

TFDUpdate SQL demo

The TFDUpdateSQL component is a component that will let you tweak the actual SQL that is sent to the database for update, insert and delete statements.

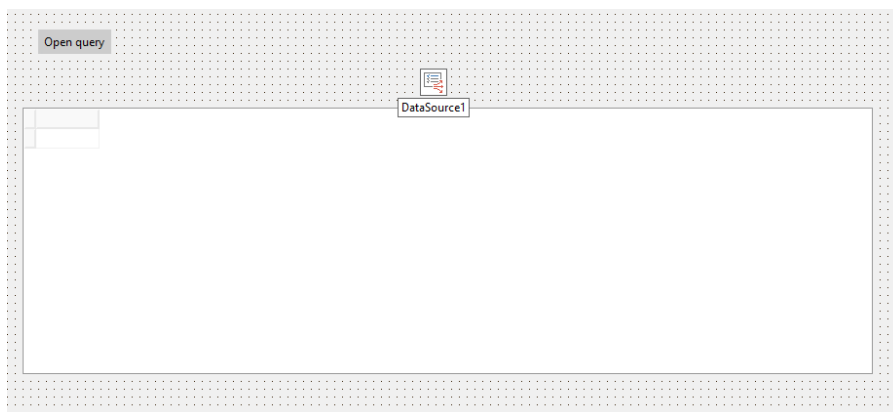
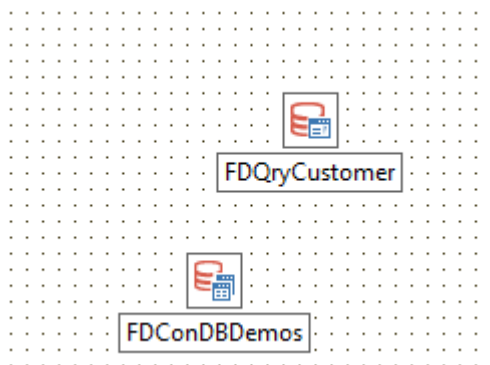
Start by building an application with a datamodule (File -> New -> Datamodule).

On the datamodule drop a TFDCConnection, point it to your database. Add also a TFDQuery that's connected to the TFDCConnection. Add SQL to the TFDQuery Component.

On the main form, when you have added the datamodule pas file to the uses clause, you can add a TDBGrid, connected to a TDataSource, that is connected to the TFDCConnection on the datamodule.

I have connected to the dbdemos Interbase database, and added the SQL `SELECT * FROM CUSTOMER`

I also added a button to open the query, so my application looks something like this:



This is a simple standard way of building an application with Delphi and has been done like this since Delphi 1 (ok. Datamodule was not introduced until around Delphi 3).

When we click the button, opening the query
dmCustomer.FDQryCustomer.Open;

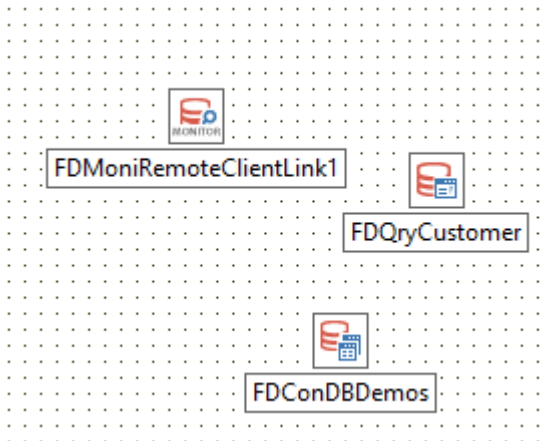
The query opens and the dbgrid is filled with data.

This demo is going to be about how to tweak the SQL that is sent to the database.

FireDAC Monitor

A really good way to check what is sent to the database is to use a monitoring system. It just so happens that there is such a system built into the FireDAC framework, so before we go any further on the actual demo, I will enable the monitoring system in the FireDAC framework.

On the datamodule drop a TFDMoniRemoteClientLink, and on the TFDConnection, set the parameter MonitorBY to Remote



FireDAC Connection Editor - [FDConDBDemos]

Select driver or select connection definition name to override, then setup parameters

Definition Options Info SQL Script

Driver ID: IB

Connection Definition Name: FDConDBDemos

Test Wizard Revert To Defaults Help

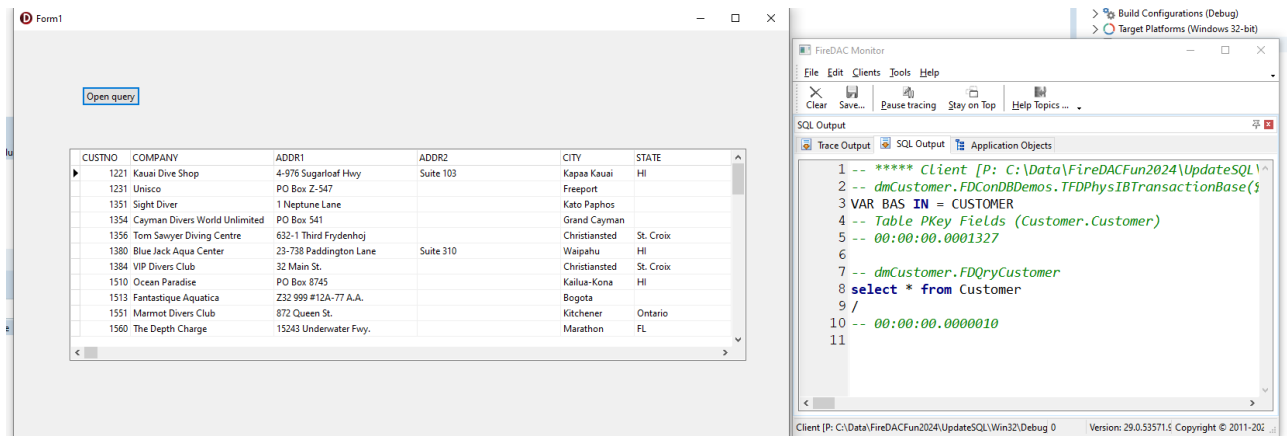
Parameter	Value	Default
DriverID	IB	IB
Pooled	False	False
Database	C:\Users\Public\Documents\	
User_Name	sysdba	
Password	masterkey	
MonitorBy	Remote	
OSAuthent		
Protocol	Local	Local
Server		
Port		
SQLDialect	3	3
RoleName		
CharacterSet	NONE	NONE
GUIDEndian	Little	Little

OK Cancel

That's all it takes

Now just to see this in action start the monitor, in the Delphi menu click Tools->FireDAC Monitor, and run also your application.

When you open the query, you can see the SQL sent to the database



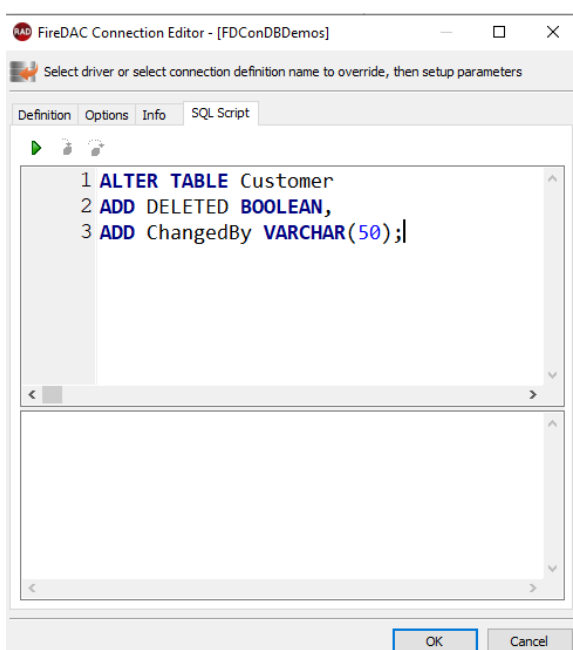
For the sake of the demo, I am going to Alter the table. You might want to make a copy of the database first or download it later.

I am going to add two fields. A Deleted field which is going to act as a flag as to whether a field is deleted instead of deleting it and a ChangedBy Field which will hold the name of who changed the record. One could be way more advanced than this, but for the sake of demonstrating it suits the purpose fine.

To alter the table we could use the

SQL ALTER TABLE Customer ADD DELETED BOOLEAN, ADD ChangedBy VARCHAR(50);

And we can use the FireDAC Connection Editor to do so. Choose the SQL Script tab, and enter the SQL. Hit the small green play button



Now you have two extra fields. In a real life application you might want to not display those fields, but I am going to leave the SQL almost as it is.

I am going to add the where Clause:

WHERE

DELETED IS NULL

OR

DELETED = FALSE

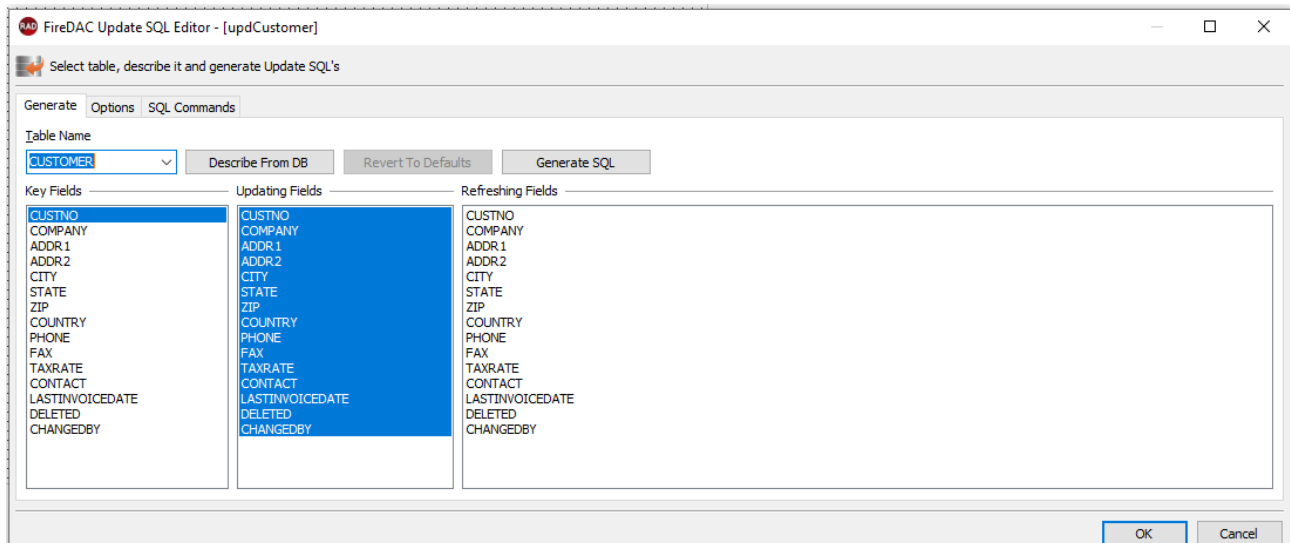
So far so good, and up until now the application works as it did when we started.

TFDUpdateSQL

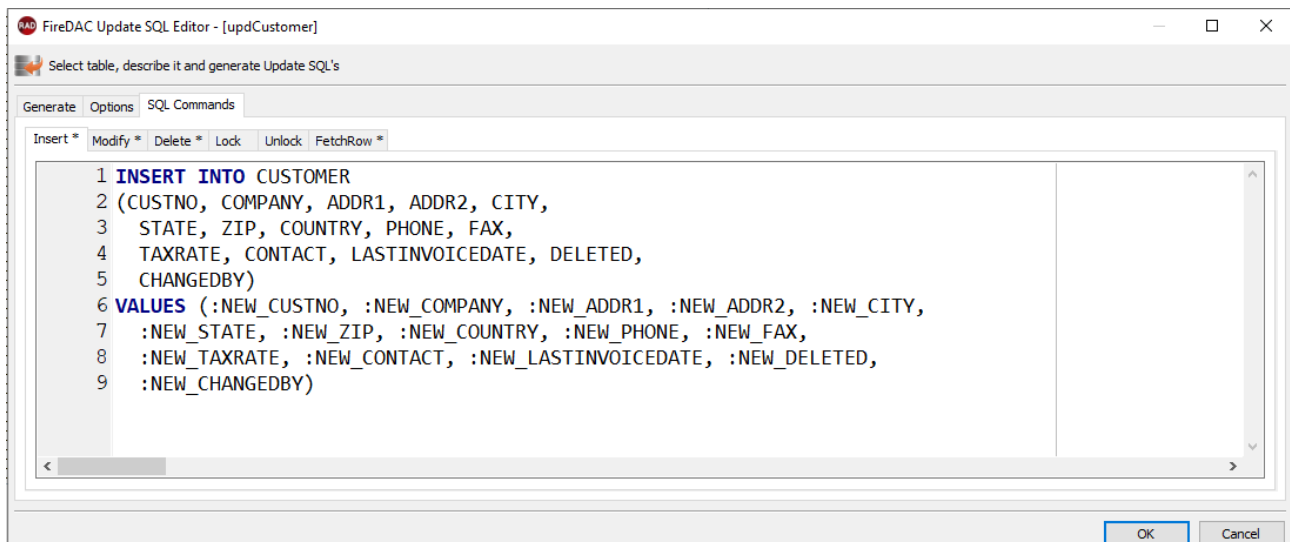
Now we need the component this demo is all about.

Drop the TFDUpdateSQL component on the datamodule, it should hook itself to the connection component. On the Query Component there is a property UpdateObject, assign the update component to this property.

Doubleclick the TFDUpdate component and the FireDAC Update SQL Editor will open. Choose the Customer table



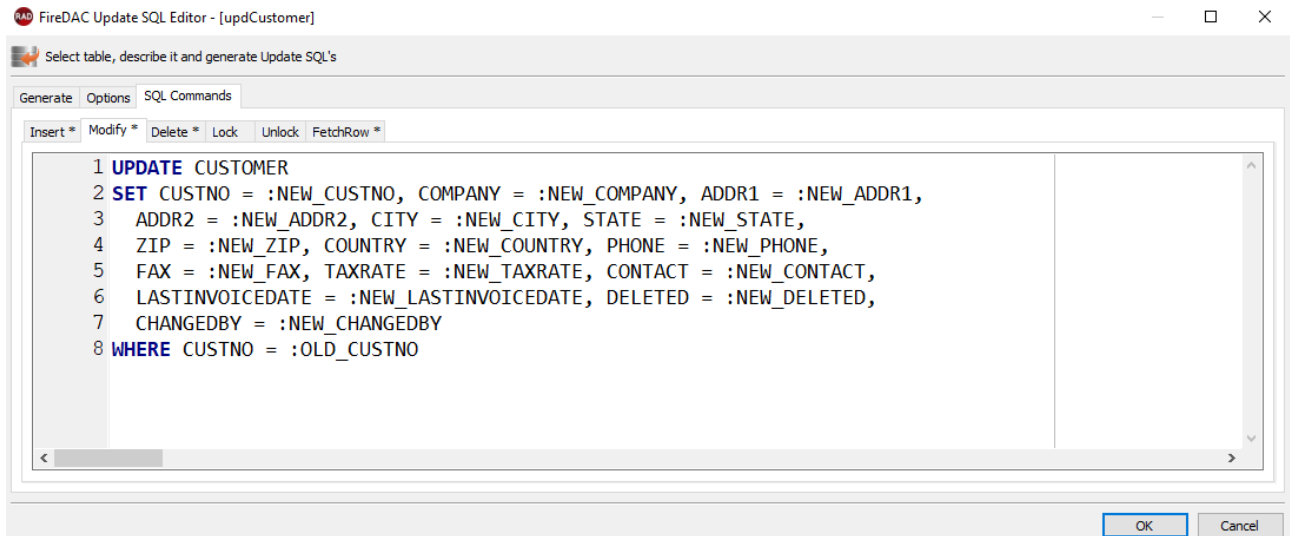
And click the “Generate SQL” button



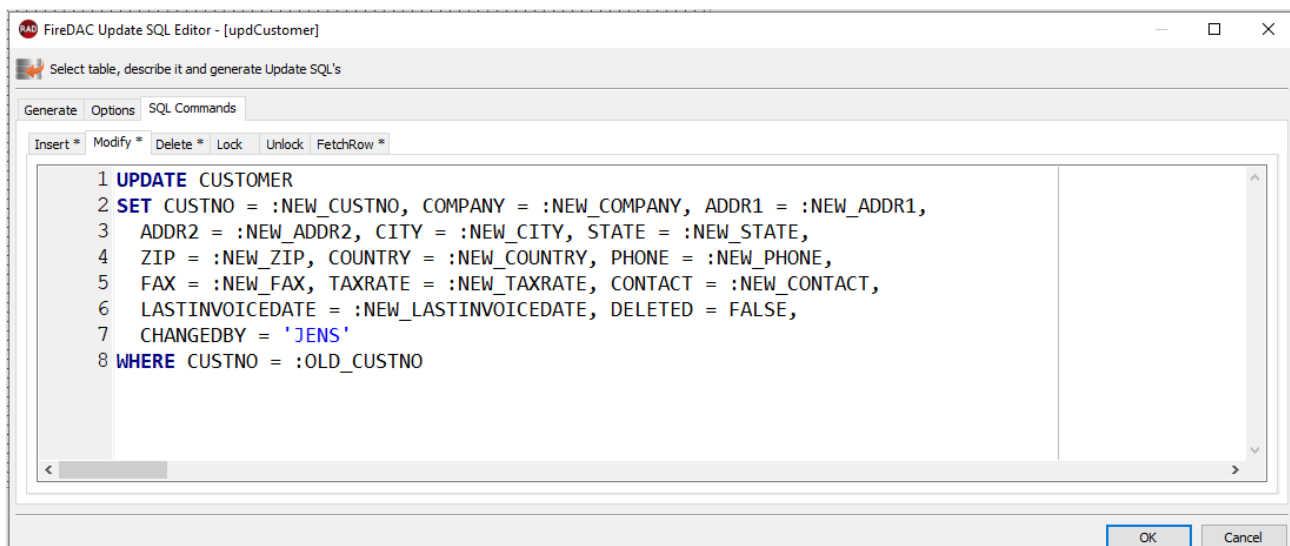
On each of the tabs you can see (and modify) the SQL.

I want to modify the SQL for modifying the record, and for deleting the record

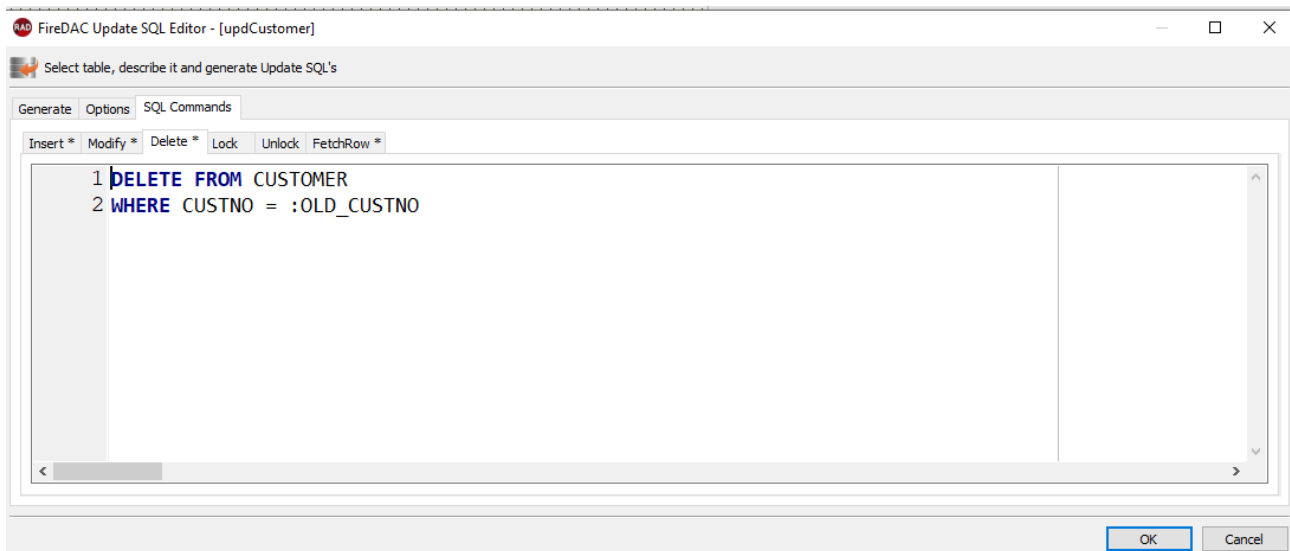
Modify



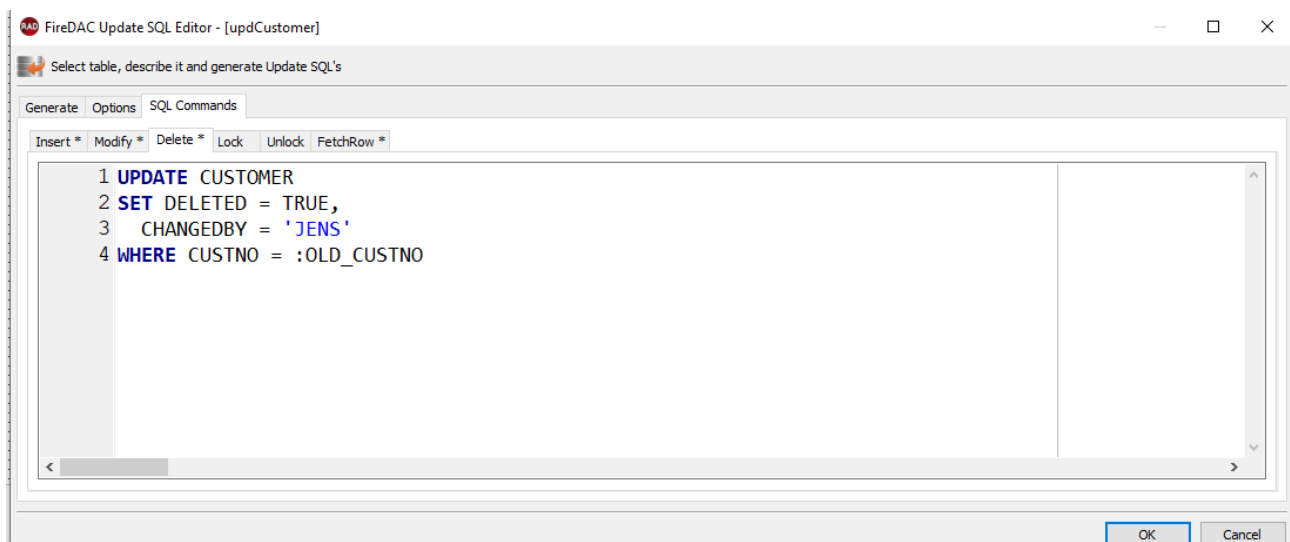
Is changed to



Delete



Can be changed to



When we now run the application and open the Query we can change a record.

I will change the name Kauai Dive Shop to Kauai Dive Shoppe, and as soon as I move off the record it is posted back to the underlying database

Form1

Open query

CUSTNO	COMPANY	ADDR1	ADDR2	CITY	STATE	ZIP
1221	Kauai Dive Shoppe	4-976 Sugarloaf Hwy	Suite 103	Kapaa Kauai	HI	94766-123
1231	Unisco	PO Box Z-547		Freeport		
1351	Sight Diver	1 Neptune Lane		Kato Paphos		
1354	Cayman Divers World Unlimited	PO Box 541		Grand Cayman		
1356	Tom Sawyer Diving Centre	632-1 Third Frydenhoj		Christiansted	St. Croix	00820
1380	Blue Jack Aqua Center	23-738 Paddington Lane	Suite 310	Waipahu	HI	99776
1384	VIP Divers Club	32 Main St.		Christiansted	St. Croix	02800
1510	Ocean Paradise	PO Box 8745		Kailua-Kona	HI	94756
1513	Fantastique Aquatica	Z32 999 #12A-77 A.A.		Bogota		
1551	Marmot Divers Club	872 Queen St.		Kitchener	Ontario	G3N 2E1
1560	The Depth Charge	15243 Undervater Fwy.		Marathon	FL	35003
1563	Blue Sports	203 12th Ave. Box 746		Ginibaldi	OR	91187

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File Load: MPPL.dll, No Debug Info. Base Address: 56E46000, Process UpdateSQL.exe (5964)

FireDAC Monitor

File Edit Clients Tools Help

Clear

Save...

Pause tracing

Stay on Top

Help Topics...

SQL Output

Trace Output

SQL Output

Application Objects

```

43
44 -- TFDCustomCommand($036BC100)
45 VAR NEW_CUSTNO IN = 1221
46 VAR NEW_COMPANY IN = Kauai Dive Shoppe
47 VAR NEW_ADDR1 IN = 4-976 Sugarloaf Hwy
48 VAR NEW_ADDR2 IN = Suite 103
49 VAR NEW_CITY IN = Kapaa Kauai
50 VAR NEW_STATE IN = HI
51 VAR NEW_ZIP IN = 94766-1234
52 VAR NEW_COUNTRY IN = US
53 VAR NEW_PHONE IN = 808-555-0269
54 VAR NEW_FAX IN = 808-555-0278
55 VAR NEW_TAXRATE IN = 8,5
56 VAR NEW_CONTACT IN = Erica Norman
57 VAR NEW_LASTINVOICEDATE IN = 02-02-1995 01:05:03
58 VAR NEW_DELETED IN = False
59 VAR NEW_CHANGEDBY IN = JENS
60 VAR OLD_CUSTNO IN = 1221
61 UPDATE CUSTOMER
62 SET CUSTNO = :NEW_CUSTNO, COMPANY = :NEW_COMPANY, ADDR1 = :NEW_ADDR1
63 ADDR2 = :NEW_ADDR2, CITY = :NEW_CITY, STATE = :NEW_STATE,
64 ZIP = :NEW_ZIP, COUNTRY = :NEW_COUNTRY, PHONE = :NEW_PHONE,
65 FAX = :NEW_FAX, TAXRATE = :NEW_TAXRATE, CONTACT = :NEW_CONTACT,
66 LASTINVOICEDATE = :NEW_LASTINVOICEDATE, DELETED = :NEW_DELETED,
67 CHANGEDBY = :NEW_CHANGEDBY
68 WHERE CUSTNO = :OLD_CUSTNO
69 /
70 -- 00:00:00.0000014
71

```

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And if I delete the Tom Sawyer Diving Centre by hitting Ctrl-Delete, I get the confirmation box.

Confirm

×

Delete record?

OK

Cancel

The record appears to be deleted in the grid, but as you see, the SQL just updates the two fields

Form1

Open query

CUSTNO	COMPANY	ADDR1	ADDR2	CITY	STATE	ZIP
1221	Kauai Dive Shoppe	4-976 Sugarloaf Hwy	Suite 103	Kapaa Kauai	HI	94766-123
1231	Unisco	PO Box Z-547		Freeport		
1351	Sight Diver	1 Neptune Lane		Kato Paphos		
1354	Cayman Divers World Unlimited	PO Box 541		Grand Cayman		
1380	Blue Jack Aqua Center	23-738 Paddington Lane	Suite 310	Waipahu	HI	99776
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1510	Ocean Paradise	PO Box 8745		Kailua-Kona	HI	94756
1513	Fantastique Aquatica	Z32 999 #12A-77 A.A.		Bogota		
1551	Marmot Divers Club	872 Queen St.		Kitchener	Ontario	G3N 2E1
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1563	Blue Sports	203 12th Ave. Box 746		Ginibaldi	OR	91187
1624	Makai SCUBA Club	PO Box 8334		Kailua-Kona	HI	94756

115

File Load: MPPL.dll, No Debug Info. Base Address: 56E46000, Process UpdateSQL.exe (5964)

FireDAC Monitor

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Clear

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Stay on Top

Help Topics...

SQL Output

Trace Output

SQL Output

Application Objects

```

71
72 -- TFDCustomCommand($036BC230)
73 VAR OLD_CUSTNO IN = 1356
74 UPDATE CUSTOMER
75 SET DELETED = TRUE,
76 CHANGEDBY = 'JENS'
77 WHERE CUSTNO = ?
78 /
79 -- 00:00:00.0004579
80
81 -- TFDCustomCommand($036BC230)
82 VAR OLD_CUSTNO IN = 1356
83 UPDATE CUSTOMER
84 SET DELETED = TRUE,
85 CHANGEDBY = 'JENS'
86 WHERE CUSTNO = :OLD_CUSTNO
87 /
88 -- 00:00:00.0000004
89

```

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The deleted record is still safe and sound in the database