EMu Release Notes ADO Reports

EMu 5.0

Document Version 1





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SECTION 1

ADO Reports

Report generation and performance have been improved with EMu 5.0 and it is now possible to report directly to an Open Database Connectivity (ODBC) data source and to an ActiveX Data Objects (ADO) RecordSet object, bypassing the ODBC filtering process.

The new report options are:

- Crystal Reports: report directly in ODBC format, bypassing the ODBC filtering process.
- Crystal ADO: report using ADO RecordSets for Crystal (which are accessible via Crystal's ADO connector).
- Microsoft ADO: report using ADO RecordSets for Microsoft products.



Crystal and Microsoft reports (Excel, Power Point and Word) which currently connect to an ODBC data source can be modified to use an ADO RecordSet.

It remains possible to create reports by connecting directly to an ODBC data source.

Note

This document assumes familiarity with Report creation in EMu. Full details about Report Creation are available in the EMu Help: **Working with EMu records>Reports**.



SECTION 2

Crystal Reports

Creating a Crystal Report using the new ADO RecordSet is similar to creating a Crystal report with a direct ODBC connection. The main differences are in selecting the data source. This document describes the differences.

How to create a Crystal ADO Report

In EMu:

2.

1. Search for or otherwise list a group of records on which to report.

1

When designing a Crystal ADO report the records in your initial record set must have a value in each field to be included in the report. If not, the field name will not appear in the list of available columns. Once the report is defined, it does not matter if a record does not have values in every field included in the report.

- Click **Reports** in the Tool bar to display the Reports box.
- 3. Click New... in the Reports box. The Report Properties box displays.
- 4. Enter a descriptive name for the Report in the top text field.
- 5. Select Crystal ADO Report from the *Type* drop list:



	Report Properties	×
Report Type	Fields Sort Order Options Security	
Tr	otals Exercise 5(Gerard)	
Type:	Crystal ADO Report] [
Language:	All Languages]
	🔲 Use Display Order	
Report File:	Download	
Size: Modified:	Upload	
	VOK X Cancel ? He	qle

6. On the Fields tab, add the fields to be included in the report. In this example the fields selected are:



Report Properties ×
Report Type Fields Sort Order Options Security
Totals Exercise 5 (Gerard)
Image: Second state Image: Second state <tr< td=""></tr<>
Add Remove Clear
✓ OK X Cancel ? Help

Note that a group was created using the **Create Group b**utton.

to run the report

- 7. Make changes on the other tabs as required. See the EMu Help for details about setting a sort order, sort options, and security.
- V OK 8. Click

The new report is added to the Reports box.

Report All .. In the Reports box, select the new report and click 9. for the first time.

A message will display indicating that your report does not exist on the server. This is to be expected as the report has not yet been built in Crystal Reports:

	KE EMu	
	A report file has not been specified. Do you want to start a new report?	
10.	Click Yes	



An xml file is generated and saved with the data from your record set. The location of this file can vary, but typically it can be found in:

C:\Users\[your username]\AppData\Local\KESoftware\Reports\e[module name]

For example, a report run in the Parties module, will save the xmldata file to:

C:\Users\[your

username]\AppData\Local\KESoftware\Reports\eparties

The Crystal Reports Designer application will open.

11. On the Start Page of the Crystal Reports Designer, select **Blank Report** under the New Reports heading

-0R-

Select **File>New>Blank Report** in the Menu bar.

The Database Expert box displays:



	Database Expert	
sta		
Browse the data source for the tables you want to Note: to edit the alias for a table, select the table in the 'Selev ress the F2 kev)	add. :ted Tables' tree and click on it or	
Available Data Sources:	Selected Tables:	
Current Connections Favorites History Karate New Connection	>	
	>>	
	< <<	
		OK Cancel H



ata Browse the data source for the tables you want to add. Note: to eth the alies for a table, select the table in the 'Selected Tables' tree and click on it or press the F2 key) Available Data Sources:		Database Expert	_ 🗆
Wate: to edit he alias for a table, select the table in the 'Selected Tables' tree and click on it or rests the f2 key) Selected Tables: yailable Data Sources: Selected Tables: Current Connections > Favorites >> History >> Create New Connection < Create New Connection < Mattow Admin Create New Connection < Mattow Admin Collabor Admin Collabor Admin Collabor Admin Public Folder Admin			
⊕ 🛄 Universes ⊕ 🛄 XML	>wese the data source for the tables you want to add. te: to edit the alias for a table, select the table in the 'Selected Tables' tree and as the F2 key) aliable Data Sources: Current Connections Favorites Correct New Connection Cast New Connec	d click on it or Selected Tables: C C C C C C C C C C C C C C C C C C	

The following screen will display:



	ADO.NET (XML)	_
Connection Please enter connection	n information	
<u>F</u> ile Path :		[]
Use Classes from Project:		
Class Name:		×
Use DataSet from Class:		

Click the button beside the *File Path* field to locate and select the xmldata.xml file created when the report was first run (Step 9).

See Step 10 for details of the location of the $\tt xmldata.xml$ file.

14. Click **Finish** to return to the Database Expert:



	Database Ex	pert		
ta				
sta Srowse the data source for the tables you want to add. Note: to edit the alias for a table, select the table in the 'Selected Tables' ress the F2 key) yvaliable Data Sources: Greate New Connection Access/Excel (DAO) Access/Excel (DAO) Cataloge (D	The and click on it or	Selected Tables:		
			ОК	Cancel He

Group 1 contains values from fields that we grouped in the EMu report in this example (see Step 6). These fields are tables of values (they can hold more than one value). This data needs to be added to our report using a sub-report (see the EMu Help for details).

Field values from the Catalog are contained in the table called row.

15. Select **row** and add it to the *Selected Tables* pane:



	Database Expert	
ta		
howse the data source for the tables you want to add.		
Note: to edit the alias for a table, select the table in the 'Selected T ress the F2 key)	Tables' tree and click on it or	
vailable Data Sources:	Selected Tables:	
Connections		
Favorites	row	
History		
- Create New Connection		
Access/Excel (DAO)	>>	
ado.net (XML)		
🖻 - 🥦 xml	<	
- Attribute Type	<<	
- 🛄 data		
- e datatype		
extends		
C Schema		
Exchange 5.5 Message Tracking Log		
- Exchange Message Tracking Log		
Legacy Exchange		
🗄 🦳 Mailbox Admin		
ODBC (RDO)		
🗊 - 🧰 Olap		
OLE DB (ADO)		
Outlook/Exchange		
Public Folder ACL		
Public Folder Admin		
Public Folder Replica		
in the productly		
		OK Cancel H

16. Click OK

The Crystal Report Designer displays, ready for you to design your Crystal report. See the EMu Help for details of designing a Crystal Report.

It is important not to move the xmldata.xml file as this will cause problems when sharing the report with other users.



How to modify a Crystal Report to use ADO instead of ODBC

To modify a Crystal Report to use ADO rather than ODBC:

- Open the Report Properties dialog for the report. This example uses the default report List (A4).
- 2. Select **Crystal ADO Report** from the Type drop list:

	Report Properties		x
Report Type	Fields Sort Order Options Sec	urity	
u 🔛	st (A4)		
Type:	Crystal ADO Report	_	
Language:	English	-	·
	🔲 Use Display Order		
Report File:	ListA4AA.rpt	Download	
Size:	89.5 Kb	Upload	
Modified:	Mon Nov 16 21:09:13 2015		-
	VOK X Canc	el 🦪 🖓 He	elp

The fields for this report are:



Report Properties ×
Report Type Fields Sort Order Options Security
List (A4)
🔒 🖓 📑 🚔 📭 🗣 🖡
 Internal Record Number Inventory No: (Inventory Details)/Accession No: (Access CreatorDetails Creator's Name Creator Level 1: (Time / Style / Movement)/Level 1: (Cultura Level 2: (Time / Style / Movement)/Level 2: (Cultura Level 3: (Cultural Origin) Level 4: (Cultural Origin) Level 5: (Cultural Origin) Title: (Designation)/Main Title: (Title)/Main Title: (Title Designation)
< >
Add Remove Clear
✓ OK X Cancel ? Help

Two tables are generated in this report.

3. Click and run the report.

Crystal will create the ADO record set and the following error will display:



 Open the Crystal report in the Crystal Report Designer and select the Database>Set Datasource Location menu option.
 The Set Datasource Location dialog will display.

The Set Datasource Location dialog will display:



ţ	Set Datasource Location		2
Change the location of the dat eplace it with. Then click Upo Current Data Source:	a source by selecting the current database (or table) and choosin date.	ng the database (or	table) to
Properties P	ue		
leplace with: ⊕- ☐ Current Connections ⊕- ☐ Favorites ⊕- ☐ History			Update
ianiania in the termination of terminatio of termination of termination of termi	ion		

5. Select **Create New Connection** in the *Replace with* pane and click beside **ADO.NET (XML)**.

The following screen will display:



	ADO.NET (XML)	×
Connection Please enter connection	information	
<u>F</u> ile Path :		
Use Classes from Project:		
<u>C</u> lass Name:		×
U <u>s</u> e DataSet from Class:		
< <u>B</u> ack <u>N</u> ext :	Finish Cancel	Help

6. Click the button beside the *File Path* field to locate and select the xmldata.xml file created when the report was run.

The location of this file can vary, but typically it can be found in:

```
C:\Users\[your username]\AppData\Local\KESoftware\Reports\e[module name]
```

For example, a report run in the Parties module, will save the xmldata file to: C:\Users\[your

username]\AppData\Local\KESoftware\Reports\eparties

7. Click Finish

You are returned to the Set Datasource Location dialog:



Set Datasource Location		×
Change the location of the data source by selecting the current database (or table) and choosin replace it with. Then click Update.	g the database (c	rtable) to
 ■ report ■ Properties ■ @ ecatalog_csv ■ @ Subreports ■ Mu Catalogue ■ Mu Catalogue ■ Properties ■ @ CreatorD_csv 		
Replace with:		
Current Connections Favorites Greate New Connection Access/Excel (DAO) Greate New Connection	^	<u>U</u> pdate
Make New Connection		
Galaype G		
	Close	Help

Next it is necessary to map fields from the old ODBC data source to the new ADO RecordSet.

In this example there are two tables to map and one sub-report.

8. To map the old ODBC Catalog fields to the new Catalog table, click **ecatalogue_csv** in the *Current Data Source* pane and then click the **row** table in the *Replace with* pane.

The Update button will be enabled.

9. Click the **Update** button and the Map Fields dialog will display:



Fields with the same name will be mapped automatically.

10. Uncheck the **Match type** check box to reveal more fields in the *Unmapped Fields* pane:





11. Complete mapping fields in the Unmapped Fields pane. In this example we map ecatalogue_key to ecatalogue_key and irn to irn by selecting both fields to map and clicking the Map button. Once mapped, fields will be moved to the Mapped Fields pane:





12. Click when all fields are mapped.

You are returned to the Set Datasource Location dialog.

13. Repeat the mapping process for all fields (in this example, mapping fields in the CreatorD_csv table to the ADO table CreatorDetails):



Set Datasource Location		×
Change the location of the data source by selecting the current database (or table) and choosing replace it with. Then click Update.) the database (or	table) to
report		
Current Connections Favorites Greate New Connection Access/Excel (DAO) ADO.NET (XML) Make New Connection Attribute Type Attribute Type CreatorDetails CreatorDetails		<u>U</u> pdate
Comma Schema Database Files Exchange 5.5 Message Tracking Log	Close	Help

14. Once all fields have been remapped in all tables click **Close**.

You are returned to the Crystal design window.

If you refresh report data at this stage and you have a sub-report object, you will probably receive an error regarding sub-report links, e.g.:





Click to open the Record Selection Formula Editor. Change the link key field used by the old ODBC table to the link key field referenced by the ADO RecordSet:



The report should now work correctly.



$S \hbox{ E C T I O N } 3$

Microsoft Excel

The following examples demonstrate how to create a basic Excel report using VBA. Please note that it is not the intention of this document to teach VBA.

Excel 2013 was used to create these reports.

How to create an Excel Report using the ADO RecordSet

With ODBC data sources there is an option in Excel to open a connection without writing Visual Basic code. This is not the case when making a connection to an ADO record set and it is necessary to write VB code.



Step 1: Create a new report in EMu

This first example is a simple report on single value fields from the Catalog module. The VBA code provided in this example will automatically populate headings and row data for each column selected.

In EMu:

- 1. Search for or otherwise list a group of records on which to report.
- 2. Click **Reports** in the Tool bar to display the Reports box.
- 3. Click New... in the Reports box. The Report Properties box displays.
- 4. Enter a descriptive name for the Report in the top text field.
- 5. Select Microsoft ADO Report from the *Type* drop list:

	Report Properties									
Report Type Fields Sort Order Options Security										
×.	New Excel Report									
Type:	Microsoft ADO Report									
Language:	All Languages 🗨									
	Use Display Order									
Report File: Size: Modified:	Download Upload									
	✓ OK X Cancel ? Help									

6. On the **Fields** tab, add the fields to be included in the report. Fields selected in this example are:



Report Properties ×
Report Type Fields Sort Order Options Security
New Simple Excel ADO Report
🔒 🙀 📑 🖶 🖣 🖓 🗛
 Internal Record Number Object Type: (Object Details) Denomination: (Designation)/Object Category: (Object Details) Object Status: (Object Details) Title: (Designation)/Main Title: (Title)/Main Title: (Title De Date Created: (Creator / Dating)/Date Created: (Creation Summary Data
< >
Add Remove Clear
✓ OK X Cancel ? Help

- Make changes on the other tabs as required.
 See the EMu Help for details about setting a sort order, sort options, and security.
- 8. Click

The new report is added to the Reports dialog box.

9. Select the new report and click **Report Al.** to run the report for the first time. A message will display indicating that your report does not exist on the server. This is to be expected as the report has not yet been built in Excel:

KE EMu	
A report Do you	file has not been specified. want to start a new report?
Yes	№

10. Click An xml file is generated and saved with the

An xml file is generated and saved with the data from your record set. The location of this file can vary, but typically it can be found in:

C:\Users\[your username]\AppData\Local\KESoftware\Reports\e[module



name]

For example, a report run in the Parties module, will save the xmldata file to: C:\Users\[your

username]\AppData\Local\KESoftware\Reports\eparties
Microsoft Excel will open with a blank worksheet as follows:

XI	5-	¢•••					B	ook1 - Excel						? 📧	- 5	×
FILE	HC	INSE	RT PAG	E LAYOUT	FORMULAS	DATA	REVIEW	VIEW	DEVELOPE	R				George	Calder	rara *
	* .	Calibri	- 11 -	A A =	= = *	·- P	General	÷	₽	5		Delete *	Σ - Α.	T H		
Paste *	*	в <u>г</u> <u>ч</u> -	1 - 2	• <u>A</u> •	5 Z Z 6	:# ₫•	\$ - %	00. 0 0.↓ 00.	Conditio Formattin	nal Format ng * Table	as Cell • Styles •	Format •	✓ Sort Filte	t & Find & er * Select *		
Clipboar	rd G		Font	5	Alignme	int 5	Nur	nber 5		Styles		Cells	Ed	iting		^
H2		- E 2	× v	fx												۷
	A	В	С	D	E	F	G	Н	1	J	К	L	М	N	0	-
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READY	1												<u> </u>	-1	-+ 1	00%



Ensure that Excel is setup correctly

If the Developer tab does not display in the Ribbon:

- 1. Click File>Options>Customize Ribbon.
- 2. With **Main Tabs** selected from the *Customize the Ribbon* drop list (1), select the **Developer** check box (2):



In order to run the macros that we will create with our reports, we need to ensure that the Security level in Excel is appropriate:

Macro Security

1. On the Developer tab, click

Enable all macros:



2.

	Trust Center	? ×
Trusted Publishers Trusted Locations Trusted Documents Trusted App Catalogs Add-ins ActiveX Settings Protected View Message Bar External Content File Block Settings Privacy Options	Macro Settings Disable all macros without notification Disable all macros with notification Disable all macros except digitally signed macros Enable all macros (not recommended; potentially dangerous code can run) Developer Macro Settings Trust access to the VBA project object model	
	ОК	Cancel
3. Click	OK to close the Trust Center.	

The following screen displays:



2			Microsoft Vis	ual Basic for Applications - Book1	- 🗆 🗙
Eile Edit View	Insert Format Debug	Run Tools	Add-Ins Window Help		
X 🖬 🕶 🖌 🕺	DEAL OCI.	a a 😖	N 2 7 7 1 0		
Project - VBAProj	iect 🗙				
	1				
Steel	poki) cel Objects Sheeti) kbook	2			
Properties - Shee	t1 ×	1			
Sheet1 Worksheet	*				
Alphabetic Categorized	1				
(Name)	Sheet1	1			
DisplayPageBreaks	False				
DisplayRightToLeft	False				
EnableAutoFilter	False				
EnableCalculation	True				
EnableFormatConditions	CalTrue				
EnableOutlining	False				
EnablePivotTable	False				
EnableSelection	0 - xlNoRestrictions				
Name	Sheet1				
ScrollArea					
StandardWidth	8.11				
Visible	-1 - xisneetVisible				

- 5. Ensure that the Microsoft ActiveX Data Objects Library is available:
 - 5.1. Select **Tools>References** in the Menu bar
 - In the References VBAProject dialog that displays, make sure that the following checkbox is checked:



References - VBAProject	×
<u>A</u> vailable References:	ОК
Microsoft Actions 2.0 Type Library	Cancel
Microsoft ActiveX Data Objects (Multi-dimensional) Microsoft ActiveX Data Objects (Multi-dimensional)	<u>B</u> rowse
Microsoft ActiveX Data Objects 2.0 Library Microsoft ActiveX Data Objects 2.1 Library Microsoft ActiveX Data Objects 2.5 Library	
Microsoft ActiveX Data Objects 2.5 Library Microsoft ActiveX Data Objects 2.6 Library Microsoft ActiveX Data Objects 2.7 Library	<u>H</u> elp
 Microsoft ActiveX Data Objects 2.8 Library ✓ Microsoft ActiveX Data Objects 6.1 Library 	
Microsoft ActiveX Data Objects Recordset 2.8 Librar Microsoft ActiveX Data Objects Recordset 6.0 Librar	
<	
Microsoft ActiveX Data Objects 6.1 Library	
Location: C:\Program Files (x86)\Common Files\System\a	ado\msado15
Language: Standard	
Click OK	



Step 2: Design the report in Excel

1. Double-click **Sheet1** in the VBAProject pane:



2. Copy and paste the following VB code:

```
Sub OpenAdoFile()
    Dim RecordSet As ADODB.RecordSet
    Dim Worksheet As Excel.Worksheet
    Dim h As Long
    Dim col As Long
    Dim datarow As Long
    Dim source As String
    ' Get the persisted record set
                   Environ("LocalAppData") &
    source
              =
                                                   "\KESoftware\
Reports\ecatalogue\xmldata.xml"
    Set RecordSet = New ADODB.RecordSet
    RecordSet.Open source, "Provider=MSPersist"
    ' Get the active page to send the data to
    Set Worksheet = ThisWorkbook.ActiveSheet
    Application.Visible = True
```



```
' Put out all of the column headers
    col = 1
    ListColumnNames Worksheet, RecordSet, col
    ' Print out all the row data
    While Not RecordSet.EOF
        col = 1
        datarow = datarow + 1
        For h = 0 To RecordSet.Fields.count - 1
                Worksheet.Cells(datarow + 1, col).Value =
RecordSet.Fields(h).Value
                col = col + 1
        Next
        RecordSet.MoveNext
    Wend
    Worksheet.Range("A1").CurrentRegion.Select
    Worksheet.Columns.AutoFit
    Set RecordSet = Nothing
End Sub
Private Sub ListColumnNames(ByVal ws As Excel.Worksheet, ByVal rs
As ADODB.RecordSet, ByRef col As Long)
    Dim i As Long
    ' Loop through the record set pulling out the column names
    For i = 0 To rs.Fields.count - 1
            ws.Cells(1, col).Value = rs.Fields(i).Name
            col = col + 1
    Next
End Sub
```



2 Microsoft Visual Basic for Application	s - Book1 - [Sheet1 (Code)]	- 0 -×
Eile Edit View Insert Form	at <u>D</u> ebug <u>B</u> un <u>T</u> ools <u>A</u> dd-Ins <u>W</u> indow <u>H</u> elp	- 8 ×
🛛 🔜 • 🖬 🔺 🖏 🙇 🐴 🔊	🕫 🕨 🖬 😼 🤮 🐨 😼 🔅 🕜 Ln 45, Col 9	
Project - VBAProject	([(General) V ListColumnNames	
(b) (mathematical (freehat)	Sub OpenAdoFile ()	-
St VBAProject (Book1)	Dim Recordset As AboDs.Recordset	
B) Sheet1 (Sheet1)	Dim blar tong	
ThisWorkbook		
	Dim datarow As Long	
	Dim source As String	
	' Get the persisted record set	
	source = Environ("LocalAppData") 6 "\KESoftware\Reports\ecatalogue\xmldata.xml"	
	Set RecordSet = New ADODB.RecordSet	
	RecordSet.Open source, "Provider=MSPersist"	
	' Get the active page to send the data to	
	Set Worksheet = ThisWorkbook.ActiveSheet	
	Application.Visible = True	
	t has our all of the aslam hadden	
	cole 1	
Properties - Sheet1	ListColumnNames Worksheet, RecordSet, col	
Sheet1 Worksheet		
Alphabetic Louis and L	' Print out all the row data	
Aphabetic Categorized	While Not RecordSet.EOF	
(Name) Sheet1	col = 1	
DisplayPageBreaks False	datarow = datarow + 1	
DisplayRightToLeft False	For h = 0 To RecordSet.Fields.Count - 1	
EnableAutoPitter Faise	Worksheet.Cells(datarow + 1, col).Value = RecordSet.Fields(h).Value	
EnableCalculation True	col = col + 1	
EnableOutlining Enitre	Next	
EnableProstTable False	RecordSet.MoveNext	
EnableSelection 0 - xNoRestrictions	wend	
Name Sheet1	Norksheet Range ("51"). Current Region Select	
ScrolArea	Norksheet. Columns. AutoFit	
StandardWidth 8.43	Set BecordSet = Nothing	
Visible -1 - x/SheetVisible	End Sub	
	<pre>Private Sub ListColumnNames(ByVal ws As Excel.Worksheet, ByVal rs As ADODB.RecordSet, ByRef col Dim i As Long ' Loop through the record set pulling out the column names For i = 0 To rs.Fields.Count - 1 ws.Cells(1, col).Value = rs.Fields(i).Name col = col + 1 Next End Sub</pre>	As Long)
I		2

3. Double-click **ThisWorbook** in the VBAProject pane and copy and paste the following code:

```
Sub Workbook_Open()
' Load up the ADO File
Sheet1.OpenAdoFile
End Sub
```





4. Save the report and upload it to your EMu report (page 24) on the Report Type tab of the Report Properties box.

When the report is run in EMu, an Excel report is generated:

FILI	HOME	÷ INSERT	PAGE LAYOU	IT FORMULAS D	ATA REVIEW	ADOBook2.xlsm - Excel VIEW DEVELOPER	201	? 📧 — 🗆 🗙 George Calderara ~
Paste	Cut Copy - Format Pain Clipboard	Calib ter B	ri - 11 I U - E		Sy + P ∃ € ± E Alignment	Wrap Text Merge & Center - S - % , S - % , Conditional Formation S - Number - Styles	as Cell Insert	Elis Editing ∧
A14	•	\times	$\checkmark f_x$					~
	Δ	в	C	D	F	F	G	H
1 6	catalogue key	irn	ObjectType	TitObjectCategory	TitObjectStatus	TitMainTitle	CreDateCreated	SummaryData
2 1		1	Object	Building Structure	Accessioned	Old Parliament House, Canberra, Australia	1927	"Old Parliament House, Canberra, Australia"
3 2	1	1000103	Object	Building Structure	Accessioned	Exhibitions - Old Parliament House, Canberra		"Exhibitions - Old Parliament House, Canberra"
4 3		1000105	Object	Building Structure	Accessioned	King's Hall - Old Parliament House, Canberra		"King's Hall - Old Parliament House, Canberra"
5 4		1000107	Object	Building Structure	Accessioned	The Cabinet Room - Old Parliament House, Canberra		"The Cabinet Room - Old Parliament House, Canber
6 5		1000108	Object	Building Structure	Accessioned	The House of Representatives - Old Parliament House, Canb		"The House of Representatives - Old Parliament Ho
7 6	;	1000110	Object	Building Structure	Accessioned	The Parliamentary Library - Old Parliament House, Canberra		"The Parliamentary Library - Old Parliament House,
8 7		1000111	Object	Building Structure	Accessioned	The Prime Minister's Office - Old Parliament House, Canberr		"The Prime Minister's Office - Old Parliament House
9 8	3	1000112	Object	Building Structure	Accessioned	The Senate Chamber - Old Parliament House, Canberra		"The Senate Chamber - Old Parliament House, Canb
10 9)	1000149	Object	Musical Instrument	Accessioned	Cello 'Marquis de Corberon' by Antonio Stradivari, Cremona	1726	"Cello 'Marquis de Corberon' by Antonio Stradivari,
11 1	.0	1000156	Object	Musical Instrument	Accessioned	Harp-lute by Edward Light, with two French lyre-guitars, earl	h	"Harp-lute by Edward Light, with two French lyre-gu
12 1	1	1000187	Object	Musical Instrument	Accessioned	Viola 'Archinto' by Antonio Stradivari, Cremona	1696	"Viola 'Archinto' by Antonio Stradivari, Cremona"
13 1	2	1000067	Object	Technology	Accessioned	A set of standard grain weights with gilt brass and platinumw	v	"A set of standard grain weights with gilt brass and
14	0							
15								
16		4						v
	Macro	51 She	et1 🕀					•
READY								III III



How to create an Excel Report with nested tables using the ADO RecordSet

1. Repeat Step1: Create a new report in EMu (page 24).

For this example, the following fields were selected. Note the two nested tables - *Creator's Name* and *Physical*:



- 3. Double-click **Sheet1** in the VBAProject pane:
- 4. Copy and paste the following VB code:



2.

```
Sub Read_XML_Data()
    Dim rst As ADODB.Recordset
    Dim Worksheet As Excel.Worksheet
    Dim i As Long
   Dim j As Long
   Dim source As String
   Dim datarow As Long
   Dim saverow As Long
    Dim lastrow As Long
   Dim col As Long
    ' These next declaration is a little odd. Its needed in cases
where the entire value
    ' of a nested table is blank. In these cases it is necessary
to force a number of columns to be skipped when printing
    ' out field values. Oddly, as long as a nested table has at
least one value, then there is no issue.
    ' There is only a need to declare one variable for each nested
table.
    ' In this example there are only two nested tables so two
declarations are needed
    ' The value assigned to each variable will depend on the
number of fields in that nested table.
    1
      In this example the first nested table is
                                                             the
CreCreatorRef tab, which has two fields, i.e. NamFirst and
NamLast
    ' and the second nested table, i.e Physical, has 3 fields,
i.e. PhyType, PhyHeight and PhyWidth
    Dim firstnestedtable As Long
    Dim secondnestedtable As Long
   Dim nestedtablecount As Long
    firstnestedtable = 2
    secondnestedtable = 3
   nestedtablecount = 1
    ' Get the persisted record set
                   =
                              Environ("LocalAppData")
    source
                                                               &
"\KESoftware\Reports\ecatalogue\xmldata.xml"
    Set rst = New ADODB.Recordset
    rst.Open source, "Provider=MSPersist"
```

```
' Get the active page to send the data to
Set Worksheet = ThisWorkbook.ActiveSheet
Application.Visible = True
'Add column labels
Worksheet.Cells(1, 1).Select
ActiveCell.EntireRow.Insert
Worksheet.Cells(1, 1).Value = "Record No"
Worksheet.Cells(1, 2).Value = "IRN No"
Worksheet.Cells(1, 3).Value = "Title"
Worksheet.Cells(1, 4).Value = "Date Created"
Worksheet.Cells(1, 5).Value = "Creator First"
Worksheet.Cells(1, 6).Value = "Creator Last"
Worksheet.Cells(1, 7).Value = "Physical Type"
Worksheet.Cells(1, 8).Value = "Physical Length"
Worksheet.Cells(1, 9).Value = "Physical Width"
col = 1
' Start printing data from Row 3
datarow = 3
lastrow = datarow
While Not rst.EOF
    col = 1
    If datarow < lastrow Then
        datarow = lastrow
    End If
    For j = 0 To rst.Fields.Count - 1
        If rst.Fields(j).Type = adChapter Then
            If rst.Fields(j).Value.BOF Then
                Worksheet.Cells(datarow, col).Value = ""
                If nestedtablecount = 1 Then
                    col = col + firstnestedtable
                    nestedtablecount = nestedtablecount + 1
                ElseIf nestedtablecount = 2 Then
                    col = col + secondnestedtable
                    nestedtablecount = nestedtablecount + 1
                End If
            Else
                If rst.Fields(j).Value.EOF Then
                    Worksheet.Cells(datarow, col).Value = ""
                    If nestedtablecount = 1 Then
```



col = col + firstnestedtable nestedtablecount = nestedtablecount + 1 ElseIf nestedtablecount = 2 Then col = col + secondnestedtablenestedtablecount = nestedtablecount + 1 End If Else saverow = datarow ListNestedValues Worksheet, rst.Fields(j).Value, col, datarow, lastrow, saverow, nestedtablecount End If End If Else If IsNull(rst.Fields(j).Value) Then Worksheet.Cells(datarow, col).Value = "" Else Worksheet.Cells(datarow, col).Value = rst.Fields(j).Value End If col = col + 1End If Next rst.MoveNext datarow = datarow + 1nestedtablecount = 1 Wend 'Closing the recordset. rst.Close 'Release object from memory. Worksheet.Range("A1").CurrentRegion.Select Worksheet.Columns.AutoFit Set rst = Nothing End Sub

Private Sub ListNestedValues(ByVal ws As Excel.Worksheet, ByVal rs As ADODB.Recordset, ByRef col As Long, ByRef datarow As Long, ByRef lastrow As Long, ByRef saverow As Long, ByRef



```
nestedtablecount As Long)
   Dim i As Long
    Dim j As Long
    Dim startrow As Long
    ' Loop through a nested table pulling out the row values
    j = 0
    startrow = saverow
    While Not rs.EOF
        max = 1
        j = col
        For i = 0 To rs.Fields.Count - 1
            ' Don't print key values
                rs.Fields(i).Name <>
                                         "ecatalogue_key"
            Ιf
                                                              And
rs.Fields(i).Name <> "CreCreatorRef_key" And rs.Fields(i).Name <>
"Physical_key" _
            Then
                If IsNull(rs.Fields(i).Value) Then
                    ws.Cells(startrow + 1, j).Value = ""
                    j = j + 1
                Else
                    If rs.Fields(i).Type = adChapter Then
                        ListNestedValues ws, rs.Fields(i).Value,
j, datarow, lastrow, saverow, nestedtablecount
                        datarow = startrow
                    Else
                                                 j).Value
                        ws.Cells(startrow,
                                                                =
rs.Fields(i).Value
                        j = j + 1
                    End If
                End If
            End If
        Next
        rs.MoveNext
        startrow = startrow + 1
    Wend
    If (j > 0) Then
       col = j
    End If
    If startrow > lastrow Then
        lastrow = startrow
    End If
```

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```
nestedtablecount = nestedtablecount + 1
End Sub
```

5. Double-click **ThisWorbook** in the VBAProject pane and copy and paste the following code:

```
Sub Workbook_Open()
' Load up the ADO File
Sheet1.Read_XML_Data
End Sub
```

6. Save the report and upload it to your EMu report (page 24) on the Report Type tab of the Report Properties box.

When the report is run in EMu, an Excel report is generated:

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1 R	ecord No	IRN No	Title	Date Created	Creator First	Creator Last	Physical Type	Physical Length	Physical Width		
2	1	1000133	Gladioli gown worn by Dame Edna Everage in Tears Before Bedtime, Australian tour, 1985 and	1985							
3	2	1000127	Arrungu Dreaming at Ulyitjirrki, 1984	1983							
4	3	1000134	Gold hotpants worn by Kylie Minogue - 'Spinning Around' video from the album Light Years, 20	2000)						
5	4	1000128	Bizet's Carmen in the Bullring, 1985	1985	John	Olsen					
6	6	1000080	Stained glass window from Glenferrie house, Malvern	1872							
7	7	1000057	Limpet - underside								
8	8	14	A Young Gentleman (or A Portrait of James Wolfe, Later General Wolfe)	c1760-65	Thomas	Gainsborough	Canvas	76.5	63.5		
9	9	15	John Sidney, 6th Earl of Leicester	1728	Joseph	Highmore	Canvas	76.2	63.5		
10	10	1000061	Riftia Plume								
11	11	1000053	Cirrate Octopus								
12	12	113456	Gussey Galah puppet	1967-73	Axel	Axelrad			135		
13	13	107939	The Maestro's Company	1984	-			440			
14	14	58	Painting Two by Gerard	17/02/2011	Gerard	Wood					
15	15	57	Painting One by Gerard	1//02/2011	Gerard	Wood					
16	27	40	A View of St. Peter's Place and Manner in which the Manchester Reform Meeting was dispose	c 1819							
17	28	52000	Artworkers calendar, 1984: August	1984	Colin	Kussell					
18	29	41	The British Butcher Supplying John Bull with a substitute for Bread	1/95							
19	37	1000194	Boronia pinnata	170							
20	38	1000148	women's open robe	1/60	Truche	c1					
21	39	103	Painting I wo by Traino	29/05/2013	Train	SIX					
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Registry entries

The Type Registry entry indicates which export type to use for each report request. The format of this Registry entry is; System | Setting | Reports | Type | Crystal CSV | value value is 0 or 1: 0 Generates data in the existing format. 1 Generates data in the new Crystal ODBC format. If this entry is not present, a *value* of 0 is assumed. System | Setting | Reports | Type | Crystal ADO | value value is 0 or 2: 0 Generates data in the existing format. 2 Generates data in the new Crystal ADO record set. If this entry is not present, a *value* of 0 is assumed. System | Setting | Reports | Type | Microsoft ADO | value where: value is 0 or 3:

- ⁰ Generates data in the existing format.
- ³ Generates data in the new Microsoft ADO format.

If this entry is not present, a *value* of 0 is assumed.



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