

Pathfinder Repair and Compact Tool

The Mantra

Backup – Backup – Backup! If you have not backed up Pathfinder, do so by backing up the PathfinderServer folder before you attempt any of the steps below. It is always a good idea to make sure you have a good backup of your PathfinderServer folder before making any major changes to the Pathfinder system.

The Symptoms

In extremely rare situations we have had customers who have attempted to add equipment into their routers in Pathfinder and upon clicking Finish in the router creation wizard, were left with a blank database. This document discusses that situation, how to recover from it, what causes it, and how we are preventing it in the future. Again this is a very rare and infrequent issue, but is alarming enough to customers that we felt this document and the changes mentioned in it were warranted.

The Cause

When a user adds equipment to a Pathfinder livewire router, the system has to delete and recreate the routing tables in the database which store the routing information between restarts. Currently PathfinderServer uses Microsoft Access databases to store this information. There is a little known and rare situation where an Access database can get a kind of corruption which will allow it to work correctly in almost all of its functionality but when we try to create a new table, we will be unable to. In current versions of Pathfinder we delete the existing tables and recreate them. When a database has this kind of corruption it is not possible to recreate the tables leaving the database empty and causing user panic. There is a sanctioned Microsoft fix for a database with this kind of corruption, but of course that requires detecting the situation before we delete any tables in the database. Because of these rare but important problems, we have made a number of changes in PathfinderServer version 4.74 as described below.

The Solution

First, when the user updates a router in version 4.74, PathfinderServer will no longer make the changes on the working database. Instead it makes a copy of the database file. Then it attempts to make the requested changes in the copy. Then only if the changes are successful will it copy the modified database over the original and reload the data. This should prevent any corruption of existing data. In the situation where the main database has this kind of corruption what will happen is that the system will not be able to complete its changes to the copy and will abort the changes leaving the original functioning database the way it was. Additional log messages have also been added to log the progress of these changes.

However, that would also leave the database in a situation where the customer could not add equipment. In order to address this, we have created a repair and compact tool. This tool will run existing Microsoft techniques for fixing such a corruption. It accomplishes this by reading the data records into a new database. Like the method above the tool will take the following steps to fix the problem:

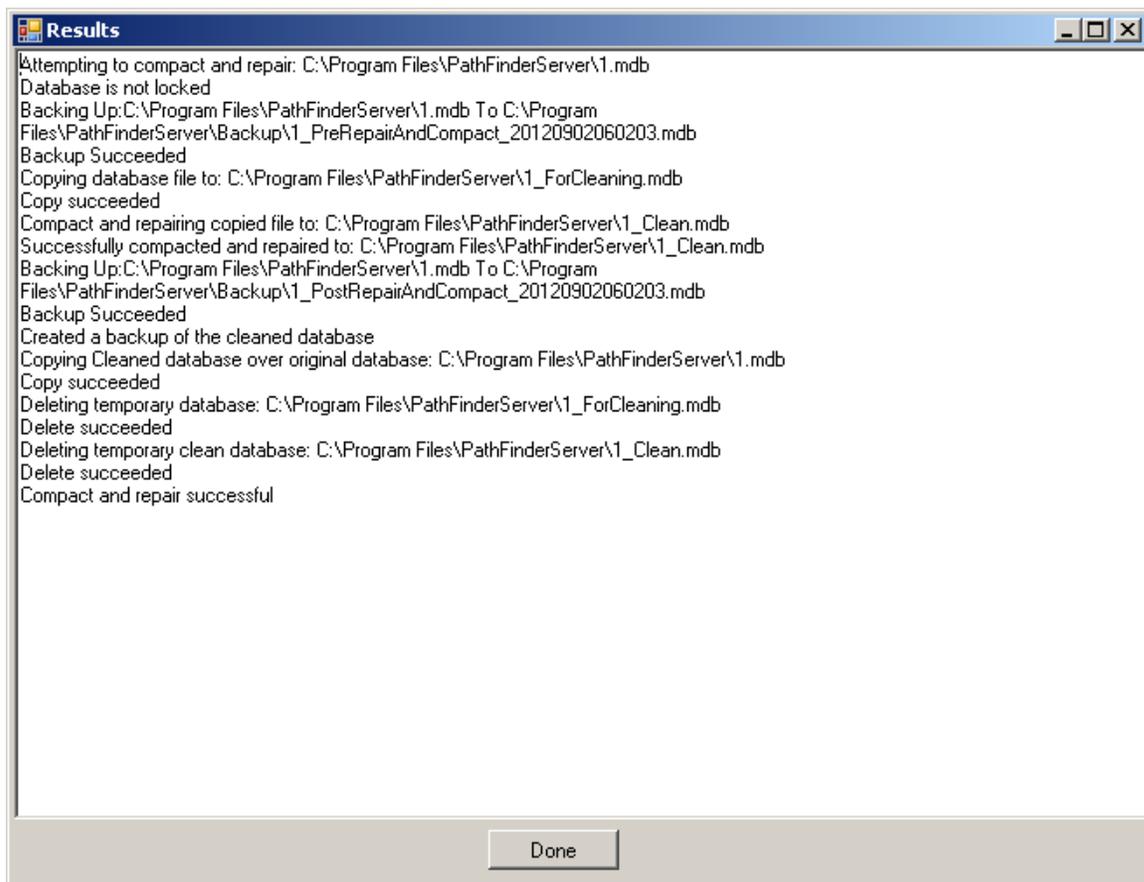
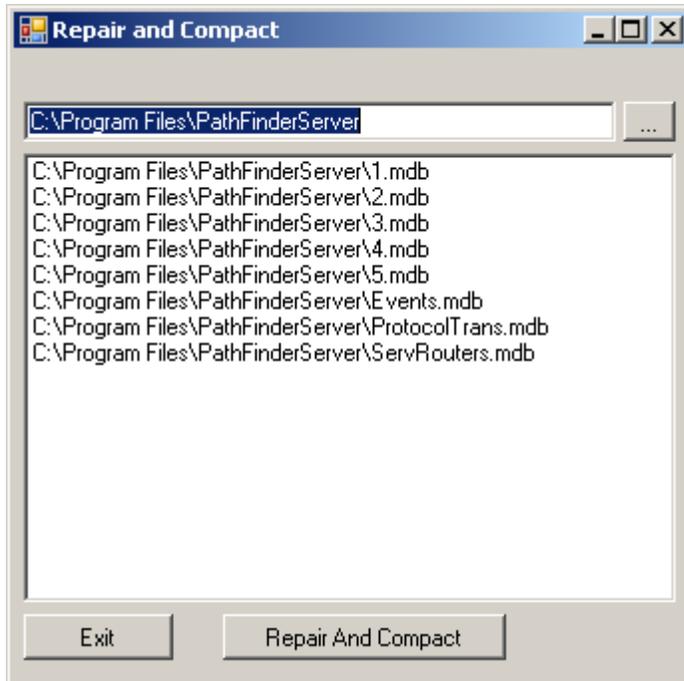
- 1) Make a backup of the existing database to the backup folder
- 2) Make a copy of the database
- 3) Run the Microsoft repair and compact functions on the copy
- 4) Make a backup of the clean database to the backups folder
- 5) Only if all of the above are successful, copy the clean database file over the corrupt one.

When possible, it is recommended to run the repair and compact tool on databases with Pathfinder shut down. This is required for any of the databases that have an open lock file, and the tool will check for that situation letting the user know that the database can not be repaired unless you first shut down the application that is using it. However, the databases which are most prone to this problem are the router databases which are files named with the number of the router plus the .mdb extension. In most cases if PathfinderServer cannot be shut down, these databases can still be repaired while the system is still running since Pathfinder only accesses them infrequently and so there is usually not a lock file open. Again the tool will tell you if you cannot run the tool on a specific database when you try to do so. Once the database is repaired you should be able to add equipment again.

There is another reason this tool can be useful. If the customer is regularly creating and destroying time based standard events which get stored in the Events.mdb (as opposed to time based stack events), the Events.mdb can grow very large. This is because a Microsoft Access database does not reclaim the space from deleted records. Therefore the Events.mdb database can grow to be quite large even if there is not much live data in it. The repair and compact tool will effectively reclaim this space.

It is also important to note that the repair and compact tool is a part of the 4.74 installer of PathfinderServer, but if the user does not wish to upgrade the server to version 4.74, the repair and compact tool can also be downloaded separately and used on older versions of Pathfinder. The tool can be obtained at: <http://pathfinderpc.com/RepairAndCompactTool.zip>. Copy the three files included in the zip file into the PathfinderServer folder, and then you can run the tool on existing databases.

On some versions of Microsoft operating systems, you may need to right click on the Repair and Compact tool and run it as Administrator. If you try to compact and repair a database and the tool tells you it does not have the privileges to make the changes, try running the tool as Administrator.



Saving the Day

All of the information above is fine for users who are running 4.74 or above, but what about the user who has tried to add equipment and now has a blank database. Fortunately, it is easy to recover from this situation. Every time the router editing wizard is executed to add and/or remove equipment from the router and the work is completed successfully, Pathfinder immediately makes a copy of the router database to the backups folder with the name of the database followed by an underscore and a time/date stamp. Therefore if the user has a blank database, they only need to open the backup folder and find the most recent version of the database prior to the blank one, and copy the backup file. Rename the copy with the original file name and copy it back into the main Pathfinder Server folder over the original file. Then restart Pathfinder and everything should be functioning again. Then they can attempt to run the repair and compact tool on the recovered database before adding additional equipment.

In the case of a cluster, a little more care is required. It is recommended that the secondary instance of PathfinderServer be shut down and then the recovered file should be copied to both servers. Then restart the primary server software, and then bring the secondary back online. The reason for this is that the clustering service keeps a record of time and date stamps of the information and so copying from the backup folder into a live cluster may just get the data overwritten again by the secondary server.

Using the steps above a wiped database can be recovered and the system can be restored to a normal operating state in a matter of minutes.

If you have any questions please contact Axia support for additional help.
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