that. The name betrays its age: it is called smsts.log. Examining this log should always be your first step in troubleshooting any deployment issue. Unfortunately, Configuration Manager can save the smsts.log in one of seven different places, depending on the stage of the build and the architecture of the operating system. Table 3-4 shows the possible locations for the smsts.log file.

TABLE 3-4 Location of deployment log files for different phases of deployment

Phase	Path
WinPE, before HDD format	x:\windows\temp\smstslog\smsts.log
WinPE, after HDD format	copied to c:_SMSTaskSequence\Logs\Smstslog\smsts.log
Full version Windows, before Configuration Manager agent installed	c:_SMSTaskSequence\Logs\Smstslog\smsts.log
Full operating system, after Configuration Manager agent	%windir%\system32\ccm\logs\Smstslog\smsts.log or %windir%\sysWOW64\ccm\logs\Smstslog\smsts.log (64-bit)
Full operating system, build complete	%windir%\system32\ccm\logs\smsts.log or %windir%\sysWOW64\ccm\logs\smsts.log (64-bit)

Using error messages for troubleshooting

This section summarizes some of the possible pop-up error messages you might encounter when problems arise during operating system deployment using Configuration Manager. These error messages have been grouped into different categories such as disk, network, XML, and media issues.

Troubleshooting disk issues

Occasionally, you might see errors caused by disk issues when you are using Configuration Manager for operating system deployment.

Error: Failed to run task-sequence 0×80070032

CAUSE: There is no valid file system either because the target is corrupt, encrypted, or unformatted. The task requires Configuration Manager to copy the WinPE files to C: that is, you must have an NTFS partition as a prerequisite.

FIX: Quick format the disk with **echo y | format c: /q** or recreate the disk partitions using diskpart.exe

One other possibility we have seen for this error is that the disk you are targeting has gone "offline" (as seen by diskpart). The solution is to just make it online by using this command:

```
sel dis 0
```

Error: Failed to stage WinPE. Code(0×80070032)

The cause and resolution of this error is usually similar to the resolution of the error previously described.

Troubleshooting network issues

Network issues can be another source of problems when you are using Configuration Manager for operating system deployment. This section describes some of the errors you might encounter and how to handle them.

Failed to run Task Sequence (unknown host). Error: 0x80072EE7

The most common error we have seen occurs before the task-sequence even starts. Fundamentally, they are down to networking. You normally have a clue something is wrong before this error appears, such as when Configuration Manager displays "Retrieving policy...."

CAUSE: The machine cannot talk to the Configuration Manager server because of a network issue of some kind.

FIX: Plug in the Ethernet cable (it happens), and check the subnet settings or add the correct Windows network drivers to your WinPE boot image.

> ***NOTE*** **WinPE needs Windows 7 or Windows 8 network drivers.**

The system cannot find the file specified. Error: 0×80070002

SYMPTOM: Unknown host (gethostbyname failed) repeatedly appears in the log file.

CAUSE: Configuration Manager can't find any source path to a file because there's no network driver loaded/installed in the WinPE boot image.

FIX: If "restart computer (reboot to WinPE)" stops responding, or hangs, it's also because there's no network driver. It's waiting for WinPE to download but it can't so it just sits there.

The specified domain either does not exist or could not be contacted. Error: 0x8007054B

CAUSE: Failed to join the domain

FIX: Check the user account or the domain or that you installed network drivers.

Failed to run command line Error: 0x8007010B

CAUSE: A file/dir is bad or missing. (The directory name is invalid.)

FIX: Rebuild your build media because a write error or crash has resulted in not all packages being correct.

Troubleshooting XML errors

Occasionally, Configuration Manager will report errors related to the XML files that it uses when deploying operating systems.

Error: 0×800700002

CAUSE: Configuration Manager can't read the file in sms\data\policy.xml.

FIX: Rebuild the build media or copy policy.xml from known good media (USB/DVD) or set in tsbootstrap.ini's mediatype=Bootmedia if you only want to boot and build from LAN.

Error: Prompts for #1 media then errors 0×800700002

CAUSE: You've created split media and the wrong volume label is in <boot:>VOLUMEID.XML.

FIX: Copy the right one to the root of the media and retry.

Troubleshooting media issues

Finally, here are some tips on troubleshooting common media issues when deploying operating systems using Configuration Manager.

Error: 0×80070007 = The storage control blocks were destroyed.

CAUSE: Your USB media is too small and Configuration Manager is trying to span to more!

FIX: Get a bigger USB pen-drive or write to a dual-layer DVD instead.

Error: 0×80070017

SYMPTOM: Building from DVD fails. Clue: the DVD spins and spins for ages, with the light blinking urgently until eventually you get a task sequence error.

CAUSE: Error 80070017 is a CRC failure, meaning the DVD/USB source media is corrupt. This happens when the task sequence tries to copy the content for package XYZ from the DVD. So, either the package XYZ is corrupt or there's a problem with the DVD itself (bad ISO or bad physical media). Try recreating the full media ISO then re-burn the DVD.

FIX: Burn another DVD or use a USB (or build from the network instead).

Application management

Application management in System Center 2012 Configuration Manager provides both administrative users and client device users with tools for managing applications in the enterprise.

Application deployments are regularly reconfigured by Configuration Manager. For example:

- A deployed application is uninstalled by the user. At the next evaluation cycle, Configuration Manager detects that the application is not present and reinstalls it.
- An application was not installed on a device because it failed to meet the requirements. Later, a change is made to the device and it now meets the requirements. Configuration Manager detects this change and the application is installed.

Application management log files

Table 3-5 lists the log files that contain information related to application management.

TABLE 3-5 Application management log files

Log name	Description	Computer with log file
AppIntentEval.log	Records details about the current and intended state of applications, their applicability, whether requirements were met, deployment types, and dependencies.	Client
AppDiscovery.log	Records details about the discovery or detection of applications on client computers.	Site system server
AppEnforce.log	Records details about enforcement actions (install and uninstall) taken for applications on the client.	Site system server
awebsctl.log	Records the monitoring activities for the Application Catalog web service point site system role.	Site system server

Log name	Description	Computer with log file
awebsvcMSI.log	Records detailed installation information for the Application Catalog web service point site system role.	Site system server
Ccmsdkprovider.log	Records the activities of the application management SDK.	Client
colleval.log	Records details about when collections are created, changed, and deleted by the Collection Evaluator.	Site system server
ConfigMgrSoftwareCatalog.log	Records the activity of the Application Catalog, which includes its use of Microsoft Silverlight.	Client
portlctl.log	Records the monitoring activities for the Application Catalog website point site system role.	Site system server
portlwebMSI.log	Records the MSI installation activity for the Application Catalog website role.	Site system server
PrestageContent.log	Records the details about the use of the ExtractContent.exe tool on a remote prestaged distribution point. This tool extracts content that has been exported to a file.	Site system server
ServicePortalWebService.log	Records the activity of the Application Catalog web service.	Site system server
ServicePortalWebSite.log	Records the activity of the Application Catalog website.	Site system server
SMSdpmon.log	Records details about the distribution point health monitoring scheduled task that is configured on a distribution point.	Site server
SoftwareCatalogUpdateEndpoint.log	Records the activities for managing the URL for the Application Catalog shown in Software Center.	Client
SoftwareCenterSystemTasks.log	Records the activities for Software Center prerequisite component validation.	Client

Troubleshooting application deployment

This section does not describe the workflow of application deployment. Instead, it highlights a couple of common issues you might run into during application deployment.

Application download failures

Symptoms:

- Client stuck downloading an application
- Client failed to download application
- Client stuck at 0 percent while downloading software

Possible solutions and troubleshooting information: missing or misconfigured boundaries and boundary groups.

- If the client is on the intranet and is not configured for Internet-only client management, the client's network location must be in a configured boundary and there must be a boundary group assigned to this boundary for the client to be able to download content.
- Content might not be distributed to the distribution points yet, which is why it is not available for clients to download. Use the in-console monitoring facilities to monitor content distribution to the distribution points.
- If you cannot configure a boundary for the client or if specific boundary groups cannot be a member of other boundary groups, you can configure the Deployment Type properties, Content tab, and Deployment options for the option "Download content from distribution point and run locally."

Application deployment compliance stuck at 0 percent

Possible solution and troubleshooting information: check the Deployments node in the Monitoring workplace for the deployment status of the application:

- **In progress** The client could be stuck downloading content. Check problem 1, discussed previously.
- **Error** For more information about this status, see the following blog post: *http://blogs.technet.com/b/configmgrteam/archive/2012/03/23/tips-and-tricks-how-to-take-action-on-assets-that-report-a-failed-deployment-in-system-center-2012-configuration-manager.aspx*
- **Unknown** This implies that the client has not received policy. Try manually initiating client policy and if this does not work, use client status to help verify client functionality. For more information, see the following on Microsoft TechNet: "How to Initiate Policy Retrieval for a Configuration Manager Client" at *http://technet.microsoft.com/en-us/library/bb633207.aspx*. Also see, "Monitoring the Status of Client Computers in Configuration Manager" at *http://technet.microsoft.com/en-us/library/gg682132.aspx#BKMK_ClientHealth*

Workflow of application deployment for Macintosh clients

This section demonstrates the workflow of application deployment on Mac clients by walking you through a scenario of deploying Adobe Reader to a Mac computer running Mac Book Pro with OS X Mountain Lion 10.8.

Macintosh computers have a tool called CMDiagnostics that is located under the Tools folder in your Mac client software. If you run CMDiagnostics without any switches, it will start collecting all the information shown here in the screenshot and zip it and store it in a directory named cmdiag-<MacMachineName>-<Date>.zip for example:

```
cmdiag-CTSLabs-MacBook-Pro.local-2013-06-07-151751.zip
```

```
Tools — bash — 80×24
CTSLabs-MacBook-Pro:Tools ctslab$ /Users/ctslab/Downloads/MacClientSource/Tools/
CMDiagnostics
Microsoft System Center 2012 Configuration Manager
Configuration Manager Client Diagnostics Utility
Copyright Microsoft Corporation

Requires root privileges, please provide password:
Password:
Checking for existing diagnostics files in /tmp and clean them up if they exist
Temp directory does not exist
Creating directories
Retrieving System Information
Collecting Operating System Information
Collecting CCM Crashreports from the current user
Collecting CCM System Diagnostics Reports
Collecting CCM Client Installation BoM
Collecting CCM Client Installation Info
Collecting CCM Client logs in /tmp
Collecting CCM Client logs in /Library/Application Support/Microsoft/CCM/Logs/
Collecting CCM Client plist
Collecting CCM Cache directory information
  adding: CCMAgent-20130513-150624.log (deflated 94%)
  adding: ccmcache/ (stored 0%)
  adding: ccmcache/CIM_SoftwareJob/ (stored 0%)
```

Copy this log to a Windows computer that has CMTrace for easier viewing. Browse to the ccmlogs directory and open CCMClient-<date>.log (that is, CCMClient-20130513-130117.log)

You might see many errors like the following but you can safely ignore them because they are either not related to the workflow being discussed here or are thrown because of a property not existing on the Mac computer:

```
Failed to GetProperty WaitHint from Configuration Provider. Input NodeUri Win32_Service.Name="com.apple.security.XPCKeychainSandboxCheck"/WaitHint : 80070490
Failed to GetProperty WaitHint from Configuration Provider. Input NodeUri Win32_Service.Name="com.apple.security.XPCTimeStampingService"/WaitHint : 80070490
Failed to GetProperty WaitHint from Configuration Provider. Input NodeUri Win32_Service.Name="com.apple.security.pboxd"/WaitHint : 80070490
Failed to GetProperty WaitHint from Configuration Provider. Input NodeUri Win32_Service.Name="com.apple.speech.synthesis.activityd"/WaitHint : 80070490
Instance Win32_OperatingSystem=@ is in unexpected format.
Failed TokenizeInstanceName for Instance Name : Win32_OperatingSystem=@. Input NodeUri : Win32_OperatingSystem=@/Name
Failed to GetProperty IPAddress from Configuration Provider. Input NodeUri CCM_IPConfig.IPAddress="169.254.70.124"/IPAddress : 80070490
Failed to GetProperty AddressFamily from Configuration Provider. Input NodeUri CCM_IPConfig.IPAddress="169.254.70.124"/AddressFamily : 80070490
Failed to GetProperty IPAddress from Configuration Provider. Input NodeUri CCM_IPConfig.IPAddress="169.254.147.77"/IPAddress : 80070490
Failed to GetProperty AddressFamily from Configuration Provider. Input NodeUri CCM_IPConfig.IPAddress="169.254.147.77"/AddressFamily : 80070490
```

You want to look for an entry that says CCM_Download_AddJob as shown here. Again, ignore any errors that start with Failed to GetProperty.

```
SwJobProvider. Successfully added download/install job. Id : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a
Received notification for Download Add Job
Received Notification for Download_AddJob. Id : CCM_Download_AddJob
PreferencesService - ProcessNotification()
#CDownloadManager::Process JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a
Failed to GetProperty IPAddress from Configuration Provider. Input NodeUri CCM_IPConfig.IPAddress="169.254.244.224"/IPAddress : 80070490
Failed to GetProperty AddressFamily from Configuration Provider. Input NodeUri CCM_IPConfig.IPAddress="169.254.244.224"/AddressFamily : 80070490
Failed to GetProperty MediaType from Configuration Provider. Input NodeUri Win32_CDROMDrive.DeviceID=0/MediaType : 80070490
Failed to GetProperty MACAddress from Configuration Provider. Input NodeUri Win32_NetworkAdapter.DeviceID=Bluetooth-Modem/MACAddress : 80070490
Failed to GetProperty MACAddress from Configuration Provider. Input NodeUri Win32_NetworkAdapter.DeviceID=en2/MACAddress : 80070490
Failed to GetProperty MACAddress from Configuration Provider. Input NodeUri Win32_NetworkAdapter.DeviceID=vlan0/MACAddress : 80070490
Failed to GetProperty ExitCode from Configuration Provider. Input NodeUri Win32_Service.Name="0x7fa3cbc21030.anonymous.Dock"/ExitCode : 80070490
```

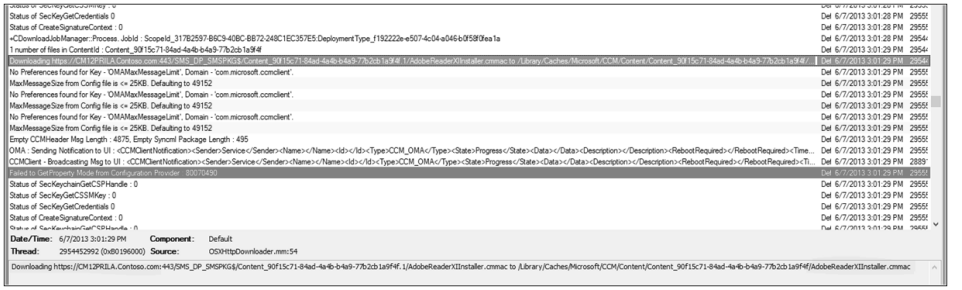
If you continue to scroll down these logs, you will see that the Configuration Manager client has successfully added the job for the Adobe Reader application.

```
SwJobProvider. Successfully added download/install job. Id : ScopeId_317B2597-B6C9-
40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a   Default
6/7/2013 3:01:28 PM   2955517952 (0xB029A000)
Received notification for Download Add Job   Default   6/7/2013 3:01:28 PM   2955517952
(0xB029A000)
Received Notification for Download_AddJob. Id : CCM_Download_AddJob   Default   6/7/2013
3:01:28 PM   2954452992 (0xB0196000)
PreferencesService - ProcessNotification()    Default   6/7/2013 3:01:28 PM   2956050432
(0xB031C000)
+CDownloadManager::Process JobId : ScopeId_317B2597-B6C9-40BC-BB72-
248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a   Default   6/7/2013
3:01:28 PM   2954452992 (0xB0196000)
```

Reviewing some additional entries in the log finds some log entries like this:

```
Downloading https://<servername>:443/SMS_DP_SMSPKG$/Content_<id>/<application>.cmmac
```

This is shown in the following two screenshots:



Review the file hash and final content hash values as shown next. This information can be useful information because when the hash match is failing, you can update the content on distribution point to see if the problem is on server side. Then if the hash values match, the problem is solved.

```
OMA Session Complete                                                                                                                                  Del 6/7/2013 3:01:33 PM
Saving Last OMA Connect Time : 06/07/2013 03:01PM                                                                                                     Del 6/7/2013 3:01:33 PM
OMA : Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name></Name><Id></Id><Type>CCM_OMA</Type><State>Complete</State><Data></Data><Description></Description><RebootRequired></RebootRequired><Time...  Del 6/7/2013 3:01:33 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name></Name><Id></Id><Type>CCM_OMA</Type><State>Complete</State><Data></Data><Description></Description><RebootRequired></RebootRequired><Ti...  Del 6/7/2013 3:01:33 PM
SSLRead failed failed with error: server closed session with no notification                                                                          Del 6/7/2013 3:01:35 PM
SSL Read failed 80070451                                                                                                                              Del 6/7/2013 3:01:35 PM
Total downloaded length : 80444445                                                                                                                    Del 6/7/2013 3:01:35 PM
Download is complete. Performing content hash validation                                                                                              Del 6/7/2013 3:01:35 PM
File Hash : B612E0462832ID04622E658750F4475FF888CE9BD4F36BF9112DEBC387D1AAEC                                                                          Del 6/7/2013 3:01:35 PM
Final Content Hash : 07EEBA48F025E170595787BE97933D33BAE26D706465983FEB53C45C13B7A1A4                                                                 Del 6/7/2013 3:01:35 PM
Content Hash Verification Success                                                                                                                     Del 6/7/2013 3:01:35 PM
HashValidation returned with Status : InstallNotStarted. HRESULT : 0                                                                                  Del 6/7/2013 3:01:35 PM
Updating Download Job with Status : InstallNotStarted. HRESULT : 0                                                                                    Del 6/7/2013 3:01:35 PM
<CDownloadJobManager::Process. JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a                Del 6/7/2013 3:01:35 PM
Download operation complete for JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a. Notifying Install Service.  Del 6/7/2013 3:01:35 PM
<CDownloadManager::Process JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a                  Del 6/7/2013 3:01:35 PM
OMADMService - ProcessNotification()                                                                                                                  Del 6/7/2013 3:01:35 PM
Received Notification for Install_AddJob. JobId : CCM_Install_AddJob                                                                                  Del 6/7/2013 3:01:35 PM
PreferencesService - ProcessNotification()                                                                                                            Del 6/7/2013 3:01:35 PM
Received Notification for Download_AddJob. Id : CCM_Download_AddJob                                                                                   Del 6/7/2013 3:01:35 PM
<CDownloadManager::Process JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a                  Del 6/7/2013 3:01:35 PM
<CDownloadJobManager::Process. JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a                Del 6/7/2013 3:01:35 PM
DownloadJob is Complete. Current State of the Job : InstallNotStarted                                                                                 Del 6/7/2013 3:01:35 PM
<CDownloadJobManager::Process. JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a                Del 6/7/2013 3:01:35 PM
Download operation complete for JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a. Notifying Install Service.  Del 6/7/2013 3:01:35 PM
<CDownloadManager::Process JobId : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a                  Del 6/7/2013 3:01:35 PM
OMADMService - ProcessNotification()                                                                                                                  Del 6/7/2013 3:01:35 PM

Date/Time:  6/7/2013 3:01:35 PM     Component:  Default
Thread:     2954452992 (0xB0196000) Source:     OSXHttpDownloader.mm:134

Total downloaded length : 80444445
```

Review the installation progress as shown next. If there are any errors during installation, you will find these after the following entries.

```
Log Text                                                                                                                                              C.  Date/Time
Received Notification for Install_AddJob. JobId : CCM_Install_AddJob                                                                                  Del 6/7/2013 3:01:35 PM
Received Notification for Install User Active.                                                                                                        Del 6/7/2013 3:01:35 PM
No Preferences found for Key - 'InstallStartDelay', Domain - 'com.microsoft.ccmclient'.                                                               Del 6/7/2013 3:01:35 PM
+SetValueInPlist : Key : InstallLastState, Value : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-507-4c04-a046-b0f58f0fe...  Del 6/7/2013 3:01:35 PM
-SetValueInPlist : Key : InstallLastState                                                                                                              Del 6/7/2013 3:01:35 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:01:35 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:01:35 PM
7A642190: Listen                                                                                                                                      Del 6/7/2013 3:01:36 PM
ClientGot.Space: Client 7A642190 lifted write-side flow control.                                                                                      Del 6/7/2013 3:01:36 PM
7A642190: Client Sent : "<CCMClientNotification><Sender>UI</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CCM_Install...  Del 6/7/2013 3:02:14 PM
CCMClient - ProcessUIMessage. Msg : <CCMClientNotification><Sender>UI</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Typ...  Del 6/7/2013 3:02:14 PM
Received Notification for Install/Reboot.                                                                                                             Del 6/7/2013 3:02:14 PM
OMADMService - ProcessNotification()                                                                                                                  Del 6/7/2013 3:02:14 PM
PreferencesService - ProcessNotification()                                                                                                            Del 6/7/2013 3:02:14 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:14 PM
+SetValueInPlist : Key : InstallLastState, Value : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-507-4c04-a046-b0f58f0fe...  Del 6/7/2013 3:02:14 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:14 PM
-SetValueInPlist : Key : InstallLastState                                                                                                              Del 6/7/2013 3:02:14 PM
Installing Software for ContentId : Content_90f15c71-84ad-4a4b-b4a9-77b2cb1a9f4f                                                                      Del 6/7/2013 3:02:15 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:18 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:18 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:19 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:19 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:19 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:19 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:20 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:20 PM

Date/Time:  6/7/2013 3:02:15 PM     Component:  Default
Thread:     2954985472 (0xB0218000) Source:     OSXPkgInstaller.mm:124

Installing Software for ContentId : Content_90f15c71-84ad-4a4b-b4a9-77b2cb1a9f4f
```

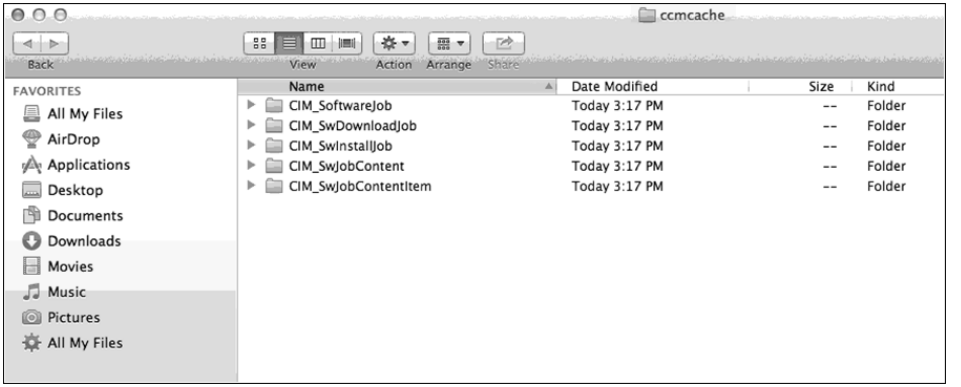
Look for an entry that says Install:Complete in the logs. The presence of such an entry in this stage of the workflow indicates that the application Adobe Reader has been successfully installed on the Mac computer.

```
Log Text                                                                                                                                              C.  Date/Time
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:35 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:35 PM
Install: Complete                                                                                                                                     Del 6/7/2013 3:02:35 PM
Successfully installed app                                                                                                                            Del 6/7/2013 3:02:35 PM
No Preferences found for Key - 'InstallRebootDelay', Domain - 'com.microsoft.ccmclient'.                                                               Del 6/7/2013 3:02:35 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:02:35 PM
+SetValueInPlist : Key : InstallLastState, Value : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-507-4c04-a046-b0f58f0fe...  Del 6/7/2013 3:02:35 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:02:35 PM
-SetValueInPlist : Key : InstallLastState                                                                                                              Del 6/7/2013 3:02:35 PM
Installation completed with JobStatus : InstallSuccess                                                                                                Del 6/7/2013 3:02:35 PM
7A642190: Client Sent : "<CCMClientNotification><Sender>UI</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CCM_Install...  Del 6/7/2013 3:03:58 PM
CCMClient - ProcessUIMessage. Msg : <CCMClientNotification><Sender>UI</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Typ...  Del 6/7/2013 3:03:58 PM
Received Notification for Install/Reboot.                                                                                                             Del 6/7/2013 3:03:58 PM
PreferencesService - ProcessNotification()                                                                                                            Del 6/7/2013 3:03:58 PM
OMADMService - ProcessNotification()                                                                                                                  Del 6/7/2013 3:03:58 PM
+SetValueInPlist : Key : InstallLastState, Value : , Path : /Library/Application Support/Microsoft/CCM/SwJobMetaData.plist                              Del 6/7/2013 3:03:58 PM
-SetValueInPlist : Key : InstallLastState                                                                                                              Del 6/7/2013 3:03:58 PM
Sending Notification to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><Type>CC...  Del 6/7/2013 3:03:58 PM
CCMClient - Broadcasting Msg to UI : <CCMClientNotification><Sender>Service</Sender><Name>AdobeReaderXInstaller</Name><Id>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a</Id><...  Del 6/7/2013 3:03:58 PM
Job : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a state is InstallSuccessComplete . Removing from process queue  Del 6/7/2013 3:03:58 PM
+SetValueInPlist : Key : InstallLastState, Value : , Path : /Library/Application Support/Microsoft/CCM/SwJobMetaData.plist                              Del 6/7/2013 3:03:58 PM
-SetValueInPlist : Key : InstallLastState                                                                                                              Del 6/7/2013 3:03:58 PM
OMADMService - ProcessNotification()                                                                                                                  Del 6/7/2013 3:03:58 PM
OMADMService - Received Notification for OMAConnect - CCM_OMA                                                                                         Del 6/7/2013 3:03:58 PM
Job came to InstallSuccessComplete. Nothing to do. Returning                                                                                          Del 6/7/2013 3:03:58 PM
Failed to GetProperty Rebootrom Configuration Provider : 80070490                                                                                     Del 6/7/2013 3:03:58 PM
Job : ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_f192222e-e507-4c04-a046-b0f58f0fea1a state is InstallSuccessComplete . Removing from process queue  Del 6/7/2013 3:03:58 PM

Date/Time:  6/7/2013 3:02:35 PM     Component:  Default
Thread:     2954985472 (0xB0218000) Source:     OSXPkgInstaller.mm:104

Install: Complete
```

Under CCMCache folder on the Mac computer, review the different folders for the application that was downloaded. The presence of these folders is another indicator that application deployment is working as expected.



Open the CIM_SwInstallJob folder shown in the previous screenshot, then open the ScopeId_*xxxx* file and review the information it contains to verify that Adobe Reader is listed. This can be helpful when you need to determine which applications have been downloaded and which have not when you are troubleshooting the installation of multiple applications.

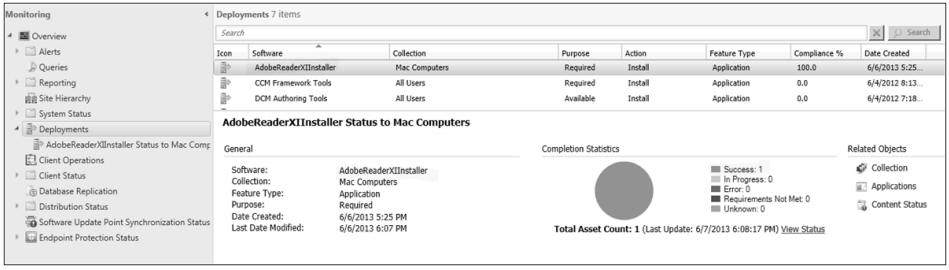
```
<CIM_SwInstallJob><JobId>ScopeId_317B2597-B6C9-40BC-BB72-248C1EC357E5:DeploymentType_
f192222e-e507-4c04-a046-b0f58f0fea1a</JobId><Name>AdobeReaderXIInstaller</Name><Desc
/><JobType>Software</JobType><AssociativeId>Content_90f15c71-84ad-4a4b-b4a9-
77b2cb1a9f4f</AssociativeId><PkgType>pkg</PkgType><Priority>1</Priority><CommandLine>/
usr/sbin/installer -pkg "Adobe Reader XI Installer.pkg"  -target "/" -verboseR</CommandL
ine><ActionType>Install</ActionType></CIM_SwInstallJob>
```

Open the CIM_SwJobContent folder located under CCMCache and review the information in the Content_*xxxx* file, looking for the following entry that has additional details concerning the application including its content hash. This can help when you need to troubleshoot hash mismatch issues.

```
<CIM_SwJobContent><ContentId>Content_90f15c71-84ad-4a4b-b4a9-77b2cb1a9f4f</Content
Id><FileList><File>AdobeReaderXIInstaller.cmmac</File></FileList><FileSizeList><Fi
le>80444445</File></FileSizeList><ContentHash>07EEBA48F025E170595787BE97933D33BAE26D7064
65983FEB53C45C13B7A1A4</ContentHash></CIM_SwJobContent>
```

Under Applications on the Mac computer, make sure Adobe Reader is installed:

One other method for checking whether application deployment was successful is to review the status in the Configuration Manager console under Deployments in the Monitoring workspace:



As you can see from the preceding walkthrough, the overall workflow for application deployment on a Mac client is a little different than for a Windows client. This section and its logs and screenshots can help you find the root cause of application deployment issues to Mac clients by enabling you to compare the logs for successful deployment shown here against the logs collected in your environment.