Tech Tip #11: Rebuilding Btrieve Files

Overview: Using the Rebuild GUI and command line tools to convert files or reclaim deleted space

In the last Tech Tip, we looked at some of the statistics you can see within your database files. But what if you want to upgrade the files to a newer format, or to a larger page size? This is easily accomplished with the **PSQL Rebuild** utility.

The **Rebuild** utility is designed to take known-good files and rebuild them with subtle changes – like file format, page size, compression, etc. Note that it is NOT valid to use the **Rebuild** utility on corrupted or damaged files, because it lacks the necessary error handling to do this task correctly.

To rebuild a file, start the Rebuild utility and click *Next* to bypass the first screen (which is just a waste of a mouse click). Then, click the *Add* button and select the files you want to rebuild. The **Rebuild** utility expects you to be rebuilding files with an extension of MKD, BTR, or DDF – if you have any other file extension, be sure to change the *Files of Type* field on the *Add* dialog box. You can add as many files as you need to this screen. When finished, click *Next* to go on to the options screen.

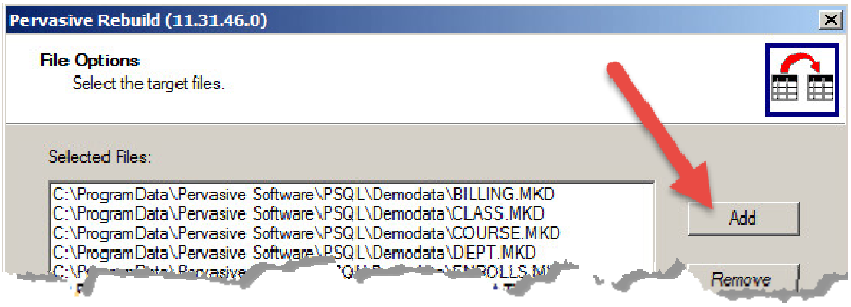

Figure 1: Selected Files Dialog

The *Rebuild Options* screen, as shown in Figure 2, includes many different components of the file that you can alter. Most of these settings can be changed completely independently from the application. In other words, you can change it and the app will never know. In the upper right, you can specify the key number you want to use for the rebuild (this can re-order the records physically in a logical order). If you select *NONE* (the default), a faster rebuild process will be used, and the physical order will not change. Immediately below that field, you see two drop box elements where you can change the *File Format* and *Page Size*. Not all file formats support all page sizes, so select the file format first. If in doubt, we recommend using a 9.5 file format with a 16K page size for fastest performance. You can also change the use of compression within a file. While *Record Compression* is fairly benign, *Page Compression* changes the way files are stored, and most data file recovery tools will not be able to work with your data after a failure. However, *Page Compression* is definitely useful to save disk space.

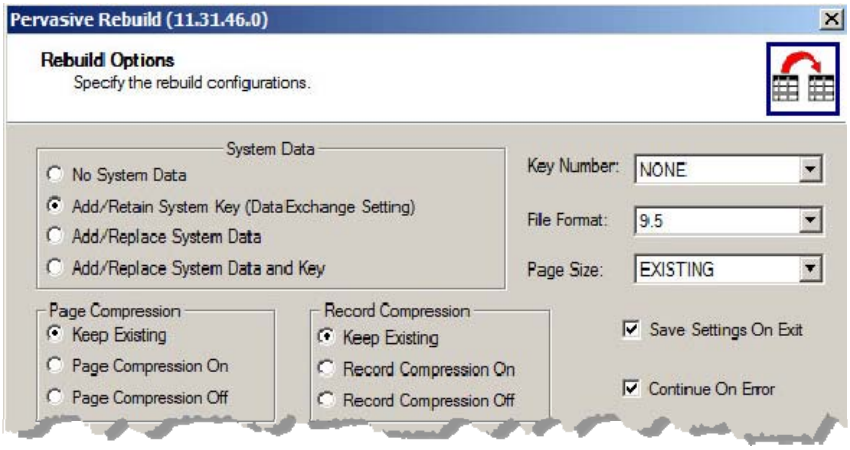

Figure 2: Rebuild Options Dialog

Click *Next* and the selected files will be rebuilt with the chosen options. When the **Rebuild** utility is finished, you should review the **Rebuild Log** to see if the tool got back an error when working on any specific file.

If you are doing a large number of files, then we recommend working from the command line **Rebuild** utility, called **rbldcli**, instead. This tool provides much of the same functionality of the graphical tool, but it allows you to specify wildcards for your file list, as well as script a process so that you can run several rebuilds in different windows -- all at the same time. With this tool, all options are given as switches, so you need to figure out what options you need first. A complete list of the command line utility options is shown in Figure 3.

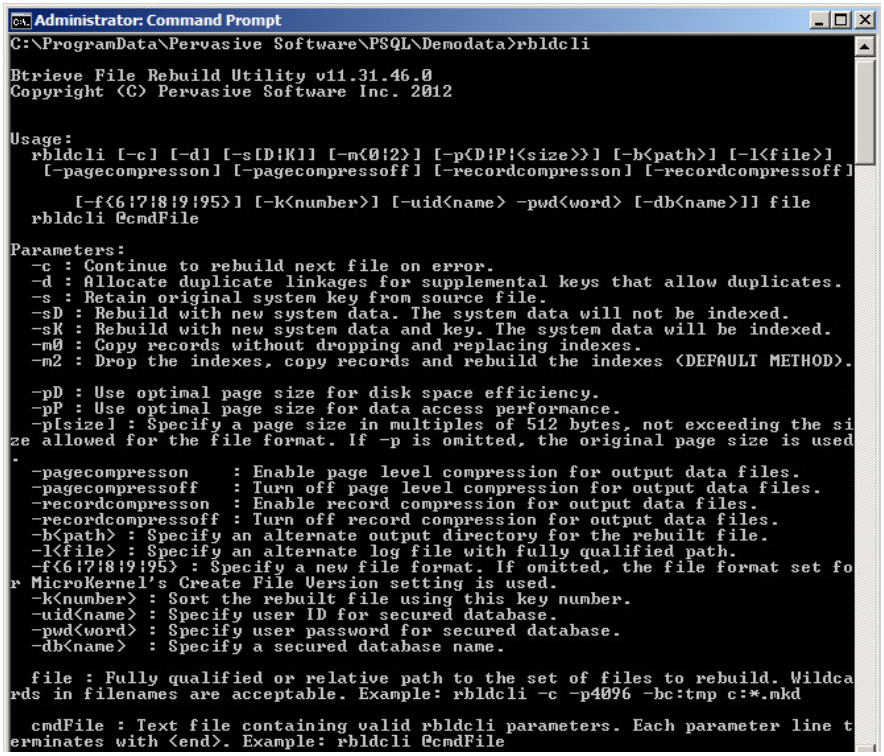

Figure 3: Rbldcli Options

The most common rebuild process, taking a file set and rebuilding all of the files to the 9.5 file format with a 16K page size would look like this on a command line: `rbldcli -c -p16384 -f95 *.*`. Note that the `-c` is used to continue when an error is found, so using *.* is safe because it will error out on any non-database files – effectively ignoring them.

As you can imagine, rebuilding files is usually a safe operation. However, there are certain cases where rebuilding can render a data set useless. Until you have a successful rebuild behind you, you'll want to make a backup of your data immediately before a rebuild, and save it until you are sure that all is well. When in doubt, check with the application developer to ensure that such a process is safe.

If all of this is overwhelming, then consider contacting Goldstar Software for help. We provide support services for PSQL database environments throughout North America and beyond. You can find us at:

http://www.goldstarsoftware.com