

Resco Backup for Palm OS® – Quick Guide

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Remarks:

This guide refers to the Resco Backup v2.01.

Full manual can be downloaded from the Resco web site.

1 About Resco Backup

Resco Backup can create backups of your handheld's RAM, schedule them to occur at intervals of your choice and restore them when needed. The RAM data can be saved to the card or any connected drive in general.

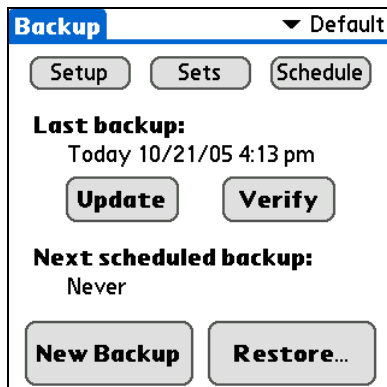


Fig. 1 –Main screen - Advanced mode



Fig. 2 – Same screen in Basic mode

Basic features

- Basic or advanced GUI acc. to the user preferences
- Backup projects, separate backup of sensitive data (contacts, phone calls, images etc.)
- Good qualitative parameters – fastest backup solution, very good compression
- Encryption
- Full or incremental (fast) update
- Multiple backup sets, multiple users
- Partial backup and restore
- Flexible backup scheduler triggered by time, Hotsync, power-off or application exit

Advanced features

- Comparison of the backup set vs. RAM by date or by content
- Comparison of 2 backup sets
- Manual editing of the exclude list
- Live filter (Allows e.g. to define project that will backup all eBooks)
- Backup of the internal drive
- Possibility to restore deleted files from the archive
- Open format (backup sets are zip archives)
- Advanced options targeting stability and NVFS-related problems

Requirements: Palm OS 5+

Installation: Add RescoBackup.prc file to the Palm Desktop Install Tool and Hotsync.

Uninstallation

Delete RescoBackup from the handheld. You might want additionally:

- Delete RscBackup from the card.
- Delete card backup folder /Palm/Backups

2 Quick Start Guide



Here is the introductory screen you get right after the first launch. It is wise to follow the advice and read at least the topics related to the error handling.

Remember: A backup program is at mercy of the applications that are just running on your PDA. If you have a clean installation, you will never have any problem. Otherwise...



The basic screen showing the pre-installed projects:

- Default project serves to backup the complete RAM. Many users don't need more. They just take care about making an occasional RAM snapshot – and that's it.
- Camera Images is about the RAM images.¹ Note that this project is created only for modern Palm handhelds and that the images are not included in the Default project. (The only exception.)
- Contacts project takes care about all PIM data (incl. memos, tasks etc.).² This data is included in the Default project, but if you want an extra level of safety – here it is.

BACKUP



Let's start and press the big Backup button. First backup will take a while. (Certainly not the 3 seconds as you see in the picture – the illustration figures are from a simulator with a simple installation.)

At the end you will get the results screen. You see how it should look like. Should anything go wrong, the list would start with red items containing brief error text.

If you don't trust the results, press the Verify button. We'll talk about it a bit later.

¹ More precisely, this project stores all files under Built In Drive folder /Photos & Videos.

² Covers all databases that contain PIM data. To see the concrete DB list use Main menu > Select Files.



Here is how the main screen looks after the backup completion. It says that the Default project was just backed up and (Next Backup) the project is not scheduled for automatic backup.

Press Backup again. Unlike the first backup, this one will take just an instant as it updates only modified files. (We call this incremental backup.)

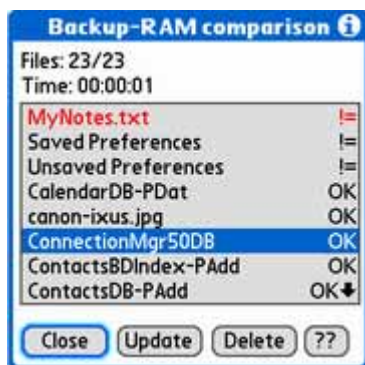
OTHER TOOLS



See a few more possibilities you have at your disposal:

- Verify checks whether the last backup is up-to-date. It compares byte-by-byte RAM against the data stored in backup.
- Scheduler allows you to setup backups performed regularly in your absence.
- Select Files option allows you to create partial backup. Look at the files selected for the contacts project and you'll see why this option is here.
- Setup allows you to modify how the backup works. E.g. you can specify password encryption here.

We could have run **Verify** right after the backup was done and you would see that all is "OK". But if you exit RscBackup and return later, you will find a different picture.



The figure shows 3 differences. (!= means *not equal*.)

One difference is marked in red, i.e. it is worth of noting. (We intentionally modified this file.)

The other "!=" items are in black meaning that it is normal that these files have been modified since the last backup. (Press the ?? button – it will tell you just that.)

Take e.g. the preferences – they were modified by RscBackup when it closed the last time. Note that you might have more such files that are updated on the fly.

Verify is an extremely useful tool as it provides

- Extra level of trust
- Information about the status of the backup data
- Targeted update: If you press the *Update* button, then all red all "!=" items will be updated.

RESTORE



While Backup creates a safety copy of the RAM contents, Restore represents the opposite process – it allows returning to the RAM snapshot saved in the past.

To see the Restore in action return to the main screen and press the *Restore* button. The picture shows the first Restore screen. Press the Next button to move on.

Remark:

What is it – a backup set? It is a snapshot of memory. (Or more precisely – of the databases selected for the project.)

So far we created just one backup set, but you can have more of them. (You specify the number of backup sets in the project setup. Scheduler will then maintain this number.)



The next screen:

Full Restore should be used after hard reset or at least after warm reset. (Warm reset = reset while holding “Up” key.) Remember this rule, it can save you from future problems.

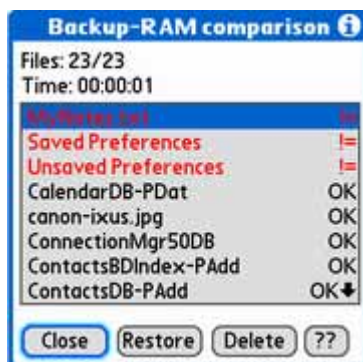
Partial Restore allows selection of just those files you want. If you want this you can go either by databases (more technical) or by applications (easier).



Here is the partial restore screen after tapping *Select Applications* button.

You see application folders and individual files under these folders. You can select either whole applications or just some of their files. In the moment you press *Restore* button, all selected files will be restored.

Note that this view offers a nice structured view of the RAM contents. And the advanced users will note that this view is better than the presentation used in many file managers.



Here is another cool Restore feature. When you return to the first Restore screen and press *Verify* button, you start a comparison of the RAM against selected backup set.

The best of all is that you can restore (see the button “??”) just the differences. It is faster, it is safer and it allows you to resume an interrupted restore.

Some people would like to do more and to decide which of the different files will be restored. Well, it can be done, but you have to switch RscBackup to advanced mode and use the tool called Diff. More about it in advanced topics.

3 Other techniques

The techniques generally refer to the Advanced mode.

Note that the [Backup] in the Basic mode means Update.

3.1 Exclude List

This dialog defines the databases that are excluded from the backup.

Do not change the default selection unless you understand the consequences.

3.2 Select Files Dialog

Use to modify the file selection for backup. (Databases from the Exclude List are omitted.)

As long as all files are selected, any backup action will concern complete RAM contents (minus excluded databases).

Once you unselect some file, you create a fixed **partial selection**; i.e. backup will ignore newly installed RAM files.

For drive-based projects (e.g. RAM Images), the **Select Files** dialog selects card folders.

3.3 Incremental update

Incremental update (shortly "Update") starts by the comparison of the backup set vs. RAM. The comparison goes by date (default) or by content. Based on the results the backup set is updated.

Databases deleted from the RAM since the last backup are deleted from the backup set as well. (Or moved to the archive if the project uses archiving.)

Update is generally much faster than the full backup

When you press Update button on the main screen, the Update is performed on the last backup set in the current project.

3.4 Backup sets

Backup set is the result of one backup action. The name of the backup set indicates current user and the time of the last update.

Update button on the main screen modifies the last backup set. Older backup sets can be updated from the Backup Sets dialog. If you want to create a new backup set, you have to use the "New Backup" button.

Backup sets occupy considerable card space and it is advisable to control their number. Setting **Max. # of backup sets** can be used in two ways:

- a) The value 0 (default) means unlimited number. [New Backup] button adds a new set. [Update] button or scheduler work on the last backup set. It is your responsibility to control the space devoted to the backup results.

b) Non-zero value (n) acts differently:

- Manual Update updates the last backup set. (As before.)
- [New Backup] creates a new set and then – if the number of sets exceeded given limit – deletes the excess sets.
- Scheduled update keeps n most recent sets using a rotation scheme: It first creates required number of backup sets. Since then it always updates the oldest set, which in turn becomes the most recent one.

Backup Sets dialog provides tools for the backup set management. Note that you can use the multi-selection to delete several backup sets at once or to compare (“Diff”) two backup sets.

The All Backup Sets dialog (main menu) lists backup sets from all projects.

3.5 Scheduler

Allows unattended, automatic backup that will take place without the user intervention.

Scheduler can perform **full backup** (creates new backup set) or **incremental update** (modifies existing backup set). Incremental update is faster and enables archiving.

Scheduler can be set to run at regular intervals (at certain day time or every x hours) or can be triggered by specific events:

- (Before or after) the Hotsync operation, or
- When some application terminates, or
- When you manually power-off the PDA

Scheduler respects the project setting '**Max. # of Backup Sets**' (Project settings) so that it maintains a rotating set of backup sets. (See Backup Sets chapter.)

Advanced scheduler options deal with NVFS problems and scheduler options dialog accommodates options common to all projects.

3.6 Projects

A project is simply a set of files backed up as one unit. **RAM-based** projects store databases, **drive-based** projects work with card files. (This is specified during the project creation.)

Every project has its own location, settings, file selection and scheduler. (Exclude list is shared by all projects.) It is allowed to schedule two projects to the same time.

Since you launch Resco Backup the first time you are working in the so-called **Default project**. Default project exists all the time - it cannot be either created or deleted. In other words - default project is what you know from other backup applications.

When creating a new project, you can make use of predefined projects. Even if you don't intend to use them, they present a suitable material to study.

3.7 Compression and encryption

Resco Backup uses zip-based compression/encryption.

Concerning the safety, zip encryption is not considered as safe for the industrial purposes. However, it is safe enough for any normal use. Remember that the encryption safety depends on the password quality.

Password - once given - should remain the same for all backup sets of the same project. Any change of the password will render unusable existing backup sets that were encrypted with the old password.

Password is queried on every use unless you specify '**Store Password**' option. (Setup dialog.) This is comfortable, but less safe. To schedule encrypted backups, you have to store the password.

Default project loses the stored password during the hard reset. Other projects keep the password stored on the card, i.e. it will survive the hard reset.

Restore requires password always disregarding the 'Store Password' option.

3.8 Verify dialog

A simple, fast tool to reliably check the backup set contents.

Verify performs byte-wise comparison of the databases stored in selected backup set vs. their RAM equivalents.

Notice that some databases may change virtually at any moment, e.g. preferences or databases modified by the system or running background applications.

Depending on the context Verify can be used to update or restore the differences. This makes it an ideal tool to resume interrupted backup or restore.

3.9 Diff dialog

An enhanced form of the Verify dialog accessible from the Backup Sets or Restore dialogs.

Unlike Verify you can more detailed information about encountered differences and perform partial selection for Update/Restore.

4 Problems

4.1 Reset loop

It is the state when the reset initialization fails to complete and induces next reset etc. The reason can be a failure during the reset initialization of some application, corrupted launcher database etc. More serious bugs may require hard reset and reinstall

Hints

1. Try warm reset (reset while holding the “Up” key)

This reset skips initialization of 3rd part apps and usually stops the reset loop.

2. Can you start Launcher?

If not, then you need to delete the launcher database – psyslaunchdb.

If you can't start a file manager (FileZ, Resco Explorer), then use Prefs to map one of the HW buttons to the file manager.

If you don't have a file manager, then try partial restore to restore just psyslaunchdb.

3. Launch all apps one-by-one to see if they work. (Any one can cause reset loop.)

4. Test background applications

Disable all such apps that you know and test soft reset. If it works, then start looking for ill behaving background application by enabling them one-by-one.

5. All of the above fails

Use brute force: Delete installed applications one-by-one until you have a working device. Or try hard reset and complete reinstall.

4.2 Problems with background applications

Background apps run concurrently with the active application and if they are not properly programmed (e.g. TextPlus, Okey, ClipPro), they can crash - especially during a backup.

How to identify background applications?

- a) Think. You know what you have installed on your system, which apps have various "Enable" buttons and look like acting on the background
- b) Try 'Lock Risky apps' dialog and use the "Set Defaults" action. The selection is based on a (simplified) analysis of the most dangerous notifications, but sometimes helps.

Crash testing

Do not use backup as the crash-provoking tool – or you use card corruption. Use instead Verify (crash probability is the same) or external apps such as Palm Internals.

Looking for miss-behaving background apps

- Search the web for device compatibility list, e.g. for "T5 compatibility list".
- Trial & Error: Disable all BKG-apps. Enable one of disabled apps at a time and perform crash testing until you find the problem.

4.3 Backup crashes

Although we cannot exclude Resco Backup bug, crash reasons use to be found elsewhere.

First test: Backup after warm reset.

If the crashes disappear, then the problem must be outside Resco Backup. The most frequent causes:

a) Failure of active background application. (Important mainly for NVFS systems)

Reason:

You use a background application that fails to lock properly.

Symptoms:

1. Full backup or Verify crashes, but Update succeeds. (Less data processed)
 2. Crash during the Backup report. (Some events are stopped during backup.)
- Crashes disappear if you run Backup/Verify after a warm reset.

Suggestion:

Read the chapter on background applications. All techniques are explained there.

b) NVFS errors. (Concerns NVFS-based systems, mainly T5, partially T650.)

c) Card problems

Get a file manager and browse the card to see if it has problems. Try to add/delete some files.

Tip: If you can mount your card as Windows drive (T5: use Drive Mode), then open Windows command prompt and run `chkdsk /F` utility. This will take care about FAT errors. Various card readers may offer similar functionality independently from your handheld type.

d) Other things to remember

1. Exclude old PIM databases (Exclude List dialog) or you risk crashes or data loss at restore. Concerns modern palmOne handhelds (T3 and higher).
2. LifeDrive: Exclude read-only databases as these databases are pre-installed at hard reset. (Not a 100% reliable criterion, but it is the best one we know.)

4.4 Restore problems

Worst problem is a reset loop after a restore. (Discussed separately) Usual reasons:

- Bad restore of the launcher database or some background application
- Restore of the databases that must not be restored
- Corrupted backup set or a card problem

In any case, a **warm reset** usually helps. Then you can start the experiments with disabling selected background apps, partial restore etc. (See the chapter on Reset Loop.)

Restore of the PIM databases

Today's Palm handhelds (T3 and higher) maintain 2 copies of PIM databases and restoring both of them may cause a data loss or a reset loop. To prevent this problem, make sure that the Exclude List really excludes old PIM DBs.

However, if you have a backup set with these databases, you still can use it:
Perform partial Restore and unselect AddressDB, DatebookDB, MemoDB and ToDoDB.

Restore after warm reset?

Depends on: Imagine the restore of a running background application = a recipe for a disaster.

Full restore should be made after a hard reset, or at least after a warm reset to avoid conflicts with running apps. (If you are lucky, then full restore of a working PDA may work, too.)

Partial restore usually does not need specific reset – unless you restore a DB that is in use.

Restore with errors

You will notice the error – either as a crash or RscBackup will tell you. A good method to correct the problem is to call Verify from the Restore screen and to restore just differences.

5 Device specifics

Treo 650

You should turn the phone OFF on the Treo 650 prior to performing a restore operation

LifeDrive

Readonly flag is used to denote databases that are pre-installed after the hard reset. Suggested strategy:

- Do not modify readonly flags
- Exclude readonly databases (Exclude list dialog)

New Palm handhelds

Starting from Tungsten T3 you should exclude old PIM databases (Exclude list dialog) or you may lose your contacts, appointments etc.

Tungsten/T5

Make sure you installed T5 update
(www.palmone.com/us/support/downloads/tungstent5/tungstent5update.html)