



Using DeployCenter 5.6 with RDM 4.20

A White Paper

September 14, 2005

Note:

Before using this information and the product it supports, read the general information in “Notices,” on page 11.

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1 Preface

This White Paper explains how to use IBM® Remote Deployment Manager (RDM) 4.20 and higher with DeployCenter 5.6, which is part of Symantec Ghost Solution Suite Version 1.0.

RDM contains a limited-function version of DeployCenter. These limitations include:

- Capture or restore only the boot partition.
- Minimal partition resizing.
- Unicast Data Transfer.

To get the full DeployCenter capabilities, you must purchase licenses for a full-function version of DeployCenter. In particular, you will then be able to enhance RDM's functionality to include the following:

- Capture or restore multiple partitions.
- Resize partitions any way you like.
- Better compression.
- Faster performance.
- Enhanced Scripting

Although it is possible to use PowerCast with RDM, our testing has shown this to be problematic. Therefore, IBM does not support the use of PowerCast with RDM.

You can use this document to learn how to do the following:

- Update your RDM installation so that it uses the full-function version of DeployCenter.
- Modify RDM *Get Donor* and *Windows Clone Install* tasks.
- Modify RDM DOS system environments.

The tasks described in this paper accomplish their desired functions in a specific way. There are alternate techniques available for doing all of these functions. The intent is to illustrate various methods, as well as to describe a way to implement these particular functions.

Important: This document is not intended to be a primer on how to use DeployCenter. Use the Symantec documentation to learn about DeployCenter.

1.1 Who should read this White Paper

This White Paper is intended to help skilled RDM administrators to create deployment procedures and to understand the concepts involved. To effectively use this White Paper, you should already have an extensive knowledge of your Network environment, your RDM environment, and DOS batch files.

1.2 Further reference

In addition to this paper, there are various other sources of information that you can consult for RDM and for RDM Custom tasks.

Guides

The following product documentation is available for RDM:

- *Remote Deployment Manager 4.20 Users Guide* – The main reference manual for RDM
- *Remote Deployment Manager 4.20 Installation Guide* – Describes the complete installation process of RDM
- *Remote Deployment Manager 4.20 Compatibility and Configuration Guide* – Lists RDM-supported hardware and software

Check the IBM Web site at <http://www-307.ibm.com/pc/support/site.wss/document.do?Indocid=MIGR-50575> to get the current versions of the above documents.

White papers

The various RDM white papers are available on the IBM Web site at <http://www-307.ibm.com/pc/support/site.wss/document.do?Indocid=MIGR-53487>.

Online help

In general, most RDM windows have online help available (except for some message windows or other windows where no help is applicable), either using a **Help** menu or a **Help** button.

Links

The following links are available for further information:

- Support is available for supported systems (IBM and non-IBM) through e-mail or fee-based telephone support. Telephone support is not available in all countries. For more information about the fee-based telephone support, go to <http://www.ibm.com/support> or <http://service.software.ibm.com/supportline.html>. For more information about e-mail support, refer to the RDM home page.

Important: Before using RDM 4.20, check the compatibility test results and browse the rest of the RDM Web site for additional information and tips concerning the installation and use of R

2 Procedure for adding DeployCenter to RDM

This section describes how to incorporate the full-function DeployCenter files into your RDM installation. It assumes you will use the DeployCenter Unicast Server.

It also assumes you have installed RDM into the C:\Program Files\IBM\RDM directory. If you used a different directory, adjust the procedure accordingly.

Although it is possible to use DeployCenter PowerCast with RDM, our testing has shown this to be problematic. Therefore, IBM does not support the use of PowerCast with RDM.

2.1 Install the latest RDM version

1. Make sure that you are using RDM 4.20 or later.

2.2 Locate the DeployCenter files

There are a couple of different ways to do this. The specific files that you need depend on which DeployCenter functions that you intend to use, as well as which technique you use to locate the files.

2. Install DeployCenter on any system that is not your RDM server. Include the optional Unicast Server, but do not include the optional PowerCast feature. You will get the following file, for use in section 2.6 below.

File name	File location
UCSERVICE.EXE	C:\Program Files\Symantec\DeployCenter 5.6

3. Use the Boot Disk Builder to build a Standalone Boot Disk (store it in a directory or the floppy drive). On the Symantec Boot Disk Builder wizard, select:
 - a. Select *Standalone Boot Disks* from the list, and then click *Next*.
 - b. Select the *Boot Disk* radio button, and then click *Next*.
 - c. Select *Copy boot disk contents to a folder*, enter a folder name like C:\BOOTDISK, and then click *Finish*.

You will get the following files from that directory or drive:

File name	File location
PQIMGCTR.EXE	C:\BOOTDISK
PQDPLCTR.RTC	C:\BOOTDISK

2.3 Copy the DeployCenter files

4. On the RDM server, and on each remote RDM Deployment Server, copy the following files from step 3 above into the C:\Program Files\IBM\RDM\local\env\71c directory:

PQIMGCTR.EXE
PQDPLCTR.RTC

Note: Prior versions of this document suggested copying the following files, instead:

```
PQIMGCTR.EXE
PQIMGCTR.OVL
PQIMGCTR.PQG
PQDPLCTR.RTC
```

If you already did it this way, we recommend you remove the 4 older files and replace them with the 2 newer ones.

2.4 (Optional) Modify RDM's script file

Note: The RDM 4.20.3 versions of these 2 files are exactly as described below, so you don't need to do this step for RDM 4.20.3 or later.

5. On the RDM server, and on each remote RDM Deployment Server, you can modify the C:\Program Files\IBM\RDM\local\env\71c\capture\store.txt and C:\Program Files\IBM\RDM\local\env\71c\deploy\wciFull.txt script files to take advantage of Deploy Center's enhanced scripting logic and functionality.
 - a. Make changes to store.txt for universal changes to the **Get Donor** task.
 - store.txt

```
SELECT DRIVE 1
SELECT PARTITION ALL
SET DESCRIPTION " "
STORE WITH COMPRESSION HIGH
```
 - b. Make changes to wciFull.txt for universal changes to the Windows Clone Install (**WCI**) task
 - wciFull.txt

```
SELECT DRIVE 1
DELETE ALL
SELECT FREESPACE FIRST
SELECT IMAGE ALL
RESIZE IMAGE PROPORTIONAL
RESTORE
```

2.5 Rebuild the DOS71C System Environment

6. On the RDM server, and on each remote RDM Deployment Server, run the C:\Program Files\IBM\RDM\local\env\MKIMAGES.BAT program. Check for error messages.

2.6 Upgrade the PowerQuest Unicast Image Server

7. On the RDM server, and on each remote RDM Deployment Server, open a CMD.EXE window. Run the following commands:

```
CD "C:\Program Files\IBM\RDM\bin"
UCSERVICE /unregserver
RENAME UCSERVICE.EXE UCSERVICE.OLD
```

This will stop and uninstall the service and clean up the registry.

8. Copy the new UCSERVICE.EXE file into the "c:\Program Files\IBM\RDM\bin" directory.
9. Run the following command in the command window (**Important** – make sure you use the command that applies to your RDM release):

For RDM 4.20.3 or later:

```
ucservice.exe /service /startup auto /imagedir "c:\Program Files\IBM\RDM"  
/logfile "c:\Program Files\IBM\RDM\log\pqlog.txt"
```

For RDM 4.20.2 or earlier:

```
ucservice.exe /service /startup auto /imagedir "c:\Program  
Files\IBM\RDM\REPOSITORY\IMAGE" /logfile "c:\Program  
Files\IBM\RDM\log\pqlog.txt"
```

Important: This is a single command that should be entered all on one line.

This will install and start the new service. If service is not started, reboot machine or manually start the service.

2.7 Test the procedure

10. Create a donor system that is configured to have 2 or more partitions.
11. Run a *Get Donor* task on that donor system. This creates the image that you will use in a *Windows Clone Install* task.
12. Immediately after the **Starting PC DOS...** message appears on the target system's monitor, press the F8 key. This allows you to step through all of the batch files, statement-by-statement.
13. Press the "y" key to execute each statement in-turn. Observe each statement, and watch for any errors that may occur.

Note: If an error occurs, debug it, fix it as appropriate (usually in one of the files you created or modified above), and then rerun the test.

Before you rerun the test, you will usually need to do the following:

- a. Power off the target system with the power switch.
- b. Right-click on the target system in the middle pane of the RDM console.
- c. Click the **Remote Deployment Manager** and the **Cancel Tasks** menu items.

Important: RDM 4.20 contains improved error-handling logic for DeployCenter errors. It can now report any specific error that came from PQIMGCTR.EXE. This will be quite useful if you get an error of this kind during your production deployments. But you should still test using the F8 procedure, to ensure that your task is working properly.

14. Now you are ready to test the whole RDM cloning scenario:
 - a. Create a donor system that contains the Windows operating system and applications that you want. Make sure that it contains 2 or more partitions, and that each partition contains some files.
 - b. Run Microsoft's SYSPREP.EXE on the donor system.
 - c. Run an RDM *Get Donor* task on the donor system. This creates an RDM image of the de-personalized donor system.
 - d. Create an RDM *Windows Clone Install* task that uses the image you created in step 14c.
 - e. Run the *Windows Clone Install* task that you created in step 14d on a target system that is similar to your donor system. For example, you can run it on your donor system.

-
- f. Boot the target system used in step 14e, logon, and verify that it is configured as you intended.

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4 Glossary

BAT file. A file that contains a batch program (that is, a set of commands).

bind. Associating one or more systems to a task. This causes all information to be verified (by one of the STC modules) and a resulting job to be scheduled to run.

console, or RDM Console. The group of programs that make up the user interface to RDM. RDM is client/server in nature so that the Console might run on any computer and not necessarily be running on the same computer as the RDM server or other RDM components. The RDM Console is actually an IBM Director Console on which the RDM Console component is installed.

image. An image is the software stored on a deployment server that is downloaded to a system during an operation. Images vary in size and in the type of software they provide to the system. The purpose and content of each image depends on the task to be accomplished, as well as the method used to download the image from the deployment server to the system. A *native* image is built off a product installation CD. A *clone* image is copied from a donor system.

job. An object managed by the scheduler and created by STC. A job is a binding of one task and one or more systems. A job can be scheduled to run once or to recur. Sometimes a job is called by a different name (Scheduled Task, Running Task), to emphasize some aspect of the job.

managed system. The IBM Director term for its system. Mentioned here only for clarity; the term *system* is preferred when referring to an RDM system.

preboot DOS agent. The preboot DOS agent is a DOS operating system with a communications stack that is booted from the network by the bootstrap agent. The preboot DOS agent performs actions on a system as directed by the RDM server.

Preboot Execution Environment (PXE). PXE is an industry standard client/server interface that allows networked computers that are not yet loaded with an operating system to be configured and booted remotely. PXE is based on Dynamic Host Configuration Protocol (DHCP). Using the PXE protocol, clients can request configuration parameter values and startable images from the server.

The PXE process consists of the system initiating the protocol by broadcasting a DHCPREQUEST containing an extension that identifies the request as coming from a client that uses PXE. The server sends the client a list of boot servers that contain the operating systems available. The client then selects and discovers a boot server and receives the name of the executable file on the chosen boot server. The client downloads the file using Trivial File Transfer Protocol (TFTP) and executes it, which loads the operating system.

Redundant Array of Independent Disks (RAID). RAID is way of storing the same data in different places (thus, redundantly) on multiple hard disks. By placing data on multiple disks, I/O operations can overlap in a balanced way, improving performance. Multiple disks increase the mean time between failure (MTBF) and storing data redundantly increases fault-tolerance.

system. An individual, target system being deployed or managed by RDM. In IBM Director terminology, an RDM system is always a platform managed object. These can represent any of the supported-by-RDM systems. They cannot represent an IBM Director object that RDM does not process, such as a chassis or an SNMP object.

task. An already defined and configured unit of work that is available to be applied to a system or a group (of systems). You create a task by clicking on the applicable task template from the RDM main console. RDM is installed with predefined tasks, such as data disposal and scan.

task template. A prototype of a specific kind of RDM task. This is a term used to describe the different kinds of tasks shown on the task pane in the main window of the RDM console. Each task template has its own characteristics and attributes. RDM comes with a set of task templates.

Wake on LAN. Technology developed by IBM that allows LAN administrators to remotely power up systems. The following components are essential for the Wake on LAN setup:

- Wake on LAN-enabled network interface card (NIC).
- Power supply that is Wake on LAN-enabled.
- Cable which connects NIC and power supply.
- Software that can send a magic packet to the system.

If the system has the first three of the previous components, the system is called a Wake on LAN-enabled system. Even though a system might be powered off, the NIC keeps receiving power from the system power supply to keep it alive. A network administrator sends a magic packet to the system through some software, for example, RDM or Netfinity IBM Director. The NIC on the system detects the magic packet and sends a signal to the power supply to turn it on. This process is also called *waking up the system*. Using RDM, this process can be scheduled for individual systems. The Wake on LAN feature and RDM together make it very easy for you to deploy software on individual systems on a scheduled basis.



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