

IBM Director 4.1



Remote Deployment Manager 4.11 Getting Started

Note: Before using this information and the product it supports, read the general information in “Notices”, on page 25.



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Preface

This guide provides step-by-step examples of using several Remote Deployment Manager (RDM) tasks.

How this book is organized

This guide is organized into the following sections:

- Chapter 1, “RDM basics”, on page 1 provides a brief introduction to RDM concepts and features.
- Chapter 2, “Tasks”, on page 5 describes the steps of creating six sample tasks.
- “Notices”, on page 25 contains product notices and trademarks.

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 Installation Guide*
- *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>.

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. RDM basics

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.

Tasks

Tasks are the functions that a user needs. A task is a predefined and configured unit of work that can be applied to a system or a group (of systems). You create a task by using the applicable task template in the RDM main console. RDM is also installed with a few built-in tasks, such as several data disposal tasks and a scan task.

RDM tasks and RDM task templates are displayed in the IBM Director Console Tasks pane (the right pane), along with all the IBM Director tasks.

You can apply a task to a system in one of the following ways:

- Drag and drop – Drag either selected systems from the center pane, or one group from the left pane, onto the task icon; or drag a task icon onto selected systems in the center pane or a group in the left pane. You are prompted to either configure the selected systems for the task or run the IBM Director Scheduler, which you can use to run the job immediately or to schedule the job for a later time.
- IBM Director Scheduler – Schedule sets of tasks to occur at some time in the future. Click the **Scheduler** icon on the IBM Director toolbar, and then click the Jobs tab. Right-click in the left pane of the **Jobs** tab and click **New Job**. On the **Date/Time** page select a time; on the **Task** page, select a task; on the **Targets** page, select a target system. To save the job, click **File**→**Save As**.
- Event Action Plan – Trigger an action plan that runs a configured RDM task.
- IBM Director Command Line – Run an IBM Director subtask (including an RDM task) from the Director command line.

Templates

A task template is a prototype of a specific kind of RDM task. Each task template has its own characteristics and attributes that apply to any subtasks created from the template. In other words, any new task is initialized with the properties of its template. RDM 4.11 comes with a set of task templates that is displayed in the Tasks pane of IBM Director Console. A basic RDM operation is to take a raw task template and create a task that is ready to do work. For example, you might use

the System Firmware Flash template to create a task with specific system firmware levels for specific machine types, or use the Windows Native Installation template to create a task with a specific operating system and installation parameters. Remember, the function of a task template is not to perform tasks; it is to create tasks.

You can also customize a template. Each template contains default values for some task parameters. You can change these values or even add new parameters by using the template property sheet.

Each task template provides a way to create tasks derived from that template. Some complex task templates require a wizard-style user interface to guide you through the process of creating a new task. Most task templates use a property sheet interface to create a new task.

Console window

The RDM console is an IBM Director Console window that also contains RDM features. Most RDM functions can be accessed using the RDM tasks in the right pane of IBM Director Console, either by right-clicking the applicable item or by dragging systems onto a task.

RDM installation does not add groups to the Groups pane (the left pane of the console window), however, during operation, you can create groups manually with IBM Director.

The Group Contents pane, the middle pane in IBM Director Console, contains a list of the systems that are members of the group that is selected in the Groups pane.

In the Tasks pane (the right pane of the console window), you initiate most of the RDM functions that operate on systems. Under the Remote Deployment Manager heading, there is a series of subheadings underneath. Content changes as you define tasks, but the general presentation is a tree view that contains the following items:

- Remote Deployment Manager (the main heading)
 - RDM templates
 - RDM tasks (built-in or ones you create)

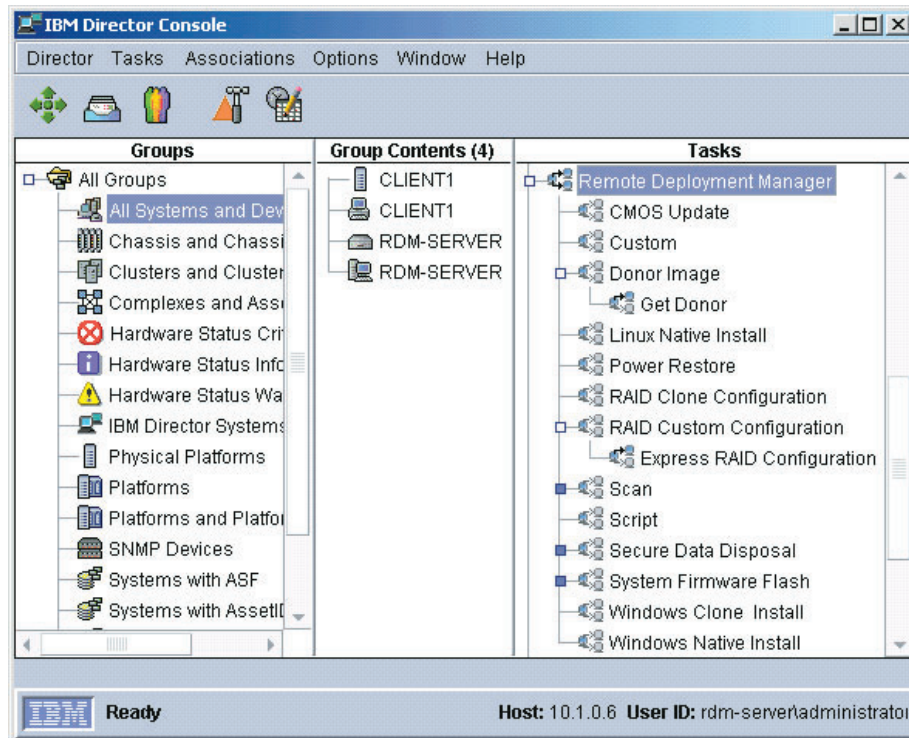


Figure 1. “IBM Director Console” window

Images

Most RDM tasks use various files during the processing of the task. We use the generic term *image* to refer to these files (or sets of files). For most tasks, images are input data; in some cases, the tasks create images as output data.

Examples of RDM images include things like:

- A zip file that contains the Windows 2000 Server I386 directory. A Windows Native Install task can use this image to deploy Windows 2000 Server to target systems.
- A PowerQuest-format set of files that is a copy of the boot partition of a donor system on which the Microsoft *SYSPREP.EXE* utility has been run. A Windows Clone Install task can use this image to deploy Windows to target systems.
- A zip file that contains the appropriate Windows XP Professional Service Pack 1 directories. A Windows Native Install task can use this image to deploy the service pack while it is deploying Windows XP Professional to target systems.
- A zip file that contains files from a BIOS update diskette. A System Firmware Flash task can use this image to flash the BIOS firmware on target systems.

Image management is one of the major RDM functions. It contains a user interface that you use to create, modify, export, or delete images.

Database

All RDM tasks use a set of parameter values during the task processing. These parameter values are contained in the RDM database – a Microsoft Jet SQL database. It contains data that describe the systems being processed and the individual tasks (plus some other data that RDM uses internally).

Systems

We use the generic term *system* to refer to any computer on which RDM runs a task. A system can be an xSeries server, IntelliStation workstation, NetVista desktop computer, mobile computer, or Point of Sale cash register.

Typical procedure

To deploy work with RDM, you need systems (the targets for deployment) and a task (the definition of the deployment work). For most tasks, you also need images (the input data). To get started with RDM, the typical procedure contains the following steps:

1. Create the images that your task will need. From the IBM Director Console, select the menu options **Tasks** → **Remote Deployment Manager** → **Image Management** to display the Image Management dialog from which you create the images.
2. Create the task. Right-click the task template in the IBM Director Tasks pane, and then click **Create new task** to display the wizard or property sheet interface. Follow the instructions in the interface to create the task.
3. Create the systems. Power on the systems causing them to connect to the network. The RDM server will detect the network connection and automatically run the default Scan task on those systems. When the Scan task is done, it will automatically power off the systems.
4. Configure the systems for your new task. Select the systems in the IBM Director Group Contents pane, and then drag the systems to your new task. This displays a menu on which you click **Configure systems** to display the System/Task Configuration (STC) window. Use STC to enter system-specific configuration data, for example, a static IP address or a unique computer name. After entering data, as appropriate, on all STC pages, select the check box that will cause the task to be scheduled, and then click **OK**.
5. Select **Run now**.
6. Select **OK** on the resulting dialog that lists the systems on which your task will run.

There are several possible variations on the previous procedure, and you can consult the *Operations Guide* for more information. However, this is the typical scenario to deploy a task on systems through the RDM console.

Chapter 2. Tasks

This section describes the complete process of creating and running several RDM tasks.

Scan

The first RDM function that you run on any system is the Scan task. A Scan task performs the following actions:

- Collects information about the system hardware.
- Creates an IBM Director object (a platform managed object) for the system, if none already exists.
- Stores the hardware information in the IBM Director database.

RDM contains a built-in Scan task that is the default Scan task. This task detects new systems. You initiate the first run of the Scan task on a system differently from the way you initiate all other RDM tasks. To initiate the Scan task, perform the following steps:

1. Configure the system so that it boots to the network. Most IBM systems are preconfigured for RDM use, and you will not need to do anything. If the system is not properly RDM-configured, you should power the system on, press the **F1** key when prompted, and change the startup sequences appropriately. The alternate startup sequence must have *network* before any *hard drive*. Optionally, you may set up the primary startup sequence the same way.
2. Power on the system so that it boots to the network. One way to do this is to press the **F12** key when prompted. If you have optionally configured (as in step 1) the system primary startup sequence to have *network* before *hard drive*, you will not have to press any key; the system will automatically boot to the network.

RDM will run the Scan task on the system, and then power off the system. It will also create an entry for the system in the IBM Director console.

At this point, you are ready to run other RDM tasks on the system.

System Firmware Flash

This example distributes the latest version of BIOS code from an RDM server to its target systems using a built-in System Firmware Flash task. You will create a firmware (BIOS) image from a BIOS flash diskette, and then deploy the firmware image to other systems by running the Deploy Latest System Firmware task.

Note: As a prerequisite for the task described here, you must have a BIOS diskette for your system.

To distribute the BIOS code from an RDM server, complete the following tasks:

1. Create a firmware (BIOS) image from a BIOS flash diskette.
2. Deploy the firmware image to other systems by running the System Firmware Flash template built-in task, Deploy Latest System Firmware.

Create a BIOS image from your BIOS diskette

To create a BIOS image from a BIOS diskette, complete the following steps:

1. From IBM Director Console, click the menu options **Tasks**→**Remote Deployment Manager**→**Image Management**. The “Image Management” window opens.

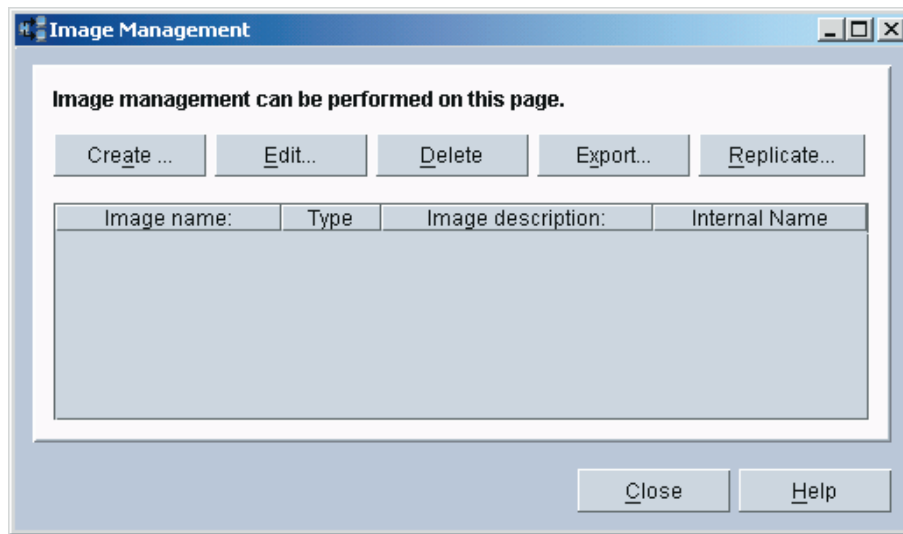


Figure 2. “Image Management” window

2. Click **Create New**. The “Image Selection” window opens.

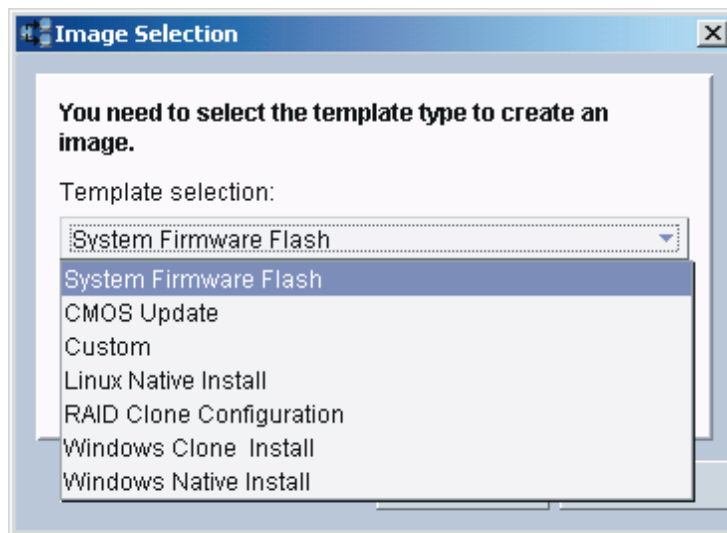


Figure 3. “Image Selection” window

3. Select **System Firmware Flash**; then, click **OK**. The “Create System Firmware Flash Image” window opens.

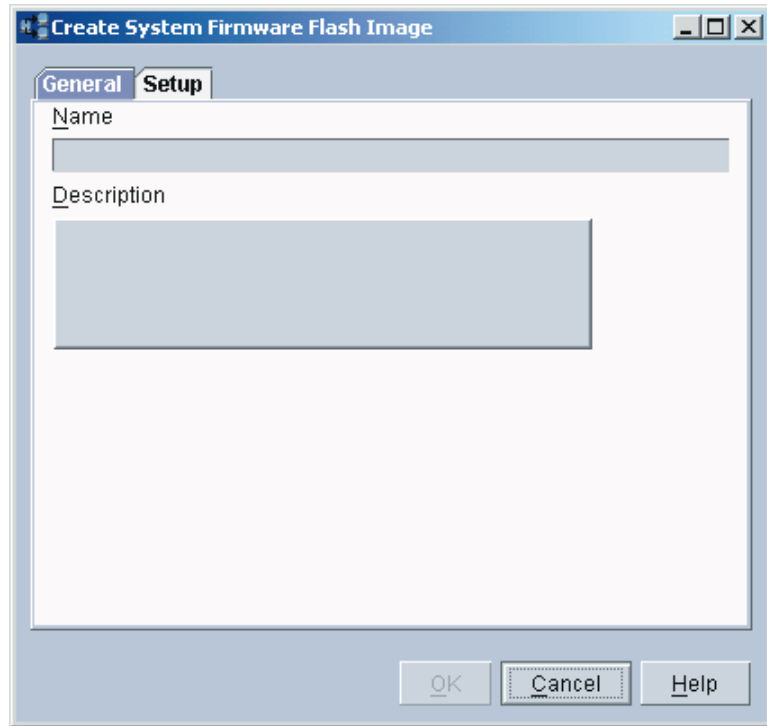


Figure 4. General page of the “Create System Firmware Flash Image” window

4. Click the **General** tab, and type a name and (optional) description for the new firmware.
5. Click the **Setup** tab and select the image type. In this example, the image type selected is **System BIOS**.

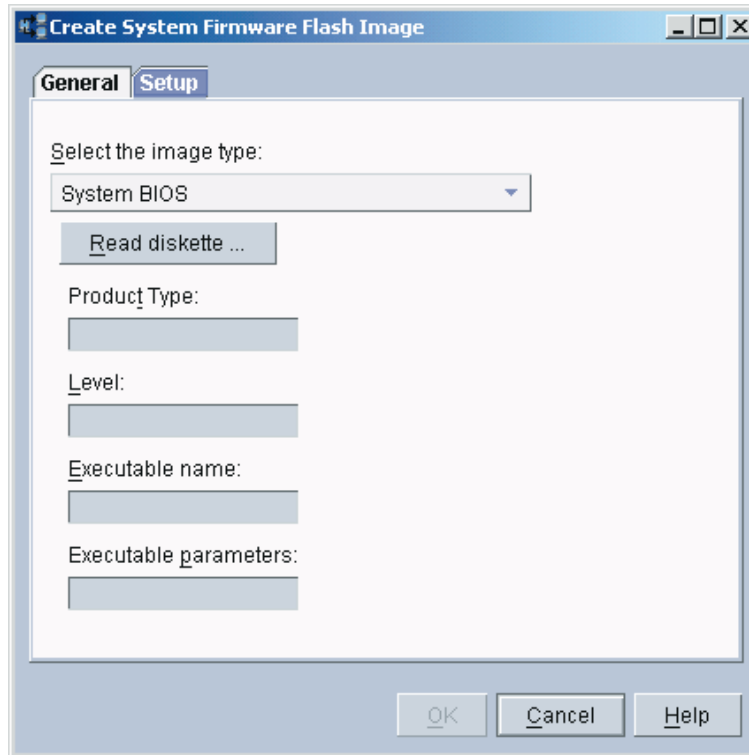


Figure 5. Setup page of the “Create System Firmware Flash Image” window

6. Insert your write-protected BIOS diskette into the diskette drive and click **Read diskette**. At that point, the product type and level are determined, and those fields are filled in automatically. Also, based on the image type you have selected, the executable name on the diskette and the parameters are determined and displayed.
7. Click **OK** to create the BIOS image. The image is stored in the RDM 4.11 Master Repository.

Deploy the BIOS image

Included with the System Firmware Flash template is a built-in task, **Deploy Latest System Firmware**. This task deploys the latest version of all applicable system firmware images that are in the RDM 4.11 Master Repository. In this case, since the BIOS image is the only firmware image in the repository, the task will deploy only that BIOS firmware.



Drag the **Deploy Latest System Firmware** task from the IBM Director Tasks pane onto the target systems to receive the latest BIOS version. (For this example, assume the BIOS image you created is the latest version.)

RAID Custom Configuration

This example configures an RDM system disk array using the built-in **Express RAID Configuration** task. The Express RAID Configuration task is ideal if you have no need to fine-tune your systems. It provides redundancy and performance gains, without the need to understand RAID in detail.



The Express RAID Configuration task mirrors the logic performed by the ServeRAID™ Manager Express Configuration function, without directly starting the ServeRAID Manager itself.

Express Configuration performs the following tasks:

- Create arrays by grouping together same-sized physical drives.
- Create one logical drive per array.
- Assign a RAID level based on the number of physical drives in each array:
 - An array with a single physical drive is assigned RAID level-0.
 - An array with two physical drives is assigned RAID level-1.
 - An array with three or more physical drives is assigned RAID level-5.
- Designate a hot-spare drive for the controller. If one or more arrays has four or more physical drives, the largest-capacity drive from those arrays is designated the hot-spare drive.

To apply the task, drag the Express RAID Configuration task from the IBM Director Tasks pane onto the target system in the Group Contents pane and click **Run systems**.

Windows Native Install

The Windows Native Install (WNI) task provides you with a way to deploy one of the supported Microsoft Windows operating systems and, at the same time, to deploy applications of your choice. When you create a new WNI task, you gather operating system and application-installation information in advance and save the information as a task instance. The task metadata is stored in the RDM database, and the task images are stored in the RDM Master Repository. When the information is stored, you can configure systems for the new task. The individualized system information is stored in the RDM database. Running the task will install and configure the operating system and applications for these systems without any user interaction at the systems.

The WNI wizard generates all the necessary files for an unattended installation including copying all the required setup files to the Master Repository. These files include:

- Files from the Microsoft Windows CD
- Application files
- Batch files to control the RDM processing

When you right-click the **Windows Native Install** template in the IBM Director Tasks pane, two options are available:

- **Create new task** – Displays the wizard, which provides a structured way to collect the information needed and then creates a new WNI task.
- **Edit template** – Displays the property sheets, which make changes to the task template only. Changes you make to the template properties will be reflected in all new tasks created from that template.

In this example, you will use the wizard to create a new Windows 2000 Professional installation task. During the creation process, you will create an operating system image and describe the way you want the operating system installed, including creating a second 3000 MB NT file system (NTFS) partition on Disk 1, reserving space for a hidden Power Restore partition, and specifying a Workgroup, all as part of the task. The wizard guides you through a series of panels.

Complete the following steps:

1. Create a WNI task by starting the wizard and creating an operating system image (if one does not exist already).
2. Connect systems that will receive the operating system image to the LAN.
3. Start RDM to scan the new systems.
4. Deploy the operating system image by dragging the task within IBM Director Console to the new systems.

Create the task

Complete the following steps to create the task:

1. Right-click the RDM **Windows Native Install** template in the IBM Director Tasks pane, and then click **Create new task** to run the WNI wizard. The “Windows Native Install” window opens.

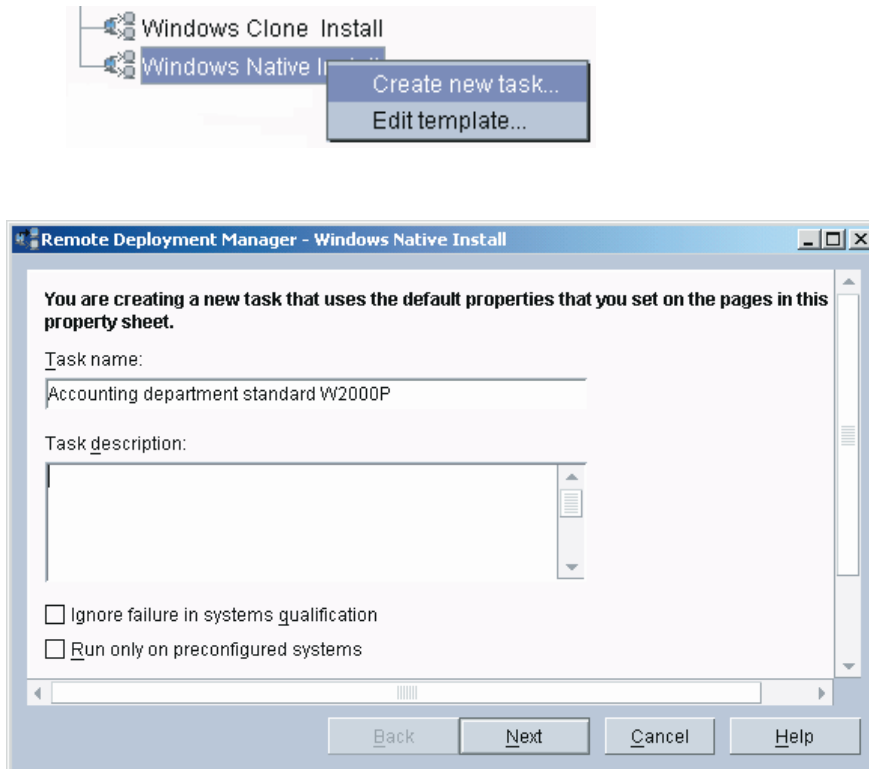


Figure 6. Windows Native Install: Default “Windows Native Install” window

2. Type a task name, for example Accounting department standard W2000P, and optionally a description.
3. Click **Next**. The “Select an operating system image” window opens.

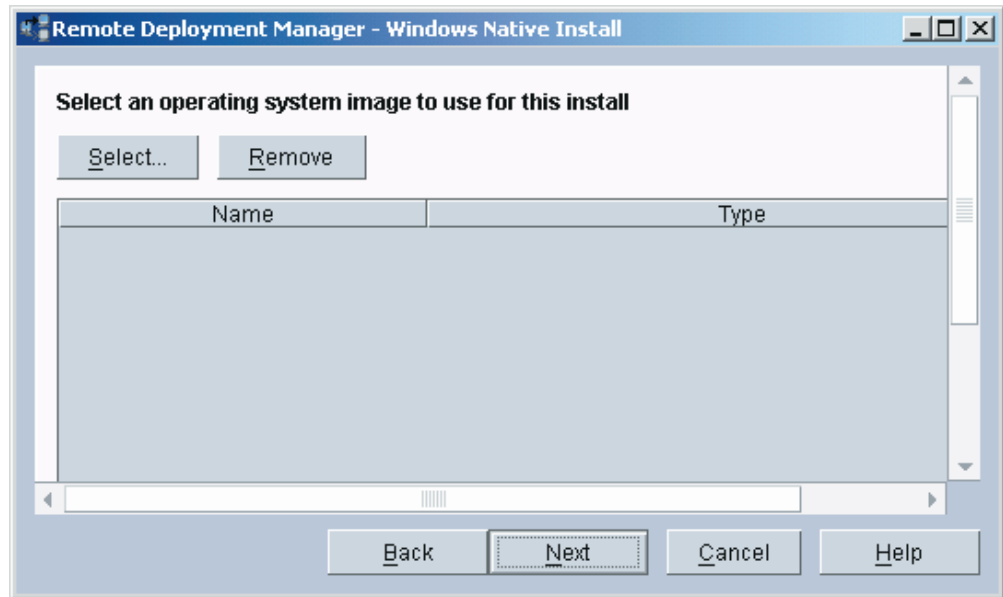


Figure 7. Windows Native Install: “Operating system selection” window

4. Complete the following steps to create a new image:
 - a. Click **Select** to add a new Windows 2000 image for this task. The “Image Selection” window opens.

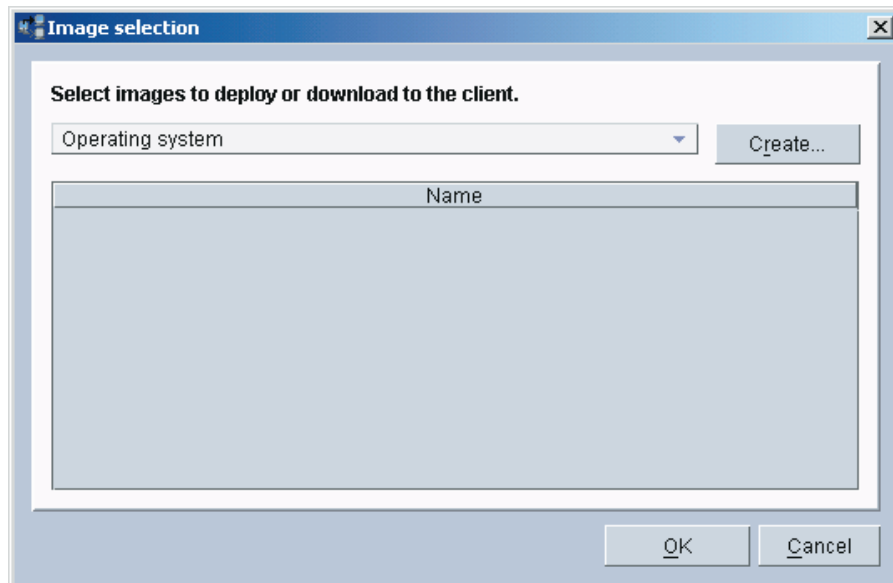


Figure 8. Windows Native Install: “Image Selection” window

- b. If you had previously created another Windows 2000 Professional WNI task, the list in this window would contain the image you need. Since this is

the first WNI task you are creating, the list is now empty. Click **Create**. The “Create Windows Native Install Image” window opens.

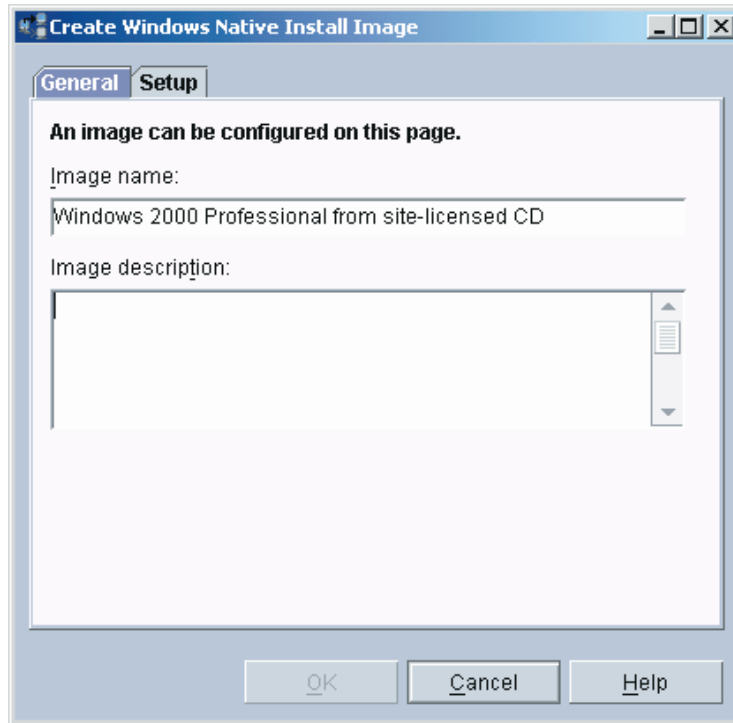


Figure 9. Windows Native Install: General page of the “Create Windows Native Install Image” window

- c. Click the **General** tab, and type a name (Windows 2000 Professional from site-licensed CD for this example) and optional description for the new image to be created.
- d. Click the **Setup** tab; then, click the image type (**Operating system**, in this case), the type of operating system (for example, Windows 2000 Professional), and language to display (in this example, **English**). Browse to the source of the image that you want to create. The Browse window title bar, whenever possible, will give the name of the file to locate. Navigate by double-clicking directories until you find that file. Select the file (winnt.exe, in this case) and click **OK**. This returns you to the Setup page.

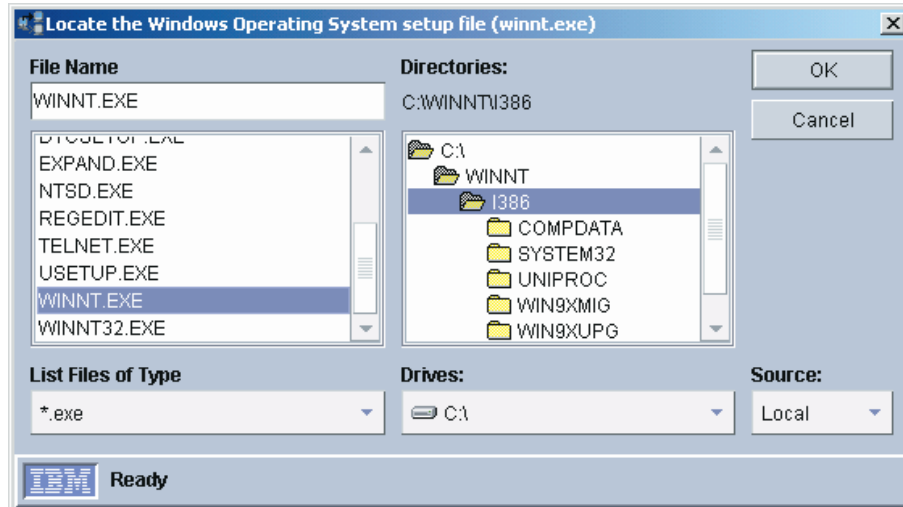


Figure 10. Windows Native Install: “Locate the Windows Operating System setup file” window

RDM fills in the remaining fields under the **Setup** tab automatically.

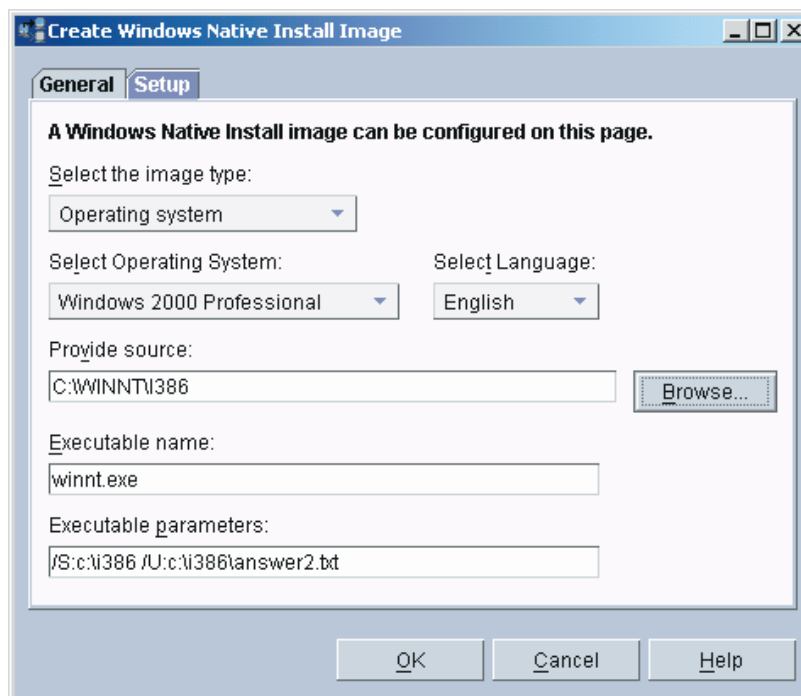


Figure 11. Windows Native Install: Setup page of the “Create Windows Native Install Image” window

- e. Click **OK** to start the image creation process.
A progress bar is displayed during image creation and, if necessary, during the file transfer to IBM Director Server.

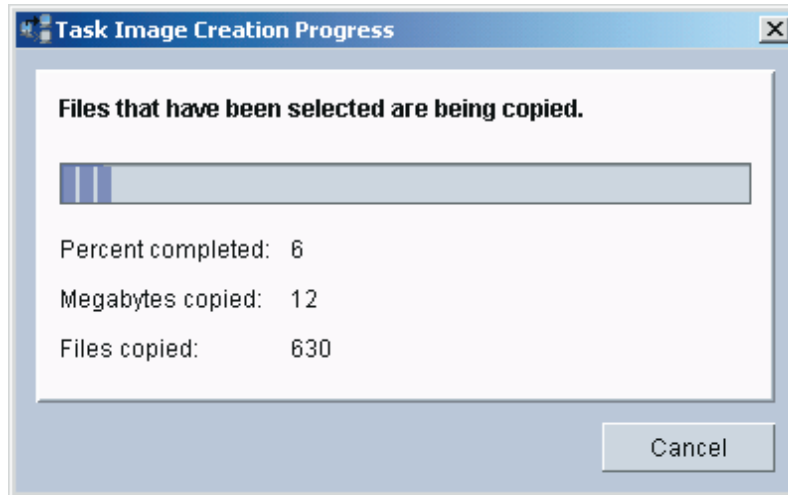


Figure 12. Windows Native Install: “Task Image Creation Progress” window

The new image is now listed in the “Image Selection” window.

- f. Select the operating system image you just created for the task and click **OK**.

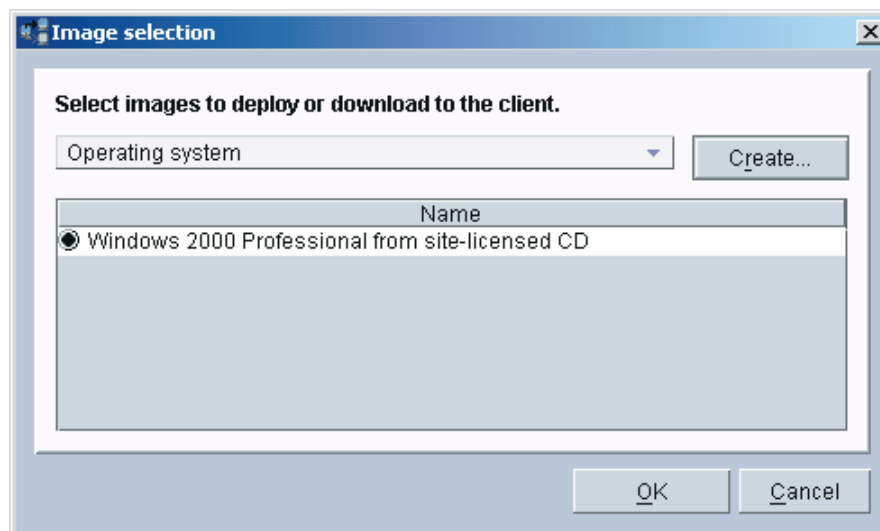


Figure 13. Windows Native Install: “Operating System Image Selection” window

5. Click **Next** to continue. This opens a new “Image selection” window.

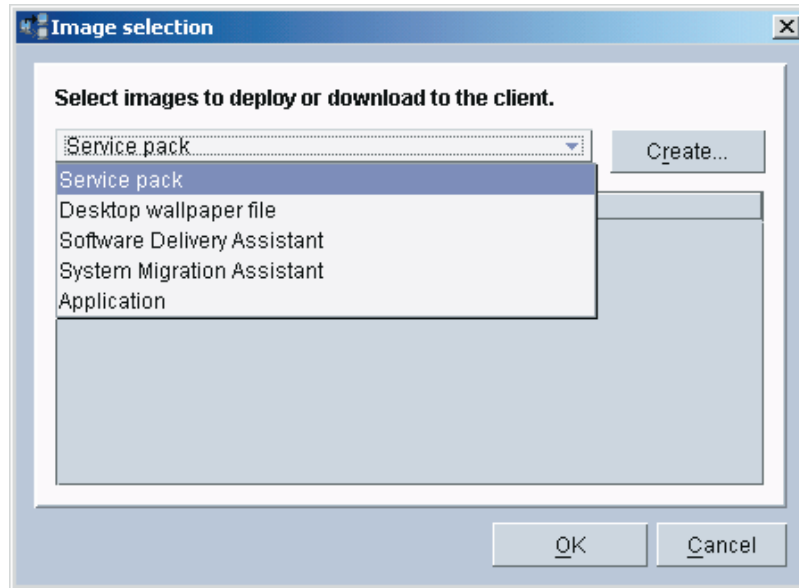


Figure 14. Windows Native Install: “Other Image Selection” window

6. Select or create images (following similar steps) of other types to use with this installation task: Service Packs, desktop wallpaper, and other applications. In this example, you will not need to select another image. Click **Next** to continue. The “Partitions can be configured” window opens.

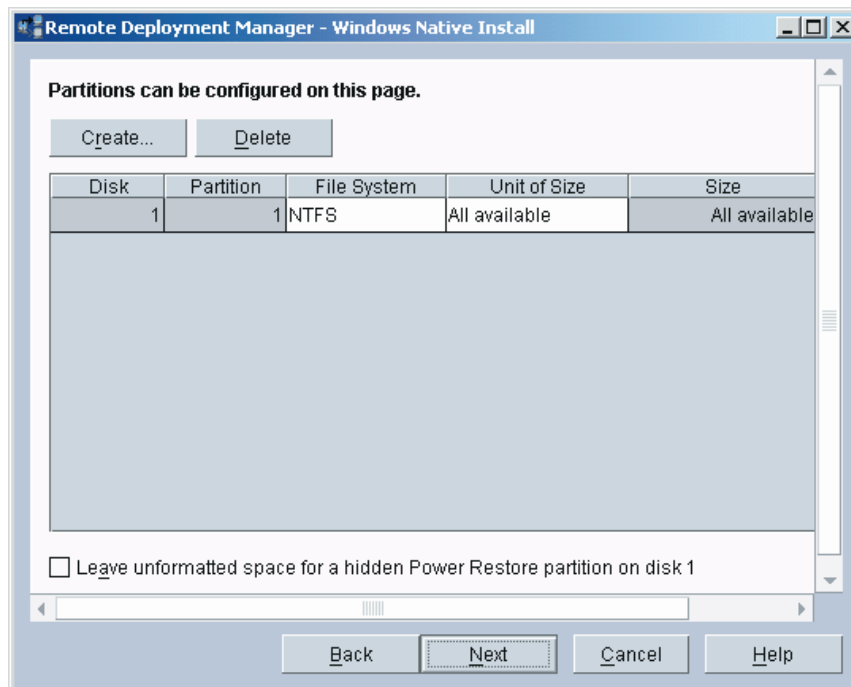


Figure 15. Windows Native Install: “Partition configuration” window

7. Click **Create** to create a new disk partition. The “Create a Partition” window opens.

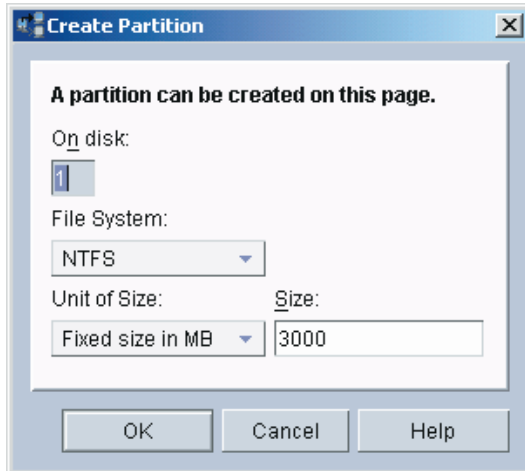


Figure 16. Windows Native Install: “Create Partition” window

For this example, create a second NTFS partition on Disk 1 that is 3000 MB. In addition, select the check box for a hidden Power Restore partition to reserve unformatted space (on disk 1) for a backup copy of the primary (boot) partition. Type the following values and click **OK** to create the new partition. The resulting window displays the configuration information.

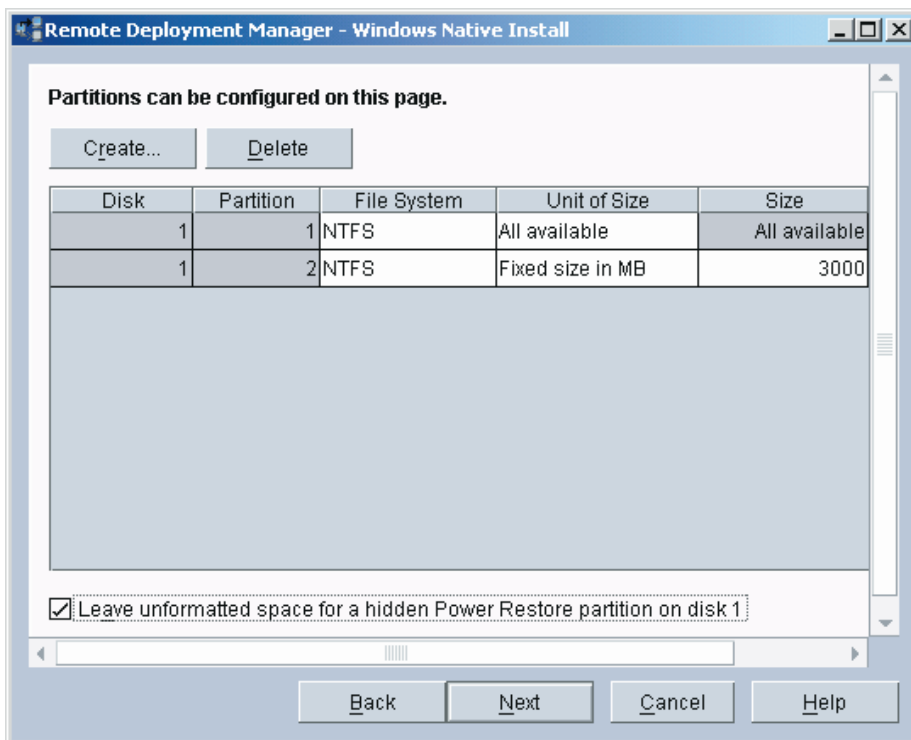


Figure 17. Windows Native Install: “Partition configuration” window

8. Click **Next** to continue. The “Personal information” window opens.

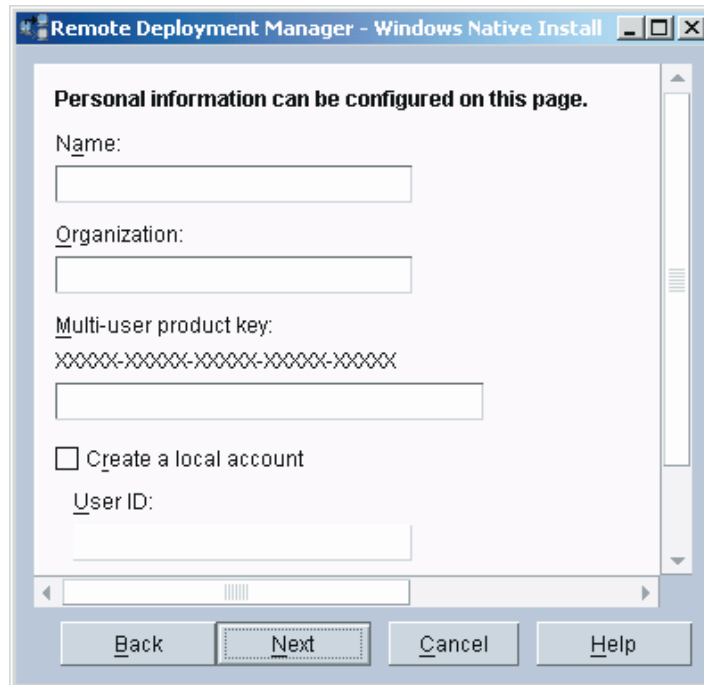


Figure 18. Windows Native Install: "Personal information" window

9. Type your name, organization, and product key. The **Multi-user product key** field is for the selected operating system and has a length of 29 characters, formatted in five 5-character alphanumeric tokens separated by hyphens.) Select the **Create a local account** check box to create a local user ID. If you type a name in the **User ID** field, it will be the default user ID on each system. Click **Next** to continue. The "Regional information" window opens.

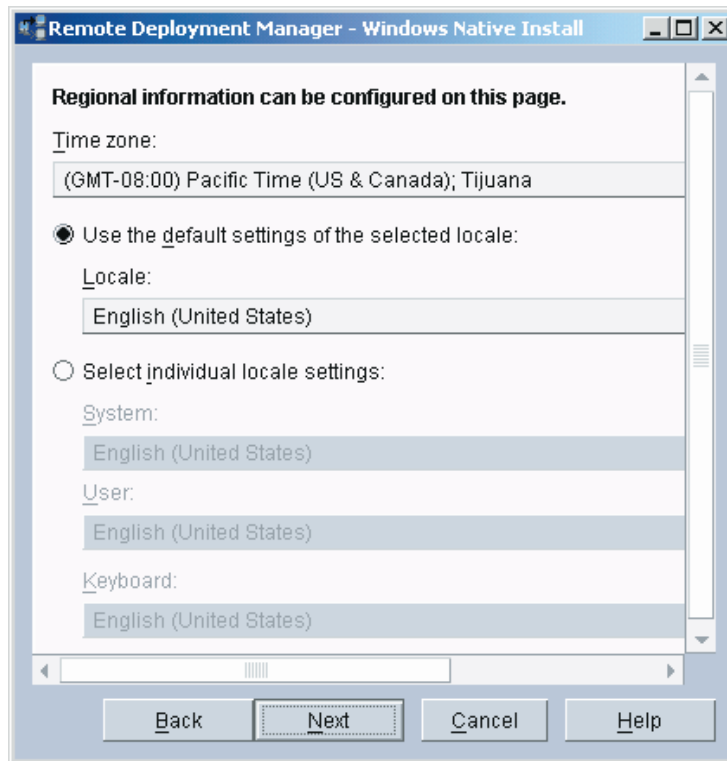


Figure 19. Windows Native Install: “Regional information” window

10. Select your time zone (for example, **Pacific Time**) from the drop-down list. Click the **Use the default settings of the selected locale** radio button, which uses **English** in our example. Click **Next** to continue. The “Network environment” window opens.

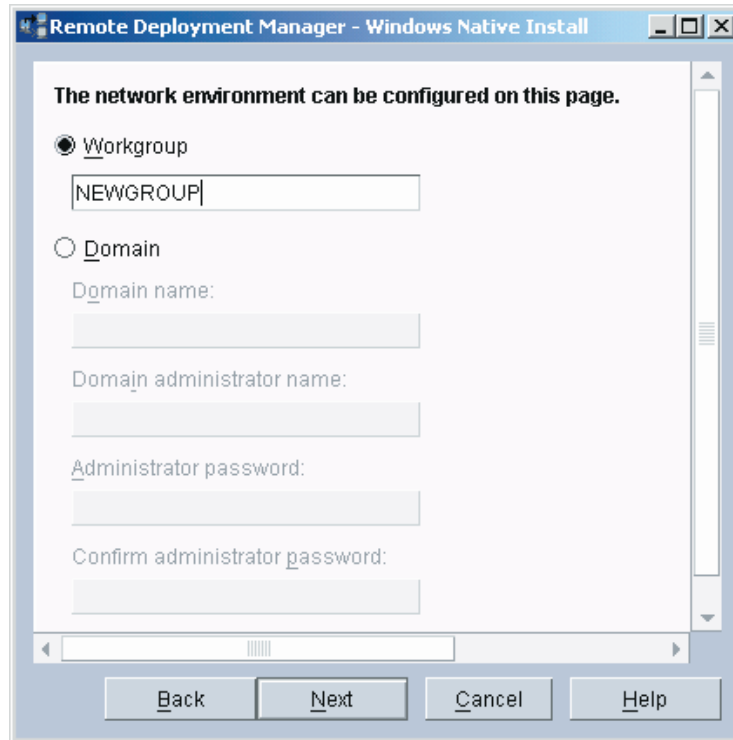


Figure 20. Windows Native Install: “Network environment” window

11. Select **Workgroup**, and type a Workgroup name (NEWGROUP in this example); then, click **Next**. The “Network protocol” window opens.

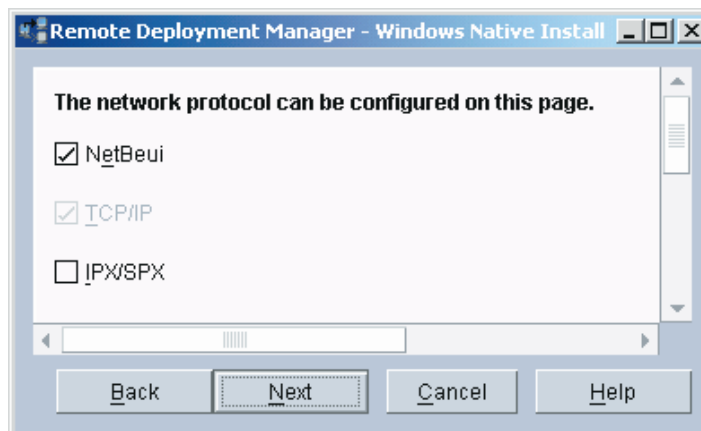


Figure 21. Windows Native Install: “Network protocol” window

12. Leave **NetBeui** and **TCP/IP** in their default state (already selected and not available), and click **Next**. The “TCP/IP can be configured” window opens.

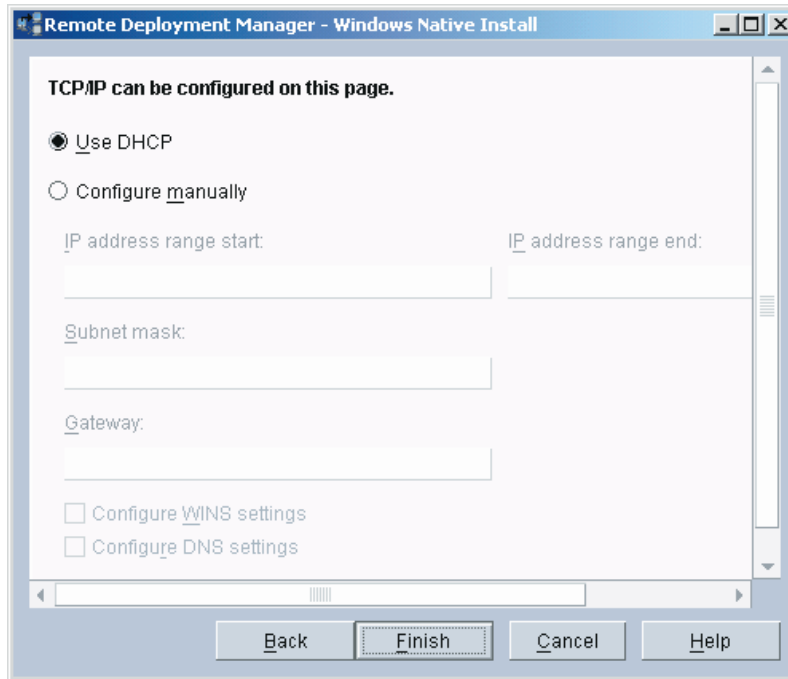


Figure 22. Windows Native Install: “TCP/IP” window

13. Click **Use DHCP** and click **Finish**. The image is now associated with a new WNI task. The next step is to deploy this task to systems.

Configure systems for the task

Some RDM tasks require data that is unique for each system being deployed. In this example, we will consider the **User ID** field to be system-unique.

1. Select the systems that you will be deploying with this task.
2. Drag the selected systems onto the new task. This displays a context menu.
3. Select **Configure systems**, which displays the System/Task Configuration (STC) window.
4. Select the <xxxx> page.

For each system, double-click on the <yyyy> cell, and then type the User ID for that system.

Deploy the task

There are several ways to initiate a task in RDM. In this example, we will use the STC window, after configuring the systems.

Complete the following steps to deploy the task:

1. Select the <zzzz> check box at the bottom of the STC window.
2. Click **OK**. This displays a window that asks whether you want to schedule the task (to run later) or to run it now.
3. Click **Execute Now**.

The WNI task performs a complete, unattended installation of Windows using the Microsoft Windows installation program (winnt.exe). When the task is finished, it will power off the system.

Power Restore

The Power Restore task performs backups and restores of the boot partition and the Master Boot Record. The example task described here will perform a backup of the target system boot partition and the master boot record.

When you right-click the **Power Restore** template in the IBM Director Tasks pane, two options are available: **Create new task** and **Edit template**.



Complete the following steps to create a task:

1. Right-click the RDM **Power Restore** template in the IBM Director Tasks pane, and then click **Create new task** to open the Power Restore property sheet for the new task. The property sheet contains three tabs: General, Setup, and Advanced.

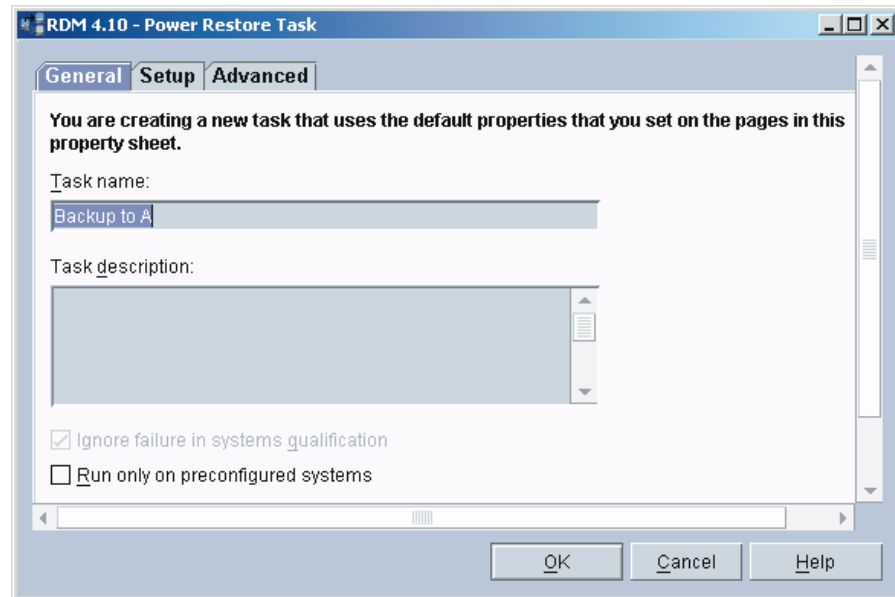


Figure 23. Initial “Power Restore Task” window

2. Type a task name, for example Backup to A, and optionally, a description.
3. Click the **Setup** tab. The Setup page defines the operations in Power Restore tasks.

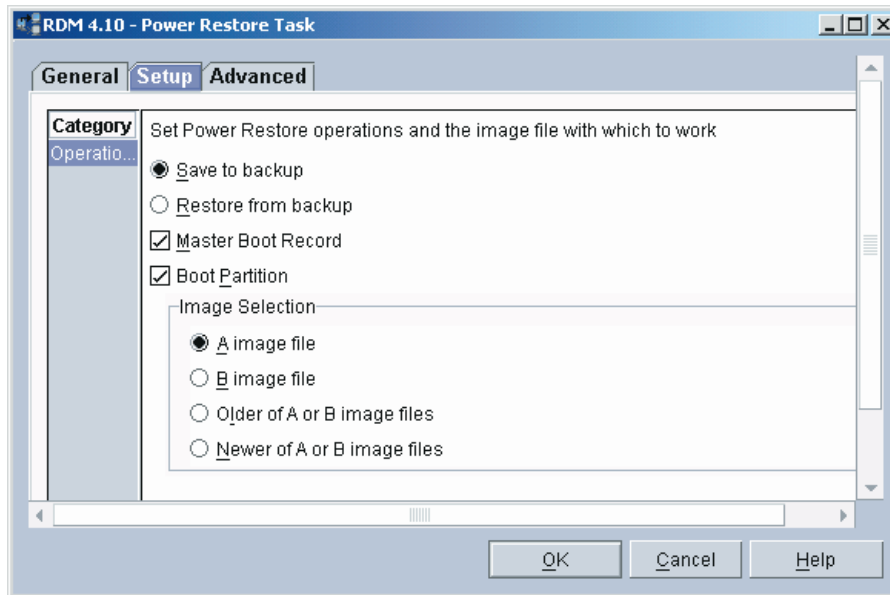


Figure 24. Power Restore: “Operations” window

4. Select the Power Restore operations:
 - Click **Save to backup**.
 - Select the **Master Boot Record** and **Boot Partition** check boxes.
 - Click **A image file**.

There are two main types of operations for Power Restore tasks: Save and Restore. Save operations involve saving a copy of the entire boot partition or Master Boot Record. Restore operations involve restoring the boot partition or Master Boot Record from backup copies, completely overwriting the current boot partition or Master Boot Record

Backups of the boot partition are saved in one or more files that are referred to collectively as image files. Up to two such image files can be saved to or restored from. These are referred to as the A image file and the B image file and can be selected by clicking the **A image file** or **B image file** button.

5. Click **OK** to create the task. The new task (Backup to A, in this case) is displayed in the Tasks pane of the main console underneath **Power Restore**.



6. Drag the new task from the IBM Director Tasks pane onto a system in the Group Contents pane and click **Run systems**. This displays a dialog window that asks whether you want to schedule the task (to run later) or to run it now.
7. Click **Execute Now**.

Script

A Script task consists of a list of subtasks (existing tasks) that are run in the order you specify. Typically, a Script task consists of all the steps required to start up a system, for example, to flash the system firmware, configure RAID, and install Windows. You select from all available tasks, either built-in or manually created, to

be included in the script task. The example in the following table of the Script task combines the tasks either created or used in the previous examples.

Table 1. Script tasks

Template	Task used
System Firmware Flash	Deploy latest system firmware (built-in task)
RAID Custom Configuration	Express RAID Configuration (built-in task)
Windows Native Install	Accounting department standard W2000P (manually created)
Power Restore	Backup to A (manually created)

Create a new Script task

Complete the following steps to create a new Script task:

1. Right-click the RDM **Script** template in the IBM Director Tasks pane, and then click **Create new task**. The “Script Task” window opens.

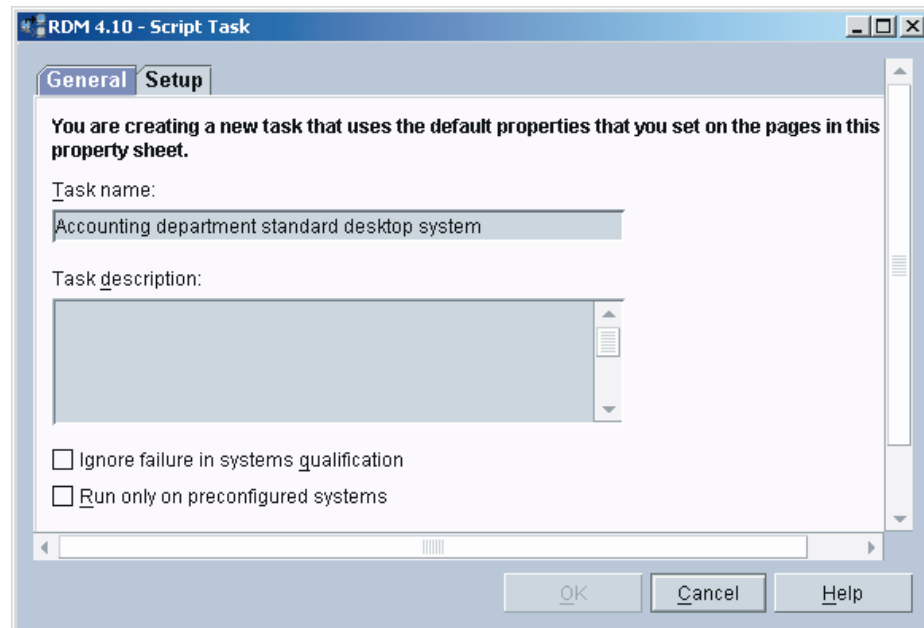


Figure 25. General page of the “Script task” window

2. Type a task name, for example Accounting department standard desktop system, and an optional task description.
3. Click the **Setup** tab. The “Setup” page opens.
4. Click the tasks to include in the new Script task.

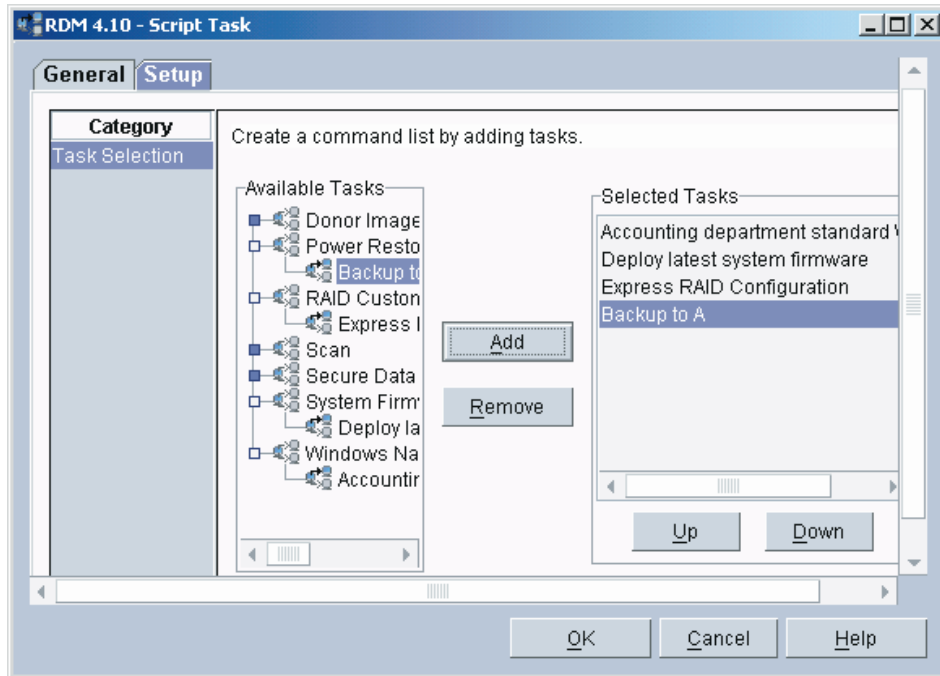


Figure 26. Setup page for “Script task selection” window

The **Available Tasks** box contains a tree view of all RDM tasks. The **Selected Tasks** box contains an ordered list of the tasks that are contained in this Script task. The tasks are run in the order in which they occur in this list (top task first).

In turn, select each of the tasks from the previous sections, and then click the **Add** button. When you click **Add**, the highlighted tasks are copied from the **Available Tasks** box to the **Selected Tasks** box. You could instead just drag each task to the **Selected Tasks** control.

Make sure that you order the tasks in the **Selected Tasks** box correctly. Drag each task up or down to its proper position. You can also move items up or down by using the **Up** and **Down** buttons. Highlight one item or multiple consecutive items, and then click **Up** or **Down** to change their order sequence.

When you click **Remove**, the highlighted tasks are removed from the **Selected Tasks** control. Use this if you accidentally add an undesired task to the **Selected Tasks** box.

5. Click **OK** to create the task.

The task is displayed as a subtask in the IBM Director Tasks pane, underneath the Script template. Right-click the new task to edit, delete, or copy the task.

Deploy the task

To run the task, drag the new task from the IBM Director Tasks pane onto a system in the Group Contents pane and click **Run systems**; then, follow the same procedure as in the previous sections.

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