



Crystal Reports Pro 3.0 Readme

by
Crystal Services

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INSTALLING CRYSTAL REPORTS PRO 3.0

- 1) To install Crystal Reports Pro (CR/Pro), start Windows by typing:

WIN

- 2) Insert the CR/Pro Disk 1 in the appropriate drive.
- 3) Make certain that the Windows Program Manager is active. Then, select the File Menu, and the Run command.
- 4) When the Run dialog box appears, type:

A:setup (if your disk is in drive A:)

and then select *OK* or press *Enter* to call up the CR/Pro installation program.

- 5) Once the installation is complete, simply double click on the CR/Pro icon.
- 6) If you have any problems running CR/Pro, check for hints in the CR/Pro Help file. Most of the configuration problems you may run into are covered in this file.

There will be icons created in Program Manager for CR/Pro, CR Data Dictionary, CR Help, CR Readme, Paradox Engine Configuration, ODBC Setup, ODBC Administrator.

Note: Windows must be Version 3.1 or later.

When you are installing CR/Pro there will be a file created called CRWSETUP.LOG. This file logs all of the information regarding the installation. If you have a problem with the installation please have the information from this file ready when you contact our Technical Support Department.

ODBC Driver Installation

Installing Crystal Reports on a network

CONFIGURATION REQUIREMENTS FOR SQL

- 1.1 Microsoft and SYBASE SQL Server
- 1.2 NetWare SQL
- 1.3 Oracle
- 1.4 Gupta SQLBase
- 1.5 DB2/2
- 1.6 ASCII
- 1.7 Access
- 1.8 Excel

1.1 Q+E Configuration for Microsoft and SYBASE SQL Server

CR/Pro uses the Q+E driver to access Microsoft and SYBASE SQL Server. You need to make sure that the CR/Pro directory appears in the path prior to any directory containing the following files (otherwise you may not be able to log onto your server from CR/Pro):

- QELIB.DLL
- QEUTIL.DLL
- QLSS.DLL

When logging onto SYBASE/SQL Server you may choose either the Q+E driver (select SQL Server/SYBASE SQL) or the Microsoft ODBC driver (select ODBC SQL).

If you decide to use the Q+E driver, verify that your system is configured correctly to run Windows applications. For example, ensure that DOSNP is loaded if you run Novell or another equivalently named pipe.

1.2 NetWare SQL

CR/Pro uses the Q+E driver to access NetWare SQL. You need to make sure that the CR/Pro directory appears in the path prior to any directory containing the following files (otherwise you may not be able to log onto your server from CR/Pro):

- QELIB.DLL
- QEUTIL.DLL
- QLXQL.DLL

If you are on a network, make sure that NetWare SQL NLM is running.

Ensure that your system is configured to run Windows applications. For example, check that NSREQ or NSREQO is loaded, the Windows Requester Interface WXQLCALL.DLL is in your path, and that the NOVDB.INI file is set correctly.

Copy WBTRCALL.DLL from your CR/Pro directory to WBTRLOCL.DLL, and copy your network version of WBTRCALL.DLL to the CR/Pro directory.

1.3 Oracle

CR/Pro uses the Q+E driver to access Oracle SQL. You need to make sure that the CR/Pro directory appears in the path prior to any directory containing the following files (otherwise you may not be able to log onto your server from CR/Pro):

- QELIB.DLL
- QEUTIL.DLL
- QLORA.DLL

If you are running an Oracle remote server you may decide to connect via the ODBC driver (select ODBC SQL), or the Q+E driver (select SQL Server/SYBASE SQL). If you are running a stand alone machine and are using Oracle, you must use the Q+E driver and run Windows in Standard mode only.

If you decide to use the Q+E driver, verify that your system is configured correctly. Otherwise you may get the message "DLL cannot be found" when logging onto Oracle from CR/Pro.

- Make sure that your system is configured to run Windows applications.
- if the QEX.INI file does not exist in your Windows directory, the CR/Pro installation automatically copies the file to your Windows directory and to your CR/Pro directory. Double check that the file was copied to your Windows directory correctly.
- If the QEX.INI file already exists in your Windows directory, the CR/Pro installation allows you to modify the settings in the QEX.INI file. Please ensure that the following settings are used in your copy of QEX.INI:

```
[QELCONNECT]
SQLServer=QESS
Oracle=QEORA
NetWareSQL=QEXQL
SQLBase=QEGUP
```

- If QEORA.DLL exists on your system, check that the directory containing CR/Pro's version of QLORA.DLL exists in the path prior to any directory containing QEORA.DLL.

1.4 Gupta SQLBase

CR/Pro uses the Q+E driver to access Gupta SQLBase. You need to make sure that the CR/Pro directory appears in the path prior to any directory containing the following files (otherwise you may not be able to log onto your server from CR/Pro):

- QELIB.DLL
- QEUTIL.DLL
- QLGUPTA.DLL

Make sure that your system is configured to run Windows applications.

1.5 IBM DB2/2

CR/Pro uses the Q+E driver to access DB2/2. You need to make sure that the CR/Pro directory appears in the path prior to any directory containing the following files (otherwise you may not be able to log onto your server from CR/Pro):

- QELIB.DLL
 - QEUTIL.DLL
 - QLEE.DLL
 - QLEE.BND
-
- Check the following is installed on your workstation:
 - OS/2 2.1
 - A printer defined to Windows (a physical printer is not required)
 - DB2/2 Client/Server version with Windows Database Client feature
 - OS/2 communication software - Extended Services 1.0
or Communications Manager/2 + NTS/2
 - Token Ring or Ethernet Adapter card (even if a standalone machine)
 - The Windows Client feature of DB2/2 uses NETBIOS to communicate with DB2/2. This communication takes place over/through an adapter card.
 - Make sure you have the following:
 - Userid (for use with DB2/2) with Administrator authority.
(Supplied default administrator id USERID will be used in these instructions; userid=USERID, password=PASSWORD)
 - DB2/2 Windows Client
 - Crystal Reports for IBM DB2/2 uses the DB2/2 Windows Client feature to communicate with DB2/2.
 - Verify installation of Windows Client feature of DB2/2.
Check for directory DBDRQLIB, and make sure it contains some files.
 - Install the Windows Client feature of DB2/2, if it has not yet been installed.
-
- Modify the Configuration file as follows:
 - x:\DBDRQLIB\DBDRQLIB.CFG (x is the drive where DBDRQLIB has been installed)
 - SQLNAME=CR/ProSTN <----assign a name (must be unique)
 - SQLSIZE=1024/5120

SQLLIB=C:\DBDRQLIB <----correct drive and subdirectory for this file
SQLCODEPAGE=437 <----or 850 - check CODEPAGE parameter in
Server's CONFIG.SYS
SQLNETREQ=3

■ AUTOEXEC.BAT CHANGES

Verify that CR/Pro and DB2/2 Windows Client have been added.

- Make sure C:\CRW is in the Path statement.
- Make sure x:\DBDRQLIB is in the Path statement
(where x is drive where this was installed)

■ CATALOG THE WINDOWS CLIENT

The DB2/2 Directory on the server must be updated with information about the CR/Pro Windows clients that will be accessing the server. This must be done even if both the Windows client and DB2/2 server are on the same physical machine.

On the DB2/2 server machine:

- The DB2/2 server name is required. This name can be found in the DB2/2 Configuration Tool.
- Select CONFIGURATION from the action bar. Select CHANGE DATABASE MANAGER. The Workstation Name shown is the Server Name required. Cancel when finished.
- Use DB2/2 Directory Tool to catalog the Windows Client workstation(s)
- Select DIRECTORY from action bar. Select WORKSTATION.
- Workstation Directory will appear. Select WORKSTATION from the action bar. Select CATALOG.

Workstation Name = CR/ProSTN *** MUST match SQLNAME in DBDRQLIB

Comment (optional)

NETBIOS (communication between client and server)

Server nname = (matches name in Configuration Tool)

Select CATALOG pushbutton.

Cancel to exit.

■ NETBIOS COMMUNICATIONS

The Windows client feature of DB2/2 uses NETBIOS to communicate with DB2/2. NETBIOS resources may need to be increased for CR/Pro usage.

- Ensure that the NETBIOS Device Drivers are installed on the server. LANDD.OS2 and LANDLLDD.OS2 should appear in CONFIG.SYS.
- Use SETUPVDD to install the LAN (NETBIOS) virtual device drivers.
- If using OS/2 Communications Manager, ensure that the NETBIOS Resources are sufficient for CR/Pro use
- Communications Manager Main Menu - Select ADVANCED from the action bar. Select CONFIGURATION. Verify Configuration file name.

- Select LAN ADAPTER AND PROTOCOL SUPPORT. Select option to CONFIGURE WORKSTATION. Press OK.
- Select 0 IBM OS/2 NETBIOS from the Current Configuration list (near bottom of display). Press EDIT.
- The values for MAXIMUM SESSIONS, MAXIMUM COMMANDS and MAXIMUM NAMES should be double the default values.
EG. Maximum Sessions - 80
Maximum Commands - 190
Maximum Names - 50.
Select OK to save any changes.
- Select OK when complete.
- If changes to NETBIOS RESOURCES have been made, the workstation communications configuration will have to be modified.
- VERIFY changes to the Configuration file.
- Stop and Re-Start Communications Manager.

■ BIND CRYSTAL REPORTS PRO TO DB2/2

A 'package' file is supplied with CR/Pro, which contains information needed by DB2/2 to access data in the most efficient way for CR/Pro.

- If the DB2/2 Server machine is separate from the CR/Pro clients, copy QLEE.BND from C:\CRW to the server.
- Type in the following command(s) from an OS/2 full screen:
STARTDBM (to start DB2/2)
SQLBIND QLEE.BND sample
where SAMPLE is the name of the Database on DB2/2
- Repeat SQLBIND commands if multiple databases.

■ USERS NEED AUTHORITY TO USE PACKAGE

The users who need to access DB2/2 data via CR/Pro will not be able to do so until they have been granted authority to access the 'package' file that was just installed in the database using SQLBIND.

Authority can be assigned to PUBLIC, so all users can access the data, a group of users, or to individual user names (For security reasons).

DBM CONNECT TO sample (start connection to database):
DBM GRANT EXECUTE ON PACKAGE PIONEER.QELIB TO PUBLIC

■ USERS NEED AUTHORITY TO ACCESS DATA

If the users are not already accessing the DB2/2 data, authorizations must be added so the users can access the tables in the database. Authority can be assigned to PUBLIC, so all users can access the data, a group of users, or to individual user names (for security reasons).

EG.
DBM GRANT ALL ON TABLE STAFF TO PUBLIC (or user list)

DBM GRANT ALL ON TABLE ORG TO PUBLIC (or user list)

- STARTUP CRYSTAL REPORTS PRO
 - Start a New Report
 - Select SQL TABLE button from the Choose Database File Window
 - Select DB2/2 SQL as Server Type. Press OK.
 - DB2/2 SQL window appears
 - Press CATALOG button
- CATALOG DB2/2 DATABASES

The DB2/2 Databases on the 'remote' OS/2 Server must be Catalogued to CR/Pro, even if the Server is on the same physical machine.

 - Catalog Database windows appears; press Catalog
 - Catalog Remote Database window
 - Alias Name - sample (assign a name)
 - Database Name - sample (DB2/2 database name)
 - Remote Node Name - (server nname - see step #4 above)
 - Comment - (optional)
 - Press OK
 - Catalog another remote database or Done

1.7 Microsoft Access via ODBC

When running the Microsoft ODBCSTP.EXE program, select the *ACCESS Files (*.mdb)* option and click the OK Button to install the necessary drivers.

Reading Access using Microsoft Access Database Engine (JET)

Reading ASCII, ACCESS, and Excel files

1.6 ASCII via ODBC

When running the Microsoft ODBCSTP.EXE program, select the *Text Files (*.txt; *.csv)* option and click the OK Button to install the necessary drivers.

Reading ASCII, ACCESS, and Excel files

1.8 Excel via ODBC

When running the Microsoft ODBCSTP.EXE program, select the *Excel Files (*.xls)* option and click the OK Button to install the necessary drivers.

Reading ASCII, ACCESS, and Excel files

UPGRADING YOUR PRINT ENGINE APPLICATIONS

Upgrading from CR 2.0 for Visual Basic

If you used the CRYSTAL.VBX custom control from an earlier version of Crystal Reports, you may receive an error indicating that a control cannot be loaded when loading your Visual Basic form. The error is a result of having a newer CRYSTAL.VBX file (with additional new properties) than the CRYSTAL.VBX your form originally included.

If you save your forms in 'Text style', which is an option in Visual Basic, this upgrading problem will not occur.

There are two methods which can be used to adjust for the new VBX file:

- Method 1:
- 1) Select Continue and load the form.
 - 2) The Crystal Reports custom control will appear as a red or black box on your form. Delete this object.
 - 3) Remove the CRYSTAL.VBX file from your project.
 - 4) Add the CRYSTAL.VBX file onto your project once again.
 - 5) Reset the properties of the object as per your requirements.

- Method 2:
- 1) Select not to continue loading the form.
 - 2) During the CR/Pro installation a backup of the existing CRYSTAL.VBX file was made to a file entitled CRYSTAL.OLD.
 - a) Rename the current CRYSTAL.VBX file to CRYSTAL.NEW.
 - b) Copy CRYSTAL.OLD to CRYSTAL.VBX.This will have the effect of placing your original file back into the CRW directory.
 - 3) Open your form in Visual Basic.
 - 4) Save the file in text format (Select SAVE AS and ensure that the Text format is ticked On).
 - 5) Close Visual Basic.
 - 6) Copy CRYSTAL.NEW to CRYSTAL.VBX (This will place the new copy of CRYSTAL.VBX back into the CRW directory).
- You should now be able to open your form without any problems since your form is now saved in text format. All properties assigned to the original custom control are intact.

The new CR/Pro Custom Control has more features, refer to

[New Crystal Reports Pro Custom Control \(VBX\) Properties for Bound Reports](#)

PARADOX ENGINE CONFIGURATION

This release of CR/Pro supports the new Paradox Engine 3.0 which in turn supports Paradox 3.5, Paradox 4.0, Paradox 4.5 and Paradox for Windows databases. Before using CR/Pro you should run the Paradox Engine Configuration program - PXENGCFG.EXE. If you are running Paradox 3.5 or earlier, choose Paradox 3.5 locking. If you are running Paradox 4.0, Paradox 4.5 or Paradox for Windows, choose Paradox 4.0 locking.

If you are running ObjectVision (OV) with the CR/Pro Print Engine, make sure you are running a version of OV greater than 2.0. This ensures that CR/Pro and OV are running compatible versions of the Paradox Engine.

MULTIPLE PARADOX.NET FILES

If you are encountering messages about multiple paradox.net files, you should delete all Paradox.net, Pdoxusrs.net and *.lck files and then run the configuration program again.

If you are encountering messages about not being able to log onto the network, it is because the new Paradox Engine is reading some settings in your WIN.INI file which tell it what network type you have installed:

[Paradox Engine]

.
.
.
.
.

NetType=2

In the new Paradox Engine 3.0 these settings are different. In order to get around this message you can set:

NetType=5

which means no network installed. This allows CR/Pro to run.

Btrieve

To use Btrieve with CR/Pro you must have the files FILE.DDF, FIELD.DDF, and INDEX.DDF, which tell CR/Pro the structures of the tables. These files are created by a DDF building program.

WIN.INI Btrieve options

The WIN.INI file has a section for Btrieve options. During installation CR/Pro will ask you if you would like to modify the Btrieve options.

[btrieve]

options=/m:64 /p:4096 /f:60 /l:40

You can continue with or without the changes. These options can be changed at a later date according to your needs. The following are descriptions of the options available:

/m	Memory size	/t	Transaction file name
/p	Page size	/u	Compression buffer size
/b	Pre-image buffer size	/i	Pre-image file drive
/f	Open files	/c	Index compaction
/l	Multiple locks	/a	Activate logging
/n	Files in a transaction	/s	Discard unneeded segments

Note: if you are using compressed Btrieve files, the buffer size must be at least as large as the largest record in your data files. To set the compression buffer size, change the /u option in the WIN.INI file. The units for this setting are kilobytes, so if your largest record is 3K, you need to set /u:3.

Btrieve 6.0

In order to read Btrieve version 6.0 DDF files, the following steps are required prior to using CR/Pro :

- After installing CR/Pro, rename the WBTRCALL.DLL from the CR/Pro directory to WBTRLOCL.DLL
- Copy your Btrieve 6.0 version of WBTRCALL.DLL to the CR/Pro directory.

Without these steps CR/Pro will not recognize your DDF file and may report a Btrieve I/O error.

Btrieve information on CompuServe

CompuServe is a good source of up-to-date information on Btrieve. If you have a CompuServe account and want to get current Btrieve information:

- connect to CompuServe and GO NOVLIB
- go to the Btrieve/XQL library section

SHARE REQUIRED

In order to use CR/Pro, SHARE must be installed with the following settings:

Share /F:5100 /L:500

During installation CR/Pro will ask you if you would like to modify this setting. You can continue with or without the changes.

RUNTIME AGREEMENT AND FILES

File Requirements

As a registered user of Crystal Reports Pro, you are allowed to distribute a runtime version of the Crystal Reports Pro print engine with your applications at no charge. The following is an overview of runtime requirements:

For all applications

The following files must be included on a distribution disk, regardless of the application it accompanies:

File	Description
CRPE.DLL	interface to the print engine
COMMDLG.DLL	help with printer selection, etc.
CRXLATE.DLL*	* You need to include this file only if you are going to use the ToWords(x) or ToWords(x, #places) functions in your reports.
PDBBND.DLL*	*You need to include this file only if in your application you bind the CR/Pro Custom Control to the Visual Basic Data Control.
WBTRCALL.DLL	Necessary for internal processing
BWCC.DLL	Custom Controls

Database–

–specific requirements

The following files are necessary for their respective databases. If your application will not be reporting on one or more of these databases, then do not include the files for those databases.

Paradox specific requirements

Include the following files if your application will be reporting on Paradox database(s):

File	Description
PDBPDX.DLL	Crystal's Paradox DLL
PXENGWIN.DLL	Borland's Paradox DLL

dBASE specific requirements

Include the following file if your application will be reporting on dBASE database(s):

File	Description
PDBXBSE.DLL	dBASE (all flavors)

Btrieve specific requirements

Include the following files if your application will be reporting on Btrieve database(s):

File	Description
PDBBTRV.DLL	Crystal's Btrieve DLL
PDCTBTRV.DLL	Crystal's Btrieve DLL
WBTRCALL.DLL	Novell Btrieve DLL
WBTRVDEF.DLL	Novell Btrieve DLL

ObjectVision specific requirements

Include the following file if your application will be pointing to an ObjectVision OVD file:

File	Description
PDIROV.DLL	Required if you created the report by pointing to an ObjectVision OVD file

ACT specific requirements

Include the following file if your application will be reporting on ACT data:

File	Description
PDBACT.DLL	Database DLL

ODBC

Include the following files if your application will be using ODBC:

File	Description
ODBC.DLL	Microsoft ODBC DLL
ODBCINST.DLL	Microsoft ODBC Install DLL
ODBC.INI*	Microsoft ODBC INI
ODBCINST.INI	Microsoft ODBC Install INI
PDSODBC.DLL	Crystal's ODBC DLL

* You must ship ODBC.INI files that are configured appropriately for the database(s) your application is using. You do this using the ODBC Admin program, ODBCADM.EXE. The ODBC.INI file must point to the location in which your ODBC drivers will be installed.

ODBC - ACCESS specific requirements

Include the following file if your application will be pointing to an ACCESS MDB file:

File	Description
RED110.DLL	MS Jet DLL
MSJETDSP.DLL	MS Jet DLL
SIMADMIN.DLL	SIMBA ODBC DLL
SIMBA.DLL	SIMBA ODBC DLL

ODBC - Excel specific requirements

Include the following files if your application will be pointing to an Excel .xls file:

File	Description
CRXLS03.DLL	Q+E ODBC DLL for Excel
CRBAS03.DLL	Q+E ODBC base DLL
CRMDS03.DLL	Q+E ODBC base DLL
CRFLT03.DLL	Q+E ODBC base DLL
CRUTL03.DLL	Q+E ODBC base DLL

ODBC - ASCII specific requirements

Include the following files if your application will be pointing to an ASCII text file:

File	Description
-------------	--------------------

CRTXT03.DLL Q+E ODBC DLL for Text
CRBAS03.DLL Q+E ODBC base DLL
CRMDS03.DLL Q+E ODBC base DLL
CRFLT03.DLL Q+E ODBC base DLL
CRUTL03.DLL Q+E ODBC base DLL

If you are using Crystal Reports Pro and SQL databases:

DB/2 specific requirements

Include the following files if your application will be reporting on DB/2 data:

File	Description
QLEE.DLL	Q+E DB2/2 or Database Manager Library
QELIB.DLL	Q+E Database Library
QEUTIL.DLL	Q+E Database Utility Library
PDSDB22.DLL	Crystal Reports DB2/2 DLL

Gupta specific requirements

Include the following files if your application will be reporting on Gupta SQLBase data:

File	Description
QELIB.DLL	Q+E Database Library
QEUTIL.DLL	Q+E Database Utility Library
QLGUP.DLL	Q+E Gupta SQLBase Library
PDSGUPTA.DLL	Crystal's Gupta DLL

NetWare SQL specific requirements

Include the following files if your application will be reporting on NetWare SQL data:

File	Description
QELIB.DLL	Q+E Database Library
QEUTIL.DLL	Q+E Database Utility Library
QLXQL.DLL	Q+E NetWare SQL Library
PDSNETW.DLL	Crystal's NetWare SQL DLL

Oracle specific requirements

File	Description
QELIB.DLL	Q+E Database Library
QEUTIL.DLL	Q+E Database Utility Library
QLXQL.DLL	Q+E Oracle Library
PDSORACL.DLL	Crystal's Oracle DLL

SQL Server specific requirements

File	Description
QELIB.DLL	Q+E Database Library
QEUTIL.DLL	Q+E Database Utility Library
QLXQL.DLL	Q+E SQL Server / SYBASE Library

PDSSYBAS.DLL Crystal's SYBASE DLL

NOTE: Again, if you are only using one type of database then you only have to include the database DLL's for that database.

Compiled Report specific requirements

If you are including a Compiled Report on the distribution diskette, include the following files:

File	Description
CRRUN.EXE	compiled reports program
XXXXXXXXX.RPT	your report file
XXXXXXXXX.MKX	compiled report resources
XXXXXXXXX.CRF	(if it exists)
XXXXXXXXX.EXE	compiled report executable

where XXXXXXXXX is your report name

NOTE: Please ensure that the .RPT, MKX, .CRF, and .EXE files are stored in the same directory.

User Defined Function specific requirements

If your report contains a formula which uses one of the User Defined Functions (a function listed in the formula editor 'Additional Functions' section), the associated XXXXXXXXX.DLL file must be included on the distribution diskette. If the function is one of the Crystal Reports' sample User Defined Functions, include the UFLSAMPL1.DLL file.

If your report contains a formula which uses a DateTime conversion Function, the UFLDTS.DLL must be included on the distribution diskette.

Export specific requirements

If your application will give your users the ability to export their reports, you must include files from the following list appropriate to the export options provided:

Format DLL's

File	Description
uxfcr.dll	Crystal Reports format
uxfdif.dll	DIF (Data Interchange Format) format
uxfdoc.dll	Word (DOS & Windows) format
worddos.xtd	only required if Exporting to Word For DOS
wordwin.xtd	only required if Exporting to Word For Windows
wperfect.xtd	only required if Exporting to Word Perfect
uxfpdx.dll	Paradox format
uxfrec.dll	Record format
uxfrtf.dll	Rich Text Format (RTF)
uxfsep.v.dll	Comma separated values format
uxftext.dll	Text format
uxfwks.dll	Lotus 1-2-3 format
uxfxls.dll	Excel format
uxfxrec.dll	Extended Record format

Destination DLL's

File	Description
uxddisk.dll	Disk file destination
uxdmapi.dll	MAPI format (Microsoft Mail)
uxdvim.dll	VIM format (cc:MAIL, Lotus Notes, WordPerfect Office etc.)

WHERE SHOULD YOU INSTALL THE CRPE FILES?

All of the CRPE and database DLL files should be placed in the same directory, and this directory needs to be a place Windows can find. When Windows tries to load CRPE.DLL it looks in the current directory, in the Windows directory, in the Windows System directory, and then in the path. You should place the files in one of these places.

WHERE SHOULD YOU PUT YOUR REPORT FILES AND DATABASE FILES?

Report files

This depends on what you have specified in your application. It is recommended that you use the report name with no path when you specify a report to print in your PEPrintReport or PEOpenPrintJob calls. If you have no path specified in your call, you can install your runtime application in whatever directory you like on the user's machine.

No path specified in the engine call

e.g. `PEOpenPrintJob ("test.rpt")`

When the call is made, the print engine will look in the current directory for the report file. If CRPE doesn't find the report file in the current directory, it will look for it in the Windows directory, in the Windows System directory, and then in the path.

This means that you can place the report files in the same directory as your application and your application can be installed in any directory you like. As long as the application keeps this directory as the current directory, it will find the report files.

Path specified in the engine call

e.g. `PEOpenPrintJob ("c:\testdir\test.rpt")` If you have specified a path in your call then CRPE will look in that directory for the report.

Database Files

We recommend that you set the database location to be "Same as Report" in the report file itself. This will tell the CRPE print engine to look in the same directory as the report definition (.rpt) file for the databases. Again, if it does not find the databases in this directory, CRPE will look for the databases in the Windows directory, in the Windows System directory, and then in the path.

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If you wish to distribute copies of the Runtime software or custom application on other terms, please contact Crystal Services directly.

NOTE: Please check the manual of your development tools to see if there are additional tool-specific requirements.

■ **NEW FEATURES IN Crystal Reports Pro 3.0**

What's new in Crystal Reports Pro, version 3.0

With the release of version 3.0, Crystal Reports Pro establishes new standards for database reporting tools. The 4 major areas of product improvement are:

1. It is easier than ever to use
2. Reporting efficiency is improved to save you time and hassle
3. Enhanced data analysis for better decision making
4. Advanced features for programmers

1. It is easier than ever to use

The FineTuner - an enhanced visual interface in the Print Preview Window.

Now you can move report data, sort, change fonts, add subtotals, formulas and graphics, and more while viewing the actual report in the Print Preview Window. Selected data is saved while you fine tune, making report creation faster. Report design is more intuitive and more fun! [Search for *Print Preview Window* in Crystal Reports Help.](#)

Crystal Data Dictionaries

Create Data Dictionaries with intuitive field names, hidden links and formulas, as well as graphics and standard reports. They are the ideal method of presenting database information to non-technical users. Take the mystery out of database structures and make reporting accessible! (The Crystal Dictionary Builder is only available in Crystal Reports Pro. Data Dictionaries, however, can be accessed by users of either Standard Edition or the Professional Edition.). [Search for *Data Dictionaries* in Crystal Reports Help.](#)

Improved Report Design Interface

[Report Gallery](#) - select a default report lay-out and a source of data and you're well on the way to an informative, impressive report! [Search for *New Report dialog box \(the Report Gallery\)* in Crystal Reports Help.](#)

[Formatting Bar](#) - change fonts, realign data, modify number formats, and more using the new Formatting Bar. [Search for *Format Bar* in Crystal Reports Help.](#)

[Drag and Drop](#) - use drag and

■ drop to enter fields on reports, set up cross

■ tab reports and create Data Dictionaries. [Search for *Database Field Command* in Crystal Reports Help.](#)

[Selection Lasso](#) - move, format, and resize multiple fields in a single step, using an expandable box, the selection "lasso". [Search for *Select command \(Edit Menu\)* in Crystal Reports Help.](#)

[Print Preview Multiple Zoom Levels](#) - select one of three different zoom options for displaying your report in the Print Preview Window: actual size, enhanced magnification for easy readability, or the entire page. [Search for *Print Preview command* in Crystal Reports Help.](#)

[Report Templates](#) - use a copy of an existing report as a template for building a new one. With data selection, links, formulas and graphics all in place, you can quickly create a new report. [Search for *Report Templates* in Crystal Reports Help.](#)

Private Tutor ■ - your personal instructor!

The Private Tutor is a personal instructor that walks you step by

■ step through dozens of report building tasks. Start the Private Tutor within Help, but unlike Help it stays with you on the screen as you learn a task. It's a special level of support that we're confident you'll use again and again. [See Page 2](#)

■ [16 in the Crystal Reports User's Manual.](#)

2. Reporting efficiency is improved to save you time and hassle

Integrated E-Mail Distribution of Reports

Integrated mail support makes report distribution a snap. Deliver reports using your favorite e-mail package (MAPI or VIM standards, for example MS-Mail, cc:MAIL, Lotus Notes and more). Its less hassle than printing and photocopying and it gives you a convenient method of sending reports to colleagues, including off-site staff. Combine e-mail functionality with support for more export formats and you can readily send reports to people in the format they prefer. Search for *Export command* in Crystal Reports Help.

Integration with the new Crystal Reports Server

Remove report processing from local machines and move onto other tasks immediately! With the Server, weekly, monthly or other recurring reports can be scheduled and generated automatically. Time sensitive reports are done on time! The Crystal Reports Server is available separately.

OLE 2.0 Compatibility

Crystal Services is committed to the timely delivery of important industry technology. Our implementation of OLE 2.0 means you can easily incorporate drawings, formatted text, charts etc. from other software programs into reports, thereby communicating information more effectively. Double-Click the object and the originating application opens up for on-the-fly editing. Search for *Object Linking and Embedding* in Crystal Reports Help.

More Data Access

PC: Crystal Reports Pro 3.0 now supports ASCII, Microsoft Access, and Microsoft Excel databases in addition to the xBASE, Paradox and Btrieve databases previously supported. Use the same great query and reporting tool for all your data sources!

SQL: V. 3.0 adds IBM DB2/2 data access to ODBC connectivity, Gupta SQLBase, Microsoft SQL Server, NetWare SQL, Oracle, and SYBASE SQL Server data access. Search for *Databases that work with Crystal Reports* topic in Crystal Reports Help.

Edit SQL Statements

Edit SQL statements for query optimization and report generation.

On-line access to Registration and Technical Support

Crystal Services has pioneered ways of making Registration and Technical Support more convenient. If you have a modem (no additional communication software required) you can register your copy of Crystal Reports Pro v. 3.0. electronically. Modem us your registration and receive your serial number in approximately 40 seconds!

Technical Support is easy with On-line access. Forward a description of your problem, including any relevant files. Your request will be promptly dealt with and an answer posted on our Server. Just dial in again (connection time is very short) to pick it up! With On-line access technical support is fast and effective.

3. Enhanced data analysis for better decision making

Save data with closed reports.

Save data with closed reports for future reference or analysis. This way you can archive periodic reports (monthly, weekly, etc.) for historical comparisons at a later date. [Search for *Save Data with Closed Report* in Crystal Reports Help.](#)

New Export Formats (RTF, WordPerfect, Word, Lotus 1-2-3, Excel)

Export data to new file formats such as Rich Text Format (RTF), Excel, Lotus 1-2-3, Word, WordPerfect, and more. Transfer information to other programs or forward reports to colleagues in their preferred format. [Search for *Export command* in Crystal Reports Help.](#)

CrossTab Reports

Cross-tabs have never been this easy! Drag and drop database fields into row and column headings and you have a terrific matrix report. Instantly pivot row and column headings with just a single click of the mouse. Cross-tabs help you make comparisons and identify trends in a hurry. Using this powerful new feature you can easily create sophisticated reports such as "Sales by Product & Region." [Search for *Creating Crosstab Reports* in Crystal Reports Help.](#)

Specify report print date

If your report contains a Print Date Field, you can change the date that appears in this field with the Report|Set Print Date command. Reprint an earlier report or post-date a current one. [Search for *Set Print Date command* in Crystal Reports Help.](#)

4. Advanced features for programmers

New print engine functions

New Print Engine functions enable applications to export reports to popular spreadsheet, word processor, or data interchange formats and to send reports to e-mail destinations. Your application has greater control over report output than ever before! See [Exporting Reports using CRPE](#)

Customize the look and functionality of the Print Preview Window

Configure the look and functionality of the Print Preview Window to ensure a consistent interface throughout your application.

Pass data directly to Crystal Reports from the Visual Basic Data Control

Bind the Crystal Reports Custom Control to directly to the Visual Basic Data Control and generating reports in Visual Basic programs is a snap! You no longer have to define a.RPT file before you can print information.

Take advantage of the ad-hoc querying capabilities of the Data Control. Use the RecordSource property of the Data Control to execute SQL statements, bind the Crystal Reports Custom Control to the Data Control, and create reports from the resulting Dynaset data.

TrueGrid is included in Crystal Reports Pro v. 3.0

TrueGrid Standard Edition, from Apex Software Corporation, is the fastest and easiest to use bound grid control for Visual Basic. Use TrueGrid as a report source to perform database queries, view the resulting data in a table format, and generate reports at the same time. Simple report customization is possible by configuring TrueGrid (hiding columns or adjusting column widths) at design time or during program execution.

Exporting Reports using CRPE

Two new functions in CRPE allow you to export reports. `PEGetExportOptions` prompts the user to choose a format and destination for exporting, as well as any options required by the export DLLs. `PEExportTo` prepares a print job to export according to the options you provide when you make the function call.

There are two ways to use these functions:

1. Call `PEGetExportOptions` to fill in the `PEExportOptions` structure, then call `PEExportTo`, passing the initialized structure to it. Make sure that you set the `StructSize` element properly, and zero out all the other members of the `PEExportOptions` structure before calling `PEGetExportOptions` for the first time.
2. Initialize a `PEExportOptions` structure yourself, using information from the header files for the appropriate format and destination DLLs, then pass this structure to `PEExportTo`. Each export DLL has a corresponding header file - for example, `uxfsepv.h` corresponds to `uxfsepv.dll`. In each header file there are the type codes required in the `formatType` and `destinationType` elements of `PEExportOptions`. If the DLL requires further information, the header file contains a declaration of the structure which holds this information.

To set up the `PEExportOptions` structure before calling `PEExportTo`, you perform the following steps:

- a) Fill in the `formatDLLName` and `destinationDLLName` elements with null-terminated strings. These are, of course, the names of the appropriate format and destination DLLs. They do not need to include drive, path or extension. For example, `uxfsepv`.
- b) Fill in the `formatType` and `destinationType` elements with values from the appropriate header files.
- c) You may choose to provide the option data. If you do not, that is if you set the `formatOptions` and `destinationOptions` elements to 0, the DLLs will prompt the user if they require further information. If you want to provide this information, you must allocate and fill in a structure of the appropriate kind, as declared in the header file for the DLL. Then set the `formatOptions` or `destinationOptions` element to the address of the structure you've allocated. Make sure to initialize the `structSize` element of the option data structure, and to deallocate it when you're done with it (you can deallocate it once `PEExportTo` returns).

Editing the SQL Query

In CR/Pro 3.0 you have the ability to edit the FROM and WHERE clauses of the SELECT statement. You cannot, however, change the SELECT clause. It is in your best interest to add information to the beginning and end of these clauses. This will allow you to make changes in the Report Designer without problems. If the SQL Query that CR/Pro has created is modified, you may have to continue editing within the SQL Query, i.e. without using Formula Editor functions.

Access Files

If you are upgrading to CR/Pro 3.0 from CR 2.0 for Visual Basic, you have a choice in how you create Access reports. CR 2.0 for Visual Basic installs the Microsoft Access Database Engine (JET) to read Access data. CR/Pro 3.0 supports these previously installed DLLs. To create a report using the Microsoft Access Database Engine, select the *Data File* option from the New Report dialog box instead of the *SQL Table* option.

Crystal Data Dictionaries

Note that you cannot create Crystal Data Dictionaries if you are connecting to ACCESS via the Microsoft Access Database Engine. To take advantage of the Dictionary capabilities you need to connect to Access via ODBC.

Reading Time/Date fields

Technical Support

Before contacting Technical Support make sure you have registered your copy of CR/Pro and have the following information ready:

- what version of CR/Pro you are using
- what type of data are you using
- how many versions of CRPE.DLL are on the system, their locations, file sizes, and dates
- listing of files in the CRW, Windows\System, report, and database directories
- if possible, a file sorted by file extension, creating by typing:

```
dir /oe > filename.dir
```

Crystal Services provides On-line (modem), fax, CompuServe and telephone support:

On-line (604)662-8298

- If you have a modem On-line support is the most convenient and effective way to solve your problems. To use it, go to the Help menu and choose Technical Support. Fill in the details on your problem and Attach any relevant files. To transmit, *Click* on the Connect button. Your request is electronically sent to the Crystal Reports Technical Support Server and is immediately given an Id #.. Telephone charges are minimal as the connection time to the Server is brief.

A Technical Support Representative will review your request and send you a response. Check for a response by going to the Help, Technical Support and *Clicking* on Connect. Updated information on all outstanding requests is immediately transmitted back to you. If your problem is still outstanding, a reply such as requires liaison with the Crystal R&D team

- in progress will be provided.

Note that you do not require any communications software to use On-line support. The software is built in - all you need is a modem!

Fax (604) 681-7163

- To prepare your fax request, go to the Help menu, choose Technical Support and fill in the details on your problem. Print the form and fax it Crystal Services. Note that this form provides valuable information that often contributes to the resolution of your problem.

CompuServe CompuServe address 72223,2632

- Please leave CompuServe messages on the MSBASIC forum in the Third Party area with the word CRYSTAL in the title. That way other users can benefit from the answer. You may find that the answer to your problem is already there!

Telephone (604) 669-8379

- Make sure that CR/Pro and the problem report are both loaded.

SQL Configuration/Edit SQL Query

[SQL Configuration Requirements](#)

[Edit SQL Query](#)

Reading ASCII, ACCESS, Excel files

To configure Crystal Reports to read your files through ODBC you must:

- Install the necessary ODBC drivers

During installation, if you elected to create the Crystal Reports icons, a Microsoft ODBC Setup (ODBCSTP.EXE) icon was created. If you did not create icons, run the ODBCSTP.EXE program from your Crystal Reports\ODBC directory using the Windows Run command.

This program will modify/create the ODBCINST.INI file located in your Windows\System directory.

ASCII files

ACCESS files

Excel files

- Define your data sources

Once the driver files have been installed correctly you must define your data sources. You can define your data sources using the ODBCSTP.EXE program, or at a later time run the Microsoft ODBCADM.EXE program.

This program will modify/create the ODBC.INI file located in your Windows/System directory.

To create a report in Crystal Reports select the *SQL Table* option from the New Report dialog box.

Installed files

The following files have been installed onto your hard drive (Note: If you used the Custom Install, only the selected program groups will be installed):

■Crystal Reports Target Directory

Programs

- CDW.EXE
- CROLE2UI.DLL
- CRPE.LIB
- CRPE.H
- CRPE.DLL
- CRRSTUB.EXE
- CRRUN.EXE
- CRW.NET
- CRW.ACT
- CRW.EXE
- CRXLATE.DLL
- GLOBAL.BAS
- LABELS.TXT
- ORASETUP.DLL
- P3CONV.DLL
- P3DIB.DLL
- P3FILE.DLL
- P3INFO.DLL
- PDBACT.DLL
- PDBBND.DLL
- PDBBTRV.DLL
- PDBPDX.DLL
- PDBXBSE.DLL
- PDCTBTRV.DLL
- PDIRACT.DLL
- PDIROV.DLL
- PDSDB22.DLL
- PDSGUPTA.DLL
- PDSNETW.DLL
- PDSODBC.DLL
- PDSORACL.DLL
- PDSSYBAS.DLL
- PXENGCFG.EXE
- PXENGWIN.DLL
- QELIB.DLL
- QEUTIL.DLL
- QLEE.BND
- QLEE.DLL
- QLGUP.DLL
- QLORA.DLL
- QLSS.DLL
- QLXQL.DLL
- UFLDTS.DLL
- UFLSAMP1.DLL

UFLSAMP1.DEF
UXDDISK.DLL
UXDMAPI.DLL
UXDVIM.DLL
UXFCR.DLL
UXFDIF.DLL
UXFDOC.DLL
UXFREC.DLL
UXFRTF.DLL
UXFSEPV.DLL
UXFTEXT.DLL
UXFWKS.DLL
UXFWP.DLL
UXFXLS.DLL
WBTRCALL.DLL
WBTRVDEF.DLL
WORDDOS.XTD
WPERFECT.XTD
WORDWIN.XTD
CRSUPPRT.INI

Readme

README.HLP

Sample Data

00019144.DAT
00028747.DAT
BOOKORD.PX
BOOKORD.DB
BTRORDER.RPT
CATEGORY.PX
CATEGORY.DB
CHECK.OVD
CHECKLST.RPT
CHKBOOK.DB
CHKBOOK.PX
COMPANY.NDX
COMPANY.DBF
CREDITS.DBF
CREDITS.NDX
CRSAMPLE .FRM
CRVBSMPL.MAK
CRVBXSAM.MAK
CRVBXSAM.FRM
CUST.DBF
CUST.NDX
CUSTOMER.PX
CUSTOMER.DB
CUSTOMRS.PX
CUSTOMRS.DB
CUSTORD2.RPT
CUSTORDS.OVD
CUSTORDS.RPT
CUSTS.DB

DETAIL.NDX
DETAIL.DBF
EMPDATA.DBF
EMPDATA.NDX
FIELD.DDF
FILE.DDF
FORM2.FRM
FORM3.FRM
HEADER.NDX
HEADER.DBF
INDEX.DDF
ITEM.DBF
ITEM.NDX
ITEMS.PX
ITEMS.DB
ORDER.OVD
ORDER4.RPT
ORDERLST.RPT
ORDERS.DBF
ORDERS.PX
ORDERS.NDX
ORDERS.RPT
ORDERS.DB
ORDVBX.RPT
PARTS.DB
PARTS.PX
PROSAMP.DCT
SALESREP.DBF
STARLOGO.OVG
TRANS.PX
TRANS.DB
UFDLL.H
UFFUNCS.H
UFJOB.H
UFJOB.C
UFLSAMP1.RC
UFLSAMP1.C
UFLSAMP1.PRJ
UFLSAMP2.DEF
UFLSAMP2.PRJ
UFLSAMP2.C
UFMAIN.H
UFMAIN.C
UFUSER.H
VOLUMES.PX
VOLUMES.DB
WINTIME.H
WINTIME.C

Help

PT_ABOUT.HLP
CDW.HLP
CRW.HLP
PTUTOR.HLP
DETLITEM.NDX
EMPLOYEE.NDX

EMPLOYEE.DBF
HEADCUST.NDX
ITEMSUP.NDX
PROLOGOB.BMP
PROLOGOC.BMP
PTUTOR.EXE
SREPSSNO.NDX
SUPPLIER.NDX
SUPPLIER.DBF

On Line Registration/ Orders/ Technical Support

CATAGORY.CRS
COUNTRY.CRS
CRSUPPRT.DLL
ITEMS.CRS
LIBRARY.CRS
SUBJECT.CRS

■Crystal Reports \ODBC Directory

The following files are installed into the Crystal Reports\ODBC directory. Several files are left in a compressed state and are decompressed when you run ODBC Setup (ODBCSTP.EXE) from the Crystal Reports directory.

ODBC.INF
CRMDS03.DL_
ODBCADM.EXE
ODBCSTP.EXE
ODBCINST.HLP
ODBC.DLL
CRXLS03.DL_
QEXLS03.DL_
MSJETDSP.DL_
ODBCINST.DLL
DRVACCSS.HL_
CRTXT03.DL_
CRUTL03.DL_
SIMADMIN.DL_
CRBAS03.DL_
CRFLT03.DL_
RED110.DL_
SIMBA.DL_

■Crystal Reports \ TRUEGRID Directory

TGCONST TXT
TRUEGRID LIC
TRUEGRID VBX
DBTABLE Directory
ABOUT.FRX
ABOUT.FAM
DBTABLE.DOC
DBTABLE.EXE
DBTABLE.ICO
DBTABLE.MAK

FORM1.BAS
FORM1.FAX
FORM1.FRM
TGONST.TXT
WHERE.BAS
WINHELP.BAS
LINKGRID Directory
ABOUT.FRX
LINKGRID.ICO
LINKGRID.MAK
FORM2.FRM
ABOUT.FAM
WHERE.BAS
WINHELP.BAS
FORM1.
COMPOSE.DBF
LINKGRID.EXE
OPUS.DBF
MARKGRID Directory
ABOUT.FRM
ABOUT.FAX
COMPOSE.DBF
FORM1.FRM
MARKGRID.EXE
MARKGRID.ICO
MARKGRID.MAK
WHERE.BAS
WINHELP.BAS
TRUBRWSE Directory
DATACONS.TXT
SCHEMA.FAX
SCHEMA.FRM
SELTABLE.FAX
SELTABLE.FRM
ABOUT.FAM
ABOUT.FRX
TRUBRWSE.EXE
TRUBRWSE.FAX
TRUBRWSE.FRM
TRUBRWSE.ICO
TRUBRWSE.MAK
WHERE.BAS
WINHELP.BAS
UTILS.BAS

Note: TRUEGRID.HLP (the TrueGrid help text) has not been included with CR/Pro. You can download the file from the Crystal Services BBS If necessary.

■Windows Directory

ODBCISAM.INI
QEX.INI
ODBC.INI
ODBCINST.INI

■Windows System Directory

CRYSTAL.VBX

OLE2PROX.DLL
OLE2CONV.DLL
QECR.LIC
CTRL3D.DLL
OLE2DISP.DLL
BWCC.DLL
COMPOBJ.DLL
TYPELIB.DLL
STORAGE.DLL
OLE2.DLL
OLE2.REG
STDOLE.TLB

Manual and On-line Help Changes

■On page 5-32, in the discussion of The Save Data with Closed Report checkbox, the third sentence should read "When you toggle the check mark off" (not on).

■On page 4-1 of the standard edition manual it says that CR/PRO will run under Win 3.0 or 3.1. CR/PRO 3.0 can only be run under 3.1 or higher.

Crystal Reports Help

■The file requirement list in the 'Runtime file requirements' should reflect the following changes:

NetWare SQL should include PDSNETW.DLL and exclude PDSGUPTA.DLL

Oracle should include PDSORACL.DLL and exclude PDSGUPTA.DLL

SQL Server should include PDSSYBAS.DLL and exclude PDSGUPTA.DLL

■Under 'Runtime file requirements' the phrase DB/2 should be DB2/2

Reading Date/Time fields

- There are three new ufl calls in the Function list under Additional functions. They are:

DTSToDate
DTSToTimeString
DTSToSeconds

In order to use these functions you will need to add the following line in your CRW.INI under the Crystal Reports section:

ConvertDateTimeToString=Yes

This feature is only for databases read in via ODBC or Q+E that have a DATETIME field. This means if you use the Microsoft Access Database Engine (JET) to read Access data you will not be able to take advantage of this option.

Reading Access files

Note: This does not allow users to read TIME fields, only DATETIME. For example if you have a Btrieve Time field then CR/Pro would not recognize the field.

Binding the Crystal Reports Pro Custom Control to the Visual Basic Data Control

Introduction

In earlier versions of Crystal Reports, Visual Basic users had to assign the ReportFileName property of the Crystal Reports Custom Control (CRYSTAL.VBX) to an existing Crystal Reports file (.RPT file) in order to generate reports in their applications. In CR/ Pro 3.0, new features have been added which enable the CR/Pro Custom Control to bind directly to a Visual Basic Data Control without a pre-existing .RPT file.

CR/Pro 3.0 is bundled with TrueGrid, a bound grid control by Apex Software Corporation, which enables programmers to also generate reports using a grid layout.

New Crystal Reports Pro Custom Control (VBX) Properties

Benefits

Visual Basic users can now pass queries from the Data Control directly to CR/Pro with the following benefits:

- generating reports in Visual Basic programs is easier
- a .RPT file does not have to be defined before information can be printed
- the ad-hoc querying capabilities of the Data Control can be used for reporting. Set the RecordSource property of the Data Control to execute SQL statements, bind the CR/Pro Custom Control to the Data Control, and create reports from the resulting Dynaset data.
- TrueGrid can be used to perform database queries, view the resulting data in a table format, and generate reports at the same time. Simple report customization is possible by configuring TrueGrid (hiding columns or adjusting column widths) at design time, or during program execution.

Sample Application

A sample program, BREPORT.MAK, is included in the CRW\TRUEGRID directory. It illustrates how Bound Reports are created in Visual Basic programs.

The Bound Report Sample Program

The Bound Report Driver

When you use CR/Pro to generate reports from database files of a particular file format (e.g., Paradox file format), you need to have the appropriate report driver (e.g., PDBPDX.DLL) to retrieve the data.

Runtime Files (this section explains which DLLs are required to access different databases)

Similarly, when you generate reports by binding to a Visual Basic Data Control, a Bound Report Driver (PDBBND.DLL) is used to retrieve data from the Data Control. Make sure PDBBND.DLL is in your Windows Systems directory or in your path, along with the appropriate database drivers.

Bound Report Files

To generate reports from a specific database file, you first use the CR/Pro Report Designer, CRW.EXE, to create a report file (.RPT) and customize the report layout.

To generate reports directly from a Data Control query, you do not need an existing .RPT file. Such reports have a default layout and have access to the field list of the Data Control only.

To allow for report customization, create a Bound.RPT file during Visual Basic design time. You can then use CR/Pro to customize the Bound.RPT file (just like you do with any other .RPT file), and even link the bound data to other database tables.

New CR/Pro Custom Control (.VBX) Properties for Bound Reports

Five new properties have been added to the CR/Pro Custom Control to support Bound Reports. These new properties are described below:

(AutoDesign)

This property allows you to create Bound.RPT files at Visual Basic design time. It is not available at runtime.

Click on the ellipse in the properties window and a "Export Bound Report..." dialog will pop up to allow you to create and save Bound.RPT files. You can create a .RPT file using one of the following options:

1. From the TrueGrid custom control

This option creates a Bound.RPT file based on the current configuration of a TrueGrid control on the form. The TrueGrid control is bound to the same Data Control as the CR/Pro Custom Control and its layout must first be initialized before this option can be used. If there is more than one TrueGrid bound to the same Data Control (a very rare occurrence), then the TrueGrid which was created first will be used.

2. From other bound controls

This option creates a Bound.RPT file based on the DataField properties of all the controls which are bound to the same Data Control that the CR/Pro Custom Control is bound to. TrueGrid bound controls are ignored when this option is chosen.

3. From the data control field list

This option creates a Bound.RPT file based on all the fields in the field list of the Data Control.

4. No default detail line

This option creates a Bound.RPT file with no fields (or detail line) specified.

After a Bound.RPT file is created, use CR/Pro to customize the report layout or even link the bound data to other database tables.

DataSource (Data Control)

This is a design time only property, not available at runtime. This property is ignored if the ReportSource property is 0 (Report files). To generate Bound Reports, set this property to the Data Control you want to retrieve the data from. The Data Control must already be on the form before this property can be set.

ReportFooter (Boolean)

This property is read/write at both design time and runtime. This property is ignored if the ReportSource property is 0 (Report files). Default is *False*, meaning the Bound Reports will not have page numbers printed. If it is set to *True*, page numbers will be printed at the bottom of pages.

ReportHeading (string expression)

This property is read/write at both design time and runtime. This property is ignored if the ReportSource property is 0 (Report files). It specifies the report title at the beginning of a Bound Report. If blank, no report title is printed.

ReportSource (numeric expression)

This property is read/write at both design time and runtime. The allowed values are:

0 - Report files

- 1 - Bound TrueGrid Control
- 2 - Other Bound Controls
- 3 - All Data Control Fields

The default value is 0 - Report files, with the ReportFileName property assigned to an existing report file name (.RPT). This is equivalent to not using the Bound Report features, i.e. generating reports from existing .RPT files.

When set to 1, 2, or 3, the ReportFileName property will be ignored and no .RPT file is needed. Reports are created using data retrieved from the Data Control. The reports generated directly from the Data Control are identical to the reports generated from the respective Bound.RPT files created using the (AutoDesign) property described above.

The Bound Report Sample

A sample Visual Basic program, BREPORT.MAK, is included in CR/Pro to illustrate how Bound Reports can be created in Visual Basic programs. The best way to learn about Bound Reports is to perform the steps described below, using the sample project provided.

Open BREPORT.MAK (in the CRWTRUEGRID directory) with Visual Basic 3.0 and follow instructions below.

This sample program demonstrates how to bind the CRYSTAL.VBX to a Data Control and then use TrueGrid and 3 bound text controls as report sources to generate Bound Reports and Bound .RPT files.

The controls on the form (FORM1.FRM) are assigned the following properties:

- Data1 (Data Control) is assigned the following properties:
DatabaseName = c:\crw\breport\biblio.mdb (you may need to change the path)
RecordSource = Titles
- Report1 (CR/Pro Custom Control) is assigned the following properties:
DataSource = Data1
- Table1 (TrueGrid Control) is assigned the following properties:
DataSource = Data1
- Text1, Text2 and Text3 are assigned the following properties:
DataSource = Data1
DataField = Title, Year Published, Au_ID, respectively
- Command1 (labeled "Report") contains the following code in the Click event:
Report1.Action = 1
- Command2 (labeled "Execute SQL") contains code in the Click event to execute the SQL statement in Text4.
- Text4.text is initialized with a SQL statement.

To use TrueGrid as a report source to generate reports:

- At design time, click on the ReportSource property of Report1 and choose "Bound TrueGrid Control". This instructs the CR/Pro Custom Control to use the TrueGrid configuration to generate the Bound Report layout.
- Run the program.
- Click on Command1 ("Report") to generate a Bound Report.
- A report will be generated based on the current configuration of TrueGrid.
- Close the report window and re configure TrueGrid by the doing one or more of the following (for more information on TrueGrid. See the TrueGrid Help file):
 - Place the mouse pointer on a grid heading and hold down the left mouse button (the column will be highlighted). Keep the mouse button down and drag the column to swap it with neighboring columns.
 - Place the mouse pointer on a vertical grid line separating 2 columns (a resize icon will appear). Press down the left mouse button and start dragging it to resize the columns. You can make a column invisible by resizing it to zero width.

- Now click on Command1 ("Report") again to generate a new report. Note that the new report reflects the new TrueGrid configuration.
- Close the report window and execute the SQL statement by clicking on Command1 ("Execute SQL"). Note that the grid refreshes itself and displays the results of the query.
- Now click on Command1 ("Report") again to generate a new report. Note that the new report reflects the results of the query.
- You can experiment with ad-hoc queries by entering SQL statements in Text4 and then click on Command1 ("Execute SQL") to execute the statement.

To use the 3 bound text controls as the report source to generate reports:

- At design time, click on the ReportSource property of Report1 and choose "Other Bound Controls". This instructs the CR/Pro Custom Control to use the DataField properties of the text controls to generate the Bound Report layout.
- Run the program.
- Click on Command1 ("Report") to generate a Bound Report.
- A report will be generated based on the fields of the bound text controls on the form (TrueGrid will be ignored). The report has 3 columns: Title, Year Published and Au_ID, which are the DataField properties of the 3 text controls.
- You can perform ad-hoc queries as in the previous example.

To use the Data Control as a report source to generate reports:

- At design time, click on the ReportSource property of Report1 and choose "All Data Control Fields". This instructs the CR/Pro Custom Control to use all the fields in the field list of the Data Control to generate the Bound Report layout.
- Run the program.
- Click on Command1 ("Report") to generate a Bound Report.
- A report will be generated using all fields from the Data Control. (Note that the first field "Title" is so long that it is the only field shown in the report window.)
- You can perform ad-hoc queries as in the previous example.

To create a Bound .RPT file:

- At design time, click on the (AutoDesign) property of Report1, then click on the ellipse ("...") to bring up the "Export Bound Report..." dialog.
- Choose the "from TrueGrid control" button. This instructs the CRYSTAL.VBX to generate a Bound .RPT based on the current configuration of TrueGrid. (You must first have configured TrueGrid at design time. See "To configure TrueGrid at design time" below.)
- Click on the "Save As..." command button. A file dialog will appear to allow you to specify a path to save the Bound.RPT.
- Click on the ReportSource property of Report1 and choose "Report files".
- Click on the ReportFileName property and enter the Bound.RPT path name you just created.
- Run the program.
- Click on Command1 ("Report") to generate a Bound Report.
- A report will be generated based on the TrueGrid configuration specified in the Bound .RPT.
- You can perform ad-hoc queries as in the previous example.
- Note that the Bound.RPT generated can be customized just like any other .RPT files using CR/Pro (CRW.EXE).
- You can repeat the above steps by choosing other options from the "Export Bound Report..." dialog to create Bound.RPT files based on other controls:
 - "from other bound controls"
 - "from data control field list"
 - "no default detail line" (This option creates a Bound.RPT with no fields defined in the report detail line.)

To configure TrueGrid at design time

Follow the steps below to configure TrueGrid at design time (for more information on TrueGrid, see the TrueGrid Help file. TrueGrid is located in the CRWTRUEGRID directory):

- Place the mouse pointer over a TrueGrid and press the right mouse button to get the database layout from the DataSource.
- A dialog box will appear asking "Use database layout from DataSource?" Click "Yes".
- TrueGrid is now configured to display all fields from the DataSource.
- You can further customize the grid by bringing up the TrueGrid Layout Editor. Again place the mouse pointer over the grid and press the right mouse button. The Layout Editor is now activated.
- Configure TrueGrid as follows (similar to configuring the grid at program runtime):
 - Place the mouse pointer on a grid heading and hold down the left mouse button (the column will be highlighted). Keep the mouse button down and drag the column to swap it with neighboring columns.
 - Place the mouse pointer on a vertical grid line separating 2 columns (a resize icon will appear). Press down the left mouse button and start dragging to resize the columns. You can make a column invisible by resizing it to zero width.
- Exit the Layout Editor by double clicking on the control button at the upper left corner.

TrueGrid

TrueGrid is included in Crystal Reports Pro 3.0

TrueGrid Standard Edition version 2.0, from Apex Software Corporation, is the fastest and easiest to use bound grid control for Visual Basic. Use TrueGrid to instantly produce an editable database browser. TrueGrid has built in support for CR/Pro 3.0. Use it as a report source to perform database queries, view the resulting data in a table format, and generate reports at the same time.

TrueGrid Sample Applications

TrueGrid sample applications are available in the CRW\TRUEGRID directory as follows:

Linked Grids:	use CRW\TRUEGRID\LINKGRID\LINKGRID\LINKGRID.EXE
Select & Mark:	use CRW\TRUEGRID\MMARKGRID\MARKGRID.EXE
True Browser:	use CRW\TRUEGRID\TBUBRWSE\TRUBRWSE.EXE
dBASE Table Entry:	use CRW\TRUEGRID\DBTABLE\DBTABLE.EXE

TrueGrid Help

The Help text for TrueGrid has not been included with CR/Pro. You can download this file from the Crystal Services BBS if necessary.

WINHELP.EXE C:\CRW\TRUEGRID\TRUEGRID.HLP

TrueGrid Error Messages

If you encounter the messages:

TRUEGRID.VBX cannot be found

TRUEGRID.LIC cannot be found

then include C:\CRW\TRUEGRID in your path or copy TRUEGRID.VBX and TRUEGRID.LIC into the Windows System directory.

If the message:

CMDIALOG.VBX is missing

occurs when running the LINKSGRID sample application, then re-install Visual Basic 3.0 and elect to install the VBX files that come with Visual Basic 3.0.

TrueGrid Professional Edition

An enhanced version of TrueGrid, TrueGrid Pro is available with added power, flexibility and advanced features. For information on TrueGrid Pro, contact Apex Software Corporation at:

4516 Henry Street
Pittsburgh, PA 15213
Sales: (800) 858-2739
Info: (412) 681-4343
Fax: (412) 681-4384

Upgrading from Crystal Reports 2.0 for Visual Basic

If you are upgrading from CR 2.0 for Visual Basic the following files will have been installed in the Windows System directory. CR/Pro installs these files into the CRW directory. You must either rename or hide the older versions of these files so that when a compiled report or print engine application is run that the correct version of the files will be found.

CRPE.DLL
CRXLATE.DLL
CRYSTAL.VBX
P3CONV.DLL
P3DIB.DLL
P3FILE.DLL
P3INFO.DLL

Private Tutor

In the index of the CR/Pro manual there are many references to PT. The PT in the index refers to Private Tutor. For information on using this feature turn to Page 2-16 in the manual.

Last Minute Changes

The following features were added to CR/Pro after the manual went to production.

New Print Engine Calls

Compiled Reports: Modify Record Selection Formula and Date Fields

Cancel the printing and see a subset of the data

"Governor" features

Integrated Mail Support through VIM

"Governor" features

A number of features are available to help users running against large SQL databases. These features are optional and default to OFF. All of these features can be set in the SQL Options dialog box. This can be accessed by clicking on File/Options/Database/SQL Options. The following are the features available:

LIKE

COUNT

LIKE

You can restrict the amount of owner/table names returned from a SQL database using the LIKE feature.

There are two wildcards available when using this feature. They are "%" (similar to "*" in DOS) and "_" (similar to "?" in DOS).

- If you wanted to return all table names that started with C you would use:
LIKE C%
- If you wanted to return all three letter table names starting with P and ending with T you would use:
LIKE P_T

This feature defaults to OFF or you may request to be prompted for the information when you pick each table for a report. To do this set "prompt on every field" under the SQL Options

Some databases may not support the LIKE function. The option will not appear on the prompt window if its not available.

COUNT

- Set the COUNT feature to be warned if the number of records exceeds the preset value. This can be changed in the File, Options.

Preliminary tests have shown that the new COUNT feature can speed up the running of the report remarkably so in most cases it will be worthwhile to have the overhead of COUNTing first.

Note: If you are using any of the Q+E drivers (not ODBC) that were shipped with CR/Pro you also have the option to COUNT the number of tables that will be returned before running a report. You can decide whether to proceed with the running the report. These options will be set in the CRW.INI file.
Eg. CountNTablesToReturn=Yes
 NTablesThreshold=50

Some databases do not support the COUNT function. For example if you are using ODBC then count # of records won't be available for you

New Print Engine Calls

There have been two new print engine calls added to CR/Pro. These are:

PEGetSqlQuery

PESetSqlQuery

PESetSQLQuery () is most useful for users who edited the SQL query in CR/Pro. For those users who did not edit the query in CR/Pro it is best to continue using CRPE calls such as PEsSetSelectionFormula () and let CR/Pro build the SQL query automatically.

When using PEsSetSQLQuery () the same restrictions apply as editing in CR/Pro. The user cannot change the SELECT portion of the statement, only the FROM and WHERE clauses.

CR/Pro does pass any editing changes in the query all the way through to the database driver.

For more information see the files CRPE.H, GLOBAL.BAS, CRPE.PAS in the CRW directory.

Compiled Reports: Modify Record Selection Formula and Date Fields

If modifying the record selection formula from a compiled report, date fields will now be recognized. The user will be prompted to enter in the new DD/MM/YYYY information.

Eg: {DateField} = Date (1993, 12, 31)

Note: If the record selection formula is used in conjunction with a function no prompting will occur to change the selection formula

Eg: Month({DateField}) = 1

See a subset of data after cancelling printing

If the user presses cancel during the reading of the records they will be prompted with a message that asks if you want to continue reading or see a subset of the data. This feature is especially helpful with reports that access large amounts of data. If the user chooses Yes they will have the ability to "fine tune" their report with this subset of data. When they are finished the changes they can print the report with all of the data.

Integrated Mail Support through VIM

In addition to exporting a report to disk or Microsoft Mail users can also export a report through VIM to cc:MAIL, Lotus Notes and more.

Installing Crystal Reports on a network

Installing a network version of Crystal Reports is a straightforward procedure. Since the installation is to serve several users, however, it is somewhat more involved than a single user installation.

To install Crystal Reports on a network

1. With Windows running, insert Disk 1 into the appropriate floppy drive on the network server.

NOTE: It is important that you run the installation program from the server node, not from a workstation node. The installation program makes changes to system files that will not be available to all authorized users if you install from the workstation node.

NOTE: If your server does not run Windows, you will need to install the network version of Crystal Reports from a workstation following the procedure below. Instead of having the program installed on the default drive (Step 4 below), have it installed on the network drive you wish to use. Besides installing the program files on your network drive, the installation program will load a number of files to the \Windows\System directory on your installing workstation and modify your WIN.INI and other local files as well. Then, for each workstation you want to make an authorized user of Crystal Reports, follow the steps beginning with Copying files to each workstation node below. Instead of copying the files from the workstation, however, copy them from the installing workstation.

2. Make certain that the Windows Program Manager is active. When it is, select the File menu, and then select the Run command from that menu.

Calling up Crystal Reports' installation program

3. When the Run dialog box appears, type:

a:setup

(if your Crystal Reports Program disk is in drive A:) or

b:setup

(if your Crystal Reports Program disk is in drive B:),

and then select OK or Press Enter to call up the Crystal Reports installation program. The Installation Options dialog box appears.

Installation Options dialog box

The first dialog box you come to is the Installation Options dialog box. You use this dialog box to change the default installation directory (if you wish), and to select either an automatic installation of all program files or a custom installation, tailored to your needs.

4. In the top section of the dialog box, specify the directory into which you want Crystal Reports installed *if you want something different than the default directory, C:\CRW.*

- If you're satisfied with the default directory, you don't have to make any changes in the Directory section.
- If you want the program installed in a different directory, enter the new path in the Directory edit box or Click the Set Location button and select a directory from the Set Directory dialog box which appears.

NOTE: Make certain that you install the files in a location that can be shared by all authorized LANPAK users.

5. In the center section of the dialog box, select automatic or custom installation.

- If you select automatic, the program installs all Crystal Reports components. If you have adequate disk space, you're probably better off having the program install all of the files for you. In that way you get all the tools and samples you need.
- If you select custom, the program will let you select the components you want to install.

- Click Continue once you've made your selections in this dialog box.

NOTE: The program checks, calculates, and displays disk space requirements versus disk space available at the bottom of the dialog box.

6. Once you Click continue, the program looks for existing copies of Crystal Reports on your hard disk. If it finds any, it asks you if you want to continue..

- If you continue and you've chosen automatic installation, the program installs your files and displays a playbyplay to let you know what's going on.
- If you continue and you've chosen custom installation, the Custom Installation Options dialog box appears.
- If you don't continue, the program returns you to the Installation Options dialog box.

Custom Installation Options dialog box

7. The box on the left lists the categories of components you can install. To select a component, highlight it and then Click the Add button. The program will add your selection to the installation list on the right, and it will calculate and display the disk space required for installing the components you have selected.

- If you want to return to the previous installation window, Click the Back button.
- If you want to abort the installation, Click the Exit button.
- If you're not sure what any of the components are, some descriptive text appears in the thin box in the middle of the dialog box to help you out.
- If you want to remove a component from the installation list, highlight it in the box at the right, and Click the Remove button. The program removes it from the list.

8. When you've selected all the components you want to install, Click Continue. The installation procedure begins. During the installation process, Crystal Reports displays a running account of what is going on in the box at the bottom of the screen.

After the files are installed

9. When the program is done installing all the files, it displays a message box telling you that the installation is complete. Click OK and the File Change dialog box appears.
10. The File Change dialog box suggests changes to your autoexec.bat file that will help enhance system performance.

NOTE: If you decide to go ahead with the proposed changes, the program saves your original autoexec.bat file under a different name. In this way, you can always reinstall your original settings should you so desire.

NOTE: Write down whatever changes are made to your autoexec.bat file, regardless of whether you make them yourself or let the program make them. You will need this information in a later step.

- If you want the program to make the changes, Click the Continue (with change) button.
- If you want to make your own changes, you can modify the current settings in the New Contents box and then Click Continue (with change)
- If you decide to undo your changes, Click the undo button.
- If you want to return to the settings as suggested by the program, Click the Original button.
- If you want to continue with the installation process without making any changes, Click Continue (no change). Bear in mind that system performance may not be as good if you don't make the suggested changes.

11. When you Click one of the Continue buttons, another File Change dialog box appears proposing other changes. Accept, modify, or reject the changes and Click one of the Continue buttons when you're finished.

NOTE: Again, write down whatever changes are made for use in a later step.

Reviewing the README file

12. A message box appears telling you that Setup is complete and asking you if you'd like to read the README file. The README file is a Windows Help file that tells you about changes to the program that occurred after this manual was completed, and other important information. Crystal Reports will display that file for you if you wish to read it at this time.

- If you select Yes, Crystal Reports takes you to the Windows Help system with the README file already loaded. When you're finished reading the README file, exit the the Help system to return to the Program Manager.

- If you select No, Crystal Reports returns you to the Program Manager.

When you return to the Program Manager, the Crystal Reports Program Group Window is now active (if you had Crystal Reports install the Program Group).

Copying files to each workstation node

Once you have installed Crystal Reports on the network server, you will need to copy files from the server to each workstation node that will be authorized to use the program.

- Copy the following files from the server \Windows\System directory to each workstation node \Windows\System directory:

bwcc.dll	compobj.dll *	ctl3d.dll
ole2.dll *	ole2conv.dll *	ole2nls.dll *
ole2prox.dll *	ole2.reg *	storage.dll *
typelib.dll *		

NOTE: Before you copy these files, you should use File Manager to compare the date/time stamps on any of these files already on your workstation with the date/time stamps of the files you intend to copy from the server. Don't overwrite any files on the workstation that have a later date/time stamp.

NOTE: If you are not planning to use OLE 2 from your workstation, it will not be necessary to include the OLE DLL's. (OLE 2 DLL's are marked with an asterisk (*) in the list above.)

Modifying the WIN.INI file

Using Notepad or some other text editor, make the following changes to the WIN.INI file on each workstation node:

In the *Extensions* section, enter the following line:

```
rpt=path/crw.exe ^.rpt
    (where path is the path of the network version of CRW.EXE)
```

In the *Btrieve* section, enter the following line:

```
options=/m:64 /p:4096 /f:60 /l:40
```

Modifying the AUTOEXEC.BAT file

Again using Notepad or some other text editor, make the following changes to the AUTOEXEC.BAT file on each workstation node:

To the *PATH* statement, enter the directory in which the network version of CRW.EXE has been installed. For example, if the network version is installed in the E:\CRW directory, you would enter the following line to the PATH statement:

```
E:\CRW\;
```

If you are planning to report on Paradox database files or use OLE 2, add the following line to the end of the AUTOEXEC.BAT file:

```
C:\DOS\SHARE.EXE /L:500 /F:5100
```

NOTE: If *SHARE.EXE* is not in the *C:\DOS* directory, use the correct directory instead.

Setting up a program icon

Updating the Registration Database

In order to update the Registration Database, it will be necessary to run the REGEDIT program. To do this, select File|Run from the Program Manager and enter the following command in the Command Line box of the Run dialog box when it appears:

```
regedit.exe /S path\ole2.reg
```

(where *path* is the path of ole2.reg)

Setting up a program icon

When your installation is complete, you can set up a program icon for Crystal Reports. To install the icon:

1. With the group window in which you want to install the icon activated, select File|New in the Windows Program Manager. The New Program Object dialog box appears.
2. Select Program Item, and the Program Item Properties dialog box appears.
3. In the Description box, type in the name you want to appear beneath the Crystal Reports icon, for example, Crystal Reports.
4. In the Command Line box, type the name and path of the Crystal Reports program file (CRW.EXE). If the network version of Crystal Reports is in the E:\CRW directory for example, enter:

```
E:\CRW\CRW.EXE
```

and Click on OK when finished. (If you installed Crystal Reports in a different directory, adjust the path to match your correct directory). Crystal Reports installs the icon in the active group window.

