xPort for Advanced Revelation

Version 3.2

Data Export Handbook

August 8, 2002

WWW.EXORSYS.COM

SOFTWARE LICENSE AGREEMENT

You should carefully read the following terms and conditions before using this software. Your use and/or registration of this software indicates your acceptance of this license agreement.

The term "Revelation" applies to all versions (including "Advanced") of the Revelation Database applications environment published and owned by Revelation Software of Andover, MA, USA.

A registered copy of xPort may be used in conjunction with only one licensed copy of Revelation resident on one computer or network and may be used simultaneously by any number of people.

Disclaimer of Warranty

THIS SOFTWARE AND THE ACCOMPANYING FILES ARE SOLD "AS IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OR SECURITY OF DATA OR ANY OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED. Because of the various hardware and software environments in which xPort may be used, NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS OFFERED.

The user must assume the entire risk and responsability of using this program. ANY LIABILITY OF THE SELLER WILL BE LIMITED EXCLUSIVELY TO PRODUCT REPLACEMENT OR REFUND OF PURCHASE PRICE.

Distribution

Anyone may freely distribute exact copies of the unregistered version of xPort with the condition that no payment is received for making such copies.

Table of Contents

Exorsys International Inc.
1075 boul. Chaudiere
Cap-Rouge, Quebec, Canada
G1Y 3T4

telephone: (418) 656-4385 - e-mail: xport@exorsys.com

Overview

The Revelation Challenge

Revelation was the most expandable, flexible and stable applications development environment available for Networked PCs from the early 1980's into the 1990's.

The same features that made Revelation the premier choice for developing large, complex systems (such as Human Resources), now present obstacles when migrating or interfacing to today's newer technologies;

1. Revelation databases have a proprietary format (based on the Pick operating system) which is very difficult to access and manipulate directly from outside the Revelation environment,

2. The document orientation of Revelation database's must be re-structured to conform to relational database norms (it is quite similar to XML, however).

3. All data is stored in unlimited-length character fields, which are must be converted and sometimes cropped to accommodate today's fixed data typing.

XPort Features

"xPort" is a full-featured data analysis and export utility which works with any version of Advanced Revelation to overcome the challenges of interfacing within this environment. A Revelation "G" edition is also available at http://exorsys.com.

1. Exports to common ASCII, Dbase and XML file formats
   - Normalizes (i.e. flattens) multi-valued fields when required
   - Provides selectable delimiters for document-oriented output
   - Exports stored and calculated (symbolic) values
   - Provides special spacing, counting and constant fields
   - Option to force all date and time output to specified formats

2. Handles big, difficult jobs
   - Source record selection and sort capability
   - No output file or record size limit
   - Filters out any invalid characters found in the source database
   - Database auditor verifies data and dictionary integrity
   - Ability to expand output field sizes to fit actual data

3. Helps you find and analyse the essential data
   - Choose potential export files from popup list
   - Obtain size, last update date and file statistics for each Revelation file
   - Choose fields for export from Dictionary popup lists
   - Normalization analysis report

4. Facilitates importing at destination system
   - Option to add CSV header record containing field names
   - XML document type definition (DTD) prototype available
   - Ability to generate Borland Database ("BDE") engine schema output
   - Access DBF File definition via common DBase III Plus drivers
   - XAUDITOR provides a detailed layout file for each record format
   - MS-SQL Create Table Script and Bulk Copy format files produced
   - Oracle Create Table and SQL*Loader scripts provided.

Constraints

Note that AREV version 3.0 introduced a number of restrictions and syntax changes (e.g. ATTACH became ATTACHTABLE). The xPort software accommodates these differences, however this document uses the older versions' syntax.

The evaluation version of XPort is limited to 50 input records. You can purchase a full version of xPort on-line via our web site at http://exorsys.com.

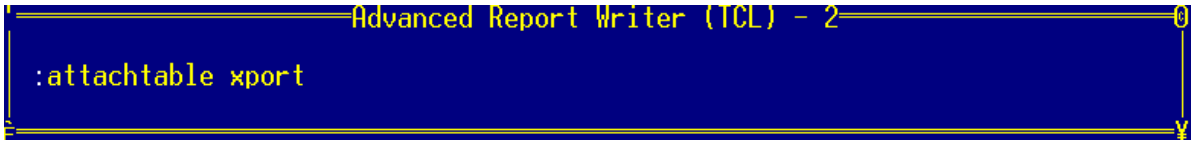
The XSDL schema output definition for XML will be made available as soon as standard specifications have been adopted.

Installation

1) Unzip to a subdirectory of AREV called "XPORT".
2) Log into your AREV application with a user ID that has access to TCL.
3) Press F5 to access TCL.

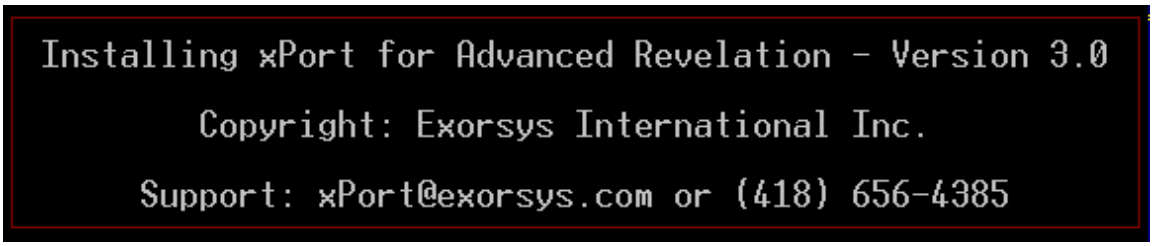
   With **AREV versions 1 or 2**, enter:

   With **AREV version 3**, enter;



4) If there are any error messages, check that the zip file has indeed been unzipped to a directory called "XPORT" which must be a sub-directory of the current directory after you have run AREV. If there are no messages then continue with:

5) The following message will be displayed while xPort is being installed:



   NOTE 1: Respond "C" to continue if you receive an error message regarding "%FIELDS%" in DICT.VOC during the installation.

   NOTE 2: xinstall will create 4 files (XFILES, XGROUPS, XCRITERIA and XSCHEMAS) on the REVBOOT volume during the installation. You may move these files to an alternate location.

6) This message will appear when the installation is done.

7) Proceed to the following section entitled "Xport Control Parameters" to complete your setup.

Accessing xPort software

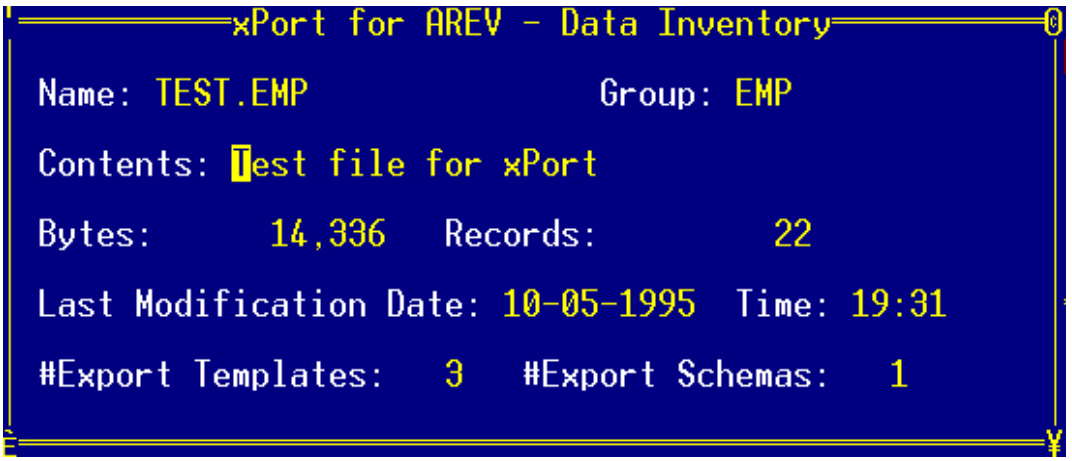
This package is composed of a number of utilities that are normally run from the TCL command line (accessed via the F5 function key). This is a fast and memory-efficient way to operate AREV software.

For occasional users, we invite you to set up simple menus of your favorite functions. There is an xPort macro included, which is the only way to run the xSeeThru utility (see "complementary tools" section).

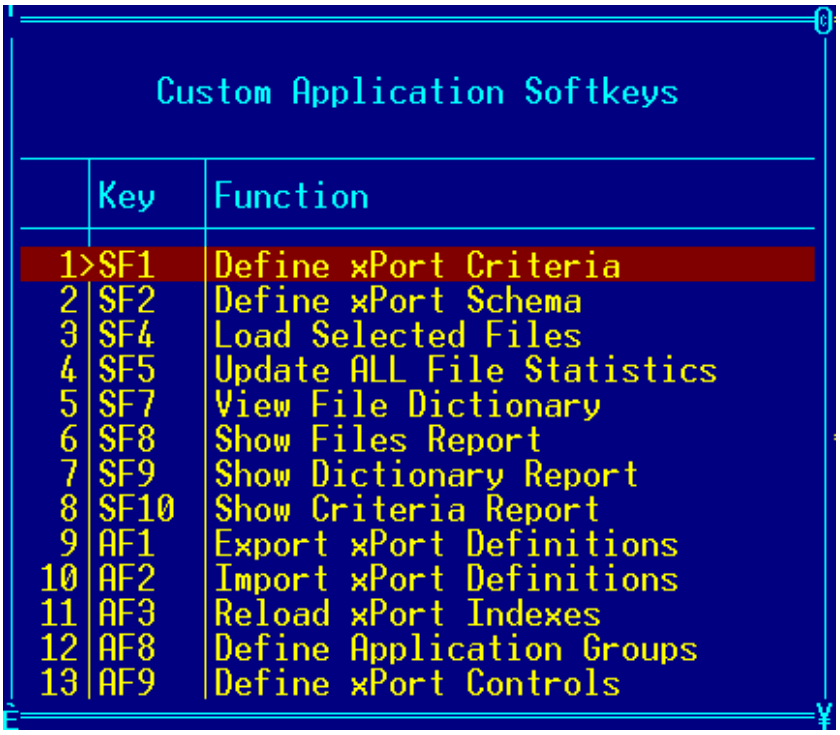
The ATTACH XPORT command must be executed every time after you start AREV and before you use any xPort software. When possible, add it to your AREV logon procedure.

XPT command

All xPort data entry and controls are accessed from the XPT TCL command, which brings up the following opening screen;



Press the F6 Key from this screen to view the following list of auxiliary functions available to control and run xPort. To select any function, highlight it using the up/down arrow keys and press <Enter> to execute.



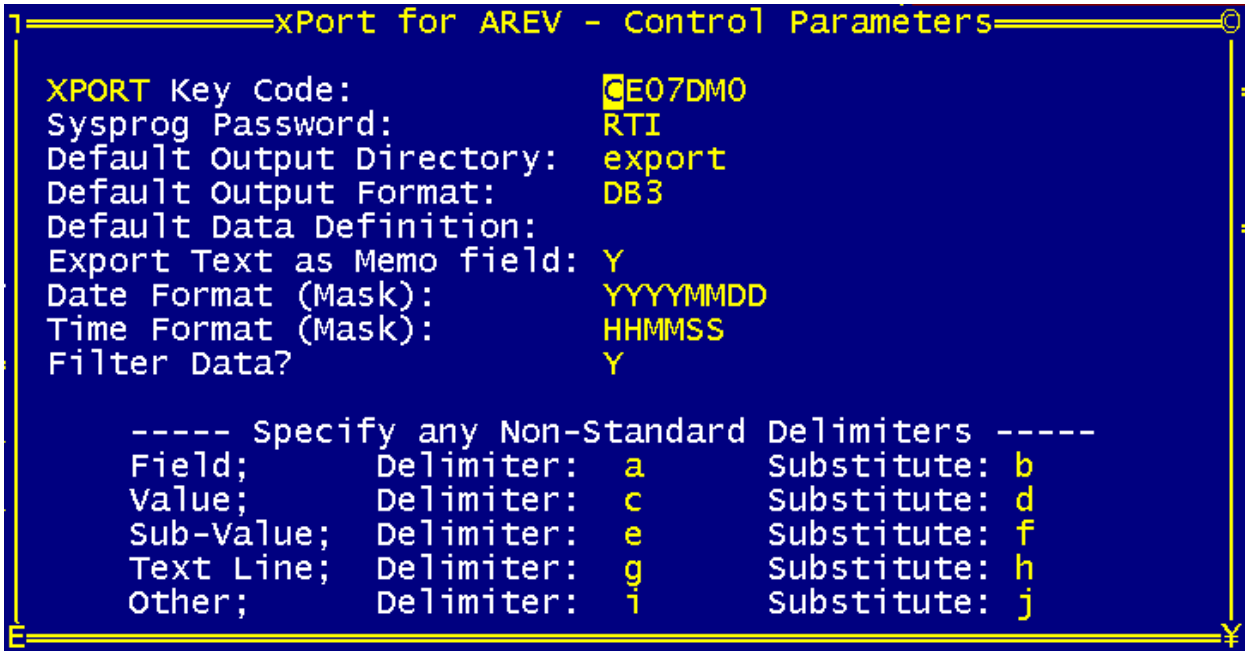
Functions can also be accessed WITHOUT DISPLAYING THE ABOVE LIST by holding down the Shift- or Alternate- key prior to pressing the desired Function Key.

XPort Control Parameters

From the XPT functions list, select;

```
AF9   Define xPort Controls
```

to access the following entry screen. Fill in the values you require (see details below), Press F9 to save, followed by the <Esc> key to return to XPT.



XPORT Key Code

Provided by Exorsys when you purchase a license for XPORT (see http://exorsys.com). Exports are limited to 50 input records when the Key Code is not present (evaluation version).

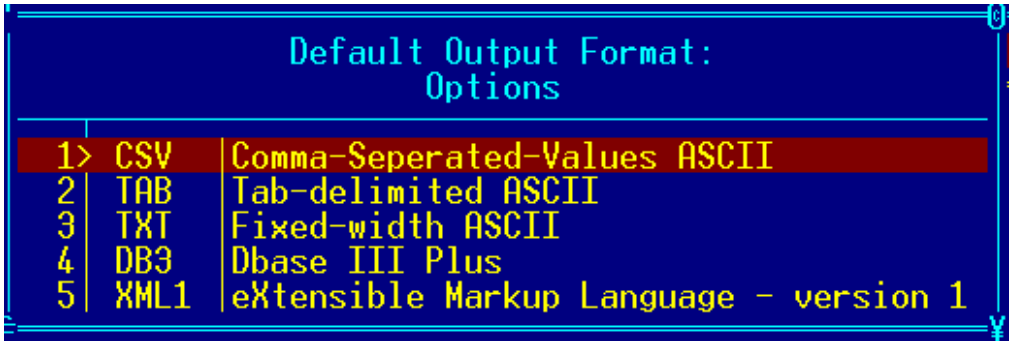
Sysprog Password

- Enter the password for the Revelation "SYSPROG" account (if any)
- If this field is not valid, xPort will be unable to obtain the last update date and the physical size of a file for data analysis functions.

Default Output Directory

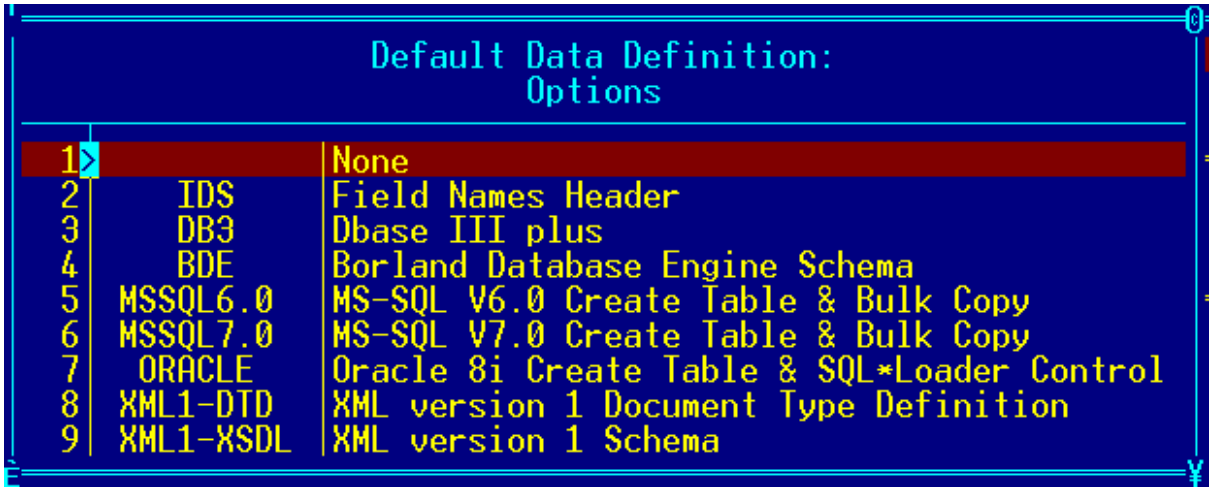
- All export data will be written to this path name except when the output file name of the criteria template contains a colon (":") in the second position or starts with a backslash ("\").
- **Create this subdirectory NOW**, otherwise or you will see some ugly error messages later.

Default Output Format



- This default value can be overridden when creating export criteria templates.

Default Data Definition



- This default value can be overridden when creating export criteria templates.

Export Text as Memo

Set this field to "N" if you do NOT want Revelation text fields (signified by "T" justification in dictionary) automatically exported as Memo (or “varchar”) items.

Date Format (Mask)

Any sequence of characters, where the following substitutions will be made when exporting any date field (not applicable when using DBF format);

YYYY - replaced by 4-digit year
YY - replaced by 2-digit year
MM - replaced by 2-digit month number
DD - replaced by 2-digit day

for example: “YYYY/MM/DD” will export 1999/12/31, always 10 positions long.

Time Format (Mask)

Any sequence of characters, where the following substitutions will be made when exporting any time field (as a character string).

HH - replaced by 2-digit time hours within the day (a.k.a. military time)
MM - replaced by 2-digit time minutes within the hour
SS - replaced by 2-digit time seconds within the minute.

for example: “HH*MM*SS” will export 25 seconds after 4:35 p.m. as the string “16*35*25”

Filter Data?

- Set this to "N" to suppress the filtering of any invalid high and low order characters that may be found in the database.

Delimiters and Substitutes

Revelation records are stored as variable length records using 4 delimiters to organize the data. These delimiters are translated using standard xPort values, unless specifically dictated by the Output format.

Prior to delimiter translation, xPort will check to see if the output delimiters already exist in the Revelation data, and if so, replace these occurrences with the Substitute character shown in the following table.

REVELATION	Default delimiter	CSV	DBF	Substitute
@FM – Field	Char #7 – tab	Comma	Dbase III+ spec.	Char #207
@VM – Value	Char #124 – vertical bar	Default	CRLF in Memo, otherwise default	Char #208
@SVM – Sub-Value	Char #94 – caret	Default	Default	Char #209
@TM – Text Line	Char #126 – tilde	Default	CRLF in Memo, otherwise default	Char #210
Other	Char #128 – C-cedile	Default	Default	Char #211

The Control screen allows you to over-ride the xPort default delimiter and substitution characters. Enter the single character or the ASCII character number (0 to 255) in each field to be changed.

Press F2 to view and/or select a character by ASCII number. To enter numbers as delimiters or substitutes, you must specify the corresponding ASCII character number.

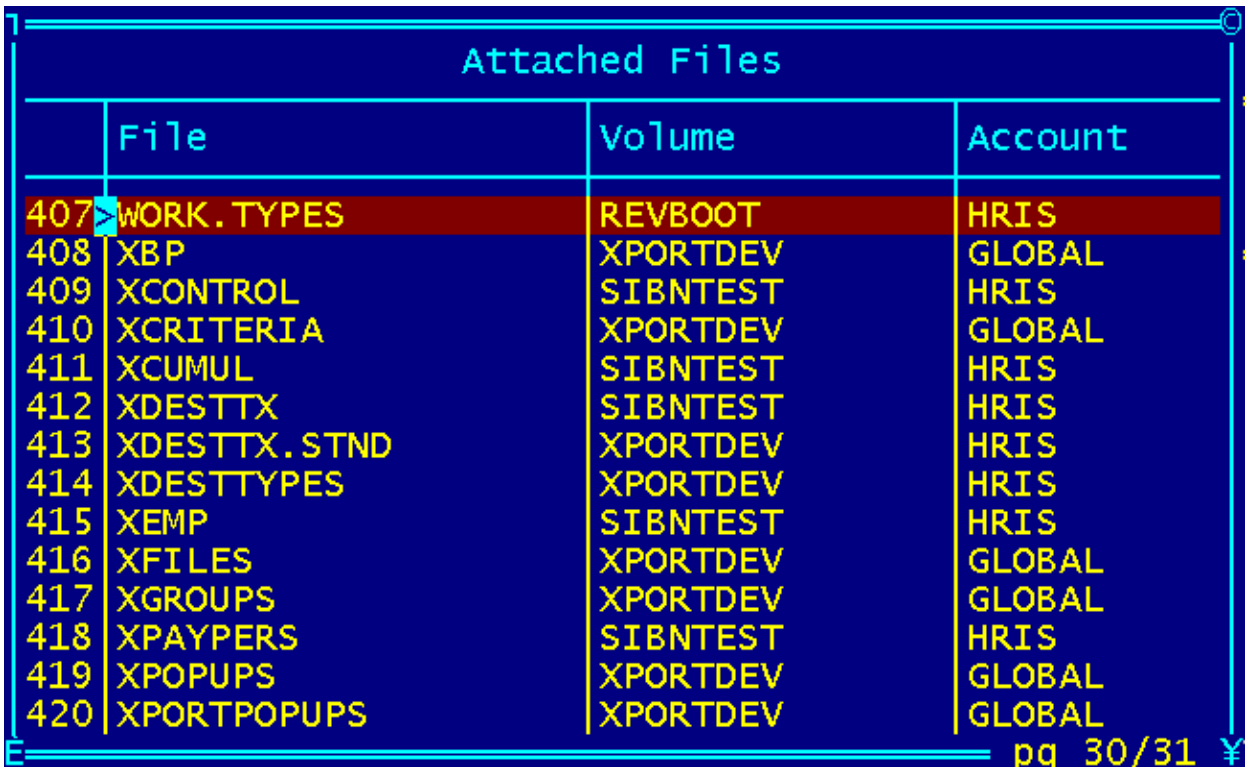
In CSV format, Field values are enclosed in double quotes, which may contain commas that are not treated as delimiters. XPort substitutes any double quotes found in Revelation data for single quotes prior to export.

Organizing your Project

Loading the Files Inventory

From the main XPT screen, select; SF4 Load Selected Files

A popup list of all available Revelation files is displayed by file name, for example;



- Press <Enter> to select/deselect each file to be loaded into inventory. Use the PageDown / PageUp keys to scroll though the list.
- Generally, you will only want to load files that belong to your application account and/or reside in data volumes. If you're unsure, load the file to review its statistics prior to making your evaluation.
- Press the F9 key to create the inventory file records. The following message will display as each file is loaded;

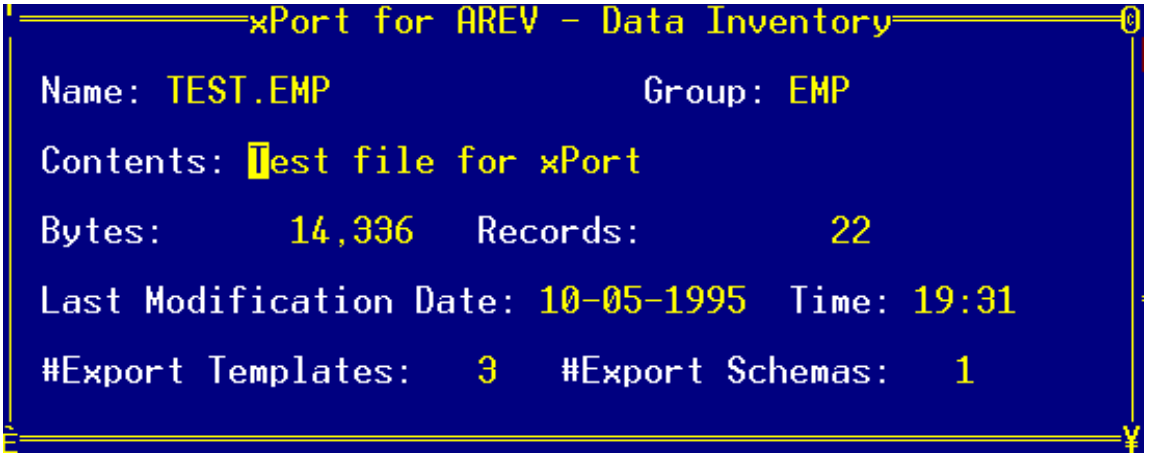
  ANALYSING "POSITIONS"

- Error messages will be generated if the Sysprog Password is missing or incorrect in the xPort Controls screen, in which case the records will be created without any statistics.
- Files can be added using the load function or by directly entering the file name on the Inventory screen and pressing F9 to save.

Preparing Files for Export

XPT Screen Contents

Use the **XPT** Data Inventory screen to organize your project;



Name: The Revelation file name.

Group[1]**:** Allows you organize files for export.
Initially loaded with the file's application*volume.
Use AF8 |Define Application Groups to create new values.

Contents[1]: Enter descriptive information about the file as documentation.

Bytes[2]**:** The total DOS file space allocated.

Records[2]**:** The number of Revelation records in the file.

Last Modification Date/Time[2]: From the DOS Directory

#Export Templates: The number of export file (criteria records) that you have created for this file.

#Export Schemas: The number of export schemas (XML record layouts) that you have created for this file.

[1] Filled in by the Files Inventory Load.

[2] Filled in by the Files Inventory Load and refreshed by the "Update File Statistics" function.

Update File Statistics

To update statistical information for all existing files based on current status, use SF5 |Update ALL File Statistics. If error messages are displayed, ensure that the Sysprog password is correctly entered in the xPort Controls screen.

Reload xPort Indexes

The xPort criteria templates and schemas associated with a given Revelation file are stored in internal indexes. Select AF3 |Reload xPort Indexes if the "#Export Templates" or "#Export Schemas" above is inaccurate. This function is also useful if the "Define Export Criteria" or "Define Export Schema" browse lists (see following sections) don't load properly.

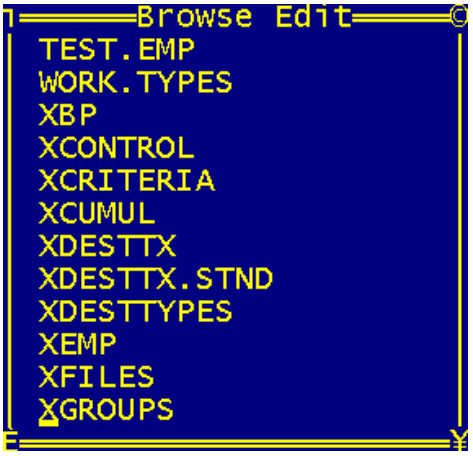
Browsing with Query

Use Revelation's Query or Select functions in XPT to browse through the files loaded in Inventory.

To activate Query, enter the "\" character in the name e.g. Name: \ then press F9.

A simple Query would be to enter the literal "BY" in the field you wish to sort by e.g.: Name: BY then press F9 to execute the Query. You can also enter search values, e.g. Group: BENEFITS will select only files that you have placed in the "Benefits" group (Note: search values are case-sensitive). You can use any number of sort fields (using "BY1", "BY2"…) and search values as you desire.

A browse list is active when the keyword "Browse" appears in a status line at the bottom of the screen. Press Alt-I to view a list of the current Browse Keys (Press F9 to close the Window):



To view successive records from the Browse list in the XPT Data Inventory Screen, enter the following control keys while the list is active;

Alt-F = display the next record (Forward)
Alt-B = display the previous record (Back)

To clear the screen while a record is being displayed, press F8.

For more information on Query, press F1 after activating Query (using "\" in the Name).

For more information on Browsing, press Ctrl-F9 from the XPT screen.

Analysing File Content and Structure

There are a series of function keys available from XPT. Enter the file name or use the Browse functions to retrieve the file information before using the Dictionary functions.

List Files Inventory

For an alpha list of all files defined in inventory, specify SF8 | Show Files Report. Enter the Alt-P command while the list is displayed on the screen to print to the printer.

View File Dictionary

Use SF7 | View File Dictionary to page through a popup list of the current file's dictionary. Refer to the following section for a description of this list.

Show Dictionary Report

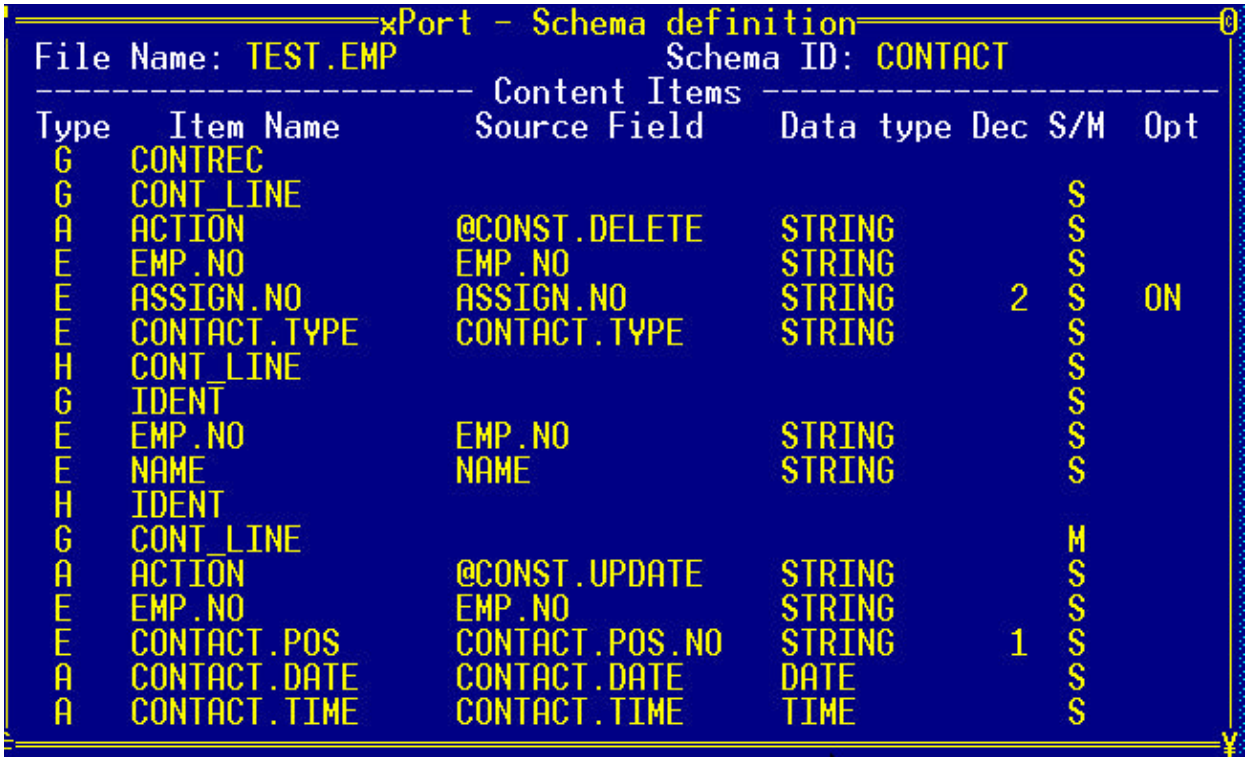
To see a formatted report of the current file's dictionary, request SF9 | Show Dictionary Report. Enter the Alt-P command while the report is displayed on the screen to print to the printer.

Defining Export Schemas

Select SF2 | Define xPort Schema from XPT (after identifying the file name) to create and maintain schema definitions for use with XML exports only.

Any existing schemas for the indicated file name will automatically be loaded as a Browse List. Refer the previous section entitled “Browsing with Query” for AREV browse commands.

Schema Screen Contents



File Name: The name of the AREV (source) file.

Schema ID: Main identifier of the xPort schema. This field becomes the XML Document Type and the name of the Root element for the XML output..

Content Items:
Every content line represents an XML output element or attribute. The first and last lines always represent the start and end tags of the record element.

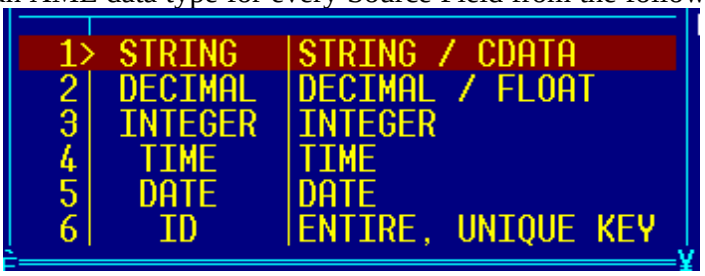
Item Type: “G” = start tag for a Group
“H” = end tag for aGroup
“E” = Field content element
“A” = attribute of the prior Group or Field Element

Item Name: Every item must have a valid XML name which is used to identify the Element or Attribute on output. Press F2 to select from the file dictionary.

Defining Export Schemas (Continued)

Source Field: Attribute and Element items are tied to a Source field, normally a Revelation Dictionary item. Group items do not have content (source items), but may have attributes associated to them on the following lines.

Data Type: Select an XML data type for every Source Field from the following options;



Dec: Defines the number of decimals to be output when the value is numeric.

Sng/Mult: Indicates whether this item is to be exported as a single or as multiple elements. When a group is defined as multi-element, then it will be output once for every set of Revelation values within that group. When a single element is defined as a multiple, one element will be exported for every value found.

This code is compared to the Revelation dictionary definition to be output as follows;

i. If the element is single, then the entire Revelation value will be exported (with delimiters). This is how AREV multi-values are exported as a text/memo field,
ii. If the element is defined as multiple (or inside a multiple group) and the AREV value is defined as MULTIPLE, then the exported element or attribute value is extracted using the INDEX counter,
iii. If the element is defined inside as a multiple group and the AREV value is defined as SINGLE, then the single element or attribute value is exported (repeated) for every occurrence
iv. If a single-valued AREV field is exported as a standalone multi-element, it will only be exported once.
v. Multiple elements will only repeat when multiple “F”(Field) AREV dictionary values are found. “S” (Symbolic) values will only repeat for the number of associated “F” values found in the same element group.

There are 3 multi-value levels available;

i. Record – repeat once per record found
ii. Value – repeat once for every Revelation value found
iii. Sub-Value – repeat once for every Revelation sub-value found

Opt: “ON” = output element even if no value (null) is present.

Schema Definition Function Keys

Press F6 to view available auxiliary functions;

Use Shift-F1 to fill an empty template with Revelation fields, then add Group elements and adjust elements or attributes to achieve desired results.

XML sample output

The above schema creates the following XML output;

```
<?xml version="1.0"?>
<!DOCTYPE CONTACT SYSTEM="CONTACT.DTD">

<!--     Created using "xPort" for Advanced Revelation - Version 2.93B   -->
<!--     by Exorsys International Inc. Mailto: xport@exorsys.com   -->

<CONTACT>

<CONTREC EMP.NO="1414">
<NAME>ABBOTT,GEORGE</NAME>
<CONT_LINE>
<CONTACT.POS CONTACT.DATE="19930604" CONTACT.TIME="16:21:00">4000</CONTACT.POS>
<CONTACT.PHONE>(514) 992-0123</CONTACT.PHONE>
<CONTACT.RESULT>POS. CONFIRMED</CONTACT.RESULT>
<CONTACT.TYPE>CO</CONTACT.TYPE>
</CONT_LINE>
<CONT_LINE>
<CONTACT.POS CONTACT.DATE="19930603" CONTACT.TIME="11:36:00">4000</CONTACT.POS>
<CONTACT.RESULT>REQ. ASSIGNMENT</CONTACT.RESULT>
<CONTACT.TYPE>CR</CONTACT.TYPE>
</CONT_LINE>
<CONT_LINE>
<CONTACT.POS CONTACT.DATE="19930601" CONTACT.TIME="08:45:00">4000</CONTACT.POS>
<CONTACT.PHONE>766-8291</CONTACT.PHONE>
<CONTACT.RESULT>WILL CALL BACK</CONTACT.RESULT>
<CONTACT.TYPE>CO</CONTACT.TYPE>
</CONT_LINE>
<ASSIGN.NO>1414</ASSIGN.NO>
</CONTREC>

<CONTREC EMP.NO="1081">
<NAME>SMITH,BARNEY</NAME>
<CONT_LINE>
<CONTACT.POS CONTACT.DATE="19950511" CONTACT.TIME="21:12:51">4000</CONTACT.POS>
<CONTACT.TYPE>CR</CONTACT.TYPE>
</CONT_LINE>
<ASSIGN.NO>1081</ASSIGN.NO>
<ASSIGN.NO>1131</ASSIGN.NO>
<ASSIGN.NO>6666</ASSIGN.NO>
</CONTREC>
```

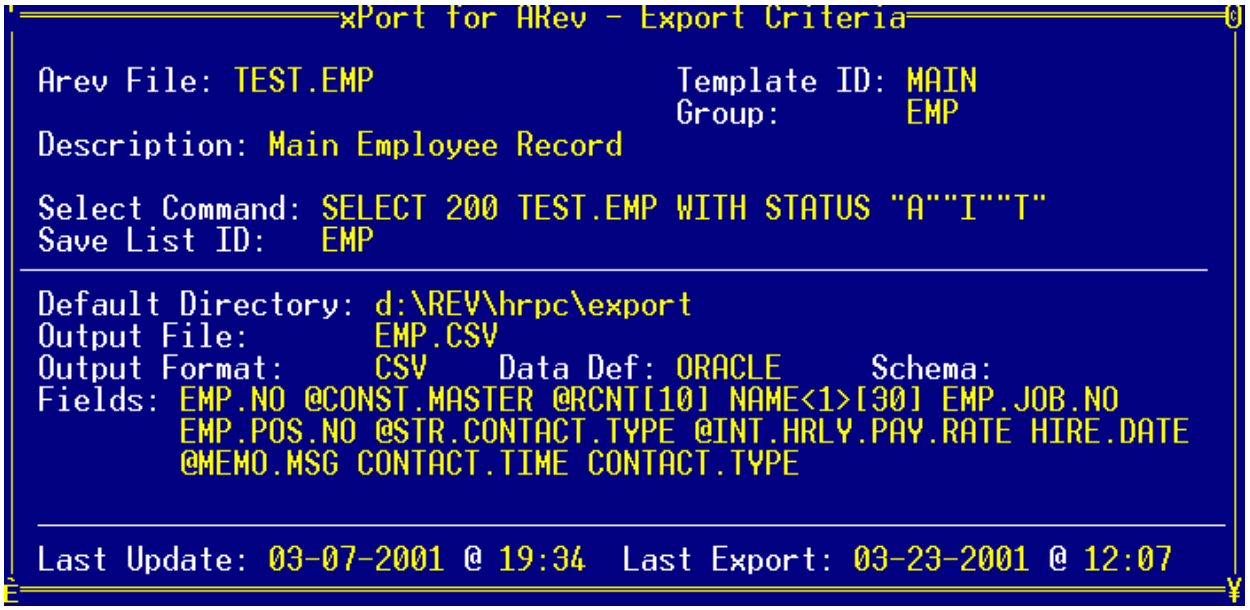
```
</CONTACT>
```

Defining Export Criteria

Specify the Revelation file name (optional) that you wish to export in XPT, then select SF1 |Define Export Criteria to define xPort templates.

Any existing templates for the indicated file name will automatically be loaded as a Browse List. Refer the previous section entitled “Browsing with Query” for AREV browse commands.

Criteria Screen Contents



Arev File: The name of the source file.

Template ID: The identifier you chose for the xPort template.

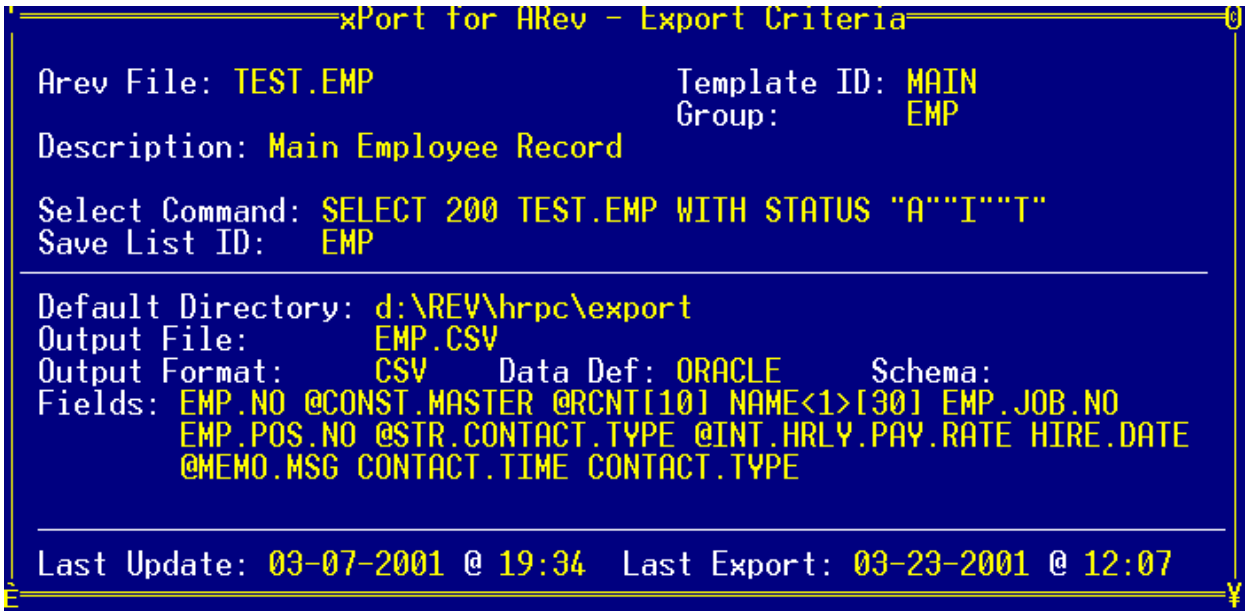
Group: The application group defines the primary sort order when selecting templates from xPort popup lists and when printing control reports. Defaults to the value from the XPT screen, where groups new groups can be created.

Description: Information displayed functions are acting on the template.

Select Command: Optional R/List statement which can be used to filter and/or sort input records. Refer to AREV Reference manual for available options. Is no select command nor Save List ID is specified, then all records will be exported in physical order. XPort evaluation software is limited to 50 input records.

The above example selects a maximum of 200 records from the TEST.EMP file having a status code of “A”,“I” or “T”.

Criteria Screen Contents - Continued



Save List ID: Indicates that the results from Select Command is to be saved for later use, **OR**, when the select command is left blank, identifies a previously saved key list to be retrieved.

Default Directory: displays the output DOS path name. Use xPort Control screen to set/modify.

Output File: Output file name. The Default Directory will also be used, except when Output File contains a colon (":") in the second position or starts with a backslash ("\").

Output Format: Press F2 for available options. See xPort Controls section for details.

Data Def: Press F2 for available options. See xPort Controls section for details.

Schema: Specifies which schema definition is to be used to create an XML output files. Press F2 to see options. Use the Shift-F2 function key from XPT to create schemas.

Fields: Free-form text of field names and xPort parameters. Press F2 for a list of field names. See the next section for details on Export Fields. Leave blank with XML output.

Last Update: Date and time this template was last modified.

Last Export: Date and time this template was last used to export data.

Press F9 to save the template.

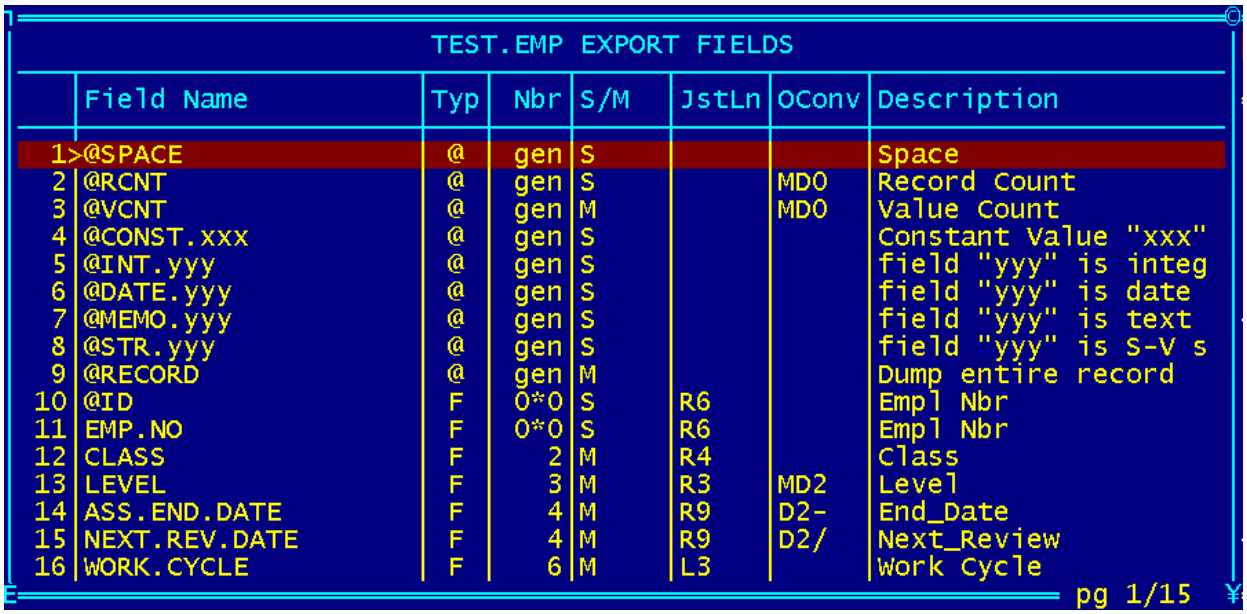
Press F6 to view available function keys.

Export Fields

Popup List

Press F2 while the cursor is positioned at the **Fields** prompt of the Criteria Screen to view the list of available export fields. The list starts with generated xPort fields, followed by physically stored fields and ending with calculated fields. Use the PageDown and PageUp keys to scroll through pages.

The Enter key will select or de-select the highlighted field line. When you have selected all fields you which to add, press F9 to save your selections to the Criteria Template record in the order you selected them. If there already were some fields selected prior to displaying this list, your new selections will be added to the end.



TEST.EMP EXPORT FIELDS

	Field Name	Typ	Nbr	S/M	JstLn	OConv	Description
1>	@SPACE	@	gen	S			Space
2	@RCNT	@	gen	S		MD0	Record Count
3	@VCNT	@	gen	M		MD0	Value Count
4	@CONST.xxx	@	gen	S			Constant Value "xxx"
5	@INT.yyy	@	gen	S			field "yyy" is integ
6	@DATE.yyy	@	gen	S			field "yyy" is date
7	@MEMO.yyy	@	gen	S			field "yyy" is text
8	@STR.yyy	@	gen	S			field "yyy" is S-V s
9	@RECORD	@	gen	M			Dump entire record
10	@ID	F	0*0	S	R6		Empl Nbr
11	EMP.NO	F	0*0	S	R6		Empl Nbr
12	CLASS	F	2	M	R4		Class
13	LEVEL	F	3	M	R3	MD2	Level
14	ASS.END.DATE	F	4	M	R9	D2-	End_Date
15	NEXT.REV.DATE	F	4	M	R9	D2/	Next_Review
16	WORK.CYCLE	F	6	M	L3		Work Cycle

pg 1/15

The field selection popup columns are:

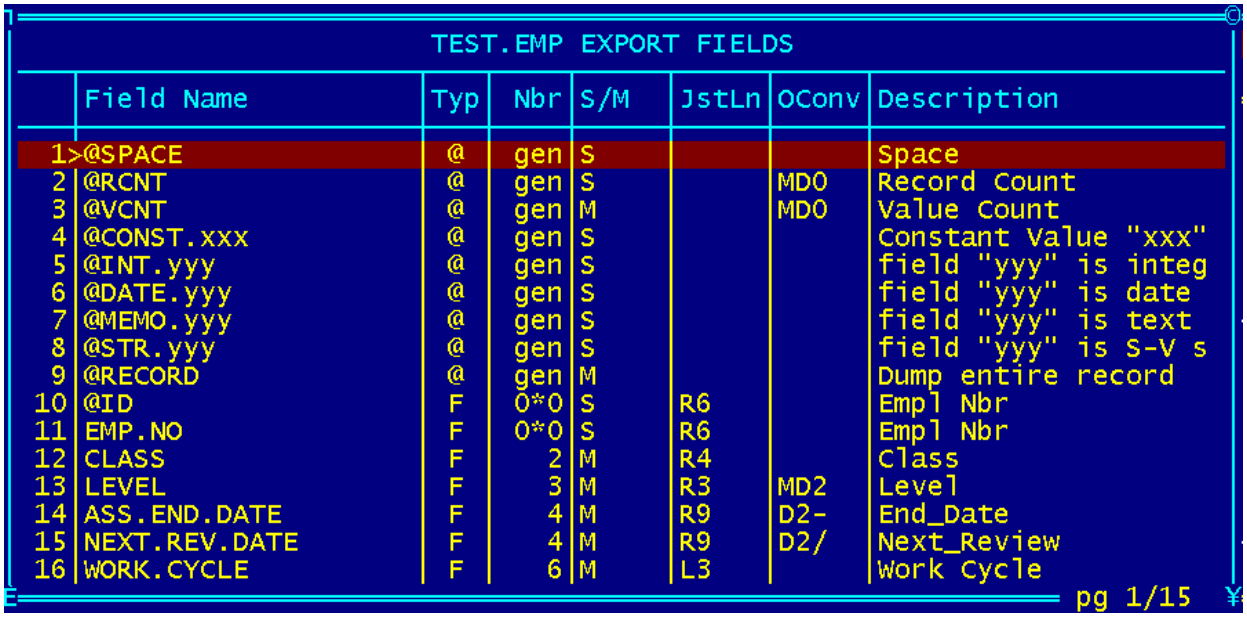
Field Name: The name of the export field.

Type: The field value is derived from;
- "@" generated or manipulated by xPort (see following section for details),
- "F" physically stored in this file,
- "S" calculated (symbolic) result from the file dictionary.

Nbr: The stored (physical) field number for the file;
- "0*n" means that this field is part "n" of the unique Revelation file key,
- "0*0" means that this field represents the entire key.

S/M: Single-value / Multi-value indicator;
- "S" There is only one (single) value per record expected for this field,
- "M" There could be any number of delimited values for this field in a record.

Field Selection Popup Columns – Continued



TEST.EMP EXPORT FIELDS

	Field Name	Typ	Nbr	S/M	JstLn	OConv	Description
1>	@SPACE	@	gen	S			Space
2	@RCNT	@	gen	S		MD0	Record Count
3	@VCNT	@	gen	M		MD0	Value Count
4	@CONST.xxx	@	gen	S			Constant Value "xxx"
5	@INT.yyy	@	gen	S			field "yyy" is integ
6	@DATE.yyy	@	gen	S			field "yyy" is date
7	@MEMO.yyy	@	gen	S			field "yyy" is text
8	@STR.yyy	@	gen	S			field "yyy" is S-V s
9	@RECORD	@	gen	M			Dump entire record
10	@ID	F	0*0	S	R6		Empl Nbr
11	EMP.NO	F	0*0	S	R6		Empl Nbr
12	CLASS	F	2	M	R4		Class
13	LEVEL	F	3	M	R3	MD2	Level
14	ASS.END.DATE	F	4	M	R9	D2-	End_Date
15	NEXT.REV.DATE	F	4	M	R9	D2/	Next_Review
16	WORK.CYCLE	F	6	M	L3		Work Cycle

pg 1/15

JstLn: The output justification and length defined for the field.
"R" = right-justified,
"L" = left-justified,
"T" = text (word-wrapped) or "memo" field
nnn = the width of the field when printed. Note that all Revelation data is stored as variable (and unlimited) length characters using Pick standard delimiters.

OConv: The output conversion formatting defined for the field. XPort only recognizes conversion strings that start with the following characters;
"MD0" = integer field,
"MDn" = floating number with "n" decimals,
"D" = date,
"MT" = time.

Description: The dictionary description / report heading defined for the field.

Supplementary Fields

These fields can be added to the xPort criteria template to facilitate subsequent importation to the destination system or to overcome source dictionary problems.

@SPACE = insert one space

@RCNT = insert 7-digit source record number

@VCNT = insert 3-digit multi-value number

@CONST.xxx = insert constant value "xxx" (any length)

@ID = insert the entire record key using "*" to delimiteach part

@RECORD = dump the entire data record using delimiters specified in xPort controls.

XFnnn = export field number “nnn” as a multi-valued 20-character field, nnn must be between 1 and 200.

Field Qualifiers

The following prefixes can be added to file dictionary fields (separated by a period) to specify how xPort should format the exported field values;

@INT = integer value

@DATE = date value

@TIME = time value

@MEMO = multi-line text

@STR = continuous string delimited as per xPort controls.

The following parameters may be added following any field name (dictionary or xPort supplementary) to further refine the export;

<nn> = export only value “nn” from the field (this allows you to select address line nn from a multi-value address field, for example)

[ll] = set output field width to “ll”, otherwise the dictionary or default length will be used. XAudit can set this parameter based on actual database contents.

Note: <nn> must precede [ll] when both are used for field

Criteria Example

```
Output File:        EMP.DBF
Output Format:      DB3      Data Definition:
Fields: EMP.NO @CONST.MASTER @RCNT[10] NAME<1>[30] EMP.JOB.NO
        EMP.POS.NO @STR.CONTACT.TYPE @INT.HRLY.PAY.RATE HIRE.DATE
        @MEMO.MSG
```

The above export criteria would be interpreted as;

Create a Dbase3 format file named “EMP” in the default export directory containing the following 10 columns;

2) The employee number using the dictionary format and specifications,
3) The string constant “MASTER”,
4) The input record count, 10 digits long,
5) The first value (line) of the “NAME” field, 30 characters long,
6) The employee’s job number using the dictionary format and specifications,
7) The employee’s position number using the dictionary format and specifications,
8) All Contact Type Values for the employee as a single delimited string,
9) The Hourly Pay Rate expressed as a integer,
10) The employee’s hire date,
11) The MSG field as a memo field, where each value is a separate line.

Normalization of Multi-Values

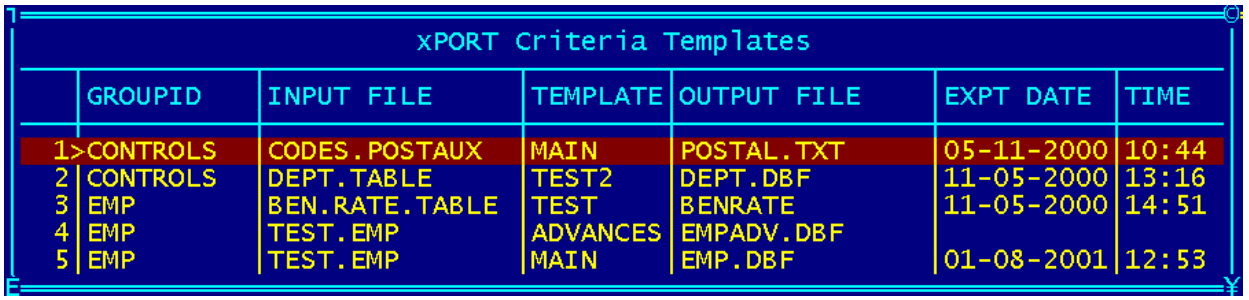
At least one output row will be produced for each input record. Every input field that is defined as multi-valued could cause xPort to write extra records to normalize (or “flatten”) its contents. If you specify “@MEMO” or “@STR” qualifiers or the field is defined as having “Text” justification in the dictionary, then these fields will not create additional records.

In the above example, one record would be created for every position the employee occupies, assuming the field EMP.POS.NO is defined as multi-valued. The contents of all single-valued fields would be duplicated on each output record.

Normalization is not applicable to XML output.

XPORTing your data

To export data by interactively choosing templates from a list, at TCL, enter: "**XPORT**".



xPORT Criteria Templates

	GROUPID	INPUT FILE	TEMPLATE	OUTPUT FILE	EXPT DATE	TIME
1>	CONTROLS	CODES.POSTAUX	MAIN	POSTAL.TXT	05-11-2000	10:44
2	CONTROLS	DEPT.TABLE	TEST2	DEPT.DBF	11-05-2000	13:16
3	EMP	BEN.RATE.TABLE	TEST	BENRATE	11-05-2000	14:51
4	EMP	TEST.EMP	ADVANCES	EMPADV.DBF		
5	EMP	TEST.EMP	MAIN	EMP.DBF	01-08-2001	12:53

- Pressing the <Enter> key to select (or de-select) the templates you need,

- Press F9 to start xPorting.

To export data in batch mode from the TCL command line, execute;

"**XPORT filename {template1}... {template*nn*}**"

- the selected template(s) for "filename" will be executed,

- if "filename" is specfied with no templates, then all exports for that file will be executed.

Output File Naming Conventions

Export data will be placed in the location indicated on each xPort Criteria Template.

Data definitions will be placed in the same directory and file name as the export data, with a different file extension depending on the data defintion type. SQL statements have a suffix of ".SQL", MS-SQL bulk loader ends with ".FMT", Oracle SQL*Loader control files end with ".CTL".

XML DTD files follow the standard file naming convention of SchemaName.DTD, where SchemaName is the Document Type derived from the SCHEMA ID you assign in the xPort Schema definition screen.

Transferring xPort definitions between databases

1) From the main XPT screen on the source database, select;

to copy the files inventory, groups, schemas and export criteria you have defined from the current database to
the “xPort” directory (or wherever the xPort software resides),

2) Copy the contents of the “xPort” directory to another copy of your database using Windows Explorer (or other means),

3) Install xPort using the standard procedures (see “install” section)

4) From the main XPT screen on the target database, select;

to copy the files inventory, groups, schemas, and export criteria you from the “xPort” directory (or wherever the
xPort software resides) to the current database.

Complementary Tools

XSEETHRU - Window database links analysis tool

* Display the Revelation window you wish to analyse on the screen,
* Enter Alt-M to bring up the macro window
* Use F2 to activate the "xPort" Macro
* Enter Alt-5 to see through the Window

REVDOC - List of internal Revelation subroutines

* Explains the use of all common RPT routines for help in debugging
* at TCL: “EDIT XPORTBP REVDOC” to view the contents

XAUDIT - Verify and document your data and dictionary

* at TCL: "XAUDIT {/ADJUST} (/NOINTEG}"
  where;
  /ADJUST = option to set export field lengths to the largest actual values found (updates the xPort template only)
  /NOINTEG = option to suppress all detail integrity checking on page 1 (i.e. provides only the record layout and data descriptions)
  - select the audits you wish to perform in the desired order by pressing the <Enter> key,
  - Press F9 to start auditting

* The audit report is written to a text file using the same path and file name as the export output file for the template, but with an ".XPA" extension.

* The auditor reports all data records which contain invalid characters and fields which contain data that does not conform to the dictionary definition

* All data found in fields which are not defined in the Revelation dictionary for the file will be highlighted.

* A full record layout for the output record is produced, including statistics on the actual average and maximum lengths found for each field.

XNORMAL - Analyse your database contents for normalization

* at TCL: "**XNORMAL**"
  - select the analyses you wish to perform in the desired order by pressing the <Enter> key,
  - Press F9 to start analyzing

* The normalization report is written to a text file using the same path and file name as the export output file for the template, but with an ".XPN" extension.

Tips and Techniques

Exporting in Dbase 3 format

1. Run XAUDIT with /ADJUST option to expand field sizes before exporting
2. Minimize use of Memo fields

Transferring to MS-Access

1. Use DB3 Format,
2. Set Automatic Key recognition off in Access,
3. Import using Get External data / Import data – select file type = "Dbase 3".

Transferring to MS-Excel

1. Export using CSV format with IDS data definition.
2. Use Data/Get Text File to create a Range
3. Use Lookup to do key matching

Transferring to MS-SQL

1. Export using TAB format with MSSQL6.0 or 7.0 data definition,
2. Customize ".FMT" and ".CTL" files to taste,
3. Set Tablock and disable logging on large MS-SQL data load,
4. Run create table script,
5. Run bulk load.

Transferring to ORACLE

1. Export using CSV format with ORACLE data definition,
2. Adjust xPort's .SQL Create Table script primary key definition when normalizing multi-values then run,
3. Run SQL*loader with generated .CTL file, use Direct Path Loading with the "unrecoverable" option for best performance.

Version History

3.2

- Decimal scaling and null element option added to schemas

3.0

- Schema defintion maintenance added to XPT.
- XML file export format & DTD output added,
- Oracle scripts and control files enhanced,
- High-performance (no select) physical sequence export added.

2.6

- Time Format added,
- Export data type controls added to export field criteria,
- PDF format Handbook created,
- Data delimiters and substitutions specification added to system controls.

2.5

- xAudit field size adjustments fixed,
- AREV 3.0 syntax restrictions addressed,
- Command line ("batch" mode) export select added and command line options changed,
- Xpt data entry screens streamlined.

2.4

- xPort definitions transfer added,
- xNormal normalization analysis added,
- MS-SQL script format adjusted for versions 6.0 and 7.0,
- Custom dictionary field formats (enclosed in [square brackets]) are ignored,
- General-purpose XF1 to XF200 dictionary items added to export undefined fields,
- Special RECORD export field dumps entire AREV records to CSV/TAB format.

2.3

- Field value extract option added,
- ARev 3 install problem corrected,
- NOINTEG option and data descriptions added to xAudit,
- Group sequencing added to xPort criteria,
- Oracle script and control file output added,
- Length verification added for key fields and symbolics,
- No limit on the consecutive number of exports.

2.2

- Number of records processed during evaluation increased from 10 to 50,
- Tab-delimited format added to ASCII export,
- Generation of MS-SQL create-table scripts and BulkCopy .FMT files,
- Formal release of the DB3 output format.

2.1

- xAudit database verification and statistics added.

2.0

- New User Interface: xMiner, xPort Criteria, Control Parameters and xPort.
- DB3 output format beta version added
- Field length override added
- Added @MEMO. fields
- Added Data filtering
- ARev version 3 compatibility issues addressed

.