WHITE PAPER

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backup and restore applications for the iPAQ Pocket PC h3800, h3900, h5400, and h1910 series

With so much more information being accumulated on our networks, computers, and devices, such as handhelds, the importance of backing up our data has become just as significant. Whether for legal purposes or in case of system failures, backups of our computer devices serve the purpose of retaining our information for future use. Not only is a solid process for backing up our data important, but also a sound restore process is also vital for maintaining the integrity of the information.

This white paper describes the backup and restore applications available with the iPAQ Pocket PCs h3800, h3900, h5400, and h1910Series. The tools used to perform the backups and restores differ slightly, but all serve the same purpose of safeguarding your data.

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introduction

The importance of backups cannot be overstated. It is important you understand the backup and restore features that are available to you on your iPAQ Pocket PC. Understanding how these applications work can help you develop a sound backup and restore process for your unit.

All of the iPAQ devices discussed in this white paper use the Microsoft™ ActiveSync backup and restore utility. All of the units mentioned, except the h1910 iPAQ, also have their own backup and restore utilities. This white paper discusses the ActiveSync utility as well as the individual applications found on the h3800, h3900, and h5400 series devices.

As with any backup, always verify that your backup target has enough space to accommodate the information you are backing up. If you exceed the storage limitations of your backup target, the backup will not successfully complete.
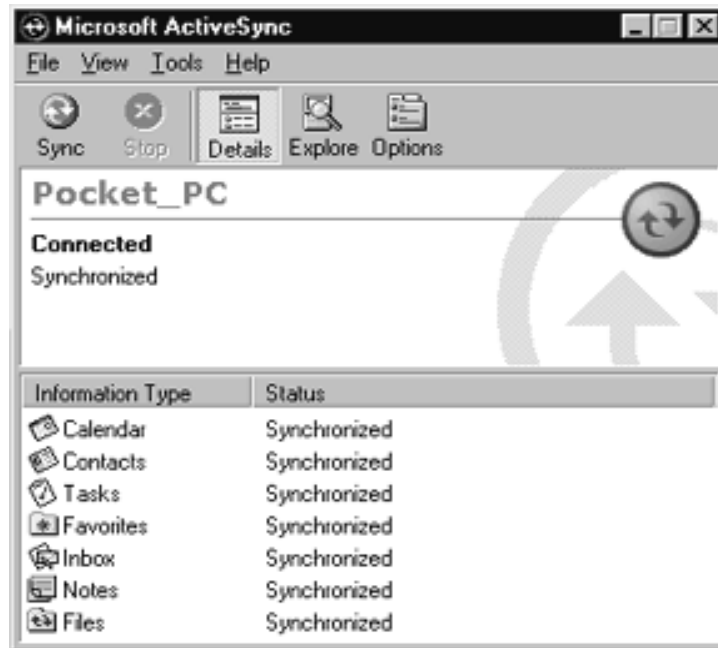
Microsoft ActiveSync backup

Microsoft ActiveSync provides comprehensive non-selective backup/restore functionality, storing the Pocket PC applications and data in the "backup.stg" file in a folder on your computer. This backup supports both "full" and "incremental" backup operations. For additional information, see "backup" in the ActiveSync Help utility.

> **Note:** You can rename the backup file to include the date or other information when multiple instances of backups are desired. The file extension must remain *.stg* for the file to be recognized by a Restore function.
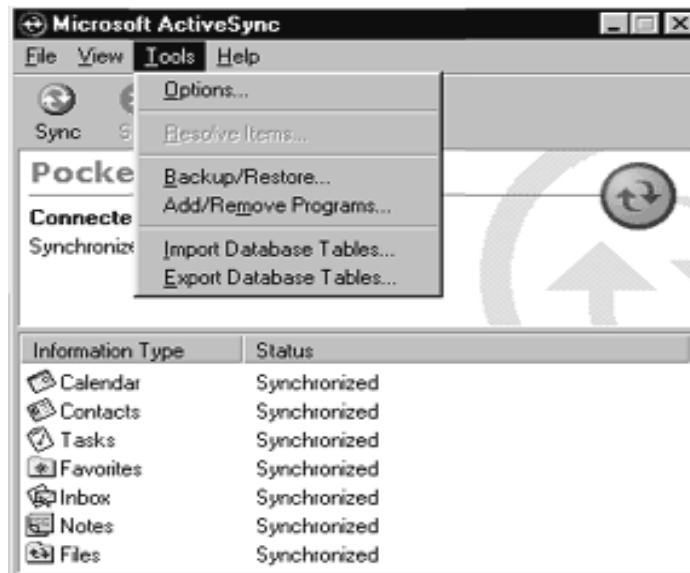
- **full backup**—This option creates a copy of all data in the iPAQ Pocket PC RAM and saves it on your computer. The time this operation takes depends on the speed of the ActiveSync connection and how much data resides on your iPAQ Pocket PC. A full backup operation is recommended the first time the backup operations are enabled.

- **incremental backup**—This option updates the backup file stored on your PC with the data that has changed on the iPAQ Pocket PC since the last backup operation. This backup completes in a much shorter time than a full backup.
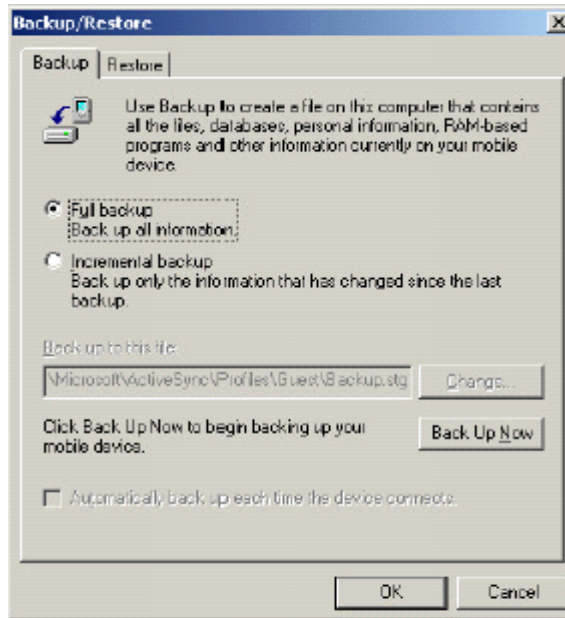
Follow these steps to back up your system:

1. Make sure your iPAQ Pocket PC is connected to your computer.

2. From your computer, open Microsoft ActiveSync.

3. From the Tools menu, click Backup/Restore.

4. Click the Backup tab.

5. Click the type of backup you want and then click the Back Up Now button to initiate the backup. A Full backup is recommended the first time the backup operation is enabled.

After a full backup has been performed for the first time, it is recommended that the Backup feature be configured with the Incremental Backup selection so that you do not have to remind yourself to back up your data and applications. This can be accomplished by clicking the Incremental Backup option from the Backup tab and checking the Automatically Back up Each Time the Device Connects check box. With this item flagged, every time the iPAQ Pocket PC is cradled, it does not only synchronize your data, but it determines the things that have changed since the last backup, and updates the backup file on the computer.

Microsoft ActiveSync restore

In the event of a total data loss on the iPAQ Pocket PC or a need to revert back to an earlier backup, you can restore data to the device using any backup file created with ActiveSync. The following steps are for the most typical scenario, that of a restore after a total loss of data caused by a battery discharge or deactivation of the battery. For additional information, see "restore" in the ActiveSync Help utility.
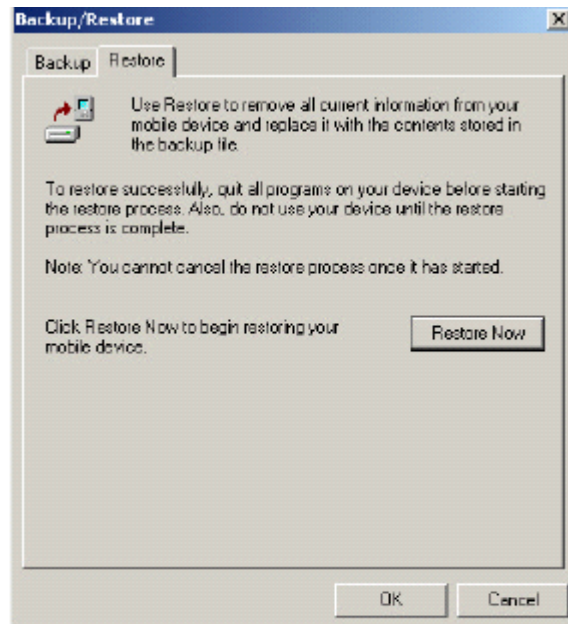
> ⚠ **CAUTION:**
> If the restore purpose was to recover personal information manager (PIM) data that was accidentally erased from the iPAQ and the desktop, safely retrieve this information after the restore, but before performing synchronization with your computer.
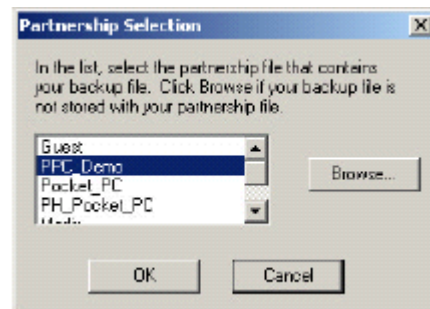
1. Connect the device to AC power, recharge the battery, and complete the setup wizard on your iPAQ before connecting to your computer and performing a restore.

2. Connect to the computer by attaching the iPAQ Pocket PC to the cradle or cable. The following dialog displays on the computer. Select the option to connect as a guest, then click Next.
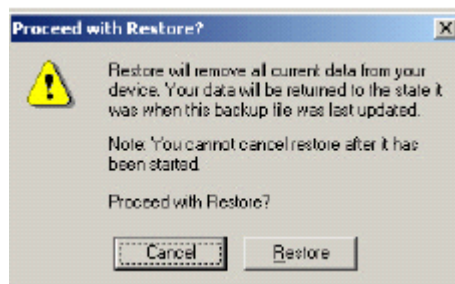
3.   Select the restore operation in Microsoft ActiveSync on the computer using the Tools, Backup/Restore menu option, and then select the Restore tab to display the following dialog.
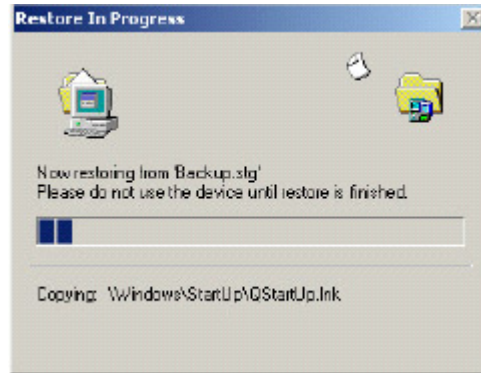

4.   Click the Restore Now button to initiate the Restore process. This causes the following dialog to display, allowing you to select the partnership that you want to restore. Select the correct partnership then click OK.

5.   A warning, indicating that you will be erasing all data on your iPAQ Pocket PC and restoring a previous image of applications and data to the device, displays.

6. Click Restore to begin the operation.

Restore In Progress

Now restoring from 'Backup.stg'
Please do not use the device until restore is finished.

Copying: \Windows\StartUp\QStartUp.lnk

7. When the Restore operation is complete, the following dialog displays asking you to remove the device from the cradle and perform a reset.

Restore Complete: Restart device

Restore complete. You must disconnect and then reset your device for these changes to take effect.

Consult your manufacturer's documentation for instructions on resetting your device.

Note: When you reconnect, ActiveSync may prompt you to combine or discard items in any synchronized databases (Appointments, Contacts, or Tasks).

OK

8. Perform a normal (soft) reset by pressing the reset button on the bottom of the iPAQ with the stylus for 2 seconds.
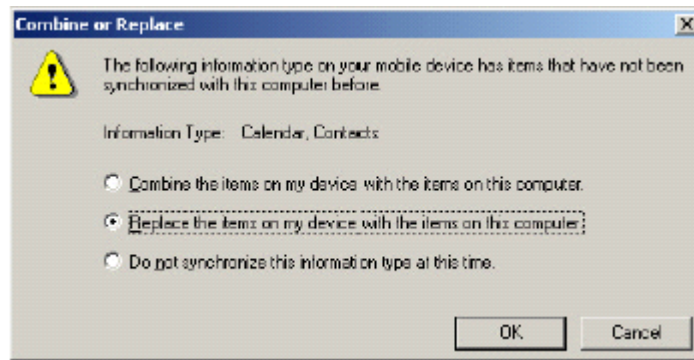
9. Connect the iPAQ Pocket PC to the computer to establish a new partnership and synchronize the PIM data selected.

    When ActiveSync recognizes pre-existing data on the iPAQ, the following prompt displays asking if you want to Combine or Replace the data.

> ⚠ **CAUTION:** The default selection of "Combine the items…" typically results in duplicate appointments in your calendar.

HP recommends that you select the option of Replace the items on my device… to avoid duplication of data.

10. After ActiveSync synchronization completes, you have finished restoring and updating your iPAQ Pocket PC with the most current PIM data.

Note: If the restore operation was performed on a different device from the original backup, it is necessary to re-align the touch screen by going to Start > Settings > System tab > Screen > Align Screen. The touch screen accuracy could be affected if this is not performed.

iPAQ h3800 series backup utility

The iPAQ Pocket PC h3800 Series offers the ability to perform a non-selective backup to a non-volatile storage device such as the iPAQ File Store, Compaq Flash, or SD media.
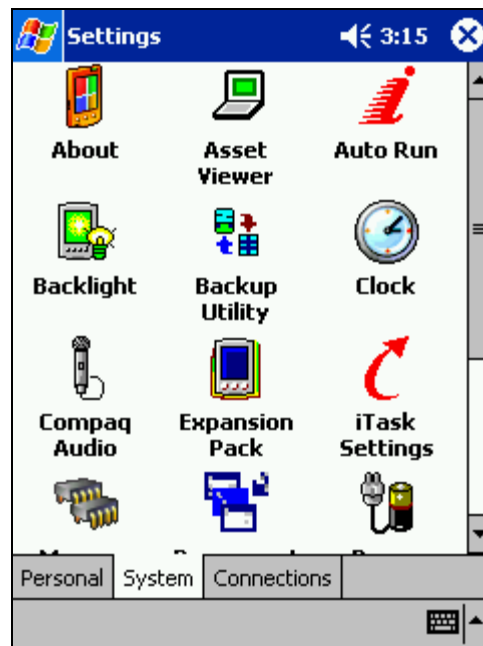
The benefit of using the iPAQ Backup feature is that you can easily carry your backup data with you so that you can restore while away from your office computer.

backup

Note: To ensure that all data and applications are backed up, manually close all active applications or perform a normal (soft) reset before beginning the backup operation.
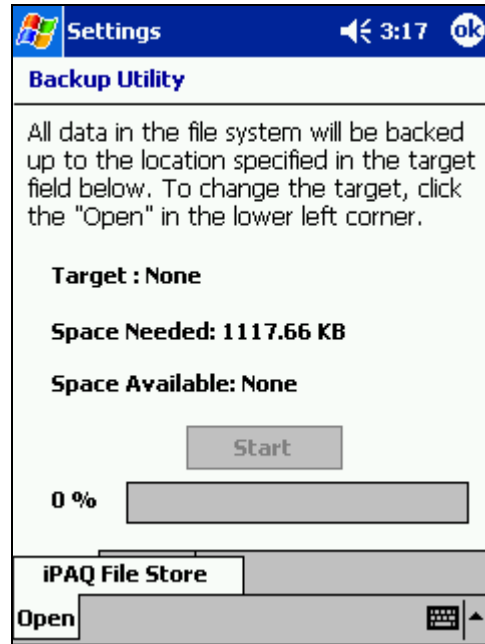
To back up your iPAQ h3800 series device, follow these steps:

    1.   From the Start menu, select Settings.

    2.   From the Settings screen, tap on the System tab on the bottom of the screen.

    3.   Select the Backup Utility program from the screen to open the utility.

4. Tap on the Open menu to select your target backup location.

5. Select the appropriate target.

6. Click Start to begin the process.

7. A warning message displays. Click OK if you are ready to begin the backup.

8. After the backup completes a message that says, "Backup is complete" displays. Click OK on this pop-up window to complete the backup.
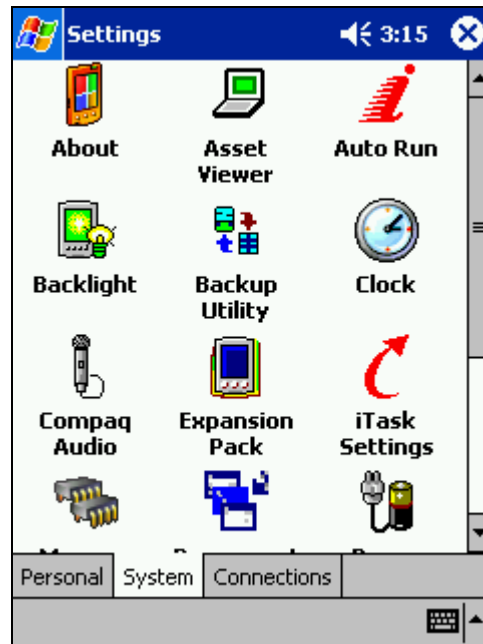
restore

The restore program allows you to pull the backed up information from the backup media and restore your system to the previous state (of the latest backup).

> △ **CAUTION:** To ensure that all data integrity is maintained after the restore, the ActiveSync partnership between the iPAQ device and the host PC should be deleted from the host PC and then recreated **before** synchronizing.
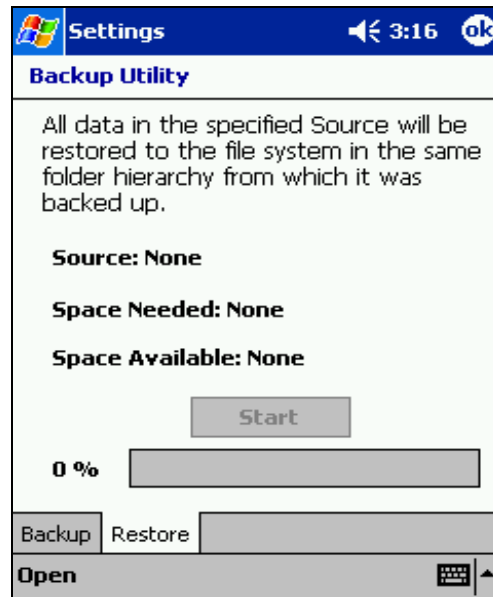
To restore, close all open applications and follow these steps:

1. From the Start menu, select Settings.

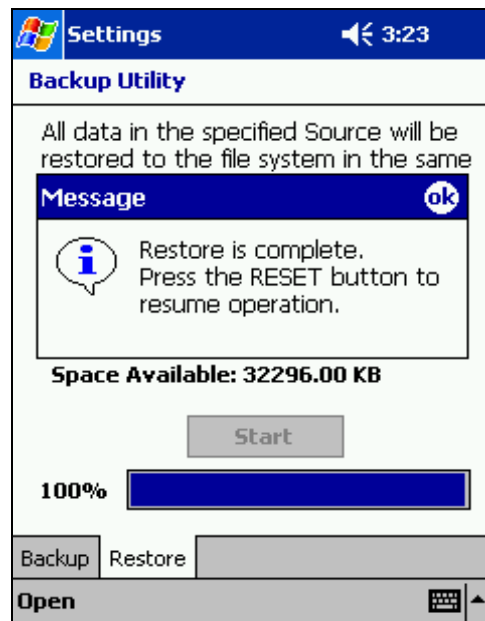2. From the Settings screen, tap on the System tab on the bottom of the screen.

3. Select the Backup Utility program from the screen to open the utility.

4. Click on the Restore tab at the bottom of the screen.

5. To select the source (where you want to restore from), tap Open and select the appropriate location.

6. After you have selected the source location, tap on Start to begin the restore.

7. You are prompted by a message indicating the restore will overwrite the current data. If you want to continue, tap Yes.

8. A second message displays advising that all programs should be closed. Close any open applicationsand tap OK to continue the restore process.

9. After the restore is complete, the following message displays.

10. Tap OK and reset the device to complete the restore.

permanent PIM

Permanent PIM is not part of the h3800 backup utility, but it is a storage feature that merits discussion. Permanent PIM allows you to store Calendar (appointment) and Contacts information into non-volatile flash memory so that it is not lost after a total loss of power or a full (hard) reset.

backing up your PIM data

To activate Permanent PIM on your iPAQ h3800 series device, follow these steps:

1. Tap Start > Settings > System.

2. From this screen, tap the Permanent PIM application icon to open the program.

3. Select both check boxes to store Contacts and Appointments to non-volatile flash memory.

4. Tap OK to exit.

restoring your PIM data

Note: After a full reset, like most user settings, the Permanent PIM selection defaults back to the factory setting of not enabled. The data is still present, but it will not be restored automatically.

After a total loss of power or a full reset, you can restore you Contacts and Calendar data by following these steps:

1. Tap Start > Settings > System.

2. From this screen, tap the Permanent PIM application icon to open the program.

3. Select the Contacts, Appointments, or both check boxes to restore your Contacts and/or Appointments from ROM back to the PIM applications.

Your PIM data will automatically start copying from ROM and populate the PIM applications.

Note: With Contacts and/or Appointments selected, your Pocket PC will perform a PIM synchronization after a normal reset. The amount of time for this synchronization to occur depends on how much Calendar and Contact data is on your Pocket PC.

permanently removing PIM data

The PIM backup file is stored in an inaccessible area of ROM (if you have this feature enabled). Because it is not removed during total loss of power or a full reset, if you want to erase this data manually or refrain from having PIM automatically backed up, follow these steps:

1. Tap Start > Settings > System.

2. From this screen, tap the Permanent PIM application icon to open the program.

3. Tap on the Contacts, Appointments, or both to deselect them.

4. A message asking if you are sure you want erase all of the backup contents of these items displays. If you are sure you want to have these items removed, tap "Yes", otherwise, tap "No".

5. Tap OK in the application window to exit the Permanent PIM application.

Your PIM data is no longer automatically saved to ROM. If you want to remove PIM data permanently, you can perform a full reset at this time. A full reset can be performed by simultaneously pressing the two outer application buttons and the reset button on the bottom of the handheld for 10 seconds.

iPAQ h3900 series backup program

The iPAQ Pocket PC h3900 Series offers a more advanced backup and restore program. With the iPAQ Backup application you can:

- back up and restore selected files, folders, and databases on your Pocket PC
- copy the entire Pocket PC system state (for example, the registry, user and system databases, and data files)
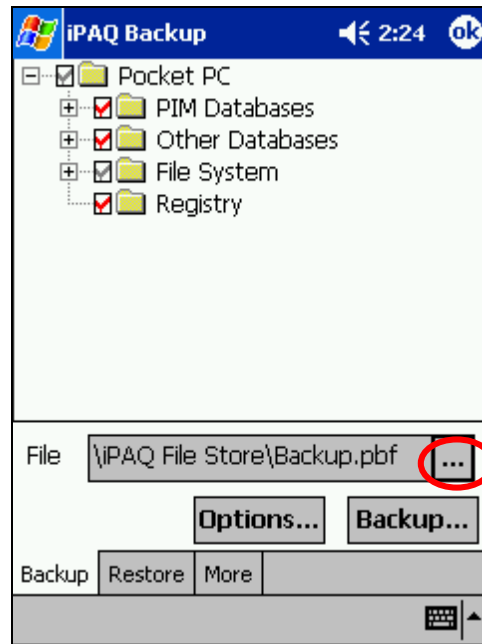- back up and restore PIM data
- schedule regular backups

manual backup

To back up your iPAQ h3900 Series device, follow these steps:

1. From the Start menu, tap Programs.
2. Tap the iPAQ Backup program.

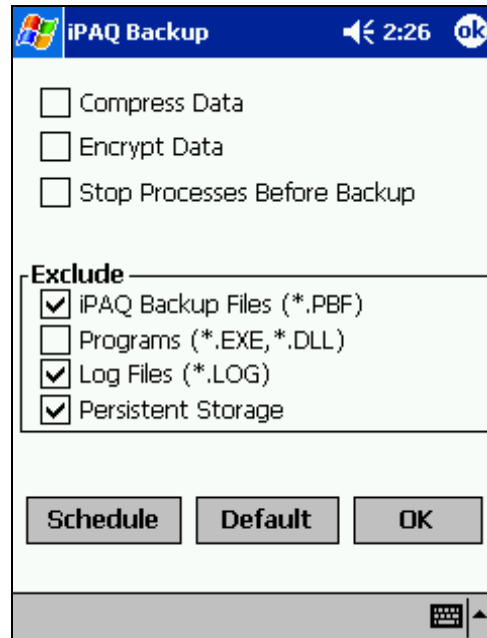3. Select files, folders, or databases from the tree view.

4. Tap the ... button. (shown circled in previous image)

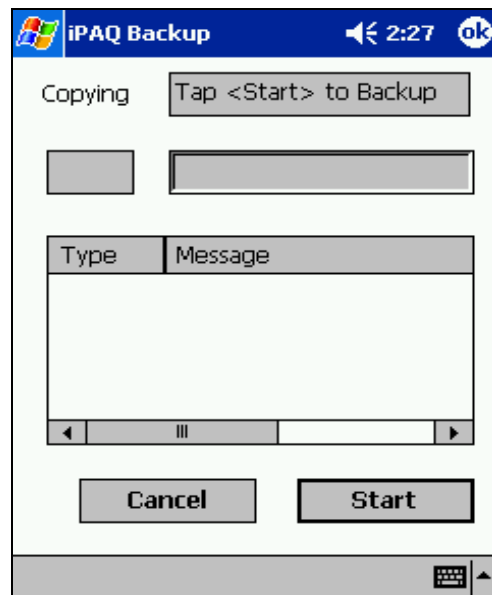5. Enter a name and saving location for the backup data, then tap OK.

Note: On the iPAQ h3900 series device you can name your backup file to best fit the description of what you are backing up. This is useful if you want to have multiple backups of various data on your device.

6. From the main backup screen, tap Options... to set the backup options. Select whether to:
    - compress or encrypt data
    - stop all processes before backing up
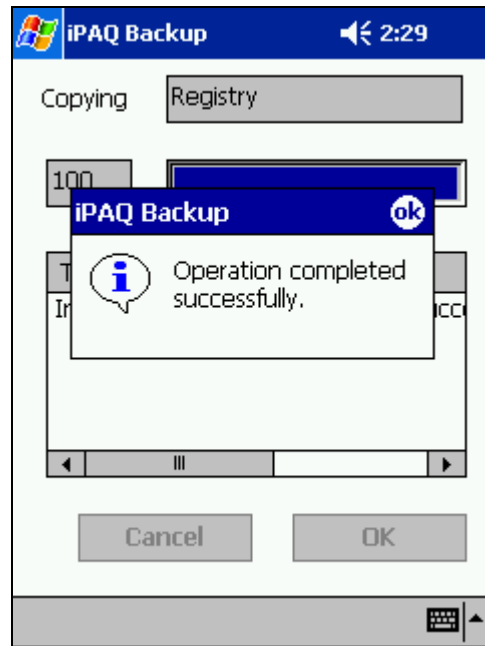   - exclude files from the backup

Note: Because some files are not backed up when they are in use, HP recommends selecting the Stop Processes Before Backup option to ensure that all information is saved.

7. Tap OK after you have selected the options.

8. Tap the Backup… button.

9. From the following screen, tap Start to begin the process.

10. When the backup is complete, the following pop-up window displays.
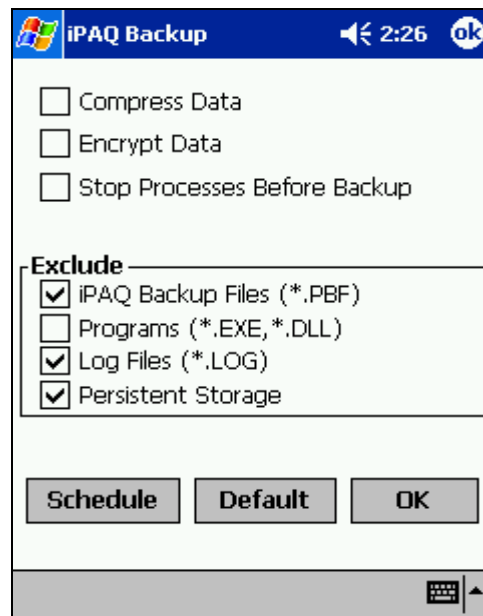

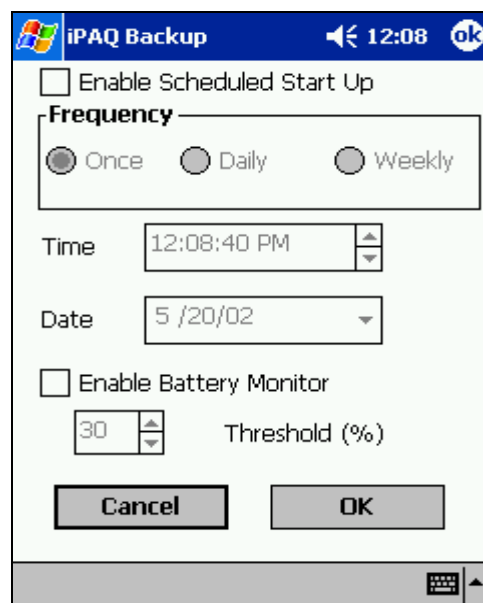11. Click OK to close the window and complete the backup process.

scheduled backup

With the iPAQ Pocket PC h3900 Series, you have the ability to schedule backups. When you schedule a backup, a pop-up reminder displays on the iPAQ screen. This feature is very useful in making sure routine backups are performed. The following steps are necessary to schedule a backup:

1. Follow steps 1 through 6 in the previous "Manual Backup" section to access the Backup options screen.

2. Tap the Schedule button to open the schedule backup options screen.

3. Check the Enable Scheduled Start Up check box, and select the frequency, the time, and date for the backup.
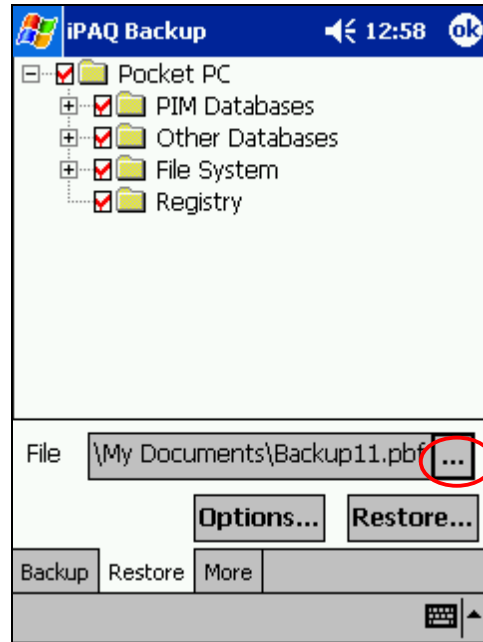
4. Click OK

restore

> △ **CAUTION:** To ensure that all data integrity is maintained after the restore, the ActiveSync partnership between iPAQ device and the host PC should be deleted from the host PC and then recreated **before** synchronizing.

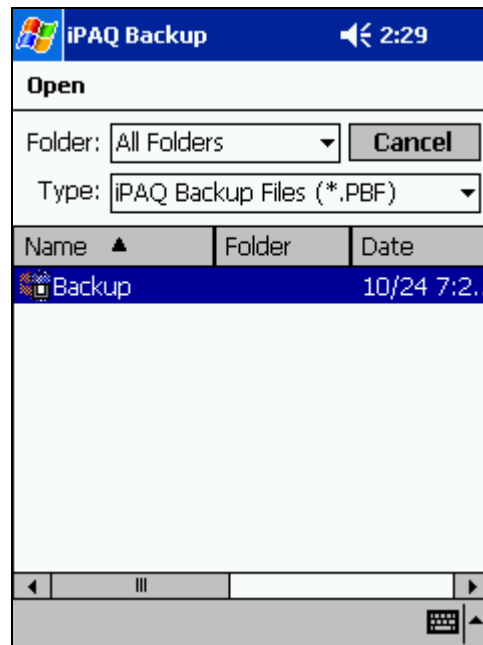To perform a restore on your iPAQ Pocket PC h3900 Series, close all open applications and follow these steps:

1. From the Start menu, tap Programs.

2. Tap the iPAQ Backup program.

3. From the main screen of the iPAQ Backup program, tap the Restore tab at the bottom of the screen.

4. Tap the … button (circled above) from this screen to select where you want to restore from.
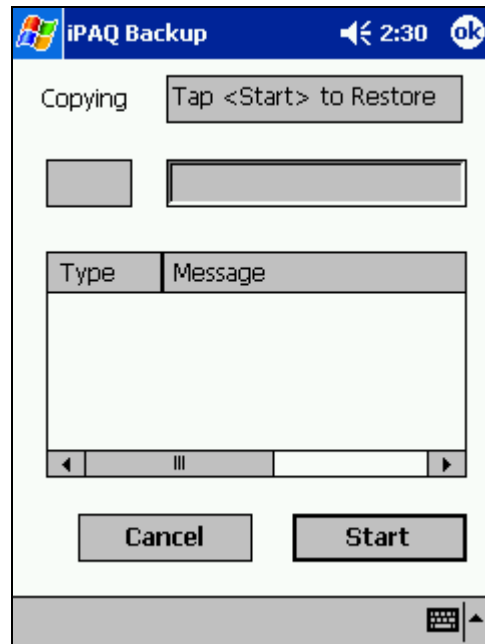
5. Select the backup file you want to use.

6. From the tree view, select which items you want to restore.

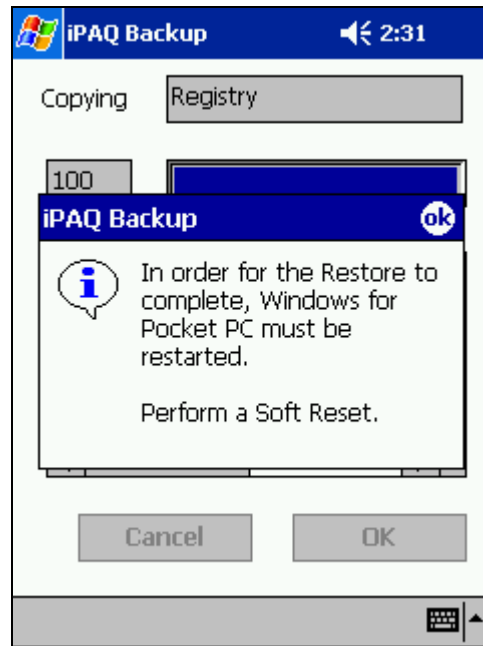7. From the main screen, tap Options… to select your restore settings.

8. Check the Stop Processes Before Restore checkbox.

9. Tap OK.

10. From the main screen, tap Restore to begin the process.

11. Press Start to initiate the restore.

12.   After the restore is complete, the following screen displays.

13.   Tap OK and perform a normal (soft) reset.

permanent PIM

Permanent PIM is not part of the h3900 backup utility. Permanent PIM allows you to store Calendar (appointment) and Contacts information into non-volatile flash memory so that it is not lost after a total loss of power or a full (hard) reset.

backing up your PIM data

To activate Permanent PIM on your iPAQ h3900 series device, follow these steps:

1. Tap Start > Settings > System.

2. From this screen, tap the Permanent PIM application icon to open the program.

```
File   Zoom   Tools   Help

   Settings            3:43   ok

Permanent PIM

Selecting an item below (enabling it
with a checkmark) will cause it to be
permanently stored in non-volatile flash
memory. This will ensure that they are
not lost when power is turned off.

Check the items you want to make
permanent:

     ☑  Contacts

     ☑  Appointments
```

3. Select both check boxes to store Contacts and Appointments to non-volatile flash memory.

4. Tap OK to exit.

restoring your PIM data

Note: After a full reset, like most user settings, the Permanent PIM selection defaults back to the factory setting of not enabled. The data is still present, but it will not be restored automatically.

After a total loss of power or a full reset, you can restore you Contacts and Calendar data by following these steps:

1.   Tap Start > Settings > System.

2.   From this screen, tap the Permanent PIM application icon to open the program.

3.   Select the Contacts, Appointments, or both check boxes to restore your Contacts and/or Appointments from ROM back to the PIM applications.

Your PIM data will automatically start copying from ROM and populate the PIM applications.

Note: With Contacts and/or Appointments selected, your Pocket PC will perform a PIM synchronization after a normal reset. The amount of time for this synchronization to occur depends on how much Calendar and Contact data is on your Pocket PC.

permanently removing PIM data

The PIM backup file is stored in an inaccessible area of ROM (if you have this feature enabled). Because it is not removed during total loss of power or a full reset, if you want to erase this data manually or refrain from having PIM automatically backed up, follow these steps:

1. Tap Start > Settings > System.

2. From this screen, tap the Permanent PIM application icon to open the program.

3. Tap on the Contacts, Appointments, or both to deselect them.

4. A message asking if you are sure you want erase all of the backup contents of these items displays. If you are sure you want to have these items removed, tap "Yes", otherwise, tap "No".

5. Tap OK in the application window to exit the Permanent PIM application.

Your PIM data is no longer automatically saved to ROM. If you want to remove PIM data permanently, you can perform a full reset at this time. A full reset can be performed by simultaneously pressing the two outer application buttons and the reset button on the bottom of the handheld for 10 seconds.

iPAQ h5400 series backup utility

The iPAQ Pocket PC h5400 Series offers a more advanced backup and restore program. With the iPAQ Backup application you can:

- back up and restore selected files, folders, and databases on your Pocket PC

- copy the entire Pocket PC system state (for example, the registry, user and system databases, and data files)

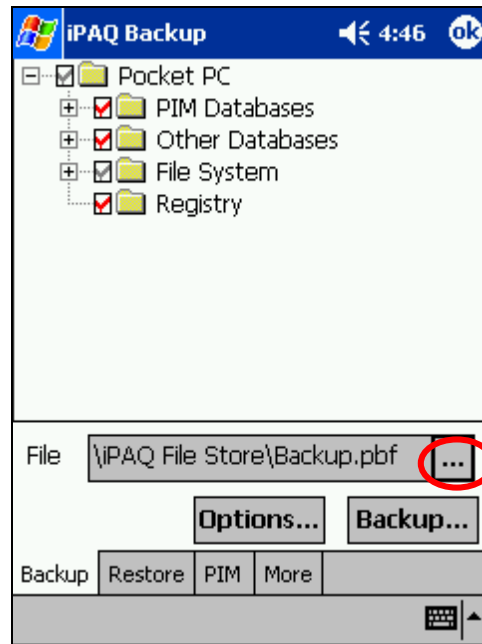- schedule regular backups

- back up and restore PIM data

manual backup

To back up your iPAQ h5400 series device, follow these steps:

1. From the Start menu, tap Programs.

2. Tap the iPAQ Backup program.

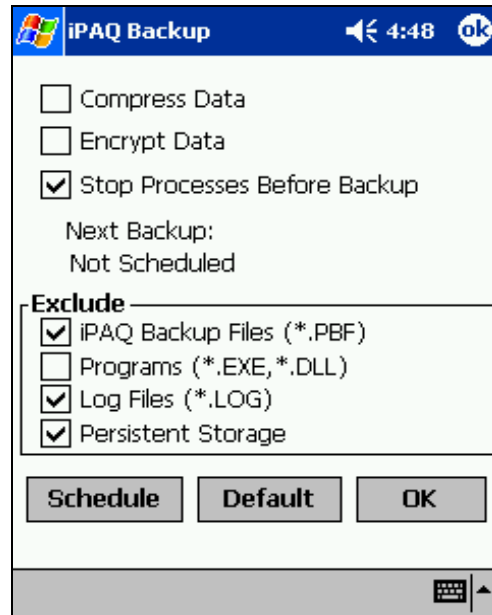3. Select files, folders, or databases from the tree view.

4. Tap the ... button. (shown circled in previous image)

5. Enter a name and saving location for the backup data, then tap OK.
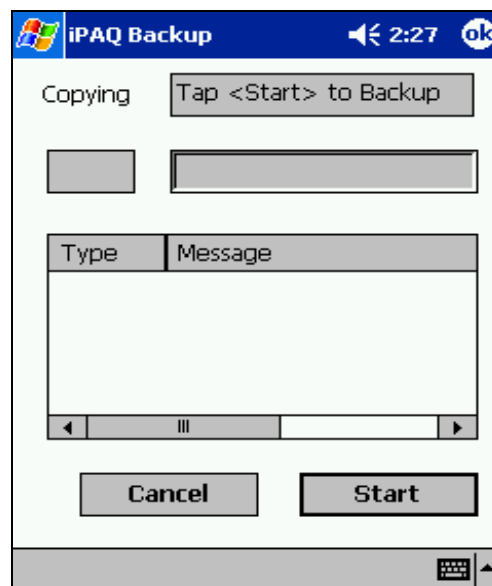

    Note: On the iPAQ h5400 series device you can name your backup file to best fit the description of what you are backing up. This is useful if you want to have multiple backups of various data on your device.

6.   From the main backup screen, tap Options... to set the backup options. Select whether to:
- compress or encrypt data
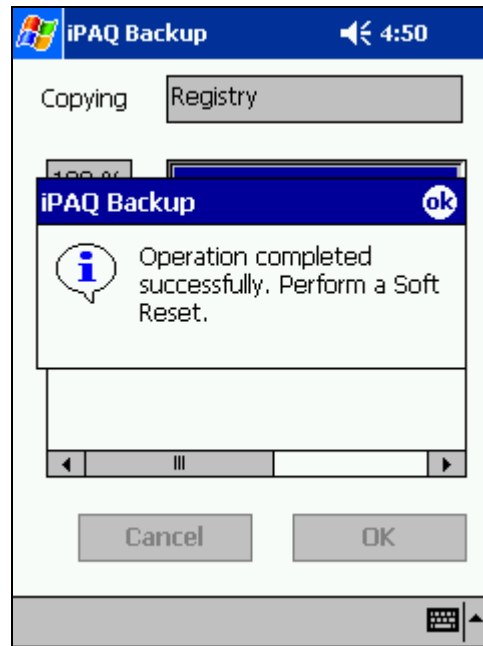- stop all processes before backing up
- exclude files from the backup

Note: Because some files are not backed up when they are in use, HP recommends selecting the Stop Processes Before Backup option to ensure that all information is saved.

7.   Tap OK after you have selected the options.

8.   Tap the Backup… button.

9.   From the following screen, tap Start to begin the process.

10. When the backup is complete, the following pop-up window displays.
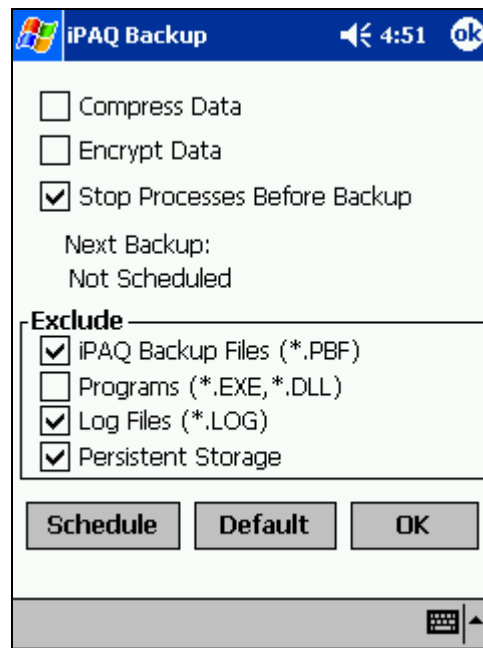

11. Click OK to close the window and complete the backup process by performing a normal (soft) reset.
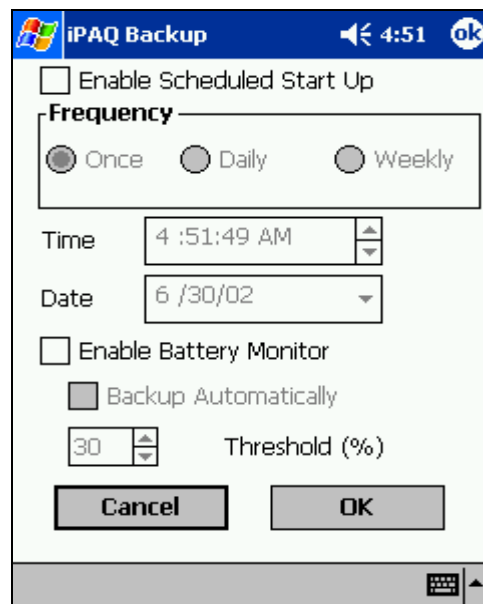
scheduled backup

With the iPAQ Pocket PC h5400 Series, you have the ability to schedule backups. When you schedule a backup, the backup starts automatically as long as the target destination is available. This feature is very useful in making sure routine backups are performed. The following steps are necessary to schedule a backup:

1. Follow steps 1 through 6 in the previous "Manual Backup" section to access the Backup options screen.

2. Tap the Schedule button to open the schedule backup options screen.

3. Check the Enable Scheduled Start Up check box, and select the frequency, the time, and date for the backup.
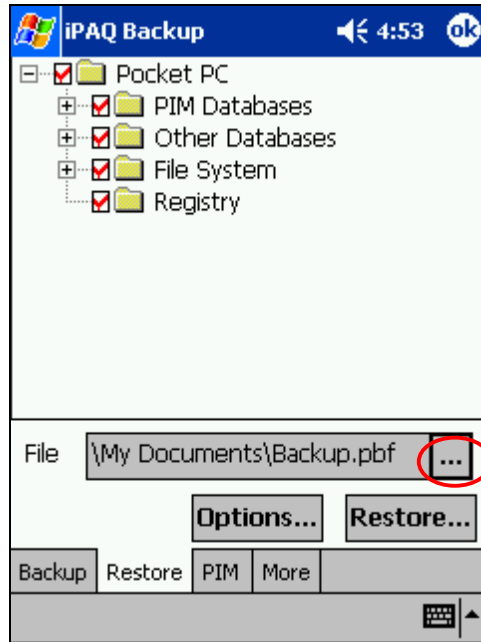
4. Click OK.

restore

> ⚠ **CAUTION:** To ensure that all data integrity is maintained after the restore, the ActiveSync partnership between the iPAQ device and the host PC should be deleted from the host PC and then recreated **before** synchronizing.

To perform a restore on your iPAQ Pocket PC h5400 Series, follow these steps:
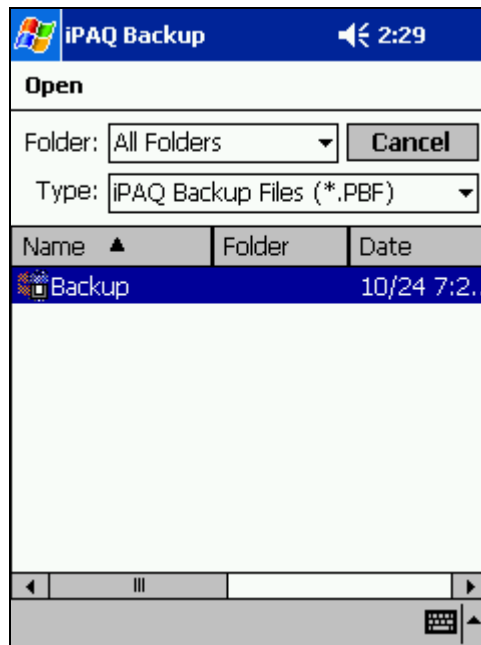
1. From the Start menu, tap Programs.

2. Tap the iPAQ Backup program.

3. From the main screen of the iPAQ Backup program, tap the Restore tab at the bottom of the screen.

4. Tap the … button from this screen (circled above) to select from where you want to restore.

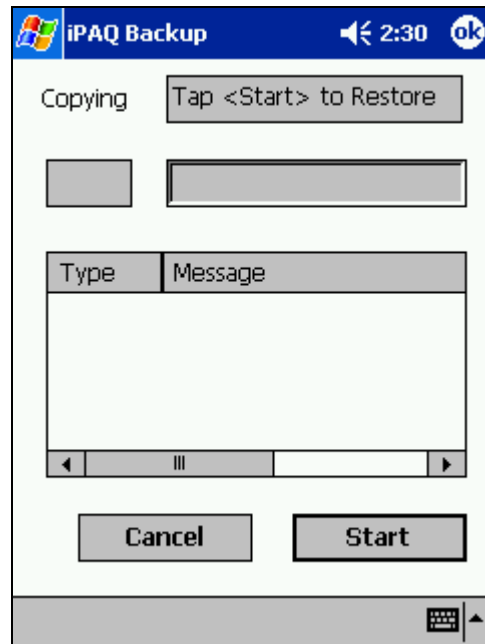5. Select the backup file you want to use.

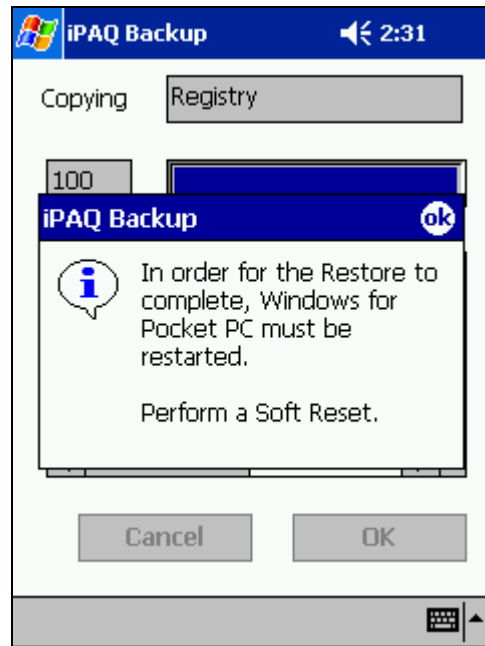6. From the tree view, select which items you want to restore.

7. From the main screen, tap Options… to select the restore settings.

8. Check the Stop Processes Before Restore checkbox.

9. Tap OK.

10. From the main screen, tap Restore to begin the process.

11. Tap Start to initiate the restore.

12.   After the restore is complete, the following screen displays.

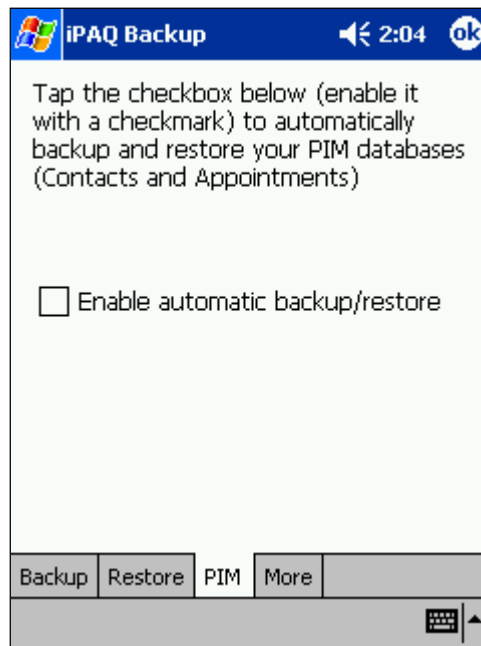13.   Tap OK and perform a normal reset.

permanent PIM

Permanent PIM allows you to store Calendar (appointment) and Contacts information into non-volatile flash memory so that it is not lost after a total loss of power or a full (hard) reset. The Permanent PIM utility on your iPAQ Pocket PC h5400 series is offered as a tab in the backup program.

backing up your PIM data

To activate the backup function for your PIM data, follow these steps:

1. Start the iPAQ Backup utility.

2. Select the PIM tab from the bottom of the backup screen.

3. From the PIM screen, tap the Enable Automatic Backup/Restore checkbox.

4. Tap OK to exit.

Your PIM data is now automatically saved to ROM. Each time Calendar or Contact data is added to the iPAQ device, it also adds the information to the PIM backup.
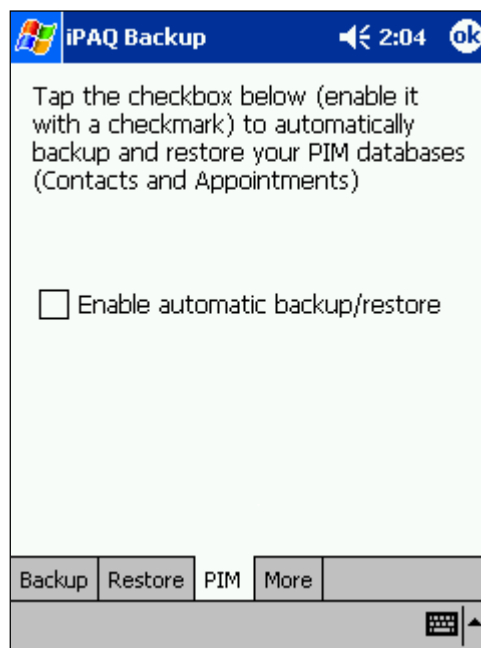
Note: With the Enable Automatic Backup/Restore selected, your Pocket PC will perform a PIM synchronization after a normal reset. The amount of time for this synchronization to occur depends on how much Calendar and Contact data is on your Pocket PC.

restoring your PIM data

Note: After a full reset, like most user settings, the Permanent PIM selection defaults back to the factory setting of not enabled. The data is still present, but it will not be restored automatically.

After a total loss of power or a full reset, you can restore you Contacts and Calendar data by following these steps:

1.   Start the iPAQ Backup utility.

2.   Select the PIM tab from the bottom of the backup screen.

3.   From the PIM screen, tap the Enable Automatic Backup/Restore checkbox.
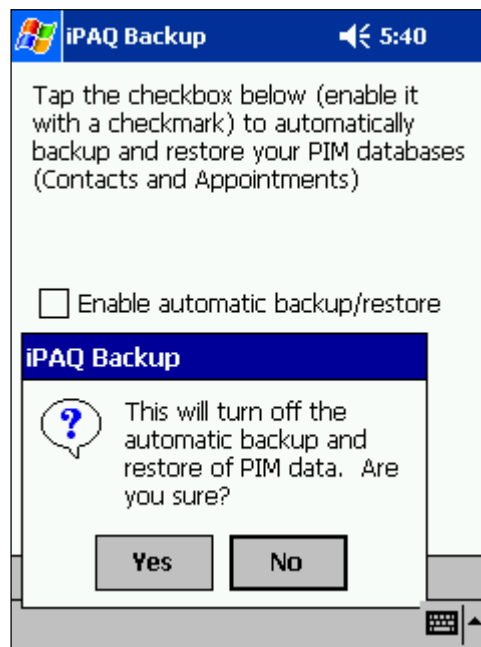

4.   Tap OK to exit.

Your PIM data will automatically start copying from ROM and populate the PIM applications.

Note: With the Enable Automatic Backup/Restore selected, your Pocket PC will perform a PIM synchronization after a normal reset. The amount of time for this synchronization to occur depends on how much Calendar and Contact data is on your Pocket PC.

permanently removing PIM data

The PIM backup file is stored in an inaccessible area of ROM (if you have this feature enabled). Because it is not removed during total loss of power or a full reset, if you want to erase this data manually or refrain from having PIM automatically backed up, follow these steps:

1. Start the iPAQ Backup utlity.

2. Select the PIM tab from the bottom of the backup screen.

3. From the PIM screen, tap the Enable Automatic Backup/Restore checkbox to remove this selection. You will see the following prompt asking if you are certain that you want to turn this feature off.

4. Tap Yes to disable this feature and access to the data in ROM.

5. Tap OK to exit.

Your PIM data is no longer automatically saved to ROM. If you want to remove PIM data permenantly, you can perform a full reset at this time. A full reset can be performed by simultaneously pressing the two outer application buttons and the reset button on the bottom of the handheld for 10 seconds.

iPAQ H1910 SERIES BACKUP UTILITY

The iPAQ Pocket PC h1910 Series does not offer a backup and restore utility of its own. Instead, backups and restores are done using the Microsoft ActiveSync application. See the "Microsoft ActiveSync Backup" and "Microsoft ActiveSync Restore" sections at the beginning of this white paper for instructions on how to use these applications.

Third-party backup and restore software is also available for the iPAQ Pocket PCs such as ArtSave from ArtSoft (**http://www.artsoft.ru/eng/artssppc.htm**), Pocket Backup from Sprite Software (**http://www.spritesoftware.com/pocket.html**), Sunnysoft Backup Manager from Sunnysoft (**http://www.sunnysoft.cz/en_novinky.php**), and Mobile Vault (for restoring) from AnyWare Consulting (**http://members.aol.com/_ht_a/anyware/wce/MobileVault/index.htm**). Visit these websites for additional information about each of these products.

summary

HP recognizes the importance of establishing a good backup routine for your iPAQ Pocket PC. That is why you have several processes and options available with your iPAQ Pocket PC to ensure that your data is protected in case of a system failure or other event that might cause data loss. By incorporating these tools into a regular backup routine, you ensure that the integrity of your data is maintained.