

IBM Director 4.1



Remote Deployment Manager 4.11 Installation Guide

Contents

Figures	v
Preface	vii
How this book is organized	vii
Notices that are used in this book	vii
RDM publications	viii
RDM resources on the World Wide Web	viii
Chapter 1. Introducing Remote Deployment Manager	1
RDM components	1
RDM Server	1
RDM Console	1
RDM Deployment Server	2
RDM Deployment Server components	2
How RDM works	3
Hardware and software requirements	4
Management systems	4
Target systems	4
Supported operating systems	5
RDM Server	5
RDM Deployment Server	5
RDM Console	5
Chapter 2. Planning your RDM installation	7
Network requirements	7
Types of RDM installations	7
Single LAN environment	8
Routed network environment	9
WAN environment	12
Configuring routers, switches, and hubs	13
Requirements	13
Configuring routers to forward DHCP broadcast messages	13
Configuring switches and hubs	13
Configuring the DHCP service	14
Using the New Scope wizard to configure the DHCP service	14
Configuring DHCP option 60	19
Configuring DHCP option 3	19
Chapter 3. Installing and upgrading Remote Deployment Manager	21
Performing an attended installation of Remote Deployment Manager	21
Installing RDM Server	21
Installing RDM Console	26
Installing RDM Deployment Server	31
Performing an unattended installation of RDM	36
Upgrading RDM	37
Chapter 4. Configuring remote deployment servers	41
Starting IBM Director Console	41
Adding a remote deployment server	42
Configuring settings for a remote deployment server	44
Chapter 5. Modifying, repairing, and uninstalling RDM	47

Appendix A. Getting help and technical assistance	49
Before you call	49
Using the documentation	49
Getting help and information from the World Wide Web	49
Software service and support	50
Appendix B. Notices	51
Edition notice	52
Trademarks	52
Index	53

Figures

1. Single LAN environment	8
2. Routed network environment example one	9
3. Routed network environment example two	10
4. Routed network environment example three	11
5. WAN environment example	12
6. Configuring DHCP server: “DHCP” window	14
7. Configuring DHCP server: “Scope Name” window	15
8. Configuring DHCP server: “IP Address Range” window	15
9. Configuring DHCP server: “Add Exclusions” window	16
10. Configuring DHCP server: “Lease Duration” window	16
11. Configuring DHCP server: “Configure DHCP Options” window	17
12. Configuring DHCP server: “Router (Default Gateway)” window	17
13. Configuring DHCP server: “Domain Name and DNS Servers” window	18
14. Configuring DHCP server: “WINS Servers” window	18
15. Configuring DHCP server: “Activate Scope” window	19
16. Configuring DHCP option 3: “Predefined Options and Values” window	20
17. Configuring DHCP option 3: “IP Address Array Editor” window	20
18. Installing RDM Server: “Welcome to the InstallShield wizard” window	22
19. Installing RDM Server: “Customer Information” window	22
20. Installing RDM Server: “Choose Destination Location” window	23
21. Installing RDM Server: “Setup Type” window	24
22. Installing RDM Server: “Start Copying Files” window	24
23. Installing RDM Server: “D-Server Configuration” window	25
24. Installing RDM Server: “InstallShield Wizard Complete” window	26
25. Installing RDM Console: “Welcome to the InstallShield wizard” window	27
26. Installing RDM Console: “Customer Information” window	27
27. Installing RDM Console: “Choose Destination Location” window	28
28. Installing RDM Console: “Setup Type” window	29
29. Installing RDM Console: “Select Features” window	29
30. Installing RDM Console: “Start Copying Files” window	30
31. Installing RDM Console: “InstallShield Wizard Complete” window	30
32. Installing RDM Deployment Server: “Welcome to the InstallShield wizard” window	31
33. Installing RDM Deployment Server: “Customer Information” window	32
34. Installing RDM Deployment Server: “Choose Destination Location” window	32
35. Installing RDM Deployment Server: “Setup Type” window	33
36. Installing RDM Deployment Server: “Select Features” window	33
37. Installing RDM Deployment Server: “Start Copying Files” window	34
38. Installing RDM Deployment Server: “D-Server Configuration” window	35
39. Installing RDM Deployment Server: “InstallShield Wizard Complete” window	36
40. Upgrading RDM Server: “Welcome to the InstallShield wizard” window	38
41. Upgrading RDM Server: “InstallShield Wizard Complete” window	39
42. “IBM Director Login” window	41
43. “IBM Director Console” window	42
44. Adding a remote deployment server: “Deployment Server Management Options” window	43
45. Adding a remote deployment server: “Add D-Server” window	43
46. Configuring settings for a remote deployment server: “Connections” page	44
47. Configuring settings for a remote deployment server: “Replication” page	45
48. Configuring settings for a remote deployment server: “Subnets” page	46
49. Configuring settings for a remote deployment server: “Add Subnet” window	46
50. Modifying RDM installation: “Welcome” window	47

Preface

This book provides information about installing and configuring IBM® Remote Deployment Manager (RDM) 4.11. In addition to presenting an overview of RDM and its requirements, it covers the following topics:

- Planning an RDM environment
- Installing RDM
- Configuring remote deployment servers
- Modifying, repairing, and uninstalling RDM

How this book is organized

Chapter 1, “Introducing Remote Deployment Manager”, on page 1 contains an overview of RDM and its components. It also includes information about the hardware and software required for an RDM installation.

Chapter 2, “Planning your RDM installation”, on page 7 contains information about network requirements and types of RDM installations. It also contains information about configuring routers, switches, and hubs, as well as procedures for configuring DHCP service running on Microsoft® Windows® 2000 Server or Windows 2000 Advanced Server.

Chapter 3, “Installing and upgrading Remote Deployment Manager”, on page 21 contains instructions for installing or upgrading RDM Server, RDM Console, and RDM Deployment Server.

Chapter 4, “Configuring remote deployment servers”, on page 41 contains information about adding a remote deployment server to the RDM database and configuring its settings.

Chapter 5, “Modifying, repairing, and uninstalling RDM”, on page 47 contains information about modifying, repairing, and uninstalling RDM.

Appendix A, “Getting help and technical assistance”, on page 49 contains information about getting help and technical assistance.

Appendix B, “Notices”, on page 51 contains product notices and trademarks.

Notices that are used in this book

This book contains the following notices designed to highlight key information:

- **Notes:** These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or difficult situations.
- **Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage could occur.

RDM publications

The following publications are available in Portable Document Format (PDF) on the *IBM Remote Deployment Manager version 4.11* CD in the docs directory:

- *Remote Deployment Manager 4.11 Getting Started*
- *Remote Deployment Manager 4.11 Operations Guide*
- *Remote Deployment Manager 4.11 Compatibility and Configuration Guide*

You can also obtain these publications from the IBM Support Web site at <http://www.ibm.com/pc/support>.

The *Remote Deployment Manager 4.11 Compatibility and Configuration Guide* lists hardware that IBM has tested with RDM. This publication is updated periodically; check the RDM Web page for the latest version.

RDM resources on the World Wide Web

The following Web pages provide resources for understanding, using, and troubleshooting RDM and systems-management tools.

IBM Remote Deployment Manager 4.11

http://www.ibm.com/servers/eserver/xseries/systems_management/rdm.html

From this Web page, you can download the latest version of the *Remote Deployment Manager 4.11 Compatibility and Configuration Guide*.

IBM Support page

<http://www.ibm.com/pc/support/>

This is the IBM Support Web site for IBM hardware and systems-management software. For systems-management software support, click **Systems management**.

IBM Online Assistant and e-Mail

<http://www.ibm.com/pc/qtechinfo/MIGR-4Z7HJX.html>

This Web page offers a quick resource to help solve your technical questions. Follow the instructions on this page to find additional solutions for your systems-management tools.

If you do not find an acceptable solution, or if you just want to bypass looking for your own solution, you can submit an electronic question. From any page within the IBM Online Assistant, click **None of the above** to submit an electronic inquiry. Response times vary between 24 and 48 hours.

IBM Systems Management Software: Download/Electronic Support page

http://www.ibm.com/pc/us/eserver/xseries/systems_management/dwnl.html

Use this Web page to download IBM systems-management software, including IBM Director.

IBM xSeries® Systems Management page

http://www.ibm.com/pc/ww/eserver/xseries/systems_management/index.html

This Web page presents an overview of IBM systems management and IBM Director. Click **IBM Director 4.1** for the latest information and publications.

IBM Universal Manageability page

<http://www.ibm.com/pc/us/pc/um/index.html>

This Web page links to an IBM portfolio of advanced management tools that help lower costs and increase availability throughout the life cycle of a product.

IBM ServerProven® page

<http://www.ibm.com/pc/us/compat/index.html>

This Web page provides information about IBM hardware compatibility with IBM systems-management software.

Chapter 1. Introducing Remote Deployment Manager

IBM Remote Deployment Manager (RDM) 4.11 is a powerful and flexible IBM Director extension. When installed in an IBM Director environment, RDM adds tools for configuring, deploying, and retiring systems. Using RDM, you can accomplish the following deployment tasks:

- Update system firmware
- Modify configuration settings
- Install operating systems and applications
- Backup and recover primary partitions
- Securely erase data from disks

RDM integrates seamlessly with IBM Director. You can access management and deployment functions through the same administrative console; you can perform comprehensive systems management using either a drag-and-drop action or a single click.

RDM components

The RDM software has three components: RDM Server, RDM Deployment Server (also known as D-Server), and RDM Console.

RDM Server

RDM Server is the main component of Remote Deployment Manager; it contains the application logic and stores data in a Microsoft Jet database.

RDM Server must be installed on the *management* server, the server on which IBM Director is installed. When you install RDM Server, RDM Console and RDM Deployment Server are installed automatically.

RDM Server can be installed on the following operating systems:

- Windows 2000 Server (Service Pack 3 or later required)
- Windows 2000 Advanced Server (Service Pack 3 or later required)

RDM Console

RDM Console is the graphical user interface (GUI) component of Remote Deployment Manager. When installed on a *management console*, a system on which IBM Director Console is installed, RDM Console adds RDM tasks to IBM Director Console.

RDM Console must be installed on any management console from which a system administrator will remotely access the management server and perform RDM tasks.

RDM Console can be installed on the following operating systems:

- Windows 2000 Professional (Service Pack 3 or later required)
- Windows 2000 Server (Service Pack 3 or later required)
- Windows 2000 Advanced Server (Service Pack 3 or later required)
- Windows XP Professional (Service Pack 1 or later required)

RDM Deployment Server

RDM Deployment Server is a file server application that delivers programs and data files to target systems.

A remote system on which RDM Deployment Server is installed is called a *deployment server*. If your environment includes several local area networks (LANs), you might want to have several deployment servers.

The instance of RDM Deployment Server that is installed on the management server contains the *master repository*; it contains the master copy of all the files used by RDM. Deployment servers contain a *distributed repository*, a subset of the master repository.

RDM Deployment Server can be installed on the following operating systems:

- Windows 2000 Professional (Service Pack 3 or later required)
- Windows 2000 Server (Service Pack 3 or later required)
- Windows 2000 Advanced Server (Service Pack 3 or later required)
- Windows XP Professional (Service Pack 1 or later required)
- Windows Server 2003, Standard Edition
- Windows Server 2003, Enterprise Edition
- Windows Server 2003, Web Edition

RDM Deployment Server components

RDM Deployment Server includes several subcomponents:

Preboot Execution Environment (PXE) service

The RDM PXE service supports the PXE protocol, which enables one to remotely start and configure computers that do not have an operating system installed. The RDM PXE service contains two internal components: Proxy Dynamic Host Configuration Protocol (DHCP) service and Boot service. The Proxy DHCP service directs the target system to the Boot service, which provides the target system with the fully qualified name of the appropriate network bootstrap program.

Multicast Trivial File Transfer Protocol (MTFTP) service

The MTFTP service transfers files between RDM Deployment Server and target systems by using either Trivial File Transfer Protocol (TFTP) or MTFTP. RDM uses MTFTP to provide native operating-system images and file up to 2 GB in size; it uses TFTP for the DOS or Linux images, bootstrap images, and other small files.

RDM repository

The RDM repository contains the files that RDM uses to run tasks on the target systems. These include PXE bootstrap programs, DOS or Linux system environments, and other image files, for example, Windows installation images, Linux installation images, and system firmware diskette images.

PowerQuest unicast image server

The PowerQuest unicast image server transfers PowerQuest-formatted images between RDM Deployment Server and target systems using a PowerQuest proprietary protocol. The PowerQuest images are used with the Power Restore task to backup and restore boot partitions and master boot records; they are used to perform cloned installations of operating systems also.

RDM D-Server service

The RDM D-Server service relays communications between target systems and RDM Server.

How RDM works

How RDM works includes the following key components:

- Adding target systems to the network
- Discovering a PXE-enabled target system
- Performing tasks on the target system

To use RDM, you first must connect the target system to the network and power it on. (The network must contain a running DHCP server.) Then, you must ensure that the system is configured to start from the network and that Wake on LAN[®] is enabled. When the system starts, it broadcasts a DHCPDISCOVER request and is assigned an IP address by the DHCP service.

RDM automatically listens on the LAN for new PXE-enabled systems that start (boot) from the network. When RDM discovers such a system, it queries the system for hardware information including the following items:

- Machine model and type
- Serial number
- Media access control (MAC) address
- Network interface card (NIC)
- BIOS version

This information is stored in the IBM Director database. RDM then assigns a default name to the system, in the form of *MachinetypeMachinemodel-Serialnumber*, and the new system is displayed in IBM Director Console. You can now perform tasks on the target system.

The following steps occur when you start a task on a target system:

1. RDM Deployment Server sends a packet to the target system. (This packet contains the MAC address of the target system NIC; if the NIC supports Wake on LAN, it can power on the system.)
2. The target system powers on and starts (boots) from the network, where it receives an IP address from the DHCP service and the fully qualified name of an RDM bootstrap loader program from RDM Deployment Server.
3. The target system downloads and runs the RDM bootstrap loader program. The RDM bootstrap loader program queries RDM Deployment Server, asking for instructions, and RDM Deployment Server relays the message to RDM Server.
4. If there is no RDM task to be performed on the target system, RDM Server instructs the system to start from the hard disk drive.
5. If there are RDM tasks scheduled to be performed on the target system, RDM Server sends the fully qualified name of a DOS or Linux system environment to the system.
6. The RDM bootstrap loader program downloads the system environment from the RDM Repository and installs it on virtual diskette drive A.
7. The target system starts (boots) from the virtual diskette drive A. The `autoexec.bat` file automatically starts an RDM program, `rdagent.exe`.

8. The rdagent.exe program then runs in a loop, requesting commands from the task command list, running the command, and reporting the success of the operation to RDM Server.

Hardware and software requirements

This section contains information about system requirements for both management systems and target systems.

Management systems

The following table lists the software, RAM, and hard disk space needed by the RDM software components.

Table 1. Minimum hardware and software requirements for RDM

	RDM Server	RDM Deployment Server	RDM Console
IBM Director software	IBM Director Server 4.1 or later	None	IBM Director Console 4.1 or later
Memory (RAM)	1024 MB	1024 MB	256 MB
Temporary disk space on system partition	200 MB	200 MB	200 MB
Disk space for RDM programs	300 MB	300 MB	30 MB
Disk space for RDM repository	2048 MB	2048 MB	Not applicable
Network adapter	At least 1 Ethernet or Token Ring adapter, with TCP/IP connectivity	At least 1 Ethernet or Token Ring adapter, with TCP/IP connectivity	At least 1 Ethernet or Token Ring adapter, with TCP/IP connectivity

The actual disk space needed for RDM repository will depend on the number and size of the image files that it stores.

A DHCP service must be installed on the network.

Target systems

Target systems must contain the following hardware:

- A supported 32-bit Intel® Pentium® (or equivalent) processor that complies with the Wired for Management (WfM), version 2.0, specification
- An Ethernet or Token Ring network adapter that supports one of the following protocols:
 - Preboot Execution Environment (PXE) 1.0
 - PXE 2.0
 - PXE 2.1

Notes:

1. You cannot deploy Linux to target systems that contain network adapters that support only PXE 1.0.
2. Some systems do not support the PXE protocols completely; some RDM functions fail on specific systems. See the *Remote Deployment Manager 4.11 Compatibility and Configuration Guide* for system specific information.

Supported operating systems

This section lists the operating systems upon which RDM 4.11 can be installed.

RDM Server

RDM Server is supported on the following operating systems:

- Windows 2000 Server (Service Pack 3 or later required)
- Windows 2000 Advanced Server (Service Pack 3 or later required)

RDM Deployment Server

RDM Deployment Server is supported on the following operating systems:

- Windows 2000 Professional (Service Pack 3 or later required)
- Windows 2000 Server (Service Pack 3 or later required)
- Windows 2000 Advanced Server (Service Pack 3 or later required)
- Windows XP Professional (Service Pack 1 or later required)
- Windows Server 2003, Standard Edition
- Windows Server 2003, Enterprise Edition
- Windows Server 2003, Web Edition

RDM Console

RDM Console is supported on the following operating systems:

- Windows 2000 Professional (Service Pack 3 or later required)
- Windows 2000 Server (Service Pack 3 or later required)
- Windows 2000 Advanced Server (Service Pack 3 or later required)
- Windows XP Professional (Service Pack 1 or later required)

Chapter 2. Planning your RDM installation

This chapter provides the information about the following topics:

- Network requirements
- Types of RDM installations
- Configuring routers, switches, and hubs
- Configuring a DHCP service to work with RDM

Network requirements

The following are the minimum conditions that an RDM environment must meet:

- A server with both IBM Director (version 4.1 or later) and RDM Server 4.11 installed.
- Routers, switches, and hubs must be properly configured.
- DHCP service must be installed and properly configured. Option 3 must be configured. If the DHCP service is running on the management server, option 60 must be configured.
- The target systems must be PXE-enabled. All IBM systems are shipped configured for PXE network boot. Non-IBM systems must be configured to start (boot) from the network before you can use RDM with them.

Types of RDM installations

There are two basic types of RDM installations:

- RDM Server is installed on a management server. There are no other RDM software components installed in the environment, except for RDM Console. (In any RDM environment, you can install as many instances of RDM Console as are needed to provide system administrators with remote access to the management server.)
- RDM Server is installed on a management server. RDM Deployment Server is installed on one or more deployment servers, each of which is located on another subnet.

Depending on the type of environment, different RDM software components must be installed and different options must be set on the DHCP service.

RDM can be installed in on a single LAN, in an environment with several subnets, or in a wide area network (WAN).

Single LAN environment

RDM is used on a single LAN. The LAN includes a DHCP server, a management server, one or more management consoles, and the target systems. DHCP option 3 is configured using the IP address of the management server.

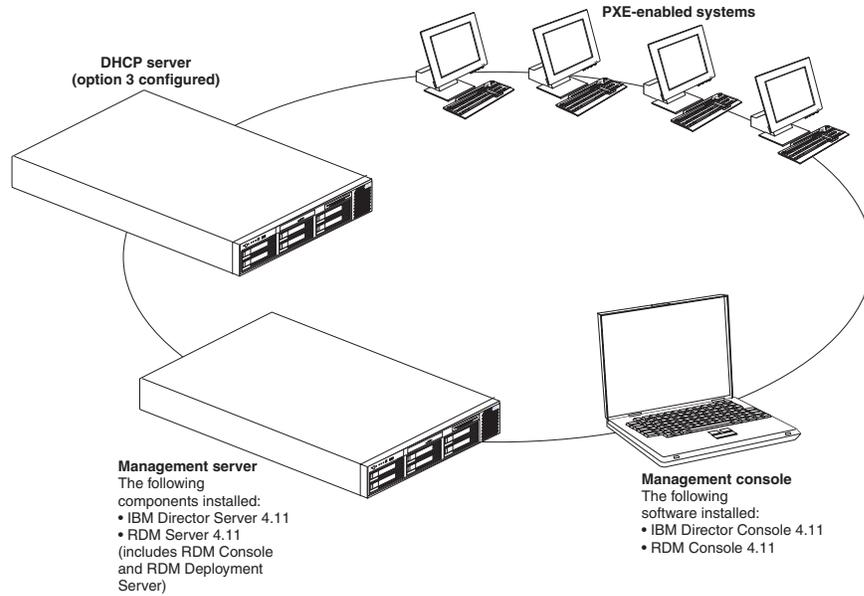


Figure 1. Single LAN environment

Routed network environment

This section includes illustrations of several ways that RDM can be configured in an environment that includes several subnets. In each example, the target systems start (boot) from the network either locally or through an IP router. The router must support BOOTP relay agent function, and DHCP option 3 must be configured using the IP address of the router.

In Figure 2, the environment includes a management server, one or more IP routers, and target systems. Because the DHCP service is on the management server, option 60 must be configured.

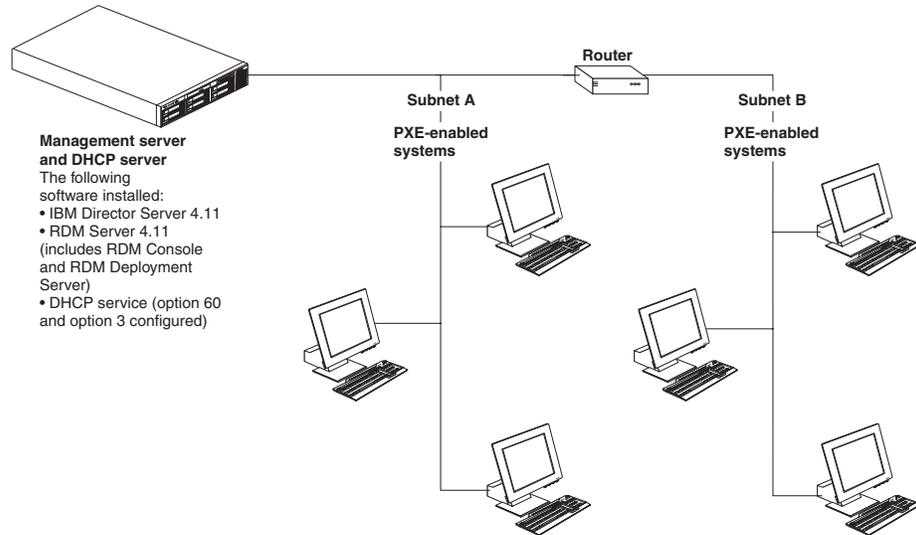


Figure 2. Routed network environment example one

In Figure 3, the environment includes a DHCP server, a management server, one or more routers, and target systems. Because the DHCP service is running on a separate server, option 60 must not be configured.

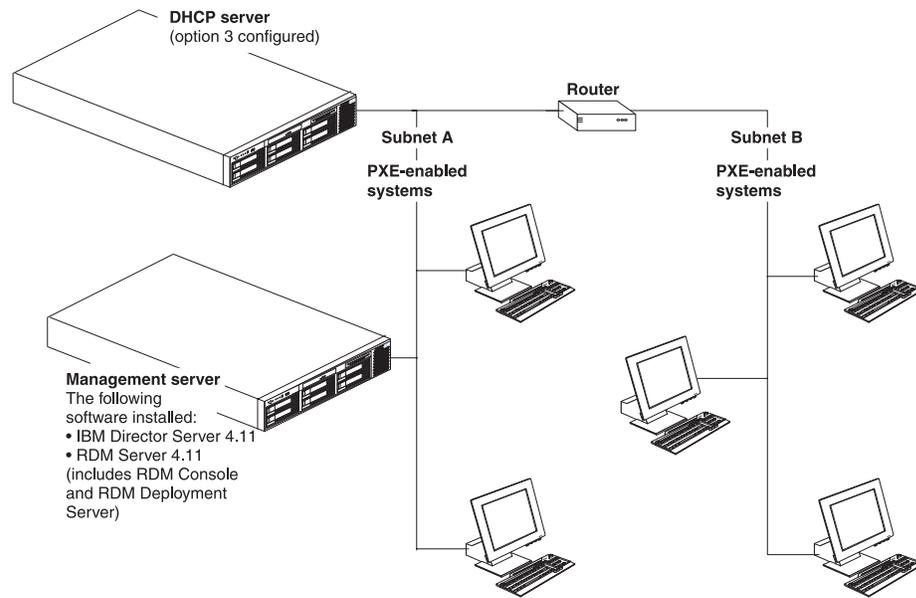


Figure 3. Routed network environment example two

In Figure 4, the environment includes a DHCP server, a management server, one or more routers, and target systems. Because the DHCP service and the management server are located on different servers, option 60 must not be configured.

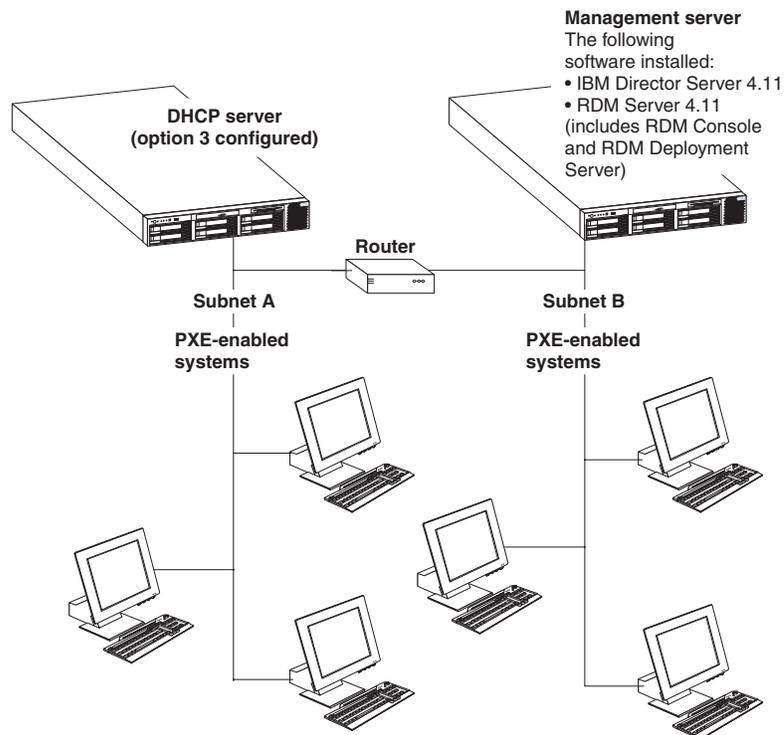


Figure 4. Routed network environment example three

WAN environment

RDM is used in a wide area network (WAN). The environment includes four subnets: Atlanta, Boston, Chicago, and New York.

RDM Server is installed on a server on the Chicago LAN (subnet B). To reduce the impact of network traffic and improve performance, RDM Remote Deployment Manager is installed on a server on each of the other subnets. This ensures that the files and data sent to the target systems are transmitted at LAN speed.

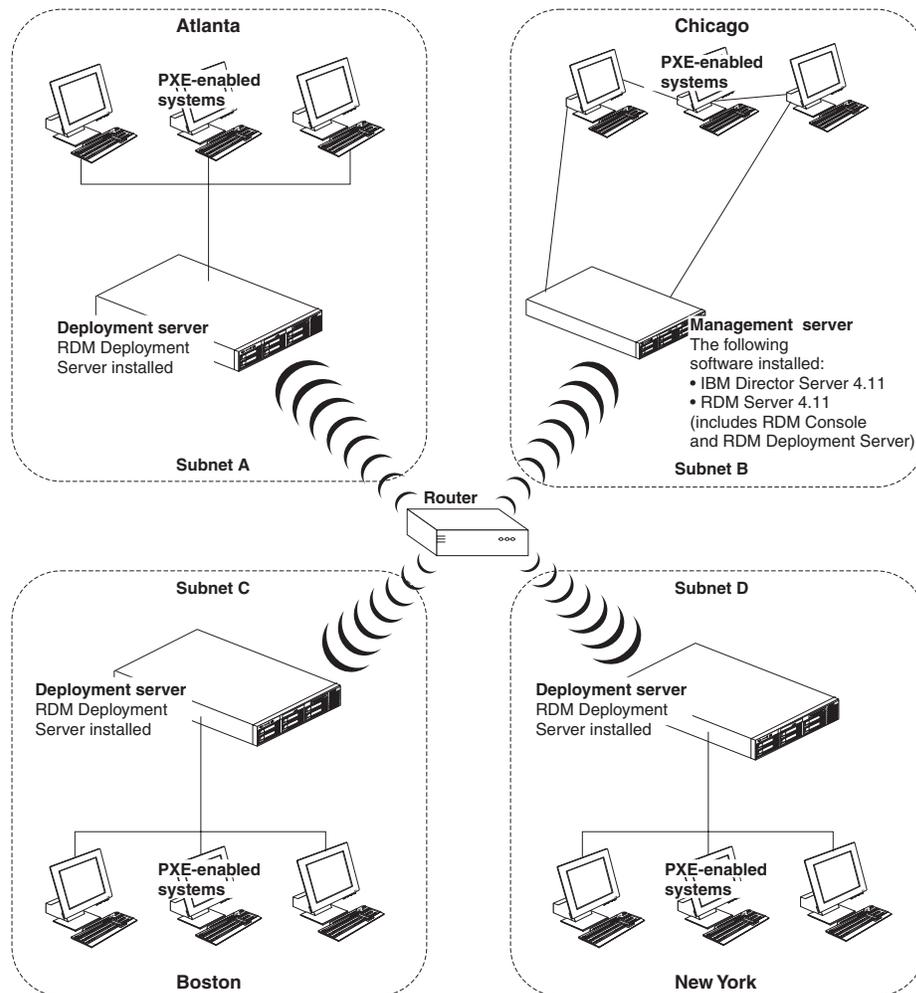


Figure 5. WAN environment example

For security reasons, network traffic is restricted between the remote sites (subnets A, C, and D) and the management server. The routers and firewalls must permit DHCP and HTTP messages to be transmitted between the remote deployment servers and the management server.

Configuring routers, switches, and hubs

This section includes information about configuring routers, switches, and hubs to work properly in an RDM environment.

Requirements

To use RDM in a routed environment, the following conditions must be met:

- The routers must support the following protocols:
 - Internet Control Message Protocol (ICMP)
 - Internet Group Message Protocol (IGMP)
 - Bootstrap Protocol (BOOTP)
- Spanning tree protocol must be disabled on ports to which target systems are connected.
- Subnet-directed broadcast forwarding must be enabled.
- Proxy Address Resolution Protocol (ARP) forwarding must be enabled.
- BOOTP/DHCP forwarding must be enabled. The BOOTP forwarding addresses must include the address of the management server. If DHCP service is not enabled on the management server, the BOOTP forwarding addresses must include at least one DHCP server. (A BOOTP forwarding address either can be the network address of the server or a static IP address.)
- The scope for a subnet that contains target system must have a correct router entry for the subnet.

If any of these conditions cannot be met, RDM cannot be used in the environment. See the documentation that came with your routers to check what features and protocols they support.

Configuring routers to forward DHCP broadcast messages

You must configure routers to forward DHCP broadcast messages to RDM Server. When a PXE-enabled target system first starts (boots) from the network, it sends out DHCPDISCOVER messages requesting an IP address and a boot file. This DHCPDISCOVER message is a UDP broadcast message and is not forwarded by a router unless DHCP broadcast messages are forwarded.

To configure a router to forward DHCP broadcast messages to RDM Server, do one of the following:

- (Cisco router) Type the IP helper-address configuration command on the router interface to which target systems are attached
- (IBM router) Type the enable bootp forwarding configuration command.

See the documentation that came with your router for more information.

Configuring switches and hubs

You must disable spanning tree protocol (STP) on all ports connected to target systems. It is not necessary to disable STP on ports connected to switches or routers.

Enable ICMP and IGMP protocols, as well as broadcast forwarding, on all switches and routers. If broadcast forwarding is not enabled, RDM performance is impaired.

Configuring the DHCP service

To use RDM, you must have a DHCP service running on a subnet connected to the management server. The DHCP service can be running on the management server or it can be enabled on another server.

The DHCP service must be configured properly. The following conditions must be met:

- Scopes must be defined for each subnet that contains target systems.
- Option 3 must be configured.
- (If the DHCP service is running on the management server only) Option 60 must be configured. You can configure option 60 during the installation of RDM Server or from a command-line prompt.

This section includes instructions for configuring a DHCP service running on Windows 2000 Server or Windows 2000 Advanced Server.

Using the New Scope wizard to configure the DHCP service

You can run the New Scope wizard to define scopes and set option 3. Then, if necessary, you can configure option 60 by running the PXEDHCP.BAT program.

Complete the following steps to use the New Scope wizard to configure the DHCP service:

1. Click **Start** → **Programs** → **Administrative Tools** → **DHCP**. The “DHCP” window opens.
2. Right-click the server node and click **New Scope**

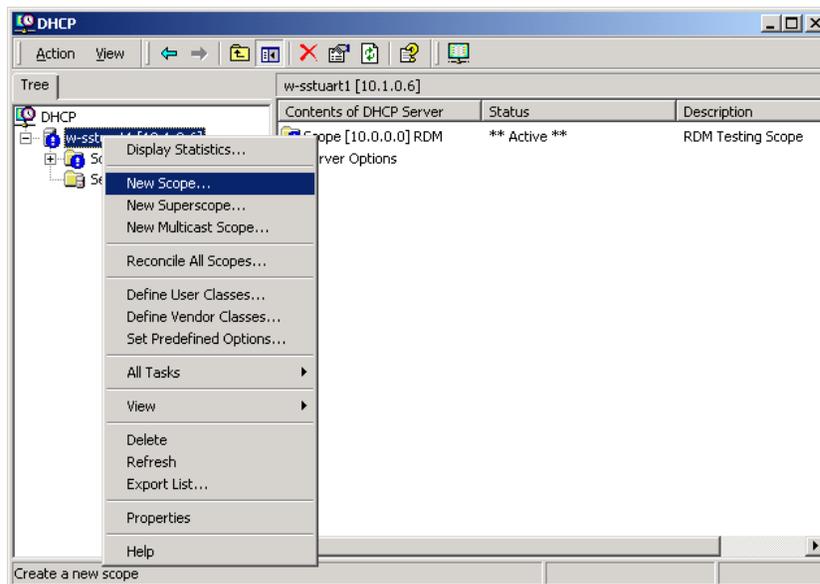


Figure 6. Configuring DHCP server: “DHCP” window

The New Scope wizard starts and the “New Scope Wizard” window opens.

3. Click **Next**. The “Scope Name” window opens.

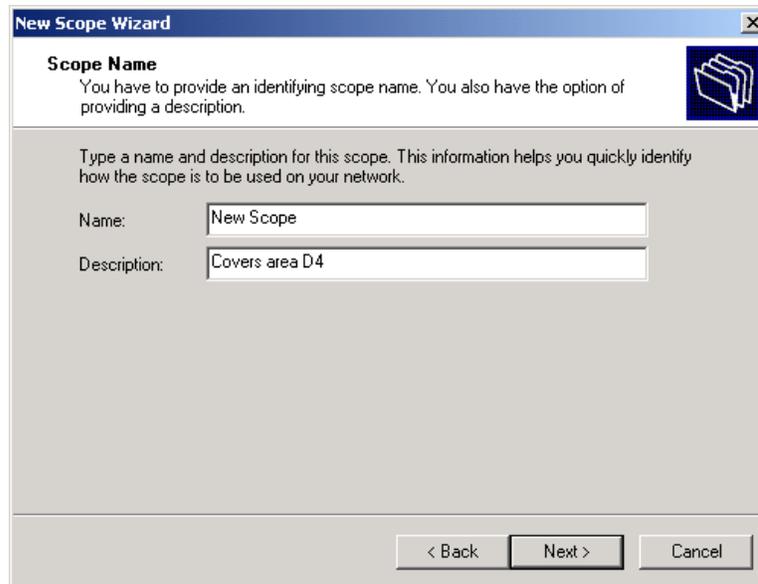


Figure 7. Configuring DHCP server: "Scope Name" window

4. In the entry fields, type a name and an optional description; then, click **Next**. The "IP Address Range" window opens.

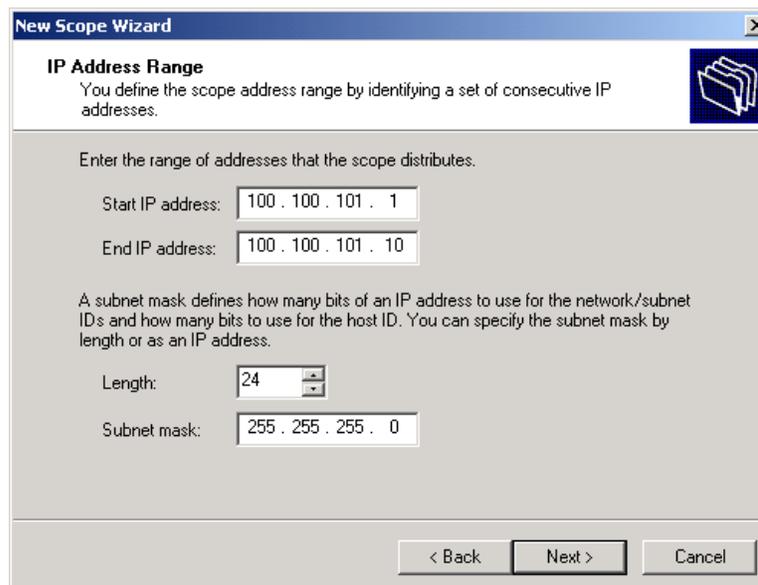


Figure 8. Configuring DHCP server: "IP Address Range" window

5. Define the scope.
 - a. In the **Start IP address** field, type the starting IP address of the range.
 - b. In the **End IP address** field, type the ending IP address of the range.
 - c. Specify the subnet mask by either typing a length in the **Length** field or typing an IP address in the **Subnet mask** field.
6. Click **Next**. The "Add Exclusions" window opens.

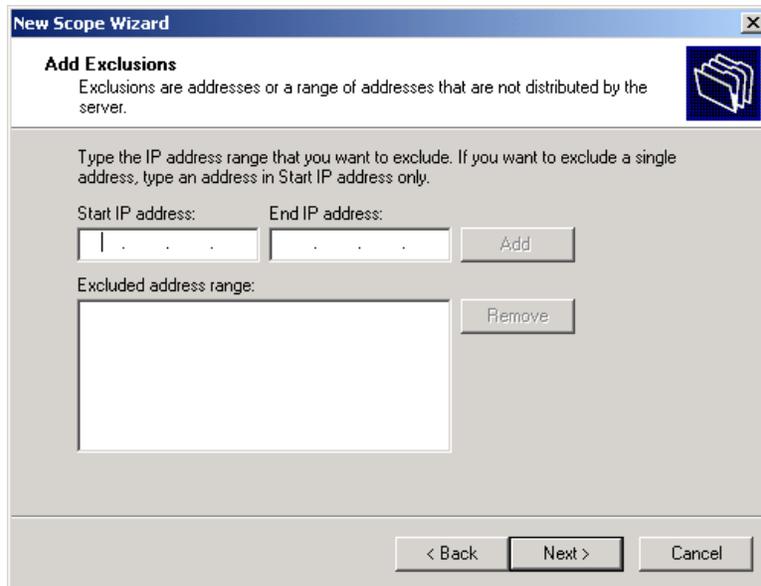


Figure 9. Configuring DHCP server: “Add Exclusions” window

7. Type the IP address range that you want to exclude; then, click **Next**. The “Lease Duration” window opens.

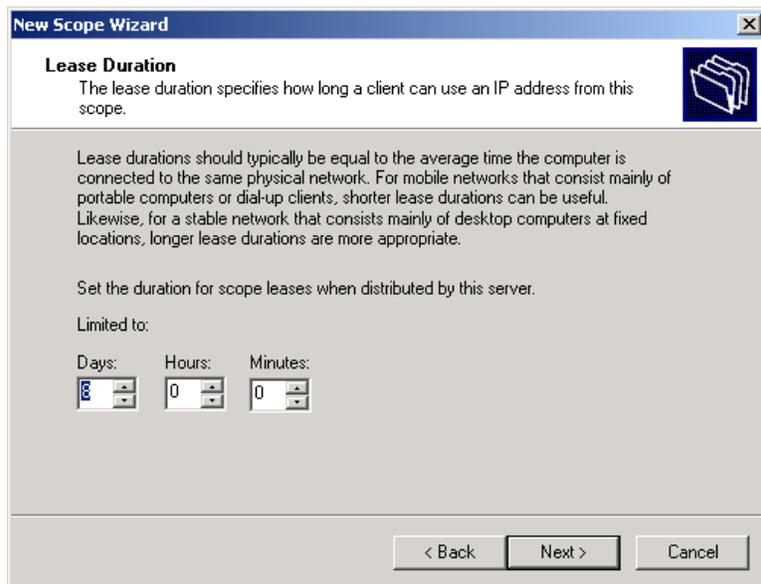


Figure 10. Configuring DHCP server: “Lease Duration” window

8. Specify the lease duration; then, click **Next**. The “Configure DHCP Options” window opens.

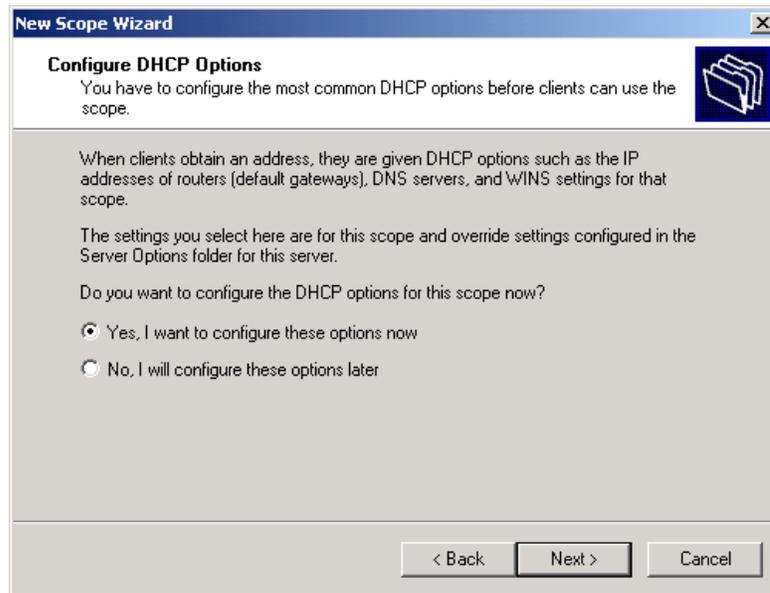


Figure 11. Configuring DHCP server: “Configure DHCP Options” window

9. Select **Yes, I want to configure these options now**; then, click **Next**. The “Router (Default Gateway)” window opens.

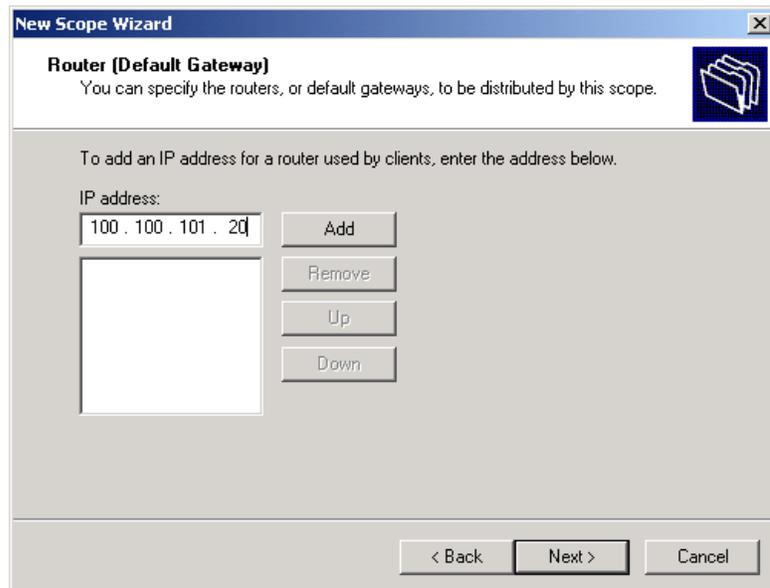


Figure 12. Configuring DHCP server: “Router (Default Gateway)” window

10. In the **IP address** field, if the DHCP service, management server, and all target systems are located on an isolated subnet, type the IP address of the management server. Otherwise, type the IP address of the router in the **IP address** field. Click **Add**.
11. Click **Next**. The “Domain Name and DNS Servers” window opens.

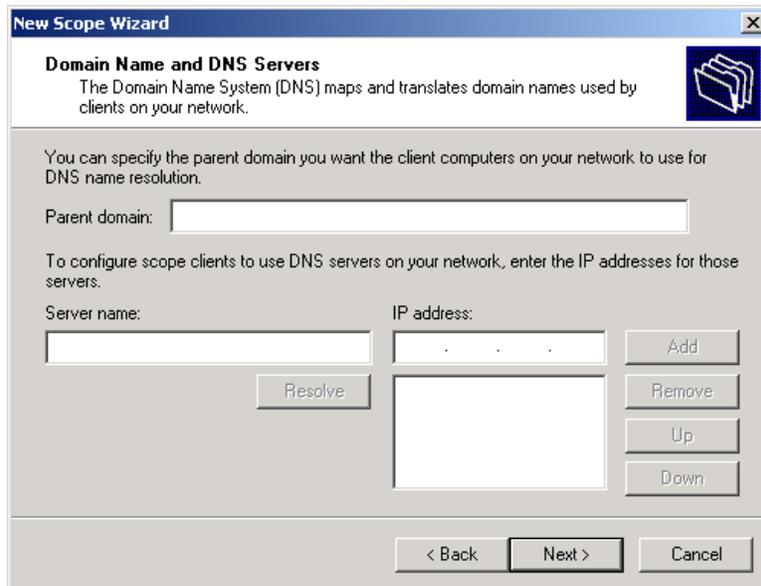


Figure 13. Configuring DHCP server: “Domain Name and DNS Servers” window

12. (Optional) Type the domain name information; then, click **Next**. The “WINS Servers” window opens.

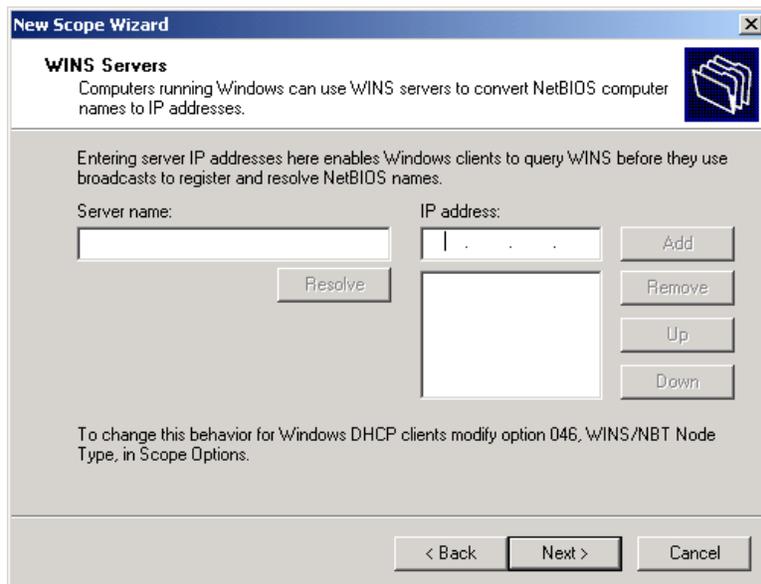


Figure 14. Configuring DHCP server: “WINS Servers” window

13. (Optional) Type the WINS server information, and then click **Next**. The “Activate Scope” window opens.

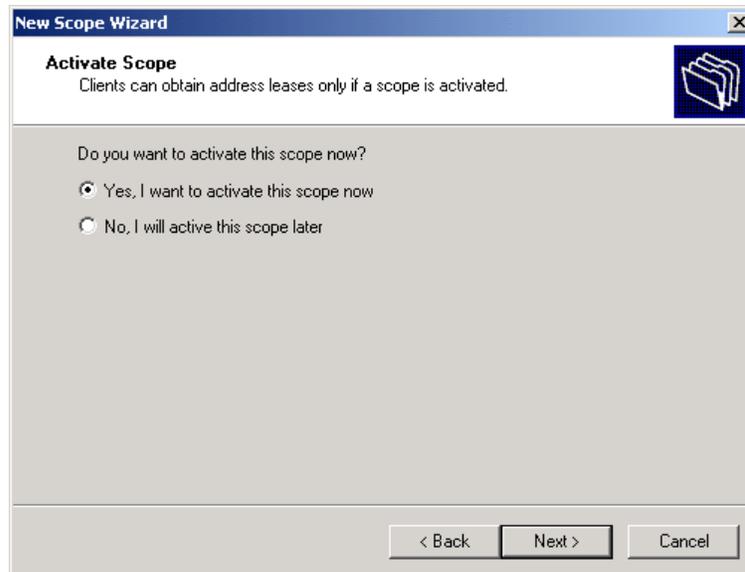


Figure 15. Configuring DHCP server: “Activate Scope” window

14. Select **Yes, I want to activate this scope now**; then, click **Next**. The “Completing the New Scope Wizard” window opens.
15. Click **Finish**.
16. (If the DHCP service is enabled on the management server only) Configure option 60. See “Configuring DHCP option 60” for more information.

Configuring DHCP option 60

You must configure option 60 if the DHCP service is running on the management server. You either can configure option 60 during the installation of RDM Server or by running the PXEDHCP.BAT program.

Complete the following steps to configure option 60 using the PXEDHCP.BAT program:

1. From a command prompt, change to the RDM\bin directory.
2. Type the following command and press Enter:
pxedhcp L

Configuring DHCP option 3

Complete the following steps to configure DHCP option 3 on a server running Windows 2000 Server or Advanced Server:

1. Click **Start** → **Programs** → **Administrative Tools** → **DHCP**. The “DHCP” window opens.
2. Right-click the server node and click **Set Predefined Options**. The “Predefined Options and Values” window opens.

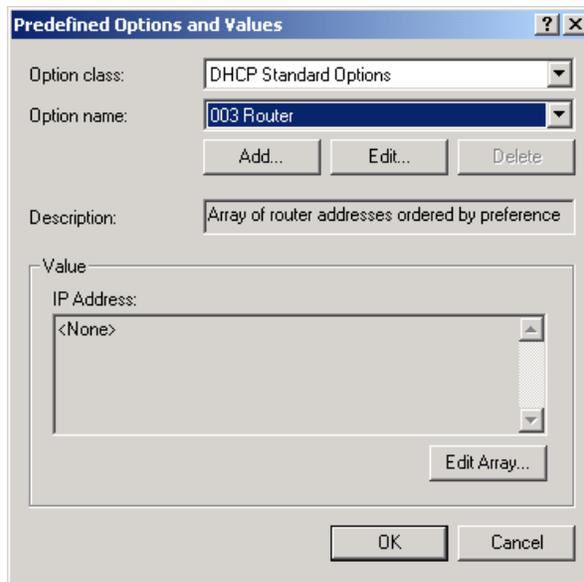


Figure 16. Configuring DHCP option 3: “Predefined Options and Values” window

3. In the **Option name** field, select **003 Router** and click **Edit Array**. The “IP Address Array Editor” window opens.

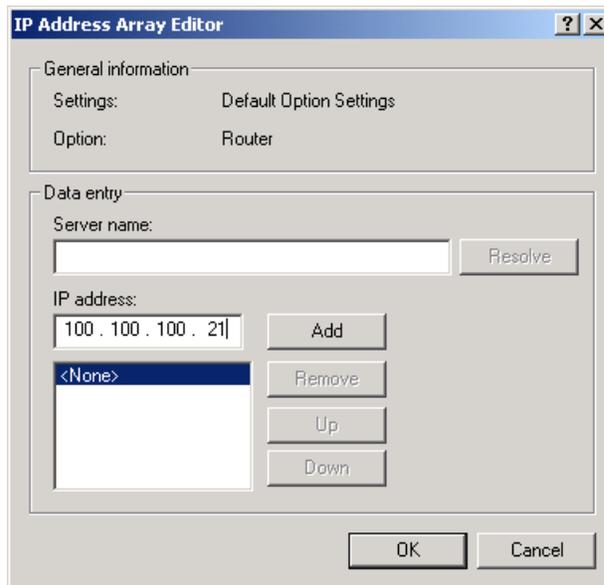


Figure 17. Configuring DHCP option 3: “IP Address Array Editor” window

4. In the **IP address** field, type the IP address of the router and click **Add**.
5. Click **OK**.

Chapter 3. Installing and upgrading Remote Deployment Manager

This chapter contains procedures for installing RDM Server, RDM Console, and RDM Deployment Server. If you are upgrading from Remote Deployment Manager 4.1, go to “Upgrading RDM” on page 37.

However, you cannot install RDM 4.11 into the same directory as earlier versions of RDM or LANClient Control Manager™ (LCCM). In addition, the RDM 4.11 installation program disables the PXE and MTFTP services associated with the earlier versions of RDM or LCCM. If you later uninstall RDM 4.11 and want to run RDM 3.x, you must manually enable the PXE and MTFTP services.

Performing an attended installation of Remote Deployment Manager

This section contains procedures for performing attended installations of RDM Server, RDM Console, and RDM Deployment Server.

Installing RDM Server

This section provides instructions for installing RDM Server. When you install RDM Server, the InstallShield wizard automatically installs RDM Console and RDM Deployment Server.

Note: Before you install RDM Server, be sure that the following prerequisites have been met:

- IBM Director Server is installed. The IBM Director database is enabled and ServeRAID™ Manager is installed.
- The management server is connected to the network.

Complete the following steps to install RDM Server:

1. Log on to the management server using an operating-system account with administrator privileges.
2. Insert the *IBM Remote Deployment Manager 4.11* CD into the CD-ROM drive. If the installation process starts automatically and the InstallShield wizard starts, go to step 4. Otherwise, click **Start** → **Run**.
3. In the **Open** field, type the following command and press Enter:
`e:\setup\setup.exe`

where *e* is the drive letter of the CD-ROM drive. The installation program starts, and the “Welcome to the InstallShield Wizard” window opens.

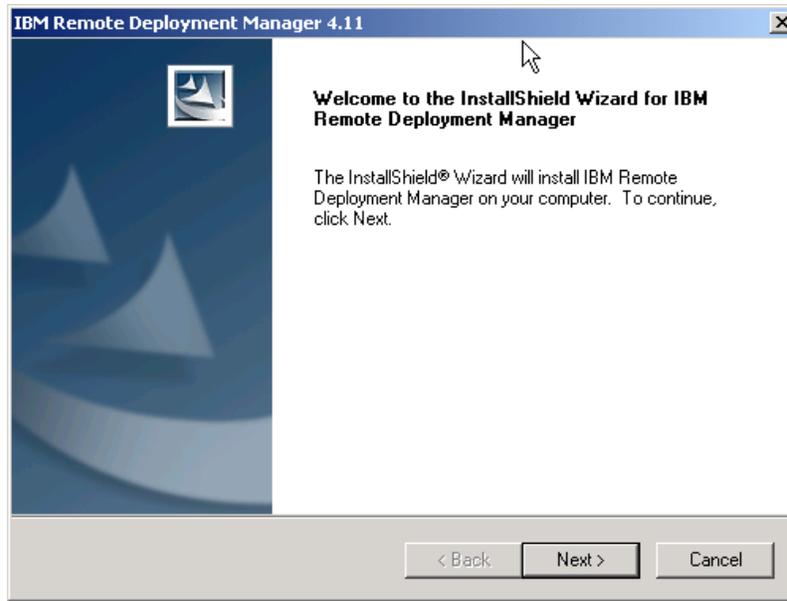


Figure 18. Installing RDM Server: “Welcome to the InstallShield wizard” window

4. Click **Next** to continue. The “License Agreement” window opens.
5. Click **Yes**. The “Customer Information” window opens.

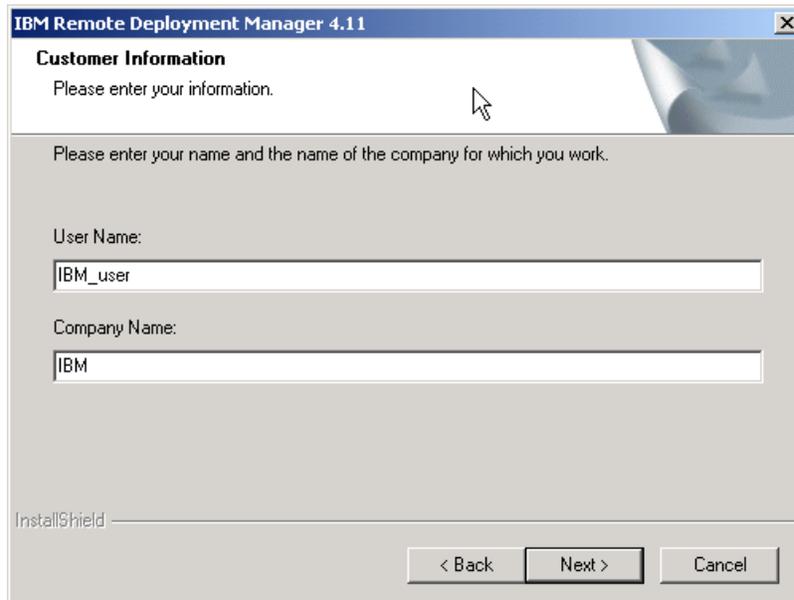


Figure 19. Installing RDM Server: “Customer Information” window

6. In the appropriate fields, type the user name and company name; then, click **Next**. The “Choose Destination Location” window opens.

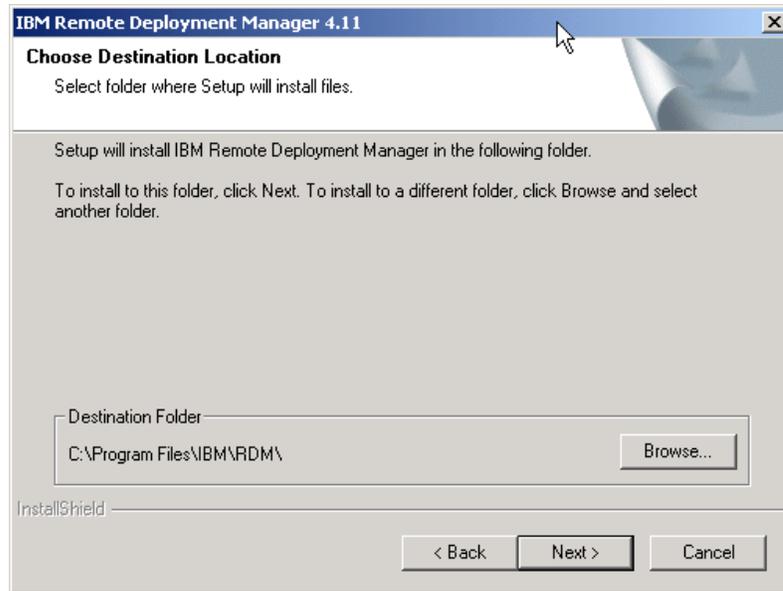


Figure 20. Installing RDM Server: “Choose Destination Location” window

7. By default, RDM is installed in `e:\Program Files\IBM\RDM`, where *e* is the drive letter of the hard disk drive. To install RDM in a different location, click **Browse**.

Note: Before you install RDM in other than the default location, be aware of the following restrictions:

- a. The length of the path must be 28 characters or less.
- b. The path is read according to DOS-style conventions. For example, the installation program converts “`C:\Program Files\IBM\RDM\`” to “`C:\Progra~1\IBM\RDM\`”.
- c. If the path length is more than 28 characters, RDM will not function, although it will appear to install properly.

Click **Next**. The “Setup Type” window opens.

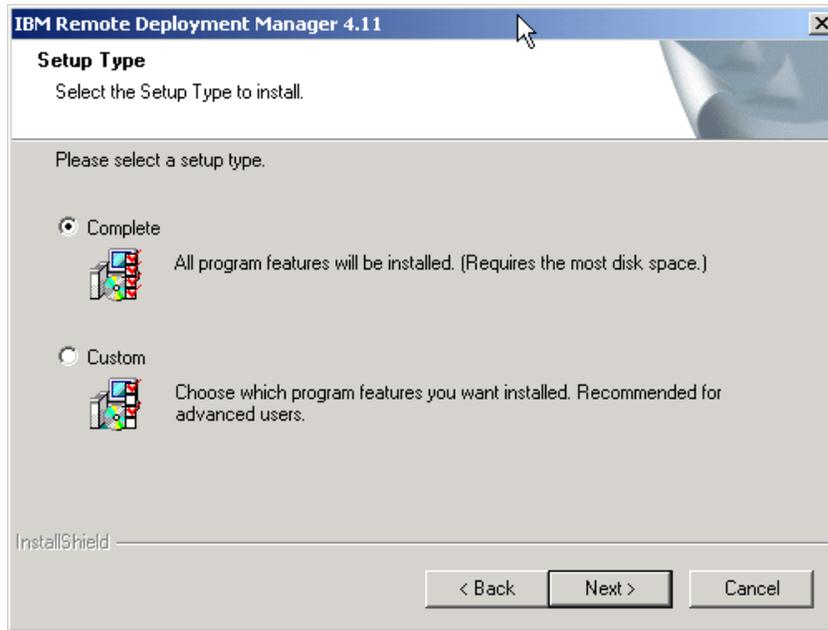


Figure 21. Installing RDM Server: “Setup Type” window

8. Select **Complete**; then, click **Next**. The “Start Copying Files” window opens.

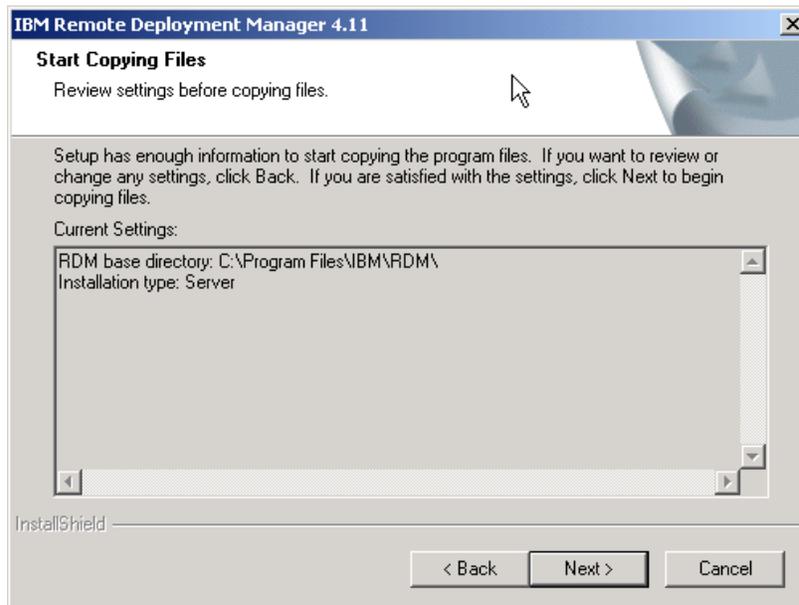


Figure 22. Installing RDM Server: “Start Copying Files” window

9. Click **Next**. The “Setup Status” window opens. When prompted to shut down IBM Director Service, click **Yes**.
10. When prompted whether DHCP service is installed on the system on which you are installing RDM Server, take one of the following actions:
 - If DHCP service is not installed on the management server, click **No**. The “RDM D-Server Configuration” window opens. Go to step 12.
 - If DHCP service is installed on the management server, click **Yes**.

11. When prompted whether to set option 60, click **Yes**. The “RDM D-Server Configuration” window opens.

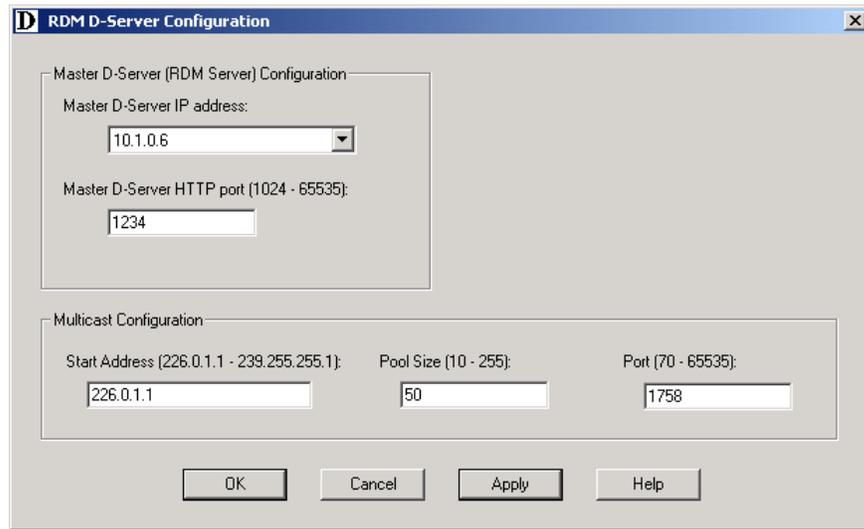


Figure 23. Installing RDM Server: “D-Server Configuration” window

12. Configure the Master D-Server.
 - a. In the **Master D-Server IP address** field, type or select the IP address of the management server. If the management server contains multiple NICs, select the IP address of the NIC used for the RDM subnet.
 - b. In the **Master D-Server HTTP port**, type the number of the HTTP port that is used for communication between the Master D-Server and remote D-Servers. This is the port on which the Master D-Server receives HTTP messages. By default, this is set to 1234.

Note: The Master D-Server HTTP port must not be in use by any other application.

13. Configure the multicast IP addresses.
 - a. In the **Start Address** field, type the first class-D (multicast) IP address for the range of addresses that are assigned to the D-Server. By default, this is set to 226.0.1.1.
 - b. In the **Pool Size** field, type the number of contiguous class-D addresses reserved for use by the D-Server. By default, this is set to 50.
 - c. In the **Port** field, type the port number assigned to the MTFTP service. This port is used to download files from the Master D-Server to the target system. By default, this is set to 1758.

Note: Make sure that the multicast IP addresses are not in use by other applications. For more information, see <http://www.iana.org/assignments/multicast-addresses/>.

14. Click **OK**.
15. When prompted that Director Service will take longer to start, click **OK**.
16. When prompted to view the readme.txt. file, click **Yes**. The readme.txt file opens.
17. After reading the RDM 4.11 readme, close the readme.txt file. The “InstallShield Wizard Complete” window is displayed.

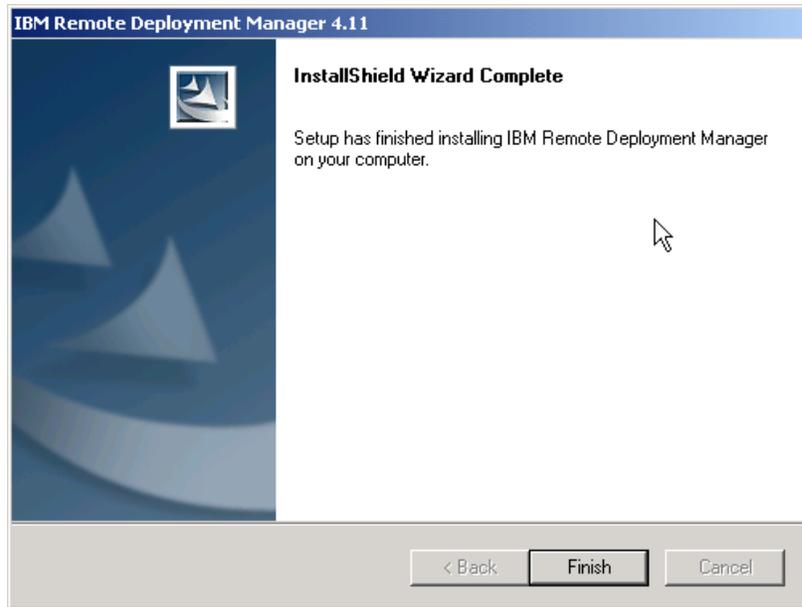


Figure 24. Installing RDM Server: “InstallShield Wizard Complete” window

18. Click **Finish**.

Installing RDM Console

This section provides instructions for installing RDM Console.

Note: Before you install RDM Console, be sure that the following prerequisites have been met:

- IBM Director Console 4.11 is installed.
- The management console is connected to the network.

Complete the following steps to install RDM Console:

1. Log on to a management console using an operating-system account with administrator privileges.
2. Insert the *IBM Remote Deployment Manager 4.11* CD into the CD-ROM drive. If the installation process starts automatically and the InstallShield wizard starts, go to step 4. Otherwise, click **Start** → **Run**.
3. In the **Open** field, type the following command and press Enter:
`e:\setup\setup.exe`

where *e* is the drive letter of the CD-ROM drive. The installation program starts, and the “Welcome to the InstallShield Wizard” window opens.

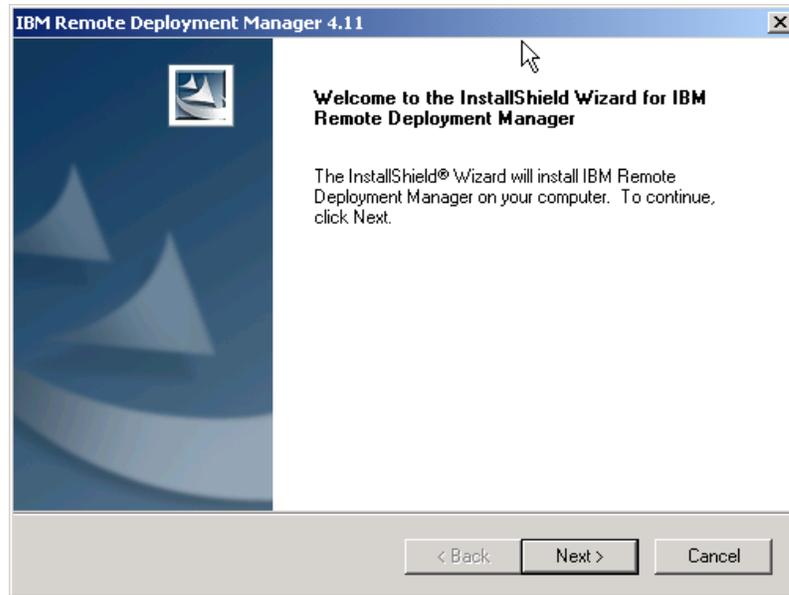


Figure 25. Installing RDM Console: “Welcome to the InstallShield wizard” window

4. Click **Next** to continue. The “License Agreement” window opens.
5. Click **Yes**. The “Customer Information” window opens.

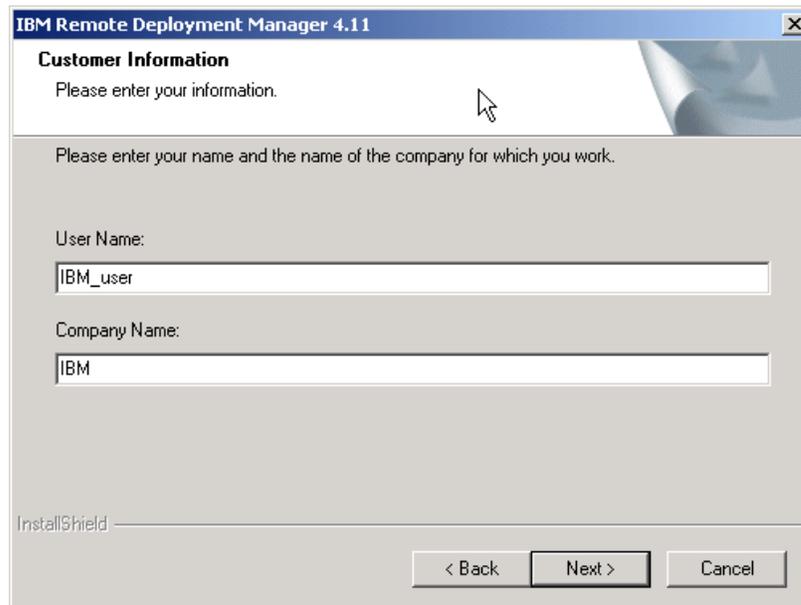


Figure 26. Installing RDM Console: “Customer Information” window

6. In the appropriate fields, type the user name and company name; then, click **Next**. The “Choose Destination Location” window opens.

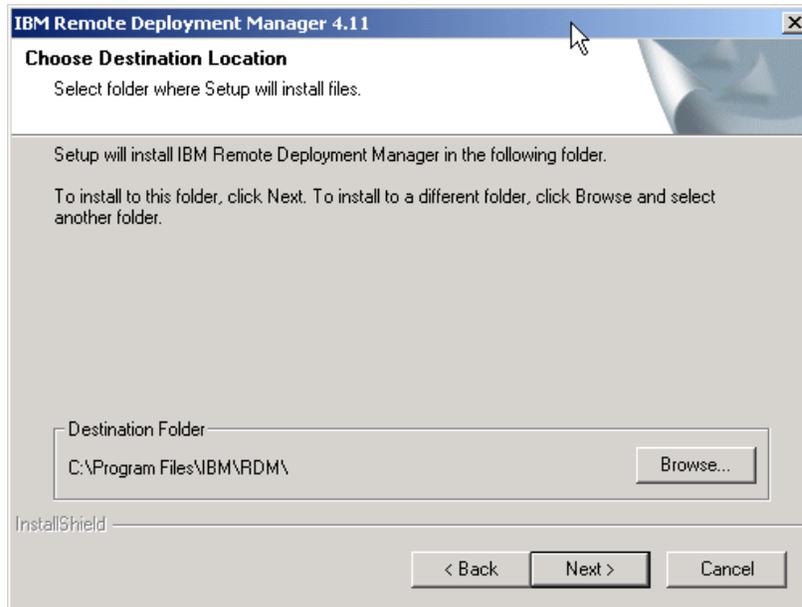


Figure 27. Installing RDM Console: “Choose Destination Location” window

7. By default, RDM is installed in `e:\Program Files\IBM\RDM`, where *e* is the drive letter of the hard disk drive. To install RDM in a different location, click **Browse**.

Note: Before you install RDM in other than the default location, be aware of the following restrictions:

- a. The length of the path must be 28 characters or less.
- b. The path is read according to DOS-style conventions. For example, the installation program converts “`C:\Program Files\IBM\RDM\`” to “`C:\Progra~1\IBM\RDM\`”.
- c. If the path length is more than 28 characters, RDM will not function, although it will appear to install properly.

Click **Next**. The “Setup Type” window opens.

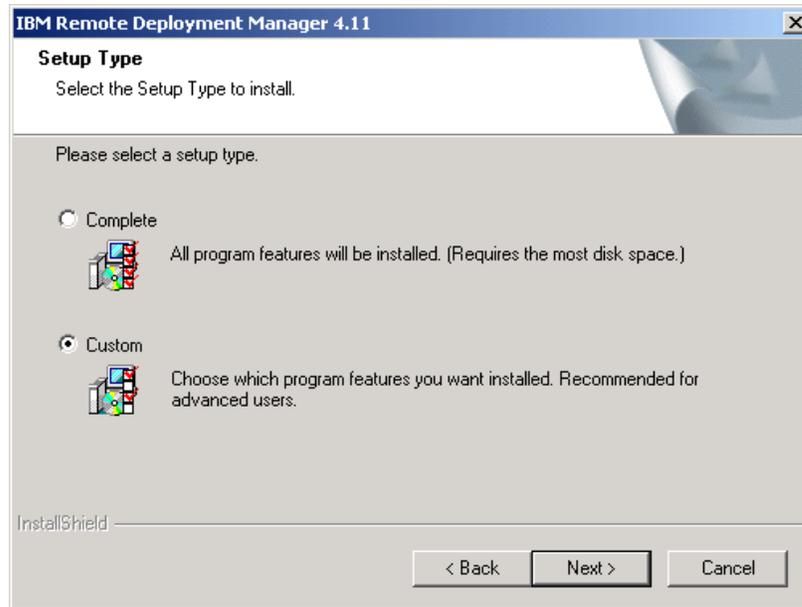


Figure 28. Installing RDM Console: “Setup Type” window

8. Select **Custom** and click **Next**. The “Select Features” window opens.

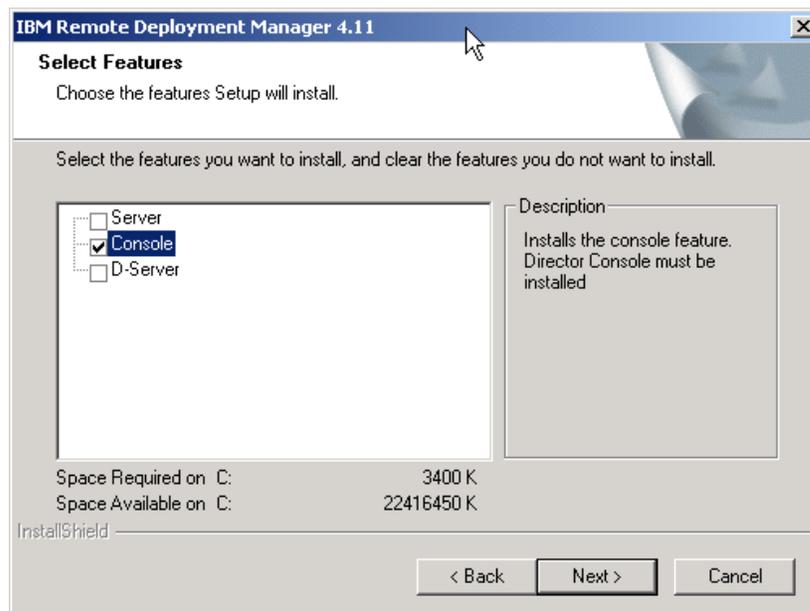


Figure 29. Installing RDM Console: “Select Features” window

9. Select the **Console** check box and click **Next**. The “Start Copying Files” window opens.

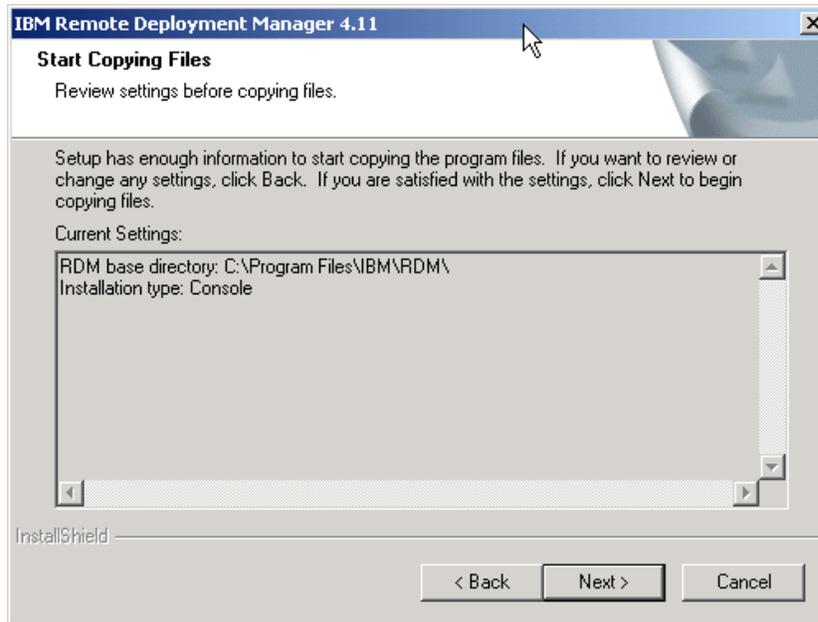


Figure 30. Installing RDM Console: “Start Copying Files” window

10. Click **Next**. The “Setup Status” window opens.
11. When prompted to view the readme.txt. file, click **Yes**. The readme.txt file opens.
12. After reading the RDM 4.11 readme, close the readme.txt file. The “InstallShield Wizard Complete” window is displayed.

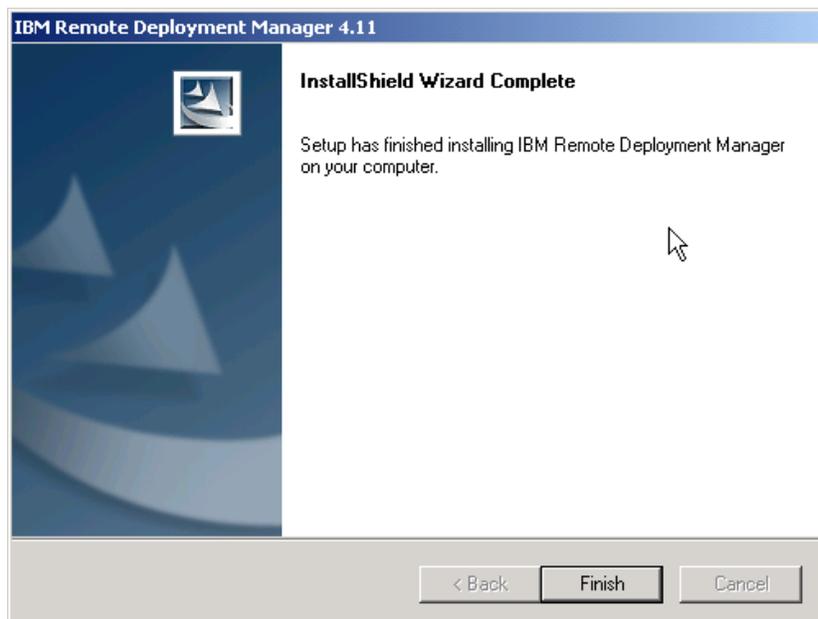


Figure 31. Installing RDM Console: “InstallShield Wizard Complete” window

13. Click **Finish**.

Installing RDM Deployment Server

This section provides instructions for installing RDM Deployment Server.

Note: Before you install RDM Deployment Server, be sure that the system is connected to the network.

Complete the following steps to install RDM Deployment Server.

1. Log on to the system using an operating-system account with administrator privileges.
2. Insert the *IBM Remote Deployment Manager 4.11* CD into the CD-ROM drive. If the installation process starts automatically and the InstallShield wizard starts, go to step 4. Otherwise, click **Start** → **Run**.
3. In the **Open** field, type the following command and press Enter:
e:\setup\setup.exe

where *e* is the drive letter of the CD-ROM drive. The installation program starts, and the “Welcome to the InstallShield Wizard” window opens.

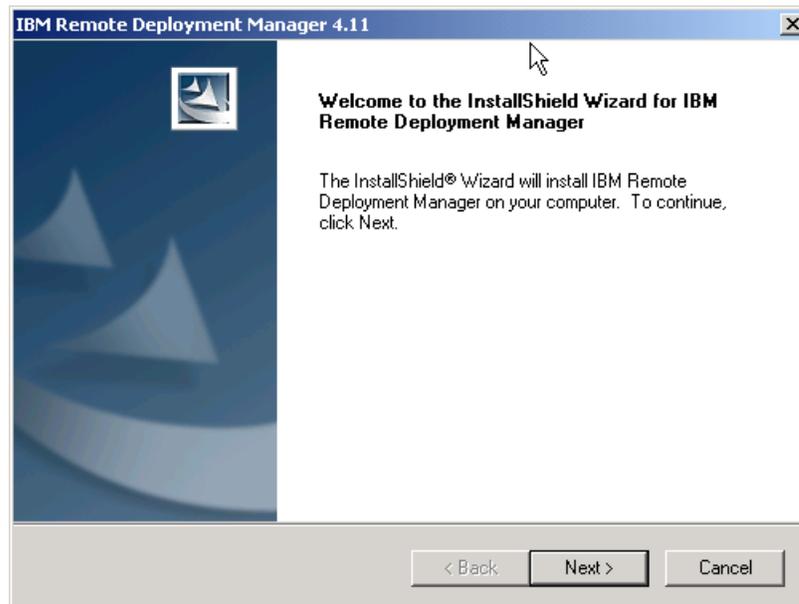


Figure 32. Installing RDM Deployment Server: “Welcome to the InstallShield wizard” window

4. Click **Next** to continue. The “License Agreement” window opens.
5. Click **Yes**. The “Customer Information” window opens.

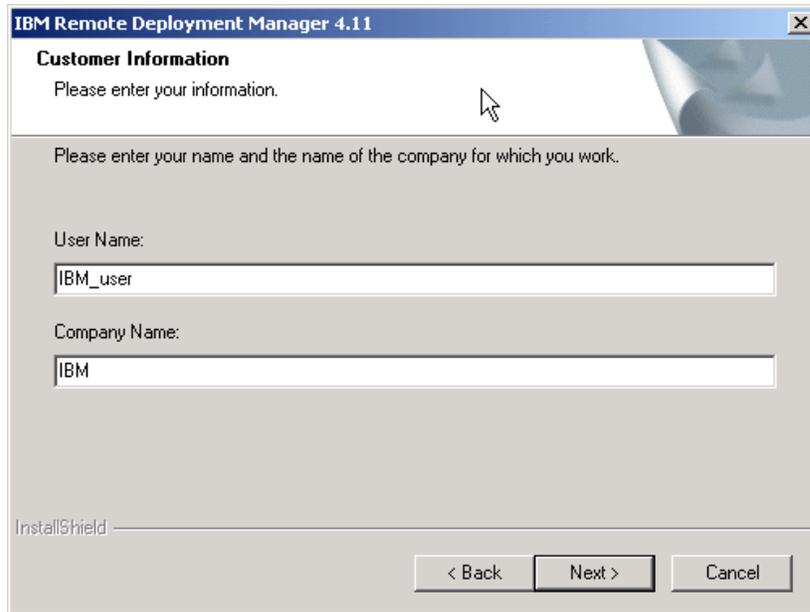


Figure 33. Installing RDM Deployment Server: “Customer Information” window

6. In the appropriate fields, type the user name and company name; then, click **Next**. The “Choose Destination Location” window opens.

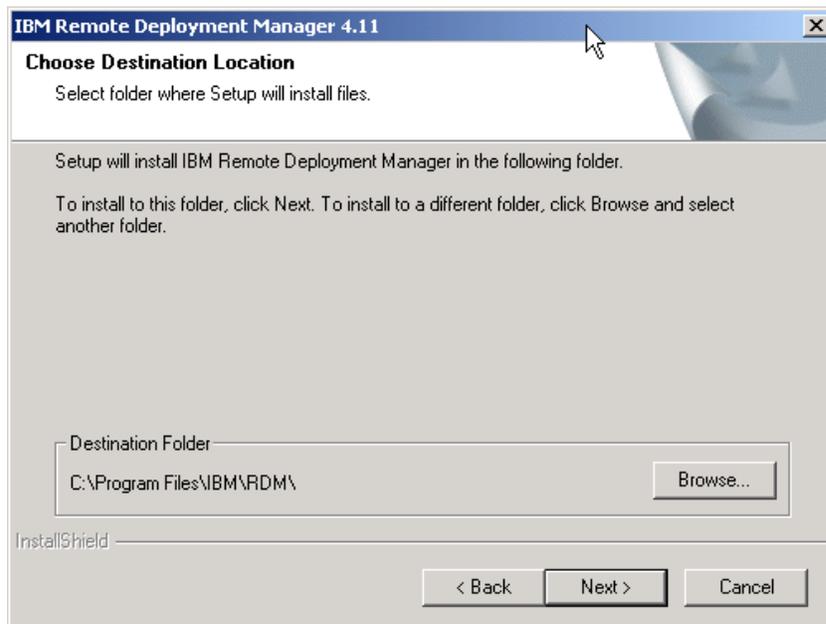


Figure 34. Installing RDM Deployment Server: “Choose Destination Location” window

7. By default, RDM is installed in e:\Program Files\IBM\RDM, where e is the drive letter of the hard disk drive. To install RDM in a different location, click **Browse**.

Note: Before you install RDM in other than the default location, be aware of the following restrictions:

- a. The length of the path must be 28 characters or less.

- b. The path is read according to DOS-style conventions. For example, the installation program converts “C:\Program Files\IBM\RDM” to “C:\Progra~1\IBM\RDM”.
- c. If the path length is more than 28 characters, RDM will not function, although it will appear to install properly.

Click **Next**. The “Setup Type” window opens.

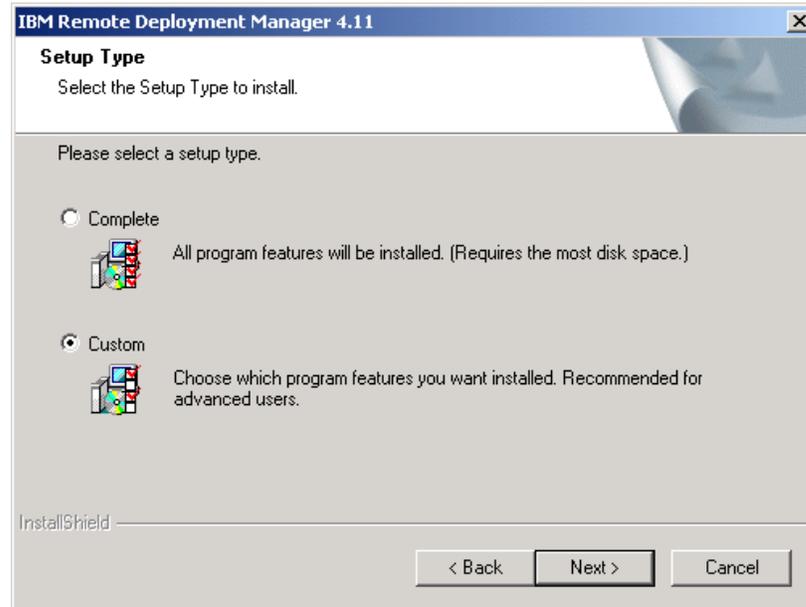


Figure 35. Installing RDM Deployment Server: “Setup Type” window

- 8. Select **Custom** and click **Next**. The “Select Features” window opens.

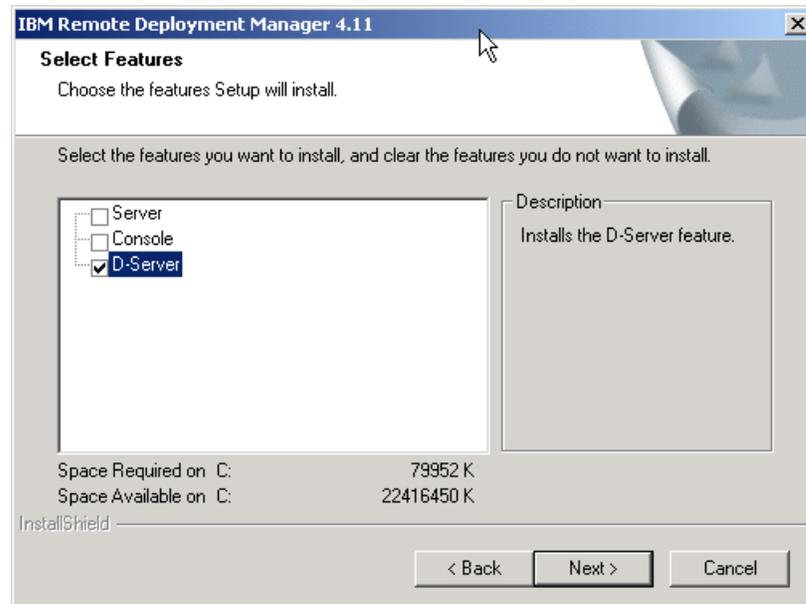


Figure 36. Installing RDM Deployment Server: “Select Features” window

9. Select the **D-Server** check box and click **Next**. The “Start Copying Files” window opens.

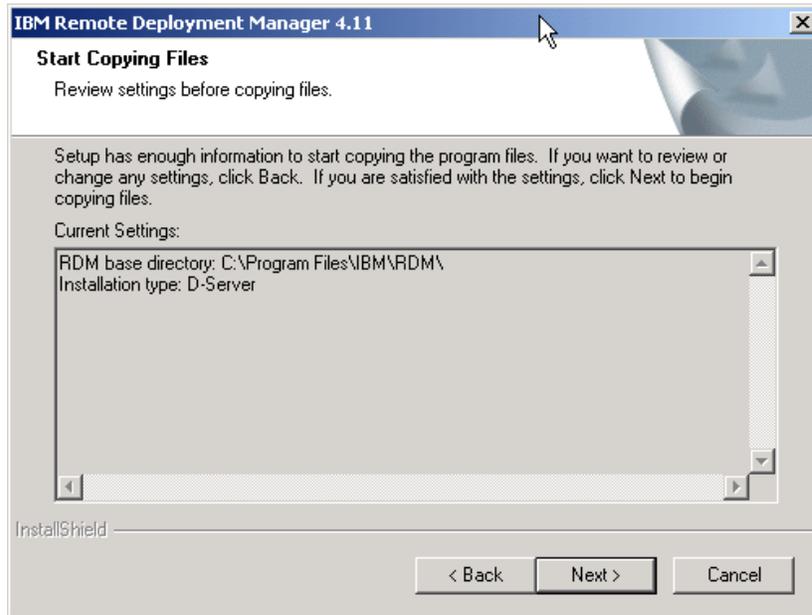


Figure 37. Installing RDM Deployment Server: “Start Copying Files” window

10. Click **Next**. The “Setup Status” window opens.
11. When prompted whether DHCP Service is installed on the system on which you are installing RDM Deployment Server, take one of the following actions:
 - If DHCP is not installed on the server, click **No**. The “RDM D-Server Configuration” window opens. Go to step 13.
 - If DHCP is installed on the server, click **Yes**.
12. When prompted whether to set option 60, if the server is running Windows 2000, click **Yes**. The “RDM Deployment Server Configuration” window opens.

Note: If the server is running Windows XP or Windows Server 2003, you must set option 60 manually.

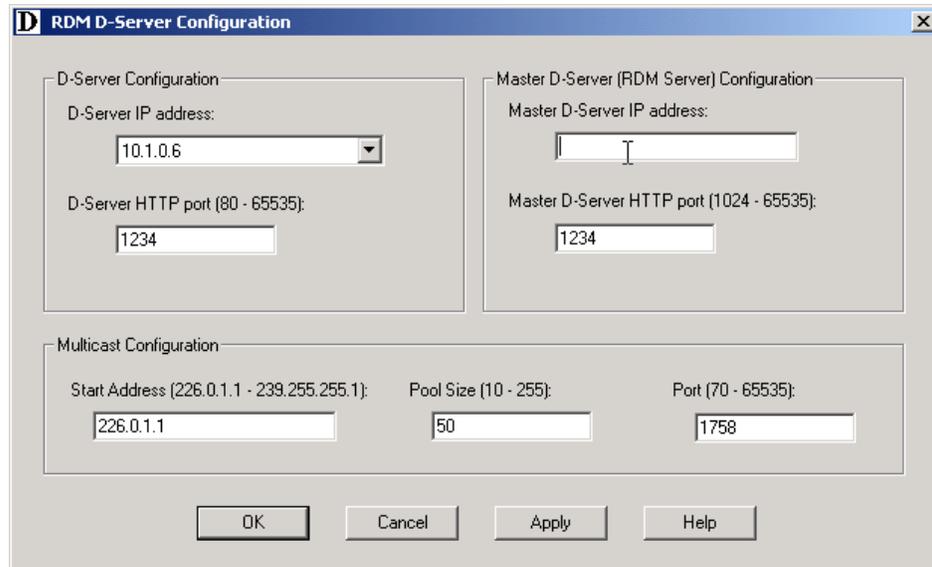


Figure 38. Installing RDM Deployment Server: “D-Server Configuration” window

13. Configure the Remote D-Server.

- a. In the **D-Server IP address** field, type or select the IP address of the deployment server. If the deployment server contains multiple NICs, select IP address of the NIC used for the RDM subnet.
- b. In the **D-Server HTTP port**, type the number of the HTTP port that is used for communication between the D-Server and the Master D-Server. This is the port on which the D-Server receives HTTP messages. By default, this is set to 1234.

Note: The D-Server HTTP port must not be in use by any other application.

14. Provide information about the Master D-Server.

- a. In the **Master D-Server IP address** field, type the IP address of the management server. If the management server contains multiple NICs, select IP address of the NIC used for the RDM subnet.
- b. In the **Master D-Server HTTP port**, type the number of the HTTP port that is used for communication between the Master D-Server and remote D-Servers. This is the port on which the Master D-Server receives HTTP messages. By default, this is set to 1234.

15. Configure the multicast IP addresses.

- a. In the **Start Address** field, type the first class-D (multicast) IP address for the range of addresses that are assigned to the D-Server. By default, this is set to 226.0.1.1.
- b. In the **Pool Size** field, type the number of contiguous class-D addresses reserved for use by the D-Server. By default, this is set to 50.
- c. In the **Port** field, type the port number assigned to the MTFTP service. This port is used to download files from the Master D-Server to the target system. By default, this is set to 1758.

Note: Make sure that the multicast IP addresses are not in use by other applications. For more information, see <http://www.iana.org/assignments/multicast-addresses/>.

16. Click **OK**.

17. When prompted to view the readme.txt. file, click **Yes**. The readme.txt file opens.
18. After reading the RDM 4.11 readme, close the readme.txt file. The “InstallShield Wizard Complete” window is displayed.

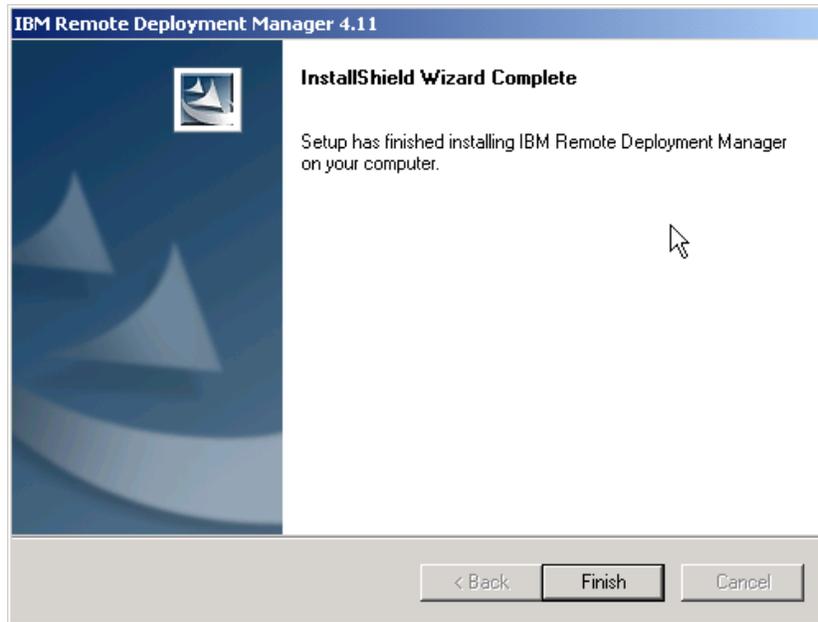


Figure 39. Installing RDM Deployment Server: “InstallShield Wizard Complete” window

19. Click **Finish**.

Performing an unattended installation of RDM

You can perform an unattended installation of RDM using a response file which provides answers to the questions posed by the InstallShield wizard. A system administrator can use this method to create a standard installation file that can be used on many systems.

To create a response file, you must perform an attended installation of the RDM software component (RDM Server, RDM Console, or RDM Deployment Server). From a command prompt, you start the installation by issuing the `setup.exe` command with the `/r` parameter. This automatically generates the `setup.iss` file needed for a silent installation; this response file contains the values of any data that you typed or selected during the attended installation.

Complete the following steps to perform an unattended installation of an RDM software component:

1. If one does not already exist, create a directory to contain the response file.
2. Using an operating-system account with administrator privileges, log onto a system on which you want to perform an attended installation of an RDM software component.
3. Change to the directory in which the `setup.exe` program is located.
4. From a command prompt, type the following command and press Enter:

```
setup.exe /r /f1"responsefile"
```

where *responsefile* is the path and file name of the response file, for example, c:\temp\setup.iss.

The installation program begins, and the InstallShield wizard starts. Follow the on-screen instructions.

5. Using an operating-system account with administrator privileges, log onto the system on which you want to perform an unattended installation of an RDM software component.

6. From a command prompt, type the following command and press Enter:

```
setup.exe /s /f1"responsefile"
```

where *responsefile* is the path and file name of the response file, for example, c:\temp\setup.iss.

The installation starts, and status information is written to the setup.log file. The setup.log file is located in the same directory as the response file.

Upgrading RDM

You can upgrade to RDM 4.11 from RDM 4.1. If you have RDM 3.x or LCCM 3.0 installed, you must perform a fresh RDM installation. Go to “Performing an attended installation of Remote Deployment Manager” on page 21.

If you upgrade a single RDM software component (RDM Server, RDM Console, or RDM Deployment Server), you must upgrade all RDM software. The levels of RDM software running on the management server, management console, and deployment server must be identical.

During the upgrade, the installation program detects which RDM software component (RDM Server, RDM Console, or RDM Deployment Server) is installed and applies the upgrade.

Complete the following steps to upgrade from RDM 4.1 to RDM 4.11:

1. Log on to the system using an operating-system account with administrator privileges.
2. Insert the *IBM Remote Deployment Manager 4.11* CD into the CD-ROM drive. If the installation process starts automatically and the InstallShield wizard starts, go to step 4. Otherwise, click **Start** → **Run**.
3. In the **Open** field, type the following command and press Enter:

```
e:\setup\setup.exe
```

where *e* is the drive letter of the CD-ROM drive. The installation program starts, and the “Welcome to the InstallShield Wizard” window opens.

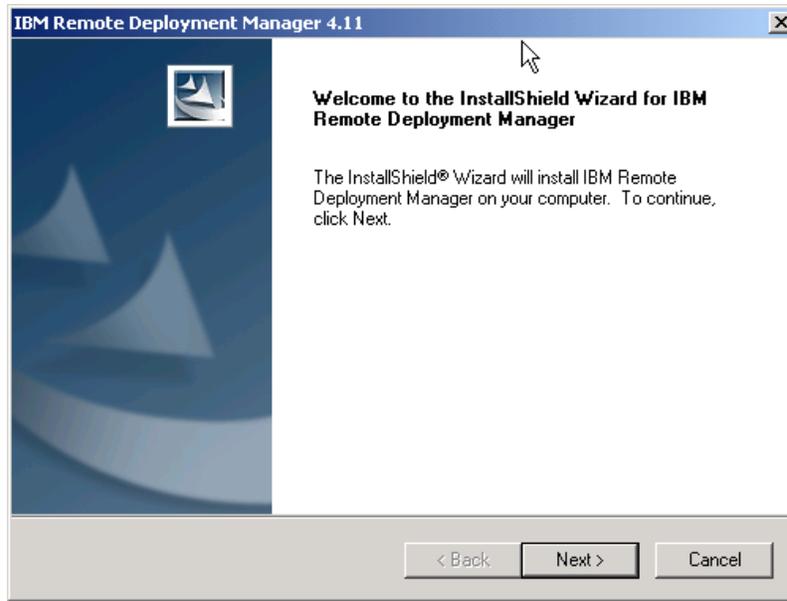


Figure 40. Upgrading RDM Server: “Welcome to the InstallShield wizard” window

4. Click **Next**. The “License Agreement” window opens.
5. Click **Yes**.
6. When prompted RDM 4.1 detected, would you like to upgrade?, click **Yes**. The “Start Copying Files” window opens.
7. Click **Next**. The “Setup Status” window opens.
8. If prompted to shut down IBM Director Service, click **Yes**.
9. If prompted that Director Service will take longer to start, click **OK**.
10. When prompted to view the readme.txt file, click **Yes**. The readme.txt file opens.
11. After reading the RDM 4.11 readme, close the readme.txt file. The “InstallShield Wizard Complete” window is displayed.

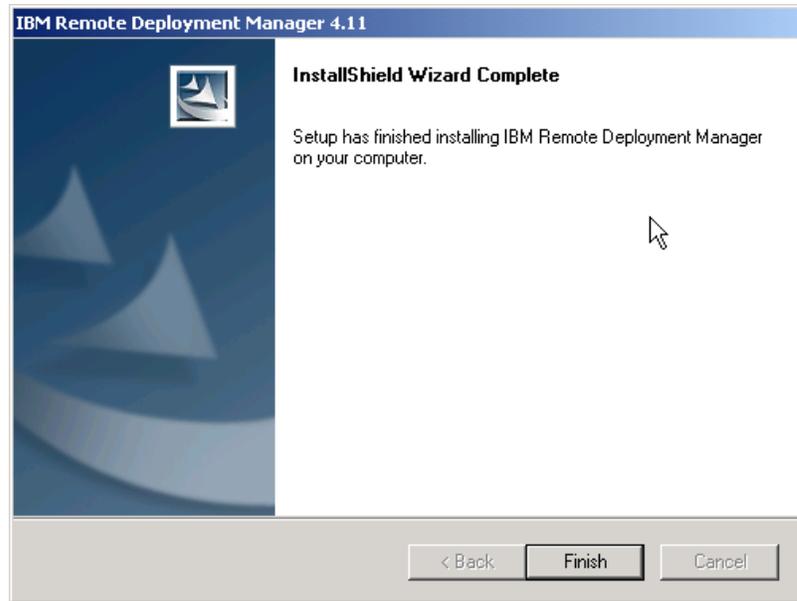


Figure 41. Upgrading RDM Server: "InstallShield Wizard Complete" window

12. Click **Finish**.

Chapter 4. Configuring remote deployment servers

If your RDM environment includes remote deployment servers, you must add them to the RDM database. This chapter describes how to add a remote deployment server to the RDM database and configure its settings.

Starting IBM Director Console

Completing the following steps to start IBM Director Console:

1. Click **Start** → **Programs** → **IBM Director** → **IBM Director Console**. The “IBM Director Login” window opens.



Figure 42. “IBM Director Login” window

2. In the **IBM Director Server** field, type the name of the management server.
3. In the **User ID** field, type:
DirectorUserID
where *DirectorUserID* is a valid IBM Director user ID.
4. In the **Password** field, type the password that corresponds to the user ID.
5. Click **OK**. IBM Director Console opens.

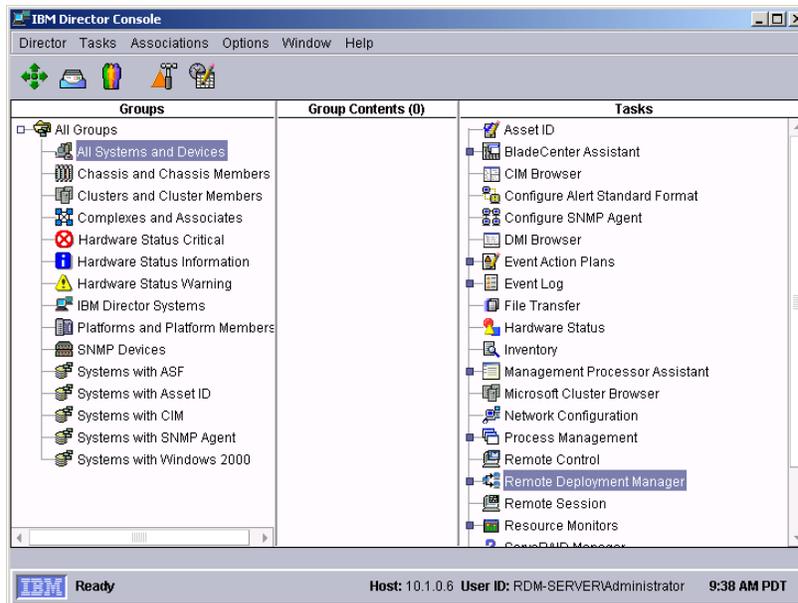


Figure 43. “IBM Director Console” window

Adding a remote deployment server

After you install RDM Deployment Server on a remote server, you must manually add the server to RDM database.

Complete the following steps to add a remote deployment server to the RDM database:

1. From IBM Director Console, click **Tasks** → **Remote Deployment Manager** → **D-Server Options**. The “Deployment Server Management Options” window opens.

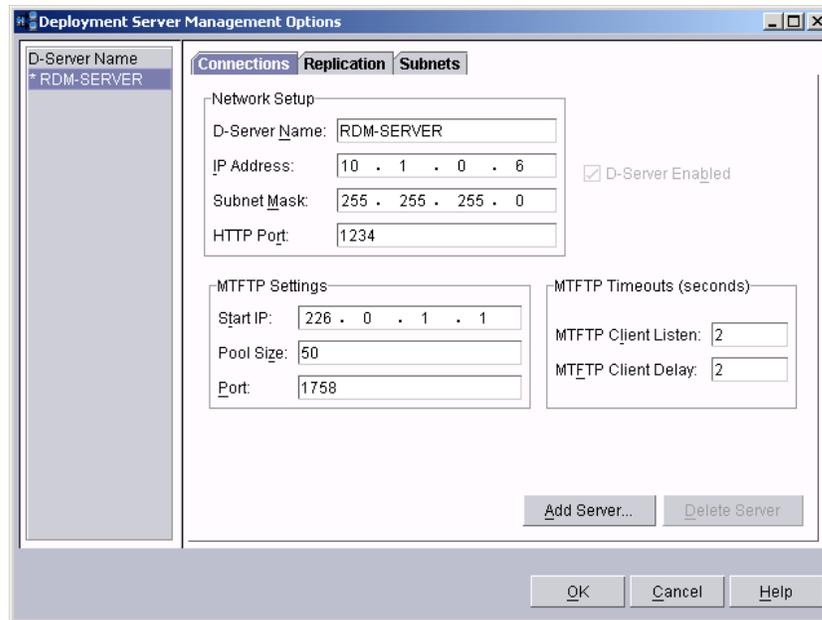


Figure 44. Adding a remote deployment server: “Deployment Server Management Options” window

2. Click **Add Server**. The “Add D-Server” window opens.

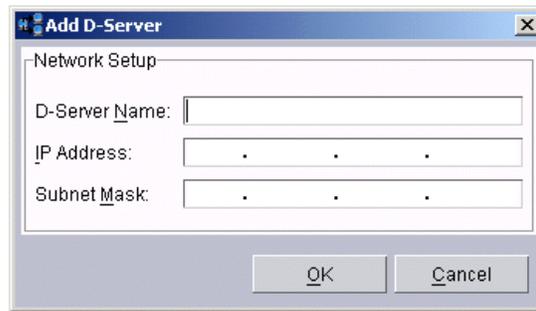


Figure 45. Adding a remote deployment server: “Add D-Server” window

3. Provide information about the remote deployment server.
 - a. In the **D-Server Name** field, type the name of the remote deployment server.
 - b. In the **IP Address** field, type the IP address of the remote deployment server.
 - c. In the **Subnet Mask** field, type the subnet mask of the remote deployment server.
4. Click **OK**. The name of remote deployment server now is displayed in the left pane of the “Deployment Server Management Options” window.

Configuring settings for a remote deployment server

Complete the following steps to configure settings for a remote deployment server:

1. From IBM Director Console, click **Tasks** → **Remote Deployment Manager** → **D-Server Options**. The “Deployment Server Management Options” window opens and the “Connections” page is displayed.

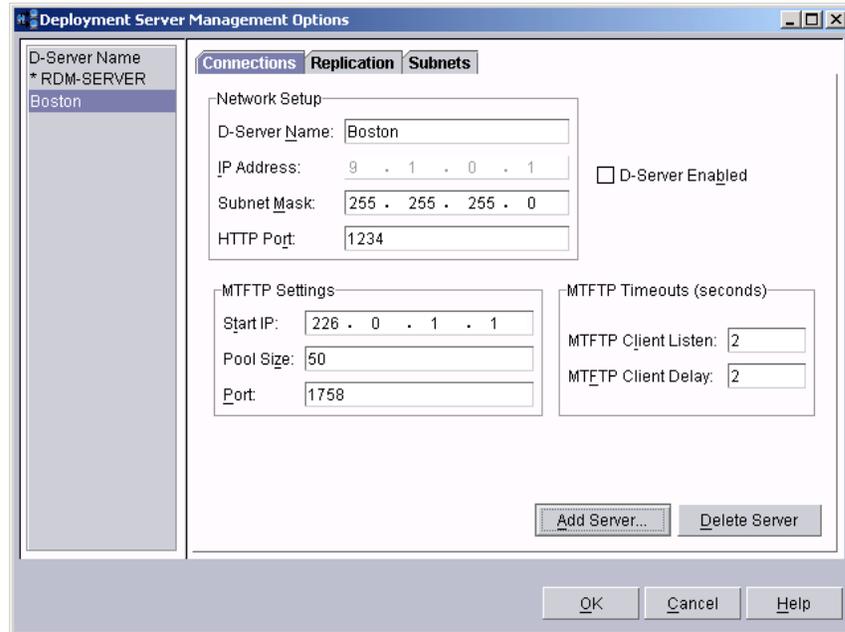


Figure 46. Configuring settings for a remote deployment server: “Connections” page

2. In the **D-Server Name** pane, click the remote deployment server for which you want to configure settings.
3. (Optional) Change the MTFTP settings.
 - a. In the **Start IP** field, type the first class-D (multicast) IP address for the range of addresses that are assigned to the D-Server. By default, this is set to the IP address selected when RDM Remote Deployment Server was installed.
 - b. In the **Pool Size** field, type the number of contiguous class-D addresses reserved for use by the D-Server. By default, this is set to the pool size selected when RDM Remote Deployment Server was installed.
 - c. In the **Port** field, type the port number assigned to the MTFTP service. This port is used to download files from the Master D-Server to the target system. By default, this is set to the port selected when RDM Remote Deployment Server was installed.
4. Configure the MTFTP timeouts.
 - a. In the **MTFTP Client Listen** field, type the number of seconds that a target system listens to determine whether or not a file is being transmitted on the network. When this time interval is exceeded, the target system requests the file from the D-Server. By default, this is set to two seconds.
 - b. In the **MTFTP Client Delay** field, type the number of seconds that a client system with an incomplete file transmission waits before requesting the file from the D-Server. By default, this is set to two seconds.

Note: If you change the MFTFP client listen and the MFTFP client delay, the values are not transmitted to the target systems; the default value of two seconds is used.

5. Click the **Replication** tab. The “Replications” page is displayed.

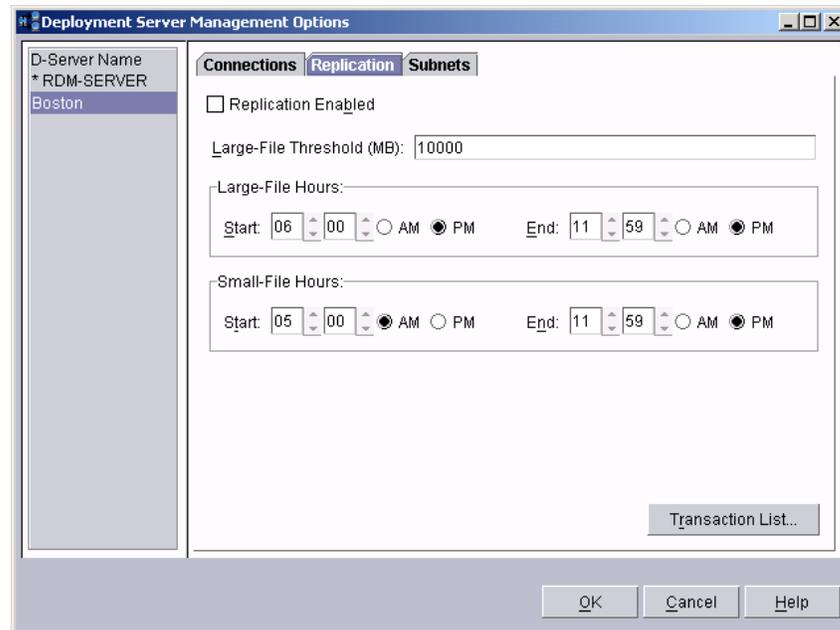


Figure 47. Configuring settings for a remote deployment server: “Replication” page

6. Configure the replication settings for the remote deployment server.
 - a. Select the **Replication Enabled** check box to enable the remote deployment server to get files directly from the management server.
 - b. In the **Large-File Threshold (MB)** field, type the size (in MB) at which the remote deployment server will consider a file to be large.
 - c. In the **Large-File Hours** fields, select the range of hours in which a large file can be replicated.
 - d. In the **Small-File Hours** field, select the range of hours in which a small file can be replicated.
7. Click **OK**.
8. Click the **Subnets** tab. The “Subnets” page is displayed.

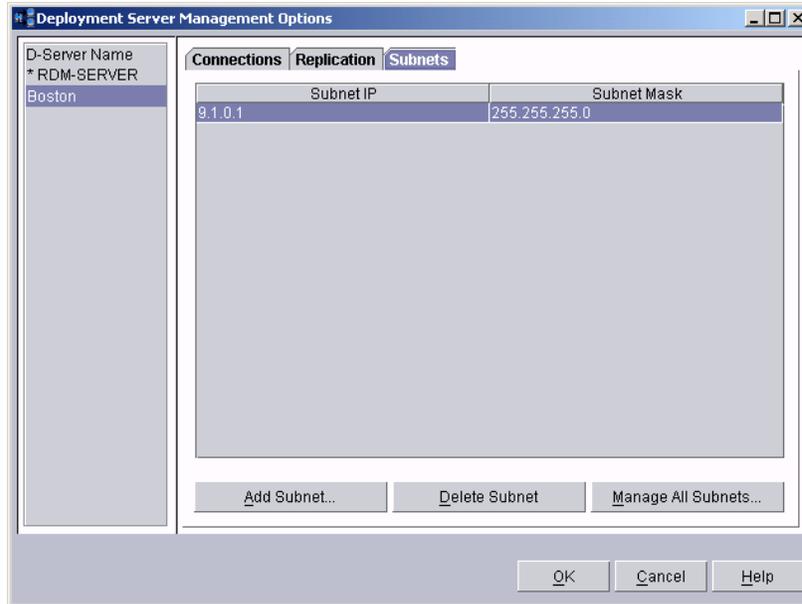


Figure 48. Configuring settings for a remote deployment server: “Subnets” page

9. Define the subnet that the remote deployment server will serve.
 - a. Click **Add Subnet**. The “Add Subnet” window opens.

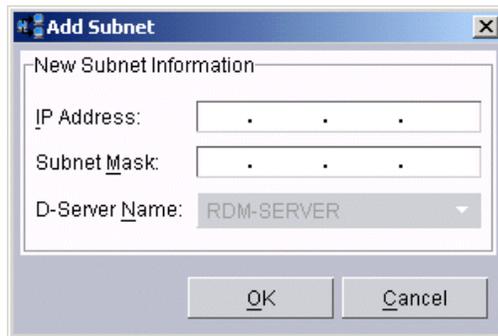


Figure 49. Configuring settings for a remote deployment server: “Add Subnet” window

- b. In the **IP Address** field, type the IP address.
 - c. In the **Subnet Mask** field, type the subnet mask.
 - d. Click **OK**. The subnet is assigned to the remote deployment server and is displayed in the “Subnets” page.

Chapter 5. Modifying, repairing, and uninstalling RDM

After installing an RDM software component (RDM Server, RDM Console, and RDM Deployment Server), you can run the InstallShield wizard again to modify, repair, or uninstall RDM.

Complete the following steps to modify, repair, or uninstall an RDM software component:

1. Click **Start** → **Settings** → **Control Panel**. The “Control Panel” window opens.
2. Double-click **Add/Remove Programs**. The “Add/Remove Programs” window opens.
3. Click **IBM Remote Deployment Manager 4.11** to modify, repair, or uninstall an RDM component; then, click **Change**. The InstallShield wizard starts, and the “Welcome” window opens.

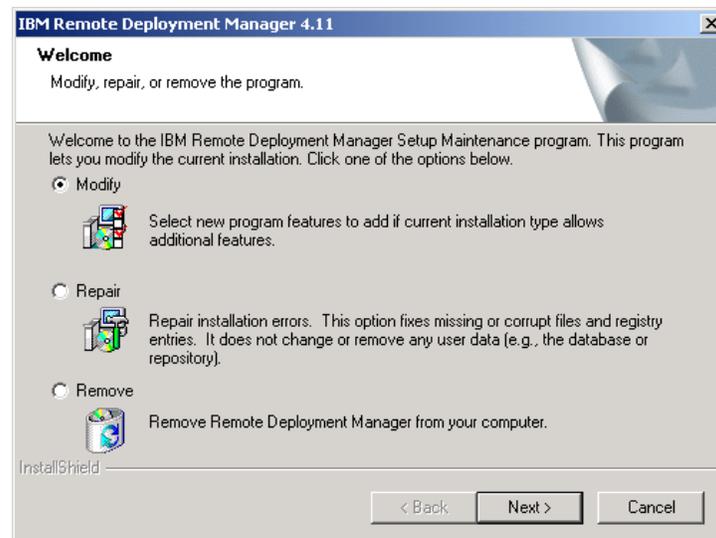


Figure 50. Modifying RDM installation: “Welcome” window

4. Select the appropriate option, and click **Next**.
5. Continue through the wizard, making changes as necessary. For more information, see “Installing RDM Server” on page 21, “Installing RDM Console” on page 26, and “Installing RDM Deployment Server” on page 31.

Appendix A. Getting help and technical assistance

If you need help, service, or technical assistance or just want more information about IBM® products, you will find a wide variety of sources available from IBM to assist you. This appendix contains information about where to go for additional information about IBM and IBM products, what to do if you experience a problem with your xSeries or IntelliStation® system, and whom to call for service, if it is necessary.

Before you call

Before you call, make sure that you have taken these steps to try to solve the problem yourself:

- Check all cables to make sure that they are connected.
- Check the power switches to make sure that the system is turned on.
- Use the troubleshooting information in your system documentation, and use the diagnostic tools that come with your system.
- Go to the IBM Support Web site at <http://www.ibm.com/pc/support/> to check for technical information, hints, tips, and new device drivers.
- Use an IBM discussion forum on the IBM Web site to ask questions.

You can solve many problems without outside assistance by following the troubleshooting procedures that IBM provides in the online help or in the publications that are provided with your system and software. The information that comes with your system also describes the diagnostic tests that you can perform. Most xSeries and IntelliStation systems, operating systems, and programs come with information that contains troubleshooting procedures and explanations of error messages and error codes. If you suspect a software problem, see the information for the operating system or program.

Using the documentation

Information about your IBM xSeries or IntelliStation system and preinstalled software, if any, is available in the documentation that comes with your system. That documentation includes printed books, online books, readme files, and help files. See the troubleshooting information in your system documentation for instructions for using the diagnostic programs. The troubleshooting information or the diagnostic programs might tell you that you need additional or updated device drivers or other software. IBM maintains pages on the World Wide Web where you can get the latest technical information and download device drivers and updates. To access these pages, go to <http://www.ibm.com/pc/support/> and follow the instructions. Also, you can order publications through the IBM Publications Ordering System at <http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>.

Getting help and information from the World Wide Web

On the World Wide Web, the IBM Web site has up-to-date information about IBM xSeries and IntelliStation products, services, and support. The address for IBM xSeries information is <http://www.ibm.com/eserver/xseries/>. The address for IBM IntelliStation information is <http://www.ibm.com/pc/intellistation/>.

You can find service information for your IBM products, including supported options, at <http://www.ibm.com/pc/support/>.

Software service and support

Through IBM Support Line, you can get telephone assistance, for a fee, with usage, configuration, and software problems with xSeries servers, IntelliStation workstations, and appliances. For information about which products are supported by Support Line in your country or region, go to <http://www.ibm.com/services/sl/products/>.

For more information about Support Line and other IBM services, go to <http://www.ibm.com/services/>, or go to <http://www.ibm.com/planetwide/> for support telephone numbers. In the U.S. and Canada, call 1-800-IBM-SERV (1-800-426-7378).

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Index

A

- Address Resolution Protocol (ARP) 13
- attended installation
 - RDM Console 26
 - RDM Deployment Server 31
 - RDM Server 21
- attention notice vii

B

- BOOTP (Bootstrap Protocol) 13
- Bootstrap Protocol (BOOTP) 13
- broadcast forwarding 13

C

- configuring
 - DHCP service 7, 14
 - remote D-server 35
 - routers, switches, and hubs 13
 - target systems 7
- Console
 - See RDM Console
- customer support viii

D

- D-Server
 - See RDM Deployment Server
- D-Server Configuration window 25, 35
- database, RDM 1
- deployment server
 - adding to RDM database 42
 - definition 2
 - system requirements 4
- Deployment Server Management Options window 42
- DHCP (Dynamic Host Configuration Protocol)
 - forwarding 13
 - option 3, configuring 19
 - option 60, configuring 19
 - service
 - configuring 7, 14
 - defining scopes 14
 - New Scope wizard 14
 - option 3 14
 - option 60 14
- DHCPDISCOVER request 3
- discovering target systems 3
- disk space, minimum requirements for RDM 4
- distributed repository, definition 2
- downloading, IBM Director viii
- Dynamic Host Configuration Protocol (DHCP)
 - forwarding 13
 - option 3, configuring 19
 - option 60, configuring 19
 - service
 - configuring 7, 14

- Dynamic Host Configuration Protocol (DHCP)
 - (continued)
 - service (continued)
 - defining scopes 14
 - New Scope wizard 14
 - option 3 14
 - option 60 14

E

- eFixes viii
- environment
 - routed network 9
 - single LAN 8
 - WAN 12

H

- hardware compatibility ix
- hardware requirements
 - management systems 4
 - target systems 4
- help viii
- hubs, configuring 13

I

- IBM Director
 - database 3
 - downloading viii
 - ServerRAID Manager feature 21
- IBM Director Console
 - illustration 42
 - starting 41
- IBM Remote Deployment Manager
 - See RDM
- IBM systems-management software
 - downloading viii
 - hardware compatibility ix
 - overview viii
- IBM Web sites
 - IBM Remote Deployment Manager 4.11 viii
 - IBM ServerProven ix
 - IBM Support viii
 - IBM Systems Management Software viii
 - IBM Universal Manageability viii
 - IBM xSeries Systems Management viii
 - Online Assistant and e-Mail viii
- ICMP (Internet Control Message Protocol) 13
- IGMP (Internet Group Message Protocol) 13
- illustrations
 - routed network
 - RDM and DCHP on different servers 10
 - RDM and DCHP on different subnets 11
 - RDM and DCHP on same server 9
 - single LAN environment 8
 - WAN environment 12

- important notice vii
- InstallShield wizard
 - RDM Console 26
 - RDM Deployment Server 31
 - RDM Server 21
- Internet Control Message Protocol (ICMP) 13
- Internet Group Message Protocol (IGMP) 13

L

- LANClient Control Manager (LCCM) 21

M

- management console
 - definition 1
 - system requirements 4
- management server
 - definition 1
 - system requirements 4
- master D-Server
 - class-D (multicast) IP addresses 25
 - configuring 25
 - HTTP port 25
- master repository, definition 2
- memory, minimum requirements for RDM 4
- modifying RDM installation 47
- MTFTP (Multicast Trivial File Transport Protocol)
 - service 2
 - timeouts, configuring 44
- Multicast Trivial File Transport Protocol (MTFTP)
 - service 2
 - timeouts, configuring 44

N

- network adapters, minimum requirements 4
- network topologies
 - illustrations
 - RDM and DHCP on different servers 10
 - RDM and DHCP on different subnets 11
 - RDM and DHCP on same server 9
 - single LAN environment 8
 - WAN environment 12
- New Scope wizard 14
- notices
 - attention vii
 - important vii
 - notes vii

O

- Online Assistant and e-Mail Web site viii
- option 60, configuring 19

P

- planning considerations 7
- PowerQuest unicast image server 2

- Preboot Execution Environment (PXE)
 - protocols 2
 - service 2
 - specifications 4
- protocols
 - Address Resolution Protocol (ARP) 13
 - Bootstrap Protocol (BOOTP) 13
 - Dynamic Host Configuration Protocol (DHCP)
 - configuring service 7, 14
 - option 3, configuring 19
 - option 60, configuring 19
 - Internet Control Message Protocol (ICMP) 13
 - Internet Group Message Protocol (IGMP) 13
 - Preboot Execution Environment (PXE) 2
 - spanning tree protocol (STP), disabling 13
- Proxy DHCP service 2
- publications viii
- PXE (Preboot Execution Environment)
 - protocol 2
 - service 2
 - specifications 4
- PXEDHCP.BAT program 19

R

- rdagent.exe, role of 3
- RDM
 - components 1
 - database 1
 - environment, overview of 7
 - hardware requirements 4
 - installation
 - attended 21
 - modifying, repairing, and uninstalling 47
 - unattended 36
 - modifying installation 47
 - overview vii, 1
 - planning considerations 7
 - prerequisites 4
 - publications viii
 - repairing installation 47
 - uninstalling 47
 - upgrade paths 37
 - Web site viii
- RDM boot service 2
- RDM bootstrap loader program, role of 3
- RDM Console
 - disk space requirements 4
 - installation
 - attended 26
 - default location 28
 - unattended 36
 - memory requirements 4
 - modifying 47
 - operating systems, supported on 1, 5
 - repairing 47
 - uninstalling 47
 - upgrading 37
- RDM D-Server service 3
- RDM D-Server services 2

- RDM Deployment Server
 - components 2
 - disk space requirements 4
 - installation
 - attended 31
 - default location 32
 - unattended 36
 - memory requirements 4
 - modifying 47
 - operating systems, supported on 2, 5
 - repairing 47
 - uninstalling 47
 - upgrading 37
- RDM Server
 - database 1
 - disk space requirements 4
 - installation
 - attended 21
 - default location 23
 - unattended 36
 - memory requirements 4
 - modifying 47
 - operating systems, supported on 1, 5
 - repairing 47
 - uninstalling 47
 - upgrading 37
- remote D-Server
 - class-D (multicast) IP addresses 35
 - configuring 35
 - HTTP port 35
- Remote Deployment Manager
 - See* RDM
- remote deployment server
 - adding to RDM database 42
 - configuring settings 44
 - MTFTP timeouts, configuring 44
 - replication settings, configuring 45
 - subnets, defining 46
- repairing RDM installation 47
- replication settings, configuring 45
- repository
 - distributed 2
 - master 2
 - overview 2
- response file, creating 36
- routed network environment (illustration) 9, 10, 11
- routers
 - configuring 13
 - enabling protocols 13
 - required protocols 13

S

- scopes, defining 14
- ServeRAID Manager 21
- ServerProven Web site ix
- Service Packs viii
- setup.iss file 36
- single LAN environment (illustration) 8
- spanning tree protocol (STP), disabling 13

- specifications
 - Preboot Execution Environment (PXE) 4
 - Wired for Management (WfM) 4
- subnets, defining 46
- support, customer viii
- switches
 - configuring 13
 - enabling protocols 13
- system environment, role of 3
- system memory, minimum requirements for RDM 4
- Systems Management Software Web site viii

T

- target systems
 - adding to network 3
 - configuration of 3, 7
 - default naming convention 3
 - discovering 3
 - hardware information 3
 - performing tasks on 3
 - system requirements 4
 - Wake on LAN, role of 3
- terminology
 - deployment server 2
 - distributed repository 2
 - management console 1
 - management server 1
 - master repository 2
- trademarks 52

U

- unattended installation
 - RDM Console 36
 - RDM Deployment Server 36
 - RDM Server 36
- uninstalling RDM 47
- Universal Manageability Web site viii
- upgrade paths 37
- upgrading RDM 4.1 37

V

- virtual diskette drive A, role of 3

W

- Wake on LAN 3
- WAN environment (illustration) 12
- Web sites
 - IBM Online Assistant and e-Mail viii
 - IBM Remote Deployment Manager 4.11 viii
 - IBM ServerProven ix
 - IBM Support viii
 - IBM Systems Management Software viii
 - IBM Universal Manageability viii
 - IBM xSeries Systems Management viii
- windows
 - D-Server Configuration 25, 35

windows *(continued)*
 Deployment Server Management Options 42
Wired for Management (WfM) specification 4
wizards
 InstallShield wizard 21
 New Scope wizard 14

X

xSeries Systems Management Web site viii



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