Remote Deployment Manager 4.11 Additional Information

This documentation contains important information about new features in IBM® Remote Deployment Manager (RDM) Version 4.11 Update 3. Corrections to RDM Version 4.11 documentation are also detailed in this documentation. Please read this entire documentation, and the `rdm411_readme_update3.txt` file that comes with RDM Version 4.11 Update 3, before installing the update.

New features:
- **RDM Version 4.11 Update 3 (go to "RDM Version 4.11 Update 3 new features" on page 2)**
- **RDM Version 4.11 Update 2 (go to "RDM Version 4.11 Update 2 new features" on page 16)**
- **RDM Version 4.11 Update 1 (go to "RDM Version 4.11 Update 1 new features" on page 18)**

Documentation corrections:
- *Compatibility and Configuration Guide* (you can obtain the latest *Remote Deployment Manager 4.11 Compatibility and Configuration Guide* on the IBM Web site
`http://www.ibm.com/servers/eserver/xseries/systems_management/sys_migration/rdm.html`)
- *Getting Started* (go to "Getting Started corrections" on page 19)
- *Installation Guide* (go to "Installation Guide corrections" on page 19)
- *Operations Guide* (go to "Operations Guide corrections" on page 19)

Related documentation

This section describes how to obtain additional information on some of the topics described in this documentation.
- Systems Management-Remote Deployment Manager v4.11 White papers - The following IBM Web site contains white papers for RDM. The white papers for RDM Version 4.11 Update 1 and Update 2 are applicable to RDM Version 4.11 Update 3 also.
`http://www.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-53487`
- *Microsoft® Windows® Corporate Deployment Tools User's Guide* (`Deploy.chm`) - This documentation contains additional information about configuring a `winbom.ini` file, and is located in the `Deploy.cab` file on the Windows Server 2003 installation CD.
- For additional information about RAID configuration utilities, such as `hypercfg.exe`, `raidsel.exe`, `acuichsv.exe`, and `acu.exe` see the documentation that comes with your server and RAID controller. You can also download the latest documentation from the IBM Web site
`http://www.ibm.com/pc/support/`.

RDM Version 4.11 Update 3 new features

The RDM Version 4.11 Update 3 adds the following functions and support.

- Enhanced support for `RDAGENT.EXE` and `MTFTP.EXE`:
  - Run in a Microsoft Windows environment
  - Improved error handling
- Enhanced Windows Clone Install task features:
  - Support for Microsoft System Preparation Tool (Sysprep) Version 2.0 (go to "Using the Microsoft System Preparation Tool Version 2.0")
  - Support for deploying plug and play drivers (go to "Adding plug and play drivers to a Windows Clone Install task" on page 5)
  - Support for adding applications (go to "Adding applications to a Windows Clone Install task" on page 6)
  - Support for multiple mass storage devices (go to "Supporting multiple mass storage devices" on page 7)
  - Support for deploying IBM Director Agent (go to "Creating a Windows Clone Install task that deploys IBM Director Agent" on page 9)
- Support for configuring the following RAID controllers:
  - (SCSI) IBM ServeRAID™ 7e (Adaptec® HostRAID™) controller
  - (SATA) IBM ServeRAID 7e (Adaptec HostRAID) controller
  - IBM ServeRAID 7t controller

  RDM uses new utilities (`raidsel.exe`, `acuichsv.exe`, and `acu.exe`) to create the command files used by the RAID Custom Configuration task and the RAID Clone Configuration task. (Go to "New RAID configuration utilities" on page 14)

Using the Microsoft System Preparation Tool Version 2.0

You must use Sysprep to prepare a donor system before you run the Get Donor task. Before performing any of the steps in this documentation, make sure you also read the *Microsoft Windows Corporate Deployment Tools User's Guide* (`Deploy.chm`).

Running Sysprep on a donor system accomplishes the following:

- Makes sure that unique security identifiers (SIDs) are generated when the donor image is distributed to a target system.
- Makes sure that the Windows Mini-Setup wizard runs the first time that the target system is started. The Mini-Setup wizard is a subset of the Windows Setup process; it provides prompts for user-specific information, configures operating-system settings, and detects new hardware. You can automate the Mini-Setup wizard by including an answer file (`sysprep.inf`) in the directory where the Sysprep utilities are located.

RDM-supported options in Sysprep 2.0

RDM Version 4.11 Update 3 supports the following features in Sysprep Version 2.0 or later:

Mass storage support

The -bmsd parameter and [BuildMassStorageSection] section in the sysprep.inf file instructs Sysprep to build a list of device drivers for mass storage controllers. This eliminates the need to edit the sysprep.inf file if the donor image supports more than one type of mass storage controller.

> **Note:** The version of Sysprep that comes with Windows XP does not support the -bmsd parameter. You can, however, run the version of Sysprep that comes with Windows Server 2003 on a Windows XP installation, and use this new parameter.

Factory mode

The -factory parameter prepares a donor system that will start in a network-enabled state *before* the Windows Mini-Setup wizard runs. This enables you to update device drivers, run Plug and Play enumeration, install applications, or make configuration changes before the target system is delivered to the end user. The winbom.ini file is the answer file for the factory mode process.

Reseal support

The -reseal parameter clears the Event Viewer logs and prepares the target system for delivery to the end user. You must use the -reseal parameter after you perform tasks in factory mode.

Clean The -clean parameter removes unused mass storage device drivers and phantom Plug and Play device drivers from the Windows registry and device manager.

Sysprep Version 2.0 is supported on Windows XP and Windows Server 2003 only. If the donor system is running Windows 2000, you must use Sysprep Version 1.x.

Notes:

1. Sysprep Version 1.x does not support Factory mode.
2. Sysprep Version 1.x does support Mass storage support, but does not support the -bmsd parameter or the [BuildMassStorageSection] section in the sysprep.inf file.

Using Sysprep 2.0 in Factory mode

This section describes how to use Factory mode in Sysprep 2.0 with RDM Version 4.11 Update 3. Using Sysprep in Factory mode is useful for adding device drivers or applications, running custom commands, and customizing INI files for an image before running Sysprep Mini-Setup.

Complete the following steps to create a Windows Clone Install task that uses a donor image created using Sysprep factory mode.

1. Create a donor system:
   a. Install the operating system and applications on the donor system.
   b. Create a directory on the donor system to contain the Sysprep files from the Deploy.cab file on the Microsoft Windows CD.
   c. (Optional) Copy plug and play (PnP) driver files to the donor system. See "Adding plug and play drivers to a Windows Clone Install task" on page 5 for more information.
   d. (Optional) Copy application files to the donor system. See "Adding applications to a Windows Clone Install task" on page 6 for more information.

e. (Optional) Configure and copy base configuration files to the donor system:

   1) Copy `oobeinfo.ini` to the `%windir%\system32\oobe` directory

   2) Copy `oeminfo.ini` to the `%windir%\system32` directory

   3) Copy `ocm.txt` to the location where the `sysprep.inf` `[GuiRunOnce]` command will call `sysocmgr` (typically `c:\ocm.txt`).

f. Run Sysprep in Factory mode on the donor system to prepare the system to start (boot) in a factory session. During a factory session, you can add device drivers and applications before Mini-Setup.

   Note: Make sure that Sysprep shuts down the donor system when it completes.

2. Run a Get Donor task on the donor system to create an image of the system boot partition. Make sure to select Sysprep type **Factory** in the "Get Donor System Task Configuration" Window.

3. Create a Windows Clone Install task that uses the new image you just created; then, complete the following optional steps as required:

   a. (Optional) Create custom task parameters to use with the `winbom.ini` file:

      1) Edit the new Windows Clone Install task and click the **Advanced** tab; then, select the **User Parameter** option in the "Category" pane.

      2) Click the **Select** button in the corresponding panel. You can use an existing parameter or create a new task parameter.

      3) Make sure you select the **Show in STC** check box; then, click **OK** to add the task parameter to the task.

   b. (Optional) Go to the task folder of the new Windows Clone Install task you created and edit the `winbom.ini` file to add device driver and application deployment information:

      • Map PnP driver paths to the `winbom.ini` answer file

      • Map application configuration paths and commands to `winbom.ini`

      • Configure other configuration files, as required, using `winbom.ini` and the Sysprep 2.0 documentation

      • Add RDM parameters to the winbom.ini file, as applicable, such as for the **Autologon** task parameter you would add `Autologon=%AutoLogon%`

4. Configure a set of systems for the new Windows Clone Install task. Enter applicable values in the "System Task Configuration" Window for system-unique parameters:

   a. Drag systems to the task; then, select the task.

   b. Make sure that all user parameters are properly configured.

5. Run the Windows Clone Install task on the set of systems.

After the Windows Clone Install task is run against a target system, the system starts in factory mode and performs the installation and configuration tasks that are specified in the `winbom.ini` file.

Attention: You can interfere with the expected operation of an unattended Windows Clone Install task in factory mode, if the `winbom.ini` file is not configured correctly. Some settings to verify are:

• `Autologon` must be correct

• `ResealMode` must be correct, ex. `ResealMode=Mini`

• `Reseal` option must be correct, ex. `Reseal=Reboot`

For more information about configuring a `winbom.ini` file, see the *Microsoft Windows Corporate Deployment Tools User's Guide* (`Deploy.chm`).

Adding plug and play drivers to a Windows Clone Install task

This section describes how to add plug and play (PnP) drivers with a Windows Clone Install task. Complete the following steps to add PnP drivers to a Windows Clone Install task.

1. Create a directory for each plug and play driver on the donor system. (ex. `c:\drv\network`)
2. Copy all required files (`*.dll`, `*.cat`, `*.inf`, `*.sys`, `*.ini`, etc.) for each plug and play driver to the applicable directory.

   Note: If you require EXE files to install a device driver, you must add the applicable information to the `[GuiRunOnce]` section of the `sysprep.inf` file and the `[OEMRunOnce]` section of the `winbom.ini` file.

3. Run Sysprep in either Reseal or Factory mode.

   Notes:
   a. Reseal mode - Use the `-pnp` option on the command line. If you are running Sysprep 2.0, you can select the `-pnp` option from the Sysprep graphical user interface.
   b. Factory mode - Select **Factory Mode** and the **PnP** check box.

4. Run the built-in Get Donor task of RDM to capture the donor image.

   Go to step 5 for Reseal mode, or step 6 for Factory mode.

5. Configure the answer file for Reseal mode and deploy the image:
   a. Create a Windows Clone Install task, using the image created in step 4.
   b. Right-click the new Windows Clone Install task; then, click **Edit Task...**
   c. In the Task Notebook, select the **Advanced** tab; then, select **Task Folder** to see the location of the task folder in the main panel.
   d. Navigate to the task folder for the new task, and open the `answer2.txt` file in an ASCII text editor.
   e. Uncomment or add the `OemPnPDriversPath` line in the `Unattended` section of the `answer2.txt` file; then, add the path to each PnP driver on the donor system to this line.

      ex. `OemPnPDriversPath=drv\net; drv\video`

      Note: `%Systemroot%` is automatically added to each path.
   f. Save and close the `answer2.txt` file.
   g. Run the Windows Clone Install task on the client systems, and the PnP drivers will be installed during the Windows Mini-Setup process.

6. Configure the answer file for Factory mode and deploy the image:
   a. Create a Windows Clone Install task, using the image created in step 4.
   b. Right-click the new Windows Clone Install task; then, click **Edit Task...**
   c. In the Task Notebook, select the **Advanced** tab; then, select **Task Folder** to see the location of the task folder in the main panel.
   d. Navigate to the task folder for the new task, and open the `winbom.ini` file in an ASCII text editor.
   e. Uncomment or add the `DevicePath` line in the `PnPDriverUpdate` section of the `winbom.ini` file; then, add the path to each PnP driver on the donor system to this line.

      ex. `DevicePath=net; video`

      Note: The path indicated by the `TargetRoot` parameter is automatically added to each path. Make sure that the combination of `TargetRoot` and `DevicePath` settings map to the correct directory on the donor image. (ex. `TargetRoot=c:\drv`)
   f. Save and close the `winbom.ini` file.
   g. Run the Windows Clone Install task on the client systems, and the PnP drivers will be installed during the Windows factory session.

Adding applications to a Windows Clone Install task

This section describes how to perform unattended installations of applications during a Windows Clone Install task. You can add applications to a Windows Clone Install task by copying the applicable installation files to a donor system before it is cloned; then, you can reference files and installation scripts from the command line during the Windows Clone Install post-deployment script session.

Notes:

1. If you use the [GuiRunOnce] section of sysprep.inf (answer2.txt in RDM), the application installation might not complete because RdAgent might restart (reboot) the system before the application installation completes. Using Sysprep in Factory mode and adding information to the [OEMRunOnce] section of winbom.ini prevents this from happening.

   For Windows 2000 operating systems, or when using Sysprep in Reseal mode, you must add commands to the beginning of the PQAgent.bat file that is called by the Windows Startup process before RdAgent runs in order to install applications.

2. This section uses IBM Director Agent as a specific example of an application added to a Windows Clone Install task.

Complete the following steps to add an application to a Windows Clone Install task.

1. Copy all application files to the donor system.

   ex. For IBM Director Agent, create a c:\dirAgent\windows directory on the donor system; then, copy the director\agent\windows\i386*.* files from the *IBM Director* CD to this new directory.

2. Remove any known registry entries for the application on the donor system.

   Note: Uninstalling IBM Director Agent from the donor system does not automatically remove this key.

   ex. For IBM Director Agent, you must delete the TWGMachineID key from [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\ComputerName\ComputerName] in the Windows registry.

3. Prepare the donor system using Sysprep in Factory mode; then, shut down the donor system.

4. From the RDM Server, run the Get Donor task on the donor system. Make sure that you select **Factory** mode as the Sysprep type.

5. Create a Windows Clone Install task.

6. Create any required batch or support files necessary for the application installation; then, add this information to the Windows Clone Installation task folder:

   a. Right-click the Windows Clone Install task you created in step 5; then, click **Edit Task...**

   b. In the Task Notebook, select the **Advanced** tab; then, select **Task Folder** to see the location of the task folder in the main panel.

   c. Navigate to the task folder; then, open the winbom.ini file in an ASCII text editor.

   d. Add the applicable information to the winbom.ini file for the application you are adding to the Windows Clone Install task.

      ex. For IBM Director Agent, the following information must be added to the winbom.ini file:

      ```
      [OEMRunOnce]
      "Installing Director Agent","DirectorAgent.CmdLine",APP

      [DirectorAgent.CmdLine]
      CmdLine="UNATTENDED rsp="c:\dirAgent\windows\diragent.rsp" waitforme"
      SetupFile="ibmsetup.exe"
      SourcePath="c:\dirAgent\windows"
      ```

   e. Save and close the winbom.ini file.

7. Run the Windows Clone Install task on the client systems.

Supporting multiple mass storage devices

This section describes how to configure `sysprep.inf` to include support for more than one mass storage device. This enables RDM to deploy a common image to client systems that have different types of mass storage devices.

The procedures in this section are written as if all mass storage devices used in the deployment process have been connected to the donor system at some time, or Microsoft `CAB` files containing the device drivers are available. If a mass storage controller uses a different device driver than what is provided by Windows, you must follow the Sysprep documentation in order to include support for the controller.

Preparing the donor system

Install the device driver for each mass storage device you must support on the donor system. This might also require that you temporarily connect the mass storage device to the donor system. If more than one mass storage device uses the same device driver, you only have to connect one device to the donor system.

Go to "Adding SysPrepMassStorage for Windows 2000," "Adding SysPrepMassStorage for Windows XP and Windows Server 2003" on page 8, or "Adding SysPrepMassStorage with the -bmsd parameter" on page 8 after preparing the donor system.

For more information about configuring a `sysprep.inf` file, see the *Microsoft Windows Corporate Deployment Tools User's Guide* (`Deploy.chm`).

Adding SysPrepMassStorage for Windows 2000

Complete the following steps to add multiple mass storage device support for Windows 2000.

Note: This procedure requires Sysprep 1.1, which you can obtain from the Microsoft Web site.

1. Extract files to any directory on the donor system. (ex. `c:\sysprep_update`)
2. Run the `pnpids.exe` program, from the `tools` directory, on the folder that contains the INF files for your mass storage devices. ex.

   `pnpids.exe c:\winnt\inf\scsi.inf >scsi.txt`

   If an INF file isn't specified, all INF files in the directory are processed. ex.

   `pnpids.exe c:\myInfs\ >myInfs.txt`

   Use the output file to merge with the `sysprep.inf` file later in this procedure. Some common INF files used to create hardware IDs are: `Machine.inf`, `Scsi.inf`, `Pnpscsi.inf`, and `Mshdc.inf`.
3. Create a new text file named `sysprep.inf`.
4. Open this new `sysprep.inf` file and create a `[SysPrepMassStorage]` section.
5. Copy the output from the `pnpids.exe` program text output file to the `sysprep.inf` file under the `[SysPrepMassStorage]` section. ex.

   `;Install IBM ServeRAID Adapter PCI\VEN_1014&DEV_002E=%systemroot%\inf\scsi.inf`
6. (Optional) Find the INF file in the `%windir%\inf` directory that corresponds to each mass storage device; then, reference the `PCI\Vendor ID` to the INF file in `sysprep.inf`.

   For example, to install an IBM ServeRAID 5i controller on a system that was deployed with a donor image containing support for an IBM ServeRAID 4Mx controller, you must add the following to the `[SysPrepMassStorage]` section of the `sysprep.inf` file:

   ```
   ;ServeRAID 5i controller
   PCI\VEN_1014&DEV_01BD&SUBSYS_02591014="C:\winnt\inf\oemscs01.inf"
   ```

   Note: The INF file might have a different name, depending on the operating system and hardware configuration.
7. Save and close this new `sysprep.inf` file; then, copy the file to the same directory as the Sysprep program on the donor system.

8. Run Sysprep with the new `sysprep.inf` file on the donor system. Make sure that the system shuts down after Sysprep completes.
9. From the RDM server, uncomment the `sysprep -clean` command in the `pqcmdln.txt` file (located in the `rdmPath\local\env\71c\custimg\` directory). Make sure that the path to the Sysprep program matches the path on the donor system.
10. Run `mkimages.bat` from the `rdmRoot\local\env` directory.
11. Configure and run the Get Donor task on the donor system.

Adding SysPrepMassStorage for Windows XP and Windows Server 2003

Complete the following steps to add multiple mass storage device support for Windows XP and Windows Server 2003.

Note: This procedure requires `sysprep.exe` and accompanying files from the `support\deployment\deploy.cab` directory on the Windows operating-system CD.

1. Extract files to any directory on the donor system. (ex. `c:\sysprep`)
2. Create a new text file named `sysprep.inf`.
3. Open this new `sysprep.inf` file and create a `[SysPrepMassStorage]` section.
4. Create another section `[SysPrep]` and add `BuildMassStorageSection=Yes` to that section.

   When you run Sysprep, PnP information found in the following INF files is used to create hardware IDs: `Machine.inf`, `Scsi.inf`, `Pnpscsi.inf`, and `Mshdc.inf`.
5. Save and close this new `sysprep.inf` file; then, copy the file to the same directory as the Sysprep program on the donor system.
6. Run Sysprep in Reseal mode with the new `sysprep.inf` file on the donor system. The `[SysPrepMassStorage]` section of the `sysprep.inf` file is updated automatically. Make sure that the system shuts down after Sysprep completes.
7. From the RDM server, uncomment the `sysprep -clean` command in the `pqcmdln.txt` file (located in the `rdmPath\local\env\71c\custimg\` directory). Make sure that the path to the Sysprep program matches the path on the donor system.
8. Run `mkimages.bat` from the `rdmRoot\local\env` directory.
9. Configure and run the Get Donor task on the donor system.

Adding SysPrepMassStorage with the -bmsd parameter

Note: This procedure requires `sysprep.exe` and accompanying files from the `support\deployment\deploy.cab` directory on the Windows operating-system CD.

   For Windows XP, you must download the latest version of Sysprep 2.0 from the Microsoft Web site.

Complete the following steps to add multiple mass storage device support with the `-bmsd` parameter.

1. Extract files to any directory on the donor system. (ex. `c:\sysprep`)
2. Create a new text file named `sysprep.inf`.
3. Open this new `sysprep.inf` file and create a `[SysPrepMassStorage]` section.
4. Save and close this new `sysprep.inf` file; then, copy the file to the same directory as the Sysprep program on the donor system.
5. From a command line, type `sysprep.exe -bmsd` and press enter. The `[SysPrepMassStorage]` section of the `sysprep.inf` file is updated automatically. You can delete any entries that are not required for your configuration.
6. Run Sysprep in Reseal mode with the new `sysprep.inf` file on the donor system. The `[SysPrepMassStorage]` section of the `sysprep.inf` file is updated automatically. Make sure that the system shuts down after Sysprep completes.

7. From the RDM server, uncomment the `sysprep -clean` command in the `pqcmdln.txt` file (located in the `rdmPath\local\env\71c\custimg\` directory). Make sure that the path to the Sysprep program matches the path on the donor system.

8. Run `mkimages.bat` from the `rdmRoot\local\env` directory.

9. Configure and run the Get Donor task on the donor system.

Creating a Windows Clone Install task that deploys IBM Director Agent

You can create a Windows Clone Install task that is based on a donor image created from a donor system on which IBM Director Agent is installed. However, to make sure that the IBM Director Agent files and registry entries are unique for each target system, you must create or modify certain files and save them to the task folder before running the task. The following table lists the files and what they do.

Table 1. Files that are used by a Windows Clone Install task that deploys IBM Director Agent

File	What it does
da-fix.bat	This batch file is run on the target system after Windows and IBM Director Agent is installed. It adjusts the Windows registry settings, configures the network driver for IBM Director Agent, and (if Web-based Access is installed) names the Web server daemon. Finally, it deletes the files that it has called.
diragt.bat	This batch file is called by the command list for the Windows Clone Install task; it copies the files from the RDM task folder to the target system.
dirrest.reg	This file is called by `da-fix.bat`; it modifies the Windows registry settings.
diragent.rsp	This file is called by `da-fix.bat`; it configures the network driver for IBM Director Agent.
httpd.con	(If Web-based Access is installed) This file is called by `da-fix.bat`; it is renamed `httpd.conf` and saved to the managed system.
pqcmdln.txt	This file calls the `da-fix.bat` file
predirag.reg	This file is called by `da-fix.bat`; it modifies the Windows registry settings.

Complete the following steps to create a Windows Clone Install task that deploys IBM Director Agent:

1. Select a donor system.

   Notes:
   a. The donor system must be part of a workgroup; it cannot be part of a domain, a cluster services server, or a certificate services server
   b. Either the built-in administrator password must be blank or you must add the password to the `answer2.txt` file in the task folder for the Windows Clone Install task that you create in step 6 on page 10.

2. If necessary, install and configure applications on the donor system:
   a. Log on to the donor system using an operating system account that has administrator privileges.
   b. Install and configure any applications that you want the donor image to contain. Make sure that any Power Restore partitions are the appropriate size for the target system.

3. (If the donor system has Web-based Access installed) Prepare Web-based Access for cloning:
   a. Make sure that Web-based Access is initialized and running properly. For more information, see the IBM Director documentation.
   b. Copy the `httpd.conf` file to a temporary location on the management server. If you installed IBM Director Agent in the default location, this file is located in the

   `d:\Program Files\IBM\Director\websrv\conf`

   directory, where *d:* is the drive letter of the hard disk drive.

4. Run the Sysprep utility on the donor system:

    a. Copy the `sysprep.exe` and `setupcl.exe` utilities to the donor system. These utilities are located in the `support\deployment\deploy.cab` directory on the Microsoft Windows installation CDs. You can also download them from the Microsoft Web site `http://www.microsoft.com`.

    b. To run Sysprep, from a command prompt, type the following command and press Enter:

        `d:\Path\sysprep`

        where *d:* is the drive letter of the hard disk drive and *Path* is the path of the directory where you copied the `sysprep.exe` and `setupcl.exe` utilities.

    c. When prompted, click **OK**.

        If the donor system is running Windows 2000, the Sysprep operation is completed and the donor system shuts down.

        If the donor system is running Windows XP or Windows Server 2003, the "System Preparation Tool" window opens. In the Flags group box, select the **MiniSetup** check box; in the **Shutdown** field, select **Shutdown**. Click **Reseal**. The Sysprep operation is completed and the donor system shuts down.

        If the donor system is a mobile computer (laptop) and fails to shut down automatically, power off the system when a blue screen and cursor is displayed.

5. Run the Get Donor task against the donor system. A donor image is created.

6. Create a Windows Clone Install task:

    a. Use the donor image that you created in step 5 to create a Windows Clone Install task. Note the location of the task folder.

    b. Modify the command list so that it includes the following text:

        ```
        ;This is command list for clone Full deployment task
        BOOTTYPE !LOADDOS /ENVIRONMENT/DOS71C
        WAKE
        !!SETENV
        TIMEOUT 240
        !deploy\deploy.bat
        !!REBOOT
        !custimg\setUser.bat
        !!SETENV
        !custimg\custimg.bat
        !mtftp get %%SERVER_IP%% template\%%TASKTEMPLATEID%%\%%TASKTOID%%\diragt.bat diragt.bat
        !mtftprc
        !diragt.bat
        BOOTTYPE !BOOTLOCAL
        !!REBOOT
        BOOTTYPE !LOADDOS /ENVIRONMENT/DOS71C
        !!REBOOT
        UpdateAssetID
        !!SHUTDOWN
        END
        ```

        Note: The commands that you must add are highlighted in boldface.

7. Create the following files and save them to the task folder for the Windows Clone Install task that you created in step 6:
   - `da-fix.bat`
   - `diragent.rsp`
   - `diragt.bat`
   - `dirrest.reg`
   - `predirag.reg`

   The following table contains information about these files and their content.

File name	Content

`da-fix.bat`	```regedit /s c:\predirag.reg```
	 ```del "c:\program files\ibm\director\data\twgmach.id" /F```
	 ```del "c:\program files\ibm\director\data\netdrvr.ini" /F```
	 ```cd \```
	 ```cd "program files\ibm\director\bin\"```
	 ```twgipccf.exe /r:c:\diragent.rsp```
	 REM This line is only needed if Web-based Access is installed
	 move /Y "c:\httpd.con" "c:\program files\ibm\director\websrv\conf\httpd.conf"
	 ```REM Post-installation registry edit```
	 ```regedit /s c:\DirRest.reg```
	 ```REM Cleanup```
	 ```del c:\diragent.rsp```
	 ```del c:\httpd.con```
	 ```del c:\predirag.reg```
	 ```del c:\dirrest.reg```
	 ```del c:\da-fix.bat```
	
	 Note: The lines highlighted in boldface are only required if the donor image contains Web-based Access.

`diragent.rsp`	```[Agent]=Y```
	 ```Driver.TCPIP=1```
	 ```WakeOnLan=1```
	 ```;AddKnownServerAddress=TCPIP::XXXX.XXXX.XXXX.XXXX```
	
	 Notes:
	 1. This enables all TCPIP drivers and the Wake on LAN® feature. You also can configure other options; for more information, see the `diragent.rsp` file located on the IBM Director CD. This file is fully-commented and located in the `director\agent\windows\i386` directory.
	 2. To ensure that the system will be automatically discovered by IBM Director Server, uncomment the AddKnownServerAddress statement and substitute the IP address of the management server for XXXX.XXXX.XXXX.XXXX. (IBM Director Server must be configured to automatically add new systems that contact it.)

File name	Content
`diragt.bat`	```mtftp get %SERVER_IP% TEMPLATE\%TASKTEMPLATEID%\%TASKTOID%\da-fix.bat a:\da-fix.bat` `SET STATUS="Copying da-fix.bat"` `PQAccD /copy a:\da-fix.bat 1:\da-fix.bat` `if errorlevel 1 goto FAIL2`  `mtftp get %SERVER_IP% TEMPLATE\%TASKTEMPLATEID%\%TASKTOID%\diragent.rsp a:\diragent.rsp` `SET STATUS="Copying diragent.rsp"` `PQAccD /copy a:\diragent.rsp 1:\diragent.rsp` `if errorlevel 1 goto FAIL2`  `mtftp get %SERVER_IP% TEMPLATE\%TASKTEMPLATEID%\%TASKTOID%\dirrest.reg a:\dirrest.reg` `SET STATUS="Copying dirrest.reg"` `PQAccD /copy a:\dirrest.reg 1:\dirrest.reg` `if errorlevel 1 goto FAIL2`  `mtftp get %SERVER_IP% TEMPLATE\%TASKTEMPLATEID%\%TASKTOID%\predirag.reg a:\predirag.reg` `SET STATUS="Copying predirag.reg"` `PQAccD /copy a:\predirag.reg 1:\predirag.reg` `if errorlevel 1 goto FAIL2`  `mtftp get %SERVER_IP% TEMPLATE\%TASKTEMPLATEID%\%TASKTOID%\pqcmdln.txt a:\pqcmdln.txt` `SET STATUS="Copying pqcmdln.txt to cmdlines.txt"` `PQAccD /copy a:\pqcmdln.txt 1:\sysprep\i386\OEM\cmdlines.txt` `if errorlevel 1 goto FAIL2`  **`REM These next 3 lines are only needed if Web-based Access is installed`** **`mtftp get %SERVER_IP% TEMPLATE\%TASKTEMPLATEID%\%TASKTOID%\httpd.con a:\httpd.con`** **`lccustom a:\httpd.con`** **`PQAccD /copy a:\httpd.con 1:\httpd.con`** **`REM httpd.con will later be renamed to httpd.conf`**  `goto END`  `:FAIL2` `SET RDRASLEVEL=1` `SET RDSTATUS="RDMSWM234E Failure %STATUS%"` `@ECHO Failure %STATUS%`  `:END` **Note:** The lines highlighted in boldface are only required if the donor image contains Web-based Access.
`dirrest.reg`	```Windows Registry Editor Version 5.00` `[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TWGIPC]` `"Start"=dword:00000002`  **`[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\DirWbs]`** **`"Start"=dword:00000002`** **Note:** The lines highlighted in boldface are only required if the donor image contains Web-based Access.
`predirag.reg`	```Windows Registry Editor Version 5.00` `[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\TWGIPC]` `"Start"=dword:00000003`  `[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\DirWbs]` `"Start"=dword:00000003`  `[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\ComputerName\ComputerName]` `"TWGMachineID"=hex:`

8. Modify the following files and save them to the task folder for the task that you created in step 6:
   - (If the donor image contains Web-based Access) `httpd.conf`
   - `pqcmdln.txt`

   The following table contains information about the files, their locations, and the content that must be modified.

   Note: Be sure to rename `httpd.conf` to `httpd.con`.

File name	Content
`httpd.conf`	`define DirectorAgentServerName %COMPUTERNAME%` **Notes:** 1. The change you must make is highlighted in boldface. The line is located in the "Configuration Parameters" section at the beginning of the file. 2. This file is located in the temporary directory to which you saved the file in step 3b on page 9.

`pqcmdln.txt`	`[Commands]`
	`"c:\sysprep\getdir.exe"`
	`"c:\autoBoot.bat"`
	`"c:\da-fix.bat"`
	`;"c:\sysprep\sysprep.exe -clean"`
	
	Notes:
	1. The line you must add is highlighted in boldface.
	2. If you installed RDM Server in the default location, the file is located in the
	
	`d:\Program Files\IBM\RDM\local\env\71c\custimg`
	
	directory, where `d:` is the drive letter of the hard disk drive.

When you run the Windows Clone Install task against a target system, the IBM Director Agent files and registry entries are unique.

Using IBM Director to remotely run Sysprep on a managed system

Complete the following steps to remotely run Sysprep on a managed system:

1. Install IBM Director Agent on the managed system. You can use a Windows Native Install task to install an operating system and IBM Director Agent to do this.

   Make sure to restart the system after IBM Director Agent is installed.

2. If the you have not already scanned the managed system with RDM, run a Scan task on the system or complete the following steps to use IBM Director to discover it.

   From IBM Director Console, click **Tasks →Discover Systems →IBM Director Systems**. After a few seconds, all systems with IBM Director Agent installed will display in the "Group Content" pane. The system might be shown more than once if RDM has previously scanned the system

   You can differentiate RDM-scanned systems from Director-discovered systems by the appearance of the icons. See the IBM Director documentation for more information.

3. Copy the Sysprep utilities to a directory on either the management server or a management console. These utilities are located in the `support\deployment\deploy.cab` directory on the Microsoft Windows installation CD. You can also download them from the Microsoft Web site `http://www.microsoft.com`.

4. Transfer the utilities to the managed system:
   a. From the Tasks pane, drag the **File Transfer** task onto the managed system. The "File Transfer" window opens.
   b. From the "Source File System" pane, drag the directory that contains the utilities onto the `c:\` drive in the "Target File System" pane. The progress of the File Transfer task is displayed.

5. Create a process task that will run Sysprep:
   a. In the Tasks pane, expand the **Process Management** task.
   b. Double-click the Process Tasks subtask. The "Process Task" window opens
   c. In the **Command** field, type the applicable Sysprep command.
   d. Click **File → Save As**. The "Save As" window opens.
   e. Type a name and click **OK**. The new process task is displayed under **Process Tasks** in IBM Director Console.
6. Run the process task:
   a. Drag the process task that you created in step 5 onto the managed system in the Group Contents pane. The "Process Task" window opens.
   b. Click **Execute Now**. The "Execution History" window opens, and the progress of the task is displayed. The managed system shuts down automatically.

New RAID configuration utilities

RDM Version 4.11 Update 3 adds support for the following RAID controllers. There are no changes to the way you configure or run RDM RAID tasks to support these new controllers.

* (SCSI) IBM ServeRAID 7e (Adaptec HostRAID) controller
* (SATA) IBM ServeRAID 7e (Adaptec HostRAID) controller
* IBM ServeRAID 7t controller

This section describes the new utilities (`raidsel.exe`, `acuichsv.exe`, and `acu.exe`) that support configuring (SCSI) IBM ServeRAID 7e (Adaptec HostRAID), (SATA) IBM ServeRAID 7e (Adaptec HostRAID), and IBM ServeRAID 7t controllers.

raidsel.exe syntax

The basic syntax for the `raidsel` utility is:

`raidsel options`

where `options` can be one or more of the following parameters:

* `-L Controller|physical|logical|raid|all` lists type-based information
* `-l 0|1|10 [RaidName]` specifies a RAID type to create, where `RaidName` is an optional name
* `-g d d [d] [d]` used with the -l option to specify device IDs
* `-S + d` adds a spare drive to an array, where *d* is a spare drive ID
* `-S - d` deletes a spare drive from an array, where *d* is a spare drive ID
* `-a build|rebuild|verify` is the build action to perform on the array

  Note: The `verify` parameter is only applicable for the optimal state.
* `-B + d` marks *d* as a bootable drive
* `-B - d` unmarks *d* as a bootable drive
* `-D d|all` deletes an array or logical drive *d*, or `all` arrays
* `-Z d|all` zaps single drive *d*, or `all` drives in the current channel
* `-q` specifies quiet mode
* `-d [n]` specifies the controller *n* to operate on, with a default of `0`
* `-b [n]` specifies the bus or channel *n* to operate on, with a default of `0`
* `-z [16KB|32KB|64KB]` sets the required stripe size when creating a RAID0 or RAID10 array, with a default of `64KB` if not specified
* `-p [high|medium|low]` specifies the driver background task priority, with a default of `medium` if not specified

- -F forces creation of an array, normally used on a drive where a partition table is detected
- Autofix turns on the autofix function during a verify action
- -delinfo [pri|sec|all|none] sets delete information option when deleting RAID1 arrays, where:
  - pri represents the primary drive
  - sec represents the secondary drive
  - all represents both drives
  - none default setting, represents no drives
- Save *<filename>* saves the RAID configuration to a file
- Load *<filename>* loads or creates the RAID configuration based on options specified in the file
- LoadB *<filename>* loads/creates and builds the RAID array based on options specified in the file

For additional information about raidsel.exe, see the documentation that comes with the server or RAID controller.

acuichsv.exe and acu.exe syntax

The basic syntax for the acuichsv and acu utilities are:

```
acuichsv options
acu options
```

where *options* can be one or more of the following parameters:
- /P *<file>* reads the contents of *<file>* and creates containers and configures channel settings based on the properties in this file. The extension of this file must be .ccu.
- /R *<file>* scans the controller for container and channel configuration, and creates a *<file>* with an extension of .mlc.
- /C *<number>* specifies an optional controller number for systems that have more than one controller number. The default is 0 for the first controller in the system.

For additional information about acuichsv.exe or acu.exe, see the documentation that comes with the server or RAID controller.

RDM Version 4.11 Update 2 new features

The RDM Version 4.11 Update 2 adds the following functions and support.

- Support for renaming blade servers automatically (go to "Renaming blade servers automatically")
- Instructions for creating a custom Linux installation image (go to "Creating a custom Linux installation image")
- Support for deploying Red Hat® Linux Advanced Server 2.1 Quarterly Update2 (QU2) to a fibre channel boot drive
- Improved error handling

Renaming blade servers automatically

Complete the following steps to create a Scan task that automatically renames blade servers.

1. In the tasks pane, right-click **Scan**; then, click **Create new task**. The "Scan" window opens.
2. Click the **Setup** tab.
3. In the "Category" pane, click **Naming**.
4. In the right pane, select the **Name IBM BladeCenter™ systems automatically** check box.
5. Continue with creating a Scan task.

When this Scan task is run against a blade server, the blade server is automatically given the following name: `BladeCenterChassis-BBayNumber`

where `BladeCenterChassis` is the name of the BladeCenter chassis, and `BayNumber` is the number of the bay. If the blade server is not associated with a BladeCenter chassis, `BladeCenterChassis` is the Universal Unique Identifier (UUID) of the blade server.

Note: If you select the blade renaming option, the task will always rename blade servers. Take care not to run such a Scan task against a blade server that you do not want to rename.

You can modify the renaming algorithm by altering the values in the `SystemNaming.properties` file. If you installed RDM in the default location, this file is located in the `d:\Program Files\IBM\RDM\repository\9` directory, where `d:` is the drive letter of the hard disk drive.

Creating a custom Linux installation image

You can use the RDM Image Management utility to save application and operating system images to the RDM deployment Server. Complete the following steps to create a custom Linux installation image.

1. Obtain the installation source files for the Red Hat distribution.
2. Copy the Red Hat installation CDs to a directory on your Linux system. Maintain the directory.
3. Determine which package files are required for the installation.
   a. Navigate to the `comps` file. (The `comps` file is the file in which package groups are defined.) This file is typically located in the installation source tree directory: `/RedHat/base`

      Note: The `comps` file is named "comps" in Red Hat Linux 7.3 and Red Hat Enterprise Linux Advanced Server 2.1. It is named `comps.xml` in Red Hat Linux 8.0, Red Hat Linux 9.0, Red Hat Enterprise Linux Advanced Server 2.1 Quarterly Update 2, and Red Hat Enterprise Linux Advanced Server 3.0.
   b. Make a backup copy of the `comps` file.

c. Open the comps file in an ASCII text editor and determine the packages or package groups that you want to remove. (RPM packages typically have interdependencies. If you remove a file that is required for the installation, the installation will fail.) If you remove a package or package group from the comps file, you also must remove all references to that package or package group from the comps file, otherwise the installation will fail.

d. Remove the corresponding sections in the comps file for each package or package group that you want to remove.

e. Save and close the comps file.

4. From the installation source files that you copied to your Linux system, remove the unnecessary package files (those files that you removed mention of from the comps file). Typically, these files are located in the installation source tree directory /RedHat/RPMS and have a .rpm file extension.

5. To regenerate the hdlist file, issue the following command:

    genhdlist --withnumbers *installation_source_tree*

    where *installation_source_tree* is the path to the installation source tree you modified in step 4.

6. Copy the entire source tree to the management server (the server where RDM Server is installed).

7. Begin the RDM Image Management console and point the utility to the copied RDM source directory to create the image.

After the image is saved to the server, you can use RDM to deploy the image to other systems. Use RDM to create the task associated with the custom image, and add or remove packages and package groups by using the Linux Native Install task wizard package panel.

Important: When you create the task that will use the custom image, select only the packages and package groups present in the modified comps file, otherwise the installation will fail.

RDM Version 4.11 Update 1 new features

The RDM Version 4.11 Update 1 adds the following functions and support.

- Support for configuring an LSI IDEal RAID adapter in an IBM @server™ BladeCenter HS20, machine type 8832 server. RDM uses a new utility, `hypercfg.exe`, to create the command files used by the RAID Custom Configuration task and the RAID Clone Configuration task. (Go to "hypercfg.exe syntax")

- Support for additional operating systems. You can now install RDM Server Version 4.11 and RDM Console Version 4.11 on the following operating systems:
  - Microsoft Windows Server 2003, Standard Edition
  - Microsoft Windows Server 2003, Enterprise Edition
  - Microsoft Windows Server 2003, Web Edition

  Note: For Windows Server 2003, you cannot set option 60 during the installation of RDM; you must set option 60 manually.

hypercfg.exe syntax

The basic syntax for the `hypercfg` utility is:

`hypercfg option`

where `option` can be one of the following parameters:

- `/AM` creates a RAID level-1 logical drive.
- `/ASStripeSize` creates a RAID level-0 logical drive with the specified stripe size. `StripeSize` can be between 32 and 4096.
- `/@FileName` configures the RAID adapter using the information contained in the specified file.
- `/L` lists the configuration for all hard disk drives attached to the RAID adapter.
- `/L /FFileName` lists the configuration and writes it to the specified file.
- `/V` lists the BIOS code information.

For additional information about `hypercfg.exe`, download the *IBM BladeCenter HS20 LSI IDEal RAID User's Guide* from the IBM Web site `http://www.ibm.com/pc/support/`.

Getting Started corrections

There are no corrections for the *RDM 4.11 Getting Started* documentation (`RDM4.11GettingStartedGuide.pdf`) at this time.

Installation Guide corrections

This section contains corrections for the *RDM 4.11 Installation Guide* (`RDM4.11InstallGuide.pdf`).

Configuring routers, switches, and hubs: Requirements

The following text details additional requirements for using RDM in a routed environment. This information is intended to be part of the bulleted list of requirements on page 13:

- An `autonegotiate` setting, or equivalent, must be used at all points in the environment. This includes all network interface cards (NICs), NIC configuration settings, and switch ports.

  Important: Specifying a value, such as 100 Mb full duplex, can result in slower network performance. Overall network performance might be reduced by a factor of two to ten times that of optimal performance. The following are examples of actions that might be affected by this slower network performance:
  - Receiving an IP address from the DHCP server
  - Downloading and starting (booting) the DOS or Linux operating system
  - Downloading large operating-system images in Windows Native Install or Windows Clone Install tasks

Operations Guide corrections

This section contains corrections for the *RDM 4.11 Operations Guide* (`RDM4.11OperationsGuide.pdf`).

PQAGENT.BAT

This section from pages 50 and 51 is no longer required with the enhancements described in "Creating a Windows Clone Install task that deploys IBM Director Agent" on page 9.

PQAGENT.REG

This section from page 51 is no longer required with the enhancements described in "Creating a Windows Clone Install task that deploys IBM Director Agent" on page 9.

Upgrading to DeployCenter, Version 5.5

The following text replaces the entire section "Upgrading to Deploy Center, Version 5.5" on pages 54 and 55:

Complete the following steps to upgrade to PowerQuest DeployCenter, Version 5.5:

1. Extract the following files from the PowerQuest DeployCenter installation CD:
   - `PQImgCtr.exe`
   - `PQImg.ovl`
   - `PQImg.pqg`
   - `PQdplctr.rtc`

   These files are located in a `.cab` file.

2. Copy the files into the following directory:

   `InstallationPath\local\env\71c`

   where `InstallationPath` is the path of the RDM installation. If you installed RDM in the default location, it is `d:\Program Files\IBM\RDM`, where `d:` is the drive letter of the hard disk drive.

3. Change to the `InstallationPath\local\env` directory and run the `mkimages.bat` file.

4. Perform one of the following procedures:
   - Repeat step 2 and step 3 on each remote deployment server (remote server on which RDM Deployment Server is installed)
     or
   - Replicate the `dos71c` file to each remote deployment server.

     You can now use the full PowerQuest DeployCenter functionality when you run a Get Donor or Windows Clone Install task.

For more information about using PowerQuest DeployCenter with RDM, download the applicable white paper from the Systems Management-Remote Deployment Manager v4.11 White papers Web site `http://www.ibm.com/pc/support/site.wss/document.do?lndocid=MIGR-53487`.

RAID Clone Configuration: Clone files

The following text is in addition to the information on pages 77-79. This information describes support for LSI IDEal RAID, (SCSI) IBM ServeRAID 7e (Adaptec HostRAID), (SATA) IBM ServeRAID 7e (Adaptec HostRAID), and IBM ServeRAID 7t controllers.

- LSI IDEal RAID Command File - A DOS batch file comprised of appropriate hypercfg commands to configure an LSI IDEal RAID controller. See "hypercfg.exe syntax" on page 18 for information on how to use the hypercfg utility.

  The following are examples of LSI IDEal RAID command files:

  `hypercfg /am /s` (creates a mirrored configuration)

  `hypercfg /as64 /s` (creates a striped configuration with a stripe size of 64)

  Note: The `/s` parameter is required to suppress user input.

- LSI IDEal Configuration Backup File - A file `<cfgfile>` created by booting a DOS boot diskette containing the `hypercfg` utility on a donor system and executing the following command:

  `hypercfg /L /F<cfgfile>`

  The data format in `<cfgfile>` is readable and is the same format as an LSI IDEal RAID command file. The `hypercfg` utility can be copied onto a startable DOS diskette from the `local\env\71s` directory in the RDM installation path.

  Note: The donor system must already have the LSI IDEal RAID enabled and configured.

- (SCSI) IBM ServeRAID 7e (Adaptec HostRAID) Command File - A DOS batch file comprised of appropriate `raidsel` commands to configure a SCSI ServeRAID 7e (Adaptec HostRAID) controller. See "raidsel.exe syntax" on page 14 for information on how to use the `raidsel` utility. The following is an example of a SCSI ServeRAID 7e (Adaptec HostRAID) command file:

```
raidsel -D all
raidsel -Z all
raidsel -l 1 -g d0b0t410 d0b0t510
raidsel -a build d0b0t410 -p high
```

The first two commands are needed to delete any existing configuration before a new one is configured. The third line configures a mirror of drives located on controller 0 (d0), channel 0 (b0), SCSI IDs 4 and 5 (t4,t5). The last line builds the RAID array, and the `-p high` parameter forces initialization of the array.

- (SCSI) IBM ServeRAID 7e (Adaptec HostRAID) Configuration Backup File - A file <cfgfile> created by booting a DOS boot diskette containing the `raidsel` utility on a donor system and executing the following command: `raidsel save <cfgfile>`

The data format in <cfgfile> is XML and the extension of <cfgfile> must be .xml. The `raidsel` utility can be copied onto a startable DOS diskette from the `local\env\71s` directory in the RDM installation path.

> **Note:** The donor system must already have the SCSI ServeRAID 7e (Adaptec HostRAID) controller enabled and configured.

- (SATA) IBM ServeRAID 7e (Adaptec HostRAID) Configuration Backup File - A file <cfgfile> created by booting a DOS diskette containing the `acuichsv` utility on a donor system and executing the following command: `acuichsv /r <cfgfile>`

This creates a text file with a file name of `cfgfile.mlc`. The following is an example `cfgfile.mlc` file:

```
Array="mirror"
Size=Maximum
Type=RAID1
Method=quickinit
Drives=0,1
End
```

The `acuichsv` utility can be copied onto a startable DOS diskette from the `local\env\71s` directory in the RDM installation path. See "acuichsv.exe and acu.exe syntax" on page 15 for information on how to use the `acuichsv` utility.

> **Note:** The donor system must already have the SATA ServeRAID 7e (Adaptec HostRAID) controller enabled and configured.

- IBM ServeRAID 7t Configuration Backup File - A file <cfgfile> created by booting a DOS diskette containing the `acu` utility on a donor system and executing the following command:

`acu /r <cfgfile>`

This creates a text file with a file name of `cfgfile.mlc`. The following is an example `cfgfile.mlc` file:

```
Controller=0
Array="mirror"
ArrayNumber=0
Size=Maximum
Type=RAID1
ReadCache=Yes
WriteCache=No
Drives=0:0:0,0:2:0
wait=No
End
```

The `acu` utility can be copied onto a startable DOS diskette from the `local\env\71s` directory in the RDM installation path. See "acuichsv.exe and acu.exe syntax" on page 15 for information on how to use the `acu` utility.

> **Note:** The donor system must already have the IBM ServeRAID 7t controller configured.

To install IBM Director Agent as part of a Windows Native Install task:

The following text replaces step g on page 124:

g. For IBM Director 4.12 and higher, enter `-s -a silent RSP="%path%\diragent.rsp" waitforme` as the parameter. For earlier versions of IBM Director, enter `silent waitforme` as the parameter.

MTFTP.EXE and MTFTPRC.BAT

The following text replaces descriptions of `TFTP` and `MTFTPRC` on pages 158 and 159:

This program is the MTFTP client. The Linux, DOS, and Windows versions are the same with the following exceptions: the DOS version omits the `-I` option, the Linux version requires the `-I` option. The Windows version treats the `-I` option as an optional parameter.

Note: The `MTFTPRC.BAT` file is created by the `MTFTP.EXE` program. This batch file is used for error checking after an `MTFTP` command runs. If `MTFTP` completes successfully, the `MTFTPRC.BAT` file is empty. If `MTFTP` fails, the `MTFTPRC.BAT` file contains statements to set the `RDSTATUS` and `RDRASLEVEL` environment variables to the appropriate failure codes. An additional statement transfers the `MTFTP` error log to the `/temp` directory on the RDM Server.

The syntax for the `MTFTP.EXE` program is:
`MTFTP {GET | PUT} ipaddr[,port] sourcefile destfile [-Aackfrequency] [-Bblocksize] [-M] [-Llisten_to]`
`[-Ttransmission_to] [-V] [-D] [-R] -Iinterface`

where:

GET | PUT	`GET` to read file from server. `PUT` to write file to server. `PUT` is only supported for unicast.
ipaddr	IP address of MTFTP service in format `w.x.y.z`
port	Listen port of MTFTP service. Default port is 1759 for multicast, 69 for unicast.
sourcefile	Name of file to read from. For `GET`, the source file resides on the server. For `PUT`, the source file resides on the client.
destfile	Name of file to write to. For `GET`, the destination file resides on the client. For `PUT`, the destination file resides on the server.
-A*ackfrequency*	Acknowledge every nth packet, where n=ackfrequency. Should be a power of 2. Default is 1.
-B*blocksize*	Blocksize of data packet - should be multiple of 512. Default is 512. Maximum value is 8192.
-M	Use multicast TFTP, listening on mip:mport assigned by server. No input required for mip or mport. Default mport mip is 1758.
-L*listen_to*	Time, in seconds, a client listens before deciding to open the multicast session himself. Must be >= 0. Defaults to 2 seconds.
-T*transmission_to*	Baseline time, in seconds, a non-acking client waits before deciding to reopen the multicast session himself. The actual time waited is adjusted based on the data already received. Must be >=0. Defaults to 2 seconds.

-V	Display progress of transfer.
-D	Display extensive details of transfer appropriate for program debugging. Debug information displayed will include verbose output regardless of specification of -V option.
-R	Replicate file from master dserver to remote dserver without actually transferring file to client.
-I*interface*	IP address of client network interface to communicate on in format w.x.y.z

The default directory for GET is always the root of the Repository specified on the D-Server. The default directory for PUT is always *RDMInstallDir*\Temp, where *RDMInstallDir* is the location where RDM is installed, on the D-Server. The default directories are the same on Linux, DOS, and Windows.

CFG1030.EXE

This section contains changes to the documentation concerning the cfg1030.exe utility described on pages 177-179:

- Include the following text after the initial description of the utility on page 177:

  Important: Deploying a Windows-based operating system to a drive that is quick synchronized might take up to four times as long as deploying to a drive that is fully synchronized.

- Replace the description of the BACKUP command on page 177 with the following text:

  The backup command saves the configuration settings for the controller to a file. The command uses the following syntax (all on one line):

  cfg1030 backup *controller# path/filename* [noprompt] [qsync]

  where

  - *controller#* is the number of the controller targeted by this command.
  - *path/filename* is the path and filename of the file in which to store configuration. The path is optional.
  - [noprompt] option is ignored.
  - [qsync] is an optional parameter that specifies that the logical drive is quick synchronized. The first 32 KB of the logical drive are cleared to 0. This parameter prevents a time-intensive full synchronization of the drives.

- Replace the description of the CREATE command on page 177 with the following text:

  The create command creates logical drives from physical drives attached to integrated SCSI controllers with RAID capabilities (LSI1020/1030 controllers). The command uses the following syntax:

  cfg1030 create *controller#* logicaldrive newarray *size RAIDlevel* {1 *scsi_ID*} [qsync]

  where:

  - *controller#* is the number of SCSI bus. An LSI1030 will have two controller numbers (1 and 2) associated with it.
  - *size* is either the size of the logical drive in MB or MAX, which specifies that you want to use the maximum space in the array.
  - *RAIDlevel* is either 1 or 1E. For xSeries® systems, this value must be 1.

- {1 *scsi_ID*} is a repeatable parameter that specifies the hard disk drives included in the logical drive. The channel number is always 1, and *scsi_ID* is the SCSI ID of a hard disk drive.
- [qsync] is an optional parameter that specifies that the logical drive is quick synchronized. The first 32 KB of the logical drive are cleared to 0. This parameter prevents a time-intensive full synchronization of the drives.

  For example, a `cfg1030` command designed to configure controller 1 uses the following syntax:

  ```
  cfg1030 create 1 logical drive newarray MAX 1 1 2 1 3 qsync
  ```

  This command creates (and quick-synchronizes) a RAID level-1 logical drive from hard disk drives located at SCSI IDs 2 and 3.

Appendix A. Command list commands: Server commands

The following text replaces the corresponding descriptions of the END and SUBTASK commands on page 186:

- **END**

  Usage   The END command is used to mark the end of the task list. RDM will not process any commands after the END command. If the END command is omitted from a task list, RDM stops interpreting commands after it processes the last command in the task list.

  Example
  ```
  END
  ```

- **SUBTASK**

  Usage   The SUBTASK command appends and runs the specified task for the current task. This task is available can be used with all tasks. The following syntax is used:

  ```
  SUBTASK name_of_task
  ```

  where `name_of_task` is the task that you want to append and run.

  Example
  ```
  SUBTASK Intellistation MPro Bios
  ```

24

Appendix A. Command list commands: RdAgent commands

The following text replaces the corresponding descriptions of the !!REBOOT and !!SHUTDOWN commands on pages 187 and 188:

- **!!REBOOT**

  Usage   The !!REBOOT command is used to restart a system. When the system restarts, it loads the environment that was specified in the last BOOTTYPE command. After the environment is loaded, RDM processes any commands that follow the !!REBOOT command in the task list.

  Example
  > !!REBOOT

  > **Note:** By default, RDM runs the !!SHUTDOWN command after processing all the commands in a task list. To change the default behavior and restart the system after a task is completed, do one of the following:
  >   - Replace the !!SHUTDOWN command with !!REBOOT
  >   - Place the !!REBOOT command in front of the END command
  >   - Substitute the !!REBOOT command for the END command
  >
  > If you create a Script task that calls other tasks, only add the !!REBOOT command to the Script task that you are editing. Do not modify the subordinate tasks.
  >
  > RDM will not process a !!REBOOT command that follows a !!SHUTDOWN command.

- **!!SHUTDOWN**

  Usage   Typically, the !!SHUTDOWN command is used to turn off a system after a task is completed. RDM does not process any commands that follow the !!SHUTDOWN command in a task list. If left unspecified, RDM runs the !!SHUTDOWN command after processing all the commands in a task list.

  Example
  > !!SHUTDOWN

  > **Note:** To change the default behavior and restart the system after a task is completed, use the !!REBOOT command. If you create a Script task that calls other tasks, change the !!REBOOT or !!SHUTDOWN command only for the Script task that you are editing. Do not modify the subordinate tasks.

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