

Exporting to Fixed Length ASCII

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DOS WIN



The Quick Answer

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THE topic of this article probably wouldn't have crossed my mind if I hadn't had two unrelated requests for it recently, and just days apart. One of these was to get Q&A to generate a custom-formatted ASCII file that a client needed to electronically submit to his company's bank each day. The other was from a county agency that needed Q&A to produce an oddball ASCII file to upload to their mainframe periodically for further processing. Both requests involved creating what I'll call a *fixed length ASCII file*—an output file format that Q&A's built-in export options don't accommodate. Evidently, a lot of older mainframe and "mini"-computers still in use by banks, universities, bureaucracies and other long-lived institutions require this kind of fixed length ASCII file format, so you might come across a need for it one of these days, if you haven't already.

Typical Q&A ASCII export formats

When exporting to ASCII format, Q&A gives you two ASCII options. Broadly defined, they are *Standard ASCII* and *Fixed ASCII*, and they are as different as night and day. A Standard ASCII file containing check numbers, dates and amounts, in that order, might look something like this:

```
"12355","9/30/2002","255.57"  
"12356","9/30/2002","3544.92"  
"12362","10/10/2002","10525.35"
```

Like most ASCII files, this one contains one record per line. That is, each record is separated by a carriage return. In this case, each data value is delimited by a comma and the surrounding quote marks.

In the case of Q&A, however, if the check numbers come from a field formatted for numbers, and the check amounts from a money field, Q&A won't put quote marks around these values when you select "Yes" for *Quotes around text* at the ASCII Options screen. (See Figure 1.) You have to

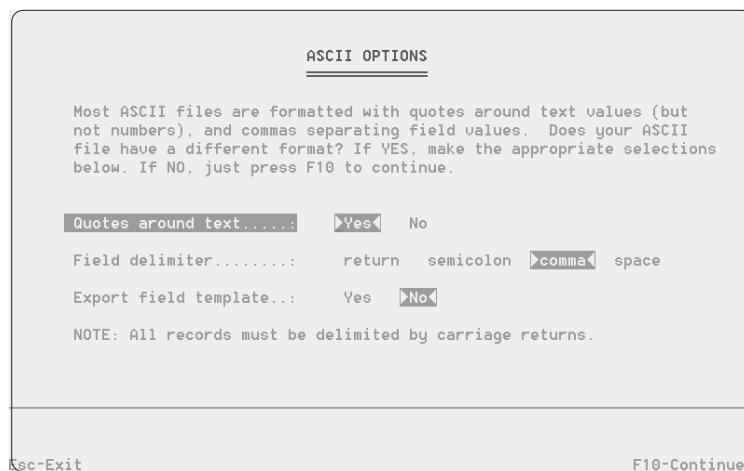


Figure 1. The Q&A for DOS ASCII Options screen..

pay close attention to the line on that screen that says "Quotes around text" and also to the comment at the top of the ASCII Options screen that says, in part:

Most ASCII files are formatted with quotes around text values (but not numbers), and commas separating field values....

This may have been true 10 or 15 years ago, but many of today's programs that accept Standard ASCII input—(variously called "plain text files" or "comma-separated values" (CSV format) files)—expect the file to

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Quick Tip

Save Your Mass Update Specs

I've always considered backing up the database to be an integral part of Mass Updating. It's just *so* easy to make a stupid mistake and wreck your data that it's unwise, to say the least, not to. When I say "backup," I do *not* mean make a tape backup of your system, I mean:

1. File / Utilities / Backup database.
2. Backup CUSTOMER.dtf to CUSTBAK.dtf, for example.
3. Overwrite? Yes.

It's as simple as that.

Why backup before running a Mass Update? Well there are manifold opportunities for error:

- You might get the Retrieve Spec wrong and update the wrong records.
- You might make a mistake in your Update Spec programming.

These mistakes can be incredibly obvious. A classic example is moving data from one field to another:

```
#1 = #2  
#2 = ""
```

Get the numbers in the wrong fields, and you're sunk! An incredibly easy mistake to make—and the sort of situation where, the longer you ponder over it, the more likely you are to get it wrong! Even the smartest of us make mistakes. So you positively *need* a backup to revert to *when*—not *if*—you get it wrong.

Okay, you know all this. So what am I adding? Here's the "tip":

Don't backup your database and then embark on the Mass Update. Save the Update Spec (and perhaps the Retrieve Spec, too, for good measure) first, and then back up the database before running the Mass Update procedure.

This way, if when checking the results afterwards you find that you have indeed suffered a "senior moment" or the "Homer Simpson" syndrome, then not only can you readily restore your database, but you have the evidence. You can see exactly what that silly mistake was.

Don't anguish over what to name the Retrieve Spec and Update Spec when saving them for this purpose. Simply name them "temp," and overwrite this name every time.

To do this, begin the Mass Update procedure this way:

1. At the Retrieve Spec, save your retrieval parameters (Shift-F8) unless it is a very simple Spec.
2. At the Update Spec, save it unless it is very simple.
3. Press Esc and confirm that you want to abandon the procedure.
4. Backup the database.
5. Restart the Mass Update procedure.
6. Press Alt-F8 to recall your saved Retrieve Spec (if saved) and press F10 to continue.
7. Press Alt-F8 to recall your saved Update Spec and press F10 to continue.
8. Run the Mass Update and carefully check the results.

It's a common fallacy that you don't need to backup before undertaking a Mass Update. Some folks think that if they make a mistake, then they can simply run the Mass Update "in reverse" to put

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have quotes around *all* the values (number and money values as well as text values) if there are quotes around *any* of them. That programs such as Excel and Access let you get away with having quotes around some but not all the values in the import file is generous of them – but we’re digressing too far.

The point is, the file format shown above isn’t *fixed length* but *variable length*. In other words, each record in the file is as long as it needs to be, and a special character (the comma in this case) along with the quotes separates the individual data values.

That’s pretty much your Standard ASCII file.

Fixed ASCII files

Q&A also offers a *Fixed ASCII* export option, which looks promising and gets a bit closer to the objective. It’s sometimes called *Table ASCII* because the file is tabular in structure. Here are the same three records shown earlier but now in a typical Fixed ASCII file format:

12355	9/30/2002	255.57
12356	9/30/2002	3544.92
12362	10/10/2002	10525.35

In a Fixed ASCII file, each data value starts in a *known column position* in every record (line or row) in the file. In this example, the check numbers start at column 1, the dates start at column 10, and the amounts start at column 25. You don’t need field delimiters in this type of file because the importing program can parse (take apart and distribute) the data based on the known position of each data value in it.

When you create a Fixed ASCII file in Q&A, you use the Merge Spec to specify, for each field in the export file, the starting column position and maximum length of each value. (See Figure 2.) If any data value exceeds its specified maximum length, Q&A truncates it.

Although the Fixed ASCII format comes much closer to a *fixed length* ASCII file than a Standard ASCII file, it



Figure 2. Q&A for DOS Fixed ASCII Merge Spec.

still isn’t fixed length because the records in the file are not all of the same length.

Fixed length ASCII files

In a “true” *fixed length* ASCII file, every *record* (line) in the file is the same length, which may mean that every data value has to be the same length which, in turn, means that you have to “pad” your data values in a way that forces them all to be the same length.

Both fixed length ASCII formats I had to deal with required this fixed record length with a “0” (zero) used as the padding character for the values. Taking the simpler of the two requirements, the fixed length ASCII file had to meet the following specifications:

- The record length had to be exactly 30 characters.
- The check number value had to be exactly 10 characters in length, padded with zeros.
- The date had to be exactly 10 characters in length, padded with zeros, with no separator character between the month, day and year.
- The amount value had to be exactly 10 characters in length, padded with zeros, include the dollars and cents (even if “00” cents) but no decimal point.

Figure 3 shows what that file had to look like using the data values in the previous two examples.

For a human-unreadable ASCII output file like this, you are well beyond what Q&A can give you via its various ASCII export options. How, for example, do you tell Q&A to strip out the “/” or “-” date separator characters? How do you strip out the decimal points from the money values? How do you conditionally add the exact number of padding characters needed for all three values? Fortunately, as is usually the case with Q&A, you have tools to help you get where you want to go.

Export files by other means

The Q&A Report module is a wonderful tool for creating all kinds of specialized ASCII output files when the

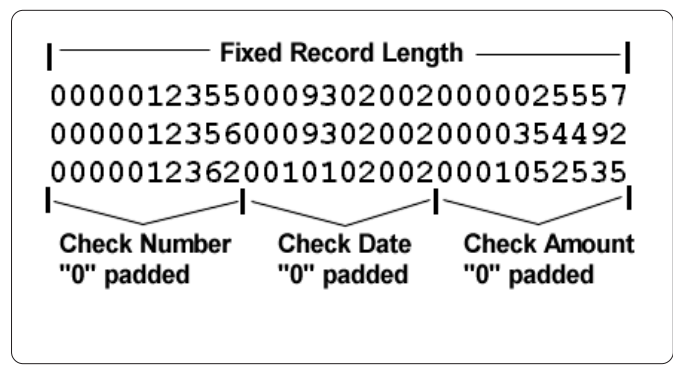


Figure 3. A “true” fixed length ASCII file.

format is one record per line. Our fixed length ASCII file is no exception. All it takes is a little know-how and a willingness to spend an hour or so designing the report. Once that's done, all you'll have to do is run the report to generate your custom ASCII file.

Continuing with the example of an output file that contains check numbers, dates and amounts, here's the Column/Sort Spec for our *Fixed Length ASCII File Output* report. This report will work in Q&A 4.0/5.0 for DOS and Q&A for Windows. (See note at end of article.)

```
Check No: 5,AS,I
Check Date: 10,I
Check Amount: 15,I
```

As you can see, we're sorting on the **Check No** column and all the columns are invisible since they will be used solely in calculations in the Derived Columns.

You'll need the following five Derived Columns:

```
Heading: Check Number Padding & Formatting
Formula No. 1 @Rt("0000000000" + @Str(#5), 10)
Column/Sort Spec: 20,I
```

```
Heading: Check Date Padding & Formatting
Formula No. 2 "00" + @Mid(#10,6,2) + @Right(#10,2)
+ @Lt(#10,4)
Column/Sort Spec: 25,I
```

```
Heading: Check Amount Formatting
Formula No. 3 @Repllas(@Str(@Tn(#15 + 0.001)),
"1", "")
Column/Sort Spec: 30,I
```

```
Heading: Check Amount Padding & Formatting
Formula No. 4 @Rt("0000000000" + @Replace(#30,
".", ""), 10)
Column/Sort Spec: 35,I
```

```
Heading: \
Formula No. 5 #20 + #25 + #35
Column/Sort Spec: 40,HS(\ )
```

As you can see from the "I" (invisible) codes, only the final Derived Column will be visible. The rest won't print. They just format the data and add the padding characters.

Derived Column #1

```
@Rt("0000000000" + @Str(#5), 10)
```

This column formats and pads the check numbers. If you knew that your check numbers would always be the same length, you wouldn't need the @Rt (@Right) function. You could simply precede check numbers of, say, four digits with six zeros to get your padded length of 10. But what if the check number turns over from 9999 to 10000 mid run?

I enclose the check number (#5) in the @Str function to ensure that Q&A treats this number as string value.

Technically, a check number field should be a text field. After all, you'd never do any kind of arithmetic on a check number. But Q&Aers often make digits-only fields like this number fields so alphabetic characters can't be typed into them or so Q&A will sort them numerically. Q&A does have a nasty habit of treating digits-only text

values as numbers, anyway (returned Lookup values in merge documents) except when you need it to.

The @Right function in this column (as in the others to follow) tacks 10 zeros onto the front of the check number, giving you a value of "000000000012345" (15 characters) for check number 12345. The function's *second* parameter is "10", so Q&A returns only the rightmost ten characters of the value, stripping out the first five zeros.

Derived Column #2

```
"00" + @Mid(#10,6,2) + @Right(#10,2) + @Lt(#10,4)
```

This column formats and pads the check dates. The one thing you can know about any date that it can always be expressed in eight digits. What isn't always quite so ascertainable is the global date format being used for the database or the way Q&A will output the date in the kind of operation you're doing. So to force a consistent date format, you want to work with the format in which Q&A internally stores dates—YYYY/MM/DD.

In this case, I needed to convert from that to the MMDDYYYY format and lose the "/" separators. The three functions in this column take care of that. I hard-coded the two zeros in front of the resulting date value to make it a length of 10 since I knew that the date value would always have a length of eight.

Derived Column #3

```
@Repllas(@Str(@Tn(#15 + 0.001)), "1", "")
```

This column formats the check amounts from Column #15. We've got a money field here that needs to be converted to a text value. Remember, a money (M) field is mainly a display format. If you type "89" in one, Q&A will display "\$89.00" yet store it as "89". A value that shows as "\$35.10" gets stored as "35.1". You can run into all kinds of problems with this when you use a money value in a string expression this way (see the sidebar below):

```
"You owe us $" + @Str(Amount) + " from last year!"
```

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Handy Money-to-Text Conversion

If you need a single expression that converts a money value to a text value with two decimal places, try this one:

```
@Repllas(@Str(@Tn(Amount + 0.001)), "1", "")
```

You can use this in Report Derived Columns and merge documents where only programming *expressions* (not *statements*) are permitted. You can also use it in a database programming *statement* like this one:

```
< Amount To Text = @Repllas(@Str(@Tn(Amount +
0.001)), "1", "")
```

This shortcut works similarly for number fields formatted N2 for two decimal places.

Migrating Data to a Redesigned Database

ALEC MULVEY

DOS WIN



If you've done a fair amount of Q&A database development, chances are you've encountered this problem more than once: You take a copy of a client's database. You redesign it, moving, adding, removing fields – whatever. When you're done, you need to marry up the data in the current (in-use) database with the newly redesigned database structure. What's the easiest way to go about it? It's a perennial problem with Q&A. I have long considered there to be only two practical solutions for getting such a redesigned database in sync with the current one:

- Prepare and use a Merge Spec to copy the data from the current one to the new one.
- Duplicate the structure changes in the “current-data” database, then copy the data from it to the redesigned database using a blank Merge Spec.

The Q&A for DOS Merge Spec

Q&A for DOS' Merge Spec is a tool you use to match data to fields during import, export, and copy operations. Q&A uses a common Merge Spec for importing (*File / Utilities / Import Data*), exporting (*File / Utilities / Export Data*) and also for copying records between databases (*File / Copy / Copy Selected Records*). Accordingly, when you call up a list of saved Merge Specs (Alt-F8), you will see a single list of specs saved for any and all of these actions.

The Merge Spec appears on-screen as a copy of the database form into which you can type numbers to match fields with data. Because it's a multi-purpose spec, it needs some further explanation.

Here is what the F1 Help screen says when at the Merge Spec during a Copy (database records) operation:

```
Use this Spec to say what information from Q&A you
want to copy to another file, and in what order.
```

```
If you want to copy ALL the information, and in the
same order, leave this Spec blank and press F10.
```

```
If you want to copy SELECTED information, tab to
each field you want to copy and type the field
numbers in the other file each field is to occupy,
then press F10.
```

When *Copying* information in Q&A, you are *sending* it to another database. The Merge Spec shows the *From* database form, and you type the field numbers in the

other or *To* database. These “field numbers” are *not* the Logical Field Numbers you might see or use in the Program Spec. (That spec for the database might be empty.) They are *not* the Logical Field Numbers as seen in the Navigation Spec. (It might be empty.) They are the ordinal numbers of the fields (1st, 2nd, 3rd and so forth) in the order in which they appear in the database form.

When determining these numbers in the target (*To*) database, do not make the mistake of counting the fields when viewing a record. There might be Read-only fields or fields skipped by navigation programming. Count them at the Retrieve Spec or at the Merge Spec where they will *all* appear. Articles in past issues of *The Quick Answer* have covered ways of simplifying this task.

Unless you leave the entire Merge Spec blank, only fields with a number in them will be copied. A “5” in a field, for example, indicates that the data from this field will be copied to the 5th field of the target database – that is, the field the cursor is in if you open its Retrieve Spec and press Tab four times.

At the risk of belabouring the point, I'd like to show you a simple example of this, because the concepts are vital to what follows.

Suppose I have a simple database named *From.dtf* with these five fields:

```
FirstName
LastName
Company
Town
Tel
```

I want to copy the records from this database into my main *Keyword.dtf* database. Now *Keyword.dtf* has many more fields than *From.dtf*. When copying from the *From.dtf* database, if I were to leave the Merge Spec blank, the data would be sent into the first five fields in *Keyword.dtf*. This would be a huge mistake since, as Figure 1 (where the fields are numbered sequentially) shows (see p. 8), these are not the same fields at all.

When determining these numbers for the Merge Spec, *all* fields must be included in the numbering scheme, including read-only fields and fields used as quasi-Windows-like push buttons (such as the “WinClip” and “Print” fields in Figure 1). You must also count fields

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Q&A Keeps Losing XP Connection

I have a very strange problem. I have been using Q&A successfully for many years on many computers. I just got a new Windows XP computer and now Q&A intermittently cannot find its files on the network server. I get the message that the directory was not found. If I reboot my computer or check the network drives in my computer then Q&A will start working again. I never had this problem with Windows 98. Any ideas?

Betsy

I have now seen this a few times and have even had it occur on our latest addition to the office network. It seems that this is another one of those things that happens when the hardware and software manufacturers try to give us just a little bit extra (that we don't really need). I would think that most Q&A users have been caught out by Windows' *hibernation* feature from which you can never successfully bring the system back to life. Your problem seems to be a similar kind of issue. We now have all kinds of power saving features built into Windows and even into the hardware installed in the system (like a *Wake on LAN* network card). The software and hardware manufacturers may be honestly trying to minimize power usage to reduce the impact on the ecosystem, but everything that is put to sleep has to be successfully awakened to be useful.

Q&A for DOS was not engineered to be a Windows program and cannot send the signals that Windows expects when it connects to the network. Basically, Q&A bypasses the O/S and goes directly to the hardware. If the hardware is asleep, Q&A doesn't know how to wake it up. So, the answer here is in the properties settings of the network card. I want you to change one or both of the following settings. Right-click on *My Computer* and select *Properties*. Click on the *Hardware* tab and then the *Device Manager* button. Select network card and left-click on it to get to the *Properties* button. Select the *Power Management* tab and *uncheck* the choice "Allow the computer to turn off this device to save power." Also check the *Advanced* tab and *disable* any setting that talks to "Wake on LAN" or the like. Now the card won't go to sleep and Q&A won't lose the network connection.

'File in Use by Network ID Not Set'

I am getting a #6A8 error. Also I cannot execute a database Recovery because of the message, "Network ID not set." I use Q&A 4.0 for Windows.

Paul

The message you are getting on the attempted Recovery is most likely not "Network ID not set" but rather "File in Use by Network ID not set." This means that Windows thinks that the database is still being used by someone. Your best bet is to shut down *all* of the computers that are using Q&A along with the server. After they are *all* shut down, bring them back up one at a time and the database should be free for Recovery. If your server is Windows 2000 or XP, you can use the administrative controls to "close" the open database files.

While we are on the subject, it always amazes me how many people do *not* make use of the Network ID capability in Q&A. If you use this feature and need to Redesign, Copy, or Mass-Update a database, instead of the innocuous *File in use...* message above, Q&A will tell you exactly who is using the database so that you can contact them and tell them to release the record or even to get out of Q&A. You might even find that Q&A is open and minimized on the taskbar of someone not in the office. How do you do this? In Q&A for DOS, select *Utilities / Set Global Options* and cursor down to the bottom of the screen. Type the User or Computer name over "Network ID Not Set" and press F10. In Q&A for Windows, select *File / Preferences* and in the Network ID box enter the same type of information and click OK.

Repairing an '06' Error

We currently use Q&A 4.0 for DOS for all of our calendaring work here in the law office. We have had very good luck with this program. Yesterday, we started to encounter problems and I need to feed off you folks to try and correct the problem. The program is run over a Novell 4.11 server application, and we have seven users authorized. Desktops are running Windows 95 or 98. Computers are Pentium IIs



Stumped?

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Q&A version number (and whether DOS or Windows) and a detailed description of the problem. We'll publish those questions we feel are of general reader interest; individual responses aren't possible.

with at least 64M memory. After we enter a client and schedule an event, we are able to save the entry, however, if we go back into the client and try to modify, change or delete the entry, when we go to save we get an error, "System Error Please Try again C-2" Ref # 06D7." Any ideas on how to correct this problem?

Floyd

This error indicates a bad (corrupted) index file. The easiest fix (on a copy of the database) is this: From the File menu, copy the design of the database to a new name and then copy all of the records into that new database. This should regenerate all the record indexes and all should be fine.

'We're Upgrading Everything'

We currently use Q&A 4.0 for DOS for all of our calendar events. We have a seven user license agreement, run a Novell 4.11 network system, with the PCs running Win 95/98. I am about to convert the entire system in the office and install a new server with Netware 6. Our PCs will be running XP-Professional.

I will need to purchase a CD in order to install to the new server. Please advise as to which CD I should purchase. My calendar folks want to get rid of the current screen and get into a Windows-type screen that is more user friendly. Which version should I buy for them? My concern is that if I change versions, will I be able to import all of my data into the new format. Or is it best to stay with the Q&A for DOS version running in a XP environment?

Floyd

You bring up so many issues that I'm not quite sure where to start. So I'll just jump right in.

First of all, you are going to change everything at once — a new version of Novell, new hardware, New workstation software. XP Pro is a great choice, but why are you upgrading your server to Novell? If you are using all Microsoft clients, why not stay with Microsoft server software (Windows 2000 Server) for better operating system and network compatibility? There are known issues between Novell and Windows 2000/XP. With one O/S you'll have better support and easier maintenance. There have also been some reported issues between Q&A and Novell 6 that indicate that Q&A (any version) was unstable on a newer version Novell drive. We have actually had to move people away from Novell drives to other attached "server" drives in order to keep their data from getting corrupted.

Secondly, you want to change to a more "user friendly" Windows screen? What does that mean? Q&A for DOS (4.0 or 5.0) will run just fine in a Window (with cut /paste, mouse, etc.), on any Windows O/S and work just fine with both the mouse and the keyboard. When you set it up correctly there is nothing more to worry about. The only real restrictions are with some Windows-

only printers. If you go with Q&A for Windows, you must partition your hard drive, you lose some capabilities, you lose your macros, and you will need to buy seven new licenses. You do pick up support for multiple forms, free-form report capabilities and better printer support — but "more user friendly"?

If I were you, I would buy the replacement CD for Q&A 4.0 for DOS, install it on your new PCs, put Windows 2000 server on the system and get back to work.

Capture a Port for Network Printing in XP

We are using Q&A for DOS on four workstations (with one set up as the file server) on a Microsoft Network. I recently upgraded the workstations to Windows XP and have gotten everything working great except shared printing through DOS. The file server has a printer on it and the number "2" PC hooked up through a network can print Windows documents, but not DOS jobs. I have tried capturing a port to LPT1, but that has not worked either. In previous Windows versions I had to setup the network manually, and I am wondering if the automated features of Windows XP are working against me. Any ideas or help would be appreciated.

Sue

You have to make sure that you are capturing the printer correctly in Windows XP. This must be done at the CMD prompt by typing:

```
Net Use LPT1 \\ComputerName\PrinterName /Persistent:yes
```

Where *ComputerName* is the Network *Sharename* of the Computer to which the Printer is attached and *PrinterName* is the network *Sharename* of the printer. *Persistent:yes* keeps this connection through reboots. Be careful to get the spaces correct. After Net, After Use, After LPT1, and After PrinterName. If you do it correctly, you will get the message, "The command completed successfully" when you press Enter. Now you will have the network printer as LPT1 for DOS programs. This printer still must be one that Q&A can address, such as a LaserJet or dot matrix printer.

Got USB?

I'm still using the Q&A for DOS I bought from you and it's been fine with my HP 810 printer. I just got an HP 2210 four-in-one printer. HP technical support couldn't tell me if I could use Q&A with it or which printer configuration to use. There aren't many choices and none have worked so far (unless I am missing something). I guess I could unhook the 2210 and hook up the 810 every time I want to print but that would be a real pain. I hope there is a simple solution.

Sharlene

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Migrating Data. . . cont'd from page 5

where the number might not show because the field's text colour is the same as its background colour.

To copy records from From.dtf to Keyword.dtf you'd need to perform the following steps:

1. File / Copy
2. From: FROM.DTF
3. Copy Selected Records
4. To: KEYWORD.dtf
5. Retrieve Spec: as required
6. Merge Spec (see Figure 2.)

Returning to the Merge Spec help screen:

```
If you want to copy SELECTED information, tab to
each field you want to copy and type the field
numbers in the other file each field is to occupy,
then press F10.
```

The operative words here are "...field numbers in the other file..." – that is, the field numbers in the database you are sending the data to.

So that's what copying selected records from one database to another takes. Let's now look at the Merge Spec with regard to importing data.

The Merge Spec when importing

Here's what the Import Merge Spec's F1 Help screen has to say:

```
If the order of the fields in the external file
match the order of the fields in your Q&A database,
AND IF you want to merge ALL the data, then leave
the Merge Spec blank and press F10.
```

```
If you want to merge data selectively, type a
number into each field that is to receive
information. The number should correspond to the
```

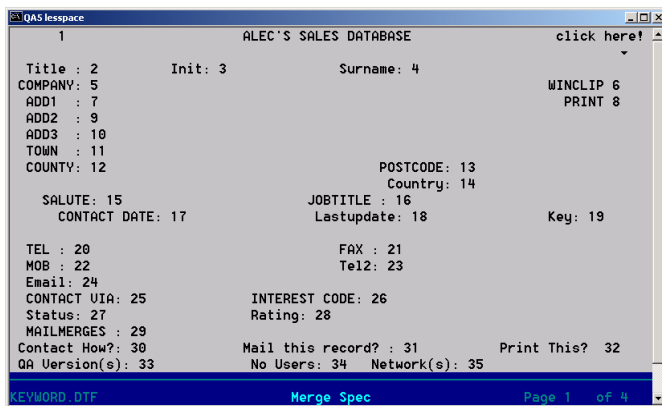


Figure 1. Field numbering in the target database. Use the Merge Spec as a convenient tool to print out the field numbers for the merge to come..

physical position of the field in the external file, counting from top left to bottom right.

When importing, you are *fetching* data from an external file and putting it into the current database. This external file is very likely to be an ASCII file, but could be a Lotus 1-2-3, dBase, or other type of file. It *cannot* be another Q&A database. For that you would use *File / Copy / Selected Records* from the other database, as discussed earlier.

Here, at the Import Merge Spec, the F1 help text is a little confusing. It says:

"... The number should correspond to the physical position of the field in the external file, counting from top left to bottom right."

This is akin to thinking of the external file in terms of a database form. In practice, though, it could be a Fixed ASCII file which is like a spreadsheet or a columnar report with rows and columns of data. The help text, in the case of a Fixed ASCII file, would be better worded this way:

"The number should represent the column number of the external file."

If it were a Standard ASCII file being imported, where the data might be comma-delimited with quotes around the values, then *"The number should correspond to the physical position of the field in the external file..."* would make more sense, though the *"...counting from top left to bottom right..."* part could be confusing. In this case, you'd really be counting just the raw positions of the fields (1, 2, 3, and so forth) on the first line of the ASCII file on the assumption that the remaining lines would all follow the same data sequence.

The Merge Spec when exporting

The third use of the Merge Spec is when exporting data. This is like *File / Copy*, but is used when sending data, not to another Q&A database, but to a file of a different type, usually an ASCII file. The help text in this context says:

```
Use this Spec to say what information from Q&A you
want to copy to another file, and in what order.
```

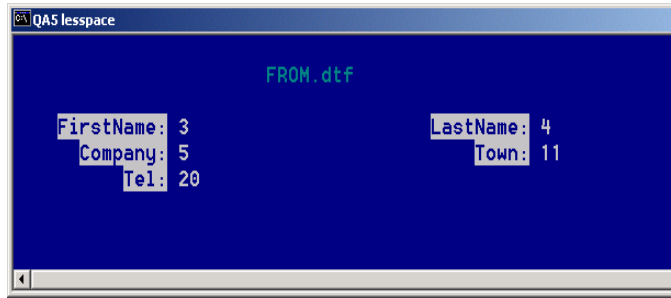


Figure 2. Merge Spec in From.dtf for copying records to Keyword.dtf. Compare numbers in the fields with the numbering scheme in Figure 1.

If you want to copy ALL the information, and in the same order, leave this Spec blank and press F10.

If you want to copy SELECTED information, tab to each field you want to copy and type the field numbers in the other file each field is to occupy, then press F10.

Again, this might be confusing. It's okay to use the term "field numbers" if you are exporting to dBase or Paradox – as long as you remember that it means *first* field, *second* field, and so forth. But the chances are that you are exporting to an ASCII file (also called a plain text file or a CSV file for "Comma Separated Values"). In this case, you might do better to think in terms of "column numbers." So a "3" in the LastName field will export this field to column or position 3 of the target file.

In Q&A, it's common to number things by 10's. In the Report module, for example, numbering columns by 10s (10, 20, 30, etc.) in the Column/Sort Spec enables you to insert new columns between the existing numbers without having to renumber the entire scheme. Likewise when designing a Table View Spec. In the Program Spec, you might have fields with Logical Field Numbers #10, #20, #30 and so on. This is all well and good, but DO NOT do this at the Merge Spec for an export. If you do, you'll get nine blank "fields" exported between the real fields!

Choosing your reconciliation method

Okay, so now that you understand what the Merge Spec is for, which method should you use when reconciling old data to a new database design? Method #1 (prepare a Merge Spec) or #2 (duplicate design changes)? Well, it all depends on how many fields are changed relative to how many there are in total.

I decide at the start of the redesign exercise which method I'm going to use. If Method #1, I make a note during the application design process of which fields are added, moved or deleted and refer to this when preparing to migrate the data.

(Always work on a COPY of the current-data database.)

When making these design changes on the current-data database, don't worry too much how it looks. Just squash the new fields in, making them at least two characters wide. Don't bother with field names or labels or even data types. They are just placeholders. A field is only "moved" if the order of fields changes. Fields shifted without changing the order, or merely changed in size, don't need to be considered.

If there are 200 fields and only three or four have been added, moved or deleted, then I would always make the corresponding changes to a copy of the old-design-

current-data database and then copy records with a blank Merge Spec. This results in a straight one-to-one transfer, first field to first field, second field to second field, and so on. This would be much quicker than filling out a Merge Spec with 200 numbers! The trouble with Q&A is that if just one field position is different in the two databases, you have to complete the Merge Spec in full.

If, however, there are only 16 fields, and 8 of them are changed, then I would fill out a Merge Spec and expect it to take me about 10 minutes. Of course, life being what it is, many such copy exercises are something between these extremes and the decision may be less clear-cut.

Another data migration option

I'd like to describe now how I went about migrating data recently after a major redesign of an active database at one of my clients. In this case, I considered both the above-described methods but ultimately used neither of them. Instead, I used an altogether different technique which seemed appropriate for the circumstances. Just so you can get a sense of the scope of the job, these were the circumstances:

- A large Q&A 5.0 database with over 500 fields on 10 screen pages.
- Very many changes with dozens of fields added, moved or renamed, including one field added to each of 52 sets of fields in a matrix on pages 3 through 9 of the form.
- Lots of updates performed on the data (in the in-use database) during the time I was working on the redesign of the copy of the database.

Clearly, the migration of the data was going to be a lengthy process using either method. Although there were many changes, there were still hundreds of fields with matching field names in the two databases. What I needed was a field-matching-by-field-name tool, leaving me to identify just the disparate fields manually. Unfortunately, Q&A for DOS does not offer a matching tool like this – but Q&A for Windows *does*. So I used Q&A for Windows to complete the task.

Migrating data for the Bookings application

In a Bookings database I recently redesigned, there were several changes on page 1 alone. For example, moving of the price fields around had a dramatic effect on the order of the fields, being now in the middle of a "Booked Seats" matrix.

Page 2 was extensively altered. On pages 3 to 9 the fields for each seat were augmented by one.

Page 10 was also extensively altered.

What I had in the end was a huge looming data migration nightmare!

I started by copying the databases so that the originals were intact, then removed all the records from NEW.dtf.

Next, I opened DATA.dtf (the “from” database) in Q&A for Windows 4.06. This is the version obtained by running the QAWIN patch supplied with Q&A 5.0 for DOS. If you’re using Q&A 4.0 for DOS you need to use release 4.05 of Q&A for Windows to ensure interoperability.

Choosing *File / Copy* in Q&A for Windows, I opened the Copy dialog. Leaving the “Copy design” checkbox unchecked, I chose *Copy Selected Records* and the dialog box I was after appeared. (See Figure 3.)

Clicking on the “Match Fields” button instructed Q&A Win to match the field names in the two databases. After just a couple of seconds pause most of the field names were correctly matched. (Very gratifying!) It was good to scroll down pages of matching fields. But there were some anomalies. For some reason, Q&A Win failed to match fields despite their having identical names. (See Figure 4.)

On page 1, many of these were because I had changed the field name. So I started matching these manually – an easy task when you have a left panel and a right panel with often subtly different field names. I then saw that a good number of the fields in the “Booked Seats” matrix were not matching. I set to matching these manually, then looked – alas, in vain – for a “Save” button. Regrettably, Q&A Win gives you no way to save a Merge Spec – a real shame. So I had to just press on. This was the longest part of the procedure – that and then checking them all. After all, I was being allowed just one hit at this. I was wishing that the Q&A Win developers had added a Save Merge Spec feature, as it would have been a lot quicker to save the Spec, run it, and then check the results and if necessary run it again after any modifications.

Once I was happy with the matching, it was just a matter of clicking on “Copy” and watching as Q&A Win copied the records into the NEW database.

Having checked the database using Q&A Win, I then – in a burst of paranoia – copied the data from NEW.dtf into another copy of NEW which had not been opened in Q&A Win. Some would say this was unnecessary – John Dow did – but I wanted to avoid any overhead with having a Q&A Win database that stores extra information regarding multiple forms and the like. I prefer my Q&A 5.0 databases to be as lean as possible.

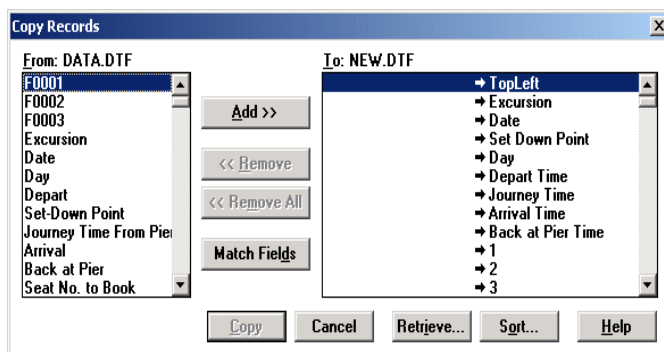


Figure 3. The Copy Records dialog in Q&A for Windows.

Conclusion

All in all, the exercise took less than two hours. At least half of that was checking and double-checking, which I would have done whichever method I had used. I found out subsequently that when matching fields, Q&A Win only matches fields that not only have the same name, but also the same *data type*. This is why the “Date Paid” and “£” fields didn’t match. I changed the data type from text to date, and from money to number, respectively, to obtain optimal standardisation of appearance. Had there been no changes of data type – which is a more likely situation – then the time saving would have been considerably greater. I didn’t complain, though. I saved myself hours of tedious work, tried something new which worked, learned a lot more about Q&A for Windows, and had a bit of fun as well!

Finally, what about *Sesame*?

Sesame, I’m pleased to report, has a “Field Name Matching” facility. It also lets you save your *Copy*, *Import* and *Export Specs*. So it has all the good features of both Q&A for DOS as well as Q&A for Windows.

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DTFMERGE Worth a Look

John Dow has since alerted me to yet another option when you need to “sync” the data between two databases. John has a utility called DTFMERGE, which achieves the field name matching (like Q&A for Windows) and makes the process quite simple. Details can be found at <http://www.johndow.com/prod/dtfmerge.htm>.

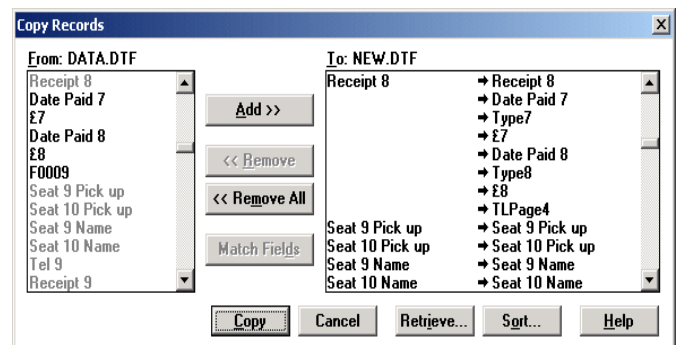


Figure 4. Most fields matched but not all. (The bold fields in the left panel were not matched).

I visited HP's web site and according to them, this printer is PCL 3 Enhanced (which is good) and connectable via USB only (which is bad). Q&A can send HP LaserJet III codes (PCL Level 3) to this printer but cannot address it through a USB port. Q&A printers have to be connected via parallel (LPT) or serial (COM) ports. The rest of the good news is that if you have this printer attached to the USB port, you can also have the 810 connected to the LPT1 parallel port and use both printers at the same time. And, you can dedicate the LPT1 HP 810 to Q&A only by setting the new printer as the default Windows printer.

Using Escape Codes to Control Printer

I am trying to create some files to control my printers. For example, I want to create a file named ff.dat that contains the formfeed code. This way I can copy ff.dat to LPT1 to eject a page. Do you know how to put the codes in a text file? I am using edit. I thought it was ctrl-Q for ctrl-[to quote the next characters, but that does not seem to work for me.

Bob

You don't say what program this pertains to, what make/model/type of printer you are trying to "control" or why you decided to use separate "files" to contain just the printer control codes. What's more, I'm not sure what you are referring to when you say you are "using edit."

Assuming the program is Q&A for DOS and the printer is a page printer that uses HP PCL (an HP LaserJet or compatible), then any printer control code you use in the manner you describe should begin with the ESC (escape) character. You type the ESC character in a Q&A Write document by pressing Alt-F10 then holding down the Alt key while pressing 27 on the numeric keypad. You would then follow this ESC character (which looks like a left-pointing arrow) with the specific printer code listed in the table of codes for the printer you are using, which you will have to obtain from the printer manufacturer. For an HP LaserJet or compatible, the page eject code would be **ESC&10H** (ESC character, ampersand, lowercase "L", zero, uppercase "H").

Depending on where you need to place the code in Q&A, you might also be able to use the *decimal* equivalent of the ESC code. (These you can place in a Q&A Write document or on the Printer Control Codes line at any Printer Options screen.) A table of printer codes for your printer should list these decimal codes alongside the ESC codes. Not all decimal codes used in Q&A will produce the expected printer results (the Q&A printer driver seems to play a role in this). ESC codes, in contrast, always work as long as you have a place to type them in. They work because they don't have to be interpreted by Q&A — they directly command the printer in its own internal language.

If you would like a copy of a text file containing all the basic HP PCL Level 3 printer control codes, drop us an email at mailbox@quickanswer.com and ask for the "PCL_Codes.txt" file. We'll send it to you by return email attachment.

—Tom Marcellus

Converting Write Docs to Word

I just found your Web site. I am looking for a way to convert several hundred Q&A 4.0 (DOS) documents to Microsoft Word. These documents are forms, so they have lines in them with text aligned to the lines in columns. Can you help?

Dave

You can use Q&A to export the documents to "Document ASCII." They will be converted to straight text documents (plain text, unfonted) that can be opened by Word. Word will display the documents in what will initially appear to be columns, but any line draw characters (lines, boxes or the like) will come through as garbage characters such as "ÄÄÄÄ". These can be searched for and replaced. The apparent columns are nothing more than spacebar-spaced text that will likely "go to pot" during your first edit. So, while it can be done, it is not pretty.

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Mass Update. . . cont'd from page 2

things back the way they were.

Sometimes, yes, but definitely *not* every time. Some operations by their very nature can't be undone. (For example, clearing a field of its variable contents). Other changes to your data may not be impossible to reverse but might prove very difficult to program.

But the problem is not just with the Update Spec. When you modify the data, you can easily remove the means to identify the

records that have been updated. So you *maybe* able to do a Mass Update in reverse, but *only if* you could devise a Retrieve Spec to identify *only* those records that you have just changed.

So do the backup first!

—Alec Mulvey

Fixed Length ASCII... cont'd from page 4

You'll get currency amounts like "\$48" when it should be "\$48.00" or "\$55.5" when it should be "\$55.50".

The formula turns an "89" into "89.001" and a "35.10" into "35.101", then replaces the final "1" with nothing, giving you "89.00" and "35.10" respectively.

Derived Column #4

```
@Rt("0000000000" + @Replace(#30, ".", ""), 10)
```

Now that the check amount has been converted to text and is sure to have two decimal places, the formula in the fifth Derived Column simply replaces the decimal point with nothing, then does the @Rt padding thing to turn it into a 10-character string.

Derived Column #5

```
#20 + #25 + #35
```

This sixth and final column is the only one that prints. Its formula combines the 10-character check number (#20) with the 10-character check date (#25) and the 10-character check amount (#40), giving you the precise 30-character record length.

This column's Heading line contains a single backslash, while the Column/Sort Spec line contains the HS(\) command. These serve to suppress printing of the column heading and dashed separator line. They'd gum up the works if included in the output file.

Parting notes

When designing this report, be sure to set its page length (at the Report Define Page screen) to a value that's higher than the number of records it will include. Otherwise, you'll wind up with page breaks in the file which the destination computer isn't likely to handle well.

Also, be aware that suppressing the heading and separator lines will leave a blank line at the top of the output file. The destination computer will probably ignore it and continue processing the rest of the file (as Q&A does when importing an ASCII file). But you should run a test just to be sure. If the blank line causes a problem, you'll have to open the file in Write and remove it.

To create the ASCII file in Q&A for DOS, you simply print the report to DISK. Q&A for Windows doesn't have this option. You have to install a "Generic Text-Only Printer" in Windows, tell Q&A Win to *Print to File*, then select this printer via the Print dialog's *Setup* button. Even with this, you may still need to bring the file into Write to delete some blank lines then resave it to ASCII.

Incidentally, *Sesame* will obviate the need for all this if you simply need to pad (front-fill) your exported data. *Sesame's* export options — and it's got a slew of them — include a padding feature. (See November 2001 issue.)

Tom Marcellus is editor of *The Quick Answer*

The sample database featured in this article (FIXED.DTF) is included in this month's download file. It contains the report that generates the sample fixed length ASCII file.

Spurious 'Missing Column' Error Messages in Reports

Occasionally, particularly after upgrading a Q&A 4.0 for DOS database to Q&A 5.0, I'll get an error message when attempting to save a report. Q&A will complain that, "A Derived Column references column 1, which doesn't exist." and won't let me save the report until I "fix" the faulty reference or add the "missing" column. The problem is that there is no such reference to column 1 in any Derived Column formula. The error message is a bug. Perhaps you've gotten a spurious error message like this when trying to save a report.

I work around it (if the message concerns a missing

column 1) by adding a Derived Column like this to the report:

```
Heading:
Formula No. 8 #1
Column/Sort Spec: 1,I
```

I make the formula "#1", name the column "1", and make it invisible so it doesn't print. Q&A then lets me save the thing.

I then go back in and remove this for-medical-purposes-only Derived Column. Q&A will then allow me to save the report as though the column were never needed.

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