User's Guide

MIDP for Palm OS, Version 1.0 FCS

Java™ 2 Platform, Micro Edition

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October, 2001

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Preface

The *User's Guide* for MIDP for Palm OS shows you how to install and use the MIDP for Palm OS product. It is for users who want to run Java applications on their Palm OS devices.

Before You Read This Book

Before you start this book, you must be familiar with basic Palm OS operations:

- Using ordinary Palm OS applications (like the Address Book or Phone Book)
- Using the Palm Desktop on your desktop computer
- Synchronizing your Palm OS device with your desktop computer

For information about these topics, see the user manual for your Palm OS device.

How This Book Is Organized

This book contains the following chapters:

- Chapter 1 introduces MIDP for Palm OS.
- Chapter 2 shows you how to install MIDP for Palm OS.
- Chapter 3 describes how to use Java applications written for MIDP.
- Chapter 4 shows you how to set preferences on your Palm OS device for MIDP for Palm OS and for individual Java applications.

- Chapter 5 shows you how to convert a Java application for MIDP into a Palm OS application, so that you can install the application on your Palm OS device.
- Chapter 6 discusses some problems that you might have while using MIDP for Palm OS and how to solve them.

Using Operating-System Commands

This document may not contain information on basic operating system commands and procedures such as changing directories on your desktop system, or synchronizing your Palm OS device with your desktop system. See the software documentation that you received with your desktop system or Palm OS device for this information.

Typographic Conventions

This manual uses the following typographic conventions:

Typeface	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this.
	Command-line variable; replace with a real name or value	To delete a file, type `rm` *filename*.

Related Documentation

MIDP for Palm OS and its documentation bundle include the following documentation:

Title	Description
User's Guide	Describes how to install and run Java applications written for MIDP on a Palm OS device.
Developer's Notes	Discusses issues important to the designers and developers of Java applications for Palm OS devices. It is not a full programming guide.
Example Java Applications	Shows screen shots of, and briefly describes, the examples that are included with MIDP for Palm OS.
ReadMe	Includes important last-minute information, including known bugs.

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CHAPTER 1

Introduction

MIDP is Java™ technology for portable electronic devices like mobile phones, advanced pagers, and personal digital assistants (PDAs). MIDP (Mobile Information Device Profile) is part of the Java™ 2 Platform, Micro Edition (J2ME™) technology from Sun Microsystems.

MIDP for Palm OS is a MIDP-compliant implementation. Java™ HQ is the MIDP implementation for a Palm OS device. Once you install MIDP for Palm OS on your Palm OS device, you can run any Java application written for MIDP.

A Java application written for the MIDP environment is also called a *MIDlet*. A set of Java applications written for the MIDP environment and packaged together are called a *MIDlet suite*. You install and use a MIDlet or MIDlet suite the same way you install and run any other program on your Palm OS device. If you can use your device's address book, you know almost everything you need to run Java applications.

CHAPTER 2

Installing MIDP for Palm OS

This chapter tells you how to install the MIDP for Palm OS product. It contains the sections:

- Installation Instructions
- Result of the Installation

Installation Instructions

There are two parts to installing MIDP for Palm OS. You must install the MIDP for Palm OS package on your desktop computer, and you must install the MIDP for Palm OS implementation (Java™ HQ) on your Palm OS device. This section describes both procedures.

▼ To Install MIDP for Palm OS on Your Desktop System

1. **Ensure that you have a MIDP-compatible desktop system. System requirements are:**
   - Windows or Solaris operating system
   - Synchronization software for your Palm OS device
   - Approximately 1.5 MB of disk space to download and unzip MIDP for Palm OS
2. **Remove any previous versions of MIDP for Palm OS from your desktop system.**

   There is no uninstaller; simply remove the files that you had previously placed on your desktop system.

3. **Unzip the distribution bundle into any directory.**

   This guide refers to your chosen directory as *installDir*.

   Unzipping the bundle creates a directory in *installDir* called `midp4palm1.0`, which holds the MIDP for Palm OS files and utilities described in the `readme.html` file.

▼ To Install Java™ HQ on your Palm OS Device

1. **Ensure that you have a MIDP-compatible Palm OS device. System requirements are:**
   - Palm OS 3.5 operating system, or later
   - At least 600K free storage:
     - Java™ HQ requires 560K.
     - A typical Java application requires 20 to 30K.
   - At least 4 MB total memory
     (Although Java™ HQ has been used on 2MB devices, some Java applications might not run properly on them.)
2. **Remove any old versions of MIDP for Palm OS from your Palm OS device.**

   Depending on the version of MIDP for Palm OS you had installed, the implementation could be called Java™ HQ or Java™ Mgr. See "Removing Java Applications" on page 11 if you need further instructions on removing an application from your device.
3. **Remove any Java applications from your Palm OS device.**

   See "Removing Java Applications" on page 11 for more information.
4. **Locate the MIDP for Palm OS implementation on your desktop system.**

   It is in the file *installDir*`\midp4palm1.0\PRCfiles\MIDP.prc`.
5. **Use the Palm Desktop's installation functionality on the `MIDP.prc` file.**

   See the documentation for your Palm OS device for more information.
6. **Synchronize your Palm OS device.**
7. **Reconvert all your old Java applications from their JAR and JAD files.**

   See Chapter 5 "Converting Java Applications to Palm OS Applications" for more information. If you are unable to reconvert your old Java applications, contact your application provider to get new JAD/JAR files to convert and install
8. **Reinstall the reconverted Java applications on your Palm OS device.**

   See "Installing Java Applications" on page 7 for more information.

Result of the Installation

Installing the MIDP for Palm OS implementation adds the following icon to your device's home screen:

FIGURE 1 Java™ HQ Icon

If you tap this icon, the About screen appears:

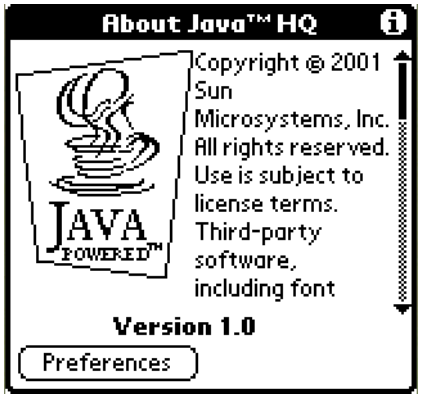

FIGURE 2 Java™ HQ About Screen

This screen contains a copyright notice and a Preferences button. Tapping the Preferences button gives you the option to change the MIDP for Palm OS global preferences. See "Setting Preferences" on page 15 for more information. This screen also provides help (a "tip") if you tap the icon.

Java™ HQ cannot launch Java applications. You run a Java application by tapping the application's icon. See "Running Java Applications" on page 8.

CHAPTER 3

Using MIDP for Palm OS

A Java application on a Palm OS device behaves like any other Palm OS application. If you can use a typical Palm OS application (like the Address Book), you already know most of what you need to run Java applications.

This chapter describes common actions that you might take with your Java application. It contains the sections:

- Installing Java Applications
- Running Java Applications
- Beaming Java Applications
- Removing Java Applications

This chapter assumes you have already installed MIDP for Palm OS on your Palm OS device, as described in Chapter 2.

Installing Java Applications

A Java application written for MIDP is distributed as a pair of files, one with a `.jar` extension and the other with a `.jad` extension. Other than their extensions, the files have the same name. For example, a poker Java application would be distributed as the files `Poker.jar` and `Poker.jad`.

When you get a Java application, for example from an application provider's web site, you must convert it to a Palm OS application before you can install it. A Palm OS application is a file that has a `.prc` extension. See Chapter 5 "Converting Java Applications to Palm OS Applications" for more information.

Note – Occasionally you will encounter a Java application that has already been converted to a PRC file. MIDP for Palm OS comes with some, such as `Demos.prc`. PRC files require no further conversion; just install the PRC file.

▼ To Install a Java Application

1. **Use the Palm Desktop's installation functionality on the converted PRC file.**

   See the documentation for your Palm OS device for more information.

2. **Synchronize your Palm OS device.**

   The application will now be on your device and its icon will appear on your device's home screen. The icon will have one of the styles shown in the following table, depending on whether the Java application contains one program or multiple programs.

TABLE 1 Styles of Default Icons

Type of Java application	Large Icon	Small Icon
Single-Program Application		
Multi-Program Application		

The icons on your Palm OS device will have this style, but might not be exactly the same as the icons in the figure. For example, each Java application provided with MIDP for Palm OS has a unique icon.

You can also map a Java application to one of your device's buttons. Do this the same way you would map any Palm OS application. See the user manual for your Palm OS device for more information.

Running Java Applications

This section covers the general procedure for running Java applications on your Palm OS device.

▼ To Run a Java Application

1. **Find the icon for the application on your device's home screen.**

   The following figure shows a home screen, and points out the icon of a Java application that you might have installed on your Palm OS device:

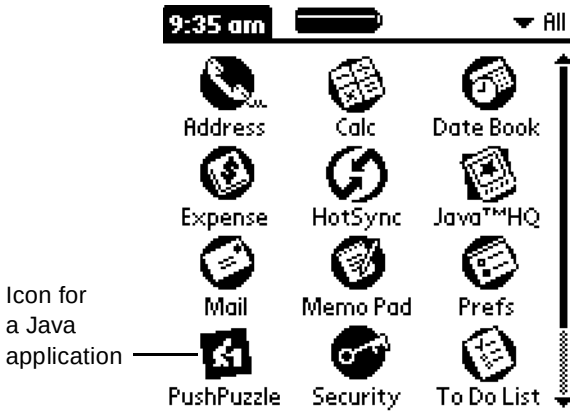

FIGURE 3 Icons on Your Device's Home Screen

2. **Tap the application's icon.**

   If you have used other Java applications, continue with Step 5.

   If this is the first time you are launching a Java application, a license will appear, similar to the one shown in the following figure:

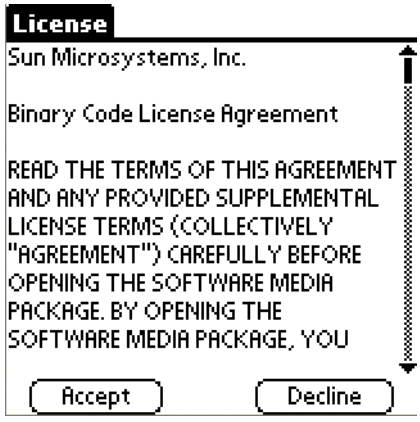

FIGURE 4 License Screen

3. **Read the license agreement.**

4. **If you accept the license, tap Accept to continue launching the application.**

   If you do not accept the license, tap Decline and you will be returned to your device's home screen.

5. **Use the application.**

   If the Java application contains a single program, that program starts immediately.

   If the Java application contains multiple programs, a choice screen appears that prompts you to choose which program you want to run. The choice screen will be similar to the one in the following figure:

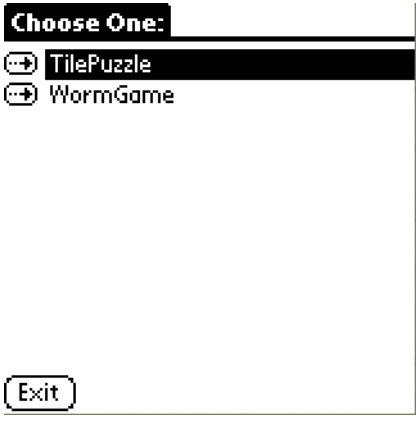

FIGURE 5 Choice Screen for a Java Application that Holds Multiple Programs

   Select a program by tapping its arrow. (Note that the highlighting indicates only that you have tapped on the program's name. You must tap the arrow to select the program.)

6. **Finish with the application by launching another application or returning to your device's home screen.**

Beaming Java Applications

Some Java applications can be beamed from one Palm OS device to another and others cannot. Even when a Java application is beamable, the recipient can only receive and run the application if the recipient has also installed MIDP for Palm OS. (The MIDP for Palm OS implementation, which has the Java™ HQ icon, is not beamable.)

Java applications that have been converted by the PRC Converter Tool must be beamed from within the application; you cannot beam them from your device's Home screen.

▼ To beam a Java Application Converted by the PRC Converter Tool

1. **Launch the application.**
2. **Tap the menu button ( ) or the application's title.**
3. **Select Beam App... from the Go menu.**

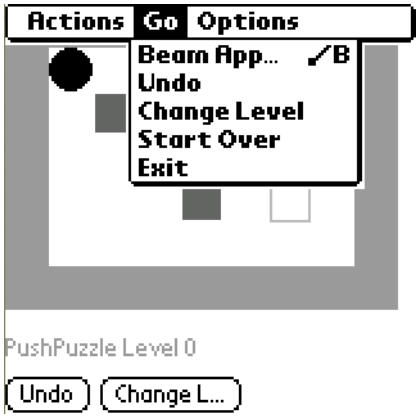

FIGURE 6 Beam App... Item in the Go Menu

If you get a PRC file directly from an application provider (and therefore you did not use the PRC Converter Tool), the Palm OS application will either be beamable or locked so that you cannot beam it. If the application is beamable, you will be able to beam it from your device's Home screen and from within the application. If the application is not beamable, the Beam App... menu item will still be present in the Go menu. If you choose it, it will beep to indicate the PRC file is locked and cannot be beamed.

Removing Java Applications

You remove a Java application, or the MIDP for Palm OS implementation, Java™ HQ, from your Palm OS device the same way you remove any other Palm OS application. If you remove Java™ HQ, Java applications will not run unless you reinstall MIDP for Palm OS on the device.

▼ To Remove a Java Application

1. **Tap the menu button ( ) when you are in your Palm OS device's home screen.**

   A menu bar similar to the following figure will appear. (Note that the figure also shows the items of the App menu. The items appear when you tap App.)

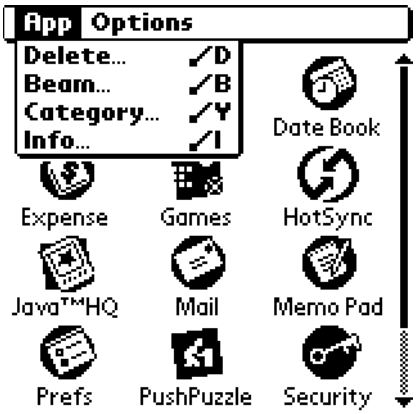

FIGURE 7 Delete... Item in the App Menu

2. **Choose Delete... from the App menu.**

   A list of removable applications will appear, in a screen similar to the one in following figure:

FIGURE 8 Dialog Box to Delete Applications

3. **Select the Java application you want to remove.**

4. **Tap Delete...**

   A confirmation screen similar to the one in the following figure will appear:

FIGURE 9 Confirmation Screen for Deleting an Application

5. **Confirm that you want to delete the application by tapping Yes.**

CHAPTER 4

Setting Preferences

There are special preference settings for the MIDP for Palm OS environment. Some apply to every Java application (*Global* preferences), while others affect only the Java application you are running (*Application* preferences).

This chapter shows you how to change your preference settings. It contains the following sections:

- "Setting Preferences"
- "Understanding Global Preferences"
- "Understanding Application Preferences"

Setting Preferences

This section presents the general procedures for changing your preference settings. See "Understanding Global Preferences" on page 17 and "Understanding Application Preferences" on page 19 for explanations of an individual preferences and their values.

▼ To Set Your Preferences

1. **Launch a Java application or Java™ HQ.**

   If you launched Java™ HQ, tap the Preferences button and proceed to Step 5.

   If you launched another Java application, proceed to the next step.

2. **Tap the menu button ( ) or the application's title.**

   A menu bar similar to the following figure will appear. (Note that the figure also shows the items of the Options menu. The items appear when you tap Options.)

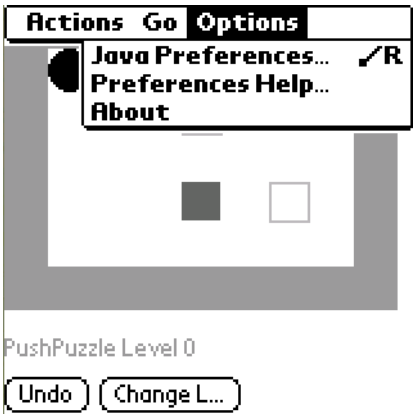

FIGURE 10 Java Preferences... Item in the Options Menu

3. **Select the Java Preferences... item from the Options menu.**

   A dialog box similar to the one shown in the following figure will appear:

FIGURE 11 Preferences Dialog Box

4. **Select Application or Global at the Preferences prompt.**

   Reminder: Application preferences affect only the Java application you are running. Global preferences affect every Java application running under MIDP for Palm OS.

5. **Update the values of the preferences you want to change.**

   See "Understanding Global Preferences" on page 17 and "Understanding Application Preferences" on page 19 for explanations of an individual preferences and their values.

6. **Tap OK to save your settings.**

   You can, instead, tap Cancel to close the screen without making changes, or Reset to return to the default MIDP for Palm OS preference settings.

   Any changes take effect the next time you launch a Java application.

   If you are changing global preferences within Java™ HQ, tapping OK completes the procedure. Skip the rest of this step and the next step.

   If you make any changes, and you are within a Java application, a dialog box similar to the one shown in the following figure will appear, to prompt you to restart the application:

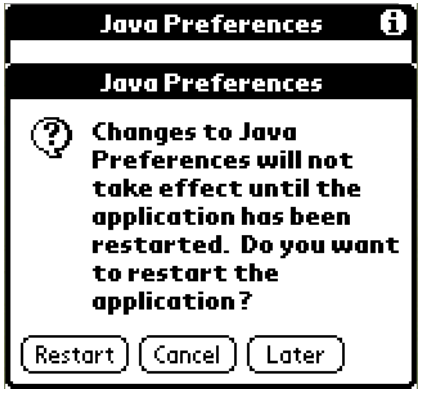

FIGURE 12 Query to Restart Your Application

7. **Tap Restart to exit the application and immediately restart it with the new preferences.**

   You can, instead, tap Cancel to keep the previous preferences unchanged and return to the current application, or Later to save your changes but continue the current application with the previous preference settings.

Understanding Global Preferences

This section explains each global preference and its values. The following figure shows the preferences in a Global Preferences dialog box:

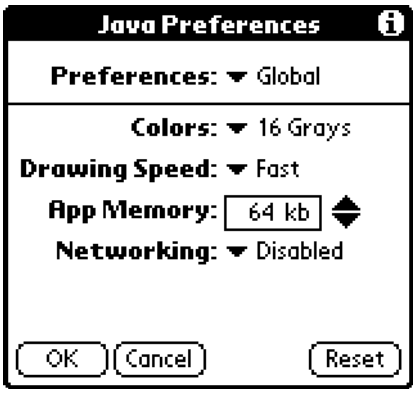

FIGURE 13 Global-Preferences Dialog Box

The global preferences are:

- Colors – Sets how many colors are used to display Java applications. The default value is device-dependant. If you decrease the number, Java applications might run faster, but with some degradation in graphics quality.
- Drawing Speed – Determines how smooth any animation will appear to be. Your options are:
  - Smooth – Animation will be smooth but applications that have animation might run more slowly.
  - Fast – Animation will be less smooth but applications that have animation might run faster.
- App Memory – Determines how much of your Palm OS device's heap memory a Java application can use. The default value is device-dependant. You can adjust the value up or down: Increasing it might improve performance, but Java applications will crash if the memory isn't available. Decreasing it might make Java applications run more reliably.
- Networking – Sets whether your device will try to connect to the internet. Your options are:
  - Disabled – The device will not connect to the internet; any network features in Java applications will not function. This is the default setting.
  - Enabled – The device will be able to connect to the internet through Palm's NetLib library. If you choose this option you are presented with an HTTP Proxy field to use if needed.

Note – Due to the limitations of palm.net and INetlib, Java applications using HTTP will not be able to communicate through palm.net and INetlib. This affects primarily Palm VII series users.

Understanding Application Preferences

You can set preferences for a particular Java application. Every Java application has the same preferences options, but changing a preference for one Java application does not affect the others. For example, you might decide that you want a particular game to display the keypad, even if other games do not.

This section explains each application preference and its values. The following figure shows the Application Preferences dialog box:

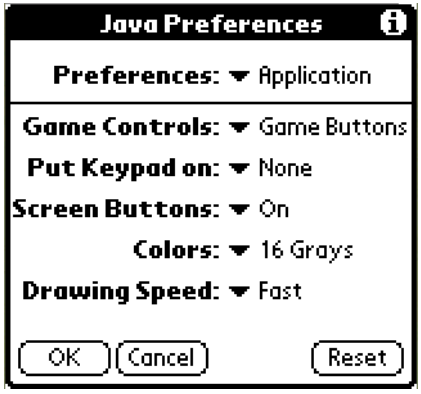

FIGURE 14 Application-Preferences Dialog Box

The application preferences are:

- Game Controls – Determines which game controls, if any, should be placed on the screen. (See "Game Control Preferences" on page 20 for more information.) Your options are:
  - Game Buttons – Does not display controls on the screen. You control the game with the buttons and graffiti area on your Palm OS device. This is the default setting.
  - Joystick – Displays just the arrow keys and Select/Fire button along one side of the screen.
  - Full Keypad – Displays a phone pad, arrow keys, Select/Fire button, and game actions (A, B, C, D) along one side of the screen.

- Put Keypad On – Sets whether to put the keypad on the left or right side of the screen. (Left-handed people sometimes prefer to put the keypad on the left, and vice-versa.)

  If the Game Controls preference is set to Game Buttons, this preference is set to None. If the Game Controls preference is set to Joystick or Full Keypad, the default setting for this preference is Right Side.
- Screen Buttons – Determines whether to display screen buttons above the graffiti area. This preference primarily affects games; it does not affect screens that present text or forms for you to fill out. You might choose to show the buttons to get more convenient access to some commands, or remove them to get more space for the application. (All of an application's commands are in the menus, so you do not lose access to any commands by turning off the buttons.)
- Colors – Sets the number of colors used to display the current application. By default this value matches the global preference; changing this value overrides the global preference for the current application.
- Drawing Speed – Determines how smooth any animation in this application will appear to be. By default, this value matches the global preference; changing this value overrides the global preference for the current application.

Game Control Preferences

Games often have different control requirements from other Palm OS applications. For example, they might want users to move game pieces around or fire game weapons. MIDP for Palm OS games have two ways that they can get input. They can use either:

- The game actions up, down, left, right, select/fire, and A, B, C, D.
- The characters on a phone keypad, which are the numbers one (1) through nine (9), *, and #.

This section covers both topics.

Game Actions

The game actions up, down, left, right, and select/fire are common to many games, whether or not they are Java applications. In addition to these common actions, MIDP for Palm OS also provides game developers the option to use four game-specific commands, A, B, C, and D. There is no way to know how or whether any particular game uses A, B, C, and D without reading its on-line help or its documentation. If a game that you want to play uses A, B, C, and D, it should have a help screen showing you what those actions do in the game.

The default way for you to play games that use game actions is through the hard buttons and graffiti area of your Palm OS device:

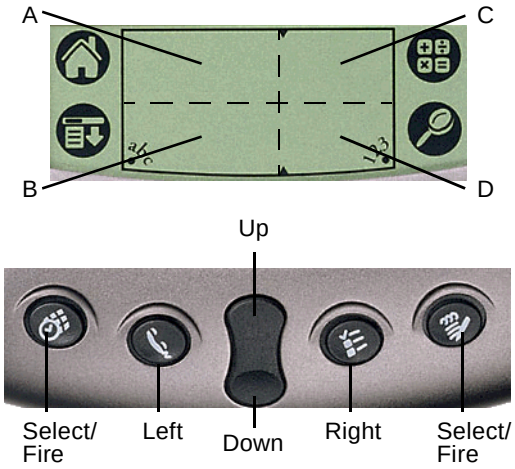

FIGURE 15 Game Actions and Your Palm OS Device

You could also use only the stylus to provide input. Note that using the mappings shown in the figure above and using only the stylus for input are mutually exclusive options. That is, if you choose to use only the stylus to provide input, then the hard buttons and graffiti area have no special mappings.

If you prefer to use stylus input, you have two choices. If the game that you are playing uses up, down, left, right, and select/fire, but does not use A, B, C, and D, you could display a Joystick on your screen, and use your stylus to tap the game action that you want to perform. On the other hand, if the game that you want to play uses the actions A, B, C, and D, then, to use only your stylus to provide game input you must display the full keypad. The next two sections tell you how to display the Joystick and the Full Keypad.

▼ To Display the Joystick

1. **Set the Game Control preference to Joystick.**

   For more specific instructions, see "To Set Your Preferences" on page 15.

2. **Set the Put Keypad On preference to Left Side or Right Side.**

   By default, after you set the Game Control Preference to Joystick, the Put Keypad On preference will be Right Side.

The following figure shows the Joystick setting, with the Put Keypad On preference set to Left Side:

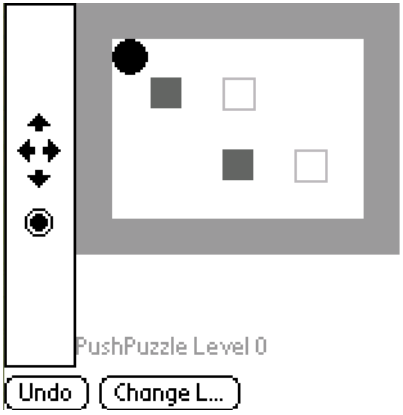

FIGURE 16 Joystick on the Left Side of the Game Screen

▼ To Display the Full Keypad

1. **Set the Game Control preference to Full Keypad.**

   For more specific instructions, see "To Set Your Preferences" on page 15.

2. **Set the Put Keypad On preference to Left Side or Right Side.**

   By default, after you set the Game Control Preference to Full Keypad, the Put Keypad On preference will be Right Side.

   The following figure shows a game with the Game Controls preference set to Full Keypad and the Put Keypad On preference set to Right Side:

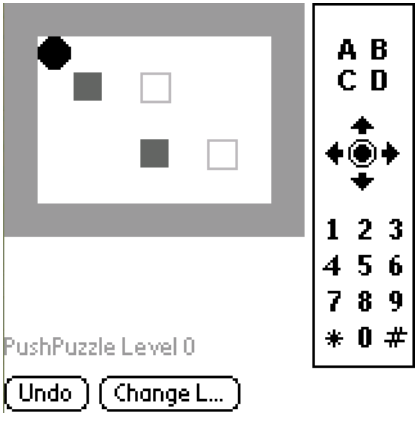

FIGURE 17 Full Keypad on the Right Side of a Game Screen

Phone Keypad

Some Java applications are games originally written for mobile phones, and therefore they expect a phone keypad for input. To play these games on your Palm OS device, you must use your stylus for input and display the full keypad as described in the previous section, “To Display the Full Keypad.”

CHAPTER 5

Converting Java Applications to Palm OS Applications

When you get a Java application written for MIDP, for example from an application provider's website, it will be a pair of files. One file will have a `.jar` extension and the other a `.jad` extension. The PRC Converter Tool changes the pair of JAR/JAD files into a Palm OS application (a PRC file) so that you can install the application on your Palm OS device.

This chapter covers how to use the PRC Converter Tool. It contains the sections:

- Preparing Your Desktop System
- Using the PRC Converter Tool

Preparing Your Desktop System

The PRC Converter Tool runs on Solaris and Windows desktop systems. Before you can use the PRC Converter Tool you must install a Java runtime environment on your desktop machine and set your `JAVA_PATH` environment variable.

Note – A Java runtime environment is required only for the PRC Converter Tool. It is not required for installing and running PRC files on your handheld device.

▼ To Prepare Your Desktop System

1. **Install a Java Runtime Environment (JRE) version 1.3 or later.**

   System requirements for these runtime environments are available on the web at the following URLs:

   - Windows (Java Runtime Environment (JRE) 1.3 or later):

     `http://java.sun.com/j2se/1.3/jre/install-windows.html`

   - Solaris SPARC (Java Runtime Environment (JRE) 1.3 or later):

     `http://java.sun.com/j2se/1.3/install-solaris-re.html`

2. **Set your `JAVA_PATH` environment variable to the JRE's location.**

   See the documentation associated with your operating system for instructions on how to set environment variables. In Windows, `JAVA_PATH` can be a User Variable.

Using the PRC Converter Tool

This section shows you how to do the following tasks:

- To Start the PRC Converter Tool From a GUI
- To Start the PRC Converter Tool From the Command Line
- To Change JAR/JAD Files Into a PRC File
- To Choose the Directory to Hold PRC Files

Note that setting a directory is optional; by default the PRC Converter Tool puts the PRC file in the same directory as the JAR/JAD files.

▼ To Start the PRC Converter Tool From a GUI

1. **Navigate to the** *installDir*`\midp4palm1.0\Converter` **directory using an appropriate GUI tool.**

   For example, in Windows, double-click on the My Computer icon and navigate to the directory from the resulting window.

2. **Double-click on the** `Converter.bat` **file.**

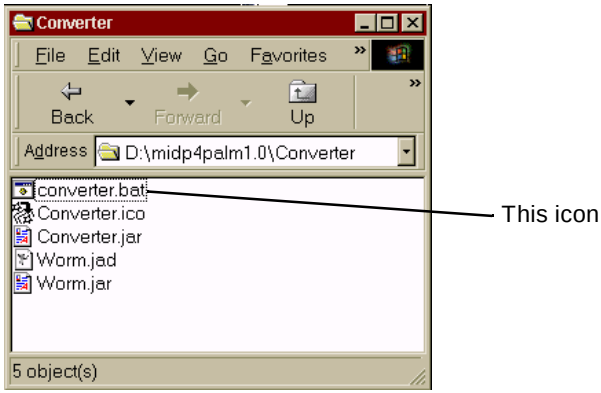

FIGURE 18 `Converter.bat` File

If your computer is configured to run JAR files directly, you could also double-click on the `Converter.jar` file. See the documentation for your Java platform for configuration instructions.

▼ To Start the PRC Converter Tool From the Command Line

1. **Open a window that provides a command prompt.**
   For example, in Windows, click Start -> Programs -> Command Prompt.
2. **Change to the** *installDir*`\midp4palm1.0\Converter` **directory.**
3. **Type** `Converter`**.**

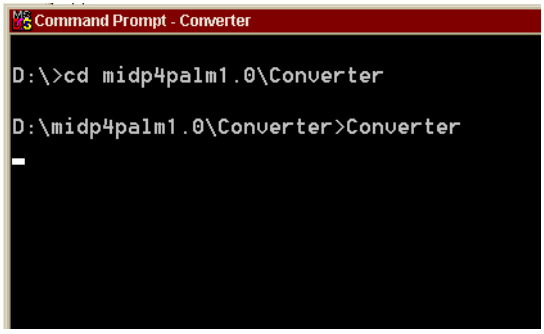

FIGURE 19 Typing `Converter` at the Command-Line Prompt

▼ To Change JAR/JAD Files Into a PRC File

1. **Make sure the JAR and JAD file are in the same directory.**
2. **If the PRC Converter Tool is not running, start it.**

   Use the instructions in either "To Start the PRC Converter Tool From a GUI" on page 27 or "To Start the PRC Converter Tool From the Command Line" on page 28.

   A window similar to the one in the following figure will appear:

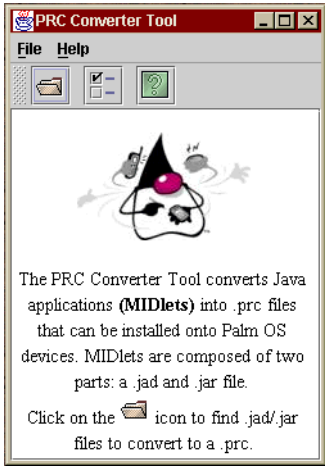

FIGURE 20 Main Window of the PRC Converter Tool

3. **Click the PRC Converter Tool's Folder button ( ), or choose Convert from its File menu.**

   A dialog box similar to the following one will appear:

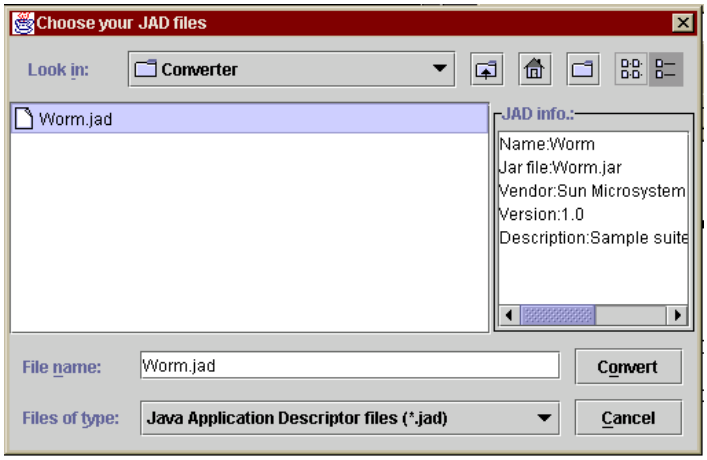

FIGURE 21 Choose Your JAD Files Dialog Box

4. **Navigate to the directory where the JAD and JAR files are located.**

5. **Select a JAD file to convert.**

   The JAD info panel shows you information about the Java application.

   Note that if your desktop computer system supports selecting multiple files in dialog boxes, you can select multiple JAD files to convert.

6. **Click the Convert button to convert the JAR/JAD file pair to a PRC.**

   (Clicking Convert does not affect the original JAR/JAD files; it merely creates a new file with a `.prc` extension.)

   You will receive an error message if there are any problems. See Chapter 6 "Troubleshooting" if you receive an error message. If there were no problems, you now have a PRC file ready to install on your Palm OS Device. See "Installing Java Applications" on page 7 for the installation procedure.

▼ To Choose the Directory to Hold PRC Files

1. **Decide which directory you will use to hold the converted PRC files.**

   By default, the PRC Converter Tool puts a converted PRC file in the same directory as the JAR/JAD file pair. If you prefer, you can have it put the PRC files it creates into a different directory instead.

2. **If the PRC Converter Tool is not running, start it.**

   Use the instructions in "To Start the PRC Converter Tool From a GUI" on page 27 or "To Start the PRC Converter Tool From the Command Line" on page 28.

3. **Click the PRC Converter Tool's Preferences button ( ) or choose Preferences from its File menu.**

   A dialog box similar to following one will appear:

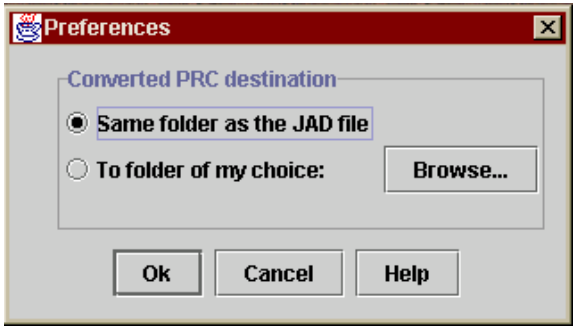

FIGURE 22 PRC Destination Dialog Box

4. **Click either:**
   - Same folder as the JAD file (This is the default.)
   - To folder of my choice:

5. **If you clicked Same folder as the JAD file, go to Step 8; if you clicked To folder of my choice:, click Browse...**

   A dialog box like the following one will appear:

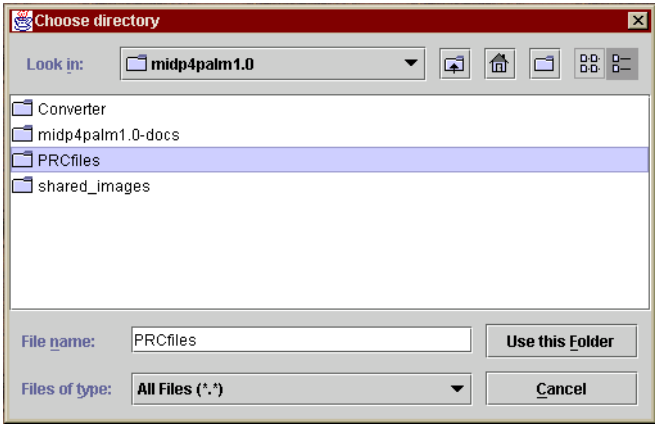

FIGURE 23 Choose Directory Dialog Box

6. **Navigate to the folder of your choice.**
7. **Click Use this Folder to make your selection the destination folder for the PRC files.**
8. **Click Ok to exit the Preferences dialog box and use the directory that you selected.**

CHAPTER 6

Troubleshooting

This section discusses a few problems that you could encounter installing and using MIDP for Palm OS. It contains two sections:

- Java™ HQ
- PRC Converter Tool

Java™ HQ

This section contains problems that you could encounter when trying to use MIDP for Palm OS, followed by brief explanations of their causes and possible solutions.

Problem – After you install `MIDP.prc` on your Palm OS device, your device has more than one MIDP icon.

An example of the problem is shown in the following figure. The icons on your Palm OS device may differ, depending on which of the previous MIDP for Palm OS versions you have installed.

FIGURE 24 Multiple MIDP for Palm OS Icons on Your Palm OS Device

Solution – Remove both implementations, and reinstall the latest `MIDP.prc` file.

Problem – When you try to run Java™ HQ you get an error message like the one in the following figure:

FIGURE 25 Error for Wrong Palm OS Version

Solution – Upgrade the operating system on your Palm OS device to version 3.5 or later, or use a device that already supports Palm OS 3.5 or later. MIDP for Palm OS cannot run on Palm OS versions earlier than 3.5.

Problem – You try to map a new Java application to a button of your Palm OS device, but cannot find the application name in the Button screen of the Palm Preferences application.

Solution – Run the Java application one time, and the name of the Java application will appear in the Button screen of the Palm Preferences application.

Problem – Your networking applications fail with the error message:

```
Net.lib interface error: 0x00001207.
```

Solution – The solution to this problem depends on your device:

- If you use a Kyocera Smartphone, the default value for the App Memory preference is 64KB. This setting may cause certain networking applications to fail. Fix the problem by changing the value of the App Memory preference 30KB. See "Setting Preferences" on page 15 for more information.
- If you have a 2MB device, you should make the network connection manually before launching the Java application. To do this:

  i. Tap the Preferences icon on your device's home screen.

  ii. Choose Network from the types of available preferences.

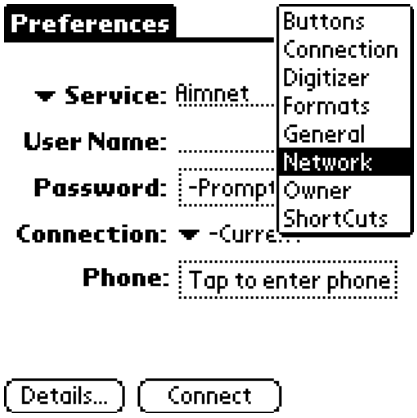

FIGURE 26 System Preferences in a Palm OS Device

iii. Enter the required information, such as your Service, User Name, and so on.

iv. Tap the Connect button.

PRC Converter Tool

This section contains problems that you could encounter when trying to run the PRC converter tool, followed by brief explanations of their causes and possible solutions.

Problem – You cannot start the PRC Converter Tool

If you have not installed the Java Runtime Environment (JRE) version 1.3 or later, or have incorrectly set your `JAVA_PATH` environment variable, the PRC Converter Tool will not start. If you are starting the PRC Converter Tool from the command line, you will receive an error message similar to the one shown in the following figure:

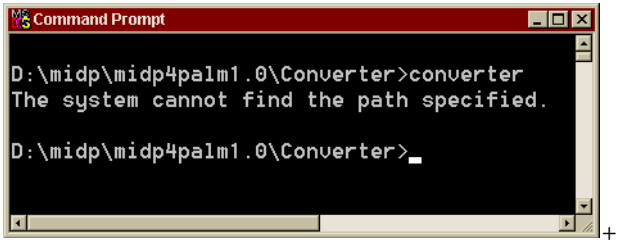

FIGURE 27 Incorrect `JAVA_PATH` Environment Variable

Solution – Install the JRE and set your `JAVA_PATH` environment variable as described in "Preparing Your Desktop System" on page 25.

Problem – You receive the following error message:

```
Only .JAD files are supported by the PRC Converter Tool. Please
select a .JAD file to convert.
```

The PRC Converter Tool accepts only a JAD file, and you have selected a file with an extension other than `.jad`.

Solution – Try downloading the file again or ask your application provider for the JAD file if it is missing.

Problem – You receive the following error message:

```
The .JAR file corresponding to the .JAD file you want to
convert is missing. Java Applications (MIDlets) are represented
by both a .JAD and a .JAR file pair. Both the .JAD and .JAR
must be present to convert the MIDlet to a .PRC file. Please
make sure both the .JAD and the .JAR files are present.
```

Solution – Make sure that the Java application's JAR and JAD files are in the same directory on your desktop computer.

Problem – You receive the following error message:

```
There is no content in the .JAD file (the file size is 0). Try
downloading the file again or contact the application provider.
```

The *MIDP Specification 1.0* requires a JAD file to have certain properties in a certain format. The JAD file cannot simply be an empty file with a `.jad` extension.

Solution – Try downloading the file again or contact the application provider.

Problem – You receive the following error message:

```
There is no content in the .JAR file (the file size is 0). Try
downloading the file again or contact the application provider.
```

The *MIDP Specification 1.0* requires a JAR file to have certain properties in a certain format. The JAR file cannot simply be an empty file with a `.jar` extension.

Solution – Try downloading the file again or contact the application provider.

Problem – You receive the following error message:

```
The .JAD file cannot be converted as critical information is
missing or formatted incorrectly. Try downloading the file
again or contact the application provider.
```

The *MIDP Specification 1.0* requires a JAD file to have certain properties in a certain format. The PRC Converter Tool will not convert a JAD file that does not follow this requirement of the specification.

Solution – Try downloading the file again or contact the application provider.

Problem – You receive the following error message:

```
The .JAD file wants to download the .JAR file directly. This
functionality is not supported in the PRC Converter Tool at
this time.
```

The PRC Converter Tool does not download a JAR file to a desktop computer; the JAR file must already be on the desktop computer.

Solution – There are two possible solutions to this problem:

- Make sure that the Java application's JAR and JAD files are in the same directory on your desktop computer.
- If both the JAR and JAD files are already on the desktop computer, edit the JAD file to remove the URL in the "MIDlet-URL" property. That is, there will be a property that looks like this:

  ```
  MIDlet-URL: http://domain.com/MidletApp.jar
  ```

  Change it so that it looks like this:

  ```
  MIDlet-URL: MidletApp.jar
  ```

Problem – You receive the following error message:

```
The .JAD and .JAR files cannot be converted because critical
information between the two files does not match. Try
downloading the file again or contact the application provider.
```

The *MIDP Specification 1.0* requires that, when JAD and JAR files have the same properties, the values of those properties must match. The PRC Converter Tool will not convert a JAR/JAD pair when their property values do not agree.

Solution – Try downloading the file again or contact the application provider.

Problem – You receive the following error message:

```
The .JAR file cannot be converted as critical information is
missing or formatted incorrectly. Try downloading the file
again or contact the application provider.
```

The *MIDP Specification 1.0* requires a JAR file to have a certain properties in a certain format. The PRC Converter Tool will not convert a JAR file that does not follow this requirement of the specification.

Solution – Try downloading the file again or contact the application provider.

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