G06J-0521-0

LANClient Control Manager for OS/2 Server

Training and Procedures Guide

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Note

Before using this information and the product it supports, be sure to read the information in Appendix A, "Notices and Trademarks" on page 121.

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Contents

About This User's Guide

This guide will help you become more familiar with IBM's LANClient Control Manager. Included in the guide are procedures and training exercises that help explain the product.

Although one of the features of LANClient Control Manager is to distribute software to client workstations on a LAN, the terms and conditions of the IBM International Program License Agreement for LANClient Control Manager do not grant any license to install, copy, or use any application software or operating system software not provided with LANClient Control Manager. This includes, but is not limited to, Microsoft Windows 3.1 and DOS. Always ensure that you have obtained the suitable licenses for any software you intend to use with LANClient Control Manager.

This guide is organized as follows:

- Chapter 1, "Overview and Concepts of LANClient Control Manager," contains an introductory overview of the purpose and features of LANClient Control Manager. Also, the different concepts relevant to LANClient Control Manager are discussed. It is important to understand the information discussed in this chapter to take full advantage of LANClient Control Manager.
- Chapter 2, "Installing and Running LANClient Control Manager," contains instructions on how to install, start, and exit from LANClient Control Manager. Also included are instructions on how to run LANClient Control Manager from another workstation and how to uninstall the program.
- Chapter 3, "Working with the Interface," provides a graphical view of each screen provided by LANClient Control Manager and a description of each field.
- Chapter 4, "Procedures," provides step-by-step procedures to accomplish the tasks associated with LANClient Control Manager.
- Chapter 5, "Hybrid RPL Training Exercises," contains detailed step-by-step exercises to create and distribute Hybrid RPL images.
- Chapter 6, "Example Files," contains examples of the files you need to create or modify. These files are used to distribute Hybrid RPL images.
- Chapter 7, "Utilities Provided by LANClient Control Manager," contains a description of the key utility programs provided with LANClient Control Manager and provides information about how to use them.

Also included is a "Notices and Trademarks" section and an index.

Who Should Read this Guide

This guide is intended to help network administrators understand the concepts and procedures of LANClient Control Manager. Training exercises are provided to help administrators use the product.

To effectively use this guide, you should have an extensive knowledge of your LAN and OS/2 Warp Server.

How to Use this Guide

As a source of general information, you can use this guide to help you understand the features, capabilities, interface, and concepts of LANClient Control Manager before installing the program. You can also use this information to assess the technical skills required to implement, use, and maintain the program.

For training, this guide is most effective when used in the following order:

1. Review Chapter 1, "Overview and Concepts of LANClient Control Manager" to become familiar with the overall concepts and capabilities of LANClient Control Manager. This chapter will also help you become familiar with new terminology.
2. Download the LANClient Control Manager program from the World Wide Web.
3. Use Chapter 2, "Installing and Running LANClient Control Manager" to ensure your server software meets the minimum requirements, including having RPL support installed.

   Note: Tips for installing RPL support on OS/2 Warp Server are provided on the World Wide Web at `http://www.us.pc.ibm.com/desktop/lccm/index.html`.

   Then, install the program and start it.
4. While the program is running, read through Chapter 3, "Working with the Interface" and use the program to open each notebook and select each page as you read about it in this guide. This will help you get a feel for using the interface.
5. Your next step depends on how you intend to use LANClient Control Manager:
   - If you will be using LANClient Control Manager to manage client workstations, but will not be developing Hybrid RPL images, you can start using LANClient Control Manager by using the information in Chapter 4, "Procedures."
   - If you will be developing Hybrid RPL images, do the following:
     a. Read Chapter 7, "Utilities Provided by LANClient Control Manager" to become familiar with the utilities you will use to develop Hybrid RPL images.
     b. Go to Chapter 5, "Hybrid RPL Training Exercises" and select an exercise that most closely matches the type of Hybrid RPL image that you will be developing and distributing in your LAN environment.
     c. Complete the exercise step-by-step in the order presented.
     d. Upon successful completion of the exercise, you can either develop your own Hybrid RPL image, or use Chapter 4, "Procedures" to start using LANClient Control Manager for any of the other LAN-management tasks.

Chapter 1. Overview and Concepts of LANClient Control Manager

Overview

LANClient Control Manager provides you with tools to simplify adding client workstations to an existing local area network (LAN). Once a client workstation is added to the LANClient Control Manager database, you can remotely install, maintain, and update software on the client workstations. Key features include:

- Automated search for new clients on the LAN
- Operating system and application program installation through the LAN
- Controlled client workstation startup through standard remote program load (RPL) or LANClient Control Manager's enhanced *Hybrid RPL*
- Easy software maintenance through the LAN
- Ability to update the BIOS over the LAN

If you have NetFinity installed on your server, LANClient Control Manager can also:

- Remotely restart (reboot) a client workstation that is already turned on in order to process changes to client software
- Remotely turn off (power down) and turn on a client workstation in order to process changes to client software

The ability of NetFinity to turn off a client workstation is directly related to the version of NetFinity and the operating system installed on the client workstation. The power-down capability of NetFinity is currently limited to client workstations running Windows 95.

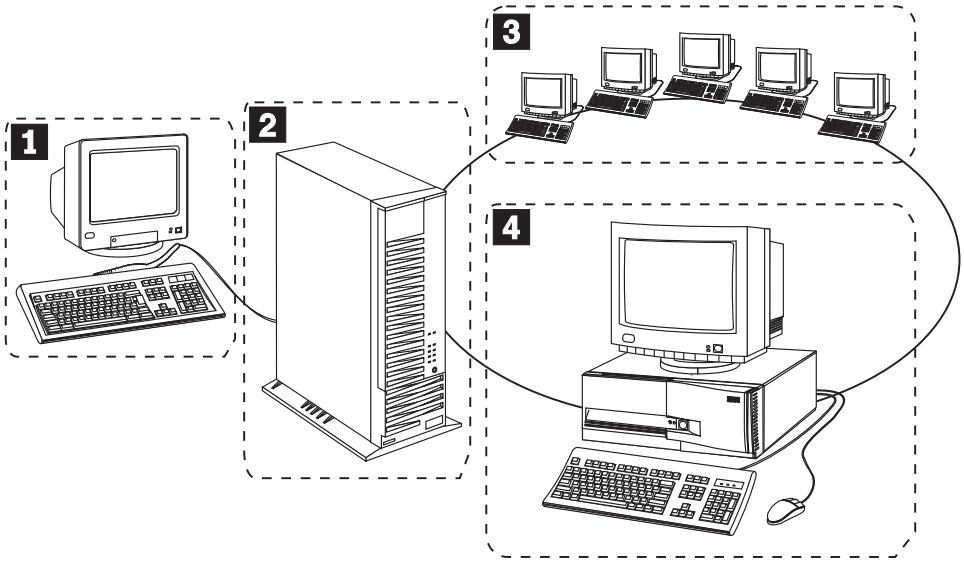
Note: LANClient Control Manager cannot be used to control clients across a router.

Specified Operating Environment

The specified operating environments for LANClient Control Manager are those supported by the compatibility test results for a variety of hardware and software combinations. The test reports are accessible from the World Wide Web at `http://www.us.pc.ibm.com/desktop/lccm/index.html`. This web location will be updated as additional test cases are completed.

LANClient Control Manager Hardware Environment

The following illustrations show the LANClient Control Manager environment.



1 Server Console - A keyboard and monitor attached to the server (optional).

2 Server - The LANClient Control Manager program is typically installed here. You can optionally install the program on a client workstation (administrator console).

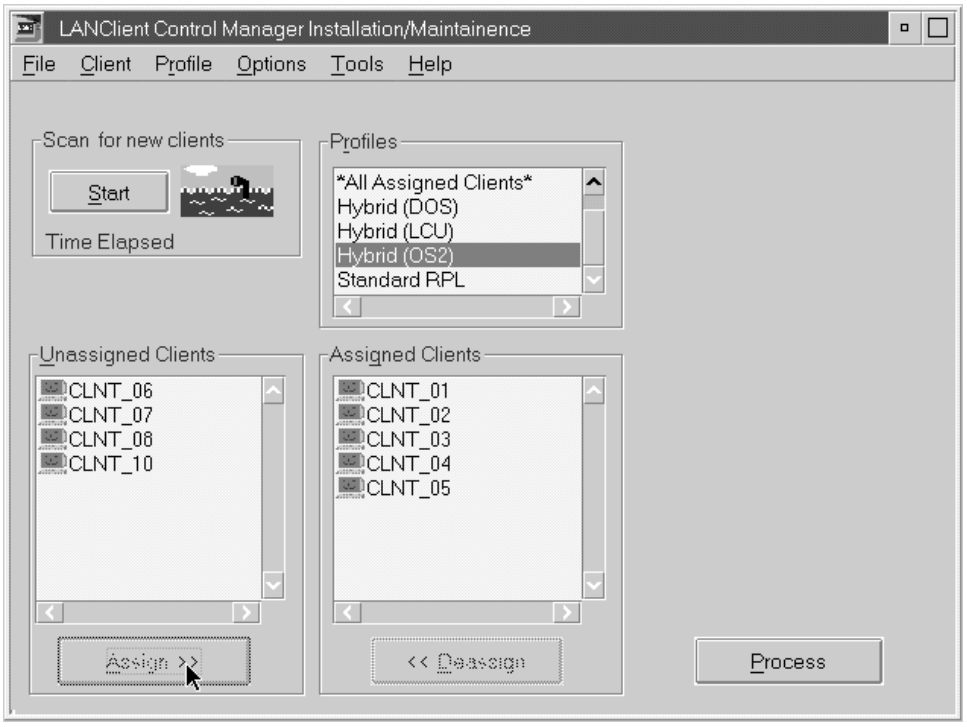
3 Client Workstations - These are workstations connected to the LAN. All client workstations to be managed by LANClient Control Manager must be enabled to support remote program load (RPL). For details, see "Installing New Client Workstations" on page 56.

4 Administrator Console - A workstation on the LAN through which or on which LANClient Control Manager is installed.

Basic Operation

LANClient Control Manager has a *scan* feature that automatically searches the LAN for new client workstations that are enabled for RPL. When it finds a new client workstation, LANClient Control Manager interrogates the client for information such as the serial number and network address. LANClient Control Manager assigns a name to the client and creates an Individual Client Details notebook for the new client. The Individual Client Details notebook contains the name of the client and the information that was detected during the scan. The name of the client appears in the *Unassigned Clients* list of the Installation/Maintenance window.

The following illustration shows the Installation/Maintenance window.



Once LANClient Control Manager has recognized a new client, you can assign the client to a software profile. Each profile has an associated *image* (set of software) on the server. When you assign a client to a profile and click on the *Process* button, the client performs one of the following actions the next time it starts.

- If a *standard RPL* profile is assigned, the server downloads a standard RPL image to the client's memory. The client starts, carries out the instructions contained within the image, and is ready to run the software made available to it through the LAN.
- If a *Hybrid RPL* profile is assigned, the server sets up a temporary operating system environment on the client, then downloads one or more batch files. The client first runs an optional preload-image batch file to prepare its hard disk to accept data, then runs a final-image batch file to copy an image (operating system and application programs) from the server to its hard disk. Optionally, the final-image batch file can contain instructions to personalize the installed image by adding system-unique information such as a unique network logon, TCP/IP address, and so on. On subsequent restarts, the client workstation downloads only a short bootstrap load instruction from the server, which instructs the client to start from its own hard disk.

You can create and store a variety of images and profiles on the server. The software within each image depends on the tasks to be accomplished by you or the end user.

Note: Profiles are unique to the LANClient Control Manager program. You create a profile to identify the associated image that resides on the server or the batch files used to copy an image from the server. Information about each profile is created and stored in the *Software Profile Details* notebook, which is discussed later in this book.

Advantages of Hybrid RPL

Hybrid RPL provides you with a very powerful technique for controlling your networked clients. There are several advantages of assigning clients to a Hybrid RPL image rather than a standard RPL image. These advantages include:

- The network load associated with downloading the complete image from the server to every client at startup is decreased.
- End users never need to load software onto their client workstations.
- You do not need to take diskettes to the client workstation to update or repair end-user software.
- End users are discouraged from keeping unauthorized or unlicensed software on their workstations, because the administrator can clean the hard disk drive and reinstall all software at any time.
- Clients can be disabled from functioning if they are disconnected from the network. This is done by altering the primary startup sequence of the client BIOS. Also, you can control the BIOS administrator password, which prohibits end users from altering the startup sequence.

Note: If an emergency occurs that prevents your clients from connecting to the network, they can optionally start up from their hard disk drives. For more information, see “Allowing Local Hard Disk Startup” on page 80.

While the Hybrid RPL process is unique to LANClient Control Manager, it does not need any proprietary hardware, and does not use any nonstandard transactions over your LAN, so it is very unlikely to have any adverse effect on any LAN applications you already use.

If you currently use a software-distribution application over the LAN, it can probably be used with Hybrid RPL to extend and improve your client control.

Use of Batch Files

You must create batch files to take full advantage of the capabilities of LANClient Control Manager. LANClient Control Manager uses batch files for the following tasks:

- Hard disk preparation (usually to invoke the FDISK operation)
- Software installation (usually using FORMAT, COPY, XCOPY, RESTORE, and PKUNZIP commands)
- Software personalization (to search for and replace character strings using variables)
- Software maintenance (to replace one or more files)

Examples of batch files for these and other tasks are provided in Chapter 6, “Example Files” on page 99. Also, the use of batch files is discussed in more detail later in this chapter.

Environment for Hybrid RPL

Before LANClient Control Manager can run the various batch files, it must set up a temporary operating system environment at the client. It is important that you understand this environment before you develop any batch files.

- For DOS Transport:
  - IBM PC DOS 7 is loaded on the client (the DOS software is not copied to the hard disk of the client; it is resident only in memory).
  - Drive S is automatically mapped to:

    `\\servername\LANC$$`

    where LANC$$ is the *LCCM_install_dir*\CLNTFILE directory. This is the directory where all of the required utility programs are stored. For details on these utilities, see Chapter 7, “Utilities Provided by LANClient Control Manager” on page 113.
- For OS/2 Transport:
  - OS/2 is loaded on the client (the OS/2 software is not copied to the client's hard disk; it is resident only in memory).
  - Z:\IMAGES is automatically mapped to:

    `\\servername\LANC$$`

    where LANC$$ is the *LCCM_install_dir*\CLNTFILE directory. This is the directory where all of the required utility programs are stored. For details on these utilities, see Chapter 7, “Utilities Provided by LANClient Control Manager” on page 113.

Interface Components

The interface of LANClient Control Manager consists of the following major components:

- Installation/Maintenance window

  This is the main window of the program, where you can view the various clients and profiles, assign clients to profiles, start and stop the scan operation, and start processing changes.
- Processing/Info window

  This window displays the status of events as they are being processed.
- Defaults Notebook

  You use this notebook to define global default parameters, such as how and when processing will take place, timeout durations, the administrator password to assign to each client workstation, and specific questions (prompts) to display at the client workstation during a scan process.
- Individual Client Details Notebook

  The information in this notebook is created automatically by the scan process for each client workstation it detects. You can also create, copy, or modify the notebook

manually. The notebook contains information about specific client workstations, such as the serial number, network address, key hardware installed, image assigned, and BIOS level. It also contains the personalization values unique to each client workstation that you use to personalize an image. You can also use this notebook to perform maintenance operations on client workstations, such as updating the BIOS code, updating the administrator password, and loading a diagnostic image. A scheduler feature allows you to override the default scheduler and schedule a processing change at a specific date and time.

- Software Profile Details Notebook

  The information in this notebook is created by you. The Software Profile Details notebook contains information about the image that is associated with a specific profile. It contains:

  – A description of the profile contents.

  – Information about the minimum hardware required by a client workstation to use the image.

  – The name of the *preload-image* batch file used to prepare the local hard disk of the client and the name of the *final-image* batch file used to install the software.

  – A listing of personalization names and values.

The interface is described in greater detail in Chapter 3, “Working with the Interface” on page 19.

Concepts

The following conceptual information will help you understand the various elements used by LANClient Control Manager.

Images

An image is the software stored on a server that is downloaded to a client workstation during a remote program load. Images vary in size and in the type of software they provide to the client workstation. The purpose and content of each image depends on the task that needs to be accomplished, as well as the method (standard RPL or Hybrid RPL) used to download the image from the server to the workstation.

Standard RPL Images

In general, a standard RPL image provides only enough function to enable the client workstation to start up and gain access to the network.

Hybrid RPL Images

A Hybrid RPL image contains the software designed to meet the needs of a specific end user, department, or group of end users that perform similar tasks. It consists of a complete operating system and a set of application programs. Multiple images can reside on a server, and the same image can be downloaded to multiple clients. The size of the image is limited only by the hard disk capacity of the client workstation that will be using it.

BIOS Update Images

LANClient Control Manager can read the contents of a flash BIOS update diskette and store it as an image on the server. All flash BIOS images are kept in a sub-directory on the server. For more information, see “Creating a BIOS Update Image” on page 67. Once the flash BIOS update is stored as an image on the server, you can use the Maintenance page of the Individual Client Details notebook to remotely update a client workstation's BIOS level. For additional information about this procedure, see “Updating the BIOS Level” on page 77.

CMOS Update Images

The CMOS update image is a file that contains the BIOS settings that are set through the client workstation's Configuration/Setup utility program. You use a *donor workstation's* Configuration/Setup utility program to save the settings you want. Next, you copy the settings to a file and copy the file to the server's directory. For more information, see “Creating a CMOS Settings Image” on page 68. Once the file is on the server, you can use the Maintenance page of the Individual Client Details notebook to copy these settings to the client workstation's CMOS memory. All CMOS update files must be identified with a .CMS file extension. For more information about this procedure, see “Assigning Clients a CMOS Settings Image” on page 78.

Diagnostic Images

After you create a diagnostic image, you put it on the server, and then you use the Maintenance page of the Individual Client Details notebook to assign the image to specific clients on an as-needed basis. For more information, see “Creating a Diagnostic Image” on page 69 and “Assigning Clients a Diagnostic Image” on page 78.

Batch Files

The Hybrid RPL process downloads and runs batch files on client workstations. These batch files copy the files of the assigned image from the server to the client workstation or carry out other tasks, such as preparing a client workstation's hard disk to accept data or modifying an image after it has been installed.

You must create the batch files to meet your specific needs. The more proficient you are at writing batch files, the more powerful LANClient Control Manager becomes as a network-management tool.

When creating batch files, keep a few rules in mind:

- Keep batch files as simple as possible.
- Test batch files on a donor workstation before running them on an entire workgroup. This will help you find errors early in a controlled environment.
- Make sure that you understand drive mapping and that you develop your batch files from the client workstation's point of view.
- Ensure that you assign the appropriate file extensions for different types of batch files that you create.

Types of Batch Files

LANClient Control Manager's Hybrid RPL process uses batch files for various tasks. Each type of batch file has a unique file extension that is used to identify its purpose. The following are the types of batch files that can be used by the Hybrid RPL process:

- .LCP

  This is the preload image batch file. This batch file is used to prepare a client workstation's hard disk before downloading the final image, usually by issuing a LCBTRDEL command to delete existing partitions and a FDISK command to re-partition the drive.

  Because the DOS FDISK command does not allow the use of command-prompt parameters that enable unattended operation, any preload-image batch file using this command must be accompanied by *response files* to provide the appropriate keyboard responses.

- .LCI

  This is the final-image batch file. This batch file is used to download the client workstation's final image from the server, usually by using the XCOPY or COPY commands. In some cases, the final image file also includes formatting commands, provides personalization attributes, and runs other programs provided by LANClient Control Manager to handle long file names and temporarily change system and hidden-file attributes.

- .MNS

  This is the maintenance batch file. This batch file is similar in function to the final-image batch file, but is used specifically to copy additional or updated programs to an image already installed on a client workstation. If a particular end-user (for example, a department manager), requires more software than other end-users, you can install a common image, then use the maintenance batch file to add the additional software. Once the additional software and maintenance batch file are on the server, you can use the Maintenance page of the Individual Client Details

notebook to install the additional software. This way, you will not have to recopy an entire image or develop a unique final-image batch file.

A Word about Drive Mapping

It is very important that you understand the concepts of drive mapping before you create your batch files. Because drive mapping assigns drive letters to directories and sub-directories of a server, you have to remember to write the batch files from the client workstation's point of view.

For example, assume you have created a DOS_WIN image for Bob's marketing team and placed it under the server's \IMAGES\BOB\DOS_WIN\ directory. Also, assume that you have mapped the IMAGES\BOB directory as drive H. When developing your final-image batch file, the statement needed to copy the image to drive C of the client workstation would be:

```
XCOPY H:\DOS_WIN\*.* C:\*.* /S
```

From the client workstation's perspective, the server's \IMAGES\BOB directory is the root directory of drive H.

Donor Workstations

The process of controlling workstations is much easier if you use a *donor* workstation to write and test your batch files before migrating the image to every client on the LAN. A donor workstation is a requirement for creating a CMOS image, testing a diagnostic image, and developing a Hybrid RPL image.

The donor workstation must be compatible (feature-by-feature) with the client workstations you plan to use. In most cases, it is advisable that the donor workstation and target client workstations be identical models to ensure that the correct device drivers are present and configured correctly. Ensure that you have adequate access to a suitable client workstation to use as a donor for writing batch files and testing changes before you make these changes on the entire workgroup. You will find it much easier to find and fix problems on a single donor client before migrating new or changed batch files to every client on your LAN.

Software Profiles

In many organizations, there are people doing the same or similar job and using the same software to do it. From a support and maintenance point of view, it is very important that these client workstations use an identical set of software. This often is difficult to achieve, and once achieved, difficult to maintain. However, using software profiles in LANClient Control Manager helps solve this problem.

You use a software profile to define a set of software and distribute it as an image through the LAN to one or more client workstations, thereby creating identical operating environments. As clients are added, the same image can be distributed to them. If the image gets updated, all client workstations currently assigned to that software profile can automatically be updated with the revised image at the next remote program load. No user intervention is required at the client workstation for the initial software installation or for updates.

Typically, most organizations will have several software profiles, each for a different type of job. For example, in addition to the operating system:

- An administrative assistant profile might include a word processor and calendar application.
- A marketing profile might include a spreadsheet and business graphics application.

After developing separate images for these functions and putting them on the server, you must create a Software Profile Details notebook for each image and give each notebook a descriptive name. Using the examples in the preceding list, the names Administrators and Bob's Marketing Team might be appropriate. When these notebooks are saved, the names appear in the Installation/Maintenance window. Each software profile is listed under the profile type (standard RPL Profiles, Hybrid RPL Profiles, and so on). The administrator would then assign each marketing workstation to the profile named Bob's Marketing Team and each administrative assistant's workstation to the profile named Administrators. The next time these workstations are started, the appropriate images are downloaded and they are ready to use.

Chapter 2. Installing and Running LANClient Control Manager

Installing LANClient Control Manager

Important:

- When you are installing the LANClient Control Manager program on the server, you must always log on as a *network administrator or equivalent.*
- You can find the files for installing LANClient Control Manager at `http://www.us.pc.ibm.com/desktop/lccm/index.html` on the World Wide Web.
- If you are re-installing an updated version of LANClient Control Manager, you must first uninstall the older version. For more information, see "Uninstalling LANClient Control Manager" on page 17.

The minimum software required is OS/2 Warp Server 4.0.

Prerequisites:

You must configure the server prior to installing LANClient Control Manager. To configure the server, install RPL support from the Warp Server CD.

Note: Prior to installing LANClient Control Manager, you must follow the RPL installation procedure at `http://www.us.pc.ibm.com/desktop/lccm/index.html` on the World Wide Web.

To install LANClient Control Manager:

1. To download and unpack LANClient Control Manager for OS/2 Server, follow the instructions at `http://www.us.pc.ibm.com/desktop/lccm/index.html`.
2. At an OS/2 system prompt, change to the directory where the LANClient Control Manager installation files are located.
3. Run the program `LS\INSTALL`.
4. Answer the following questions:
   a. Select the type of installation (**server** or **workstation**) and click on **Next**.

      Note: If you select server, all required files are installed to a directory on your RPL server. If you select workstation, all required files are installed onto a client workstation (administrator console).

      If you intend to run LANClient Control Manager from a remote workstation, you must use the full UNC path for all files you specify in the Software Profile Details notebook and Individual Client Details notebook. For example:

      *servername**sharename**directory**filename*

      The following share is automatically created by LANClient Control Manager:

      servername\LANC$$

      where LANC$$ points toward:

      LCCM_install_dir\CLNTFILE\

   b. Type the full path of the directory for the destination of the installation (the server name is automatically provided), and click on **Next**.

c. Select the components (LANClient Control Manager and Sample Files) you want to install and click on **Next**.

d. Click on **Yes** in the Query message box to continue with the installation.

Starting LANClient Control Manager

The following procedure is for starting LANClient Control Manager from the workstation on which it was installed.

To start LANClient Control Manager:

1. Log on to the server as a network administrator or equivalent.
2. At an OS/2 prompt, change to the installation directory.
3. Type **LCCM**, then press **Enter**.

   You can also start the program by using the following (optional) parameter:

   `LCCM/server=`*`servername`*

   This method of starting changes the server name that is managed by LANClient Control Manager.

After you start the program, a group of icons related to LANClient Control Manager is provided on the desktop.

Note: You can also run LANClient Control Manager from another workstation. For more information, see “Running the Program from Another Workstation” on page 16.

Running the Program from Another Workstation

LANClient Control Manager initially runs only on the workstation through which you installed it. However, while working with the program, you might need to run LANClient Control Manager from another client workstation connected to the LAN.

To run the program from another workstation:

1. From the server on which you first installed LANClient Control Manager, copy the following files to a directory on the target workstation:
   - LCCM.EXE
   - LCCLIENT.INI
   - LCSCAN.INI
2. From the target workstation, change to the directory containing LCCM.EXE.
3. Run the copied version of LCCM.EXE.

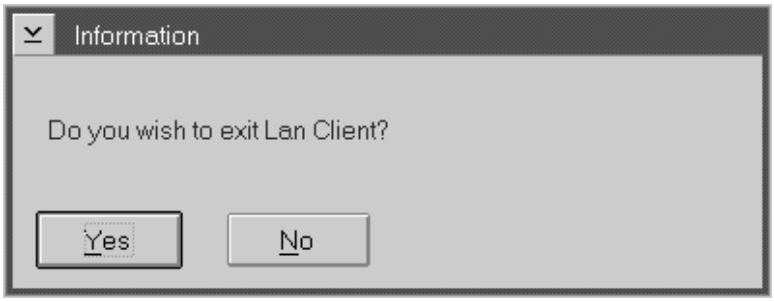
Exiting from LANClient Control Manager

To exit from the program:

1. Select **File** from the Installation/Maintenance window.
2. Select **Exit**.

If no details have changed, LANClient Control Manager automatically exits.

If details have changed but have not been processed, the following window display:



- Select **Yes** to *save* and *begin processing* the changes. The Processing/Info window displays. While this process is running, you can perform no other action within the program.
- Select **No** to cancel the exit and return to LANClient Control Manager.

Uninstalling LANClient Control Manager

At the administrator console, or at the workstation on which you installed LANClient Control Manager:

1. Locate the LANClient Control Manager installation directory on your server. If you want to save your client data, profile data, and network adapter list, copy or back up the files:

   - NETWORK.LST
   - LCCLIENT.DBS
   - LCPROF.DBS
   - LCCLIENT.INI

   Delete these files if you do not want to save them.

2. Within the OS/2 interface, click on the Uninstall icon. This icon is located in the group of LANClient Control Manager icons that was created upon installation.

3. Click on **OK** to begin uninstalling LANClient Control Manager.

Chapter 3. Working with the Interface

Installation/Maintenance Window

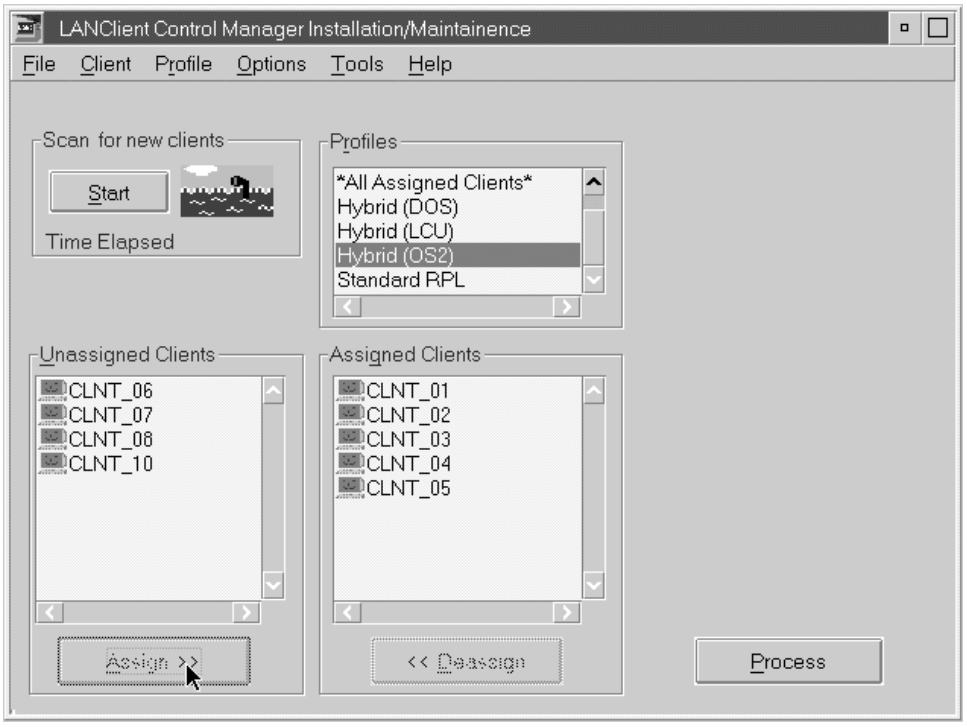
The main window within LANClient Control Manager is the Installation/Maintenance window. Each time the program is started, the Installation/Maintenance window is the first window to appear.

Using the available buttons in the Installation/Maintenance window, you can scan for new clients, assign and unassign clients to specific profiles, and process all changes. The additional menu bar at the top of the window provides access to all other functions within the program.

When moving within the Installation/Maintenance window and other windows of the program and when selecting items on the screen, you can use the mouse or keyboard (ALT key, ARROW keys, TAB key, ENTER key, and so on).

All actions you take within the program must end with the **Process** button. By clicking on the Process button, you save new information and either immediately change the permanent databases or initiate the Scheduler, which processes changes at a scheduled day and time. For more information on the Scheduler of the Defaults page, see “Defaults Notebook - Scheduler Page” on page 29. For more information on the Scheduler of the Individual Client Details notebook, see “Individual Client Details - Scheduler Page” on page 42.

The following illustration shows the Installation/Maintenance window. When you first start LANClient Control Manager, you will not see new clients until you add them to the database. For more information, see “Adding Client Workstations to the Database” on page 58. Also, you must create software profiles before you can assign clients. For more information, see “Creating a Software Profile” on page 71.



See “Managing Clients” on page 73 and “Managing Software Profiles” on page 71 for tasks associated with the program interface.

Selecting Clients

You can select one client or multiple clients before performing a procedure in the Installation/Maintenance window. Clients can be selected in one of three ways:

- To select *one* client, click on the client using the primary mouse button.
- To select *multiple* clients, press and hold the Ctrl key, click on the individual clients using the primary mouse button, and release the Ctrl key.
- To select a *contiguous group* of clients, click on the first client in the group, hold the shift key and then click on the last client in the group. All clients between the two that you click on are selected.

Recognizing Clients within the Interface

If you are using a color monitor, you might notice that clients are displayed with different colors. The color of a client indicates specific qualities about the client.

- *Green* indicates that the client matches the hardware requirements for the selected profile.
- *Red* indicates that the client workstation does not match the hardware requirements of the selected profile, or no profile is selected.
- *Gray* indicates that the client currently has RPL disabled.
- *Reversed text* indicates that the client is currently selected.

Processing Changes Within LANClient Control Manager

Changes made within LANClient Control Manager are saved in a temporary database until you click on the Process button. This enables you to make multiple changes before starting to process them. This is done because processing might take some time if it involves assigning clients to Hybrid RPL profiles that require large downloads.

- For immediate changes:

  Click on the **Process** button to begin processing the changes. Once you select the Process button, the changes are saved to the LANClient Control Manager database and the processing begins. You can perform no other actions while the changes are being processed. The Processing/Info window opens and displays all jobs currently in the queue and their associated status.

- For scheduled changes:

  Once you click on the Process button, the changes are executed when the scheduled time arrives. The Processing/Info window opens and displays all scheduled jobs currently in the queue, along with the day and time that the scheduled event will occur. You can perform no other actions while the changes are being processed.

  Note: After setting a scheduled change and clicking on the **Process** button, you must leave your administrator's console switched on in order for the scheduled event to take place.

- On exiting LANClient Control Manager:

  If there are any processing changes outstanding when you exit LANClient Control Manager, the exit information box displays. See “Exiting from LANClient Control Manager” on page 16 for more information.

Any errors in processing are displayed on screen. You will find these error messages in the last (third) column of information within the Processing/Information window.

The error codes can be returned by any process within the batch file being executed, or by any CMOS, BIOS, or diagnostic process being run. LANClient Control Manager cannot keep a list of meanings and actions for any external program error messages, because they are dependent on the program that has returned them. If an error message has been returned:

- By an image batch file

  Run the image batch file on a donor workstation until you find the error. Check the error code against the appropriate help file for the program in the image batch file that is not working. Correct the error and click on the Process button again.

- By a diagnostic program

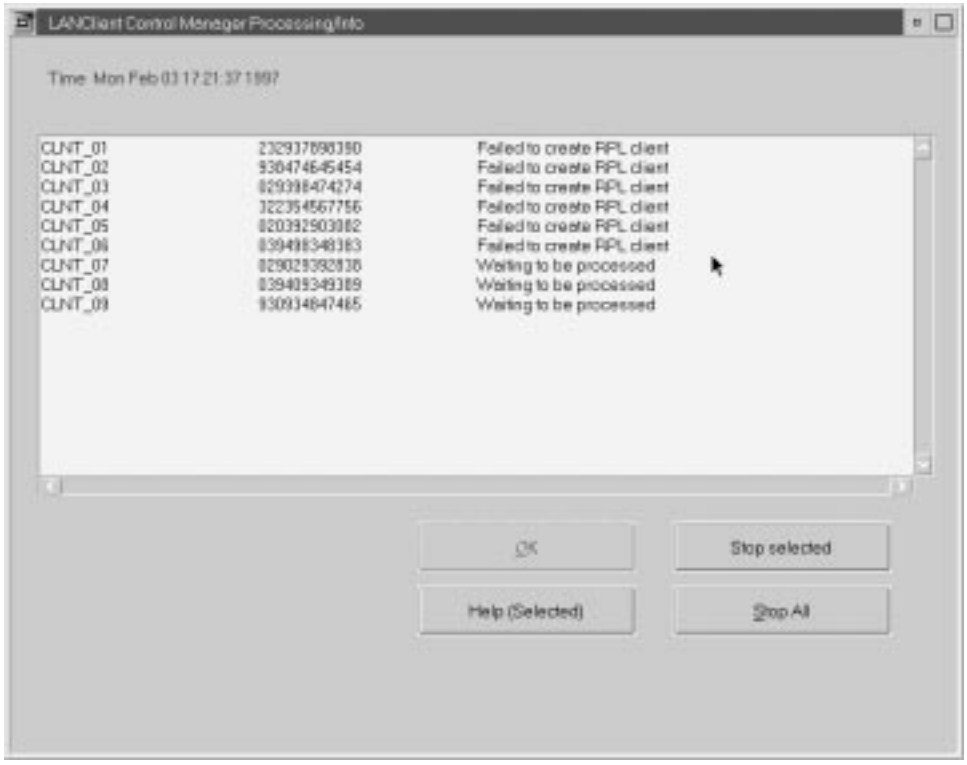
  The error codes returned by a diagnostic program depend entirely on the diagnostic program that is running. Consult the documentation for the diagnostic program (usually online or in a README file).

- By a BIOS upgrade procedure or CMOS upgrade procedure

  On the original BIOS flash diskette, or in the directory containing the BIOS image, you will find a help file containing the error codes and a description of each error. Or, after setting the diskette or BIOS-image directory as your default, you can type **CMOSUTIL /?** and press **Enter**. The directory containing the name of the BIOS image is: *LCCM_install_dir*\CLNTFILE\BIOS*BIOS_Flash_Name*

Processing/Information Window

The Processing/Information window displays each time a processing change takes place. Processing changes can occur immediately after you click on the Process button or can be on a delayed schedule. For more information on scheduled changes, see “Defaults Notebook - Scheduler Page” on page 29 for information on the scheduler of the Defaults notebook or “Individual Client Details - Scheduler Page” on page 42 for information on the scheduler of the Individual Client Details notebook. The following is an example of the Processing/Information window.



While the processing changes take place, you can click on the **Stop All** button to stop processing, or you can select specific clients in the list, and then click on the **Stop selected** button to stop processing.

There are three columns of information within this window:

- The first column lists the name that is assigned to each client.
- The second column lists the network address of the client.
- The third column lists the status of the client. The messages in this column indicate whether the client is waiting, scheduled, processing, or completed. Error codes might be returned to the this column, if there has been a failure.

Defaults Notebook

Whenever you need to change the default settings of the program, you must access the Defaults notebook.

To access the Defaults notebook:

1. Select **Options** from the menu bar of the Installation/Maintenance window.
2. Select **LANClient Control Manager Defaults**. The Defaults notebook displays.

   Note: Some settings within the Defaults notebook are over-ridden by settings in the Individual Client Details notebook. For more information, see "Individual Client Details Notebook" on page 31.

   The Defaults notebook contains four pages of information:

   - General

     This page contains information about the BIOS administrator password, the client name, and the RPL server name.

   - Processing

     This page contains information about the Hybrid RPL process and the client restart function.

   - Scan

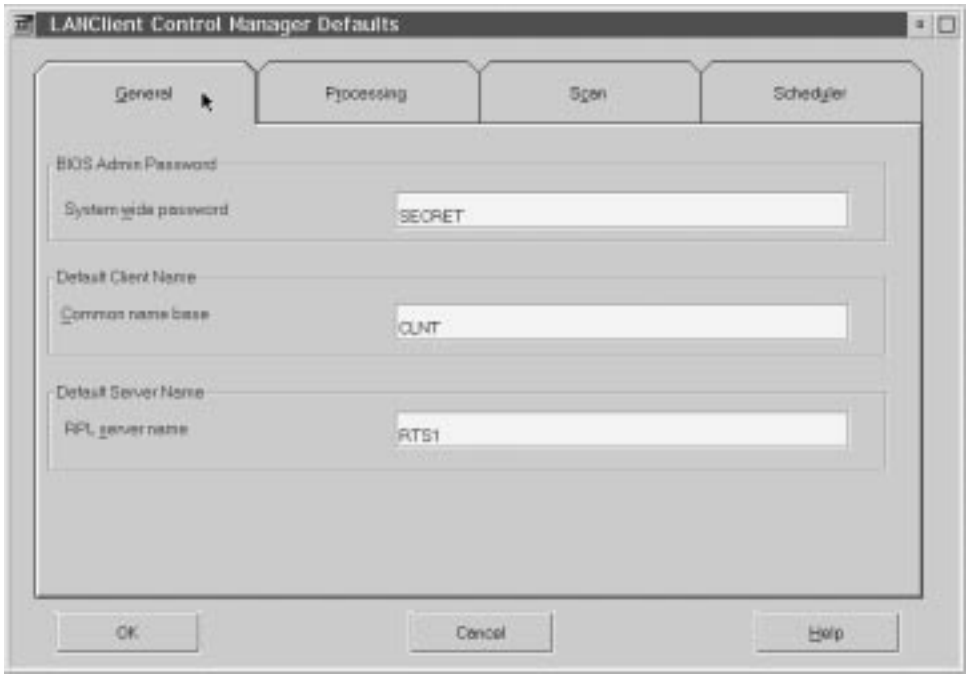
     This page contains information about the optional user prompts that appear each time a client workstation is discovered by the scan process.

   - Scheduler

     This page contains information about how and when changes are processed.

   To change to another page, click on the tab with the name of the information you want to view or change. All four categories, and the options within each one, are explained in this section.

Defaults Notebook - General Page



- BIOS Administrator Password

  The default value, if specified, is applied to all new clients during the scan process. If the field is left blank, no password will be set. If a default password is set, it is assigned to new clients when you scan them in. The default password is then applied to all new clients when the Process button is pressed to process immediate changes and when scheduled jobs reach their set time on the processing queue.

  Notes:

  – The default BIOS administrator password is set only during the scan process. If the default BIOS administrator password is set after the client has been scanned, the password will not be applied to that client.

  – Changing the default password does not affect the passwords of clients that have already been scanned. If you need to change the BIOS administrator password for clients that have already been created, you can do so by using the Maintenance page of the Individual Client Details notebook. For more information, see “Individual Client Details - Maintenance Page” on page 38.

  – The BIOS administrator password *code* is based on the positions of the keys, not the characters typed in. If any of your clients use a keyboard layout that is different from the keyboard layout you use to operate LANClient Control Manager (for example, a keyboard for another language), the BIOS password set through LANClient Control Manager might not be recognized when typed on the client keyboard. Be sure to use only characters that occur in the same position on all keyboards used. If the field is left blank, the password is disabled.

- Default Client Name

  Every client managed by LANClient Control Manager must be allocated a name that is unique to that client on the network. When clients are generated by the scan

process, a name is automatically allocated. This name is made up from the default client name base followed by an automatically generated number.

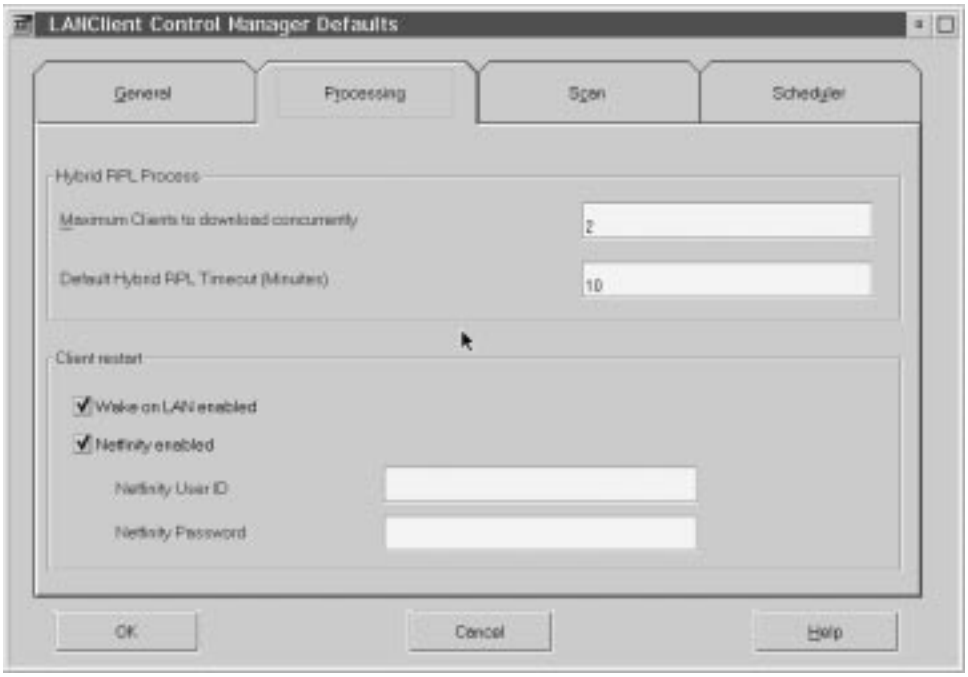
The default client name base is an alphanumeric string with a maximum of eight characters. The string must start with an alpha character. The actual client name generated is the name base followed by a decimal number from 001 to 999. You can change the client name base if the default is not suitable.

- Default Server Name

  This is the name of the server that controls the remote program load (RPL) process for your clients. Anyone using LANClient Control Manager must have administrator access privileges to this server. The default value is set during the installation of LANClient Control Manager. The server name might be preceded by a single backslash, double backslash, or no backslash. Changing the server name has no effect until you stop and restart LANClient Control Manager.

Note: You can also change the server name by using the `/server` parameter on the command line when you start the program. For more information, see "Starting LANClient Control Manager" on page 15.

Defaults Notebook - Processing Page



- Hybrid RPL Process

  Use the following fields to set limits for the Hybrid RPL process.

  – Maximum Clients to Download Concurrently

    This setting limits the number of clients that can download Hybrid RPL images at the same time. For example, if you specify 10 for this limit, and if more than 10 clients try to perform Hybrid RPL download at the same time, all the downloads will still work, but only 10 will actively transfer images over the network at the same time. When the first one completes, the eleventh will start, and so on until they have all been loaded. The purpose is to prevent excessive

load on the network and the server; the optimum setting depends on many aspects of network setup, tuning, and loading.

This setting affects only the initial image download and not the number of clients that can operate in Hybrid RPL mode once download is complete.

– Default Hybrid RPL Timeout (Minutes)

This setting specifies the time limit to wait for processing to complete for each client. If the Hybrid RPL download is not completed in the specified time, an error code is returned and processing stops.

- Client Restart

Use the following fields to record restart options.

– Wake on LAN Enabled

Client workstations that are physically powered off can be powered back on by LANClient Control Manager. To power on client workstations, LANClient Control Manager sends a packet containing the media access control (MAC) address of the workstation in five second intervals across the network. When the network adapter of the client detects this address, it powers up the workstation. When LANClient Control Manager has detected that the client is awake and running, it stops sending the packet.

Note: Some network-adapter and computer manufacturers might also refer to the MAC address as the universally administered address (UAA) or the network interface card (NIC) address.

Client workstation requirements for Wake on LAN:

— The workstation must be plugged into a live electrical socket.
— The network adapter must be enabled to support Wake on LAN.
— The workstation must have the BIOS Wake on LAN feature available and enabled.
— The workstation must be properly connected to the network.

– NetFinity Enabled

LANClient Control Manager uses NetFinity functions to remotely shut down and restart workstations before processing changes. If you have NetFinity Manager installed on your server, check this box to enable its functions.

Note: The power-down capability of NetFinity is currently limited to client workstations running Windows 95.

Neither NetFinity Manager nor NetFinity Services is shipped with LANClient Control Manager. For NetFinity to function correctly with LANClient Control Manager, you must have the following:

— NetFinity Manager, version 5.0 or greater, installed on the workstation or server on which you have installed LANClient Control Manager.

— NetFinity Services version 4.00.2 or greater (or NetFinity Manager version 5.0) installed on each client you want to remotely shut down or reboot through LANClient Control Manager.

Refer to the NetFinity documentation for details on using these products.

– NetFinity User ID

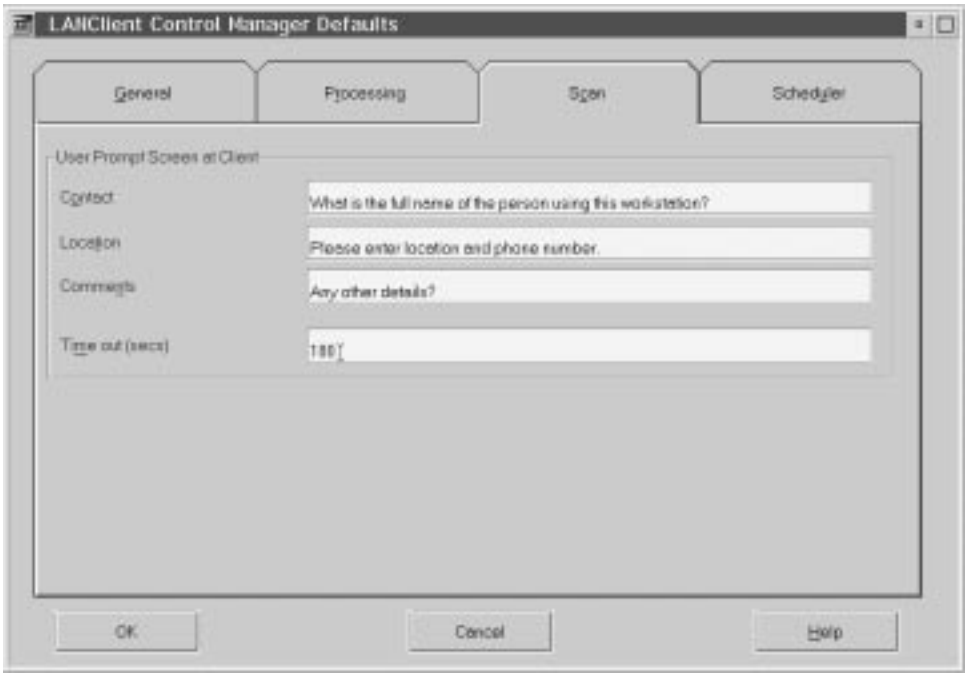
If you are using NetFinity, enter the NetFinity Manager user ID here to enable LANClient Control Manager to issue NetFinity commands, without being prompted for a logon.

– NetFinity Password

  Enter your password for NetFinity here.

Defaults Notebook - Scan Page

You can set LANClient Control Manager to ask specific questions of the end user or installer at each client workstation. These questions are asked onscreen at every new client workstation detected by the scan process. Displaying questions during the scan operation is optional. The Scan page of the Defaults notebook is shown below.



You can specify the questions that you want to ask concerning the following information:

- Contact
- Location
- Comments

You can ask any questions you like, and the answers are saved on the Details page of the Individual Client Details notebook. For more information, see “Individual Client Details Notebook” on page 31. The answers can be viewed or modified and optionally used as the value to display in lists of clients. If you do not specify any user prompts, the scan process completes without end-user input, and the values in the Individual Client Details notebook are left blank. You can manually enter the information into the Individual Client Details notebook later, if needed.

You can also specify the timeout period for the end-user response. This is the time that the scan process will wait for each prompt to be answered. If no input is entered, the scan process completes, leaving the information blank. If no timeout is specified, the scan process waits indefinitely for input.

Defaults Notebook - Scheduler Page

In the Defaults notebook, the Scheduler allows you to specify the date and time that LANClient Control Manager begins processing the changes that have been made.

Important:

- The Scheduler of the Defaults notebook is overridden by the Scheduler of the Individual Client Details notebook. For more information, see “Individual Client Details - Scheduler Page” on page 42.
- Use the Scheduler for the Defaults notebook and the Individual Client Details notebook with care. For example, if you incorrectly set the Scheduler for 3 *p.m.* instead of 3 *a.m.*, and specify the forced shutdown or restart operating system options, the client workstations are immediately restarted in the middle of the working day. Also, if you set the Scheduler to update client workstations during an overnight process, be sure to warn end users who might be running overnight processing that their workstations will be shut down at the specified time and that any end-user processing jobs in progress at that time will be terminated.

- Default Schedule
  - As soon as possible

    If you select this button, the changes begin processing as soon as you click on the Process button in the Installation/Maintenance window.
  - Set day and time

    Setting a date and time enables LANClient Control Manager to process the changes unattended, during the day and time of your choice.

    Note: If you use the Scheduler to set a specific date and time, you must still click on the Process button and leave the program running for the scheduled changes to take place. Clicking on the Process button places the scheduled changes in the processing queue of the Processing/Info

window; when the specific day and time arrives, the scheduled changes are processed.

- Day and time

  The day and time fields are available if you have checked the Set day and time button. Select these fields using the following values:

  – Day

    Select the desired day to process the changes. You can also select "Next 24 hours" within this field.

  – Hours

    Select the hour to process the changes.

  – Minutes

    Select the minutes to process the changes.

Individual Client Details Notebook

Information about each client is managed from the Individual Client Details notebook. This notebook displays when you edit configuration details of existing clients or create new clients without using the scan option.

To access the notebook for an existing client:

1. Select a client (or multiple clients) in one of the listings of the Installation/Maintenance window.
2. Select **Client** from the menu bar.
3. Select **Configure** from the list.

Note: By selecting a single client, you can make changes for that client only. By selecting multiple clients, you make changes for all clients selected. When making changes for multiple clients, only some fields are available for editing. Fields not available for editing are grayed out.

To create a new Individual Client Details notebook:

1. Select **Client** from the menu bar.
2. Select **Create new** from the list.

The Individual Client Details notebook contains the following pages:

- Details

  This page contains important details about the client, such as name, address, and serial number.

- Hardware

  This page contains information about the hardware of the client.

- RPL Details

  This page contains details of the client's assignment to a software profile.

- Maintenance

  This page allows you to enter information about various maintenance procedures for the client, such as BIOS, CMOS, and administrator password updates.

- Parameters

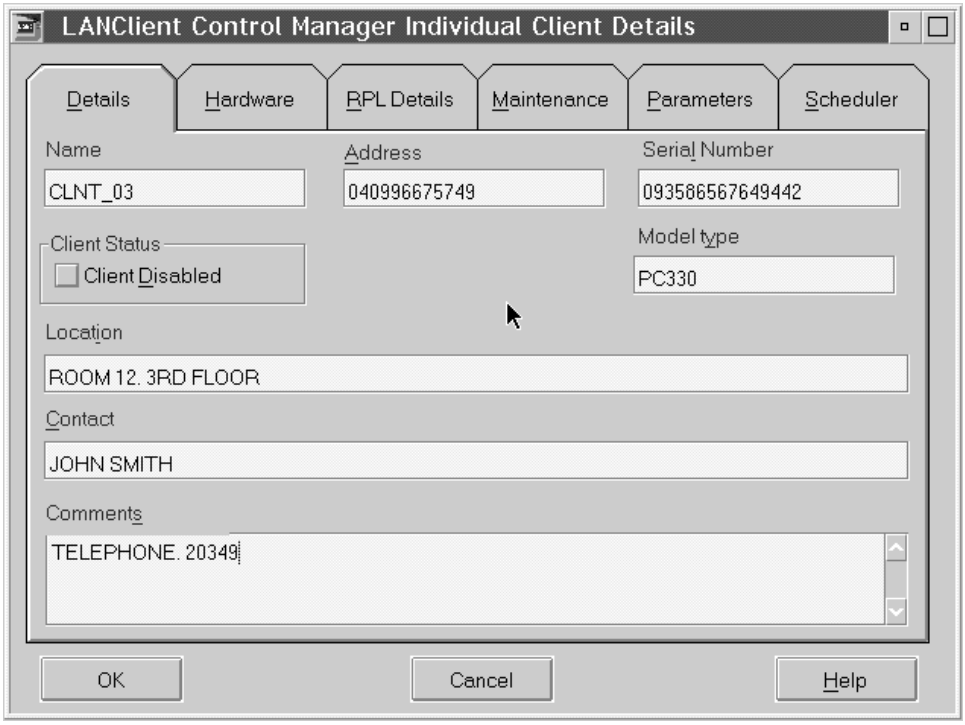
  This page is used to personalize information within a Hybrid RPL image for the client.

- Scheduler

  This page allows you to control when scheduled changes will take place for the client.

Individual Client Details - Details Page

The Details page of the Individual Client Details notebook contains information that identifies the client.



- Name

  If the client is created automatically by the scan process, the name is generated by LANClient Control Manager. If you manually create a client, you must type the name here. The name must be unique and cannot be modified for multiple clients.

- Address

  This is the 12-digit, hexidecimal, universally administered address (UAA) of the network adapter installed in the client workstation. This address is set by the manufacturer of the network adapter. This address is also referred to as the media access control (MAC) address or network interface card (NIC) by some manufacturers.

  For more information, see “Client Address” on page 33.

- Serial Number

  This is the client serial number that is collected during the scan process or manually entered when a client is created by you.

- Client Status

  This field indicates whether or not RPL is enabled for the client. If the Client Disabled box is checked, the client cannot start by means of a RPL.

- Model Type

  This field shows the type and model number of the client workstation. This information is collected during the scan process.

- Location, Contact, and Comment

This information is typically entered by the end user or installer during the scan process if questions were specified on the Scan page of the Defaults notebook. For more information, see “Defaults Notebook - Scan Page” on page 28. You can change or update these fields as needed.

Client Address

The client address is normally collected during the scan process. If you create a client without using the scan process, you must get the network address from the client and type it in this field.

The client address *must* match the address (MAC address, UAA, or NIC address) that is permanently assigned to the client's network adapter. You can change this field, but do so only under the following conditions:

- You are creating a new client without using the scan process
- The network adapter for an existing client has been changed for any reason (for example, if it develops a fault).

To find the address for a client, turn on the client and let it attempt to start up from the network. The address is displayed on the screen along with other information. The format varies depending on the type of network adapter. For examples, see:

- “Network Address for IBM Token Ring Adapter”
- “Network Address for IBM Ethernet Adapter”

Alternatively, some network adapters have their addresses printed on labels attached to the adapters. Also, if the network subsystem is integrated with the system board of the workstation, the network address might be accessible through the Configuration/Setup Utility program.

Network Address for IBM Token Ring Adapter: When the client attempts to start up from the network, the client screen displays information about the RPL process. The following example is a typical RPL display for an IBM token-ring adapter. The network adapter address follows the prefix *AA*. In this example, the adapter address is 0004AC8140D7.

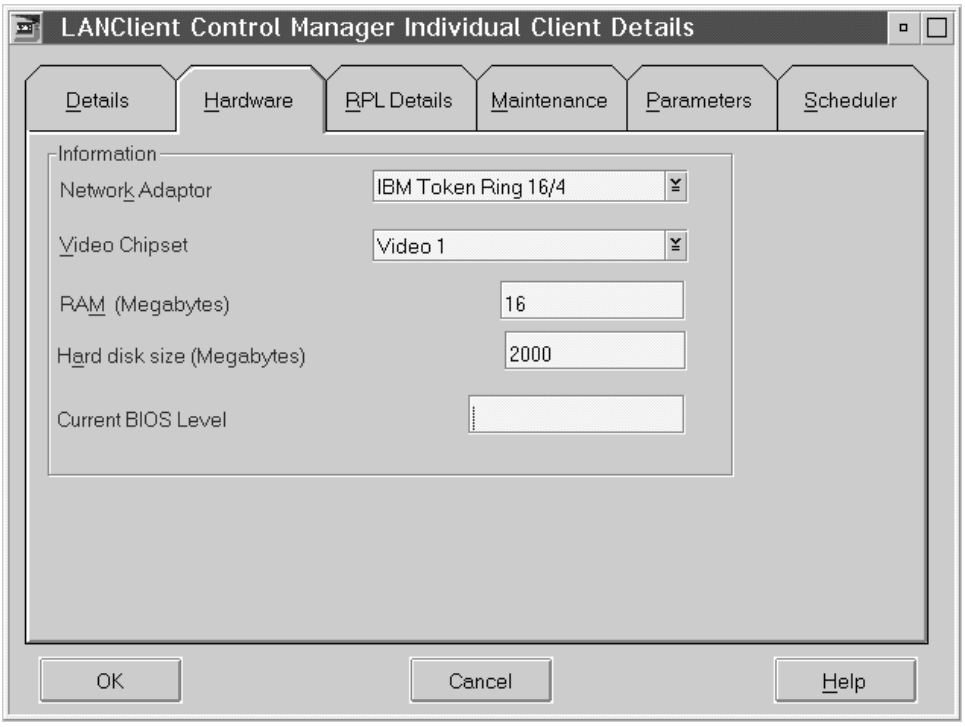
```
ET-00:00:22
ID-166
BU-0000
AA-0004AC8140D7
AL-00 0B00 P322AB
BL-C41876M
MM-DA00 11
SR-DC00 16
OP-0000 04 S
RQ-0008
```

Network Address for IBM Ethernet Adapter: When the client attempts to start up from the network, the client screen displays information about the RPL process. The following example is a typical RPL display for an IBM Ethernet adapter. The network adapter address follows the prefix *RPL-ROM-ADR:*. In this example, the network adapter address is 1000 5ABA AE2D.

```
RPL Protocol ROM v1.03 (930311)
IBM LAN Adapter for Ethernet  MLID v1.20 (930311)
(C) IBM, NSC, 1993.  All Rights Reserved.
RPL-ROM-ADR: 1000 5ABA AE2D
RPL-ROM-IRQ: 5
RPL-ROM-PIO: 0280
RPL-ROM-FFC: 10
```

Individual Client Details - Hardware Page

The Hardware page of the Individual Client Details notebook contains details about the installed hardware of each client. LANClient Control Manager uses this information to ensure that a new client meets the hardware requirements for a specific software profile. The client hardware details are normally collected by the scan process, but can be entered or modified using this page.



- Network Adapter

  The adapter type is selected from a drop-down list. If the adapter your client is using is not shown on the list, select **Unknown**.

- Video Chipset

  The video chipset installed in the client is selected from a drop-down list. If the video subsystem your client is using is not shown in the list, select **Unknown**.

- RAM

  This field displays the amount of installed random-access memory (RAM). The amount specified is in units of 1 048 576 bytes.

- Hard Disk

  This field displays the capacity of the hard disk drive. The amount specified is in units of 1 000 000 bytes.

- Current BIOS Level

  This field shows the BIOS level currently installed in the client workstation.

Individual Client Details - RPL Details Page

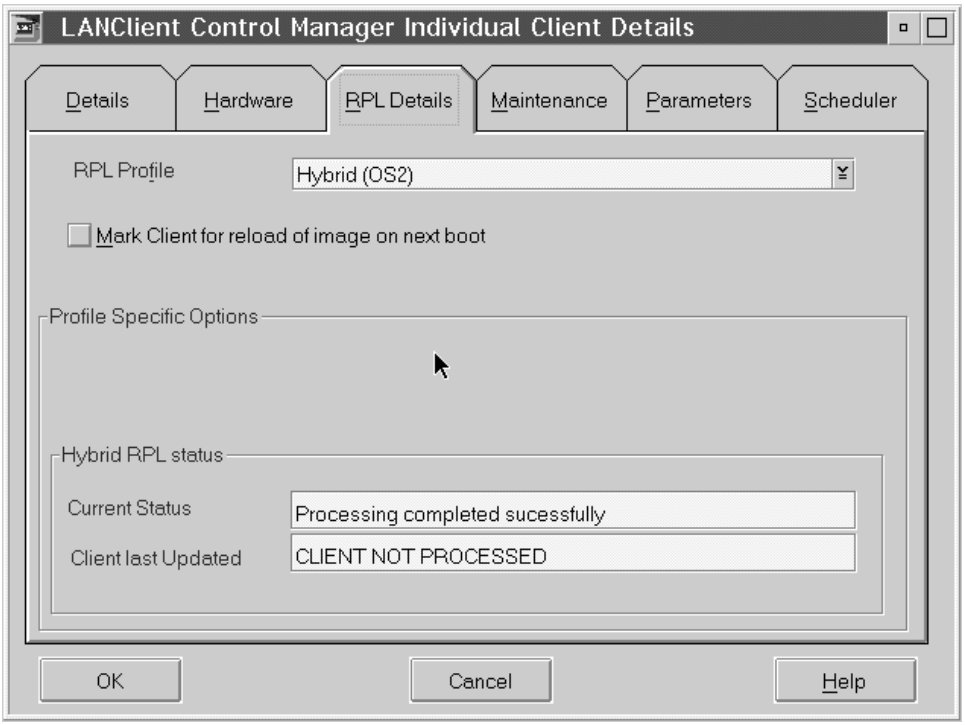
The RPL Details page of the Individual Client Details notebook is used to set up the details of a client's assignment to a software profile.

Hybrid RPL Profile for Client

If you select a Hybrid RPL profile from the drop-down list in the RPL Profile field, the following fields are available:

- Mark Client for reload of image on next boot

  You can force a reload of software to a Hybrid RPL client at its next startup by clicking on the reload check box. This is useful if the software on the client has been damaged. Rather than try to diagnose the problem and replace the individual damaged files, you can reload the whole image by selecting the *reload* box and asking the user to restart the workstation.

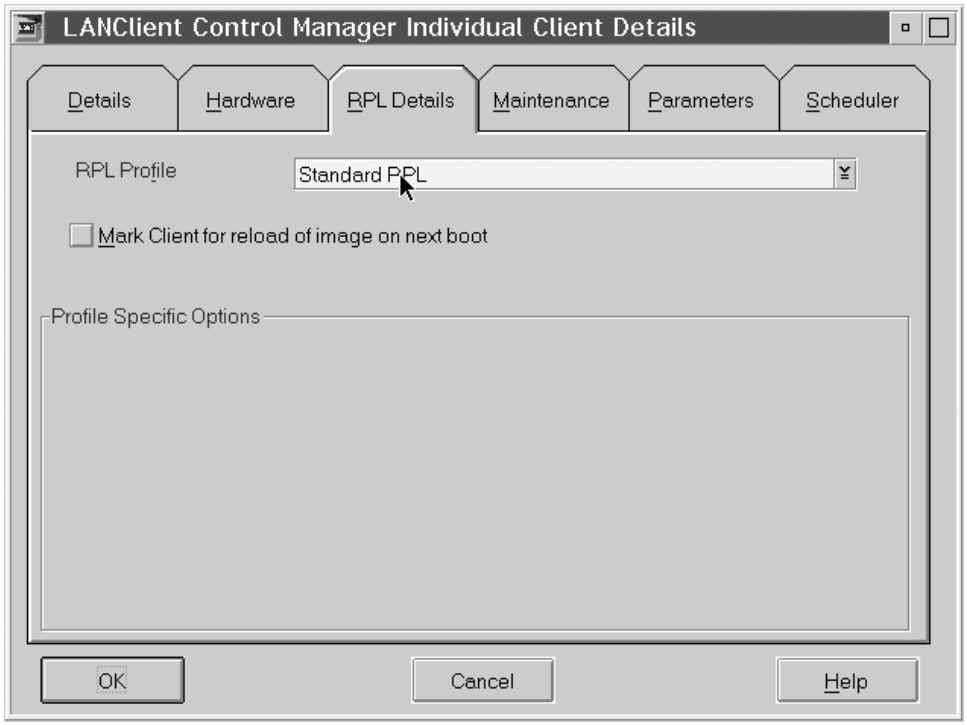


- Hybrid RPL Status

  The Current Status and Client last Updated fields are for informational purposes only. You cannot enter data into these fields.

Standard RPL Profile for Client

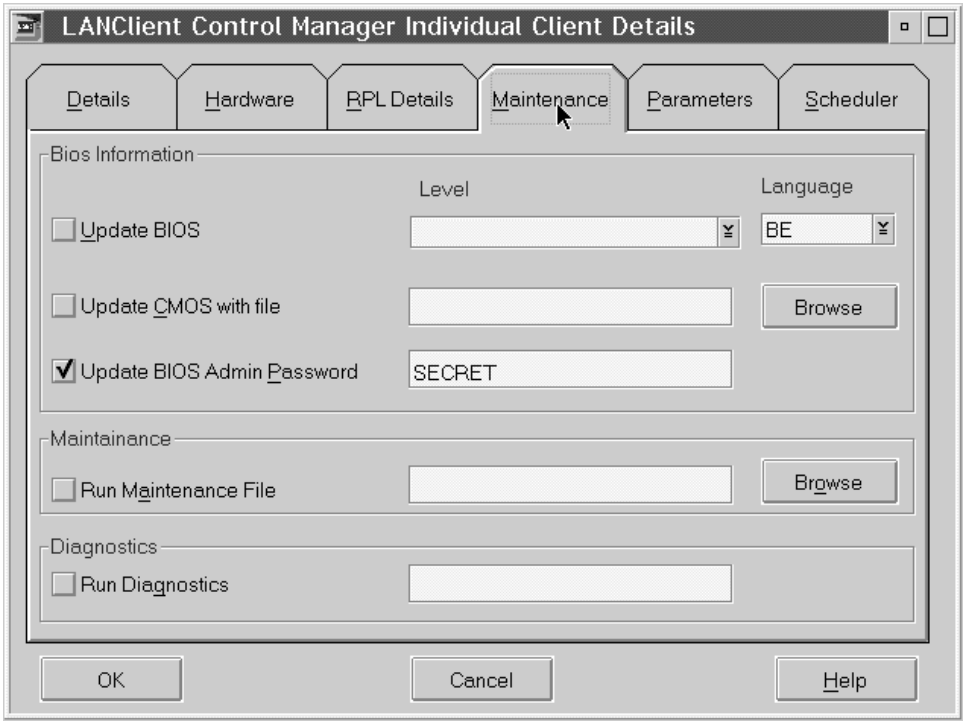
If you select a Standard RPL profile from the drop-down list in the RPL Profile field, the Mark client for reload of image on next boot field is available.



See “Creating a Software Profile” on page 71 for information on how software profiles are created.

Individual Client Details - Maintenance Page

The Maintenance page of the Individual Client Details notebook allows you to specify various actions to maintain and update the client.



If you select any of the *Update* or *Run* boxes, the next time the client starts, instead of the Hybrid RPL bootstrap or standard RPL image being downloaded, the selected procedure runs. The following fields are available on the Maintenance page:

- Update BIOS

  Select this box to update the client BIOS level at the next startup. Use the following fields to specialize this selection:

  – Level

    Select the BIOS level from the drop-down list.

  – Language

    Select the BIOS language from the drop-down list.

- Update CMOS with file

  Select this box to update the client CMOS settings. Type in the name of the file, or search for a file by selecting the **Browse** button. The file extension for these files is .CMS. The CMOS settings will be updated the next time this client is processed. Refer to “Assigning Clients a CMOS Settings Image” on page 78 for more information.

- Update BIOS Admin Password

  Select this box to set or change the client BIOS administrator password. You can type in the new password or delete the current password. The password will be updated the next time this client is processed. Refer to “Changing the BIOS Administrator Password for Service” on page 81 for more information.

- Run Maintenance file

  Select this box to run a maintenance batch file.

  A maintenance batch file is a batch file used to perform a one-time action on a client the next time the client starts up. This maintenance file normally performs a partial image download or upgrade. For example, if your word processing package is upgraded, write a small maintenance file to copy only those new files that are required. This prevents running a full image download.

  If you select a maintenance batch file to run and check the Run Maintenance file box, the next time the client starts, instead of the Hybrid RPL bootstrap or standard RPL image, a maintenance bootstrap is loaded onto the client and the specified batch file is run. When the batch file completes, the client restarts, and normal operation continues. You can use this process to update a single application on the client without reloading the whole image. You can type in the name of the maintenance batch file you want to use or you can use the Browse button to search for a file. Maintenance batch files must have a file extension of .MNS.

- Run Diagnostics

  Select this box to load a diagnostic image on the client the next time it restarts.

  Some computer maintenance and diagnostics programs are shipped only on self-starting diskettes. Therefore, to use these programs you must convert the diskette into a standard RPL image and put it on the server.

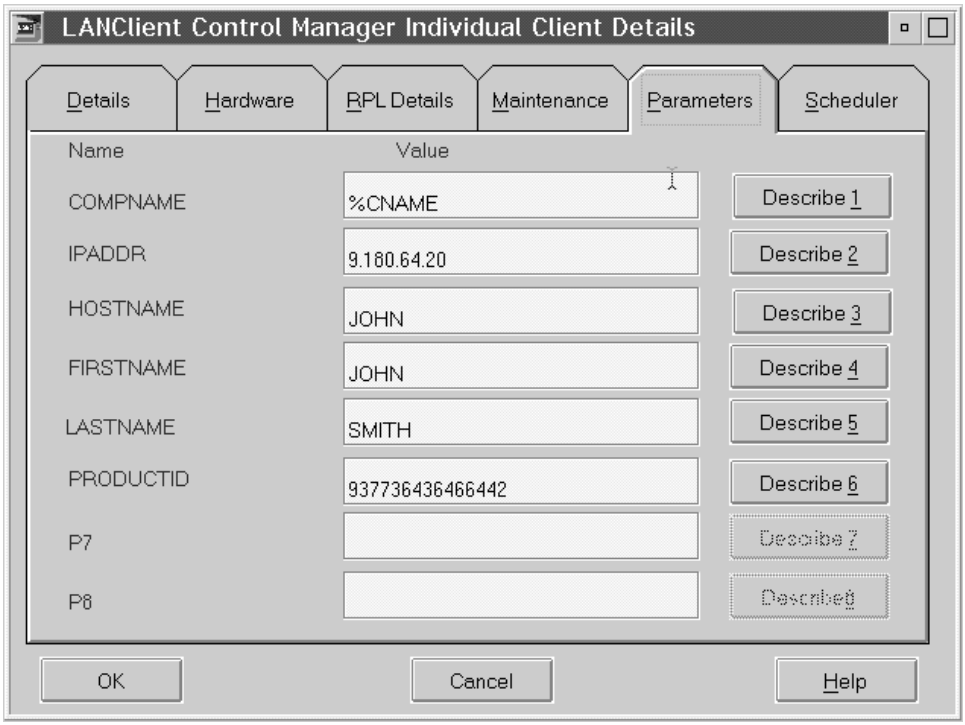
  You must type in the full name of the diagnostic image (path and file name). Once you check the Run Diagnostics box, LANClient Control Manager will *not* uncheck this box after the diagnostic program has been downloaded and run. Therefore, the diagnostics program runs each time the client starts up. You must *manually* uncheck this box when the diagnostic program is no longer required.

Individual Client Details - Parameters Page

The Parameters page is used to personalize a Hybrid RPL image to contain information for an individual client. The values you specify on this page are passed to Hybrid RPL image batch files. The parameter values specified on this page are *unique* for each client using this profile.

Before you can specify parameter *values* on this page, you must first specify the corresponding parameter *names* in the Client Parameters page of the Software Profile Details notebook and assign the client to that profile. **Do not process the assignment until you fill in the values on this page.**

For more information, see "Passing Parameters to Image Batch Files" on page 65 and "Software Profile Details - Client Parameters Page" on page 53.



The following fields are available on this page:

- Name

  The parameter names (COMPNAME, IPADDR, HOSTNAME, and so on) are taken from the Client Parameters page of the Software Profile Details notebook. See "Software Profile Details - Client Parameters Page" on page 53 for more information. You cannot edit the names from the Individual Client Details notebook

- Value

  The Value fields allow you to use up to 24 characters to define a value for the corresponding parameter name. These *values* are passed to a final-image batch file (.LCI file), a maintenance batch file (.MNS file), or a customization batch file (.BAT) as automatic responses to Parameter requests embedded within these files.

- Describe

When you press the Describe button, a text-edit box pops up in which you can enter a parameter description. This description can be up to 127 characters long.

Using the preceding illustration as an example, in a batch file that has the line:

```
DEDITD /R /N0 c:\lancli\LANCLI.reg dummy_IPAddr %IPADDR%
```

the value returned would be:

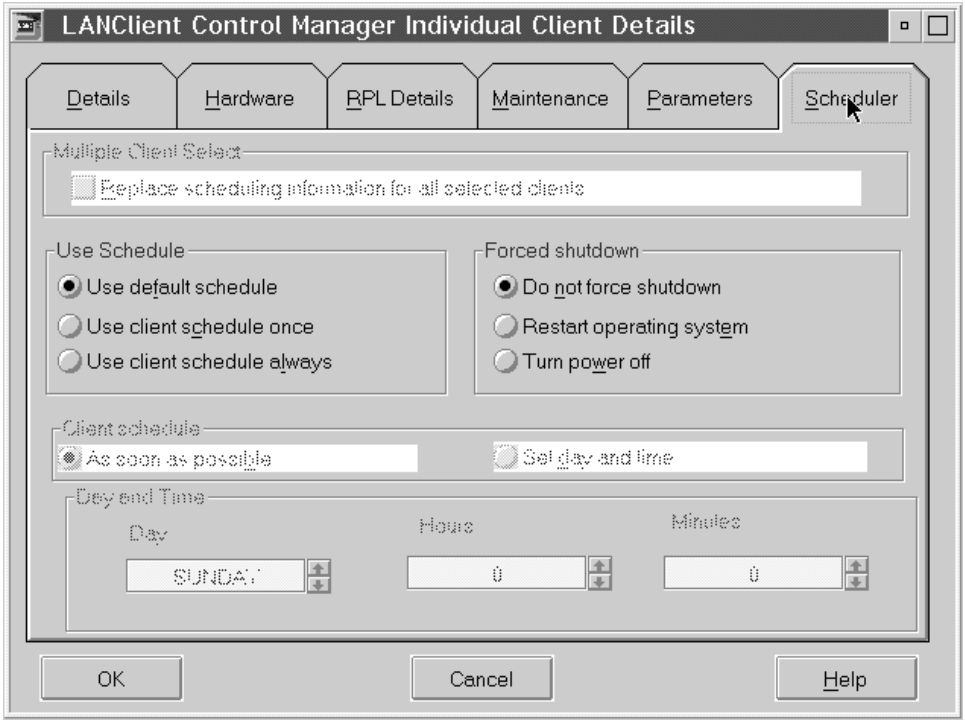
```
9.180.64.20
```

Important: Be careful when reassigning clients to new software profiles. The parameter values from this page must match those requested from any .LCI files or .MNS files that the client uses in the new software profile.

Individual Client Details - Scheduler Page

The Scheduler page allows you to specify the date and time that LANClient Control Manager begins processing the changes that have been made to the selected clients. (For more information on processing changes, see “Processing Changes Within LANClient Control Manager” on page 22.) This page specifies the date and time that changes to the clients are performed. Scheduled changes are placed on the list of actions to be taken in the Processing/Info window after the Process button is selected. You must select the Process button to start scheduled jobs.

Important: Use the Scheduler for the Defaults notebook and the Individual Client Details notebook with care. For example, if you incorrectly set the Scheduler for 3 *p.m.* instead of 3 *a.m.*, and specify the forced shutdown or restart operating system options, the client workstations are immediately restarted in the middle of the working day. Also, if you set the Scheduler to update client workstations during an overnight process, warn end users who might be running overnight processing jobs of their own that their workstations will be shut down at the specified time and any end-user processing jobs in progress at that time will be terminated.



- Multiple Client Select

  This box is disabled and grayed unless multiple clients are selected. When multiple clients are selected and this box is checked, this schedule will be used for all selected clients.

- Use Scheduler

  There are three options for Use Schedule:

  – Use Default Schedule

    If this option is selected, all functions on this page are disabled and the Scheduler of the Defaults notebook is used.

- Use Client schedule once

  If this option is selected, the schedule information on this page is used for the next client process only, and then the client reverts to using the Scheduler of the Defaults notebook.

- Use Client schedule always

  If this option is selected, the schedule information on this page is retained and used for all future processes.

- Forced Shutdown

  LANClient Control Manager uses NetFinity software to remotely shut down and restart client workstations before processing changes. The power-down capability of NetFinity is currently limited to client workstations running Windows 95. The following requirements must be met before a forced shutdown will function correctly:

  - NetFinity Manager (version 5.0 or greater) must be installed on the workstation or server on which you have LANClient Control Manager installed.
  - NetFinity Services (version 4.00.2 or greater) or NetFinity Manager (version 5.0 or greater) must be installed on each client workstation you want to shut down or restart.
  - NetFinity Manager must know about the clients. To ensure NetFinity knows about all affected clients, you must perform the following procedure:

    1. Start NetFinity Manager from your administrator console.
    2. From the main window of NetFinity, select Remote System Manager.
    3. Open a new group and give it a name (for example, "All_Clients").
    4. From the NetFinity Manager System pull-down menu, select Discover Systems. The clients appear in the group window as they are discovered.

  For more information on the Default Client Restart, see “Defaults Notebook - Processing Page” on page 26.

  - Do not force shutdown

    If the client workstation is still operating when the scheduled process time arrives, the workstation will not be shut down and restarted. The RPL download takes effect when the workstation is next restarted by the user.

  - Restart operating system

    Take care when selecting this option. If the client workstation is on when the scheduled time arrives, the workstation is restarted through NetFinity, even if it is processing a job. Any jobs in process are terminated and any unsaved data is lost.

  - Turn power off

    The Wake on LAN feature must be enabled in the Processing page of the Defaults notebook. If the Turn power off option is checked, the client workstation will be powered off through NetFinity and then powered on through Wake on LAN to perform a clean startup.

  The following options are available if either Use Client schedule once or Use Client schedule always is selected under Use Schedule.

- Client Schedule

- As soon as possible

  If you select this button, the changes begin processing as soon as you click on the Process button in the Installation/Maintenance window.

- Set day and time

  Setting a date and time enables LANClient Control Manager to process the changes unattended, during the day and time of your choice.

  Note: If you use the Scheduler to set a specific date and time, you must still click on the Process button and leave the program running for the scheduled changes to take place. Clicking on the Process button places the scheduled changes in the processing queue of the Processing/Info window, and when the specific day and time arrives, the scheduled changes are processed.

- Day and time

  The day and time fields are available if you have checked the Set day and time button. Select these fields using the following values:

  - Day

    Select the desired day to process the changes. You can also select "Next 24 hours" within this field.

  - Hours

    Select the hour to process the changes.

  - Minutes

    Select the minutes to process the changes.

Software Profile Details Notebook

Information about each software profile is managed in the Software Profile Details notebook. This notebook displays when you edit configuration details of an existing software profile or when you create a new software profile.

For more information on managing software profiles, such as creating, viewing, or editing profiles, see “Managing Software Profiles” on page 71. Also, for general information on software profiles, see “Software Profiles” on page 10.

To access a Software Profile Details notebook, do one of the following:

- Double-click on an existing software profile within the Installation/Maintenance window.
- Create a new software profile. For more information, see “Creating a Software Profile” on page 71.

The Software Profile Details notebook contains the following pages:

- Details

  This page contains the profile name, profile type, and a description of the software.

- Minimum Hardware

  This page contains information about the hardware required for the specific software profile.

- RPL Details

  This page contains information about the remote program load for the software profile.

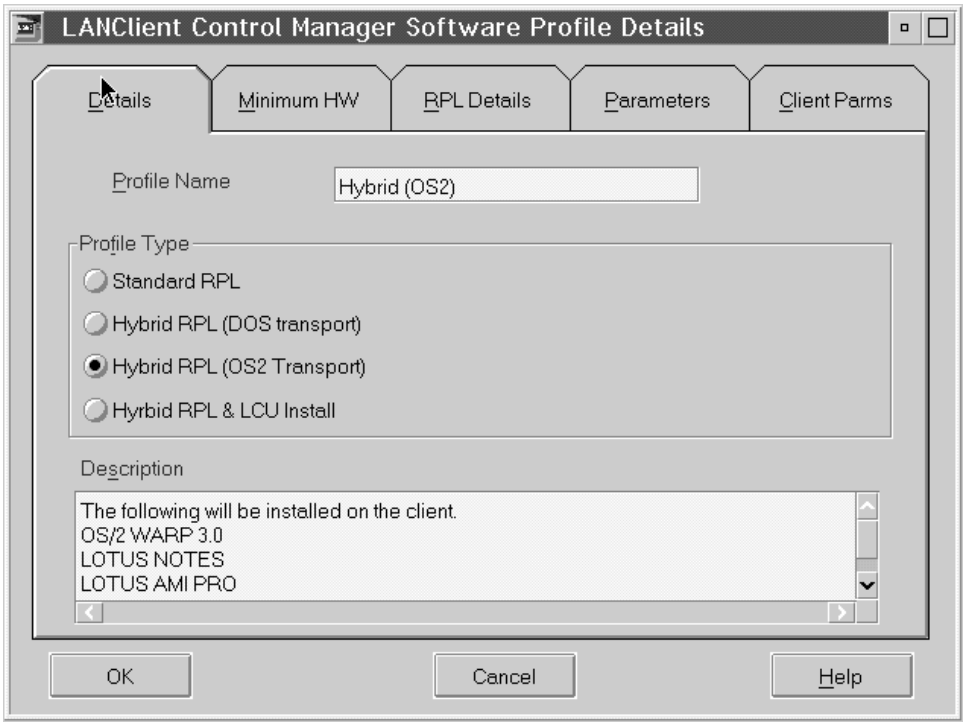
- Parameters

  This page contains information about custom parameters that are common for all clients assigned to the software profile.

- Client Parameters

  This page contains information about custom parameters that are unique to individual clients assigned to the software profile.

Software Profile Details - Details Page



The Details page contains the following fields:

- Profile Name

  The name of each software profile must be unique. Give the profile a descriptive name that identifies the group of clients for which it is intended or the job the profile is designed to do.

- Profile Type

  – Standard RPL

    Select this button if the profile will be downloading a standard RPL image to the client's memory.

  – Hybrid RPL (DOS Transport)

    Select this button if the profile uses batch files that use DOS commands to prepare and transport a DOS/Windows image to a client's hard disk. LANClient Control Manager sets up a temporary DOS environment at the client to execute the batch files. (For more information, see “Environment for Hybrid RPL” on page 6.)

  – Hybrid RPL (OS/2 Transport)

    Select this button if the profile uses batch files that use OS/2 commands to prepare and transport an OS/2 image or DOS/Windows image to a client's hard disk. LANClient Control Manager sets up a temporary OS/2 environment at the client to execute the batch files. (For more information, see “Environment for Hybrid RPL” on page 6.)

  – Hybrid RPL and LCU Install

The Hybrid RPL and LCU Install function allows you to install and run the IBM LAN CID Utility automatically on your client workstations. The IBM LAN CID Utility is a software distribution manager that redirects product installation files to clients using SRVIFS, a NETBIOS application over your LAN. Thus, LAN CID Utility provides what is termed a redirected installation. LAN CID Utility is comprised of REXX procedures and several supporting modules that tracks the current state of an installation across restarts and ensure that each step is run in the correct sequence. For more information, see "Software Profile Details - RPL Details Page" on page 48.

– Description

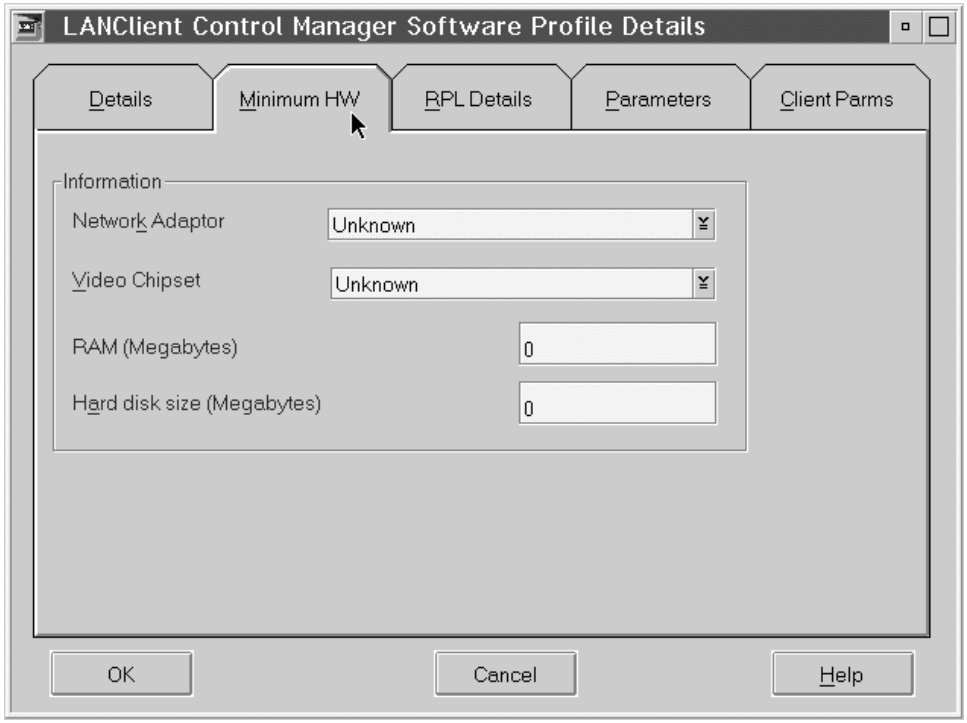
  Use this space to write a description of the software profile. For example, for a standard RPL image, you can describe the contents of the image, or for a Hybrid RPL image, you can describe what the preload-image and final-image batch files will do.

Software Profile Details - Minimum Hardware Page

The Minimum Hardware page contains the following fields:

- Network Adapter

  Select a network adapter from the list available.



- Video Chipset

  Select a video chipset from the list available. If your video chipset is not on the list, or if the clients assigned to this profile are using varying video chipsets, choose **Unknown**. This setting allows the image to be installed on any client.

- RAM

  Enter the minimum amount of RAM required to download and use the software controlled by this profile. If you enter a value of zero, LANClient Control Manager ignores the minimum RAM requirements. The memory specified is in units of 1 048 576 bytes.

- Hard disk size

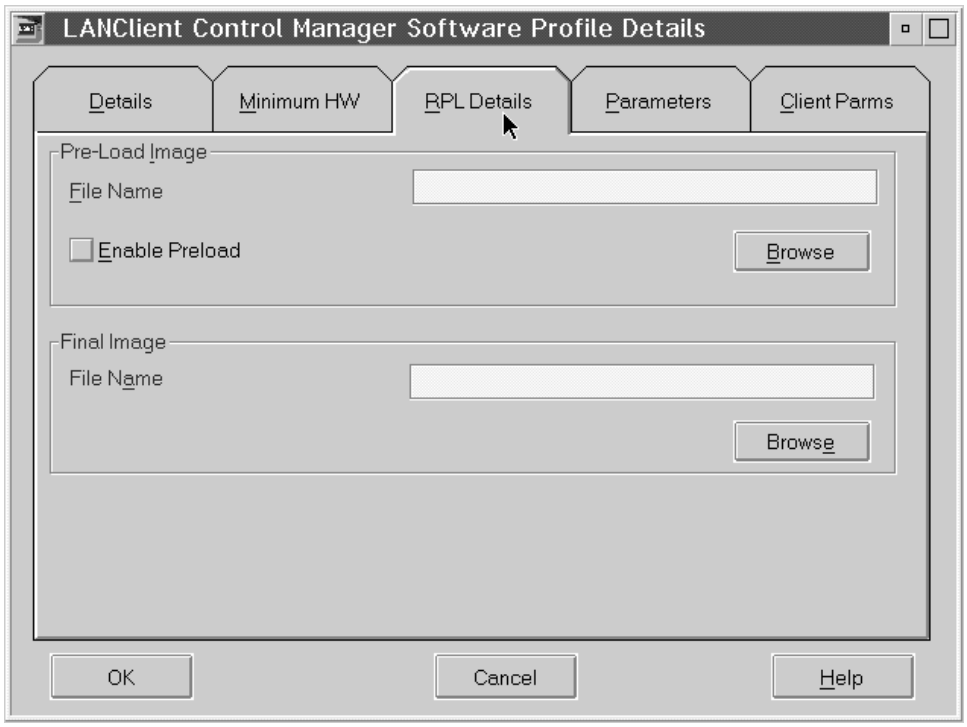
  Enter the minimum amount of hard disk space to be used by software downloaded using this profile. If you enter a value of zero, LANClient Control Manager ignores the minimum hard disk requirements. The hard disk space specified in units of 1 000 000 bytes.

Software Profile Details - RPL Details Page

The appearance of this screen is directly related to the type of RPL selected in the Details page of this notebook. See “Software Profile Details - Details Page” on page 46 for more information.

Hybrid RPL Details

If you have selected the Hybrid RPL option on the Details page, you can specify the file names for the preload and final-image batch files.



- Preload Image
  - File Name

    Type in the path and name of your preload-image batch file, or use the **Browse** button to locate the file. The file extension for preload image batch files is .LCP.

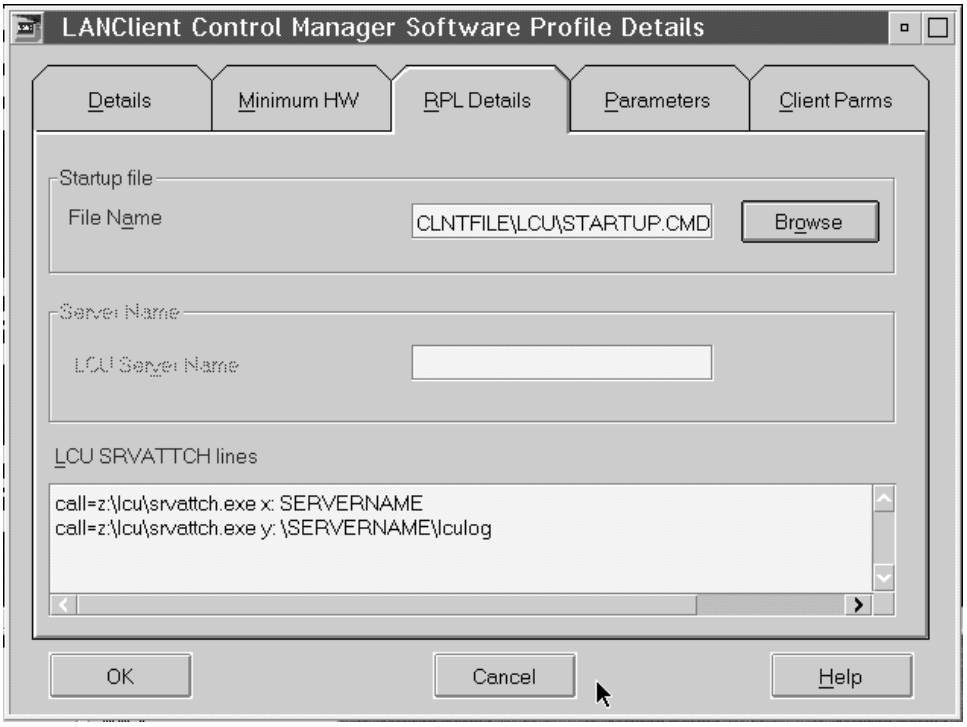
    The preload-image batch file specifies the actions to be performed at the client before downloading the final image. The preload-image batch file is normally used to run FDISK on a new client workstation. You must create the preload-image batch file yourself. A single preload-image batch file can be used by multiple clients and multiple software profiles.
  - Enable Preload

    Check this box to enable the specified preload-image batch file to be downloaded to the client. Uncheck this box to disable the specified preload-image batch file to be downloaded to the client.
- Final Image

  Type in the path and name of your final-image batch file, or use the **Browse** button to locate the file. The file extension for final-image batch files is .LCI. You must create the final-image batch file yourself. A single final-image batch file can then be used by multiple clients.

Hybrid RPL & LCU Install Details

LANClient Control manager allows you to RPL to a client the equivalent of the two boot diskettes required to start CID installation. After selecting the Hybrid RPL & LCU Install option on the Details page, you must supply a STARTUP.CMD file, (one is supplied in the CLNTFILE directory, called LCUSTART.CMD which uses the default commands and can be used without modification).



Also, a section is provided with SRVATTCH lines. These lines are added to the CONFIG.SYS during boot up. You must edit these line appropriately:

```
call=z:\lcu\srvattch.exe  x: \\YOURCIDSERVER
call=z:\lcu\srvattch.exe  y: \\YOURCIDSERVER\lculog
```

Note: The preceding values are default values. You must edit these lines using the same format used with the standard boot diskette process.

Important: You must edit the client REXX command file on your CID server by changing the following lines:

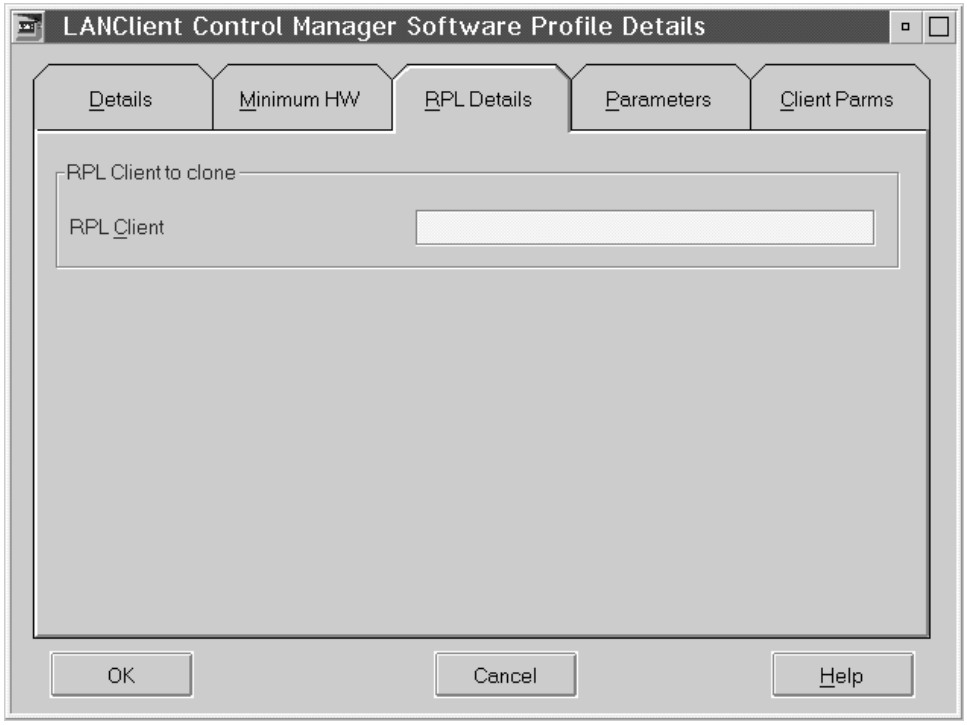
Note: An example of this file is provided in “LCU REXX Command File” on page 105.

- In the Reboot section:
  1. 'AskRemoveDisketteIfFloppy' should be commented out.
  2. 'cmdline' should be repeated. This causes the SETBOOT command to be executed twice.
- In the Install section, modify the installation statements for OVERALL_STATE=1 so that the following two commands are executed:
  1. 'echo 0 > server.1'
  2. 'echo 0 > server.2'

These commands cause the creation of two files on drive Z. Because drive Z is connected to the RPL server, LANClient Control Manager detects these files and changes the boot image from the CID boot diskette image to the HYBRID image. When the client reboots, it now executes the next phase of the CID installation using the CID code that was installed on the hard disk by the first phase of the CID installation.

Standard RPL Details

If you have selected the Standard RPL button on the Details page, you can specify the final image name.



Type in the name of your standard RPL image. For more information on creating a standard RPL image, see “Creating a Standard RPL Image” on page 61.

Software Profile Details - Parameters Page

This page specifies a group of named parameters that are passed to the Hybrid RPL final-image batch file. The parameter values specified on this page are *common* for each client using this profile.

Note: If you have parameters that need to be unique for each individual client, you must enter them in the Client Parameters page of this notebook. For more information, see "Software Profile Details - Client Parameters Page" on page 53.

The following fields are available for this page.

- Name

  You can specify up to 16 characters for the parameter name. The Name fields correspond to parameter names used in the final-image batch files (.LCI files). In these batch files, the parameter names are always prefixed and suffixed by a percentage (%) sign. For example, in the following illustration, the first parameter name, COMPANY, would be written in an image batch file as %COMPANY%.

- Value

  You can specify up to 24 characters for the parameter value (no spaces are permitted). This is the value that is passed to final-image batch files for the parameter names specified in the corresponding Name field. In the previous illustration, "XYZ_International" is returned as a value to a final-image batch file that had a %COMPANY% parameter specified.

- Describe

  When you click on the Describe button, a text edit box pops up in which you can enter a parameter description. This description can be up to 127 characters long.

For an example of batch files that use these parameters, see Chapter 6, “Example Files” on page 99.

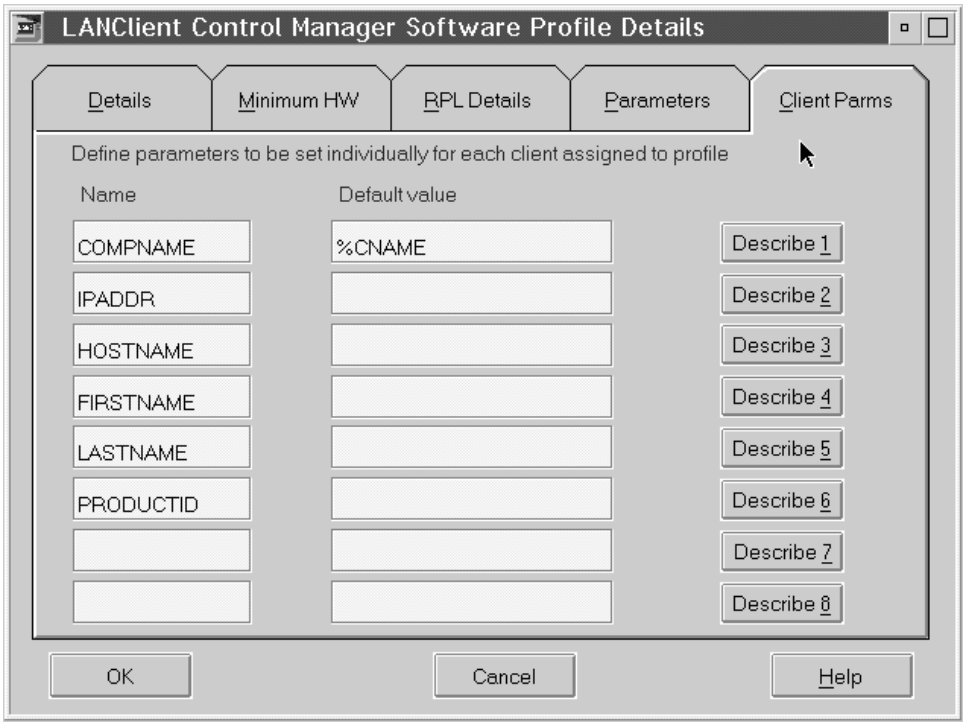
Software Profile Details - Client Parameters Page

This page specifies a group of named parameters that are passed to Hybrid RPL final-image batch files. The parameters specified on this page are *unique* for each client using this profile.

The following fields are available for this page.

- Name

  You can specify up to 16 characters for the parameter name. The Name fields correspond to parameter names used in the final-image batch files (.LCI files). In these batch files, the parameter names are always prefixed and suffixed by a percentage (%) sign. For example, in the following illustration, the first parameter name (COMPNAME) would be written in an image batch file as %COMPNAME%. The names specified on this page are passed to the Parameters page of the Individual Client Details notebook, where unique values can be provided for each individual client.



- Default Value

  In most cases, the default values can be left blank because unique values will be defined in the Parameters page of the Individual Client Details notebook. However, you can specify up to 24 characters for a default parameter value (no spaces are permitted). The default value is passed to the Parameters page of the Individual Client Details notebook (where it can be overwritten, if necessary). RPL image batch files that request client parameters take the value from the Parameters page of the Individual Client Details notebook.

In the illustration shown, %CNAME is a reserved value that has special characteristics. Like any other values specified on this page, %CNAME is passed to the Parameter page of the Individual Client Details notebook; but unlike other values, it automatically picks up the unique name of the client (from the Name field on the Details page of the Individual Client Details notebook) and passes it to any batch file that has the parameter name %COMPNAME%. See "Individual Client Details - Details Page" on page 32 and "Parameter Exceptions" on page 67 for more information.

- Describe

  When you press the Describe button, a text-edit box pops up in which you can enter a parameter description. This description can be up to 127 characters long.

Additional Help

When you are running LANClient Control Manager, you can find onscreen help by doing one of the following:

- Press **F1**.
- Select **Help** from the menu bar of the Installation/Maintenance window.

Chapter 4. Procedures

Adding Clients

This section provides instructions on setting up client workstations so that they can be used with LANClient Control Manager. Also, instructions for adding new client workstations to the LANClient Control Manager database are provided.

Installing New Client Workstations

Objective: To install new client workstations that can be used with LANClient Control Manager.

The following instructions describe the general steps for installing new client workstations for use with LANClient Control Manager. You might need to refer to the documentation that comes with each workstation for specific instructions.

To install new client workstations:

1. Verify that each workstation contains one of the following:
   - Integrated Ethernet or token-ring subsystem
   - Ethernet or token-ring adapter with integrated RPL function
   - Ethernet or token-ring adapter with optional RPL ROM chip (module)

   Note: The network subsystem (adapter or integrated) must support RPL. If you plan to use an adapter that does not support RPL, you must purchase an additional RPL read-only memory (ROM) chip for that adapter. For more information, contact the manufacturer of the adapter.
2. Set up the workstations according to the manufacturer's instructions.
3. Connect network cables to the workstations and to network receptacles.
4. Turn on each workstation and enter the Configuration/Setup Utility program. To access the Configuration/Setup Utility program on many IBM workstations, you must press F1 while the workstation is starting up.
5. The relevant settings within the Configuration/Setup Utility program must be enabled for RPL.
   a. If there is a **Network Boot** (or equivalent) option, choose RPL for this setting.

      Note: Some IBM workstations with an integrated Ethernet subsystem have an **Ethernet Support** category in the Configuration/Setup Utility program. Within this category is the **Network Boot** option. Ensure that RPL is selected for this option. For more details, see the documentation that comes with the IBM workstation.

   b. Do one of the following:
      - In the startup sequence menu, select **network** as the first startup device.
      - If you want to be able to start the computer from a diskette, in the startup sequence menu, select the diskette drive as the first startup device and network as the second startup device.

      Note: Some IBM workstations might already be enabled to start up from the network. For more information, see the documentation that comes with the workstation.

      Also, some IBM workstations might have a dual startup sequence. The first sequence is the primary startup sequence of the workstation and the

second sequence is the Automatic Power On startup sequence. For more information about using the second sequence with a Hybrid RPL, see "Using Hybrid RPL With Dual Startup Sequences" on page 80. For more details on the setting the startup sequences, see the documentation that comes with the IBM workstation.

c. On each workstation that supports the Wake on LAN protocol, set Wake on LAN to enabled.

6. Save any changes you made and exit the Configuration/Setup Utility program.
7. Restart each client workstation.
8. Do one of the following:
   - If you plan to automatically scan new clients into the LANClient Control Manager database, set the appropriate values in the Defaults notebook. For more information, see "Setting Specific Defaults Prior to Scanning." If you have already set the values in the Defaults notebook, see "Using the Scan Feature" on page 58.
   - If you plan to add a new client to the LANClient Control Manager database by manually creating an Individual Client Details notebook, see "Adding a New Client Manually" on page 59.

Setting Specific Defaults Prior to Scanning

Objective: To set specific defaults of LANClient Control Manager so that each newly scanned client workstation is assigned the appropriate values.

This section is directly related to the scan feature of LANClient Control Manager. If you plan to manually add clients to the LANClient Control Manager database, this section does not apply. For more detailed information on all the fields within the defaults notebook, see "Defaults Notebook" on page 24.

To set defaults specific to the scan process:

1. Select **Options** from the menu bar of the Installation/Maintenance window.
2. Select **LANClient Control Manager Defaults**.
3. Enter the appropriate information in the following fields:
   - General page - BIOS administrator password
   - General page - Common base name
   - Scan page - All fields

If you change the BIOS administrator password, keep the following rules in mind:

- The default BIOS administrator password is assigned to new client workstations only during the scan process. If the default BIOS administrator password is set or changed after the client has been scanned, the password is not assigned.
- Changing the default BIOS administrator password does not affect the passwords of clients that have already been added to the LANClient Control Manager database. In the Individual Client Details notebook, the BIOS administrator password can be changed for clients that have already been created. For more information see "Individual Client Details - Maintenance Page" on page 38.
- The BIOS administrator password code is based on the positions of the keys, not the characters typed in. If any of your clients use a different-language keyboard or a

keyboard layout different from the keyboard you use to interact with LANClient Control Manager, the BIOS administrator password might not be recognized when typed in from the client keyboard. Ensure that you use only characters that occur in the same position on all keyboards used. If the field is left blank, the password is disabled.

Adding Client Workstations to the Database

Objective: To add a new client workstation to the LANClient Control Manager database using one of the two following methods:

- Automatically, by using the *scan* feature
- Manually, by using the Individual Client Details notebook

For more information, see "Using the Scan Feature" or "Adding a New Client Manually" on page 59.

Using the Scan Feature

Before you begin:

- Ensure that the client workstations you want to add are installed correctly. For details, see "Installing New Client Workstations" on page 56.
- Ensure that the desired values are set in the Defaults notebook. For details, see "Setting Specific Defaults Prior to Scanning" on page 57.
- If you have set the defaults (on the Scan page of the Defaults notebook) to collect user data when the new client workstation is scanned, ensure that someone is at each client workstation to answer the questions.

To start the scan process:

1. At the administrator console, start the scan process by clicking on the **Start** button in the Installation/Maintenance window.

   The following actions occur:

   a. The text on the button changes to **Stop** and the scan icon becomes animated to indicate that a scan is in progress.

   b. The scan function collects details about new clients that have been attached to the network and for which no standard RPL or Hybrid RPL image has been specified. The details collected from a scan include:

      - Network address
      - Type and model number
      - Serial number
      - Amount of random access memory (RAM) installed
      - Hard disk drive capacity
      - Video adapter or chipset

   c. If you have set the Defaults notebook to ask questions about the client workstation, onscreen prompts display at the client workstation. An end-user response is required. If a timeout period has been set, the prompts must be answered in the allotted time or else the processing will continue without collecting the end-user input.

   d. If a default BIOS administrator password was defined in the General page of the Defaults notebook, the password is assigned to each new client detected during this scan operation.

e. Each new client workstation is placed in the Unassigned Clients list of the Installation/Maintenance window.

2. To stop the scan process, click on the **Stop** button. All client workstations that were properly installed are now added to the LANClient Control Manager database.

Note: An optional method for scanning is to start the scan process, go to the client workstations and install them, and then turn on each workstation. By doing this, you, as the installer, can personally address any prompts that have been set for an end-user response.

This optional method might be preferable if you are using end-user prompts, because you can answer the prompts as soon as you are finished installing the client, and only one trip is required. If you are not using prompts, you just plug in the client, switch it on, and proceed to the administrator console of the program.

LANClient Control Manager cannot start any other operations until the scan process is stopped.

What to do next:

- If you have already created the software profile, assign each client to the appropriate software profile. For more information, see "Assigning Clients to Software Profiles" on page 73.
- If the appropriate software profile does not exist, create it. For more information, see "Creating a Software Profile" on page 71.

Adding a New Client Manually

As an alternative to the scan process, which scans the entire network, you can enter the details of an individual new client directly into the Individual Client Details notebook.

Before you begin, collect the following information for the new client workstation:

- Network address (see "Client Address" on page 33 for more details)
- Serial number (see the documentation provided with the client workstation for more details)

To manually add a new client:

1. Select **Client** from the menu bar of the Installation/Maintenance window.
2. Select **Create new**.
3. When the Individual Client Details notebook opens, enter information in the relevant fields. To create a new client, at a minimum you must record the following client information in the Details page:
   - A unique client name
   - A unique network address
4. After you have entered the appropriate information, select **OK**.
5. Select the **Process** button in the Installation/Maintenance window.

An alternate method of creating a new client is to copy an existing client and use the relevant information that applies to the new client.

To create a new client from a copy of an existing client:

1. Click on an existing client from the Installation/Maintenance window.
2. Select **Client** from the menu bar.
3. Select **Create copy**.
4. When the Individual Client Details notebook appears, all fields have been copied except those from the Details page. Enter information in the Details page for the new client, and alter any other relevant information. The client name and network address must be entered and must be unique for the new client to be fully created.
5. After you have entered the appropriate information, select **OK**.
6. Select the **Process** button in the Installation/Maintenance window.

What to do next:

- If you have already created the software profile, assign each client to the appropriate software profile. For more information, see "Assigning Clients to Software Profiles" on page 73.
- If the appropriate software profile does not exist, create it. For more information, see "Creating a Software Profile" on page 71.

Working with Images

This section contains instructions for creating the image and batch files that you use with LANClient Control Manager.

Creating a Standard RPL Image

Objective: To create a standard RPL image for use with LANClient Control Manager.

LANClient Control Manager uses a standard RPL image to start up client workstations without the use of the local hard disk drives of the workstations. For more information on RPL and images, see "Images" on page 8.

To create a standard RPL image, you must first create an RPL client to clone. You need to use the RPL management tools of Warp Server to do this, as LANClient Control Manager does not provide these functions.

The following information gives an outline of the standard RPL process using an OS/2 Server.

1. Create a standard RPL client to clone. For more information, see your OS/2 Warp Server documentation.
2. Ensure that each new client workstation is set up correctly for RPL. (For details, see "Installing New Client Workstations" on page 56.)
3. Restart the new client workstations.
4. Scan the network for new clients. This creates an adapter record within the Remoteboot Manager program. Keep LANClient Control Manager running, and move on to the next step. For additional information, see "Installing Network Adapter Device Drivers" on page 83.
5. Create the software profile. For information on creating the software profile, see "Creating a Software Profile" on page 71.
6. If necessary, add new client workstations to the database. For information, see "Adding Client Workstations to the Database" on page 58.
7. Assign clients to the software profile. For more information, see "Assigning Clients to Software Profiles" on page 73. You might have to personalize some details or parameters for individual clients. For additional information, see "Individual Client Details Notebook" on page 31.

Creating a Hybrid RPL Image

Objective: To create a Hybrid RPL image and the associated batch files that are used to transport the image and prepare it for use.

For general information on RPL and images, see "Images" on page 8.

The following procedure contains general instructions for creating a Hybrid RPL image. For more detailed information, see Chapter 5, "Hybrid RPL Training Exercises" on page 85.

To create a Hybrid RPL image:

1. Create the image (operating system, applications, and so on) on a donor workstation and test it thoroughly.
2. Create a backup batch file to prepare the image and transport it to the server.

   Note:

   If you are using the DOS transport method and copying directories using XCOPY, do not exceed the limit of 56 characters in the path name. If you have an especially deep file structure (many sub-directories under the main directory), you might encounter a problem if your extended directory structure becomes too long. This can cause XCOPY to fail, as it runs out of space to store all the names of the directories, sub-directories, and files.

   If you encounter this problem, perform one of the following:

   - Cut down the length of the directory structure involved. For example, when copying a new final image from a donor workstation to your server, copy the files to a top level directory on your server (instead of a directory under the LANClient Control Manager directory). Make sure this top level directory has a short name (for example \DW59HYB1).
   - Use another program for copying files between your server and your clients (for example, PKZIP from PKWARE Incorporated). For more information, see "Using Alternative Methods for Transporting Images" on page 64.

   You might have to change hidden and system file attributes before using XCOPY. For more information, see "LCATTRIB.EXE" on page 114.
3. Transport the image to the server. For more information on copying files from the donor workstation to the server, see "Using a Donor Workstation Startup Image" on page 63.
4. Create batch files with the appropriate file name extensions.
   a. If you choose, you can create a preload-image batch file with the .LCP file name extension.

      This batch file is used to partition the hard disk on the client before the final image is downloaded. The preload-image batch file executes a program such as FDISK.

      When you use the FDISK command, you must also create a response file in order to run this command unattended. You must use an editor that allows input of nonprintable characters because the response file must contain the ENTER and ESC control characters. For more details, see "Response Files for the FDISK Command" on page 116.

   b. Create a final-image batch file with the .LCI file name extension.

      This batch file executes such programs as COPY or XCOPY on the client to transport all required software from a directory on the server to the hard disk of the client. The commands you use within a final-image batch file might vary depending on the operating system you plan to transport to each client. For example, you might need to use a specific command for restoring attributes for system and hidden files and for personalizing the image.
5. Copy the batch files to the server.

What to do next:

- Create the software profile. For more information on creating the software profile, see "Creating a Software Profile" on page 71.
- To find examples of creating Hybrid RPL images, see Chapter 5, "Hybrid RPL Training Exercises" on page 85.

Using a Donor Workstation Startup Image

Use the following procedure to create and assign a donor workstation startup image. This procedure attaches the donor workstation to the LAN for transporting images, and it also gives you read/write access to the server.

To create a donor workstation startup image:

1. Use a text editor to create a final-image batch file (.LCI) by typing one of the following:
   - For DOS Transport:

     ```
     pause
     pause
     ```

   - For OS/2 Transport:

     ```
     cmd.exe
     ```

2. Save the file and name it any name you want, but make sure it has an .LCI file extension. For the purpose of this discussion, we will call this file DONORBT.LCI.
3. Copy the DONORBT.LCI file into the following directory:

   LCCM_install_dir\
4. Create a Software Profile Details notebook for DONORBT.LCI:
   a. Within the Installation/Maintenance window, select **Profile** and then select **Create New**.
   b. On the Details page:
      1) Type **Donor Boot** in the Profile Name field.
      2) Click on the Hybrid RPL (DOS Transport) radio button or the Hybrid RPL (OS/2 Transport) radio button.
   c. On the Minimum Hardware page:
      1) Select the donor workstation network adapter from the drop down menu of the Network Adapter field.
      2) Select **Unknown** from the drop down menu of the Video Chipset field.
      3) Type **0** in the RAM field.
      4) Type **0** in the Hard Disk field.
   d. On the RPL Details page, in the Final Image File Name field, use the Browse button to find the DONORBT.LCI file, then select it. Leave the other fields on this page blank.
   e. Select **OK** to save and close the notebook.

To assign the image to the donor workstation:

1. Within the Installation/Maintenance window, assign the donor workstation to the Donor Boot Image profile and click on the **Process** button.

2. Restart the donor workstation. A Hybrid RPL takes place on the donor workstation and establishes a LAN connection. If you are using OS/2 Transport, go to step 4 on page 64.
3. From the donor workstation keyboard, press **Ctrl + C** to escape from the Hybrid RPL. The LAN connection remains active, and a command prompt appears.
4. Do one of the following:
   - For DOS Transport:
     a. Type `net logoff` and press Enter.
     b. Type `net logon` and press Enter.
     c. Type your user ID and password, when prompted. You must log on as the network administrator.
     d. Type `net use s: \\servername\LANC$$`, and then press Enter. You now have read/write access to the appropriate drive.
   - For OS/2 Transport:
     a. Type `logon userid /p:password` and press Enter.
     b. Type `net use s: \\servername\LANC$$`, and then press Enter.

     Note: OS/2 transport uses a .CMD file as a backup batch file instead of a DOS .BAT file.

Once you have created a Donor Boot Image profile, you can use it over and over again to transport images from any donor workstation.

Using Alternative Methods for Transporting Images

Most of the examples and training exercises in this manual use XCOPY as the method of transporting images from the donor workstation to the server and from the server to the client workstation. Specific examples of using XCOPY are located in Chapter 5, "Hybrid RPL Training Exercises" on page 85. When looking over these procedures, you might notice that XCOPY has limitations with file attributes (DOS and OS/2 transport), and the number of characters that can be used in a path (DOS transport only). Also, files transported with XCOPY are full size (no compression), which adds extra traffic on the LAN. You can avoid some of these limitations by using backup and restore programs or a program such as PKZIP.

The following examples show two methods of using the DOS version of the PKZIP program to transport an image from a donor workstation to a server and from a server to the client workstation. Other archive and backup/restore programs might have similar capabilities and can be used to achieve the same result.

Example 1: Using PKZIP as the transport mechanism to the server:

1. Install a licensed copy of PKZIP and PKUNZIP on the `\LCCM_install_dir\` or one of its sub-directories.
2. Create the image on the donor workstation and test it thoroughly.
3. Use the following PKZIP command in your backup batch file to compress (ZIP) the image into a single .ZIP file residing on the server.

   `I:\path_1\PKZIP I:\path_2\W95EXMP1.ZIP -r -P C:\*.*`

   where:

- *I:* is the server drive
- *path_1* is the path to the directory on the server containing PKZIP
- W95EXMP1.ZIP is the name of the ZIP file to be created
- *path_2* is the path to the directory you created for the image
- *C:* is the hard disk of the donor workstation

Note: PKZIP attributes are case sensitive. You might want to use a different parameter for compression based on the load this method puts on your LAN. Refer to the PKZIP documentation for information about PKZIP attributes.

When you run your backup batch file from the donor workstation, a single .ZIP file is created on the server.

Example 2: Using PKUNZIP as the transport mechanism to the client:

In your final-image batch file, include the following line instead of the XCOPY statement:

*I:**path_1*\PKUNZIP -d *I:**path_2*\W95EXMP1.ZIP *C:*

where:

- *I:* is the server drive
- *path_1* is the path to the directory on the server containing PKUNZIP
- W95EXMP1.ZIP is the name of the ZIP file
- *path_2* is the path to the directory for W95EXMP1.ZIP
- *C:* is the hard disk of the client workstation

When the final-image batch file is run, the single compressed file on the server is unzipped on the client hard disk.

Passing Parameters to Image Batch Files

Parameters can be replaced automatically within image batch files using LANClient Control Manager. This is done during the image download process. In this way, you only need to create one generic image batch file for each software profile. The LANClient Control Manager utility program DEDITD.EXE or DEDIT.EXE is used to replace parameters.

Note: For DOS-transport image batch files, use the utility program DEDITD.EXE to replace parameters. For OS/2-transport image batch files, use the utility program DEDIT.EXE to replace parameters.

1. Create the image batch file

   If you have not already done so, create the image batch file you will be working with. This can be any type of batch file used with LANClient Control Manager, for example, a final-image batch file (.LCI) or a maintenance file (.MNS). In your image batch file, create environment variables ("dummy" entries, enclosed within percentage signs) where parameter values are required.

2. Create a software profile

   If this is a new image, create a new software profile. For additional information, see “Software Profile Details Notebook” on page 45.

3. Set up the parameters common for all clients

   a. In the Installation/Maintenance window, select the profile you are working with.

   b. Select **Configure** or double-click on the selected profile.

   c. Click on the **Parameters** tab.

d. Enter the parameters that are common to all clients using this software profile. The Name fields must correspond to names you have given to parameters used in your batch files. Within the batch files, the parameter names must be enclosed within percentage (%) signs.

4. Set up the parameters that are unique for each client

   a. In the Installation/Maintenance window, select the profile you are working with.

   b. Select **Configure** or double-click on the selected profile.

      Click on the **Client Parms** tab.

   c. Enter the Names of each parameter. These Names will be copied automatically into the Parameters page of the Individual Client Details notebook for every client using this software profile. There are only three possible values you can enter at this stage. For additional information, see "Parameter Exceptions" on page 67.

   d. Click on the **OK** button to save the changes to the Software Profile Details notebook.

   e. If you have not yet assigned clients to this profile, you must do this now. For additional information, see "Assigning Clients to Software Profiles" on page 73.

   f. In the Installation/Maintenance window, select the first client using this software profile. The Individual Client Details notebook is displayed. For additional information, see "Selecting Clients" on page 21.

   g. From the Individual Client Details notebook, select the Parameters page. The available parameters (copied from the Client Parms page of the Software Profile Details notebook) are displayed.

   h. Enter the Values for the available parameters. There are three parameter exceptions you can also specify as values on this page. For more details, see "Parameter Exceptions" on page 67.

   i. Go back to step 4f and select the next client. Continue until you have assigned parameters for all clients.

5. Select the Image For Load (or Reload)

   You must now select the image to be loaded on the client. There are several ways to do this, depending on what type of image you are working with. You can load the image on to a single client, a group of clients, or all clients using this software profile. For additional information, see "Selecting Clients" on page 21.

   - If this is a new final image and you have followed all the above steps, simply click on the **Process** button to begin downloading the image, or specify a scheduled time and day for the download to take place (you can do this through the Scheduler of the Individual Client Details notebook or the Default notebook), then click on the **Process** button.
   - If this is an updated final image, check the Mark Client for reload of image on next boot checkbox in the RPL Details page of the Individual Client Details notebook.
   - If this is a maintenance image, check the Run maintenance file checkbox in the Maintenance page of the Individual Client Details notebook.

Parameter Exceptions

There are three character strings that are reserved for specific purposes when used as parameter values. If any of the reserved character strings are used as a value in either the Client Parameters page of the Software Profile Details notebook or the Parameters page of the Individual Client Details notebook, the character string picks up a preexisting value from the Details page of the Individual Client Details notebook.

Each of the following character strings picks up the values specified in the associated fields in the Details page of the Individual Client Details notebook.

- %CNAME%

  This character string yields the name of the client.

- %CADDRESS%

  This character string yields the address of the network adapter or network subsystem.

- %CSERIAL%

  This character string yields the serial number of the client.

Creating a BIOS Update Image

Objective: To create a BIOS flash image to update the BIOS level of different client workstations on your LAN.

The BIOS level of the client is part of the information collected during the scan process. (For more details on the information collected during a scan, see "Using the Scan Feature" on page 58.) It might be necessary to upgrade the BIOS level because of:

- Improvements to BIOS function
- A need to change client workstation BIOS language
- Updates to the BIOS

If updates are required, the new files are made available by IBM through bulletin board systems, publicly accessible servers, or similar means. Once this information is available, you can download the BIOS code onto a diskette. For the purposes of the following procedure, this diskette is referred to as the BIOS flash diskette.

In LANClient Control Manager, updating the BIOS level for a client is a two-step process. First, you must create an image from the BIOS flash diskette. You do this through the Installation/Maintenance window of LANClient Control Manager. Once an image is created, you can perform the second step, which is using the Individual Client Details notebook to update the BIOS level for specific clients. For more information on this second step, see "Updating the BIOS Level" on page 77.

Important: Write protect the BIOS flash diskette before performing this procedure.

To create an image from a BIOS flash diskette:

1. Insert a BIOS flash diskette into the diskette drive.
2. Select **Tools** from the menu bar of the Installation/Maintenance window.
3. Select **Read BIOS flash diskette**.
4. In the Flash Setup screen, select the diskette drive letter.

The diskette reads and the flash level displays. (The flash-level name is the volume label of the diskette).

5. Accept the flash-level name given or assign a new name. (In most cases, you should accept the default name.) This name is used by LANClient Control Manager to identify the BIOS level.

   Note: If you change the level name generated from the BIOS flash diskette, and download this to a client, the client BIOS level shown on the BIOS setup screens of the client workstation will not match the Current BIOS Level field from the Maintenance page of the Individual Client Details notebook. This is because the BIOS program has the original level name embedded within the program code.

6. Select **OK**. A new directory, named after the flash level, is created under the *LCCM_install_dir*\CLNTFILE\BIOS directory, and the contents of the diskette are copied.
7. If you are overwriting an existing directory, you are warned of this and given the option to **Cancel** or **Overwrite.**

To assign this BIOS update image to different client workstations, see "Updating the BIOS Level" on page 77.

Creating a CMOS Settings Image

Objective: To create a CMOS settings image to use with different client workstations on your LAN.

CMOS is a small block of data that contains the BIOS configuration settings of a client workstation. You might want to create different CMOS images depending on the needs of the end user. For example, you might want to allow some clients access to their diskette drives, while restricting diskette-drive access for other clients.

Before you begin:

You must download the BIOS update diskette that matches the BIOS level you are using. IBM often provides updates that you can download from a bulletin board system (BBS) or the World Wide Web. From the new BIOS update diskette, you must use the CMOSUTIL.EXE program.

To create a CMOS settings image:

1. At a donor workstation:
   a. Start up the workstation and access the Configuration/Setup Utility program. On many IBM workstations, you can access this program by pressing F1 during the power-on self-test (POST).
   b. Change and save the desired settings as required.
   c. Exit from the Configuration/Setup Utility program and restart the workstation. Ensure that the workstation starts up and functions properly.
2. Use the CMOSUTIL.EXE program to save the current settings of the donor workstation to a file that you name with the .CMS extension.
   a. To run the CMOSUTIL program and save the settings to a file, type:

      `CMOSUTIL \path\file_name.CMS /create`

      Give the file a unique name that you can identify later. For example, NO35DISK.CMS could be the name of a file that has settings that restrict a client workstation's access to diskette drives.
   b. Copy this file to the corresponding BIOS directory on your server:

      `C:\.LCCM_install_dir\BIOS\Flash_BIOS_Name`

      where the *Flash_BIOS_Name* directory is the name of the BIOS level on your donor workstation (unless this was changed by the system administrator during the Read BIOS Flash Diskette process).
3. If you want to create another CMOS image that uses different settings, go back to step 1 and repeat the procedure, saving the results to a different file name.

To assign this CMOS image to client workstations, see "Assigning Clients a CMOS Settings Image" on page 78.

Creating a Diagnostic Image

Some computer maintenance and diagnostic programs are shipped on self-starting diskettes. You can convert these diskettes into a standard RPL image, put the image on the server, and then assign the image to client workstations.

Note: The environment set up by LANClient Control Manager is capable of running diagnostic programs that do not require more than 502 KB of free conventional memory. Current versions of QAPlus/PRO diagnostics shipped by IBM for PC 300, PC 700, and IntelliStation products exceed this limitation.

To create a diagnostic image:

1. From the OS/2 Desktop, double-click on **LAN Server Administration**.
2. Double-click on **Local Workstation** *name*.
3. Double-click on **Diskette Image Source**.
4. From the menu bar, click on **Object**, then from the drop-down menu click on **Make image from diskette**.
5. In the Image name field, type the name you want to assign to the diagnostic image. Use an easily identifiable name.
6. In the Target server field, select your server name from the drop-down list.

7. In the Source drive field, select the drive letter of the diskette drive you will be using.
8. Insert the diagnostic diskette into the selected drive, then click on **OK**.

   The diagnostic image (.IMG file) will be made and placed into the correct directory.

When the need arises for a client to run diagnostics, follow the instructions in “Assigning Clients a Diagnostic Image” on page 78.

Managing Software Profiles

Objective: To create, view, edit or delete software profiles.

When managing software profiles, you use the Software Profile Details notebook for the specific software profile.

For specific information on the components of the Software Profile Details notebook, see "Software Profile Details Notebook" on page 45.

Creating a Software Profile

You can create a profile by entering new information, or you can create a copy from a similar, existing profile. The latter method saves time because you do not have to reenter duplicate information.

To create a new software profile:

1. Select **Profile** from the menu bar of the Installation/Maintenance window.
2. Select **Create new**. A new Software Profile Details notebook appears.
3. In the blank fields of the different pages, type the information for the new software profile. Make certain that you type a Profile Name on the Details page, and select the correct type of RPL. For more information, see "Software Profile Details Notebook" on page 45.
4. Click on **OK** to return to the Installation/Maintenance window.

To create a software profile from a copy of an existing profile:

1. Select the software profile you want to copy within the Installation/Maintenance window.
2. Select **Profile** from the menu bar of the Installation/Maintenance window.
3. Select **Create copy**. When the copy is created, all fields are transferred except the profile name.
4. Type a unique Profile Name in the Details page.

   If necessary, edit any other fields that are different from the original software profile.
5. Click on **OK** to return to the Installation/Maintenance window.

Viewing or Editing an Existing Software Profile

To view or edit an existing software profile:

1. Double-click on the software profile within the Installation/Maintenance window, or highlight the software profile, select **Profile** from the menu bar, and then select **Configure**. The Software Profile Details notebook appears.
2. Do one of the following:
   - To view the description of the software profile, select the **Details** page. Click on other pages to view different fields.
   - To edit the software profile, modify the appropriate fields of the various pages of the notebook. For more information, see "Software Profile Details Notebook" on page 45.

3. Click on the **OK** button to return to the Installation/Maintenance window.

Deleting a Software Profile

To delete an existing software profile:

1. Select the software profile within the Installation/Maintenance window.
2. Select **Profile** from the menu bar.
3. Select **Delete**.
4. Select **Yes** in the message box that displays.

   All clients assigned to the deleted software profile are placed in the Unassigned Clients list of the Installation/Maintenance window.
5. Click on the **Process** button to save and process the changes.

Managing Clients

Objective: To manage client settings through the LANClient Control Manager interface.

The procedures in this section are specific to the interface (screens) of LANClient Control Manager. For most of the procedures, you must access the Individual Client Details notebook. For specific information on the components of the Individual Client Details notebook, see "Individual Client Details Notebook" on page 31.

For most of the procedures in this section, you must select (click on) clients from the listings within the Installation/Maintenance window. By selecting a single client, you can make changes for that client only. By selecting multiple clients, you can make changes for all clients selected. When making changes for multiple clients, only some fields are available for editing. Fields not available for editing are grayed out. For information on selecting multiple clients within the Installation/Maintenance window, see "Selecting Clients" on page 21.

Assigning Clients to Software Profiles

Important: In order for the changes to take place, you must always click on the Process button after assigning software profiles to clients.

To assign clients to software profiles:

1. Select the software profile within the Installation/Maintenance window.
2. Select the clients to be assigned in the Unassigned Clients box.
3. Click on the **Assign** button. The clients appear in the Assigned Clients box.

   Note: If the client requires additional personalization at the individual client level, open the Individual Client Details notebook for each newly-assigned client and fill in the values for each name listed on the Parameters page. For details, see "Individual Client Details - Parameters Page" on page 40.
4. Click on the **Process** button to save and process the changes.

In order to reassign clients to a new software profile, you must first unassign the clients using the instructions in "Unassigning Clients from Software Profiles."

After the changes are processed, the new software profile takes effect the next time the client workstation restarts (or as soon as the change is applied if the client is already waiting to start up). If the software profile is a Hybrid RPL profile, the software is downloaded onto the hard disk drive of the client and then the client restarts. Any restarts after that are made from the hard disk until the software profile is changed.

Unassigning Clients from Software Profiles

Unassigning a client from a software profile changes an assigned client into an unassigned client. You might want to unassign a client in order to immediately reassign it to a different software profile. After you unassign a client, the client appears in the Unassigned Clients box.

Note: If a client is left in the Unassigned Clients box after the changes are processed (clicking on the Process button), the client will not be able to start up.

To unassign one or more clients from a software profile:

1. Select a client or multiple clients within the Assigned Clients box.
2. Click on the **Deassign** button.
3. Click on the **Process** button to save and process the changes.

Temporarily Disabling a Client

Note: A disabled client appears gray within the listings of the Installation/Maintenance window.

To temporarily disable a client from starting:

1. Select a client or multiple clients within the Assigned Clients box.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on one of the selected clients.
   - Select **Client** from the menu bar, and then select **Configure**.
3. Select the **Details** page.
4. Click on the **Client Disabled** check box.
5. Click on **OK** to return to the Installation/Maintenance window.
6. Click on the **Process** button to save and process the changes.

Deleting a Client

To delete one or more clients:

1. Select a client or multiple clients within the Assigned Clients box.
2. Select **Client** from the menu bar.
3. Select **Delete**.
4. Click on the **Process** button to save and process the changes.

Showing Client Mismatches

The function to *show mismatches* is available only to clients that have been assigned software profiles. Clients that have configuration problems (mismatches) appear red within the Installation/Maintenance window. Any mismatch problems might prevent the client from functioning correctly.

To show configuration mismatches:

1. Select a client shown in red within the Assigned Clients box.
2. Select **Client**.
3. Select **Show Mismatch**.

You can view details of the configuration mismatches by clicking on **Show Search Results**. This function works on individual clients only; you cannot show mismatches for a group of clients.

Selecting How Clients are Displayed

You can customize how clients are displayed within the boxes of the Installation/Maintenance window. You can list them by one of the following values:

- Name
- Network Address
- Serial Number
- Contact
- Location
- Comment

To select how clients are displayed:

1. Select **Options** from the menu bar of the Installation/Maintenance window.
2. Select **Display Clients By**.
3. Select a value from the list that appears.

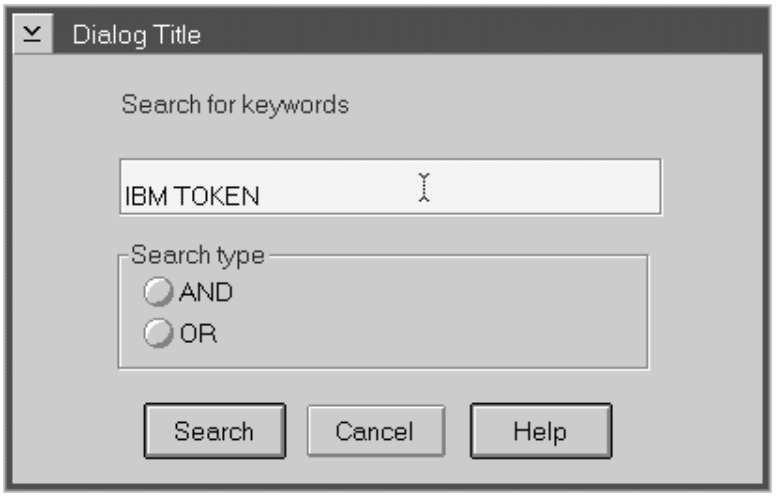
Note: The default attribute for displaying clients is Name. Of the options provided by LANClient Control Manager, only Name and Network Address are guaranteed to be unique. Location or Contact might be more useful, depending on your organization.

Searching for Specific Clients

After scanning for new clients, you can narrow the list of clients by creating a database search. You can search for any alphanumeric values (text and numbers) stored in LANClient Control Manager that might help you identify individual clients or groups of clients. For example, you can locate clients that have a specific BIOS level or video chip set. You can search for field values stored in any of the pages of the Individual Client Details notebook (or combinations of these values). (For more information about these fields, see “Individual Client Details Notebook” on page 31.)

To perform a search on existing clients:

1. Select **Tools** from the menu bar in the Installation/Maintenance window.
2. Select **Search for Client**. The following window appears.



3. Enter the keywords you want to search on; you can also enter partial words. Leave a space between each word.
4. Select one of the following search types:
   - **AND** - finds occurrences that match all the keywords typed in.
   - **OR** - finds occurrences that match any of the keywords typed in.
5. Select **Search**. Search results are displayed in the Clients Database Search window. You can then select, edit, copy, or delete individual clients or groups of clients from this window.

Modifying an Existing Client

To modify an existing client:

1. Select a client in the Installation/Maintenance window.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on the selected client.
   - Select **Client**, then select **Configure.**
3. Edit the desired fields of the different pages. For more details, see "Individual Client Details Notebook" on page 31.
4. Click on **OK** to return to the Installation/Maintenance window.
5. Click on the **Process** button to save and process the changes.

Forcing an Image Reload at Next Startup

This procedure forces an image reload onto selected clients at the next client startup. You might want to use this procedure if the software on the client has been damaged. Rather than try to diagnose the problem and replace the damaged files individually, you can save time by reloading the entire software profile.

To set a forced image reload at next startup:

1. Select a client or group of clients within the Installation/Maintenance window.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on a selected client.
   - Select **Client** from the menu bar, then select **Configure.**
3. After the Individual Client Details notebook appears, select the **RPL Details** page.
4. Click on the button for **Mark Client for reload of image on next boot**.
5. Click on **OK** to return to the Installation/Maintenance window.
6. Click on the **Process** button to save and process the changes.

Changing or Deleting a BIOS Administrator Password

You can change or delete a BIOS administrator password that has already been assigned to one or more client workstations

To change or delete a BIOS administrator password:

1. Select the clients you want to update in the Installation/Maintenance window.

2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on a selected client.
   - Select **Client** from the menu bar, then select **Configure.**
3. Select the **Maintenance** page.
4. Click on the **Update BIOS Admin Password** check box.
5. In the field to the right of the **Update BIOS Admin Password** check box, do one of the following:
   - To delete an existing BIOS administrator password, erase the current password and leave the field blank.
   - To change an existing BIOS administrator password, erase the current password and type in a new one.
6. Click on the **OK** button to return to the Installation/Maintenance window.
7. Click on the **Process** button to save and process the changes.

Updating the BIOS Level

If you need to create an image before updating the BIOS level, see "Creating a BIOS Update Image" on page 67.

To assign the BIOS level to clients:

1. Select the clients you want to update in the Installation/Maintenance window.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on one of the selected clients.
   - Select **Client** from the menu bar, then select **Configure.**
3. Select the **Maintenance** page.
4. In the BIOS **Level** box, select the level for the BIOS upgrade.
5. In the BIOS **Language** box, select the language for the BIOS upgrade.
6. Click on the **Update BIOS** check box.
7. Select the **Scheduler** page of the Individual Client Details notebook and verify the scheduler information. For details, see "Individual Client Details - Scheduler Page" on page 42.
8. Click on **OK** to return to the Installation/Maintenance window.
9. Click on the **Process** button to save and process the changes.
10. The Processing/Info window displays. BIOS updates are not made until the client workstations are switched off and restarted, or the client's scheduled update time is reached.

    Note: If the BIOS update fails, an error code appears in the Processing/Info window. The meanings of the error codes vary depending on the BIOS level. To decipher the error codes:

    a. Insert the appropriate BIOS flash diskette into the diskette drive.

    b. To see a list of error codes and their meanings, at a command prompt, type:

```
A:\CMOSUTIL /?
```

Assigning Clients a CMOS Settings Image

Note: If you change the client's CMOS data, you must use a CMOS level that is compatible with the client's BIOS level.

Before assigning a CMOS settings image with LANClient Control Manager, you must create the image and put it on the server. For more details, see "Creating a CMOS Settings Image" on page 68.

To assign clients to a CMOS settings image:

1. Select the clients you want to update in the Installation/Maintenance window.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on one of the selected clients.
   - Select **Client** from the menu bar, then select **Configure.**
3. Select the **Maintenance** page.
4. Use the drop-down menu to select the (.CMS) file for the clients.
5. Check the **Update CMOS with file** check box.
6. Select the **Scheduler** page of the Individual Client Details notebook and verify the scheduler information. For more details, see "Individual Client Details - Scheduler Page" on page 42.
7. Click on **OK** to return to the Installation/Maintenance window.
8. Click on the **Process** button to process these changes.

   The Progess/Information window displays. CMOS updates will not be made until the client workstations are switched off and restarted, or the client's scheduled update time is reached.

   Note: If the CMOS settings update fails, an error code appears in the Processing/Info window. The meanings of the error codes vary depending on the BIOS level. To decipher the error codes:

   a. Insert the appropriate BIOS flash diskette into the diskette drive.

   b. To see a list of error codes and their meanings, at a command prompt, type:

      ```
      A:\CMOSUTIL /?
      ```

Assigning Clients a Diagnostic Image

Before assigning a diagnostic image with LANClient Control Manager you must create the image and put it on the server. For more information, see "Creating a Diagnostic Image" on page 69.

To assign clients to a diagnostic image:

1. Select the target clients in the Installation/Maintenance window.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on one of the selected clients.
   - Select **Client** from the menu bar, then select **Configure.**

3. Select the **Maintenance** page.
4. Type in the full path and file name of the diagnostic image directly into the field provided (beside the Run Diagnostics check box).
5. Check the **Run Diagnostics** check box.
6. Select the **Scheduler** page of the Individual Client Details notebook and verify the scheduler information. For details, see "Individual Client Details - Scheduler Page" on page 42.
7. Click on **OK** to return to the Installation/Maintenance window.
8. Click on the **Process** button to process these changes.

Assigning Clients a Maintenance File

To assign clients to a maintenance image:

1. Select the clients you want to update in the Installation/Maintenance window.
2. Access the Individual Client Details notebook by doing one of the following:
   - Double-click on one of the selected clients.
   - Select **Client** from the menu bar, then select **Configure.**
3. Select the **Maintenance** page.
4. Use the **Browse** button to select the correct maintenance file, or type in the full path and file name directly into the field provided (beside the Run Maintenance file check box).
5. Check the **Run Maintenance file** check box.
6. Select the **Scheduler** page of the Individual Client Details notebook and verify the scheduler information. For details, see "Individual Client Details - Scheduler Page" on page 42.
7. Click on **OK** to return to the Installation/Maintenance window.
8. Click on the **Process** button to process these changes.

Managing Settings at the Client Workstation

Objective: To manage workstation settings by changing information in the Configuration/Setup Utility program of each client workstation.

To perform the procedures in this section, you must access the Configuration/Setup Utility program of the client workstation. The settings you choose in these procedures directly affect how LANClient Control Manager performs.

Allowing Local Hard Disk Startup

If you have a centralized client-configuration and maintenance area from which you send preconfigured workstations out to different areas of your organization, you can run LANClient Control Manager from a single server to configure your clients, set them to start up from the hard disk, and disconnect them from the LAN. LANClient Control Manager stores the client-configuration details so that if the client workstation comes back in for maintenance or reconfiguration, the details are readily available.

To allow local hard disk startup for clients:

1. Install the new client workstation. For more information, see “Installing New Client Workstations” on page 56.
2. Scan the new client workstation into the LANClient Control Manager database. For more information, see “Using the Scan Feature” on page 58.
3. Assign the client to a Hybrid RPL profile and process. For more information, see “Assigning Clients to Software Profiles” on page 73.
4. Go to the client workstation, and shut it down.
5. Reconfigure the startup sequence:
   a. Disconnect the network cable from the client workstation and then restart it.
   b. Restart the client workstation and enter the Configuration/Setup utility program. (On many IBM workstations, you must press F1 to enter the program. If an administrator password has been set, type it in.) Within the Configuration/Setup utility program, change the startup sequence in one of the following ways:
      - Select **hard disk drive** as the first startup device.
      - If you want to maintain the ability to start the workstation from a diskette, select **diskette drive** as the first startup device and **hard disk drive** as the second startup device.
   c. Save the settings and exit the program.

If you need to reload, or perform any other maintenance actions from LANClient Control Manager, set the startup sequence so that **network** is the first startup device. This allows the client to perform an RPL at next startup.

Using Hybrid RPL With Dual Startup Sequences

Some IBM workstations allow you to specify two startup sequences within the Configuration/Setup utility program the client workstation. (Consult your IBM workstation user manual for specific details.)

When using a Hybrid RPL, the first startup device of the first startup sequence must be set to *network*. When the user switches on the client workstation, the Hybrid RPL process connects and "shakes hands" with the client before allowing the client to continue starting up from its hard disk. This is a very brief process that allows you to maintain control of the client workstation at all times. If you have scheduled image downloads or maintenance procedures to run *as soon as possible*, the client is processed at this time (see the Scheduler page for either the Defaults notebook or the Individual Client Details notebook).

The second startup sequence is used to specify how the workstation starts up when requested to do so by LANClient Control Manager. On some IBM workstations this is called the Automatic Power-On Startup sequence. You must enable Wake on LAN within the BIOS settings of the client and also within the LANClient Control Manager interface before the second startup sequence will operate. Look for the LANClient Control Manager settings in the Processing page of the Defaults notebook.

Each startup sequence has four possible startup devices. If the first startup device fails, the workstation automatically attempts to start up from the second, third, and then fourth device. The startup devices are:

- Network
- Hard Disk Drive
- Diskette Drive
- CD Drive

Note: If you set the first startup device to network but do not set the second, third, or fourth device, the client will not function when disconnected from the LAN. The command for starting client workstations remotely is specified in the Scheduler page of the Individual Client Details notebook. Use this function to schedule clients to be switched on automatically and processed at any time during a seven-day period. For more information, see “Individual Client Details - Scheduler Page” on page 42.

Changing the BIOS Administrator Password for Service

The client workstation BIOS settings can be password protected to help prevent unauthorized users from changing settings such as the startup sequence. In most IBM workstations, the BIOS settings are normally accessed by pressing F1 while the workstation is starting up.

The BIOS administrator password can be set or disabled in the Maintenance page of the Individual Client Details notebook by setting the **BIOS Password** field. If this field is left blank, the password is disabled.

The BIOS program on a client is to be accessed by an authorized user only. If you follow the steps below, it is not necessary to tell anyone else the password or to have the administrator present at the client workstation to make changes.

1. Ensure that a trained or authorized user is at the client workstation, ready to make the changes.
2. At the server, disable the BIOS password for the client.
3. At the client, restart the workstation so that the change takes effect.
4. At the server, enable the BIOS password.
5. At the client:

a. Restart the workstation again, and press **F1** to access the BIOS settings. Make the required BIOS changes.

b. Exit from the BIOS settings utility. The client will restart and the BIOS password will be enabled.

Note: Ensure that only authorized users are given access to BIOS settings. If the startup sequence of the client is changed in the BIOS settings so that *network* is not the first option, all control of the client from LANClient Control Manager is lost. If the BIOS password is changed at the client, you cannot reestablish Hybrid RPL control.

The BIOS administrator password *code* is based on the positions of the keys, not the characters typed in. If any of your clients use a different language keyboard or a keyboard layout different from the keyboard you use to interact with LANClient Control Manager, the BIOS administrator password might not be recognized when typed in from the client keyboard. Ensure that you only use characters that occur in the same position on all keyboards used. If the field is left blank, the password is disabled.

Installing Network Adapter Device Drivers

Objective: To install device drivers for new network adapters in client workstations that will be managed by LANClient Control Manager. In order to complete this procedure, you must access the NETWORK.LST file provided by LANClient Control Manager. This file is located in the following directory:

LCCM_install_dir\NETWORK.LST

Note: For detailed procedures on enabling RPL to function with various device drivers, Refer to http://www.us.pc.ibm.com/desktop/lccm/index.html on the World Wide Web. The information on the World Wide Web will be updated for all supported network adapters.

To install device drivers for unsupported network adapters:

1. Install the adapter and driver in the normal manner. Refer to the README text file supplied with the driver for detailed information on adapter and driver installation.
2. Before LANClient Control Manager recognizes a new adapter you must also add the adapter details to the file NETWORK.LST. This file is located in the directory where you installed LANClient Control Manager. When you have loaded the file into an editor, you must add one line for each new adapter you want to use.

Important: Edit the NETWORK.LST file with care. Reading the file is dependent on space and the semi-colon positions within each line. The line must end with a semi-colon. All invalid lines are ignored. The format of the line is:

```
DESCRIPTION;X;Y;BOOT_BLOCK;OS2_BOOT_REC;DEVICE_DRIVER;PNP_PCI_ID;SCAN_ON_OFF;
```

where:

```
  DESCRIPTION   is the description in the adapter list of LANClient
                Control Manager.  All characters from the start of the
                line until the semi-colon (;) are used as the description.

  X (field 2)   is a unique and sequential number in the list.

  Y (field 3)   is reserved by the program.  You MUST set this field
                to the same value as field 2.

  BOOT_BLOCK    is the DOS boot record that has been added to RPL.MAP.
                Refer to the appropriate documentation on Remoteboot
                for more details.

  OS2_BOOT_REC  is the OS/2 boot record that has been added to RPL.MAP.

  DEVICE_DRIVER is the path and filename of the NDIS OS/2 driver that is
                installed for the adapter.  Typically, this is the RPL
                directory.  A backslash character (\) must appear at the
                beginning of this field.

  PNP_PCI_ID    is the PNP (plug and play) or PCI identifier for the
                adapter.
                - PNP ID = First 7 digits of the PNP number
                - PCI ID = First 8 digits of the PCI number

  SCAN_ON_OFF   is the first six digits of the MAC address equal to
                0 (off) or 1 (on).  (This field is used by the scan
                function only.)
                IMPORTANT: see the following note for more details.
```

Note: If the first six digits of the MAC addresses of two or more adapters are identical, it might not be possible for OS/2 Warp Server to detect what type of adapter is attempting the RPL. When a new client is scanned, the only adapter information available to the network software is the 12-digit MAC address, where the first six digits of the MAC address identify the adapter type. Currently, different adapter manufacturers might assign identical MAC address types to different adapters.

If you are using a limited number of adapter types on your LAN, you might not encounter a problem, but if an identification conflict does occur, you must switch off conflicting adapter types during the scan process and only allow one (conflicting) type during each scan. This limitation only affects the scan process. Up to five addresses can be specified with an =0 (off) or =1 (on).

The following lines are listed within the NETWORK.LST file.

```
IBM Token Ring 16/4;2;2;R_DTK_NDIS;R_230_OTK;\IBMCOM\MACS\IBMTOK.OS2;244d000;08005A=1,0004ac=1;
IBM EtherJet ISA;4;4;R_DET_EJ;R_230_OETEJ;\IBMCOM\MACS\IBMEINDI.OS2;244d101;002035=0;
IBM Crystal EtherJet;5;5;R_DETCLA;R_230_OETCLA;\IBMCOM\MACS\END2ISA.OS2;0e63604;002035=1;
```

Chapter 5. Hybrid RPL Training Exercises

Introduction

The training exercises are provided to help you become more familiar with the Hybrid RPL process. Each exercise gives a specific example of how to create image batch files and how to use them with LANClient Control Manager.

Important: The terms and conditions of the IBM International Program License Agreement for LANClient Control Manager do not grant any license to install, copy, or use any application software or operating system software mentioned in this guide that is not shipped as part of LANClient Control Manager. Always ensure that you have obtained suitable licenses for any software you intend to use with LANClient Control Manager. When using the exercises in this chapter, keep the following information in mind:

- The environment automatically created for Hybrid RPL is created on the client workstation during the download process. For more information, see "Environment for Hybrid RPL" on page 6.
- For information about unsupported adapters, see"Installing Network Adapter Device Drivers" on page 83 .
- XCOPY Considerations

  The way LANClient Control Manager uses software profiles allows you a great deal of flexibility. If you have your own preferred methods of copying programs and data to clients, you can probably adapt this method to LANClient Control Manager. For example, the exercises in this section use XCOPY for copying files but, you can also use another archive program, like PKZIP, to transport the files. For more information, see "Using Alternative Methods for Transporting Images" on page 64.
- Example Files

  Example files for all exercises are provided in Chapter 6, "Example Files" on page 99.
- Utility Programs

  The utility programs you must use to perform the exercises in this chapter are provided by LANClient Control Manager. Some of the utilities might not be necessary for the task you are trying to perform. For more information on the utility programs, see Chapter 7, "Utilities Provided by LANClient Control Manager" on page 113. You can find the utilities in the *LCCM_install_dir*\CLNTFILE directory.

DOS/Windows Image

This exercise remotely installs a DOS/Windows image on a client workstation. The image can also contain other applications, but for the purposes of this exercise, DOS and Windows are the only software specifically mentioned.

Note: As part of this exercise, you create a text file called MOCKINI.TXT. This file is modified during the Hybrid RPL download process using the parameter-passing feature provided by LANClient Control Manager. The only purpose of this text file is to give you hands-on experience using parameter-passing techniques. In an actual work situation, you can use these same parameter-passing techniques to modify .INI files or any other text-based files that require client-specific information, such as domain names, gateway addresses, user ID's, IP addresses, and so on.

Objective: This exercise:

- Sets up a client workstation
- Adds the client workstation to the LANClient Control Manager database
- Creates a DOS/Windows image
- Transports the DOS/Windows image to the server
- Assigns the client workstation to the software profile
- Downloads the DOS/Windows image to the client workstation

Before you begin, you must have the following:

- A server attached to the LAN. The server must be functioning and have LANClient Control Manager already installed.
- The LANClient Control Manager Defaults notebook must be set up with the proper default information. For details, see “Setting Specific Defaults Prior to Scanning” on page 57.
- A donor workstation that is compatible with the new client workstation you will be managing.
- A donor boot startup image as described in “Using a Donor Workstation Startup Image” on page 63. You will assign this image to the donor workstation in step 8 on page 88.
- Three licenses for DOS and Windows.
- A client workstation. This workstation must have a network adapter and meet the minimum hardware requirements to run DOS and Windows.

To install a DOS/Windows image:

1. Install two client workstations and attach them to the LAN. (For details, see “Installing New Client Workstations” on page 56.) One client workstation will become the donor workstation. The other will receive the image and will be referred to as the client workstation throughout the remainder of this exercise.
2. Start LANClient Control Manager and scan for the new donor and client workstations. (See “Using the Scan Feature” on page 58 for details.)
3. Install DOS and Windows on the donor workstation. You can also install additional applications at this time.
4. Create the directory C:\LANCLI on the donor workstation.

5. Copy the following utility programs to the C:\LANCLI directory:

   - DISKDOS.EXE
   - LCATTRIB.EXE
   - DEDITD.EXE

   You can find the utility programs in the *LCCM_install_dir*\CLNTFILE directory.

6. Create a text file for modification. This is the file that will be modified using the parameter-passing techniques.

   a. Create the text file with the following contents only:

   ```
   REM Sample File for LCCM Exercise

   [Common data]
   OrgName = dummy_Org

   [Individual data]
   FullName = dummy_Username
   JoinDomain = dummy_Domain
   NetworkAddress = dummy_Caddress
   ```

   Note: The format of this file simulates an .INI file. Normally, you would edit an existing .INI file (or other text-based file) and replace existing values with "dummy" names. The "dummy" names will be referenced in the final-image batch file you create later in this exercise. When the image is downloaded, the customization batch file will replace the dummy names with values that are common to the organization and unique to the individual client.

   b. Save the file on the donor workstation as:

   ```
   C:\LANCLI\MOCKINI.TXT
   ```

7. At the donor workstation, create and save a backup batch file.

   a. Use a text editor to create a backup batch file that has the following content:

   ```
   C:
   CD \
   \LANLCI\DISKDOS /F=C:\LANCLI\DOS7.BB /D=C /R=R
   \LANCLI\LCATTRIB C:\ /A /S
   S:
   MD \DOS70
   CD \DOS70
   XCOPY C:\*.* S:*.* /S /E
   C:
   CD \
   \LANCLI\LCATTRIB C:\ /R /S
   ```

   The backup batch file will be used to prepare the image and transport it to the server. For an explanation of the commands used in the backup batch file, see “Backup Batch Files - DOS/Windows Image” on page 100.

   b. Save the backup batch file on the donor workstation as:

   ```
   C:\LANCLI\BACKUP.BAT
   ```

8. Assign the donor workstation to the donor boot startup image. Next, connect the donor workstation to the network as described in the procedure “Using a Donor Workstation Startup Image” on page 63.

9. Change the directory to the local-disk root directory (drive C).
10. Run the backup batch file by changing to the LANCLI directory and typing `BACKUP.BAT`. This command transports the image from the donor workstation to the server.
11. At the administrator console, stop the donor boot process within the Installation/Maintenance window, and then create a preload-image batch file.

    Note: Creating a preload-image batch file is an optional step for LANClient Control Manager. A preload-image batch file is needed only if you want to partition the hard disk of the client workstation before installing the image.

    a. Use a text editor to create a preload-image batch file that has the following content:

    ```
    ECHO ON
    S:\LCBTRDEL 0 /S
    FDISK < S:\LC5050FD.DAT
    ```

    For an explanation of the commands used in the preload-image batch files, see "Preload-Image Batch Files" on page 102.

    Important: If the size of the client workstation hard disk is 4 GB or greater, you cannot use LC5050FD.DAT. LC5050FD.DAT creates a primary DOS partition that is 50% of the hard disk space, and this partition cannot exceed 2 GB. For information on creating your own response file, see "Response Files for the FDISK Command" on page 116.

    b. Save the preload-image batch file as:

    LCCM_install_dir\FAT_PR.LCP

    Note: This file can have any name you want, but the extension must be .LCP. The name FAT_PR.LCP will be used throughout the remainder of this exercise.

12. At the administrator console, create a final-image batch file.

    Note: The final-image batch file runs on the client from a DOS network start up when the Hybrid RPL download is processed.

    a. Use a text editor to create a final-image batch file that has the following content:

```
FORMAT C: /U < S:\FORMAT.TXT
XCOPY S:\DOS70\IBMBIO.COM C:\
XCOPY S:\DOS70\IBMDOS.COM C:\
XCOPY S:\DOS70\*.* C:\ /S /E /V
C:
CD \
\LANCLI\DISKDOS /F=C:\LANCLI\DOS7.BB /R=W /D=C
\LANCLI\LCATTRIB C:\ /R /S
\LANCLI\DEDITD /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Org %ORGNAME%
\LANCLI\DEDITD /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Username %USERNAME%
\LANCLI\DEDITD /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Domain %DOMAIN%
\LANCLI\DEDITD /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Caddress %CADDRESS%
```

    For an explanation of the commands used in the final-image batch file, see "Final-Image Batch Files - DOS/Windows Image" on page 103.

    b. Save the final-image batch file on the server as:

    LCCM_install_dir\DOS70.LCI

    Note: This file can have any name you want, but the extension must be .LCI. The name DOS70.LCI will be used throughout the remainder of this exercise.

13. Create a Software Profile Details notebook for your DOS/Windows image.

    a. At the Installation/Maintenance window of LANClient Control Manager, select **Profile** from the menu bar, then select **Create New**. This opens the Software Profile Details notebook.

    b. On the Details page:

    - Type DOS_WIN_Test in the Profile Name field.

      Note: You can name the profile any name you want. The profile name DOS_WIN_Test will be used throughout the remainder of this exercise.

    - Click on the Hybrid RPL radio button DOS Transport radio button.
    - In the Description field, type a description such as:

```
Exercise profile
DOS 7.0 with Windows 3.X
```

    c. On the Minimum HW page:

    - Select the appropriate adapter for the client workstation from the drop-down menu of the Network Adapter field.
    - Select **Unknown** from the drop-down menu of the Video Chipset field.
    - Type **0** in the RAM field.
    - Type **0** in the Hard Disk field.

    d. On the RPL Details page, use the browse button to find:

    - In the Preload Image File Name field:

```
FAT_PR.LCP
```

- In the Final Image File Name field:

  ```
  DOS70.LCI
  ```

  Also, ensure that the Enable Preload box is checked.

e. On the Parameters page, set up the following parameter names:

```
Names      Values
=====      ======
ORGNAME    Type in your company name
```

Note: The values on this page are common for all clients using this profile.

f. On the Client Parameters page, set up the following parameter names:

```
Names     Values
=====     ======
USERNAME  - Leave Blank -
DOMAIN    - Leave Blank -
```

Note: The names used on this page are passed to the Parameters page of the Individual Client Details notebook for each client assigned to this profile. Although you used %CADDRESS in your final-image batch file, you do not need to specify it on this page. %CADDRESS is a special value that picks up the contents of the Address field from the Details page of the Individual Client Details notebook. For additional information about other special parameters, see “Parameter Exceptions” on page 67.

g. Select **OK** to save and close the notebook.

14. Assign the client to the new software profile, but DO NOT PROCESS THE CHANGES UNTIL INSTRUCTED TO DO SO IN A LATER STEP OF THIS EXERCISE. (For instructions on assigning clients, see “Assigning Clients to Software Profiles” on page 73.)

15. Open the Individual Client Details notebook for the new client assigned to this image. (See “Modifying an Existing Client” on page 76 for details.)

    a. On the Parameters page, set up the values for the following names:

```
Names       Values
=====       ======
USERNAME    Type in the end user's name
DOMAIN      Type in the domain name (or some text to represent
            a domain name).
```

    b. Select **OK** to save and close the notebook.

16. Click on the Process button in the Installation/Maintenance window to begin processing.

17. Turn on the client workstation.

    If you used a preload-image batch file, the client hard disk is partitioned. Next, the hard disk is formatted, and the image is downloaded to the client hard disk and is customized for that specific client. The next time the client is started, it starts DOS/Windows from its own hard disk.

    If you open the MOCKINI.TXT file at the client workstation, you will see that the dummy parameters have been replaced with the parameters defined in the LANClient Control Manager notebooks.

Additional clients can be assigned to the same profile. However, before processing the additional assignments, edit the Individual Client Details notebook for each new client and modify the Parameters page as described in this exercise.

OS/2 Warp Image

This exercise remotely installs an OS/2 Warp image on a client workstation using the OS/2 transport feature of LANClient Control Manager. The image can also contain other applications, but for the purposes of this exercise, OS/2 Warp is the only software specifically mentioned.

Note: As part of this exercise, you create a text file called MOCKINI.TXT. This file is modified during the Hybrid RPL download process using the parameter-passing feature provided by LANClient Control Manager. The only purpose of this text file is to give you hands-on experience using parameter-passing techniques. In an actual work situation, you can use these same parameter-passing techniques to modify .INI files, .CMD files, or any other text-based files that require client-specific information, such as domain names, gateway addresses, user ID's, IP addresses, and so on.

Objective: This exercise:

- Sets up a client workstation
- Adds the client workstation to the LANClient Control Manager database
- Creates an OS/2 Warp image
- Transports the image to the server
- Assigns the client workstation to the software profile
- Downloads the image to the client workstation

Before you begin, you must have the following:

- A server attached to the LAN. The server must be functioning and have LANClient Control Manager already installed.
- The LANClient Control Manager Defaults notebook must be set up with the proper default information. For details, see “Setting Specific Defaults Prior to Scanning” on page 57.
- A donor workstation that is compatible with the new client workstation you will be managing.
- A donor boot startup image, using the OS/2 transport feature, as described in “Using a Donor Workstation Startup Image” on page 63. You will assign this image to the donor workstation in step 8 on page 94.
- Three licenses for OS/2 Warp.
- A client workstation. This workstation must have a network adapter and meet the minimum hardware requirements to run OS/2 Warp.

To install an OS/2 Warp image:

1. Install two client workstations and attach them to the LAN. (For details, see “Installing New Client Workstations” on page 56.) One client workstation will become the donor workstation. The other will receive the image and will be referred to as the client workstation throughout the remainder of this exercise.
2. Start LANClient Control Manager and scan for the new donor and client workstations. (See “Using the Scan Feature” on page 58 for details.)
3. Install OS/2 Warp on the donor workstation. You can also install additional applications at this time.
4. Create the directory C:\LANCLI on the donor workstation.
5. Copy the following utility programs to the C:\LANCLI directory:

- DISK.EXE
- DEDIT.EXE

You can find these utility programs in the *LCCM_install_dir*\CLNTFILE directory.

6. Create a text file for modification. This is the file that will be modified using the parameter-passing techniques.

   a. Create the text file with the following contents only:

   ```
   REM Sample File for LCCM OS/2 Exercise

   [Common data]
   OrgName = dummy_Org

   [Individual data]
   FullName = dummy_Username
   JoinDomain = dummy_Domain
   NetworkAddress = dummy_Caddress
   ```

   Note: The format of this file simulates an .INI file. Normally, you would edit an existing .INI file, .CMD file, or other text-based file and replace existing values with "dummy" names. The "dummy" names will be referenced in the final-image batch file you create later in this exercise. When the image is downloaded, the customization batch file will replace the dummy names with values that are common to the organization and unique to the individual client.

   b. Save the file on the donor workstation as:

   ```
   C:\LANCLI\MOCKINI.TXT
   ```

7. At the donor workstation, create and save a backup batch file.

   a. Use a text editor to create a backup batch file that has the following content:

   ```
   C:
   CD \
   \LANCLI\DISK /F=C:\LANCLI\OS2WARP.BB /D=C /R=R
   MD S:\OS2WARP
   CD S:\OS2WARP
   XCOPY C:\*.* S:\OS2WARP /H /O /T /S /E /R /V
   ```

   The backup batch file is used to prepare the image and transport it to the server.

   b. Save the backup batch file on the donor workstation as:

   ```
   C:\LANCLI\BACKUP.CMD
   ```

8. Assign the donor boot startup image and connect the donor workstation to the network as described in the procedure “Using a Donor Workstation Startup Image” on page 63.

9. Change the directory to drive C.

10. Run the backup batch file by changing to the LANCLI directory and typing:

    ```
    BACKUP.CMD
    ```

    This command transports the image from the donor workstation to the server.

11. After the image has been transferred, stop the donor boot process in the Processing/Information window.

12. At the administrator console, create a preload-image batch file.

Note: Creating a preload-image batch file is an optional step for LANClient Control Manager. A preload-image batch file is needed only if you want to partition the hard disk of the client workstation before installing the image.

a. Use a text editor to create a preload-image batch file that has the following content:

```
fdisk /delete:all /disk:1
fdisk /create /bootmgr
fdisk /create:hpfs /vtype:1 /disk:1 /start:t /size:300
```

b. Save the preload-image batch file as:

LCCM_install_dir\HPFS_PR.LCP

Note: This file can have any name you want, but the extension must be .LCP. The name HPFS_PR.LCP will be used throughout the remainder of this exercise.

13. At the administrator console, create a final-image batch file.

Note: The final-image batch file runs on the client from a DOS network startup when the Hybrid RPL download is processed.

a. Use a text editor to create a final-image batch file that has the following content:

```
FORMAT C: /FS:HPFS < Z:\IMAGES\FORMAT.TXT
Z:\IMAGES\DISK /F=Z:\IMAGES\OS2WARP\LANCLI\OS2WARP.BB /R=W /V= /D=C
XCOPY Z:\IMAGES\OS2WARP\*.* C:\ /H /O /T /S /E /R /V
C:\OS2\INSTALL\BOOTDISK\SYSINSTX.COM C:
C:
CD C:\
\LANCLI\DEDIT /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Org %ORGNAME%
\LANCLI\DEDIT /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Username %USERNAME%
\LANCLI\DEDIT /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Domain %DOMAIN%
\LANCLI\DEDIT /R /N0 C:\LANCLI\MOCKINI.TXT dummy_Caddress %CADDRESS%
```

b. Save the final-image batch file on the server as:

LCCM_install_dir\OS2.LCI

Note: This file can have any name you want, but the extension must be .LCI. The name OS2.LCI will be used throughout the remainder of this exercise.

14. Create a Software Profile Details notebook for your image.

a. At the Installation/Maintenance window of LANClient Control Manager, select **Profile** from the menu bar, then select **Create New**. This opens the Software Profile Details notebook.

b. On the Details page:

- Type `OS2_WARP_Test` in the Profile Name field.

  Note: You can name the profile any name you want. The profile name OS2_WARP_Test will be used throughout the remainder of this exercise.

- Click on the Hybrid RPL OS/2 Transport radio button.
- In the Description field, type a description such as:

```
Exercise profile
OS/2 Warp
```

c. On the Minimum HW page:

- Select the appropriate network adapter for your intended client workstation from the drop-down menu of the Network Adapter field.
- Select **Unknown** from the drop-down menu of the Video Chipset field.
- Type **0** in the RAM field.
- Type **0** in the Hard Disk field.

d. On the RPL Details page, use the browse button to find:

- In the Preload Image File Name field:

  `HPFS_PR.LCP`

- In the Final Image File Name field:

  `OS2.LCI`

  Also, ensure that the Enable Preload box is checked.

e. On the Parameters page, set up the following parameter names:

Important: Blank spaces between words are not supported.

```
Names      Values
=====      ======
ORGNAME    Type in your company name
```

Note: The values on this page are common for all clients using this profile.

f. On the Client Parameters page, set up the following parameter names:

```
Names     Values
=====     ======
USERNAME  - Leave Blank -
DOMAIN    - Leave Blank -
```

Note: The names used on this page are passed to the Parameters page of the Individual Client Details notebook for each client assigned to this profile. Although you used %CADDRESS in your final-image batch file, you do not need to specify it on this page. %CADDRESS is a special value that picks up the contents of the Address field from the Details page of the Individual Client Details notebook. For additional information about other special parameters, see “Parameter Exceptions” on page 67.

g. Select **OK** to save and close the notebook.

15. Assign the client to the new software profile, but DO NOT PROCESS THE CHANGES UNTIL INSTRUCTED TO DO SO IN A LATER STEP OF THIS EXERCISE. (For instructions on assigning clients, see “Assigning Clients to Software Profiles” on page 73.)
16. Open the Individual Client Details notebook for the new client assigned to this image. (See “Modifying an Existing Client” on page 76 for details.)

a. On the Parameters page, set up the values for the following names:

Important: Blank spaces between words are not supported.

```
Names       Values
=====       ======
USERNAME    Type in the end user's name
DOMAIN      Type in the domain name (or some text to represent
            a domain name).
```

b. Select **OK** to save and close the notebook.

17. Click on the Process button in the Installation/Maintenance window to begin processing.

18. Turn on the client workstation.

    If you used a preload-image batch file, the client hard disk is partitioned. Next, the hard disk is formatted, and the image is downloaded to the client hard disk and is customized for that specific client. The next time the client is started, it starts OS/2 Warp from its own hard disk.

    If you open the MOCKINI.TXT file at the client workstation, you will see that the dummy parameters have been replaced with the parameters defined in the LANClient Control Manager notebooks.

    Additional clients can be assigned to the same profile. However, before processing the additional assignments, edit the Individual Client Details notebook for each new client and modify the Parameters page as described in this exercise.

Chapter 6. Example Files

Introduction

The files in this section are provided as examples that can be used with LANClient Control Manager. You can also find these examples in the exercises section of this guide.

Comments are provided to help explain the overall function of each example and the specific utilities that are used. In most cases, each comment applies to the line of code that follows it. Comments are marked by REM statements.

Backup Batch Files - DOS/Windows Image

```
REM  Your donor workstation should be connected to the
REM  network and server where LANClient Control Manager
REM  has been installed.

C:
CD \

REM  Save the boot record to a file using DISKDOS.EXE.

\LANCLI\DISKDOS /F=C:\LANCLI\DOS7.BB /D=C /R=R

REM  Change all files to be normal files with read/write
REM  access using LCATTRIB.EXE.  This is necessary because
REM  the batch files use XCOPY to transport the files.
REM  All attributes are saved into a file.

\LANCLI\LCATTRIB C:\ /A /S

REM  Drive S is root mapped to the LCCLIENT directory.  For
REM  details, see "Environment for Hybrid RPL" on page 6.
REM  Create the directory on the server into which you will
REM  store the image, then change to that directory.

S:
MD \DOS70
CD \DOS70

REM  Use XCOPY to transport the contents of the donor
REM  workstation hard disk to a directory you created
REM  on the server.

XCOPY C:\*.* S:*.* /S /E

REM  Restore the hidden and system file attributes on the
REM  donor workstation using LCATTRIB.EXE.

C:
CD \
C:\LANCLI\LCATTRIB C:\ /R /S
```

Backup Batch File - OS/2 Warp Image

The following backup batch file is for an OS/2 Warp image using the HPFS file system. This file is used with the OS/2 version of LANClient Control Manager using an OS/2 Transport.

```
REM  Your donor workstation should be connected to the
REM  network and server where LANClient Control Manager
REM  has been installed.

C:
CD \

REM  Save the boot record to a file using DISK.EXE.

\LANCLI\DISK /F=C:\LANCLI\OS2WARP.BB /D=C /R=R

REM  Create the directory on the server into which you will
REM  store the image.  Then, change to that directory.  In
REM  this example, drive S is root mapped to the
REM  CLNTFILE\IMAGES directory.

MD S:\OS2WARP
CD S:\OS2WARP

REM  Use XCOPY to copy the contents of the donor workstation
REM  hard disk to a directory you created on the server.

XCOPY C:\*.* S:\OS2WARP /H /O /T /S /E /R /V
```

Preload-Image Batch Files

- The following is an example preload-image batch file for a FAT file system using the DOS transport option.

  ```
  REM  This example creates two equal partitions, each
  REM  occupying 50% or the total available hard disk space.

  ECHO ON
  S:\LCBTRDEL 0 /S
  FDISK < S:\LC5050FD.DAT
  ```

  The LC5050FD.DAT file is supplied with LANClient Control Manager. This file is automatically downloaded to the client during the Hybrid RPL process. To create a single partition occupying 100% of the available disk space, substitute LCFDISK.DAT for LC5050FD.DAT. For details, see "Response Files for the FDISK Command" on page 116.

- The following is an example preload-image batch file for an HPFS file system using the OS/2 transport option. This example installs OS/2 Boot Manager, creates a bootable partition of 300 MB, and leaves the rest of the disk space unused.

  ```
  REM  This preload batch file contains FDISK commands to
  REM  set up BootManager and a bootable hard disk
  REM  partition.  See the OS/2 Help on FDISK to write
  REM  a similar file for your client workstations.

  fdisk /delete:all /disk:1
  fdisk /create /bootmgr
  fdisk /create:hpfs /vtype:1 /disk:1 /start:t /size:300
  ```

  For additional information about FDISK commands, refer to your OS/2 documentation.

Final-Image Batch Files - DOS/Windows Image

The following example final-image batch file can be used with a DOS image using the DOS transport option.

```
REM  Format drive as FAT.  DOS Transport uses a DOS FORMAT command
REM  and maps to drive S for the image files.

FORMAT C: /U < S:\FORMAT.TXT

REM  Transport the image from the server to the client
REM  workstation.

XCOPY S:\DOS70\IBMBIO.COM C:\
XCOPY S:\DOS70\IBMDOS.COM C:\
XCOPY S:\DOS70\*.* C:\ /S /E /V

REM  Set the boot record at the client workstation
REM  using DISKDOS.EXE.

C:
CD \
\LANCLI\DISKDOS /F=C:\LANCLI\DOS7.BB /R=W /D=C

REM  Restore the hidden and system file attributes at the
REM  client workstation using LCATTRIB.EXE.

\LANCLI\LCATTRIB C:\ /R /S

REM  If passing parameters is required, include lines
REM  such as the following.  For details, see
REM  "Passing Parameters to Image Batch Files" on page 65.
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_1 %YourValue1%
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_2 %YourValue2%
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_3 %YourValue3%
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_4 %YourValue4%
```

Final-Image Batch File - OS/2 Warp Image

The follwing example final-image batch file can be used with an OS/2 image using the OS/2 transport option.

```
REM  Format drive as HPFS.  OS/2 Transport uses an OS/2
REM  FORMAT command.

FORMAT C: /FS:HPFS < Z:\IMAGES\FORMAT.TXT

REM  Restore the boot record on the client workstation using
REM  DISK.EXE.

Z:\IMAGES\DISK /F=Z:\IMAGES\OS2WARP\LANCLI\OS2WARP.BB /R=W /V= /D=C

REM  Transport the image from the server to the client
REM  workstation.

XCOPY Z:\IMAGES\OS2WARP\*.* C:\ /H /O /T /S /E /R /V

REM  Install the system files using SYSINSTX.COM.

C:\OS2\INSTALL\BOOTDISK\SYSINSTX.COM C:

C:
CD C:\

REM  If passing parameters is required, include lines
REM  such as the following.  For details, see
REM  "Passing Parameters to Image Batch Files" on page 65.
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_1 %YourValue1%
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_2 %YourValue2%
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_3 %YourValue3%
REM  \LANCLI\DEDITD /R /N0 C:\directory\filename dummy_4 %YourValue4%
```

LCU REXX Command File

The following is an example of the LCU REXX command file. The file used on your CID server might vary from the example given here.

When you edit your file, save it using a unique client name, for example CLIENT_99. You should then specify this file as the LCU Client Name in the RPL Details page of the Individual Client Details notebook.

If all of your LCU clients are going to be of the same type, you can create a single file, named DEFAULT.CMD and specify this file as the LCU Client Name.

```
/* This is the LAN CID Utility skeleton command file.  This command file     */
/* illustrates the installation of OS/2 and an application.                  */

/* Specifically, this command file installs OS/2 2.1 and LS 4.0.             */

/*-----------------------------------------------------*/
/*         DO NOT MODIFY THE NEXT EIGHT LINES          */
/*-----------------------------------------------------*/

parse ARG client logfile additional

QUEUE_REBOOT = 0
CALL_AGAIN = 0

Call AddDLLFunctions

x.0.instprog = ''
x.0.rspdir   = ''
x.0.statevar = 'CAS_STATE'
x.0.default  = ''


/*-----------------------------------------------------*/
/*             MODIFICATIONS START HERE                */
/*-----------------------------------------------------*/


/*****************************************************/
/*                SRVATTCH SECTION                   */
/*****************************************************/

/* 'SRVATTCH y: \\CODESERV\LCULOG'   */                        /* Additional SRVATTCHs can be placed here*/


/* 'SRVATTCH y: SERVER2'         */                          /* They can be placed before specific     */
                                                             /* RunInstall statements too if you only  */
                                                             /* want to attach to a special server     */
                                                             /* right before a specific install.       */
```

```
/*****************************************************/
/*                VARIABLES SECTION                  */
/*****************************************************/

/*-----------------------------------------------------*/
/*         DO NOT REMOVE THE NEXT FIVE LINES           */
/*              (They may be modified)                 */
/*-----------------------------------------------------*/

bootdrive = 'c:'                                        /* Boot Drive                              */
configsys = bootdrive ]] '\CONFIG.SYS'                  /* Fully qualified path to CONFIG.SYS      */
maintdir  = bootdrive ]] '\SERVICE'                     /* Maintenance directory, refrenced by     */
                                                        /*   SEMAINT, SEINST, and LAPS.            */
exepath   = 'X:\EXE\V300'                               /* Path to executable directory on server */
dllpath   = 'X:\DLL\V300'                               /* Paths to the DLL directories on server */
lapsrsp   = 'X:\RSP\LAPS'

/*-----------------------------------------------------*/
/* The next four lines are included to make it         */
/* easier to change the version of OS/2 2.x that is    */
/* to be installed.                                    */
/*                                                     */
/* These variables are referenced in the product       */
/* data sections for SEINST and SEMAINT.               */
/*-----------------------------------------------------*/

os2dir  = 'OS2V300'                                      /* Name of OS/2 2.1 directories         */
os2img  = 'X:\IMG\OS2WARP.FULLPAK'                      /* - product image directory            */
os2rsp  = 'X:\RSP\' ]] os2dir                           /* - response file directory            */
os2log  = 'Y:\' ]] os2dir                            /* - log file directory                 */


/*****************************************************/
/*               PRODUCT DATA SECTION                */
/*****************************************************/

x.seinst = 1                                                        /* structure index                      */
x.1.name='OS/2 3.0'                                                 /* product name                         */
x.1.statevar = 'CAS_' ]] x.1.name                                   /* state variable name                  */
x.1.instprog = exepath ]] '\seinst                    ',            /* fully qualified install program name */
               ' /b:' ]] bootdrive ]] '               ',            /* - bootdrive                          */
               ' /s:' ]] os2img ]] '                  ',            /* - source directory                   */
               ' /t:' ]] maintdir ]] '                ',            /* - service directory                  */
               '/l1:' ]] os2log ]] '\' ]] client ]] '.log ',        /* - log file                           */
               ' /r:'                                               /* - response file flag (auto selection)*/
x.1.rspdir   = os2rsp                                               /* response file directory              */
x.1.default  = 'os2only.rsp'                                        /* default response file name           */

x.semaint = 2                                                       /* structure index                      */
x.2.name='OS/2 3.0 Maintenance'                                     /* product name                         */
x.2.statevar = 'CAS_' ]] x.2.name                                   /* state variable name                  */
x.2.instprog = exepath ]] '\semaint                   ',            /* fully qualified install program name */
                ' /s:' ]] os2img ]] '                 ',            /* - source directory                   */
                ' /t:' ]] maintdir ]] '               ',            /* - target directory                   */
                ' /b:' ]] bootdrive ]] '              ',            /* - target boot drive (not necessarily current) */
                '/l1:' ]] os2log ]] '\' ]] client ]] '.log'         /* - log file                           */
x.2.rspdir   = ''                                                   /* no auto selection                    */
x.2.default  = ''


/*-----------------------------------------------------*/
/*         NUMBER OF PROGRAMS SET UP IN THE            */
/*               PRODUCT DATA SECTION                  */
/*-----------------------------------------------------*/

NUM_INSTALL_PROGS = 2


/*-----------------------------------------------------*/
/*       DO NOT MODIFY OR REMOVE THE NEXT LINE         */
/*-----------------------------------------------------*/

OVERALL_STATE = GetEnvironmentVars()
```

```
/*************************************************/
/*                 INSTALL SECTION               */
/*************************************************/

Do Forever
  Select
    when OVERALL_STATE = 0 then do
      if BootDriveIsDiskette()   == YES    then iterate        /* Check if booted from diskette*/
                                                               /*  if it was, then goto state 1*/
      if RunInstall(x.semaint)   == BAD_RC then exit           /* Install maintenance system   */
      Call CheckBoot                                           /* Reboot if it was requested   */
    end
    when OVERALL_STATE = 1 then do
      if RunInstall(x.seinst)   == BAD_RC then exit            /* Install operating system     */
      'echo 0 > server.1'
      'echo 0 > server.2'
      Call Reboot                                              /* Reboot if it was requested   */
    end
  end
end
exit


/*********************************************************/
/*         DO NOT MODIFY ANY CODE BELOW THIS LINE !!!        */
/*********************************************************/

RunInstall: procedure expose x. queue_reboot call_again configsys logfile client OVERALL_STATE
  parse arg index, new_state, other
  install = SetEnvironmentVar(x.index.statevar)
  if install == YES then do
    state = value('REMOTE_INSTALL_STATE',,'OS2ENVIRONMENT')     /* check   REMOTE_INSTALL_STATE */
    if state <> 0 then
      rc2 = LogMessage(75, x.index.name, state, logfile)        /* log an install starting msg  */
    else
      rc2 = LogMessage(72, x.index.name, '', logfile)           /* log an install starting msg  */

    install_prog = 'CMD /C ' ]] strip(x.index.instprog)         /* build the command string     */

                                             /* If automatic responst file selection was     */
                                             /* indicated, then get the response file name   */
                                             /* and append it to the command string.         */
    if x.index.default <> '' then do
      response_file = DetermineResponseFile(x.index.rspdir, client,
                                          , x.index.default, x.index.name,
                                          , logfile)
      if response_file == '' then exit
      install_prog = install_prog ]] response_file
    end

    install_prog                                                /* Execute the install program  */

    state = value(x.index.statevar,,'OS2ENVIRONMENT')           /* Get the current install state*/
                                                                /* for this install program from*/
                                                                /* the environment.             */

                                             /* Check the return code and set the global     */
                                             /* variables accordingly.                       */

    parse value ProcessReturnCode(rc, state, QUEUE_REBOOT, CALL_AGAIN, logfile),
           with rc ',' state ',' QUEUE_REBOOT ',' CALL_AGAIN

    rc2 = value(x.index.statevar, state, 'OS2ENVIRONMENT')      /* Set the new install state for*/
                                                                /* this install program.        */

                                             /* Put the install state into the CONFIG.SYS,   */
                                             /* if this action was unsuccessful, then exit.  */

    if PutStateVar(x.index.statevar, state, configsys, logfile) <> 0 then exit
                                                                /* Code continued on next page  */
```

```
    if rc == GOOD_RC then do
      if pos('\SEMAINT', translate(install_prog)) <> 0 then     /* If the install program was   */
        Call PreserveStartupCmd(install_prog)                   /* SEMAINT, then make sure      */
                                                                /* STARTUP.CMD won't be copied  */
                                                                /* over when SEINST runs.       */

      rc2 = LogMessage(70, x.index.name, '', logfile)           /* log an install successful msg*/
      return GOOD_RC                                            /* return a good return code    */
    end

    else do
      rc2 = LogMessage(71, x.index.name, '', logfile)           /* log an install failed msg    */
      if (new_state <> '') then                                 /* If a new state was requested,*/
                                                                /* then set OVERALL_STATE to the*/
        rc2 = SetState(new_state, 'RunInstall', 2)              /* new state.                   */

      return BAD_RC                                             /* return a bad return code     */
    end
  end
  return GOOD_RC


/*************************************************************/
PreserveStartupCmd: procedure

  parse upper arg string, other

  if pos('/T:', string) <> 0 then                               /* Determine if there is a      */
    findvalue = '/T:'                                           /* target parameter.  If there  */
  else                                                          /* is none, return.             */
    if pos('-T:',string) <> 0 then
      findvalue = '-T:'
    else
      return 0

  remain = substr(string, pos(findvalue, string) + 3)           /* Get the value of the target  */
                                                                /* parameter.                   */
  blank = pos(' ', remain)

  if (blank <> 0) then
    param = substr(remain, 1, blank-1)
  else
    param = remain
                                              /* Erase startup.lcu in the target directory,  */
                                              /* then rename startup.s13 to startup.lcu      */

  'if exist ' param ]] '\startup.lcu erase  ' param ]] '\startup.lcu'
  'if exist ' param ]] '\startup.s13 rename ' param ]] '\startup.s13 *.lcu'

  return 0

/*************************************************************/
GetEnvironmentVars: procedure expose X. NUM_INSTALL_PROGS


  OVERALL_STATE = value(x.0.statevar,,'OS2ENVIRONMENT')         /* Get the overall install state */
                                                                /* from the environment.         */

  if OVERALL_STATE == '' then do                                /* If the overall install state  */
    OVERALL_STATE = 0                                           /* has not been set yet, reset   */
    do I=0 to NUM_INSTALL_PROGS by 1                            /* all the state vars to 0.      */
      if x.I.statevar <> '' then
        rc = value(x.I.statevar,'0','OS2ENVIRONMENT')
    end
  end

  return OVERALL_STATE
```

```
/*************************************************************/
SetEnvironmentVar: procedure
  parse arg env_string, other
  if env_string == '' then do                                 /* If the install program has   */
                                                              /* no state variable, then ...  */

    rc = value('REMOTE_INSTALL_STATE','0','OS2ENVIRONMENT')   /* Set the REMOTE_INSTALL_STATE */
                                                              /* to 0 so that the program     */
                                                              /* being run can know that is   */
                                                              /* being run in an unattended   */
                                                              /* environment.                 */

    return YES                                                /* return install=yes           */

  end

  state = value(env_string,,'OS2ENVIRONMENT')                 /* Otherwise, get the value of  */
                                                              /* the state variable from the  */
                                                              /* environment.                 */

  if state <> '' then do                                      /* If the state variable exists */

    rc = value('REMOTE_INSTALL_STATE',state,'OS2ENVIRONMENT') /* Set the REMOTE_INSTALL_STATE */
                                                              /* environment variable to the  */
                                                              /* value of the state variable. */

    return YES                                                /* return install=yes           */
  end
  else                                                        /* Otherwise,                   */
    return NO                                                 /* return install=no            */


/*************************************************************/
BootDriveIsDiskette:

  if IsBootDriveRemovable() == 1 then do                      /* If the drive booted from is  */
                                                              /* a diskette drive, then set   */
    rc2 = SetState(OVERALL_STATE+1)                           /* the OVERALL_STATE to the     */
                                                              /* requested value.             */
    return 'YES'

  end

  else                                                        /* else the machine was booted  */
                                                              /* from the hardfile.           */
    return 'NO'

/*************************************************************/
BootDriveIsFixedDisk:

  if IsBootDriveRemovable() == 0 then do                      /* If the drive booted from is  */
                                                              /* a fixed disk, then set       */
    rc2 = SetState(OVERALL_STATE+1)                           /* the OVERALL_STATE to the     */
                                                              /* requested value.             */
    return 'YES'

  end

  else                                                        /* else the machine was booted  */
                                                              /* from a diskette.             */
    return 'NO'

/*************************************************************/
SetState:
  parse arg new_state, proc_name, param_num, other

    if datatype(new_state, number) <> 1 then do               /* If the new state requested is*/
                                                              /* not numeric, then log an     */
      if proc_name <> '' then                                 /* error.                       */
        LogMessage(63, proc_name, param_num, logfile)
      else
        LogMessage(63, 'SetState', 1, logfile)

      exit
    end

    OVERALL_STATE = new_state                                 /* Set the OVERALL_STATE to the */
                                                              /* new state requested.         */

    rc = value(x.0.statevar, new_state, 'OS2ENVIRONMENT')     /* Save the OVERALL_STATE in the*/
                                                              /* environment.                 */
    return 'NO_ERROR'
```

```
/************************************************************/
SaveStates:

  do I=0 to NUM_INSTALL_PROGS by 1           /* Put the install states into the CONFIG.SYS,  */
    if x.I.statevar <> '' then               /* if this action was unsuccessful, then exit.  */

      if PutStateVar(x.I.statevar, value(x.I.statevar,,'OS2ENVIRONMENT'),
                     , configsys, logfile) <> 0 then exit
  end

  return

/************************************************************/
RebootAndGotoState:
  parse arg new_state, other

  rc2 = SetState(new_state, 'RebootAndGotoState', 1)          /* Set the state to go to in    */
                                                              /* OVERALL_STATE.               */

  Call SaveStates                                             /* Save the environment vars    */

  Call Reboot                                                 /* Reboot the machine           */

  return


/************************************************************/
CheckBoot:
  if QUEUE_REBOOT <> 0 then do                                 /* If a reboot has been queued  */
                                                               /* by an install program ...    */

    if CALL_AGAIN == 0 then                                    /* If no install programs want  */
                                                               /* to be recalled ...           */

      rc = SetState(OVERALL_STATE+1)                           /* Increment the overall state  */
                                                               /* variable.                    */

    Call SaveStates                                            /* Save the environment vars    */

    Call Reboot                                                /* Reboot the machine           */

  end

  else                                                         /* Otherwise, increment the     */
    rc = SetState(OVERALL_STATE+1)                             /* state variable and go on.    */

  return


/************************************************************/
Reboot:
  bootdrive

  rc = value('OS2_SHELL', bootdrive ]] '\OS2\CMD.EXE', 'OS2ENVIRONMENT')
  rc = value('COMSPEC',   bootdrive ]] '\OS2\CMD.EXE', 'OS2ENVIRONMENT')

  'cls'
/*   rc = AskRemoveDiskIfFloppy() */

  pathlen = length(exepath)                                    /* Get length of exepath        */
  posslash = lastpos("\",strip(exepath))                       /* Determine the last occurcnce */
                                                               /*   of '\' in exepath          */

  if posslash = pathlen then                                   /* If '\' is the last character */

    cmdline = exepath ]] 'SETBOOT /IBD:' ]] bootdrive          /* Then append 'SETBOOT'        */

  else

    cmdline = exepath ]] '\SETBOOT /IBD:' ]] bootdrive         /* Else append '\SETBOOT'       */

  LogMessage(74, '', '', logfile)                              /* Log a message indicating     */
                                                               /* reboot.                      */
  cmdline
  cmdline

  LogMessage(73, 'SETBOOT', '', logfile)                       /* If the code gets to here, the*/
                                                               /* reboot failed.  Log a message*/
  exit                                                         /* and exit.                    */

  return
```

```
/*********************************************************/
AddDLLFunctions:
  Call RxFuncAdd 'ProcessReturnCode',     'CASAGENT', 'PROCESSRETURNCODE'
  Call RxFuncAdd 'DetermineResponseFile', 'CASAGENT', 'DETERMINERESPONSEFILE'
  Call RxFuncAdd 'PutStateVar',           'CASAGENT', 'PUTSTATEVAR'
  Call RxFuncAdd 'LogMessage',            'CASAGENT', 'GETANDLOGMESSAGE'
  Call RxFuncAdd 'AskRemoveDiskIfFloppy', 'CASAGENT', 'ASKREMOVEDISKIFFLOPPY'
  Call RxFuncAdd 'IsBootDriveRemovable',  'CASAGENT', 'ISBOOTDRIVEREMOVABLE'
  Call RxFuncAdd 'GetOS2Version',         'CASAGENT', 'GETOS2VERSION'
  Call RxFuncAdd 'SetCIDType',            'CASAGENT', 'SETCIDTYPE'

  return
```

Important: If you are using OS/2 LAN Server 4.0, refer to the LAN CID Utility Online Guide. This guide can be installed from the installation CD for the version of OS/2 that you are using. This comprehensive guide details all the many features and options of the LAN CID Utility. These features are beyond the scope of the LANClient Control Manager User Guide.

Chapter 7. Utilities Provided by LANClient Control Manager

Utilities Used in Image Batch Files

The utilities provided in this section can be found in the *LCCM_install_dir*\CLNTFILE directory.

DEDITD or DEDIT

Objective: To use the DEDITD.EXE or DEDIT.EXE (for OS/2 transport only) utility that replaces, inserts, or appends strings within text files.

The syntax of the command is:

```
DEDITD (DEDIT) /I[L]A | /I[L]B | /R | /AE | /AS [/Nnumber] target [search] replace
```

Options for the command are:

```
/IA|B      Insert after, before search
/ILA|B     Insert in the line after, before search
/R         Replace search with target throughout the file
/AE|S      Append replace to a line at the end or start of the file
/N         Perform an action
           (Default is to do it once, as in /N1)
number     Perform action this number of times
           /N0 inserts/replaces all occurrences)
target     Full path and name of the text file to edit
search     Optional string to search for
replace    String to substitute/append on search string
```

For example, the following line replaces the first 5 occurrences of the string LOADHIGH in the file C:\AUTOEXEC.BAT with the string LOAD.

```
DEDITD /R /N5 C:\AUTOEXEC.BAT LOADHIGH LOAD
```

DISKDOS.EXE or DISK.EXE

Objective: To save (read) and restore (write) the boot record using the DISKDOS or DISK command. The DISK command is used with OS/2 transport only.

The syntax of the command is:

```
DISKDOS (DISK) [/V] /F=filename /D=drive [/R=R|W]
```

Options for this command are:

```
/V              For debug output
/F=filename     File to read/write from/to
/D=drive letter Logical drive to read/write
/R=R|W          R for read, W for Write
```

LCATTRIB.EXE

Objective: To back up and restore hidden and system file attributes that are not transferred using (DOS) XCOPY.

LCATTRIB.EXE saves the attributes in a file and resets them. The file is saved in the present working directory. Restore them again on your donor workstation after transporting the image. Restore them on the target client workstation after the image has been received.

The syntax for the command is:

```
LCATTRIB drive:directory [options]
```

Options for the command are:

```
directory       Full path of directory to start from
/S              Recurse sub-directories
/A              Alter file attributes
/R              Restore file attributes
```

For example, to back up the attributes for drive C, type:

```
LCATTRIB C: /A /S
```

To restore attributes for drive C, type:

```
LCATTRIB C: /R /S
```

LCBTRDEL.EXE

Objective: To use the LCBTRDEL.EXE utility to delete the master boot record of a physical disk drive. This action destroys all partitions on the disk and, for normal purposes, all data saved on it. Use this utility only if you want to partition the disk using FDISK.

The syntax of the command is:

```
LCBTRDEL n /S
```

where n is the disk drive number and /S is a *safety* flag to prevent accidental use.

After using LCBTRDEL.EXE, you would normally call FDISK. Since the DOS version of FDISK has no command line control, you have to prepare a response file of characters to pipe input to FDISK to run it automatically. To do this:

1. Prepare a DOS-startup diskette containing FDISK.COM and LCBTRDEL.EXE.
2. Start up a donor workstation using the diskette.
3. Run LCBTRDEL to delete the master boot record.
4. Start FDISK.
5. Using FDISK, partition the drive the way you want it, while writing down the exact sequence of keystrokes required.
6. Using a text editor which can accept non-printable ASCII characters, create a file containing the characters required. (The ESC key is 27 decimal, 1B hexadecimal, and the Enter key is 13 decimal, 0D hexadecimal.)
7. Test the file by repeating the process, but calling FDISK with your file piped into it.

   For example:

   ```
   C:\LCCM\INTER.EXE FDISK < C:\LCCM\MYKEYS.DAT
   ```

   Note: It is important to run LCBTRDEL again before FDISK, since the sequence of commands required by FDISK is different depending on how the disk is partitioned before you run it. LCBTRDEL gives you a common starting point.

Response Files for the FDISK Command

The FDISK command can be used to prepare the hard disk so that file systems can be copied to it. Two response files are provided by LANClient Control Manager to run the FDISK command unattended.

- LC5050FD.DAT contains the responses for FDISK to process a disk with no partitions defined and to create one primary and one secondary partition, each taking 50% of the disk space.

  Important: If the size of the client workstation hard disk is 4 GB or greater, you cannot use LC5050FD.DAT. LC5050FD.DAT creates a primary DOS partition that is 50% of the hard disk space, and this partition cannot exceed 2 GB.

- LCFDISK.DAT contains the responses for FDISK to process a disk with no partitions defined and to create a single partition, 100% of available disk space.

If you intend to setup DOS clients, using the DOS transport option, you must use the DOS version of FDISK. The DOS version of FDISK does not support a command line interface. Therefore, to run the DOS FDISK command unattended, you must prepare a file of responses in advance, because the program does not have a command line interface. This response file is not required by the OS/2 version of FDISK, which does have a command line interface. If running FDISK on an OS/2 HPFS or FAT client, the FDISK commands can be specified over several lines in a preload-image batch file. Type HELP FDISK or FDISK /HELP at an OS/2 command line to obtain more information on available FDISK options under OS/2.

Note: When using FDISK, you should start from a known disk configuration by deleting all partitions. The utility LCBTRDEL.EXE resets the hard disk to a known state by deleting the master boot record. For more details, see "LCBTRDEL.EXE" on page 115.

The following example is the sequence of responses found in the LC5050FD.DAT file:

```
ENTER        Create DOS partition
ENTER        Create Primary DOS partition
N ENTER      Do not use all disk space
50% ENTER    Use 50% of disk space
ESC          Return to FDISK Options
ENTER        Create DOS partition
2 ENTER      Create extended DOS partition
ENTER        Use maximum available space
ESC          Go to create logical DOS drives
ENTER        Use all available space
ESC          Return to FDISK options
2 ENTER      Set active partition
1 ENTER      Partition 1
ESC          Return to FDISK options

ENTER        Reboot
```

The most likely variation would be to create one or more partitions of fixed size. To do this you just have to change the text *50%* to the size of the partition required.

Note: LANClient Control Manager is currently restricted to managing client workstations with a maximum of two DOS drives. You can create more partitions, but no more than two can be primary or logical DOS drives.

If you want to create your own response file you must first go through the FDISK procedure to partition the hard disk and write down every keystroke you use. Be sure to include the final keystroke to restart the workstation. Next, use an editor to prepare a binary file with the ASCII codes for the keystroke characters. (ENTER is 13 decimal, 0D hex. ESC is 27 decimal, 1B hex.)

Other Utilities

The WATCHDOG.EXE utility can be found in the *LCCM_install_dir*\UTILS directory. The OS2WAKE.EXE utility is in the *LCCM_install_dir*\LS\UTILS directory.

WATCHDOG.EXE

There might be circumstances where LANClient Control Manager clients encounter problems in completing a download from the server. Typically, this happens when a client has started to scan, and the scan is stopped at the server before the client has completed the scan process. This can also happen during the execution of a software profile download, if processing is stopped or another server error occurs. In these circumstances, the client is stopped at an error condition, and manual intervention would normally be required.

To recover from these situations, a utility is provided by LANClient Control Manager that performs a *watchdog* type function for the client.

The watchdog program reboots the client after the default time (3 minutes) has expired. The default time can be over-ridden by issuing a command within any batch file used within LANClient Control Manager.

The watchdog utility consists of two programs:

- WATCHDOG.EXE

  A DOS-device driver that monitors the timer and reboots the client when the timeout expires. The driver sets an initial timeout value of 3 minutes.

- WDSET.EXE

  A DOS program that sets a new value in minutes for the timeout period of the watchdog timer.

To install the watchdog function:

The WATCHDOG.EXE program must be added to the RPL boot blocks.

Important: Please note that the default timeout is set to 3 minutes. If you are performing a client operation that is likely to exceed 3 minutes, then you must use the WDSET.EXE program to extend the timeout period.

To change the default timeout value, you must add the following line in any batch file used (for example, a preload-image batch file or a final-image batch file):

```
WDSET new_timeout_value

where:

new_timeout_value is a value between 0 and 65535 and
represents the new timeout value in minutes. A value of 0
will disable the watchdog timer.  For example, to set a
timeout value of 45 minutes use:

WDSET 45
```

If a failure occurs after pressing the (Start) Scan button, or if scan terminates on the server prematurely, a file called SCANERR.LOG is created on the server that has additional diagnostic information about the failure.

OS2WAKE.EXE

Objective: To power on clients remotely using the Wake on LAN feature. For use with OS/2 servers only. The OS2WAKE.EXE utility is in the *LCCM_install_dir*\LS\UTILS directory.

OS2WAKE.EXE is a stand-alone program that uses the Wake on LAN feature to power on clients remotely. The MAC addresses (addresses of the network adapters) of the clients can be specified either on the command line or in an .INI file. The IEEE 802.2 protocol must be installed and configured on the local workstation for OS2WAKE.EXE to work.

The syntax for the command to use MAC addresses from an INI file is:

```
OS2WAKE [/D delay] /F filename
```

The syntax for the command to specify MAC addresses on the command line is:

```
OS2WAKE [/D delay] address1 [address2 [...]]
```

Options for the command are:

```
address1, address2, ...   12-digit hexadecimal MAC addresses
delay                     Delay between transmission of packets in
                          milliseconds (default is 1 ms.)
filename                  INI file containing MAC addresses
```

The INI file can contain individual MAC addresses and ranges of MAC addresses. Individual MAC addresses are specified one per line, at the beginning of the line as follows:

```
001122334455
```

Ranges of MAC addresses are specified by their beginning and ending addresses as follows:

```
001122334455-001122334466
```

A sample INI file is provided with the OS2WAKE.EXE program.

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