Version 7.6

Database Conversion Guide

R:BASE Technologies, Inc.

R:BASE 7.6

Database Conversion Guide

by R:BASE Technologies, Inc.

Welcome to R:BASE 7.6 for Windows

Welcome to the Next Generation R:BASE 7.6 for Windows. R:BASE is an Industrial-Strength, True 32-Bit, Multi-User Relational Database. But R:BASE is not just a Database Management System; it is a total GUI development environment for all Windows desktop and network applications. R:BASE 7.6 for Windows is the ideal Database Management Suite for creating and maintaining your mission critical data with a true graphical user interface. Since its introduction in 1981 as the first PC-based database management system based on Dr. Codd's relational model, R:BASE has led as the first 32-bit DBMS in its class, providing programming-free application development, automatic multi-user capabilities, 4GL (a full-featured programming language in the R:BASE base product) and embedded ANSI SQL. And now with R:BASE 7.6 for Windows, we have added a whole new look and feel to enhance the applications you develop in R:BASE. You can rapidly produce the type of results that previously would have required various third party development tools. Simply using native controls, you can now design cool applications at a fraction of the cost and development time when compared to other database and development tools available.results that previously would have required various third party development tools.

R:BASE 7.6 for Windows Database Conversion Guide

Printed: June 2008 in Murrysville, PA

First Edition

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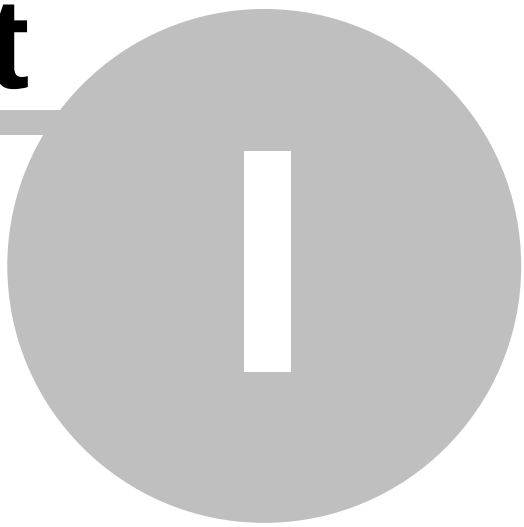


1 Preparation

When preparing to convert a legacy database and use those files in R:BASE 7.6 for Windows, it is important that you follow the proper steps to convert that database. Please review the following steps and recommendations to ensure you convert your legacy database(s) successfully.

1.1 Make a Database Backup

Before you begin, make a backup copy of your database. You should place the database on a storage medium that is different than the one which your original files are already stored upon. For example, if you are using a hard disk to store the data, you can back up your database to an external hard drive, a flash drive, a tape drive, or a CD-ROM. With these storage options, you can also copy the backup files back to your hard drive.

If users are still entering data into the live database, while the conversion is taking place, use a different database copy than the one in use. When the conversion is complete, the live data being added to can always be loaded into the converted database at a later time. Make sure no users are connected to the database when the copy is made.

During the conversion process, it is also recommended to make periodic backups. This will prevent you from starting from the beginning in case any problems occur.

1.2 Review Table and Column Names

You must review all table and column names to be sure that no invalid names are defined and no reserved words are used.

In the current version, a 1-18 character alpha-numeric name must be specified for a column. Spaces are NOT permitted. Valid names must start with an alpha character and can include the following symbols:

- Letters (A-Z)
- Numbers (0-9)
- _ (underscore)
- # (pound sign) *
- $ (dollar sign) *
- % (percent sign) *

*__Note:__ For ODBC compliance, it is NOT recommended to use the #, $, or % even though R:BASE permits it.

Review your table and column names that may begin with a number. Check for any characters that are not supported like a question mark "?" or a greater than character ">".

Also review your table and column names to verify that no reserved words are used. These words, commands, keywords, and other names are to be used exclusively by the R:BASE database. Names used by System Tables, System Views and System Columns are also reserved words. As a rule, all words beginning with "**SYS**" are reserved.

Do not use reserved words or any shorter forms of them as names for columns, tables, or views. As a rule, if the word is a reserved word, R:BASE will flag it. R:BASE will not allow you to use a reserved word as a column or table name, but this MAY NOT always be the case. For example in the table designer, R:BASE may not warn you about **REF**, short for **REFERENCES**, but **REF** will not be allowed in a command file. If a particular column or table is giving you problems, please check out the list below and consider all shortened versions of the words listed here.

The following is a list of all known reserved words, commands, keywords, and other names that are in effect when ANSI is set on, which is the default setting.

ABORT	CHDIR	ENDIF	IFLT	MOD
ABS	CHDRV	ENDS	IFRC	MODULE
ABSOLUTE	CHECK	ENDSW	IHASH	MOUSE
ACOS	CHKDSK	ENDWHILE	IHR	MOVE
ADA	CHKKEY	ENTER	IMIN	MPW
ADD	CHOOSE	ENVVAL	IMON	MULTI
AINT	CLEAR	EQ	IN	NAME
ALL	CLOSE	EQNULL	INDEX	NE
ALTER	CLS	ERASE	INDICATOR	NEW
AND	COBOL	ERROR	INI	NEWPAGE
ANINT	CODELOCK	ESC	INITPOS	NEWROW
ANSI	COLLATE	ESCAPE	INPUT	NEXT
ANY	COLLATEC	EXCEPT	INSERT	NEXTROW
APPEND	COLOR	EXECUTE	INT	NEXTTAB
AS	COLUMN	EXISTS	INTEGER	NINT
ASC	COLUMNS	EXIT	INTENSITY	NOCHECK
ASCII	COMMENT	EXP	INTERSECT	NOECHO
ASIN	COMMIT	EXPAND	INTERVAL	NOFILL
ASSIGN	COMPUTE	EXPLODE	INTO	NOHEADER
AT	COMPUTED	EXPRESS	IS	NONE
ATAN	CONNECT	FAILS	ISEC	NONUM
ATAN2	CONSTRAINT	FASTFK	ISTAT	NOT
ATT	CONTAINS	FASTLOCK	IYR	NOTE
ATTACH	CONTINUE	FEEDBACK	IYR4	NOTE_PAD
AUTHORIZATION	COPY	FETCH	JDATE	NULL
AUTHORIZE	COS	FILES	JOIN	NUM
AUTOCHK	COSH	FILL	KEY	NUMERIC
AUTOCOMMIT	COUNT	FILLIN	KEYBOARD	OF
AUTOCONVERT	CREATE	FIRST	KEYMAP	OFF
AUTODROP	CROSSTAB	FLOAT	LABEL	ON
AUTONUM	CTR	FLUSH	LANGUAGE	OPEN
AUTONUMBER	CTXT	FOLD	LAST	OPTION
AUTORECOVER	CURRENCY	FOR	LASTKEY	OPTIONS
AUTOROWVER	CURRENT	FOREGRND	LAUNCH	OR
AUTOSKIP	CURSOR	FOREIGN	LAVG	ORDER
AUTOSYNC	CURSORS	FORMAT	LAYOUT	OUTER
AUTOUPGRADE	CVAL	FORMATTED	LBLPRINT	OUTPUT
AVERAGE	DAT	FORMS	LCFOLD	OWNER
AVG	DATA	FORTRAN	LE	PACK
BACKGRND	DATE	FOUND	LIKE	PAGE
BACKUP	DATETIME	FROM	LIMIT	PAGEMODE
BEEP	DEBUG	FULL	LINEEND	PAGEROW
BEGIN	DECIMAL	FV1	LINES	PASCAL
BEGINS	DECLARE	FV2	LIST	PASSTAB
BELL	DEFAULT	GATEWAY	LISTATT	PASSTHROUGH
BETWEEN	DEFINE	GE	LISTREL	PAUSE
BIT	DELETE	GET	LJS	PLAYBACK
BITNOTE	DESC	GETDATE	LMAX	PLI
BLINK	DETACH	GETKEY	LMIN	PLUGINS
BLINKING	DEXTRACT	GETVAL	LOAD	PMT1
BOTH	DIALOG	GO	LOCK	PMT2
BREAK	DIM	GOTO	LOG	POINTER
BRND	DIR	GRANT	LOG10	PRECISION
BROWSE	DISCONNECT	GROUPED	LOOKUP	PREF
BUILD	DISPLAY	GT	LOOKUPS	PREFIX
BY	DISTINCT	HAVING	LT	PREVROW
C	DOUBLE	HEADING	LUC	PREVTAB
CALL	DRAW	HEADINGS	MANOPT	PRIMARY
CASCADE	DROP	HELP	MAX	PRINT
CASE	DUPLICAT	ICAP1	MAXIMUM	PRINTER
CASEP	DUPLICATE	ICAP2	MAXTRANS	PRIOR
CD	ECHO	ICHAR	MD	PRIVILEGE
CGA	EDIT	IDAY	MENU	PRNSETUP
CENTURY	EDITOR	IDWK	MESSAGES	PROC
CHANGE	ELSE	IF	MIN	PROCEDURE
CHAR	END	IFEQ	MINIMUM	PROJECT
CHARACTER	ENDC	IFGT	MKDIR	PROMPT

PROMPTS	SATTACH	TAN
PROPERTY	SAVEROW	TANH
PUBLIC	SCHEMA	TDWK
PUT	SCONNECT	TERM1
PV1	SCRATCH	TERM2
PV2	SCREEN	TERM3
QBE	SCROLL	TERMINAL
QUALCOLS	SDETACH	TEXT
QUERY	SECTION	TEXTRACT
QUIT	SELECT	TIME
RATE1	SELMARGIN	TIMEOUT
RATE2	SEQUENCE	TITLE
RATE3	SERVER	TMON
RBAPP	SET	TO
RBBEDIT	SFIL	TOLERANCE
RBDEFINE	SGET	TRACE
RBEDIT	SHOW	TRANSACT
RBGSIZE	SIGN	TRIG
RBLABELS	SIN	TYPE
RBSYNC	SINH	UDF
RBSYSTEM	SKIP	ULC
RD	SLEN	UNION
RDATE	SLOC	UNIQUE
READ	SMALLINT	UNLOAD
READ/WRITE	SMOVE	UNNAMED
REAL	SNAP	UPDATE
RECALC	SOME	UPGRADE
RECORD	SORT	USER
RED	SORTED	USERAPP
REDEFINE	SOUNDS	USING
REFERENCES	SOUNDS_L	VALUES
REFRESH	SOUNDS_LIKE	VARBIT
RELATIVE	SPUT	VARCHAR
RELOAD	SQLCODE	VARIABLE
REMOVE	SQLERROR	VARIANCE
RENAME	SQRT	VERIFY
REPORTS	SRPL	VERSION
RESET	SSQL	VIEW
RESTORE	SSUB	VIEWS
RETURN	STARTUP	WAIT
REVERSE	STATICDB	WALKMENU
REVOKE	STDEV	WHENEVER
RHIDE	STORE	WHERE
RJS	STRIM	WHILE
RMDIR	STRUCTURE	WHILEOPT
ROLLBACK	SUB	WIDTH
ROUND	SUBTRACT	WITH
ROW	SUFFIX	WORK
ROWLOCKS	SUM	WRAP
RPHONE	SWITCH	WRITE
RPW	SYS	YEAR
RSHOW	TABLE	ZERO
RTIME	TABLES	ZIP
RULES	TABSIZE	
RUN	TALLY	

If you are still using a legacy version of R:BASE, it is recommended that you perform these table and column name changes in that version. After making the table and column names changes, R:BASE will update the form, report, and label column objects with the appropriate new name. However, if any of the columns and tables are listed in the form, report, and label variable expressions, you must manually edit these expressions.

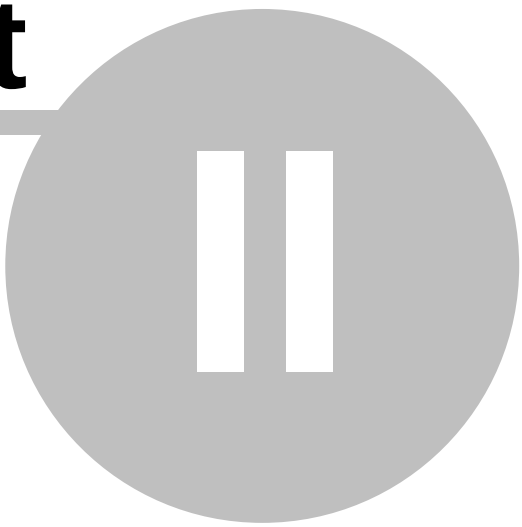
On paper, record any table and column name changes. Later in the conversion process when you're updating your command files, you will need to make these necessary name changes for the command files as well.

1.3 Conversion Tools

The Manual Tools and a Single Seat of R:BASE 6.5++ for Windows are included in the Full Version of R:BASE 7.6 for Windows, for conversion purposes. The files and installer are located on the root of the R:BASE 7.6 for Windows CD-ROM in the "Conversion Tools" folder. These executable programs in the "CONVERT" directory are only used for converting databases that are older than R:BASE 4.5.

Convert Express is a separate product and is sold separately. Convert Express is only used with R:BASE 2.11, or earlier, databases. Or, if your R:BASE database version is 3.x or 4.0, and you do not wish to save your forms and reports, then Convert Express will serve your needs. Please call R:BASE Technologies at 1+724.733.0053 or e-mail sales@rbase.com, if you wish to purchase Convert Express.

Part



2 Starting With the Database Files

2.1 Recognizing the Database Files

When locating and using the database name in the conversion instructions, be sure to remember that the "actual" database name for .RBS and .RBF files does not include the "1", "2", or "3", which is located before the file extension. For example, a R:BASE 3.1 database with the name SALES will have the database files SALES1.RBF, SALES2.RBF, and SALES3.RBF, but the database name is still just "SALES". In the steps below where the "dbname" is required in the command syntax, use only the "actual" database name.

To use this document you will need to know which version of R:BASE you are upgrading from. To assist you in getting a rough idea of which version you are starting at, we have included the table below which lists the various R:BASE file formats. Once you find your R:BASE database version from the table below, follow the necessary conversion steps in the next section.

R:BASE Database File Formats

4000 / 5000	System V to 4.0
DBNAME1.RBS	DBNAME1.RBF
DBNAME2.RBS	DBNAME2.RBF
DBNAME3.RBS	DBNAME3.RBF
4.5 to 5.0	5.5 to 7.6
DBNAME.RB1	DBNAME.RB1
DBNAME.RB2	DBNAME.RB2
DBNAME.RB3	DBNAME.RB3
	DBNAME.RB4

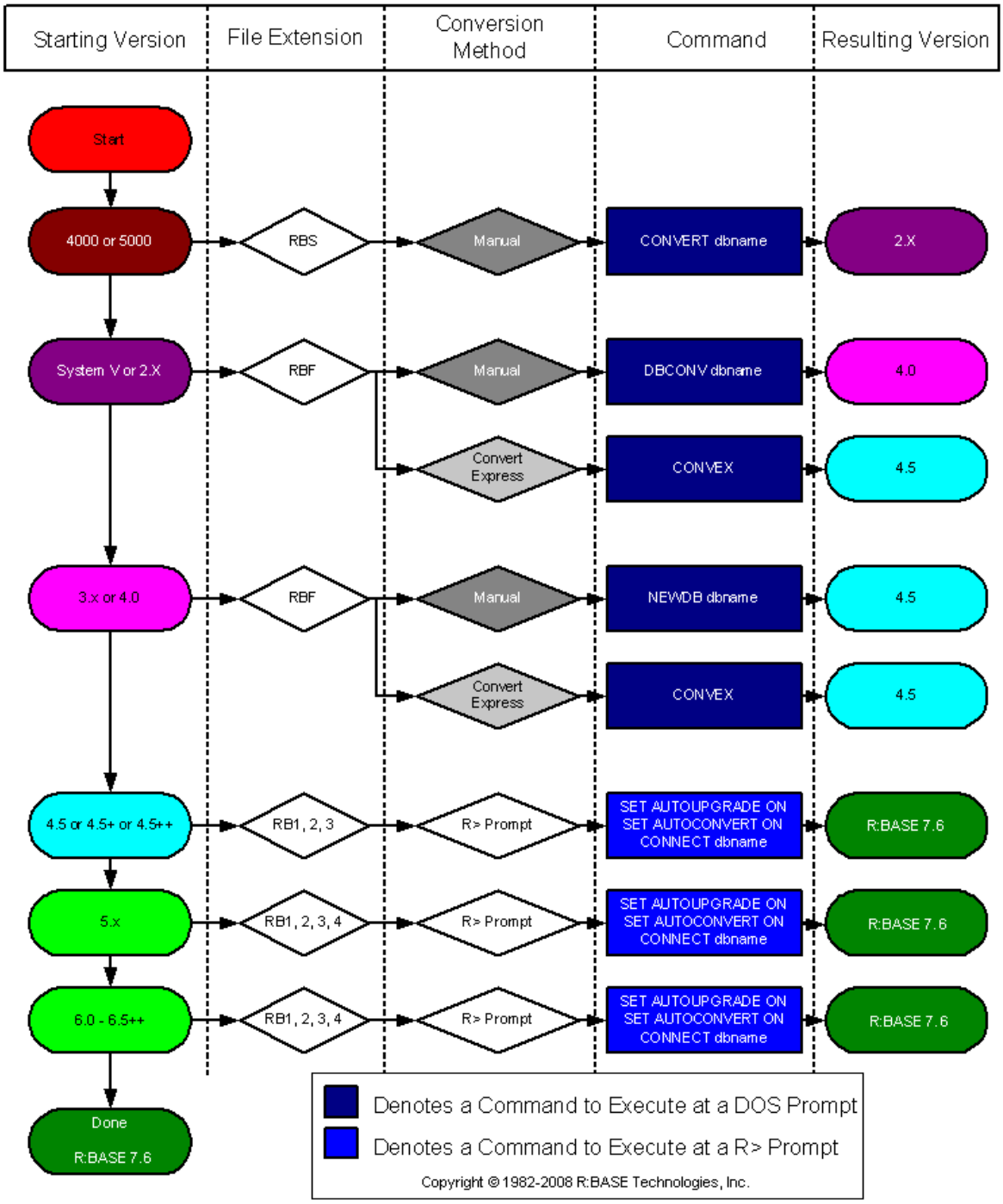
2.2 Conversion Steps

PLEASE REMEMBER TO BACK UP YOUR DATABASE!

The steps required to convert legacy databases to work with R:BASE 7.6 for Windows are described in the following flow chart. Locate your current R:BASE database file version below and complete the steps until you reach the bottom. If you are not sure of your database file version, refer to the above chart.

These steps are ONLY required for database files that are used with R:BASE 6.5++ or ealier versions.

If you are using R:BASE 7.0 or higher, then you are only required to connect to your database files using the new version, and you are ready to begin using your database!



2.2.1 R:BASE 4.0 and Lower Versions

If you are converting a database from R:BASE 4.0 or lower, you must first following the below instructions, then proceed to either the "Manual Tools" or "Convert Express" based on the products you are licensed for. If you did not buy Convert Express, then go to the "Manual Tools".

If you are converting a database at version R:BASE 4.5 and higher or 6.5++ and lower, then proceed to the steps listed at "R:BASE 4.5 and Higher Versions".

All Databases at Version 4.0 and Lower:

1. Create a new directory; perhaps something near your root directory on the local drive (example: "C:\DBTEMP").
2. Copy the contents of the "CONVERT" directory, from the installation CD, to your new directory.
3. Copy your database files to the new directory.
4. Continue with your version as listed below.

2.2.1.1 Manual Tools

Start at your R:BASE database version, in the bold font.

R:BASE 4000 / R:BASE 5000

1. Open a Command Prompt or DOS Prompt window and navigate to the new directory
2. At the Prompt, type: `CONVERT dbname`
3. Repeat for all databases
4. Continue with the steps listed at **"R:BASE System V, 2.x and 3.x"**

R:BASE System V, 2.x and 3.x

1. If you have not done so already, open a Command Prompt or DOS Prompt window and navigate to the new directory
2. At the Prompt, type: `DBCONV dbname`
3. Repeat for all databases
4. Continue with the steps listed at **"R:BASE 3.x and 4.0"**

R:BASE 3.x or 4.0

1. If you have not done so already, open a Command Prompt or DOS Prompt window and navigate to the new directory
2. At the Prompt, type: `NEWDB dbname`
3. Repeat for all databases
4. Continue with the steps listed at **"R:BASE 4.5 and Higher Versions"**

You can exit the Command Prompt or DOS Prompt window now. Use the EXIT command to exit.

2.2.1.2 Convert Express

Start at your R:BASE database version, in the bold font.

R:BASE 4000 / R:BASE 5000

1. Open a Command Prompt or DOS Prompt window and navigate to the new directory
2. At the Prompt, type: `CONVERT dbname`
3. Repeat for all databases
4. Continue with the steps listed at **"R:BASE System V, 2.x and 3.x"**

R:BASE System V, 2.x, 3.x, or 4.0

1. If you have not done so already, open a Command Prompt or DOS Prompt window and navigate to the new directory
2. At the Prompt, type: `CONVEX`
3. Select CONVERT DATABASES

4. Select ALL FOUND
5. Continue with the steps listed at **"R:BASE 4.5 and Later Versions"**

2.2.2 R:BASE 4.5 and Higher Versions

At this point, you must have R:BASE 7.6 installed on your computer. Be sure to review the R:BASE 7.6 Getting Started Guide regarding the installation and set up for your R:BASE software. The Getting Started Guide is lcated in the R:BASE program directory (default: C:\RBTI\RBG76).

Before attempting to connect to your pre-R:BASE 7.6 for Windows database for the first time, you will need to following these instructions to ensure proper conversion:

If there is no OWNER or Password

1. Install and launch R:BASE 7.6
2. Navigate to your database directory using the "Browse for Folder" button (bottom left corner, folder icon with a green arrow)
3. Go to the R> Prompt window (third button from the left on the Tool Bar, or press [Ctrl]+[R]
4. At the R> Prompt, type: `SET MULTI OFF` , then press [Enter]
5. At the R> Prompt, type: `SET STATICDB OFF` , then press [Enter]
6. At the R> Prompt, type: `SET AUTOUPGRADE ON` , then press [Enter]
7. At the R> Prompt, type: `SET AUTOCONVERT ON` , then press [Enter]
8. At the R> Prompt, type: `CONNECT DBNAME` , then press [Ent]
9. At the R> Prompt, type: `SET IDQUOTES=`` , then press [Enter] (the ` quote character is the reverse single quote, which is next to the "1" and under the tilde "~", on American keyboards
10. At the R> Prompt, type: `DISCONNECT` , then press [Enter]
11. Repeat "Steps 8-10" for all databases
12. Continue with the Housekeeping chapter

If there is a Username and Password

1. Install and launch R:BASE 7.6
2. Navigate to your database directory using the "Browse for Folder" button (bottom left corner, folder icon with a green arrow)
3. Go to the R> Prompt window (third button from the left on the Tool Bar, or press [Ctrl]+[R]
4. At the R> Prompt, type: `SET MULTI OFF` , then press [Enter]
5. At the R> Prompt, type: `SET STATICDB OFF` , then press [Enter]
6. At the R> Prompt, type: `SET AUTOUPGRADE ON` , then press [Enter]
7. At the R> Prompt, type: `SET AUTOCONVERT ON` , then press [Enter]
8. At the R> Prompt, type: `CONNECT DBNAME IDENTIFIED BY Username Password` , then press [Enter]
9. At the R> Prompt, type: `SET IDQUOTES=`` , then press [Enter] (the ` quote character is the reverse single quote, which is next to the "1" and under the tilde "~", on American keyboards
10. At the R> Prompt, type: `DISCONNECT` , then press [Enter]
11. Repeat "Steps 8-10" for all databases
12. Continue with the Housekeeping chapter

If there is an Owner

1. Install and launch R:BASE 7.6
2. Navigate to your database directory using the "Browse for Folder" button (bottom left corner, folder icon with a green arrow)
3. Go to the R> Prompt window (third button from the left on the Tool Bar, or press [Ctrl]+[R]
4. At the R> Prompt, type: `SET MULTI OFF` , then press [Enter]
5. At the R> Prompt, type: `SET STATICDB OFF` , then press [Enter]
6. At the R> Prompt, type: `SET AUTOUPGRADE ON` , then press [Enter]
7. At the R> Prompt, type: `SET AUTOCONVERT ON` , then press [Enter]
8. At the R> Prompt, type: `SET USER Ownername` , then press [Enter]
9. At the R> Prompt, type: `CONNECT DBNAME` , then press [Enter]
10. At the R> Prompt, type: `SET IDQUOTES=`` , then press [Enter] (the ` quote character is the reverse single quote, which is next to the "1" and under the tilde "~", on American keyboards
11. At the R> Prompt, type: `DISCONNECT` , then press [Enter]
12. Repeat "Steps 8-11" for all databases

13. Continue with the Housekeeping chapter

The first time you connect to a legacy database using R:BASE 7.6 for Windows, the following additional system tables will be created:

- SYS_FORMS3
- SYS_LABELS3
- SYS_LAYOUTS3
- SYS_MERGE
- SYS_REPORTS3

To verify this, while connected to your database, type: `LIST SYS_%`

This is where the R:BASE 7.6 for Windows objects are stored. This permits backward compatibility with earlier versions.

2.2.2.1 Housekeeping

The following will create a copy of the database that is completely rebuild with the structure, data, and indexes reloaded. It's one of the very basic but very useful housekeeping tools. It is similar to the PACK command (or defragmenting a hard drive).

These steps must be typed in at the R> Prompt, followed by the [Enter] key:

```
1. DISCONNECT
2. RENAME OrigName.RB* BckupDB.RB*
3. CONNECT BckupDB
4. RELOAD OrigName
```

Continue below to check your database for ODBC compliance.

2.2.2.2 ODBC Compliance

If you are planning on using ODBC to import and export data from R:BASE, at this section you must make sure that your characters are set correctly by doing the following:

1. Go to an R> Prompt
2. Connect to your Database
3. Type `SHOW CHAR`
4. Compare your values to the chart below

Character	Set To	Description
MANY	%	Percent Sign
SINGLE	_	Underscore
QUOTES	'	Single Quote
IDQUOTES	`	*Reverse Single Quote

* On American keyboards, this is usually located under the tilde "~", which is next to the 1

5. If they do not match, change them by typing SET TYPE=CHAR
(where TYPE is from the "Character" column and CHAR from the "Set To" column)

For example, SET MANY=%

Continue below to insure your database files are **Y2K** compliant.

2.2.2.3 Y2K Compliance

For more information on Y2K Compliance please visit our Y2K Page at http://www.rbase.com/support/y2k/

To check the Y2K compliance of your database do the following.

1. Go to an R> Prompt
2. Connect to your Database
3. Type SHOW DATE

Most likely the settings will be as follows... (This is the default for upgraded databases).

```
DATE FORMAT MM/DD/YY
DATE SEQUENCE MMDDYY
DATE CENTURY 19
DATE YEAR 0
```

If so, then your database is NOT Y2K compliant. To activate the Y2K compliancy features of your database we recommend the following:

Set your Format to 4 Y's

When they are set that way then 1/1/1999 will be seen as a valid year and 1/1/99 will also be a valid year. If you are set to 2 Y's then only 1/1/99 will be a valid year.

Set the Date Year to a Convenient Year

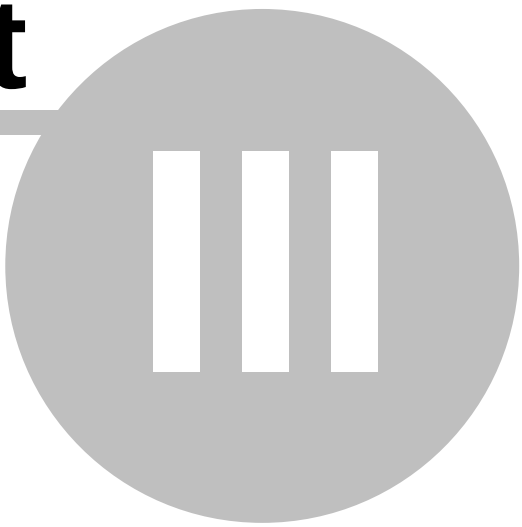
The Date Century and Date Year determine how 2 digit years such as 1/1/99 are handled. To determine your settings mentally combine the century and the year (in this case 19 and 0 make 1900) and then add 99 (in this case 1999) all two digit years will be interpreted as being between these dates. Setting Date Year to 80 will result in 19 + 80 giving 1980 and then adding 99 making 2079. Thus all two digit dates will be between 1980 and 2079. For example a date entered as 1/1/60 would be seen as 2060.

Older versions set to four Y's would see 2 digit dates as being complete four digit years. For example, 1/1/99 would be January First in the year 99. This is known as First Century data. For this reason if your database is already set to four Y's on the format we recommend using the following command to check for invalid dates:

```
TALLY datecol FROM tablename WHERE datecol < 1/1/1950
```

This should build a list of all dates (and how often they occur) that are possibly incorrectly entered and that you can then deal with. Be careful not to go overboard. For example: if you have your family tree stored in an R:BASE Database then be careful that you leave Great Grandmother's birthday in the 1800's where it is supposed to be even though the Tally command above would flag that as an "invalid" date.

Part



3 Converting Forms, Reports, & Labels

At this point, if you reviewed and followed the steps provided in the conversion process, you will have four database files, where you can see your tables listed in the R:BASE 7.6 Database Explorer window. You should also be able to browse the table data with no problem.

You must now decide whether or not you will convert your existing Forms, Reports, and Labels to R:BASE 7.6 for Windows. If you are already using a Windows version of R:BASE, then it is very likely that you will convert the Forms, Reports, and Labels to save time. If you are upgrading from a DOS version of R:BASE you can convert the Forms, Reports, and Labels, or create new ones in the Windows version.

Will you be converting your Forms, Reports, and Labels?

- If the answer is: "**No**," then you can begin using R:BASE 7.6 to design new Forms, Reports, and Labels. If you have not done so already, begin with the R:BASE Tutorial to learn the fastest methods to create and design your forms and reports. The Tutorial is available directly from the R:BASE main Menu Bar under "Help" > "R:BASE Tutorial".

- If the answer is: "**Yes**," and if your database is being upgraded from DOS or is not currently at the 6.5++ version for Windows, you will need to take several necessary conversion steps to migrate the Forms, Reports, and Labels to the 6.5++ version. If you are already using R:BASE 6.5++ for Windows, go directly to "6.5++ Forms, Reports, & Labels".

  As you are planning to convert your existing Windows Forms, Reports, and Labels from your pre-6.5++ database, you will need to open **EACH** Form, Report, and Label in the respective designer (Form Designer, Report Designer, Label Designer) in the R:BASE 6.5++ for Windows version, make a slight change (like moving an object), and then save your changes.

  By saving the changes in 6.5++ you are setting a version flag which allows the R:BASE 7.6 Form Designers, Report Designers, Label Designers to properly convert the item.

  There is no way to automatically convert all of your Forms, Reports, and Labels to 6.5++. They must all be opened, saved, and closed individually.

  Procede to the next chapter for converting "**Legacy Forms, Reports, & Labels"**.

3.1 6.5 and Lower Forms, Reports, & Labels

At this point, you must have R:BASE 6.5++ installed on your computer. A Single Seat of R:BASE 6.5++ for Windows is included with the Full Version of R:BASE 7.6 for Windows, for conversion purposes. The installer is located on the root of the R:BASE 7.6 for Windows CD ROM in the "Conversion Tools" folder.

DOS to Windows Users

When you convert a form, report, or label, you can have R:BASE format it automatically for you. If you choose to "Autoformat" the form, report, or label, R:BASE 6.5++ will resize the fields vertically and moves them so that they are visible and do not overlap one another, based upon your default settings. This step will save you a considerable amount of time in the DOS to Windows conversion.

Before you begin the **"Conversion Steps**" below, first define your default settings in R:BASE 6.5++.

Defining R:BASE 6.5++ Default Settings

Specify global default settings for objects in forms, reports, and labels using the "Preferences" dialog box.

1. Launch R:BASE 6.5++ for Windows
2. Connect to your database by selecting "File" > "Connect to Database..." from the main Menu Bar.

   You will be prompted to locate your database files where they are stored on your computer. Once connected to your database, you will see the database name listed in the R:BASE 6.5++ program caption in brackets.

3. From the main Menu Bar, select "Utilities" > "Preferences".

The "Preferences" dialog window will appear. Within the "Designer Defaults" panel, a separate button for "Forms...", "Reports...", and "Labels..." is displayed.

4. Choose the button "Forms..."

   The "Forms Settings" dialog will appear. There are three buttons that require your attention: "Column Objects", "Variable Objects", and "Text Objects".

5. Choose the "Column Objects" button.

   The "Column Objects Properties" dialog will appear.

6. Choose the "Font..." button.

   The default value for the font is "MS Sans Serif", "Regular", "8".

7. Change the font name, style and size to something more legible for the conversion. (i.e. "Arial", "Bold", "12" or... "Times New Roman", "Bold", "12")
8. Click the "OK" button, then the "OK" button again.
9. Repeat the same font name, style and size for your form "Variable Objects" and "Text Objects".
10. Return to the "Preferences" dialog and repeat the same font changes for "Reports" and "Labels", covering the "Column Objects", "Variable Objects", and "Text Objects" in each.

Note: You can skip setting up the defaults for any Designer if you do not use that part of R:BASE. For example, if you don't have any labels to convert, then you do not have to set up your Label defaults.

Conversion Steps

1. Launch R:BASE 6.5++ for Windows, if you have not done so already.
2. Connect to your database by selecting "File" > "Connect to Database..." from the main Menu Bar.

   You will be prompted to locate your database files where they are stored on your computer. Once connected to your database, you will see the database name listed in the R:BASE 6.5++ program caption in brackets.

3. Open the Object Manager, if it is not already displayed. (select the first icon on the tool bar that looks like an octopus).

   You will see several tabs across the top of the Object Manager; "Apps", "Databases", etc.

4. Click on the "Database" tab and you should see your database(s) listed.
5. Select the "Open" if you are not actually connected to your database.

   When you are connected to your database, the other tabs will become enabled.

6. Select the "Reports" tab.

   Your list of R:BASE reports will be displayed, if any are defined.

7. Highlight the first item in the list, by clicking on it, and click the "Design" button.

   At this point you may see three different "Yes"/"No" dialog confirmations based on whether you are converting from DOS to Windows and what types of objects are located on the form/report/label.

8. When you are prompted, "Do you wish to upgrade?", select "Yes".

9. When you are prompted, "Do you wish to auto-format?", select "Yes".

   This will perform the automatic conversion of the DOS item based upon default settings.
   IMPORTANT: Make sure you have set up the "Defining R:BASE 6.5++ Default Settings" as described above.

10. You may be asked to change double lines to single lines, which is your decision. It really does not make any difference as the items will likely be replaced with more Windows-friendly visually appealing items.

The report will now be displayed. If you are upgrading from 6.1, or 6.5, you will not see any dialo0g message, but are required to make a slight adjustment to any object on the report.

11. Now, close the report and save your changes.

    If any error messages are displayed when you save the report, it is recommended that you take care of them now before continuing.

    Possible reasons that an error message is displayed include:

Error Message	Problem	Possible Solution
Error in Expressions. Fix Expressions before saving.	There may be a variable based upon another variable that is not defined.	At the R:BASE R> Prompt, use the SHOW VARIABLE command to list defined global variables. Then, to define a new global variable, use the SET VARIABLE command. If there are several variables that need defined for the entire conversion process, create a command file to store all needed SET VARIABLE commands.
Error in Expressions. Fix Expressions before saving.	There may be a lookup variable based upon a column name that has changed.	If you have renamed a column or a column was renamed through the conversion process due to an illegal column name, and that column is used in a lookup variable on this report, you must alter the column name in the variable expression and save your changes.

Error in Expressions. May not save properly. Continue Saving?	Variables that perform calculations or combine a number of values are not enclosed in parenthesis.	For variables like the one below,
		
		`vTotal = price * quantity`
		
		add parenthesis as follows:
		
		`vTotal = (price * quantity)`

Error in Expressions. Placed variables may have been lost.	If you do not fix your expressions, by adding parenthesis around calculations, and then save your changes, you run the risk of losing the variable objects as they were placed on your report, form, or label.	You must correct the expression value by adding parenthesis, then place the variable(s) on the report again.
"Unrecognized column in expression.", followed by; "Expression cannot be evaluated."	A text variable that combines a number of values is using the incorrect QUOTES setting.	If you changed your QUOTES setting from double quotes (") to single quotes ('), replace any double quotes with single quotes in the expressions where quotes are used.
"Unrecognized column in expression.", followed by; "Expression cannot be evaluated."	A referenced variables may not be dotted.	If a variable expression contains other variables, be sure to place a period before the referenced variable so R:BASE recognizes the variable value, and not the variable name.

While you are reviewing your report, be sure to review the following:

- variables should not display **ERROR** in place of the data type
- variables are assigned the correct data type (TEXT, INTEGER, etc.)
- your break definitions have valid variables/columns

Note: Don't spend too much time lining things up in the R:BASE 6.5++ designers. Only make superficial changes. You will be able to make changes much easier in the newest Windows version.

If any changes were made, save your changes and close the report.

12. Select the next report in the list and repeat Steps 7-11.
13. Once you are complete converting all of the reports, you will begin converting Forms by selecting the "Forms" tab, and Labels by selecting the "Labels" tab. Launch each of the individual designers using the "Design" button. Follow steps 7-11 above.

The resulting Forms, Reports, and Labels will be workable and SHOULD RUN, but not nearly what they can be!

The next step is to close R:BASE 6.5++ for Windows and open R:BASE 7.6 for Windows.

3.2 6.5++ Forms, Reports, & Labels

At this point in the database conversion process, you will either be a R:BASE 6.5++ for Windows user that has just upgraded to 7.6, or you have just converted all of your Forms, Reports, and Labels to version 6.5++ using the previous steps. To continue, you must have R:BASE 7.6 for Windows installed on your computer to complete the instructions below.

1. Launch R:BASE 7.6 for Windows
2. Connect to your database by selecting "Database" > "Connect to Database..." from the main Menu Bar.

   You will be prompted to locate your database files where they are stored on your computer. Once connected to your database, you will see the database name listed in the R:BASE 7.6 program caption in brackets.

Throughout the following instructions, there will be areas of the R:BASE interface that will require you to know what is being referred to (i.e. Database Explorer, Group Bar, Tool Bar, Menu Bar, etc.). For a quick description as to what these objects are, please read the "Introduction" page of the R:BASE 7.6 Tutorial before continuing.

To open the **Introduction** page, select "Help" > "R:BASE Tutorial" from the R:BASE main Menu Bar.

Once you have completed reading the introduction page, close the window and go to the next section, **Converting Forms**.

3.2.1 Converting Forms

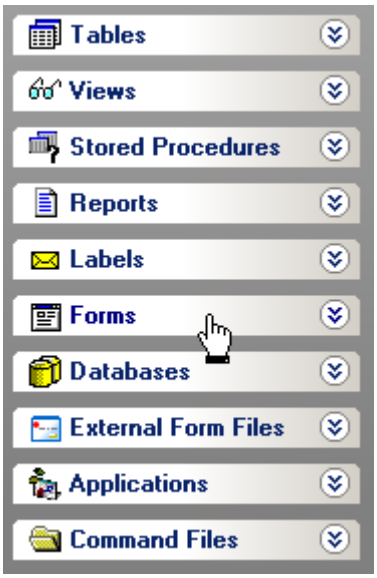
You should now be looking at the R:BASE window with the Database Explorer displayed. To confirm, you will see the main R:BASE caption read the "R:BASE 7.6", then your database name listed in square brackets, then "R:BASE Database Explorer" listed in square brackets.

- If you do not see your database listed in brackets, then connect to it now by selecting "Database" > "Connect to Database..." from the main Menu Bar. You will be prompted to locate your database files where they are stored on your computer. Once connected to your database, you will see the database name listed in the R:BASE 7.6 program caption in brackets.

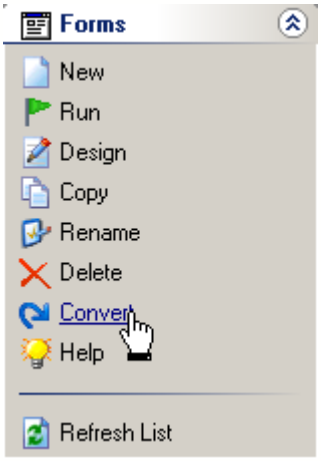
- If you do not see "R:BASE Database Explorer" listed in square brackets, then select the "Database Explorer" button on the main Tool Bar. It is the first button on the left and the hint displayed will read "Show Database Explorer".

At the Database Explorer window, you will see the "Group Bar" listed on the left side of the window containing various menu options of R:BASE database modules (i.e. Tables, Views, Forms, etc.)

1. Click on the "Forms" menu option of the Group Bar (figure 1) and select the "Convert" sub menu option (figure 2).

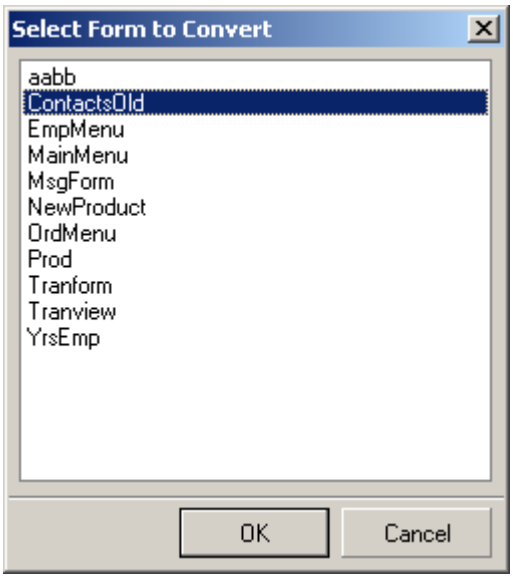


(figure 1)



(figure 2)

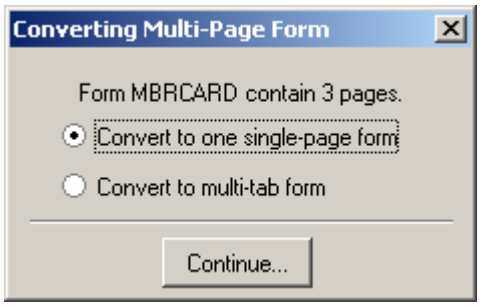
Upon pressing this button, you will see that a dialog containing a list of the available forms is displayed (figure 3).



(figure 3)

2. Select the form that you want to convert, and press the "OK" button.

3. If you are converting a multi-page form, you will be prompted to convert the form to either a single-page form or a multi-tab form.



With multi-page forms, you will want to convert it to a multi-tab form.

4. Select the "Convert to multi-tab form" option, and select the "Continue..." button.

   The Form Designer will convert and launch the form in the designer.

At this point, you can now make changes to your form! However, since many of the issues and suggestions refer to specific object names and require basic understanding of the Form Designer, it is recommended, that you perform the conversions of the remaining modules (i.e. reports, labels), and then complete the R:BASE Tutorial before continuing.

From the Main Menu, choose "Help" > "R:BASE Tutorial". This tutorial covers step-by-step instructions on building a complete database and application from scratch providing the R:BASE relational logic as it adhere's to Dr. Codd's relational model. This is where one would initially learn how to quickly adapt to the R:BASE interface!

3.2.1.1 Issues and Suggestions

From this point in the conversion process, you can now make the necessary improvements on your existing form design, and consider the listed suggestions.

NOTE: From inside the Form Designer, you can launch the Form Designer help file by pressing the [Shift]+[F1] hot keys.

- **Scrolling Regions**
  All regions in forms are converted to Scrolling Regions in the new R:BASE 7.6 form. If you have applied a color to a region from a DOS-version form, the region will be outlined with boxes.

  When existing form regions are converted to Scrolling Regions in the 7.6 version, any Text Label contained on the region will be placed behind the scrolling region after the conversion. You will need to manually move these objects from behind the scrolling region back to the front in the R:BASE 7.6 Form Designer after the conversion of the form. Moving these object can be done easily by selecting the objects, and using Cut [Ctrl]+[X] & Paste [Ctrl]+[V] to place the objects back on the region. Be sure to set the focus on the region (select it with cursor) before the pasting the object.

- **Push Buttons**
  When converting existing multiple page forms to R:BASE 7.6, if you use Push Buttons with a predefined Next Page or Previous Page EEP, these buttons will appear on the 7.6 form, but will have no action assigned to them. This is because of the Tab Control behavior which is used in R:BASE 7.6 to create multiple page forms.

- **Lookup Variables**
  The "Lookup Variable" is now really a "Lookup Variable", not to be changed. All expressions (if based on lookup variables) are evaluated CORRECTLY and refresh INSTANTLY. Prior to version 7.x, that was not the case. You had to issue the RECALC command every time you wanted to refresh your variables. If you wish to achieve the same results in 7.6, then DO NOT use form defined expressions, but rather EEPs which can fire when you want and have the freedom to change the variables accordingly.

  Example:

1. In the Form Designer, you can create an Exit EEP on the column/variable before the look column/variable field.
2. Exit EEP should do all the lookup for that column/variable.
3. Once the value is placed, now you can do whatever you want to change it or keep that same value.

- **Lookup Variable Tip**
  Recently added to the R:BASE 7.6 Form Designer was the option to run a command file (or action) for a form before the Form Designer is launched. In the Form Designer, choose "Layout" from the Menu bar, the select "On Before Design Action...".

  This allows you to create any variables that Lookup Variables are based upon to avoid annoying error messages when the form is opened in the designer. An example of a lookup variable based upon another variable would be...

```
1 : TEXT    vCompany = Company IN Customer WHERE CustID = .vCustID
```

  The error message appears because the variable vCustID is not defined. Adding the SET VAR command following to the "On Before Design Action..." will alleviate this error message:

```
SET VAR vCustID INTEGER
```

  The "On Before Design Action..." is listed under "Layout" on the main Menu Bar.

- **Form Variables**
  Form variables that perform calculations or combine a number of values should be enclosed in parenthesis. If you are getting an error messages for a variables performing calculations, like the one below,

```
2 : CURRENCY    vTotal = price * quantity
```

  add parenthesis as follows:

```
2 : CURRENCY    vTotal = (price * quantity)
```

To learn more about the new Form Designer and Form Controls, please review the Help File [Shift]+[F1].

And, if you have not done so already, complete the R:BASE Tutorial in its entirety.

From the Main Menu, choose "Help" > "R:BASE Tutorial". This tutorial covers step-by-step instructions on building a complete database and application from scratch providing the R:BASE relational logic as it adhere's to Dr. Codd's relational model. This is where one would initially learn how to quickly adapt to the R:BASE interface!

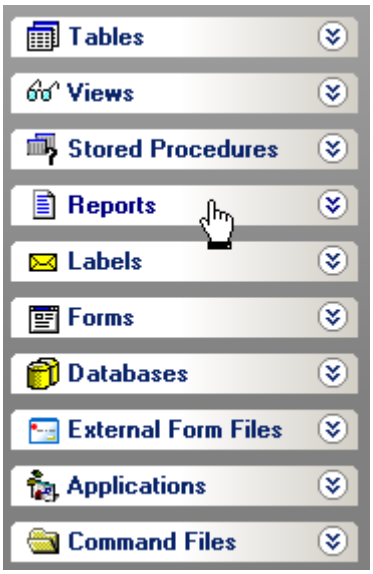
3.2.2 Converting Reports

You should now be looking at the R:BASE window with the Database Explorer displayed. To confirm, you will see the main R:BASE caption read the "R:BASE 7.6", then your database name listed in square brackets, then "R:BASE Database Explorer" listed in square brackets.

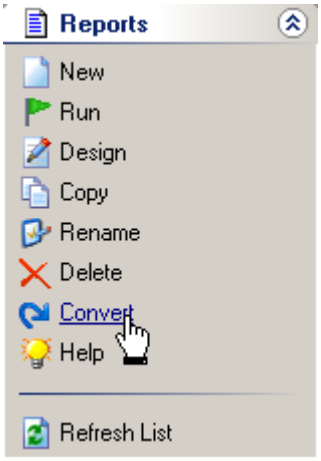
- If you do not see your database listed in brackets, then connect to it now by selecting "Database" > "Connect to Database..." from the main Menu Bar. You will be prompted to locate your database files where they are stored on your computer. Once connected to your database, you will see the database name listed in the R:BASE 7.6 program caption in brackets.
- If you do not see "R:BASE Database Explorer" listed in square brackets, then select the "Database Explorer" button on the main Tool Bar. It is the first button on the left and the hint displayed will read "Show Database Explorer".

At the Database Explorer window, you will see the "Group Bar" listed on the left side of the window containing various menu options of R:BASE database modules (i.e. Tables, Views, Forms, etc.)

1. Click on the "Reports" menu option of the Group Bar (figure 1) and select the "Convert" sub menu option (figure 2).

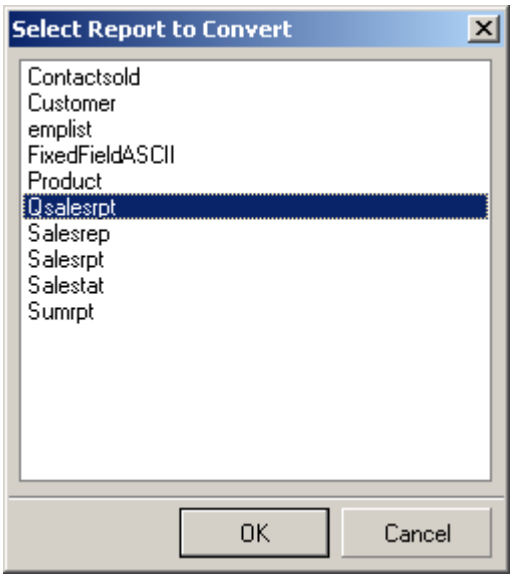


(figure 1)



(figure 2)

Upon pressing this button, you will see that a dialog containing a list of the available reports is displayed (figure 3).



(figure 3)

2. Select the report that you want to convert, and press the "OK" button.

   The Report Designer will convert and launch the report in the designer.

At this point, you can now make changes to your report! However, since many of the issues and suggestions refer to specific object names and require basic understanding of the Report Designer, it is recommended, that you perform the conversions of the remaining modules (i.e. forms, labels), and then complete the R:BASE Tutorial before continuing.

From the Main Menu, choose "Help" > "R:BASE Tutorial". This tutorial covers step-by-step instructions on building a complete database and application from scratch providing the R:BASE relational logic as it adhere's to Dr. Codd's relational model. This is where one would initially learn how to quickly adapt to the R:BASE interface!

3.2.2.1 Issues and Suggestions

From this point in the conversion process, you can now make the necessary improvements on your existing report design, and consider the listed suggestions.

NOTE: From inside the Report Designer, you can launch the Report Designer help file by pressing the [Shift]+[F1] hot keys.

- **Sub-Totals and Totals**
  To calculate sub-totals and totals of table columns, Aggregate Variables have always been used to perform this job. Now, the R:BASE 7.6 for Windows Report Designer has a built-in object called DBCalc, which performs these same functions on table columns without creating the extra overhead of variables. You can replace your Variable Label objects with DBCalc objects in instances where the Variables Object results will not be used further down in the report.

- **#DATE, #TIME, #PAGE, Document, and Page Information**
  R:BASE 7.6 for Windows Report Designer now has an object called System Variable, which allows you to place the current DATE, TIME, Document Name, Print DATE and TIME, or one of five Page Numbering options. You should delete any Variable Label objects whose expression value consists of a System Variable (#DATE, #TIME) and replace that object with a System Variable object. If you have any Variable Label objects whose expression value consists of the #PAGE System Variable you must delete the variable object and replace that object with a System Variable object.

- **Lookup Variable Tip**
  Recently added to the R:BASE 7.6 Report Designer is the option to run a command file (or Action) for a form before the Report Designer is launched. In the Report Designer, choose "Report" from the Menu bar, the select "Actions" > "On Before Design...".

  This allows you to create any variables that Lookup Variables are based upon to avoid annoying error messages when the report is opened in the designer. An example of a lookup variable based upon another variable would be...

```
1 : TEXT    vCompany = Company IN Customer WHERE CustID = .vCustID
```

  The error message appears because the variable vCustID is not defined. Adding the following SET VAR command to the "On Before Design..." action will alleviate this error message:

```
SET VAR vCustID INTEGER
```

  The "On Before Design..." action is located under "Report" > "Actions" on the main Menu Bar.

- **Report Variables**
  Report variables that perform calculations or combine a number of values should be enclosed in parenthesis. If you are getting an error messages for a variables performing calculations, like the one below,

```
2 : CURRENCY    vTotal = price * quantity
```

  add parenthesis as follows:

```
2 : CURRENCY    vTotal = (price * quantity)
```

- **Report Totals**

To be sure your report totals are calculating correctly on all NULL and not NULL records, make sure your **ZERO** setting is ON. Check the setting under "Settings" > "Configuration Settings".

- **Printer Control Codes**
  If you used DOS or machine printer control codes in your R:BASE Report variables from previous versions, they can no longer be stored in the Report Variables. A control code would appear in the variable list with an expression as follows: <27 40 115 49 83>

  If the control code was used to alter the text on the report (i.e. bold, underline, etc.), then just delete the control code. There are many new features in the Windows interface that replace using control codes for altering report text objects. The R:BASE 7.6 for Windows version allows you to perform these font changes must easier.

  If you have control codes listed in the report that control hardware for paper feeds or to open a cash drawer, then write down your exact code and review the "PCC Label" Control in the Report Designer. This control will allow you to support the same functionality used previously.

- **Picture Format**
  For a report object, you may see **[]** listed in your report preview.

  In R:BASE for DOS and R:BASE for Windows versions prior to 7.x, a "Picture Format" option was available. The option allowed the justification the value and several formatting options based upon the data type of the object. To add the justification a [>], or [<] was used to right/left justify.

  In the current R:BASE version, this option is now called "Display Format", which still offers several formatting options for report objects based upon the data type of the object. While the formatting option is still supported, the justification option is no longer supported in the previous context, within the "Display Format" settings. To right/left/center justify text of an object, use the "Format" tool bar which supports many text formatting options.

  If you see **[]** listed in your report preview for a report object, you must right click on the object, select "Display Format", and remove the [] characters.

- **Page Setup**
  For DOS to Windows conversions, the default page size setting is set to it's largest values in order to make sure no objects are lost in the conversion process. You must make sure you alter your page settings back to your desired values in order for your reports to print correctly.

  To alter the page size settings, follow the below instructions:

  1. Select "File" > "Page Setup..." from the main Menu Bar.
  2. Select the "Paper Size" tab
  3. For Portrait orientation reports, the Width should be set to "8.5".
  4. For Landscape orientation reports, the Height should be set to "8.5".

     From this dialog, you can also adjust your report margins from the "Margins" tab.

  After making any changes, make sure that all of your report objects are located within the defined page size settings and margins. Otherwise, R:BASE will display a warning that "Controls beyond the new page width will be deleted." In this case, select "Cancel" to avoid losing any controls. Then move your controls within your desired page settings and then make your page size setting changes again.

- **Report Preview**
  The "Report Preview" tab will display a preview of your report as it may appear when you send the report to the printer or screen. Before selecting the tab, you must make sure that there are no errors listed in your Report variables, otherwise, you will receive an error message for every error listed multiplied by the number of records displayed in the Report Preview window.

  What you can do to limit the number of rows displayed in the Report Preview window, thus limiting the number error messages. To do so, alter the Report Default settings for how many rows are displayed when previewing a report.

1. Select "Settings" > "Report/Label Designer" > "Default Settings..." from the main Menu Bar.
2. Alter the value for "Row Count for Preview:" to a smaller value other than 100; perhaps to 10.

- **Legacy Objects**
  Any lines created in R:BASE for DOS will be removed. If you created lines in a DOS version of R:BASE by using text (such as dashes or underscores), these objects will be treated as text objects. These may show up as strings of strange letters such as "ä". You will want delete these objects and replace them with actual line objects within the Report Designer.

To learn more about the Report Designer and controls, please review Report Designer help file by pressing the [Shift]+[F1] hot keys.

And, if you have not done so already, complete the R:BASE Tutorial in its entirety.

From the Main Menu, choose "Help" > "R:BASE Tutorial". This tutorial covers step-by-step instructions on building a complete database and application from scratch providing the R:BASE relational logic as it adhere's to Dr. Codd's relational model. This is where one would initially learn how to quickly adapt to the R:BASE interface!

3.2.3 Converting Labels

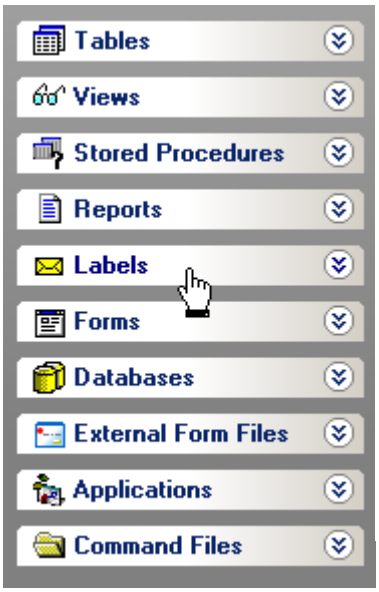
You should now be looking at the R:BASE window with the Database Explorer displayed. To confirm, you will see the main R:BASE caption read the "R:BASE 7.6", then your database name listed in square brackets, then "R:BASE Database Explorer" listed in square brackets.

- If you do not see your database listed in brackets, then connect to it now by selecting "Database" > "Connect to Database..." from the main Menu Bar. You will be prompted to locate your database files where they are stored on your computer. Once connected to your database, you will see the database name listed in the R:BASE 7.6 program caption in brackets.

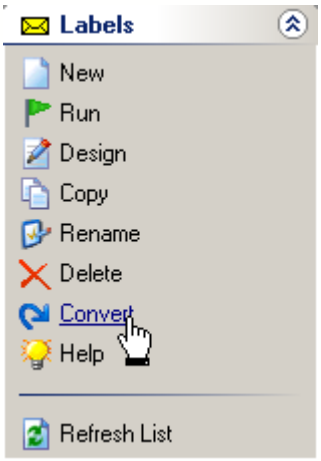
- If you do not see "R:BASE Database Explorer" listed in square brackets, then select the "Database Explorer" button on the main Tool Bar. It is the first button on the left and the hint displayed will read "Show Database Explorer".

At the Database Explorer window, you will see the "Group Bar" listed on the left side of the window containing various menu options of R:BASE database modules (i.e. Tables, Views, Forms, etc.)

1. Click on the "Labels" menu option of the Group Bar (figure 1) and select the "Convert" sub menu option (figure 2).

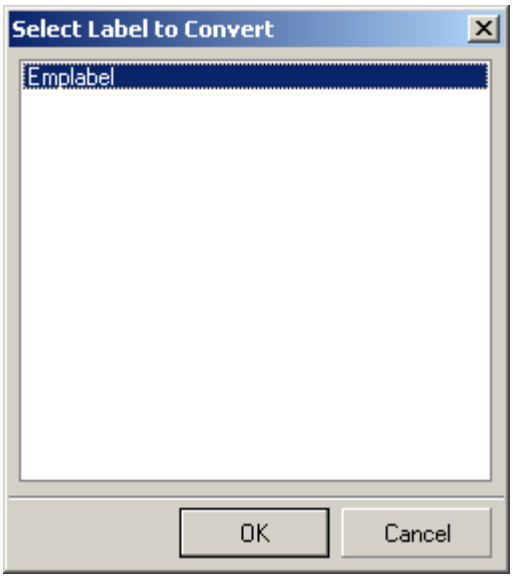


(figure 1)



(figure 2)

Upon pressing this button, you will see that a dialog containing a list of the available labels is displayed (figure 3).



(figure 3)

2. Select the label that you want to convert, and press the "OK" button.

   The Label Designer will convert and launch the report in the designer.

At this point, you can now make changes to your label! However, since many of the issues and suggestions refer to specific object names and require basic understanding of the Label Designer, it is recommended, that you perform the conversions of the remaining modules (i.e. forms, reports), and then complete the R:BASE Tutorial before continuing.

From the Main Menu, choose "Help" > "R:BASE Tutorial". This tutorial covers step-by-step instructions on building a complete database and application from scratch providing the R:BASE relational logic as it adhere's

to Dr. Codd's relational model. This is where one would initially learn how to quickly adapt to the R:BASE interface!

3.2.3.1 Issues and Suggestions

From this point in the conversion process, you can now make the necessary improvements on your existing label design, and consider the listed suggestions.

NOTE: From inside the Label Designer, you can launch the Label Designer help file by pressing the [Shift]+[F1] hot keys.

- **Sub-Totals and Totals**
  To calculate sub-totals and totals of table columns, Aggregate Variables have always been used to perform this job. Now, the R:BASE 7.6 for Windows Label Designer has a built-in object called DBCalc, which performs these same functions on table columns without creating the extra overhead of variables. You can replace your Variable Label objects with DBCalc objects in instances where the Variables Object results will not be used further down in the label.

- **#DATE, #TIME, #PAGE, Document, and Page Information**
  R:BASE 7.6 for Windows Label Designer now has an object called System Variable, which allows you to place the current DATE, TIME, Document Name, Print DATE and TIME, or one of five Page Numbering options. You should delete any Variable Label objects whose expression value consists of a System Variable (#DATE, #TIME) and replace that object with a System Variable object. If you have any Variable Label objects whose expression value consists of the #PAGE System Variable you must delete the variable object and replace that object with a System Variable object.

- **Lookup Variable Tip**
  Recently added to the R:BASE 7.6 Label Designer is the option to run a command file (or Action) for a form before the Label Designer is launched. In the Label Designer, choose "Label" from the Menu bar, the select "Actions" > "On Before Design...".

  This allows you to create any variables that Lookup Variables are based upon to avoid annoying error messages when the label is opened in the designer. An example of a lookup variable based upon another variable would be...

```
1 : TEXT    vCompany = Company IN Customer WHERE CustID = .vCustID
```

  The error message appears because the variable vCustID is not defined. Adding the following SET VAR command to the "On Before Design..." action will alleviate this error message:

```
SET VAR vCustID INTEGER
```

  The "On Before Design..." action is located under "Label" > "Actions" on the main Menu Bar.

- **Label Variables**
  Label variables that perform calculations or combine a number of values should be enclosed in parenthesis. If you are getting an error messages for a variables performing calculations, like the one below,

```
2 : CURRENCY    vTotal = price * quantity
```

  add parenthesis as follows:

```
2 : CURRENCY    vTotal = (price * quantity)
```

- **Label Totals**
  To be sure your label totals are calculating correctly on all NULL and not NULL records, make sure your **ZERO** setting is ON. Check the setting under "Settings" > "Configuration Settings".

- **Printer Control Codes**
  If you used DOS or machine printer control codes in your R:BASE Label variables from previous versions, they can no longer be stored in the Label Variables. A control code would appear in the variable list with an expression as follows: <27 40 115 49 83>

  If the control code was used to alter the text on the label (i.e. bold, underline, etc.), then just delete the control code. There are many new features in the Windows interface that replace using control codes for altering label text objects. The R:BASE 7.6 for Windows version allows you to perform these font changes must easier.

  If you have control codes listed in the label that control hardware for paper feeds or to open a cash drawer, then write down your exact code and review the "PCC Label" Control in the Label Designer. This control will allow you to support the same functionality used previously.

- **Picture Format**
  For a label object, you may see **[]** listed in your label preview.

  In R:BASE for DOS and R:BASE for Windows versions prior to 7.x, a "Picture Format" option was available. The option allowed the justification the value and several formatting options based upon the data type of the object. To add the justification a [>], or [<] was used to right/left justify.

  In the current R:BASE version, this option is now called "Display Format", which still offers several formatting options for label objects based upon the data type of the object. While the formatting option is still supported, the justification option is no longer supported in the previous context, within the "Display Format" settings. To right/left/center justify text of an object, use the "Format" tool bar which supports many text formatting options.

  If you see **[]** listed in your label preview for a label object, you must right click on the object, select "Display Format", and remove the [] characters.

- **Page Setup**
  For DOS to Windows conversions, the default page size setting is set to it's largest values in order to make sure no objects are lost in the conversion process. You must make sure you alter your page settings back to your desired values in order for your labels to print correctly.

  To alter the page size settings, follow the below instructions:

  1. Select "File" > "Page Setup..." from the main Menu Bar.
  2. Select the "Paper Size" tab
  3. For Portrait orientation labels, the Width should be set to "8.5".
  4. For Landscape orientation labels, the Height should be set to "8.5".

     From this dialog, you can also adjust your label margins from the "Margins" tab.

  After making any changes, make sure that all of your label objects are located within the defined page size settings and margins. Otherwise, R:BASE will display a warning that "Controls beyond the new page width will be deleted." In this case, select "Cancel" to avoid losing any controls. Then move your controls within your desired page settings and then make your page size setting changes again.

- **Label Preview**
  The "Label Preview" tab will display a preview of your label as it may appear when you send the label to the printer or screen. Before selecting the tab, you must make sure that there are no errors listed in your Label variables, otherwise, you will receive an error message for every error listed multiplied by the number of records displayed in the Label Preview window.

  What you can do to limit the number of rows displayed in the Label Preview window, thus limiting the number error messages. To do so, alter the Label Default settings for how many rows are displayed when previewing a label.

  1. Select "Settings" > "Report/Label Designer" > "Default Settings..." from the main Menu Bar.
  2. Alter the value for "Row Count for Preview:" to a smaller value other than 100; perhaps to 10.

- **Legacy Objects**
  Any lines created in R:BASE for DOS will be removed. If you created lines in a DOS version of R:BASE by using text (such as dashes or underscores), these objects will be treated as text objects. These may show up as strings of strange letters such as "ä". You will want delete these objects and replace them with actual line objects within the Label Designer.

To learn more about the Label Designer and controls, please review Label Designer help file by pressing the [Shift]+[F1] hot keys.

And, if you have not done so already, complete the R:BASE Tutorial in its entirety.

From the Main Menu, choose "Help" > "R:BASE Tutorial". This tutorial covers step-by-step instructions on building a complete database and application from scratch providing the R:BASE relational logic as it adhere's to Dr. Codd's relational model. This is where one would initially learn how to quickly adapt to the R:BASE interface!

3.3 R:BASE 7.0 and Higher Forms, Reports, & Labels

After connecting to your R:BASE 7.0 or higher database, your Forms, Reports, and Labels will automatically populate the Forms, Reports, and Labels menus of the R:BASE Database Explorer. The items will run in R:BASE 7.6 with little or no changes.

It is recommended that you review each item to insure the conversion was 100% successful.

Part

4 Converting Applications

As R:BASE can be customized for any type of business model or company schema, there have always been several ways that developers and users could create an application. Actually, if you think of what an application consists of, you're really looking at a stored series of commands in what are called a command files, which are then combined with other command files to form applications.

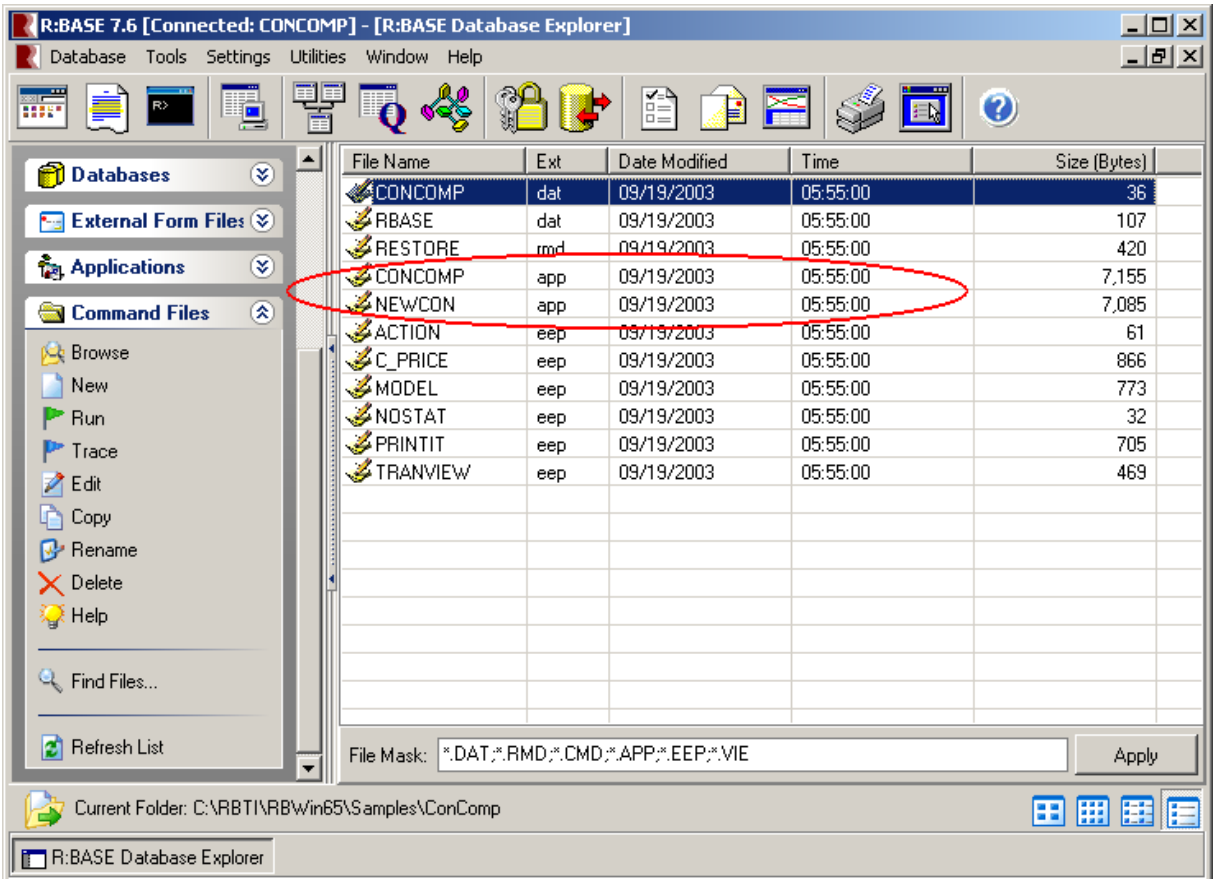
R:BASE provides all of the tools you need to produce command files and applications, it is just up to you to decide which method serves your needs best.

4.1 R:BASE 6.5++ and Lower Applications

4.1.1 Application Express Users

If you are converting an application that was designed using the Application Express module from versions prior to R:BASE 7.x, the actual application file consisting of the R:BASE command language (.APP) can be used in R:BASE 7.6. In addition to the .APP file, there will be an .APX and either .API or .APW files. You will only need the .APP file.

The source code command syntax within the APP file contains the menus and menu actions of your custom application. The APP file is likely located with your database files. So, when you connect to your database using R:BASE 7.6, you will see the APP file listed under the "Command Files" menu within the Database Explorer's Group Bar. The files will not be listed under the "Applications" menu as the R:BASE 7.6 Application Designer will not open prior Application Express projects for editing.



In order to use the .APP file contents in R:BASE 7.6, you will need to review and update the command syntax

used in the file. Based on the R:BASE version you are upgrading from, there are additional steps needed to upgrade your application code. The older your application is, then the more steps will be needed. And, if you are upgrading from a DOS version, there are additional changes required as well.

In R:BASE 7.6, you have several different ways to run the menus contained within this file. Please review the several Application Formats available to you.

4.1.2 Command Files

The application may be one large .APP file or several smaller files; usually with the .CMD file extension. The standard command file extension was CMD in the DOS days. Now in R:BASE 7.6 for Windows, the new standard is .RMD as more file servers and mail servers flag the .CMD file extension as a possible virus. If you are using a custom file extension, you can add the extension to the "File Mask:" field under the "Command Files" option and they will then appear in this window.

In order to use your command files in R:BASE 7.6, you will need to review and update the command syntax used in the files. Based on the R:BASE version you are upgrading from, there are additional steps needed to upgrade your command syntax. The older your command files are, then the more steps will be needed. And, if you are upgrading from a DOS version, there are additional changes required as well.

In R:BASE 7.6, you have several different ways to run the menus contained within this file. Please review the several Application Formats available to you.

4.1.3 New Application Formats

When building R:BASE databases and applications, R:BASE users have several options as to how they want to store their "application".

1. **Forms** - an application can be completely Form driven by storing all of the code in form EEPs.

2. **Application Builder** - using the Application Builder interface, an application can be stored in a .RBA file, separate from the database files. This offers additional security over using just command files.

3. **Command Files** - using only code (i.e. CHOOSE, DIALOG, PAUSE, etc), an application can be entirely written in one or many RMD, APP, CMD, and DAT files.

4. **External Form Files** - an application can be driven using External Forms, by storing all of the code in form EEPs. Like an R:BASE Application file (.RBA), External Form Files are stored outside of the database.

5. **All, or some, of the above** - an application can consist of all of a few of the above methods to store R:BASE menu and command files.

4.1.4 Updating the Command Syntax

Based on the R:BASE version you are upgrading from, there are additional steps needed to upgrade your application code. The older your application is, then the more steps will be needed.

You may encounter reserved words (PROJECT, TIME), obsolete commands (SET POINTER), and/or commands whose syntax has been enhanced for your benefit (PRINT, SELECT, CHOOSE). The time inveested to perform these changes depends on the size of your command files.

4.1.4.1 Table and Column Name Changes

During the initial Preparation stages of the conversion process you were instructed to review change your table and column names which match any invalid names and reserved words, and to record these changes on paper.

If you made any table and/or column name changes, the first step in your command syntax updates is to make these necessary name changes in the application/command files.

One suggestion for task this task is to use the R:BASE built-in "Find Files" utility. To launch this command file utility, choose "Utilities" > "Find Files" from the main Menu bar. This interface will allow to to search your command files for obsolete commands and other words, so you are not forced to manually search the

individual files.

Keep in mind that whether you are using the R:BASE Editor or another text editor, to make these command syntax updates it is wise to take advantage of all of the utilities available in the text editor. In this case where you are replacing keywords, be sure to use any built-in word Search and Replace utilities to make this task easier.

You can review the list of Reserved Words at any time.

4.1.4.2 Obsolete Commands

The following table contains a list of commands that are considered to be obsolete. Most of these commands have been made obsolete by their SQL Compliant equivalent, and there is no guarantee that these commands will be supported in future versions of R:BASE. Any code which relies on any of these commands should be considered dangerous as their use may have unintended and unpredictable results.

While most items have a direct replacement there are some items that are listed as having no direct replacement. However it may be possible to replace those commands with other commands that emulate that functionality. For more information on the "Replacement" commands, refer to the R:BASE Help "Command Index", or press [F1] from any location in R:BASE.

One suggestion for task this task is to use the R:BASE built-in "Find Files" utility. To launch this command file utility, choose "Utilities" > "Find Files" from the main Menu bar. This interface will allow you to search your command files for obsolete commands and other words, so you are not forced to manually search the individual files.

Obsolete Command	Replacement	Notes
#FORM_COLUMNNAME	RBTI_FORM_COLNAME	See also RBTI System Variables
#FORM_FORMNAME	RBTI_FORM_FORMNAME	See also RBTI System Variables
#FORM_TABLENAME	RBTI_FORM_TBLNAME	See also RBTI System Variables
AVE()	LAVG	
BUILD KEY	CREATE INDEX	
CHANGE	UPDATE	
CHANGE COLUMN	ALTER TABLE	
CLOSE	DISCONNECT	
COLUMNS	CREATE TABLE	
(CVAL('FORM_ALIAS')	RBTI_FORM_ALIAS	See also RBTI System Variables
(CVAL('FORM_CAPTION')	GETPROPERTY RBASE_FORM CAPTION vCaption	
(CVAL('FORM_DATA')	RBTI_FORM_COLVALUE	See also RBTI System Variables
(CVAL('FORM_DATA_TYPE')	RBTI_FORM_DATATYPE	See also RBTI System Variables
(CVAL('FORM_FIELD_NAME')	RBTI_FORM_COLNAME	See also RBTI System Variables
(CVAL('FORM_NAME')	RBTI_FORM_FORMNAME	See also RBTI System Variables
(CVAL('FORM_TABLE')	RBTI_FORM_TABLENAME	See also RBTI System Variables
DEFINE	CREATE SCHEMA	
DELETE KEY	DROP INDEX	
DELETE FROM #n	DELETE FROM TableName WHERE CURRENT OF CURSOR	See also DECLARE CURSOR

DISPLAY	EDIT USING	Used with Variable Forms.
DRAW	NONE	Used with Variable Forms. No direct replacement.
ECHO	SET ECHO ON	
EDIT VAR ...	NONE	Used with Variable Forms. No direct replacement.
ENTER VAR ...	NONE	Used with Variable Forms. No direct replacement.
ESC	[ESC]	Used in IF and WHERE clauses to compare to the Esc key.
Value1 EQ Value2	Value1 = Value2	Value1 equals Value2
EXISTS	IS NOT NULL	
EXPAND	ALTER TABLE	
EXPRESS	RBAPP	
FAILS	IS NULL	
FILLIN	DIALOG	In windows consider using DIALOG, ENTER or EDIT.
Value1 GE Value2	Value1 >= Value2	Value1 greater than or equal to Value2.
Value1 GT Value2	Value1 > Value2	Value1 greater than Value2.
IN #n	WHERE CURRENT OF CURSOR	Used with UPDATE and SET VAR commands.
Value1 LE Value2	Value1 <= Value2	Value1 less than or equal to Value2.
Value1 LT Value2	Value1 < Value2	Value1 less than or equal to Value2.

MAX()	LMAX()	
MICRORIM_RETURN	STP_RETURN	
MICRORIM_WALLPAPER	NONE	This variable was only used with Forms and Reports created for R:WEB.
MIN()	LMIN()	
Value1 NE Value2	Value1 <> Value2	Value1 does not equal Value2.
NEXT	FETCH	See also DECLARE CURSOR
NOECHO	SET ECHO OFF	
OPEN	CONNECT	
OWNER	CREATE SCHEMA	
PASSWORDS	GRANT	
PLAYBACK	NONE	No Replacement.
POPUP/PULLDOWN Menus	NONE	Use #LIST option of CHOOSE command. Use LISTOF command option to create list of items.
PROMPTS		Now DOS Only.
REDEFINE	ALTER TABLE	
REMOVE	DROP	
RESET	NONE	No Replacement.
#RETURN	NONE	Used with Variable Forms. No Direct Replacement.
SCREEN RESTORE	RECALC VARIABLES	Now DOS Only.
SELECT FROM #n	SELECT FROM TableName	See also DECLARE CURSOR WHERE CURRENT OF CURSOR

SET CGA	NONE	No Replacement.
SET EDITOR	NONE	No Replacement due to enhanced RBEDIT module.
SET EXTENDED	NONE	R:BASE always operates in Extended Mode now.
SET INTENSITY	NONE	Use "Selected Row" color option in Scrolling Region Properties.
SET OLDLINE	NONE	Use the Page Style option in Reports.
SET POINTER	DECLARE CURSOR	
SET RBGSIZE		No replacement necessary due to imbedded 7.x properties. Command is ignored.
SET USERAPP	NONE	No replacement.
SORTED BY	ORDER BY	
USER	CONNECT IDENTIFIED BY ...	
VIEW	CREATE VIEW	
WRITE		In Windows consider using DIALOG, PAUSE, ENTER or EDIT.
ZIP RBEDIT	RBEDIT	RBEDIT is no longer a seperate executable.
ZIP RBSYNC	RBSYNC	RBSYNC is no longer a seperate executable.

4.1.4.3 DOS to Windows Conversion

When converting from DOS to Windows, there are command syntax changes that may or may not require your attention.

Instances where you will positively update the command syntax are any locations where DOS message commands (WRITE) or information prompts (FILLIN) which will need replaced by their Windows counterpart (PAUSE and DIALOG).

These commands send simple messages or prompts for data entry to the end user. Your time involved in this step depends on how much user interaction is in the code.

To assist you with these replacements, R:BASE 7.6 for Windows includes several syntax builders for the DIALOG and PAUSE commands. They can be accessed from the Menu Bar under "Utilities" > "Plugins".

For **WRITE**, you may have this;

```
WRITE 'THE PROCESS IS COIMPLETE!' AT 10 05
```

and will replace it with this:

```
PAUSE 2 USING 'THE PROCESS IS COIMPLETE!' CAPTION ' ' ICON INFO
```

For **FILLIN**, you may have this;

```
FILLIN vdte USING 'ENTER DEADLINE DATE: ' AT 12 10
```

and will replace it with this:

```
DIALOG 'ENTER DEADLINE DATE:' vdte venke 1 CAPTION 'Question'
ICON QUESTION
```

4.1.4.4 Enhanced Commands

There will be commands whose syntax has been enhanced for your benefit. Most of these commands will not require mandatory changes other than for an enhanced display (CHOOSE, DIALOG, PAUSE, PRINT), but the PRINT command is an example of a command that has been enhanced 20 times over, and will require you to alter your syntax.

You may have this:

```
OUT PRINTER
PRINT bulletin SORTED BY poscl
OUT screen
```

and will replace it with this:

```
PRINT bulletin ORDER BY poscl ASC OPTION PRINTER
```

or even this:

```
PRINT bulletin ORDER BY poscl ASC OPTION PRINTER +
|SHOW_CANCEL_DIALOG OFF |TRAY 2 |COLLATION ON +
|COPIES 2 |ORIENTATION LANDSCAPE |PRINTER_NAME HPLaser1345
```

4.1.5 Using the R:BASE Editor

You may be thinking that this is too much. But, there are two important tools included with R:BASE 7.6 that will make your command syntax changes more pleasant that you think.

The new R:BASE Editor & R:Style!

The R:BASE Editor is an editor specifically designed for creation and editing of R:BASE program and application files, command files, recorded scripts, and text files. It offers these special R:BASE features:

- You can specify settings such as the font, tab stops, and text wrapping. You can also search and replace text, and print files.
- Any number of program files can be open simultaneously.
- Command files are shown with syntax highlighting with the option of displaying each syntax element in a different color text.
- Safe tabs -- the Tab key inserts spaces.
- Block commands include block indent, block outdent, block comment out, and block comment in.
- Seamless integration with the R:Style, R:BASE code styler and checker.
- And more...

What is R:Style?

R:Style provides structural error checking, and spelling assistance to help debug your code prior to running it. R:Style will tell you where in the file to look, and what error to look for! R:Style is not a full syntax checker, but it is an excellent structure checker, with some syntax checking thrown in as a bonus.

R:Style will find:

- Mis-terminated lines (= instead of +)
- Illegal or ambiguous commands
- Missing, unmatched, or incorrect quotes
- Unmatched parenthesis
- Missing RETURNs & ENDs, adds them
- Missing or out of place structures, IF, THEN, ELSE, ENDIF, SWITCH, ENDSW, WHILE, THEN, ENDWHILE, BREAK
- Duplicate block names in APP files
- Illegal use of command words in code or block names
- Ill advised RETURN from within WHILE or SWITCH
- Illegal dotted variables
- Support for finding misspelled or illegal words
- And more...

4.2 R:BASE 7.0 and Higher Applications

Any .RBA Application files, Form-Driven Applications, External Form Files, or command files running in R:BASE 7.0 and higher will run in R:BASE 7.6 with little or no changes.

It is recommended that you review your application menus and actions to insure the system is 100% operational.

Part V

5 Feedback

Suggestions and Enhancement Requests:

From time to time, everyone comes up with an idea for something they'd like their software to do differently. This is true of all applications, no less R:BASE.

If you come across an idea that you think might make a nice enhancement to R:BASE, your input is always welcome.

Please submit your suggestion and/or enhancement request at our online R:BASE Developers' Corner Crew (R:DCC) homepage at: http://www.rbase.com/RBG7RDCC. Describe what you think might make a nice enhancement.

Unless additional information is needed, you will not receive a direct response. You can periodically check the status of your submitted enhancement request accordingly.

Reporting Bugs:

If you experience something you think might be a bug in R:BASE, please report it at our online R:BASE Developers' Corner Crew (R:DCC) homepage at: http://www.rbase.com/RBG7RDCC.

You will need to describe:

- What you did
- What happened
- What version and build of R:BASE you have
- Any error messages R:BASE gave
- What kind of computer you have
- Which operating system you're using
- Anything else you think might be relevant

Unless additional information is needed, you will not receive a direct response. You can periodically check the status of your submitted bug accordingly.

If you would like to send the sample as an attachment in reference to submitted bug on RBG76 RDCC, please send an e-mail to rbg76rdcc@rbase.com.

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