CHAPTER 8

Installing Configuration Manager 2007

Finally! By now, you have spent a considerable amount of time reading the first seven chapters of this book. You have studied the terminology, examined those components you plan to install, and carefully designed your ConfigMgr 2007 hierarchy, paying very close attention to wide area network (WAN) links and administrative requirements. You have also documented and verified your site boundaries, and have determined whether you will operate in mixed mode or "go native." Due to its nature, a successful Configuration Manager (ConfigMgr) implementation requires substantial planning.

This chapter covers installation of the central site server and basic configuration tasks. It also reviews multisite installation considerations as well as discusses the installation of primary and secondary child sites. In addition, the chapter discusses troubleshooting approaches for site installation and configuration.

You may notice the use of multiple site servers in this chapter. The lab environment used in this book has a central site (CEN) running on Bluebonnet, and four primary sites, all in the SCCMUnleashed.com domain. Here are the primary sites reporting to the central site:

- ▶ **DAL (Dallas)—**Running on the Wildflower server
- ▶ **HOU (Houston)—**Running on the Mockingbird server
- ▶ **BXL (Brussels)—**Installed on the Tumbleweed server
- ▶ **BEJ (Beijing)—**Installed on the Roadrunner server

This chapter discusses the installation of Configuration Manager 2007 on the central site server, and uses the BXL primary site for examples as well. The CEN, DAL, and BXL sites are running Configuration Manager 2007, whereas HOU and BEJ run SMS 2003. Chapter 9, "Migrating to Configuration Manager 2007," steps through the process of upgrading the HOU primary site to Configuration Manager 2007. The Configuration Manager console installs as part of your site server installation; Chapter 10, "The Configuration Manager Console," includes a discussion of installing the console on other systems.

Pre-Installation

You are almost ready to begin the ConfigMgr site installation. Before launching the installation program (setup.exe), assess the points in this section to ensure you have completed all prerequisites. If you have multiple ConfigMgr sites and/or servers in your design, verify you have that information documented, including what servers handle which ConfigMgr site roles, as well as required prerequisites for each server. Review the following questions:

▶ Will you configure the central site for mixed mode or native mode?

   Chapter 6, "Architecture Design Planning," discusses site security modes.

▶ Will your hierarchy contain all primary sites, or primary and secondary sites? Will you need any branch distribution points?

   Chapter 2, "Configuration Manager 2007 Overview," introduces primary and secondary sites as well as the use of branch distribution points.

▶ Will you install all site components on your central site, or distribute them over multiple servers?

   Chapter 6 discusses distributing components across multiple servers.

▶ How much drive space do you need on each site server?

   See Chapter 6 for disk space requirements.

▶ Do you need to extend the Active Directory (AD) schema?

   Chapter 3, "Looking Inside Configuration Manager," discusses extending the schema.

▶ Is your hardware sufficient?

   See Chapter 4, "Configuration Manager Solution Design," and Chapter 6 for hardware requirements and planning.

These are questions you will want specific answers for before deploying your first production ConfigMgr site. If the answers are not completely clear, do not pass Go! Spend some additional time reviewing the previous chapters, particularly Chapter 6.

Before starting the installation process for ConfigMgr, verify you have installed and configured all software prerequisites. The next sections briefly describe those requirements. For additional information on prerequisites when installing Configuration Manager, refer to http://technet.microsoft.com/en-us/library/bb694113.aspx.

Windows Components

Configuration Manager 2007 depends on a number of Windows components. Depending on your site design, you may not need all components on each ConfigMgr site in your hierarchy. Table 8.1 provides a brief overview of the Windows components required for each site server and site role. See http://technet.microsoft.com/en-us/library/bb680717. aspx for a complete list of ConfigMgr-supported configurations.

TABLE 8.1 Windows Components Required for ConfigMgr Roles

ConfigMgr Role	Required Windows Component
Distribution point	WebDAV (Web Distributed Authoring and Version) extensions.
To allow content transfer from the distribution point using BITS, HTTP, and HTTPS, you must also have IIS 6.0 (or later) and BITS.	BITS-enabled distribution point.
IIS (Internet Information Services) 6.0 or later.	BITS (Background Intelligent Transfer Service). WebDAV extensions.
Branch distribution point	Remote Differential Compression (RDC). This is installed by default on Windows Server 2003. BITS.
Management point	IIS 6.0 or later. BITS. WebDAV extensions.
Fallback status point	IIS 6.0 or later.
Software update point	Windows Server Update Services (WSUS version 3.0) or later, depending on the ConfigMgr service pack level. IIS 6.0 or later.
Server locator point	IIS 6.0 or later.
Reporting point	IIS 6.0 or later. ASP (Active Server Pages).
System Health Validator point	Windows Server 2008, Enterprise, Datacenter, and Standard Editions.
Site servers	All site servers must be a member of an Active Directory domain.
ConfigMgr console	RDC (installed by default on Windows Server 2003). .NET Framework 2.0. Microsoft Management Console (MMC) 3.0.
Multicast-Enabled Distribution Point	Windows Server 2008, Windows Deployment Services, and IIS with ISAPI Extensions.

8

TABLE 8.1 Continued

ConfigMgr Role	Required Windows Component
Virtual Application Streaming	BITS, IIS 6.0 or later.
Client Status Reporting	Microsoft .NET Framework 2.0, Office Web Components.
SQL Reporting Services Reporting	Microsoft SQL Server 2005 Reporting Services, IIS 6.0.

Windows Server 2008 will have some default components configured differently from Windows Server 2003. For example, WebDAV extensions require a separate download, and Remote Differential Compression is not enabled by default. For instructions on configuring these components for Windows Server 2008, review the article on configuring Windows Server 2008 for site systems at http://technet.microsoft.com/en-us/library/cc431377.aspx.

SQL Server

All primary sites use Microsoft SQL Server 2005 with Service Pack 2 or greater for the Configuration Manager database. Consider using Enterprise edition if you are planning to use clustering with more than two nodes or if you have a very large site. SQL Server Standard edition will be sufficient for almost all environments.

Microsoft now supports upgrading the site database to SQL Server 2008 if you apply a hotfix:

▶ For the base or Released to Manufacturing (RTM) version of ConfigMgr 2007, apply the hotfix discussed at http://support.microsoft.com/kb/955229. Apply the hotfix to the following servers:

  ▶ Primary site servers using SQL Server 2008 to host the site database.

  ▶ Secondary site servers reporting to primary sites that use SQL Server 2008 to host the database.

  ▶ Systems with the Configuration Manager 2007 console installed and connecting to a site that uses SQL Server 2008 to host the database.

  ▶ Servers hosting a remote Systems Management Server (SMS) provider.

▶ For ConfigMgr Service Pack (SP) 1, follow the instructions at http://support.microsoft.com/kb/955262. If applicable, apply the hotfix to the following servers:

  ▶ Primary site servers using SQL Server 2008 to host the database.

  ▶ Systems with the Configuration Manager console installed and connecting to a site using SQL Server 2008 to host the database.

  ▶ Servers hosting a remote SMS provider.

Windows Server Update Services

If you plan to use ConfigMgr to deploy Microsoft security patches, you must install WSUS 3.0 (for ConfigMgr 2007 RTM) or WSUS 3.0 SP 1 (for ConfigMgr 2007 SP 1). For information on WSUS with ConfigMgr, see http://technet.microsoft.com/en-us/library/bb693886.aspx. Chapter 15, "Patch Management," discusses using ConfigMgr 2007 for security patch management.

The Prerequisite Checker

Running the ConfigMgr prerequisite checker confirms whether your system meets the minimum installation requirements for ConfigMgr 2007. The prerequisite checker verifies requirements such as administrative rights, SQL Server version, .NET Framework version, eXtensible Markup Language (XML) version, MMC version, and required Windows updates and hotfixes. Microsoft provides a complete list of setup prerequisite checks at http://technet.microsoft.com/en-us/library/bb680951.aspx.

The ConfigMgr prerequisite checker automatically runs during site installation. You can also run it separately by using one of the following methods:

▶ Select the prerequisite checker from the ConfigMgr installation menu (Splash.hta) in the root of the installation media.

▶ Call setup.exe with appropriate command-line arguments. For example, to verify the prerequisites for a secondary site, open a command prompt (Start -> Run, and type **cmd**) and type

```
Setup.exe /prereq /sec
```

For a complete list of arguments, see http://technet.microsoft.com/en-us/library/bb681060.aspx.

Site Installation

After verifying the prerequisites and deciding whether to extend the Active Directory schema, you are ready to begin ConfigMgr site installation.

TIP

Use SMS Trace to Monitor ConfigMgr Installation

SMS Trace (also called Trace32 and introduced in Chapter 3) is a utility in the ConfigMgr Toolkit used to view log files in real time. Download the ConfigMgr Toolkit from Microsoft at http://www.microsoft.com/downloads (search for **ConfigMgr Toolkit)**, and install it on your soon-to-be primary site. After you begin the ConfigMgr installation, launch Trace32 and open the ConfigMgr installation logs (%*SystemRoot*%\ConfigMgrPrereq.log and %*SystemRoot*%\ConfigMgrSetup.log). You will see the logs dynamically update as the installation proceeds.

Installing ConfigMgr

Perform the following steps to install the primary site:

1. Browse to your installation media and launch Splash.hta, found in the root of the installation media. As shown in Figure 8.1, you have several options in the splash screen, including running the prerequisite checker, reviewing the release notes, and installing ConfigMgr.
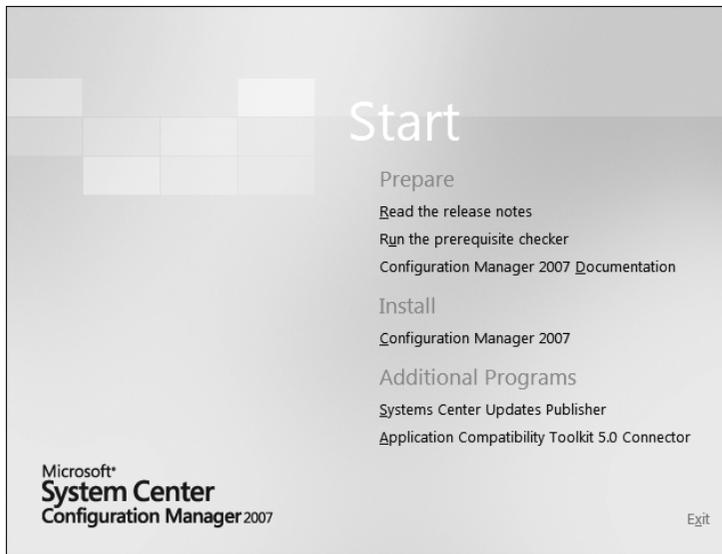

FIGURE 8.1   System Center Configuration Manager Installation splash screen

2. Review the release notes for late-breaking information about known issues, bug fixes, and other important information. When you are ready, select the option Install Configuration Manager 2007 to view the Welcome screen.

3. Verify you are ready to move forward and then click Next to choose a setup option, as shown in Figure 8.2.

Real World: Previous Installations of ConfigMgr or SMS

If you arrive at the Available Setup Options screen (shown in Figure 8.2) and see that you are unable to install a ConfigMgr site server, first confirm you are installing the site on a supported operating system. In addition, if the server previously had SMS or ConfigMgr installed, you may encounter this situation if the uninstall was not completely successful. If the Registry key HKEY_LOCAL_MACHINE\Software\Microsoft\ SMS\Setup exists, delete it and retry the installation.

If the installation continues to fail, check the ConfigMgr installation logs (%*SystemRoot*%\ConfigMgrPrereq.log and %*SystemRoot*%\ConfigMgrSetup.log) for more information. You may be able to perform a little additional "clean-up." If all else fails, you may need to resort to reinstalling the operating system on the server for a clean opportunity to install ConfigMgr.

FIGURE 8.2   Available setup options for Configuration Manager installation

4. Provided you are attempting to install on a supported server operating system (OS), select the option Install a Configuration Manager site server. Then click Next to view the license terms. Read the license agreement, and if you agree to the terms, click Next to proceed.

TIP

Install the ConfigMgr Console on a Workstation for Everyday Use

Another option on the Available Setup Options screen is Install or upgrade an adminis-trator console. A common misconception for new ConfigMgr administrators is that you must run the Configuration Manager console on the site server. You can actually install it separately on a workstation operating system (such as Windows Vista or XP). While installing the console, you will select a site to manage. After installation, you can also attach to additional ConfigMgr primary sites and manage them all from a single con-sole, without needing explicit administrative rights to the server. Chapter 10 discusses using the ConfigMgr console.

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5. On the Installation Settings page displayed in Figure 8.3, you finally can start select-ing those decisions you reviewed in the "Pre-Installation" section of this chapter prior to starting the installation. Choose between custom settings and simple settings:

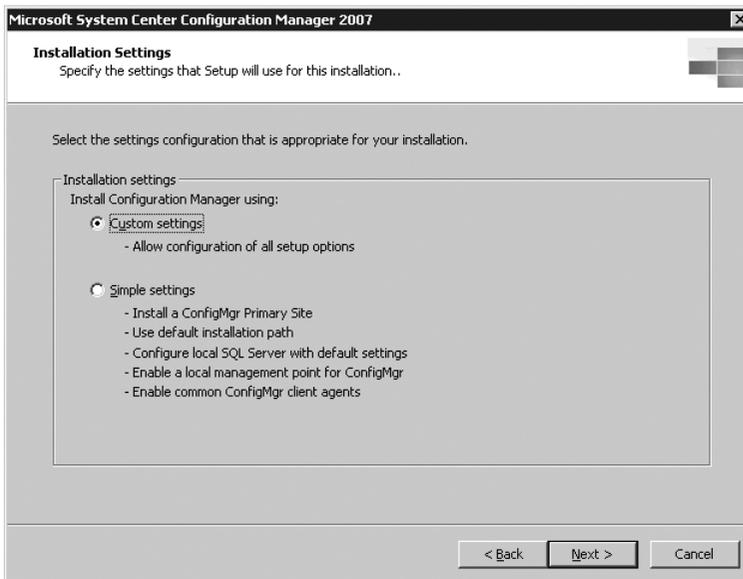FIGURE 8.3   Choosing to install using custom or simple settings

▶ Custom settings allow you to specify the installation path, configure individual component settings and client agents, port settings, and more.

▶ Simple settings are most useful in a test environment, but the authors recommend using custom settings so you are more aware of the configuration options and the process required for production deployment.

Choose the Custom settings option and click Next to continue.

6. On the Site Type page shown in Figure 8.4, select Primary site. Because you are installing your first site, this will also be your central site.

7. After you specify the site type, the wizard asks you to participate in the Customer Experience Improvement Program. Review the documentation at http://technet. microsoft.com/en-us/library/bb693975.aspx and be familiar with your corporate policies. Then choose whether to participate.

Joining the Customer Experience Improvement Program can help the Configuration Manager development team understand your pain points in Configuration Manager. You can change this option after installation by using the Help menu in the ConfigMgr console.

8. Specify the product key for your Configuration Manager installation. Enter a valid product key and then click Next to continue.

9. On the Destination Folder page, select the installation directory to install the software.

10. On the Site Settings page shown in Figure 8.5, enter the three-character site code, along with a site name (or description). Use those three characters wisely, because
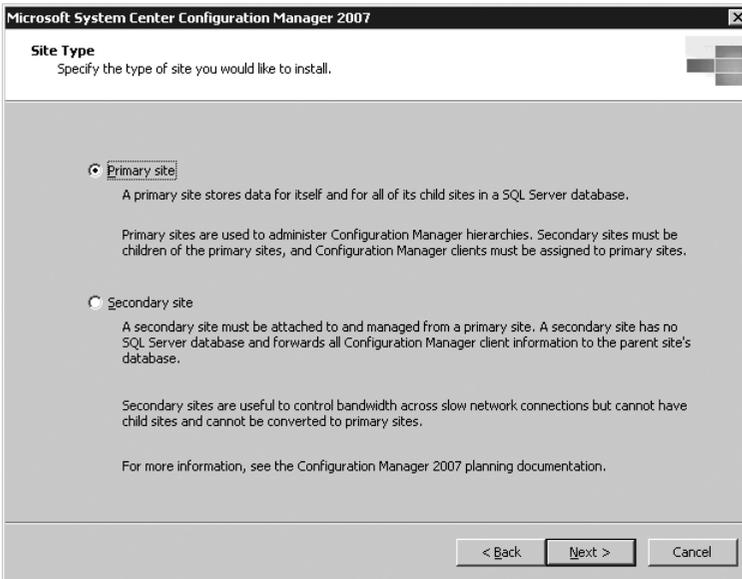
FIGURE 8.4   Specifying a site type

you will be unable to change the site code or the site name after installation completes. Figure 8.5 uses the code **CEN** and the name **CENTRAL SITE**.
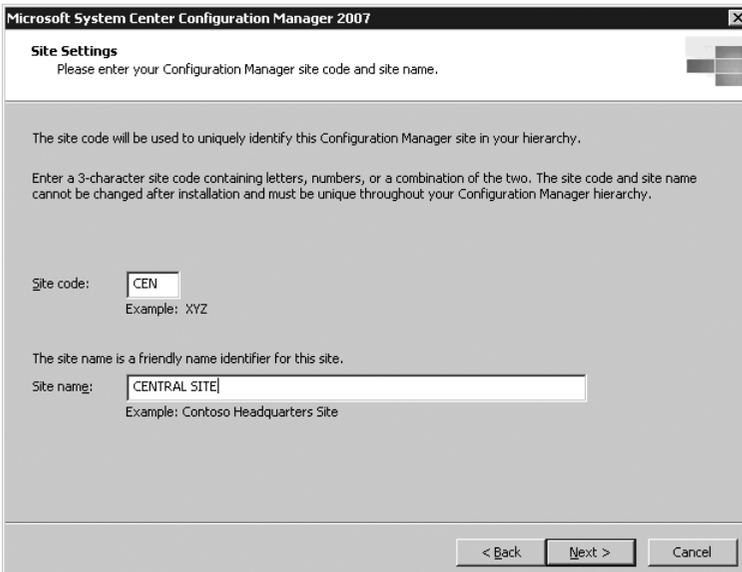

FIGURE 8.5   The Site Settings page

11. On the next page, the wizard asks you to specify the desired site mode. As discussed previously in Chapter 6, be sure to make your selection wisely. If you choose to "go native" right now, have your signed security certificate ready to import.

    If you will be supporting SMS 2003 clients or Windows 2000 systems in this site, the site will need to use mixed mode. Mixed mode is also required if your site has a parent site configured for mixed mode.

    It is recommended you install the first site in mixed mode (although you can always switch back and forth; see http://technet.microsoft.com/en-us/library/bb693556.aspx for details). After completing installation and confirming everything is working properly, migrate the site to native mode. For this sample installation, select mixed mode for now. The "Preparing for Native Mode" and "Enabling Native Mode" sections of this chapter give an example of configuring a site in native mode.
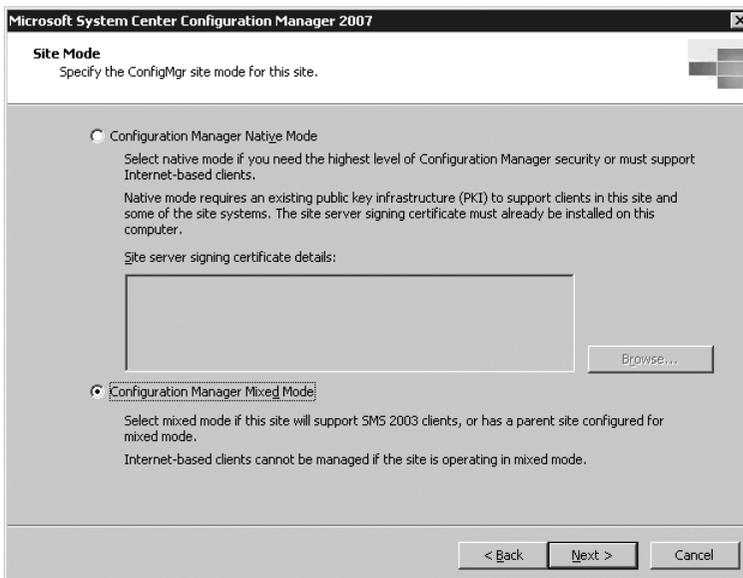

FIGURE 8.6   Specifying the site mode

12. You are now ready to enable client agents for your site. As shown in Figure 8.7, enabling client agents is as simple as checking a box. With the exception of Network Access Protection, all client agents are enabled by default.

13. On the Database Server page (shown in Figure 8.8), identify the SQL Server computer name and instance, and specify the ConfigMgr site database name. If the database name does not exist, the Configuration Manager setup program will create a new database if SQL Server is installed on the local system.

    If you specified SQL on a remote server, you must first create the database manually and add the machine account of the primary site server to the local Administrators group of the remote SQL server. Also during installation, the user account that is
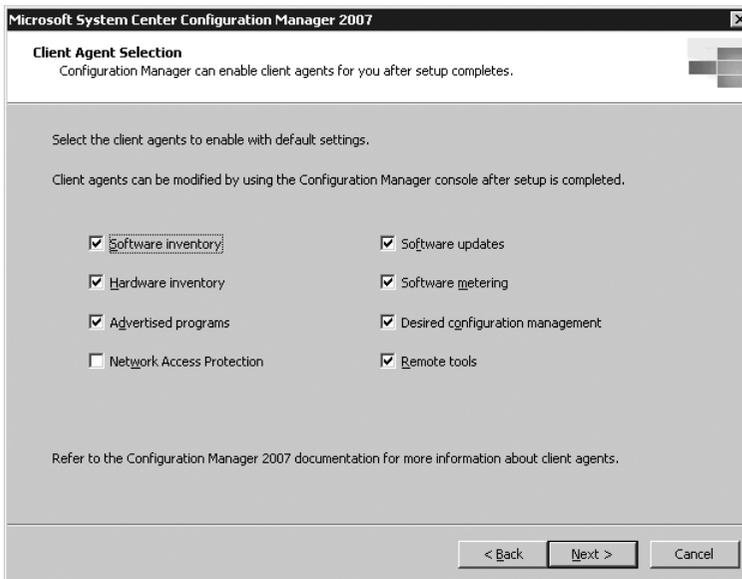
FIGURE 8.7   The Client Agent Selection page

running the ConfigMgr install must have administrative rights on the SQL server, or be assigned the sysadmin SQL Server role on the remote SQL server. Microsoft provides detailed documentation on installing ConfigMgr with a remote SQL Server at http://technet.microsoft.com/en-us/library/bb693554.aspx.

To specify a remote SQL database, simply enter the NetBIOS name of the remote SQL server and ensure that both you (as the installer) and the ConfigMgr site server have administrative rights to the SQL Server computer for installation and configuration.

Figure 8.8 shows the Database Server page with the name of the database server and the (default) site database name specified. The database will be installed on the default instance of the Bluebonnet central site server. If you want to use a named instance, simply enter it using the format specified in Figure 8.8.

TIP

Multiple Primary Sites—Use a Consistent Database Name

You may encounter a situation where it is necessary to modify your site database configuration. If you have multiple primary sites (which means you have multiple site databases, because each primary site has its own database), you may want to consider changing the database name to a consistent name (for example, "ConfigMgr"). Because using the default site database name results in a unique name for each database on each site, as shown in Figure 8.8, if you need to run a SQL script on each of your databases, you may have to change the script for each site. Using a consistent database name for all sites provides additional opportunities to automate configuration and maintenance changes.
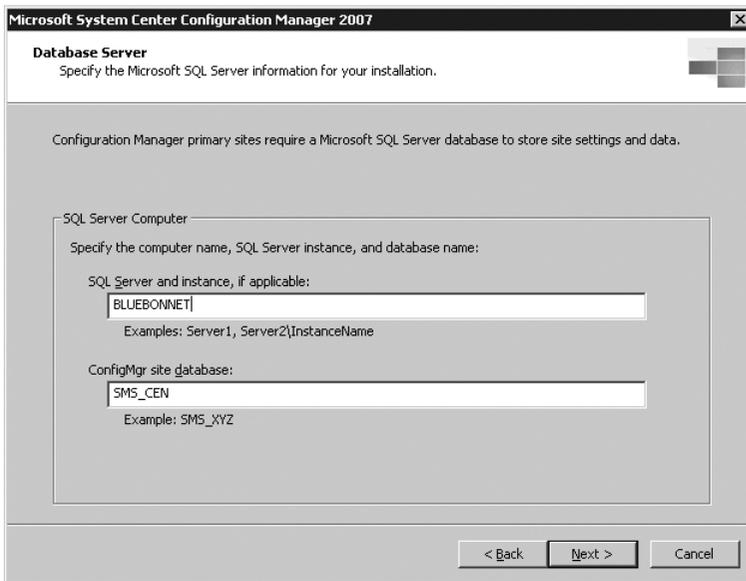
FIGURE 8.8   Specifying the database server and instance

14. The next page of the setup wizard is the SMS Provider Settings page. Specify the NetBIOS name of the server to install the SMS provider.

   The SMS provider is your communication method between the ConfigMgr console and the ConfigMgr database. It is also the supported avenue to ConfigMgr data using Windows Management Instrumentation (WMI). The SMS provider is typically installed on the ConfigMgr primary site. You can also install the SMS provider on the SQL Server system or an entirely separate server. Do not install the provider on a clustered SQL Server instance or a SQL Server containing databases for multiple sites, because Microsoft does not support the provider in these scenarios. For larger sites, you may consider offloading the provider to increase performance. Microsoft provides documentation on choosing the SMS provider installation location at http://technet.microsoft.com/en-us/library/bb694290.aspx.

15. On the Management Point page, choose to install a management point (MP) if you will be assigning clients to this site. All ConfigMgr clients require access to the management point to communicate with the ConfigMgr site. You can install the management point on the site server or a separate supported server operating system. Check the management point system requirements in Table 8.1 for additional information. You can create a new management point, or move an existing management point once site installation completes.

16. On the Port Settings page, select the default port (80) or use a custom port for client communications, provided you configured the site to use mixed mode. (If you're configuring for native mode, HTTPS settings are also available for configuration.)

17. On the Updated Prerequisite Components page, you have the option to automatically connect to the Internet and download all prerequisite components, or you can

specify an existing path to where you have previously downloaded the components. Setup will download several components, such as the Windows Update Agent, a WMI update, the Microsoft Remote Differential Compression Library, and a BITS update. Multiple supported languages are automatically downloaded as well.

TIP

How to Download Site Prerequisites Before Installation

Depending on your environment, you may not have access to the Internet from your ConfigMgr site, or you may have a slow Internet connection. Alternatively, you may be like us and prefer that everything you need is available before installing your site.

To download the prerequisites in advance, ensure you have Internet access, connect to your ConfigMgr installation media, and run the following command:

```
<Media Path>\SMSSETUP\BIN\I386\Setup.exe /DOWNLOAD <Destination>
```

Here, `<Destination>` is the location destination for your download—ensure this folder exists prior to running the setup command.

You can run this command from any supported Windows OS (Windows Vista, Windows XP, and so on). The download takes approximately 5 minutes with a high-speed Internet connection.

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18. The Updated Prerequisite Component Path page will do one of two things, depending on your selection on the Updated Prerequisite Components page:

    ▶ If you selected Check for updates and download newer versions to an alternate path, specify the path to download the files.

    ▶ If you selected The latest updates have already been downloaded to an alternate path, simply specify the path so the installation can use those files.

19. Review the Settings Summary page, displayed in Figure 8.9, to ensure you entered all configuration information accurately. You can reconfigure some of these settings later, but others (such as Site Code and Site Name) are permanent. Click Next, which automatically launches the prerequisite checker.

20. The Installation Prerequisite Check page verifies installation of all prerequisites, with results displayed in Figure 8.10. The complete list of setup prerequisite checks at http://technet.microsoft.com/en-us/library/bb680951.aspx provides detailed information of all ConfigMgr prerequisites. For any items that fail the check, double-click the individual result to see additional information. You should be able to remediate most problems while leaving the setup page open. If the server must be rebooted, you will need to restart the installation process from the beginning.

21. After correcting any items that failed prerequisite checks, click Run Check to rerun the prerequisite check. After all checks pass, click OK to begin the ConfigMgr site installation. During the installation process, review the installation log located at %*SystemRoot*%\ConfigMgrSetup.log. An installation progress page appears, as displayed in Figure 8.11.
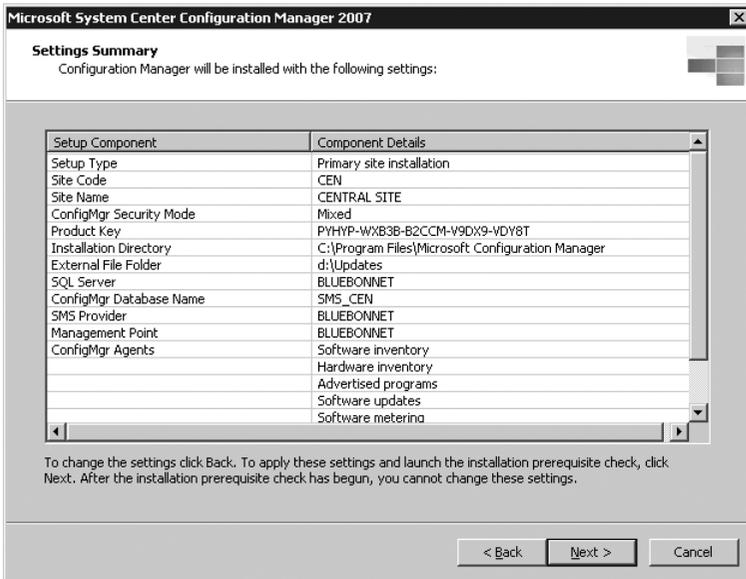
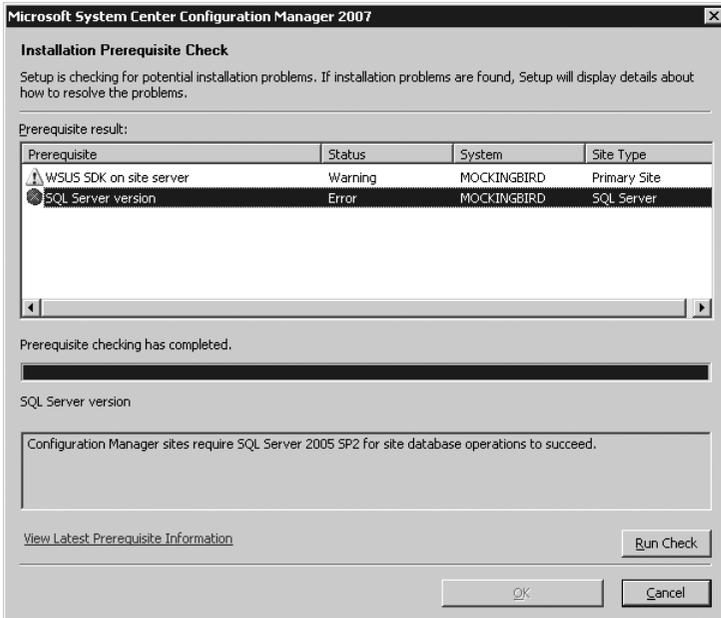FIGURE 8.9   The Settings Summary page

FIGURE 8.10   The Installation Prerequisite Check page, with failures
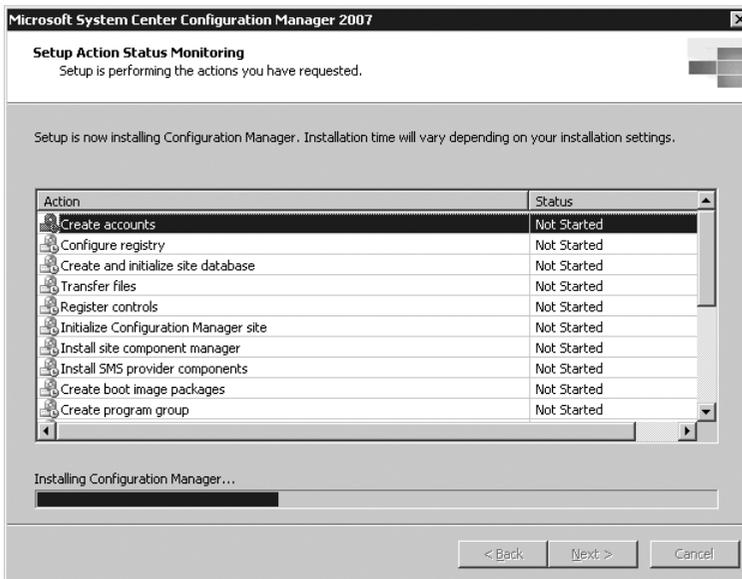
FIGURE 8.11   The Setup Action Status Monitoring page

22. The Completing the Microsoft System Center Configuration Manager 2007 Setup Wizard page appears at the end of the installation. If you haven't been watching the ConfigMgrSetup.log using SMS Trace (see the earlier note "Use SMS Trace to Monitor ConfigMgr Installation" regarding SMS Trace), click the View Log button to review the log, as shown in Figure 8.12.

TIP

Always Review ConfigMgrPrereq.log and ConfigMgrSetup.log

If you are like the authors of this book, you will be very excited when you see the message in Figure 8.12 that reads "Setup completed all operations successfully." Although there is a very good chance that this message is completely accurate, it is highly recommended you take the time to review the logs. Installations have occurred that appeared (and reported) to be successful, but were not completely successful due to problems such as improper SQL configuration or improper rights between servers. The message in Figure 8.12 gives a good indication of success, but the logs give the best indication. Browse *%SystemRoot%*\ConfigMgrPrereq.log and *%SystemRoot%*\ConfigMgrSetup.log to view additional installation information.

With the central site installed, you can use the same procedures to install other primary site servers. You would then join the sites together, as discussed in the "Attaching to Parent" section of this chapter. You will also want to upgrade your site servers to the
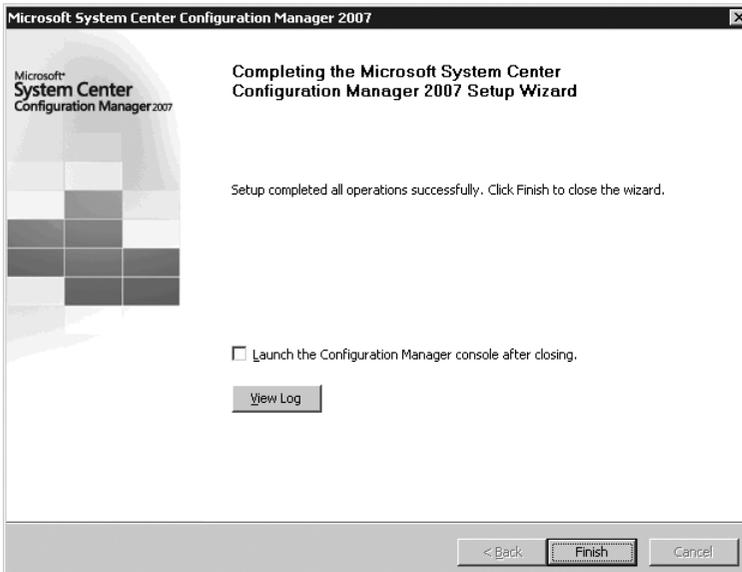
FIGURE 8.12   Completing the Microsoft System Center Configuration Manager 2007 Setup Wizard

current service pack level and ConfigMgr 2007 Release 2 (R2), as discussed in the following sections.

NOTE

Performing a Silent Installation of ConfigMgr

You can perform a silent/unattended installation of ConfigMgr. The article at http://technet.microsoft.com/en-us/library/bb693561.aspx provides information on unattended setups and includes additional links to sample script files and command-line parameters.

Installing a ConfigMgr Service Pack

Before installing a service pack, read the Readme file included with the service pack media. As always, ensure you have a proper backup before attempting the upgrade. Chapter 21, "Backup, Recovery, and Maintenance," contains information about configuring ConfigMgr scheduled backups.

NOTE

Disable All SQL Replication Before Performing the Site Upgrade

To upgrade successfully, you must first remove any existing database replication and subscriptions. Microsoft provides an article on disabling SQL Server database

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