

DRAFT

Ebase Maintenance Recommendations

Ebase V1.0.x/V2.0.x

Larry Bednar

March 17, 2004

Purpose

This document outlines important maintenance actions that should be regularly performed in maintenance of the database.

Maintenance Actions

Daily

1. Update fast find fields. (Ideally performed at end of day, or before any “find” operations for which complete accuracy is a requirement.)

It may be pragmatic to run this script less often if the script takes a long time to complete in your database, if only small numbers of records in your database have changed, or if “find” operations that must be accurate are run on only an occasional basis.

2. Complete backup to tape, zip cartridge, etc. (ideally performed at end of day)
3. Perform basic checks for database corruption
 - a. Open all files (using the “set to single-user/set to multi-user” functions is a handy way to do this in Ebase V1.0.x) – if any files will not open, database corruption is indicated.
 - b. In each Ebase database, use a script to open an “all fields” layout and move to each record in the database – if any record causes a database crash when opened, database corruption is indicated.
 - c. (Other recommendations still under development...)

At any indication of database corruption, the best response is usually to revert the database to the last copy that did not show evidence of corruption and request that users repeat any data modifications entered since that time. Efforts to repair corruption otherwise may require substantial expertise. The time and expense involved in such repairs frequently exceeds the expense of reentering a single day’s data.

Weekly

1. Review deletion records

For both ebase V1.0.x and ebase v2, the administrator should look for deletion patterns that seem to be mistakes or dangerous choices on the part of users. Check with users to verify that simultaneous deletions of multiple records were actually what was intended.

[Ebase V1.0.x] Ebase users sometimes accidentally simultaneously delete entire found sets when using the powerful administration accounts when they only intended to delete a single record. The standard “user” account does not allow deletions of all records in a found set. Bulk deletions represent major database activities that the administrator

should be aware of. At a bare minimum, the presence of bulk deletions alerts the administrator to the fact that someone was using the “master” account – a practice that is dangerous if frequent among general users. In addition, it may be wise to double-check that bulk deletions of many records were actually what was intended by the user performing the deletion.

For ebase V2, the administrator should review all records marked for deletion, and order the final removal of records from the database where appropriate.

In ebase V2, when a user “deletes” a record, it is only “marked” for deletion. The actual removal of the record only occurs when a database administrator later reviews deletions and orders the final removal of those records.

2. Virus definition update for anti-virus software on computer holding database.
3. Antivirus sweep of computer holding database
4. Send one backup copy of database to a different location for safekeeping (this should be a different building or city).
5. Check “sharing” status of directory holding the “master” copy of Ebase files. This directory should *not* be accessible over local area network. The only access to Ebase files should be through a “hosted” FileMaker Pro session on the “server”.
6. Review data entered during the week and scan for inappropriate data entry approaches, etc. Communicate better approaches to users and correct problems as appropriate.

Monthly

1. Perform diagnostic tests on computer holding database
 - a. Run software to verify correct operation of hard disks (for example, Norton Disk Doctor or similar software)
 - b. Run defragmentation/disk examination utilities after backup is completed (for example Norton Speed Disk or similar software)
2. Perform maintenance actions as indicated by diagnostic results
3. [Ebase v2] Run “Delete orphaned location records” script
4. [Ebase v2] Run “Delete flagged ContactLocation records” script
5. [Ebase v2] Run “Resize all windows” script

After Customizations/Modifications

1. Save a copy of all FileMaker databases and copy to CD or other removable media. To make this easier, it is ideal to save “clones” (FM database files without loaded data) rather than copies of the databases containing all your data. Having these copies can reduce your expenses if database corruption ever forces you to load data into an uncorrupted set of ebase files.
2. Document the changes made to your ebase implementation. This can reduce your expense if database corruption ever forces you to manually recreate customizations before loading your data into a fresh set of ebase files.

General

1. One of the most important maintenance steps you can take with your database is to **use the powerful “administrator” and “developer” accounts ONLY when the power of those**

accounts is needed. (In ebase V1.0.x, these accounts are the ones using the “admin” and “master” passwords in an initial download of ebase. In ebase V2, the names are changeable at setup. It is quite common that Ebase users who use these accounts indiscriminately accidentally damage their databases or data. Prevention is the best policy. Use the safer “user” account for routine database work, and the other accounts only when necessary.

2. **Customize only after careful consideration and research, and only to provide for a long-term, consistent need.** Experimentation with new techniques, field additions, or other modifications for one-time needs should be performed in other databases containing data exported from this application. An accumulation of poorly implemented or undocumented fields or features in your database can easily make for problems in long-term database maintenance, etc.
3. It can hardly be overemphasized: **Back up frequently.** The Ebase support mailing lists include many messages from those who did not do this and had no recourse but an expensive total rebuild of their database after a mishap.
4. Keep only **ONE copy** of the database files available for startup and use. It is common for problems to develop with Ebase use when multiple copies of the database files are maintained. Typically, different groups of users somehow begin working with different copies of the files, or a single user inadvertently ends up working with different copies at different times. Naturally, confusion results when data entered or modified at one time by one person doesn't show up in the database reviewed by another person. Later efforts to resynchronize the disparate databases can be laborious and error-prone. Prevention is the best policy. If backups of the database are kept on computer hard disks, place them in a WinZip archive file or similar to prevent this type of confusion. Otherwise, place all copies of the database on removable media like zip cartridges or tapes. Keep only your main working copy of the database on computer hard drives ready for use.
5. **AVOID powering off** a computer where Ebase is running without “gracefully” closing Ebase (using the Ebase “close” function) or FileMaker (using the FileMaker window's “exit” or “close” functions) first. Awkward shutdowns commonly result in file corruption damaging the function of the database. Repair of corruption typically requires a skilled database developer or similar and can be difficult. The most effective response is often to revert to the last uncorrupted backup of the database – resulting in a need for reentering all information added to the database since that backup. .
6. It is a VERY good idea to **maintain a written record of maintenance actions** performed on your database. The form provided on the last page of this document is designed for this purpose – it may be printed and placed in a 3-ring binder.

DRAFT

Ebase Database Recovery Steps

Larry Bednar
March 17, 2004

Purpose

This document outlines steps to be taken in event of a power outage or computer system crash that results in “corruption” of the FileMaker files used by Ebase.

Recovery Directions

Preparation and Prevention

Uninterruptible Power Supply

Power outages are a common cause of awkward shutdowns that lead to corruption of Ebase files. It is probably wise to consider the purchase of an uninterruptible power supply for the computer holding the “master” copy of Ebase.

Backup System

Successful recovery from corrupted databases requires a backup copy of Ebase. It is not recommended that the FileMaker “recovery” process be used in attempts to remove the corruption.

The frequency of backups should consider the amount of data entry and data modification performed on your database. Backups must be frequent enough that reentry of all critical data entered since the latest backup is always an acceptably low effort. With high quantities of data entry/modification, daily backups may be desirable. With relatively low levels of data entry/modification, a weekly backup might suffice.

Data Entry Records

Note that reentry of the database work taken since the last backup will require that an orderly filing system is available to feed that part of the recovery process. Ideally, documents or notes used for data entry should be filed in a fashion that allows your organization to track when that information was entered into the database.

For membership renewals, this can be as simple as having one file of membership applications waiting for entry into the database, and a second file containing those applications that have already been entered. If the entry date is recorded on each application as it is entered, all information entered since the last backup can be easily recovered.

Alternatively, where a daily backup is performed at the end of each day, a system where a single file folder holds all of today’s data entry information may be enough.

Recovery

1. After every awkward shut-down, power outage, or computer system “freeze-up”, the database administrator should promptly check a variety of functions in Ebase to determine whether problems are present. This test should be performed BEFORE other users begin working with the database.

Tests that have been suggested in discussions on the Ebase support mailing lists include (listed in order of ease of use, easiest first):

- Verify that all Ebase files can be opened
- Navigate to every record of suspect Ebase files (a script would be ideal for this purpose)
- Open every layout of suspect Ebase files (a script would be ideal for this purpose)
- Using a layout that displays all fields in a suspect Ebase file, move to each field on every record of the file.

If possible, it will also be helpful to have a standard list of “finds”, “go to record” operations, etc. that should be run, with the “correct” results recorded for comparison.

NOTE: Some experts recommend that you revert to a backup copy ANY time a crash, computer lock-up, etc. forces an awkward shutdown of Ebase. Database corruption can indeed be accumulated even if it isn't obvious, so this is probably the most rigorous approach. For a described example, see the the “ebase database corruption example” available in the “downloads” area of my web site at www.quimdas.com. However, most Ebase users do not revert to a backup copy if the database appears to be functioning correctly. If this is your choice, please be aware that there is some level of risk associated with that decision.

2. If Ebase files appear to be corrupted, restore Ebase from your most recent backup.

Do NOT rely on the FileMaker “recover” function to restore your database to good functioning condition.

- Place all existing Ebase files into a WinZip archive or similar file with an appropriate name.

Do NOT simply move these files to another folder. It is an important principle of Ebase database management to leave only ONE set of Ebase files available for use. Placing the files in an archive accomplishes this goal.

- Restore Ebase from the most recent backup.
- Test the restored copy of Ebase for correct function.
- Notify data entry personnel of the need to reenter information entered since the last backup.

Day	Date	Worker	Backup	Backup Media ID	Update Fast Find	Send Backup Offsite	Dir. Share Setting	Virus Scan	PC Diagnostic Tests
Mon			X		X	--		--	--
Tue			X		X	--		--	--
Wed			X		X	--		--	--
Thurs			X		X	--		--	--
Fri			X		X	X	X	X	--
Mon			X		X	--		--	--
Tues			X		X	--		--	--
Wed			X		X	--		--	--
Thurs			X		X	--		--	--
Fri			X		X	X	X	X	--
Mon			X		X	--		--	--
Tues			X		X	--		--	--
Wed			X		X	--		--	--
Thurs			X		X	--		--	--
Fri			X		X	X	X	X	--
Mon			X		X	--		--	--
Tues			X		X	--		--	--
Wed			X		X	--		--	--
Thurs			X		X	--		--	--
Frid			X		X	X	X	X	--
Mon			X		X	--		--	--
Tues			X		X	--		--	--
Wed			X		X	--		--	--
Thurs			X		X	--		--	--
Fri			X		X	X	X	X	--
End of Month			--		--	--	--		X

Instructions:

1. One form should be used for each month.
2. At the first use of a form, fill in the year and month
3. For each working day:
 - a. fill in the date (1, 2, 3, ...31)
 - b. enter the initials of the database worker
 - c. for each task indicated by an "X", circle the "X" if the task was performed

Backups should use a set of labeled tapes or cartridges. The ID label of the media used on any given day should be entered in the "Backup Media ID" column of this table.