

FileMaker Go Synchronizing Techniques



Arthur Evans, from UK and Ireland based FileMaker Trainers AWE Consultancy, demonstrates how records created with FileMaker Go can be easily synchronized with a main FileMaker database using simple Scripts techniques

Introduction

FileMaker Go for the iPad, iPhone and iPod Touch, has rapidly established itself as the easiest and quickest method for turning Apple's iOS mobile devices into highly effective data capture tools. A mobile worker can either connect to a hosted FileMaker file over a wireless or 3G connection, or out in the field create and edit records on the mobile device by using the same database file created with FileMaker Pro and simply transferred to the iPad, iPhone or iPod touch.

This article demonstrates a simple technique whereby new records created by staff working out of the office with a FileMaker database held on a mobile device and accessed using FileMaker Go can be copied back into the main workgroup FileMaker database, avoiding duplication or record set errors.

Synchronising records from FileMaker Go with FileMaker Pro

There are many situations where a mobile worker working with FileMaker Go will need to take a copy of a FileMaker database to work with on the mobile device. A key one is where no signal would be possible to connect to a remote hosted FileMaker database. Two recent project examples for this instance have been where FileMaker Go has been used by a wood burning stove supplier looking to generate customer quotation records for remote cottage owners in the remote Mourne Mountains of Northern Ireland, or where a portable appliance tester was working in Belfast office basements. For both FileMaker Go users, their location meant that there was no possibility of obtaining a remote connection to their main office FileMaker Pro database.

The stove supplier needed to take a copy of his FileMaker database with him to capture new customer details and put together quotation line items with prices working from a copy of his stock table. The portable appliance tester needed a

FileMaker file on his mobile device that could capture new equipment records on site and record new electrical tests carried out on both new and existing equipment.

Both these remote workers needed to find a technique that would enable them to isolate new records that they had created in the field and update the main office FileMaker database with these new records when they were back in the office.

The simple record synchronisation technique demonstrated in this article addresses the need to update the main workgroup FileMaker Pro database with new records captured by staff on their mobile devices. This article does not examine synchronisation techniques at field level. Field level synchronisation is possible with more advanced scripting and design techniques and will be discussed in a future article.

Note that the file that normally resides on the mobile device must be copied back to a computer with FileMaker Pro installed for you to add the scripts that will be defined in the next section to the file and for any new records to be imported from this file back into the main FileMaker file used by the workgroup.

Identifying and isolating New Records Created with FileMaker Go

The FileMaker Pro function `Get(ApplicationVersion)` can be used to indicate which records within a FileMaker Pro file were created on the mobile device. This is important so that these records can be searched for and isolated prior to importing them back into the main workgroup FileMaker file.

The function `Get(ApplicationVersion)` when evaluated will return the text string 'Pro' followed by the version number when using FileMaker Pro and the text string 'ProAdvanced' followed by the version number when using FileMaker Pro Advanced. On the mobile device the `Get(ApplicationVersion)` function will return the text string 'Go' followed by the version number on the iPhone or iPod touch, or 'Go_iPad' and the version number, on the iPad.

Before a FileMaker file is copied onto the mobile device for use with FileMaker Go, the database designer should add a text field which evaluates a calculation formula everytime a new record is created, in any table in the file.

In the example shown in Figure 1, a text field called 'Created on Application Version' has been added to each table in a FileMaker Pro file called iPATFM. This file and the file PATFM - which represents the main FileMaker Pro file back in the office - are designed to accompany this article.

The text field 'Created on Application Version' has been defined in the Options for Field dialogue box to be a calculated value with the formula `Get (ApplicationVersion)`.

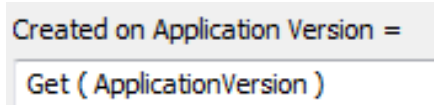
The image shows a screenshot of a FileMaker field definition. The field name is 'Created on Application Version' and it is set to the function 'Get (ApplicationVersion)'. The text is displayed in a light blue box with a thin border.

Figure 1: The ‘Created on Application Version’ field used to capture the word “Go” for the application version regardless of the mobile device type

For any new records created on the Mobile device where this field is included in the table, the field will contain a text string with the phrase “Go” in it.

When the remote worker returns to the office, the FileMaker file can be copied back onto the office network, for example by emailing the file from the mobile device, or by copying it from the connected mobile device via iTunes.

We can now take advantage of the Get(ApplicationVersion) function with a script that can find and isolate any records created using FileMaker Go on the mobile device.

A Note on Serial Numbers when Records are Merged From Two FileMaker Files

Given that new customer or equipment records are being created on the mobile device with FileMaker Go, there is a risk that a record created on the iOS device could be given the same unique serial number or primary key field value, as a record that may have been created on the main office database. This can have big error implications if it is left unresolved. One of the golden rules of relational database design is that the Primary key field value in a record set should be unique. If it is not, the wrong customer will be associated with a quotation or an invoice, or the wrong electrical equipment could be associated with a test result.

One way to avoid this risk of duplicate primary key values in any of the FileMaker file tables is to modify the FileMaker file that is held on the mobile device so that any new records created on the device automatically are given a serial number far higher than the main office database values are ever likely to reach.

In the example file associated with the article, iPATFM, any new equipment and test records are automatically assigned a primary key serial number of 99999991 or greater. The workgroup main database PATFM is never expected to hold this many records or have a record with a primary key serial number value reach this high a number.

Three Scripts to isolate New Records created with FileMaker Go Import them and update the Mobile Device with the Top Record Set

Now that we have a method by which to search for and isolate only those new records created on the mobile device with FileMaker Go, we can three new scripts; one script added to the main database PATFM to import all new records, and two scripts added to the iPATFM file. These second and third scripts are designed to search for new

records only and then to delete all existing records on the mobile device file and re import the top set of records, for all tables, from the main office database.

Script 1: Find all New Records created using FileMaker Go

The first script which is designed to find all new records on the mobile device database iPATFM is shown in Figure 1.

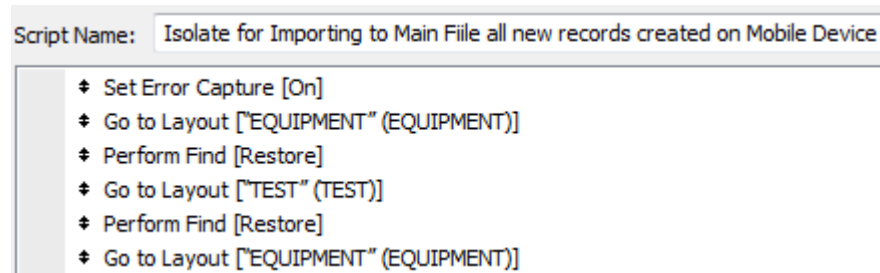


Figure 1: FileMaker Script added to the iPATFM file to search for all new records in the EQUIPMENT AND TEST tables

The two Perform Find script steps in Figure 1 have been set to search for any record

In both the EQUIPMENT and the TEST tables which have the text string *Go* held in the 'Created on Application Version' field. The Specify Find requests for both Perform Find script steps are shown in Figure 2a and Figure 2b.

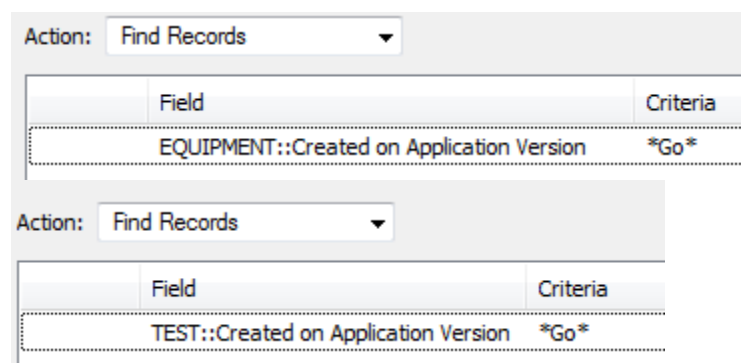


Figure 2a & 2b: the Perform Find script steps used to search for any new records created on the mobile device

Script 2: Delete ALL records held on the Mobile device file ready to Import the New set of Records

A second script must be added to the FileMaker file that resides on the mobile device. This second script is used to show all records in all tables of the FileMaker file, delete all records and import the top new set of records from the main FileMaker file. Although it is the second script to be described here, it is the last script to be called

and run, once synchronisation is complete and any new records from the mobile device file have been imported into the main FileMaker file.

The script to select all records in all tables and delete them is shown in Figure 3.

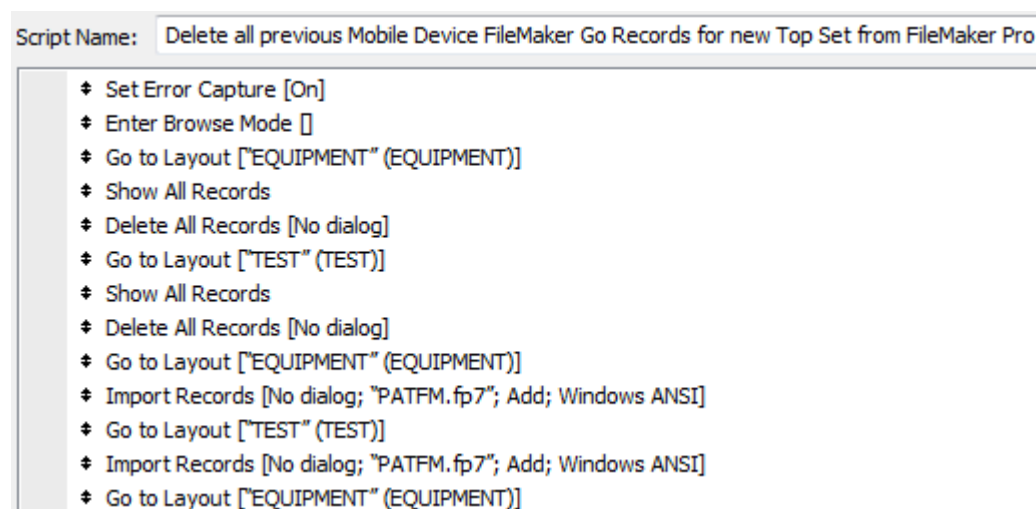


Figure 3: The script added to the mobile FileMaker file that deletes all existing records in that file and imports the top set of records for each table from the main FileMaker file

When the two Import Records script steps are added to the script shown in Figure 3, it is critical in the Import Options dialogue box that the 'Perform auto-enter options while importing' check box is **left blank** as shown in Figure 4. If this is not done then all new records will have their primary key field values changed and will be marked in the Created on Application Version field as being made with FileMaker Go. This will lead to duplicate records the next time the file is synchronised.

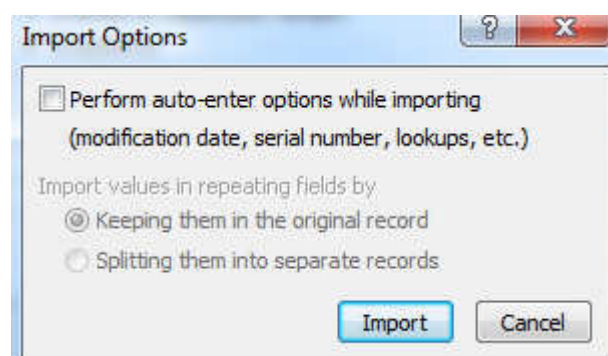


Figure 4: for the Import Records script step option, do **not** check the 'Perform auto-enter options' check box in the Import Options dialogue box

Script 3: To capture any New Records created with FileMaker Go and Import them into the Main Database

The third script is the only one added to the main database example file PATFM. This script is used to call the first script we created which isolates the new records, imports any new records into each database table, resets the 'Created on Application Version' text value from *Go* to 'Mobile' to avoid duplicate future re-imports of existing records. This third script finally calls the second script we created to import the top set of records back onto the mobile device FileMaker file.

The third script is shown in Figure 5 with text comments in bold used to describe each section of the script.

```

Script Name: Capture New iOS Records after copying mobile database to same folder as this one

♦ Set Error Capture [On]
♦ Show Custom Dialog ["Synchronise database by adding..."; "Synchronise database by adding new Records from Mobile Device?"Have you copied the iPAT file from ...]
♦ If [Get ( LastMessageChoice ) = 1]
♦ Halt Script
♦ End If
♦ #Run an external script in iPAT to isolate all records created on the mobile device with FileMaker Go
♦ Perform Script ["Isolate for Importing to Main File all new records created on Mobile Device" from file: "iPATFM"]
♦ #Import any new records from the Equipment Table
♦ Go to Layout ["EQUIPMENT DETAILS" (EQUIPMENT)]
♦ Import Records [No dialog; "iPATFM.fp7"; Add; Windows ANSI]
♦ #Replace the Go originator name so that the Equipment records will not be imported again from the mobile device and risk duplication...
♦ Replace Field Contents [No dialog; EQUIPMENT::Created on Application Version; "MobileDevice"]
♦ #Show all Equipment Records to be imported back into the iPATFM file
♦ Show All Records
♦ #Import any new records from the Test Table
♦ Go to Layout ["TEST LIST" (TEST)]
♦ Import Records [No dialog; "iPATFM.fp7"; Add; Windows ANSI]
♦ #Replace the Go originator name so that the Test records will not be imported again from the mobile device and risk duplication...
♦ Replace Field Contents [No dialog; TEST::Created on Application Version; "MobileDevice"]
♦ #Show all Test Records to be imported back into the iPATFM file
♦ Show All Records
♦ Go to Layout ["MENU" (PATFM)]
♦ #Finally run an external script in iPATFM to import the top set of EQUIPMENT and TEST records...
♦ Perform Script ["Delete all previous Mobile Device FileMaker Go Records for new Top Set from FileMaker Pro" from file: "iPATFM"]
♦ Show Custom Dialog ["The mobile device FileMaker Go..."; "The mobile device FileMaker Go file called iPATFM has been synchronised"Have the iPATFM file can now be..."]
♦ Close File ["iPATFM"]

```

Figure 5: The third script which is added to the main FileMaker database file to manage importing of any new records from the mobile device file

The script step Replace Field Contents used twice in the script, for records in the Test table and in the EQUIPMENT table, is important and is used only on the newly imported records to replace the existing contents of the field Created on Application Version from *Go* to the phrase 'MobileDevice'. If this is not done, we risk re-importing duplicate records, using the technique we have used in the first script to search for and isolate records created using FileMaker Go.

The final two lines of the script opens a dialogue box to tell the user that the top record set has now been imported back into the file iPATFM ready to be copied back onto the mobile device. The iPATFM file is closed by the last line of the script, for this file to be copied back onto the iPad, iPhone or iPod touch ready to start capturing new records remotely.

To automate the whole synchronisation process for the user, this third script can be called from a button that is added to the main menu screen of the main database file called PATFM. The button is shown in Figure 6.

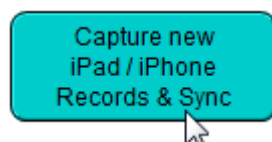


Figure 6: A button on the PATFM menu layout is defined to run the import Script and automate the synchronisation procedure for the user

Taking It Further

This article has presented one simple method by which new records created by a remote worker using FileMaker Go can be imported and synchronised with the main office or workgroup FileMaker database.

The scripts and the script step techniques introduced in this article and included in the two associated files PATFM and iPATFM can be copied, imported and adapted for your own FileMaker Go solution. Records created FileMaker Go in any table within a FileMaker file held on the mobile device can be identified and found. When the file is copied back onto the office network, these records can be imported into the main office or workgroup copy of the file.

With a little adaption, the scripts can be enhanced so that only a subset of the main workgroup database record set is copied back to the FileMaker file used on the mobile device. This could be useful where members of the sales team are given only a certain proportion of the business contacts database, to cover specific geographic or industry sectors.

Arthur Evans is a FileMaker Business Alliance Trainer with offices in Northern Ireland and London. His training company established in 1992 provides on site FileMaker training courses, technical support and development services for FileMaker end users across the UK and Ireland.

www.aweconsultancy.com

info@aweconsultancy.com