ORACLE

Oracle Documaker

Working with XML Files

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Chapter 1

Introduction

Full support for XML in Documaker products was introduced in version 10.2. This support provides a variety of features for...

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This chapter includes information on these topics:

NOTE: The ability to work with XML files is included in Oracle Documaker Desktop. In prior releases, this was an add-on capability PPS users could purchase separately. If you are a PPS customer and you would like to work with XML file, contact your sales representative for information on upgrading to Oracle Documaker Desktop.

OVERVIEW

XML (Extensible Markup Language) is a simple, flexible, text format language used primarily for data exchange. It is a structured language containing a definition of the data as well as the data itself. Here are a couple of links you may find useful:

www.w3c.org/XML

www.w3.org/TR/xpath

Originally developed to meet the challenges of large-scale electronic publishing, XML is also playing an increasingly important role in the exchange of a wide variety of data on the web and elsewhere. An example XML file is shown below:

```
<?xml version="1.0" encoding="UTF-8"?>
<book isbn="0123456789">
     <title>
        Hound of the Baskervilles
     </title>
     <author>Arthur Conan Doyle</author>
     <character>
          <name>Sherlock Holmes</name>
          <friend-of>Dr Watson</friend-of>
          <since>1850-10-04</since>
          <qualification>extrovert genius</qualification>
     </character>
     <character>
          <name>Dr Watson</name>
          <friend-of>Inspector LeStrade</friend-of>
          <since>1866-08-22</since>
          <qualification>brash medic</qualification>
     </character>
</book>
```

Setting Up the XML Add-On

With the XML add-on, you can import and export XML files while using Documaker Workstation and you can send and receive XML messages. Setting up the new import and export capabilities is similar to setting up any import/export file format.

To import and export XML files in Documaker Workstation, you use these XML add-on functions:

Function	This function lets you...
WXMImportXML	Import data from an XML file into a form set.
WXMExportXML	Export data from a form set to an XML file.
WXMEntryHookExtXMLLoad	Send messages from the system to any type of message server.
WXMImportXMLArchive	Send messages from the system to any type of message server.

NOTE: The ability to work with XML files is included in Documaker Workstation, but *must be purchased separately* by PPS users. You must also have a Docupresentment license to use the messaging features in the WXMEntryHookExtXMLLoad and WXMImportXMLArchive functions because they call Docupresentment files.

To use the XML add-on, you must first set up the import, export, and messaging functions. If applicable, you then set up Docupresentment.

SETTING UP DOCUMAKER WORKSTATION

To use the import and export functions, you must also add this control group and options to your FSISYS.INI or FSIUSER.INI file:

```
< XML_Imp_Exp >
    Ext             = .xml
    File            = export
    Path            = c:\fap\mstrres\SAMPCO
    SuppressDlg     = No
    AppendedExport = No
```

Option	Description
Ext	(Optional) Enter the extension for the output files. The default is XML.)
File	(Optional) Enter a file name, such as XMLEXP. If you omit this option the system prompts the user to enter the file name.
Path	(Optional) Enter the path, such as \xmlfile. If you omit this option, the system defaults to the current directory.
SuppressDlg	(Optional) Enter Yes to suppress the File Selection window. The default is No.

Follow the instructions below to complete the import, export, and messaging setup.

Setting Up the XML Export Format

Follow these steps to set up the XML export format:

1. Open the FSISYS.INI file in the resource library for which you want to use export files. You can use any text editor to open this file.
2. Locate the ExportFormats control group. Most text editors have a find or search function you can use to quickly find this group heading. Then add the following line:

For this export format	Enter...
XML	**09=;XM;XML Export;WXMW32->WXMExportXML**

This assumes **09** is not already being used. Here is an example:

```
< ExportFormats >
    09=;XM;XML Export;WXMW32->WXMExportXML
```

Setting Up the XML Import Format

Follow these steps to set up the XML import format:

1. Open the FSISYS.INI file in the resource library for which you want to use export files. You can use any text editor to open this file.
2. Locate the ImportFormats control group. Most text editors have a find or search function you can use to quickly find this group heading. Then add the following line:

For this import format	Enter...
XML	**09=;XM;XML Import;WXMW32->WXMImportXML**

This assumes **09** is not already being used. Here is an example:

```
< ImportFormats >
    09=;XM;XML Import;WXMW32->WXMImportXML
```

Setting Up the XML Message Format

To send a message from Documaker Workstation to a message handling program such as IDS or MQSeries, you must add an option to either the ImportFormats or AFEProcedures control groups.

One example of sending and receiving a message from Documaker Workstation to a message handling program is to retrieve an archived record from Documaker Workstation via Docupresentment. You can do this two ways:

- Set it up as an import hook by adding the WXMImportXMLArchive function to ImportFormats control group.

  ```
  < ImportFormats >
      07=;XR;XML Import from IDS;WXMW32->WXMImportXMLArchive
  ```

  (This assumes *07* is not already being used.)

- Set it up as an entry hook by specifying the WXMEntryHookExtXMLLoad function as the parameter for EntryFormset option in the AFEProcedures control group.

  ```
  < AFEProcedures >
      EntryFormset = WXMW32->WXMEntryHookExtXMLLoad
  ```

SETTING UP DOCUPRESENTMENT

If you are using Docupresentment as the message server, you must also add the INI options shown below to let Documaker Workstation retrieve an archived record from Docupresentment and load data into a form set before any data is entered by a user.

The archived record is retrieved using the Key1, Key2 and KeyID entered on the New Form Set window. For this to happen, you must set up the following request type in the DOCSERV.INI file for Docupresentment:

```
< ReqType:GetXML>
    function = atcw32->ATCLogTransaction
    function = atcw32->ATCLoadAttachment
    function = atcw32->ATCUnloadAttachment
    function = dprw32->DPRSetConfig
    function = dprw32->DPRLocateOneRecord,Key1,Key2,KeyID
    function = dprw32->DPRRetrieveFormset
    function = dprw32->DPRPrint
    function = dprw32->DPRProcessTemplates
    function = atcw32->ATCSendFile, DOCC_XML, SENDBACKPAGE, TEXT
```

You can use any name for the archive library, as long as the same MRL name is used in Documaker Workstation.

You can set up this feature as an entry or import hook:

```
< AFEProcedures >
    EntryFormset = WXMOS2->WXMEntryHookExtXMLLoad
```

or

```
< ImportFormats >
    07=;XR;XML Import from IDS;WXMW32->WXMImportXMLArchive
```

If you set it up as an entry or import hook, you must also set up these INI options:

```
< XML_Imp_Exp >
    DSIUseNTUserID        =
    DSIVARS               =
    DSIIgnoreTimeoutError =
    DSIAttachedVarFile    =
    DSIImportLevel        =
    DSITimeout            =
    DSIReqType            =
    DSIRecordDFD          =
```

Option	Description
DSIUseNTUserID	(Optional) Set this option to Yes to use the NT user ID. The default is No. This gives you a way to pass the NT user ID in the queue instead of the normal DMWS ID.
DSIVARS	(Optional) Enter *variable*;*value*, where *variable* is the variable name and *value* is its value. This lets you identify a constant list of variables to be sent in the queue.
DSIIgnoreTimeoutError	(Optional) Enter Yes to continue processing if a timeout occurs. The default is No. This gives you a way to ignore a timeout when waiting on a return queue.

Option	Description
DSIAttachedVarFile	(Optional) The default is DOCC_XML. Set this option to the attachment name if it differs from DOCC_XML. This gives you a way to specify the variable name the XML file is attached to.
DSIImportLevel	(Optional) This option is typically used by programmers. Enter 2 if you want the hook to operate on the FAP_MSGOPEN level. Enter 3 if you want it to operate on the FAP_MSGRUN level. The default is 2.
DSITimeout	(Optional) Enter the number of milliseconds you want for the time-out. The default is 60000 milliseconds or 60 seconds.
DSIReqType	(Optional) Enter the name of the request type of the message placed in the queue. The default is GETXML.
DSIRecordDFD	(Optional) Enter the name of a DFD file. The system tries to match variable fields sent in the request to field values in this DFD file. It then attaches the DFD record to the end of the message.

If the request for an XML file comes back with an error, as opposed to a time-out, IDS displays an error message.

Using the Parser

The system uses the Expat XML parser, which was originally developed for Netscape. It is a third-party library. You cannot plug in your own parser. Here are some links if you want more information on Expat:

http://expat.sourceforge.net/

http://sourceforge.net/projects/expat/

The Expat parser supports these encodings:

- UTF-8
- ISO-8859-1
- US-ASCII

You should be able to use any of these encodings to pass information to Docupresentment, DSI APIs, or Documaker. Docupresentment sends back UTF-8.

Byte order marks

Some XML editors and software add the *Byte Order Mark* (BOM) to the beginning of the XML file, starting at offset 1. For example, if your XML file has UTF-8 encoding, the first three bytes of your XML file would contain...

```
EE BB BF
```

If, however, you open this file in a browser, you will not see this information. Furthermore, not all text editors display these values file. One sure way to find out if your XML file includes the BOM is to view the file using the Type DOS command.

The GenData program can handle XML files which include the BOM, but you must allow for this offset went you define the SeachMask option. Here are some examples:

If the BOM *is* included for UTF-8, define the SearchMask option as shown here:

```
< ExtractKeyField >
    SeachMask = 4,<?xml
```

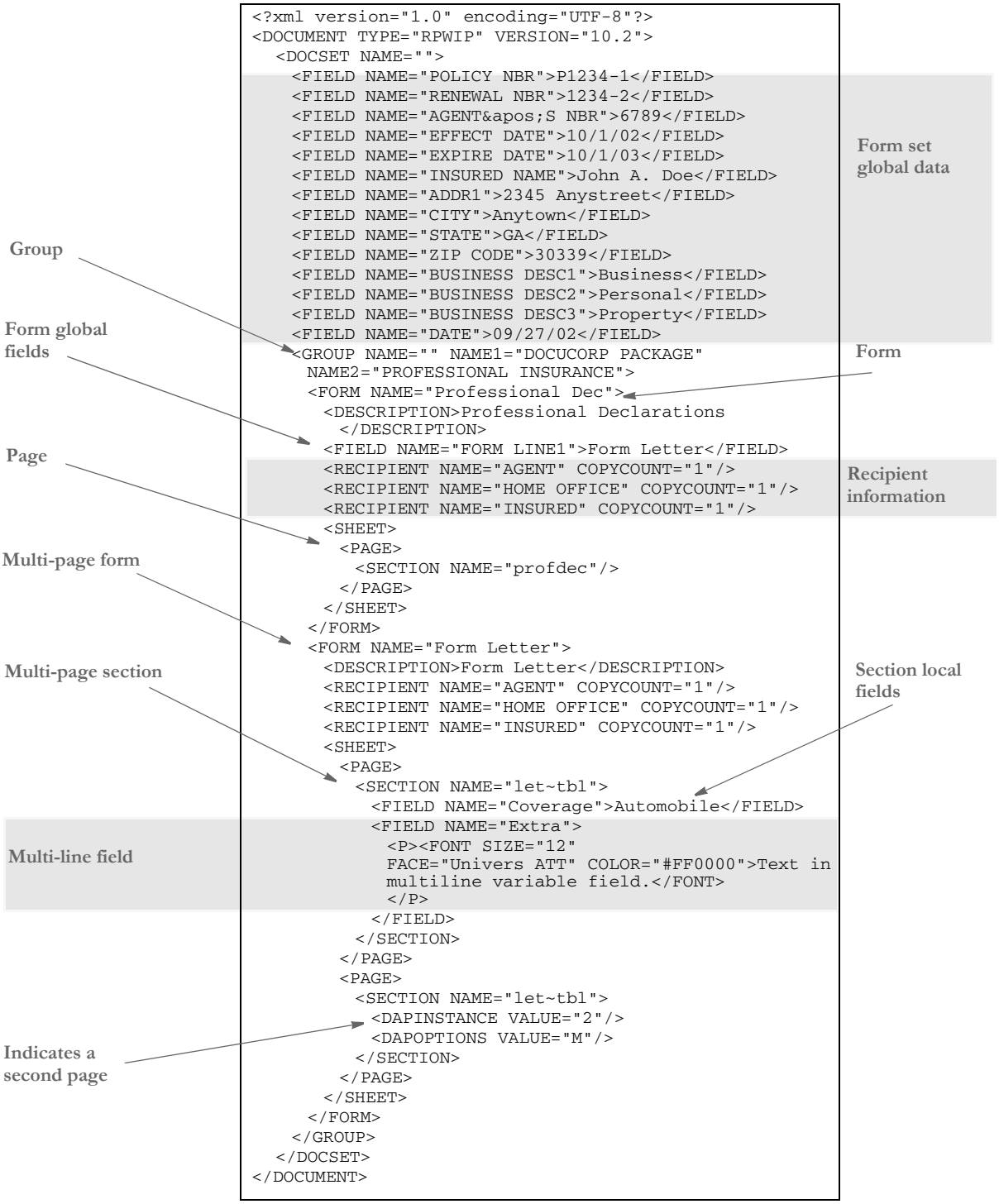
If the BOM *is not* included, define the SearchMask option as shown here:

```
< ExtractKeyField >
    SeachMask = 1,<?xml
```

If you define the SearchMask option incorrectly, the GenData program will not create transaction trigger records.

XML File Format

Here is an example of the format of the XML file the system creates:




```
<?xml version="1.0" encoding="UTF-8"?>
<DOCUMENT TYPE="RPWIP" VERSION="10.2">
  <DOCSET NAME="">
    <FIELD NAME="POLICY NBR">P1234-1</FIELD>
    <FIELD NAME="RENEWAL NBR">1234-2</FIELD>
    <FIELD NAME="AGENT&apos;S NBR">6789</FIELD>
    <FIELD NAME="EFFECT DATE">10/1/02</FIELD>
    <FIELD NAME="EXPIRE DATE">10/1/03</FIELD>
    <FIELD NAME="INSURED NAME">John A. Doe</FIELD>
    <FIELD NAME="ADDR1">2345 Anystreet</FIELD>
    <FIELD NAME="CITY">Anytown</FIELD>
    <FIELD NAME="STATE">GA</FIELD>
    <FIELD NAME="ZIP CODE">30339</FIELD>
    <FIELD NAME="BUSINESS DESC1">Business</FIELD>
    <FIELD NAME="BUSINESS DESC2">Personal</FIELD>
    <FIELD NAME="BUSINESS DESC3">Property</FIELD>
    <FIELD NAME="DATE">09/27/02</FIELD>
    <GROUP NAME="" NAME1="DOCUCORP PACKAGE"
     NAME2="PROFESSIONAL INSURANCE">
     <FORM NAME="Professional Dec">
      <DESCRIPTION>Professional Declarations
       </DESCRIPTION>
      <FIELD NAME="FORM LINE1">Form Letter</FIELD>
      <RECIPIENT NAME="AGENT" COPYCOUNT="1"/>
      <RECIPIENT NAME="HOME OFFICE" COPYCOUNT="1"/>
      <RECIPIENT NAME="INSURED" COPYCOUNT="1"/>
      <SHEET>
       <PAGE>
        <SECTION NAME="profdec"/>
       </PAGE>
      </SHEET>
     </FORM>
     <FORM NAME="Form Letter">
      <DESCRIPTION>Form Letter</DESCRIPTION>
      <RECIPIENT NAME="AGENT" COPYCOUNT="1"/>
      <RECIPIENT NAME="HOME OFFICE" COPYCOUNT="1"/>
      <RECIPIENT NAME="INSURED" COPYCOUNT="1"/>
      <SHEET>
       <PAGE>
        <SECTION NAME="let~tbl">
         <FIELD NAME="Coverage">Automobile</FIELD>
         <FIELD NAME="Extra">
          <P><FONT SIZE="12"
          FACE="Univers ATT" COLOR="#FF0000">Text in
          multiline variable field.</FONT>
          </P>
         </FIELD>
        </SECTION>
       </PAGE>
       <PAGE>
        <SECTION NAME="let~tbl">
         <DAPINSTANCE VALUE="2"/>
         <DAPOPTIONS VALUE="M"/>
        </SECTION>
       </PAGE>
      </SHEET>
     </FORM>
    </GROUP>
  </DOCSET>
</DOCUMENT>
```

Keep in mind...

- DAPOPTIONS should have a value of *M* for multi-page sections (FAP files). There are other section options, but only *M* is applicable in XML.

  Use DAPINSTANCE to provide a page number for multi-page sections. If the section does not span multiple pages, omit the DAPINSTANCE value.

- When you have multiple XML transactions within a single file, separate each transaction with a line feed. This is a requirement of Documaker software, not the XML parser.

- Although you do not have to include line feeds inside the XML for a transaction, we suggest you add a line feed after each element tag. This makes it easier to read the file and helps in debugging your XML. A message like

  ```
  Line 255, column 8, syntax is incorrect
  ```

  is easier to diagnose than

  ```
  Line 1, column 156780, syntax is incorrect.
  ```

Chapter 2

Importing and Exporting XML Files with Documaker Workstation

This chapter tells you how to set up your system to import and export XML files while using Documaker Workstation (PPS).

These topics are discussed:

Modifying INI Files

To import and export XML files into Documaker Workstation, you must make sure the following control group and options are in your FSISYS.INI file:

```
< XML_Imp_Exp >
    Ext             = .xml
    File            = export
    Path            = c:\fap\mstrres\SAMPCO
    SuppressDlg     = No
    AppendedExport = No
```

Option	Description
Ext	(Optional) Enter the extension for the output files. The default is XML.
File	(Optional) Enter a file name, such as *XMLEXP*. If you omit this option the system prompts you to enter the file name.
Path	(Optional) Enter the path, such as *\xmlfile*. If you omit this option, the system defaults to the current directory.
SuppressDlg	(Optional) Enter Yes to suppress the File Selection window. The default is No.
AppendedExport	Enter Yes to append the current exported transaction to the last one. The default is No.

Setting up the XML export format

Locate the ExportFormats control group and add this line under that control group:

```
< ExportFormats >
    09=;XM;XML Export;WXMW32->WXMExportXML;
```

NOTE: This example assumes that *09* is not already being used in this control group.

Setting up the XML import format

Locate the ImportFormats control group and add this line:

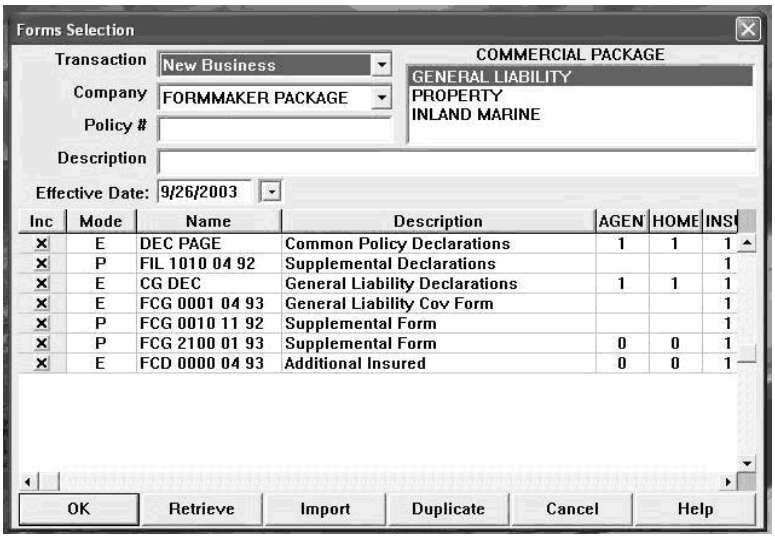
```
< ImportFormats >
    09=;XM;XML Import;WXMW32->WXMImportXML;
```

NOTE: This example assumes that *09* is not already being used in this control group.

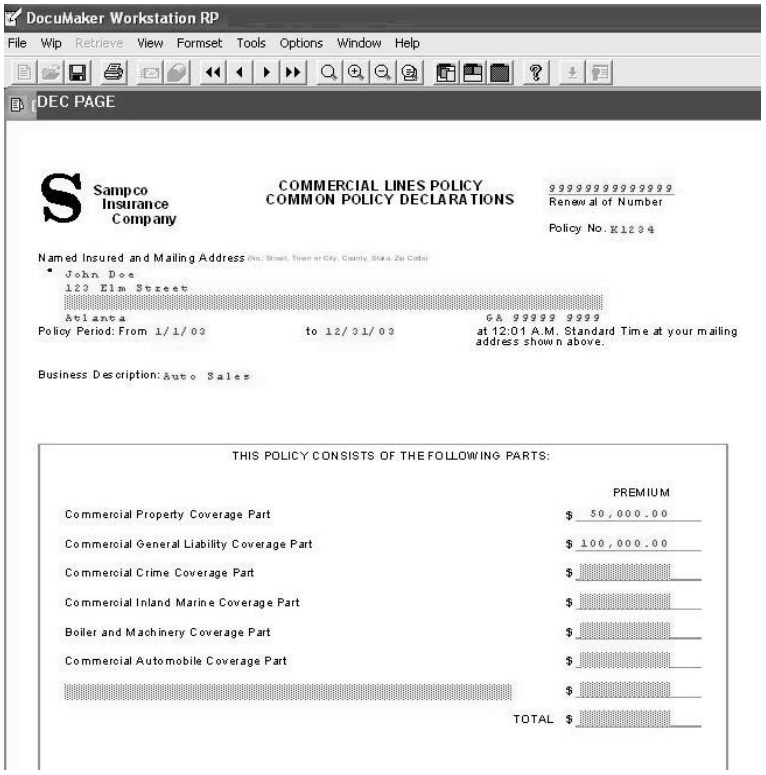
Creating an XML Export File

To create an XML export file, follow these steps:

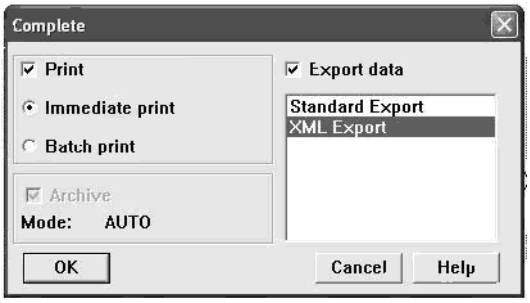
1. Start Documaker Workstation (PPS). Select the File, New option.
2. Complete the Form Selection window and press Ok.



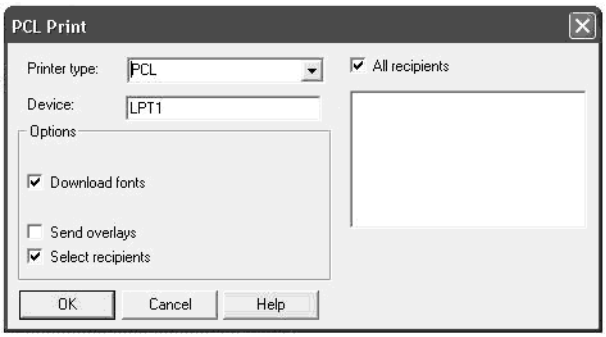
3. Enter data on the forms and complete the form set using the File, Complete option.



4. Next, check the Print and Export Data fields. Then click XML Export and Ok.



5 Print the form set.



6 Export the data to an XML file.

If the SuppressDlg option is set to No under the XML_Imp_Exp control group, the system displays this window:

The name that appears in the File Name field is the one you specified in the File option in the XML_Imp_Exp control group. If you left that option blank, enter a file name here.

Example Documaker XML File Format

The XML file created from Documaker Workstation (PPS) should look similar to the file excerpts shown below.

```
<?xml version="1.0" encoding="UTF-8"?>
<DOCUMENT TYPE="RPWIP" VERSION="10.3">
  <DOCSET NAME="">
    <FXRFILE NAME="rel102sm"/>
    <GROUP NAME="" NAME1="DOCUCORP PACKAGE" NAME2="VERSION 103">
      <FORM NAME="Tersub - Basic" OPTIONS="R">
        <DESCRIPTION>Tersub - Basic Paragraph Assem</DESCRIPTION>
        <FIELD NAME="FIELDTwo">8:30 AM</FIELD>
        <FIELD NAME="FIELDThree">5:30PM</FIELD>
        <RECIPIENT NAME="AGENT" COPYCOUNT="1" CODE="" SEQUENCE="1"/>
        <RECIPIENT NAME="HOME OFFICE" COPYCOUNT="1" CODE=""
          SEQUENCE="2"/>
       <RECIPIENT NAME="INSURED" COPYCOUNT="1" CODE="" SEQUENCE="3"/>
          :
      </FORM>
    </GROUP>
  </DOCSET>
</DOCUMENT>
```

This table lists the system-generated tag names and attributes and gives an explanation of each.

Tag Name	Attribute	Explanation
?xml		The XML declaration line
DOCUMENT	TYPE	The Documaker Standard Header. The attribute *Type* is hard-coded to be exported as *RPWIP*.
	VERSION	The version of the software being used.
DOCSET	NAME	The name of the document set that contains all forms required to process a single transaction, which is usually the FORM.DAT file.
GROUP	NAME1, NAME2, NAME3	The key names used in the FORM.DAT file to group a set of common forms, such as Key1 = Company, Key2 = LOB, and so on.
FORM	NAME	The name of a single document containing one or more pages and options that define the form. See Form options on page 22 for more information.
DESCRIPTION		(Optional) A user-defined description of the form.
FIELD	NAME	(Optional) A field tag can be at the document, form, or section level, depending on the field scope. Fields tags at the... - Document level will be populated to all identically named variable fields in all images and all forms in a form set. - Form level will be populated to all identically named variable fields in all images in the current form. - Section level will be populated only to the variable field within a single section/image.
RECIPIENT	NAME	The name used to identify who receives a copy or copies of a form set, or any part of a form set.

Tag Name	Attribute	Explanation
	COPYCOUNT	The number of copies for a particular recipient
	CODE	Not required.
	SEQUENCE	(Optional) The order in which the recipient copies print.

```
<SHEET>
  <PAGE>
    <SECTION NAME="parasem">
      <FIELD NAME="FIELD">
        <P ALIGN="CENTER">
          <FONT STYLE="FONT-SIZE: 10pt" FACE="Univers ATT">
            <B>Sample Text</B>
          </FONT>
        </P>

        <P STYLE="margin-left: 2.00in">
          <FONT STYLE="FONT-SIZE: 10pt" FACE="Univers ATT">
           Sample text left margin is 2 inches sample text
          </FONT>
<P>
          <STOPS>
            <TS FAPS=”3600” SPECIAL=”2”/>
            <TS FAPS=”7600” SPECIAL=”1”/>
            <TS FAPS=”11600” LEADER=”46”/>
          </STOPS>
          <FONT STYLE=”FONT-SIZE: 11pt” FACE=”Albany AMT”>
            <TAB/>Center Tab Stop
            <TAB/>Right Just. Tab Stop
            <TAB/>Left with Leader
          </FONT>
        </P>
       </P>
       <BR>
      :
  </PAGE>
</SHEET>
```

Tag Name	Attribute	Explanation
SHEET		Used to identify if the form pages are simplex or duplex.
PAGE		Indicates a single sheet of paper.
SECTION	NAME	Indicates a segment of a page or an entire page. (Image Name)
FIELD	NAME	(Optional) The field tag at the section level is data that will be populated only to the variable field within a single section/image.
P		(Optional) Indicates a paragraph in a text area or multi-line field. *P* is used when paragraph attributes are needed.

Tag Name	Attribute	Explanation
BR		(Optional) Indicates a paragraph break. *BR* is used when there are no attributes for a paragraph.
	ALIGN	(Optional) Indicates the justification, such as *Left*, *Center*, or *Right*.
	STYLE	(Optional) Indicates the indentation, such as a 2-inch left margin or a 1-inch hanging indent margin.
FONT	STYLE	(Optional) Indicates the point size of the font used.
	FACE	(Optional) Indicates the font family name.
	COLOR	(Optional) Indicates the font color.
B		(Optional) Indicates bold text.
I		(Optional) Indicates italicized text.
U		(Optional) Indicates underlined text.
STOPS		Custom tab stops group – contains non-default tab stop definitions
TS	FAPS	Width of custom tab stop, 2400 faps = 1 inch (default is 600, ¼ inch)
	SPECIAL	Tab stop type: 0 = left (default), 1 = right, 2 = center, 4 = decimal, 8 = bar
	LEADER	Optional leader character ASCII value (46 is a period)
TAB		Denotes a tab within the text. (Note that actual tab characters embedded within the text are treated as spaces.)

```
<P>
   <FONT STYLE="FONT-SIZE: 10pt" FACE="Univers ATT">
    Skywire Software's customer and technical support personnel
    are available to answer any questions you may having concerning
    your systems. You can call them between the hours of
    <INPUT NAME="FIELDTwo" VALUE="8:30 AM" SIZE="7" MAXLENGTH="25"
     ACCESSKEY="F"/>
       :
   </FONT>
 </P>
<BR>
<P>
<UL TYPE="CIRCLE">
  <LI>
    <FONT STYLE="FONT-SIZE: 10pt" FACE="Univers ATT">Sample Text</
FONT>
  </LI>
  <LI>
    <FONT STYLE="FONT-SIZE: 10pt" FACE="Univers ATT">Sample Text</
FONT>
  </LI>
</UL>
</P>
```

Tag Name	Attributes	Explanation
INPUT	NAME	(Optional) Indicates the name of an embedded variable field.
	VALUE	(Optional) Contains the data in the variable field.
	SIZE	(Optional) Indicates the length of the data.
	MAXLENGTH	(Optional) Indicates the length of the variable field.
	ACCESSKEY	(Optional) Specifies the scope of the field. Enter G (global), F (form global), or L (image local)
UL	TYPE	(Optional) Indicates an unordered bullet list, such as one using symbol bullets. The type of bullet can be *circle*, *square*, or *disc*. When importing text areas and multi-line fields from an XML file, the system modifies the default bullet size to match that used in Documaker Studio and Documaker Workstation. This size is one-third of the font size. This only affects imported XML files which contain unordered bullet lists.
OL	TYPE	(Optional) Indicates an ordered bullet list, such as a numbered list or an outline. The type can be: • Arabic number (1, 2, 3, and so on) • Upper case letter (A, B, C, and so on) • Lower case letter (a, b, c, and so on) • Upper case Roman numeral (I, II, III, IV, and so on) • Lower case Roman numeral (i, ii, iii, iv, and so on)
LI		(Optional) Indicates a bullet list item.
	STYLE	(Optional) Indicates the indentation, such as a 2-inch left margin.

Form options

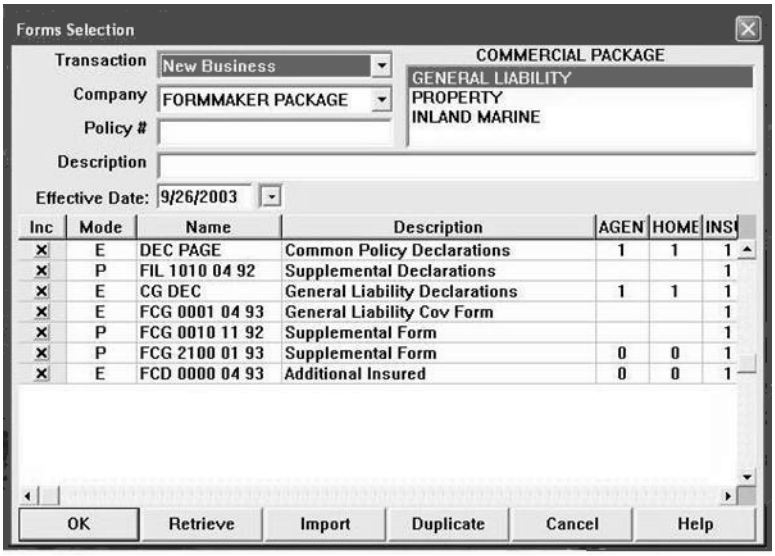
You can choose from these form options:

To indicate the form	Enter this code
Is to be stapled	B
Was completed	C
Is a dec page	D
Is an entry form with required fields	E
Is fixed (non-selectable)	F
Is legal size	G
Is hidden	H
Is A4 size	I
Is executive size	J
Is in landscape	K
Can be copied (multiple copies are allowed)	M
Should not be defaulted to the display	N
Is an overflow form	O
Is a pull form	P
Is required	R
Is a sub dec - program policy	S
Was user selected	U
Is a master dec - program policy	X
Was system generated	Y
Should contain a line of Zs (z-z-z-z-z...)	Z

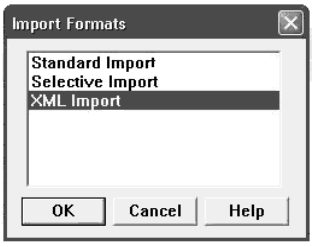
Importing a Documaker XML File

Follow these steps to import a Documaker XML file:

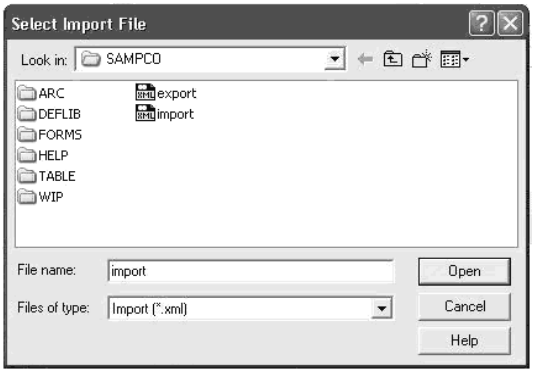
1 Start Documaker Workstation (PPS). Select the File, New option. The Form Selection window appears. From the Form Selection window, click Import.



2 Click XML Import as the format.



3 Select the XML file you want to import.



4 Complete the Forms Selection window and click Ok.

Your form set should be populated with data from your XML import file.

Transforming XML Files

You can export an XML file with XSLT transformation. This lets you transform the output XML file into another format, such as HTML or text. The final output format is determined by the XSLT template you choose.

The system transforms an export file with the XSLTW32.EXE program using the XSL template you specified with the XSLTName option.

To enable the export, add this option to the ExportFormats control group:

```
< ExportFormats >
    01  =;Mx;Export with XSL;WXMW32->WXMExportWithXSL
```

Then add these options:

```
< ExportWithXSL >
    XSLTName       =
    Executable     =
    Debug          =
```

Option	Description
XSLTName	The full or relative path and name of the XSLT template.
Executable	(Optional) The full path and name of the program. If omitted, the system looks for the XSLTW32.EXE program in the directory where the AFEMNW32.EXE program is located.
Debug	(Optional) Enter Yes to leave temporary files in place.

NOTE: The default control group used by the WXMExportWithXSL rule is the ExportWithXSL control group. If you specify another control group and one of its options are missing, the system uses the values from the ExportWithXSL control group.

You can define several INI options in the ExportFormats control group if you want to display multiple output processing options, each with its own XSL template. Here is an example:

```
< ExportFormats >
    01 =;M1;Export with XSL;WXMW32->WXMExportWithXSL
    02 =;M2;Export with XSL;WXMW32->WXMExportWithXSL
```

Each option listed under the ExportFormats control group requires a matching ExportWithXSL control group:

```
< ExportWithXSL:M1 >
    XSLTName    =
    Executable  =
    Debug       =
< ExportWithXSL:M2 >
    XSLTName    =
    Executable  =
    Debug       =
```

Appending output transformations

You can append multiple XSLT output transformations to the same file using this INI option:

```
< ExpFile_CD >
    AppendedExport = Yes
```

This example transforms an XML export into a semicolon-delimited output file you can import into Excel. It also uses the XSLTW32.EXE program for the transformation.

First, you need these INI options:

```
< ExportFormats >
    01 =;M1;Export with XSL;WXMW32->WXMExportWithXSL

< ExportWithXSL:M1 >
    XSLTName    = x:\rp\mstrres\aeic\xsl\output1.xsl
    Executable  =
    Debug       = No
```

And this XSL style sheet:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet
xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
version="1.0">
<xsl:output method="text" encoding="ISO-8859-1" />
<!-- global variables -->
<xsl:template match="/">
<xsl:call-template name="process"/>
</xsl:template>
<xsl:template name="process">
<xsl:variable name="semicolon" select="';'"/>
<xsl:variable name="root" select="DOCUMENT/DOCSET"/>
<xsl:variable name="policy" select="$root/
FIELD[@NAME='POLICY']"/>
<xsl:variable name="insnam" select="$root/
FIELD[@NAME='INSNAM']"/>
<xsl:variable name="insnam2" select="$root/
FIELD[@NAME='INSNAM2']"/>
<xsl:variable name="insad1" select="$root/
FIELD[@NAME='INSAD1']"/>
<xsl:variable name="insad2" select="$root/
FIELD[@NAME='INSAD2']"/>
<xsl:variable name="inszip" select="$root/
FIELD[@NAME='INSZIP']"/>
<xsl:variable name="agent" select="$root/
FIELD[@NAME='AGENT']"/>
<xsl:variable name="effdte" select="$root/
FIELD[@NAME='EFFDTE']"/>
<xsl:variable name="expdte" select="$root/
FIELD[@NAME='EXPDTE']"/>
<xsl:variable name="cddesc" select="$root/
FIELD[@NAME='CDDESC_BUSDSC']"/>
<xsl:variable name="premo_prop" select="$root/
FIELD[@NAME='PREMO_PROP']"/>
<xsl:variable name="advprem" select="$root/
FIELD[@NAME='ADVPREM']"/>
<xsl:variable name="totpre" select="$root/
FIELD[@NAME='TOTPRE']"/>
```

```
<xsl:variable name="galmt" select="$root/
FIELD[@NAME='GALMT']"/>
<xsl:variable name="prcolmt" select="$root/
FIELD[@NAME='PRCOLMT']"/>
<xsl:variable name="pailmt" select="$root/
FIELD[@NAME='PAILMT']"/>
<xsl:variable name="perocc" select="$root/
FIELD[@NAME='PEROCC']"/>
<xsl:variable name="fdlmt" select="$root/
FIELD[@NAME='FDLMT']"/>
<xsl:variable name="medlmt" select="$root/
FIELD[@NAME='MEDLMT']"/>
<xsl:value-of select="concat($policy, $semicolon)"/>
<xsl:value-of select="concat($insnam, $semicolon)"/>
<xsl:value-of select="concat($insnam2, $semicolon)"/>
<xsl:value-of select="concat($insad1, $semicolon)"/>
<xsl:value-of select="concat($insad2, $semicolon)"/>
<xsl:value-of select="concat($inszip, $semicolon)"/>
<xsl:value-of select="concat($agent, $semicolon)"/>
<xsl:value-of select="concat($effdte, $semicolon)"/>
<xsl:value-of select="concat($expdte, $semicolon)"/>
<xsl:value-of select="concat($cddesc, $semicolon)"/>
<xsl:value-of select="concat($premo_prop, $semicolon)"/>
<xsl:value-of select="concat($advprem, $semicolon)"/>
<xsl:value-of select="concat($totpre, $semicolon)"/>
<xsl:value-of select="concat($galmt, $semicolon)"/>
<xsl:value-of select="concat($prcolmt, $semicolon)"/>
<xsl:value-of select="concat($pailmt, $semicolon)"/>
<xsl:value-of select="concat($perocc, $semicolon)"/>
<xsl:value-of select="concat($fdlmt, $semicolon)"/>
<xsl:value-of select="concat($medlmt, $semicolon)"/>
<xsl:text>&#xA;</xsl:text>
</xsl:template>
</xsl:stylesheet>
```

And this XML export file:

```
<?xml version="1.0" encoding="UTF-8" ?>
- <DOCUMENT TYPE="RPWIP" VERSION="10.3">
- <DOCSET NAME="">
<FIELD NAME="POLICY">A108</FIELD>
<FIELD NAME="INSNAM">SAM MALONE</FIELD>
<FIELD NAME="INSNAM2">CHEERS, INC.</FIELD>
<FIELD NAME="NEW">X</FIELD>
<FIELD NAME="INSAD1">123 MAIN ST</FIELD>
<FIELD NAME="INSAD2">SUITE 100</FIELD>
<FIELD NAME="INSCTY">ATLANTA</FIELD>
<FIELD NAME="INSST">GA</FIELD>
<FIELD NAME="INSZIP">23033</FIELD>
<FIELD NAME="AGENT">12345</FIELD>
<FIELD NAME="AGYNAM">Docucorp Insurance Agency</FIELD>
<FIELD NAME="AGYAD1">2727 Paces Ferry Road S.E.</FIELD>
<FIELD NAME="AGYAD2">Suite II-900</FIELD>
<FIELD NAME="AGYCTY">Atlanta</FIELD>
<FIELD NAME="AGYST">GA</FIELD>
<FIELD NAME="AGYZIP">30339</FIELD>
```

```
<FIELD NAME="PRMSTE">GA</FIELD>
<FIELD NAME="EFFDTE">07/05/2003</FIELD>
<FIELD NAME="EXPDTE">07/05/2004</FIELD>
<FIELD NAME="TERM">366 DAYS</FIELD>
<FIELD NAME="CDDESC_BUSDSC">BAR & GRILL</FIELD>
<FIELD NAME="PREMO_PROP">12,000.00</FIELD>
<FIELD NAME="ADVPREM">12,000.00</FIELD>
<FIELD NAME="FEEDESC1">Policy Tax</FIELD>
<FIELD NAME="FEEDESC1 TAX">3%</FIELD>
<FIELD NAME="FEEAMT1">360.00</FIELD>
<FIELD NAME="FEEDESC2">Stamping Fee</FIELD>
<FIELD NAME="FEEAMT2">250.00</FIELD>
<FIELD NAME="OTHCHG">610.00</FIELD>
<FIELD NAME="TOTPRE">12,610.00</FIELD>
<FIELD NAME="CSIGNEDLOC">Atlanta, GA</FIELD>
<FIELD NAME="SIGNED DATE">07/30/2003</FIELD>
<FIELD NAME="SIGNED TIME">09:25:18</FIELD>
<FIELD NAME="OPINIT">DOCUCORP</FIELD>
<FIELD NAME="SIGNATURE">Authorized Representative</FIELD>
<FIELD NAME="GALMT">1,000,000</FIELD>
<FIELD NAME="PRCOLMT">1,000,000</FIELD>
<FIELD NAME="PAILMT">1,000,000</FIELD>
<FIELD NAME="PEROCC">1,000,000</FIELD>
<FIELD NAME="FDLMT">1,000,000</FIELD>
<FIELD NAME="MEDLMT">1,000,000</FIELD>
- <GROUP NAME="" NAME1="American Equity" NAME2="INTERLINE">
- <FORM NAME="FS100 10-2000">
<DESCRIPTION>Schedule of Forms/End</DESCRIPTION>
<FIELD NAME="FORM DESC LINE">Forms Applicable - INTERLINE</FIELD>
<FIELD NAME="FORM DESC LINE #003">A100J 02-1999 Policy Jacket -
AEIC</FIELD>
<FIELD NAME="FORM DESC LINE #004">A100 03-1997 Common Policy Dec -
AEIC</FIELD>
<FIELD NAME="FORM DESC LINE #005">A101 03-1997 Minimum Earned
Premium Endt</FIELD>
<FIELD NAME="FORM DESC LINE #006">A104 10-1998 Service of Suit</
FIELD>
<FIELD NAME="FORM DESC LINE #007">IL0017 11-1998 Common Policy
Conditions</FIELD>
<FIELD NAME="FORM DESC LINE #008">IL0021 04-1998 Nuclear Energy
Liab Excl Endt</FIELD>
<FIELD NAME="FORM DESC LINE #010">Forms Applicable - GENERAL
LIABILITY</FIELD>
<FIELD NAME="FORM DESC LINE #012">CL150 01-2000 General Liab
Coverage Part</FIELD>
<FIELD NAME="FORM DESC LINE #013">L003 03-1997 Amendment of Premium
Condition</FIELD>
<FIELD NAME="FORM DESC LINE #014">L005 01-2000 Contractual Liab
Limitation</FIELD>
<FIELD NAME="FORM DESC LINE #015">L007 07-1998 Ded Liab Ins-w/Costs
per Claim</FIELD>
<FIELD NAME="FORM DESC LINE #016">L150 01-2000 Additional
Exclusions</FIELD>
<FIELD NAME="FORM DESC LINE #017">CG0001 07-1998 Comm General Liab
Cov Form</FIELD>
```

```
<FIELD NAME="FORM DESC LINE #018">CG2160 09-1998 Excl - Year 2000
Computer Prob</FIELD>
<RECIPIENT NAME="EXTRA COPY" COPYCOUNT="1" />
<RECIPIENT NAME="GENERAL AGENT" COPYCOUNT="1" />
<RECIPIENT NAME="HOME OFFICE" COPYCOUNT="1" />
<RECIPIENT NAME="ORIGINAL" COPYCOUNT="1" />
<RECIPIENT NAME="RETAIL AGENT" COPYCOUNT="1" />
- <SHEET>
- <PAGE>
<SECTION NAME="FORMSCHA" />
</PAGE>
</SHEET>
</FORM
</DOCSET>
</DOCUMENT>
```

The output file looks like this:

```
A108;SAM MALONE;CHEERS, INC.;123 MAIN ST;SUITE 100;23033;12345;07/
05/2003;07/05/2004;; 12,000.00;
12,000.00;;1,000,000;1,000,000;1,000,000;1,000,000;1,000,000;1,000,
000;
```

You can import this file into an Excel spreadsheet.

Chapter 3

Importing and Exporting XML Files with Documaker Server

To import and export XML files in Documaker Server, you use the ImportXMLFile and ImportXMLExtract rules. These rules work similar to the other import rules, such as ImportFile.

For more information on these rules, see

- ImportXMLExtract on page 31
- ImportXMLFile on page 34

Keep in mind that importing XML is not the same as using an XML file as your extract file. Import assumes you are using a specific file layout that describes your document in a predefined manner.

ImportXMLExtract

Use this form set rule (level 2) to import a file which consists of one or more XML transactions into the GenData program for processing. Using this file, the GenData program creates the recipient batch, NAFile, POLFile, and NewTrn files that you can print, archive, or both using the GenPrint and GenArc programs.

You append multiple export files to create the import XML file. The export files are created using the Documaker Workstation XML Export option. This illustration shows an example file comprised of export files appended to one another:

Transaction 1

```
<?xml version="1.0"?>
<Document Type="Docucorp Universal" Version="5.0">
<DocSet>
<ArcEffectiveDate></ArcEffectiveDate>
<Library Name="Docucorp Insurance"></Library>
<Key1 Name=”Company”>DocuInsur</Key1>
<KeyY2 Name=”Lob”>Package Policy</Key2>
<TransactionID Name="PolicyNum">1010j</TransactionID>
…
…
```

Transaction 2

```
<?xml version="1.0"?>
<Document Type="Docucorp Universal" Version="5.0">
<DocSet>
<ArcEffectiveDate></ArcEffectiveDate>
<Library Name="Docucorp Insurance"></Library>
<Key1 Name=”Company”>DocuInsur</Key1>
<KeyY2 Name=”Lob”>Package Policy</Key2>
<TransactionID Name="PolicyNum">1110j</TransactionID>
…
…
```

Transaction 3

```
<?xml version="1.0"?>
<Document Type="Docucorp Universal" Version="5.0">
<DocSet>
<ArcEffectiveDate></ArcEffectiveDate>
<Library Name="Docucorp Insurance"></Library>
<Key1 Name=”Company”>DocuInsur</Key1>
<KeyY2 Name=”Lob”>Package Policy</Key2>
<TransactionID Name="PolicyNum">1210j</TransactionID>
…
…
```

Syntax

```
ImportXMLExtract;;;
```

NOTE: You can only use this rule for single-step processing.

Although there are no parameters for this rule keep in mind:

- Create a simplified AFGJOB.JDT file when you use this rule. For instance, omit these rules:
  - LoadRcpTbl
  - LoadExtractData
  - RunSetRcpTbl
  - CreateGlbVar
  - LoadDDTDefs
  - InitOvFlw
  - SetOvFlwSym
  - ResetOvFlw

NOTE: For information on these and other rules, see the Rules Reference.

- Use the NoGenTrnTransactionProc rule because the XML file has no transaction information on the first line.
- Place the ImportXMLExtract rule in the <Base Form Set Rules> section of the AFGJOB.JDT file after the BuildFormList rule or any custom rule that creates a form set.
- In the TRN_File control group, set MaxExtRecLen option to the length of the longest record in the import file.
- In the TRN_Fields control group, include only the Key1, Key2, and KeyID options. Set these options to dummy data, because the GVM variables are set to the data values in the XMLTags2GVM control group during processing.
- Define the XMLTags2GVM control group in your FSISYS.INI file as shown here:

```
< XMLTags2GVM >
    GVM = XMLTag, (Req/Opt)
```

  Where GVM is the name of the GVM variable and XMLTag is the tag name in the XML file. Include *Req* or *Opt* to specify whether it is required or optional. If it is required and is not present in the XML file, processing will terminate. Here is an example:

```
< XMLTags2GVM >
    Key1    = Key1, Req
    Key2    = Key2, Req
    KeyID   = TransactionID, Opt
```

Example

Assume you have the following items defined in your master resource library. See XML File Format on page 12 for an example of an import file in the standard XML file format.

Here is an example of the INI options you need in your FSISYS.INI file:

```
< Data >
```

```
    AFGJOBFile = .\deflib\afgjob.jdt
    ExtrFile   = .\extract\extrfile.xml
< ExtractKeyField >
    SearchMask = 1,<?xml
< Key1Table >
    XML        = XML
< Key2Table >
    XML        = XML
< KeyIDTable >
    XML        = XML
< Trigger2Archive >
    Key1       = Key1
    Key2       = Key2
    KeyID      = KeyID
    RunDate    = RunDate
< TRN_Fields >
    Key1       = 3,3,N
    Key2       = 3,3,N
    KeyID      = 3,3,N
< TRN_File >
    BinaryExt  = N
    MaxExtRecLen= 175
< XMLTags2GVM >
    Key1       = Key1,Req
    Key2       = Key2,Req
    KeyID      = TransactionID,Opt
```

Here is an excerpt from a sample AFGJOB.JDT file:

```
< Base Rules >
;RULStandardJobProc;;;
…
< Base Form Set Rules >
;NoGenTrnTransactionProc;;;
;BuildFormList;;;
;ImportXMLExtract;;;
…
…
```

ImportXMLFile

Use this form set rule (level 2) to import an XML file which specifies a Documaker Server document layout. The XML document must conform to the Documaker Standard XML format.

NOTE: Importing an XML document in this manner does not let you map additional XML information other than that specified in the Documaker Standard XML format.

Syntax

```
;ImportXMLFile;;option;
```

There are several ways to specify the import file in the option parameter:

Option	Description
FILE	Enter the name and path of the import file.
INI	Enter the INI control group and option in which the import file is defined. Separate the control group and option with a comma.
SCH	Enter the search criteria and the file name data, separated by a space. The name of the file, including its path, that you want to import should be contained in the record in the file indicated by the ExtrFile option in the Data control group. The search criteria are one or more comma delimited data pairs, offsets and character string, used as the search mask for finding the record in the specified file. The file name data is a comma delimited data pair that defines the offset and length of the file name in the record defined by the search criteria parameter.
GVM	Enter the global variable name (GVM) that contains the file name and path information.

Keep in mind:

- Create a simplified AFGJOB.JDT file when you use this rule. For instance, omit these rules:
  - LoadRcpTbl
  - LoadExtractData
  - RunSetRcpTbl
  - CreateGlbVar
  - LoadDDTDefs
  - InitOvFlw
  - SetOvFlwSym
  - ResetOvFlw

NOTE: For information on these and other rules, see the Rules Reference.

- Use the NoGenTrnTransactionProc rule because the XML file has no transaction information on the first line.
- Place the ImportXMLExtract rule in the Base Form Set Rules section of the AFGJOB.JDT file after the BuildFormList rule or any custom rule that creates a form set.
- In the TRN_File control group, set MaxExtRecLen option to the length of the longest record in the import file.
- In the TRN_Fields control group, include only the Key1, Key2, and KeyID options. Set these options to dummy data, because the GVM variables are set to the data values in the XMLTags2GVM control group during processing.
- Define the XMLTags2GVM control group in your FSISYS.INI file as shown here:

```
< XMLTags2GVM >
    GVM = XMLTag, (Req/Opt)
```

  Where GVM is the name of the GVM variable and XMLTag is the tag name in the XML file. Include *Req* or *Opt* to specify required or optional. If it is required and is not present in the XML file, processing terminates. Here is an example:

```
< XMLTags2GVM >
    Key1    = Key1, Req
    Key2    = Key2, Req
    KeyID   = TransactionID, Opt
```

Example

These examples show the different ways you can define the import file when you use this rule. Assume you have the following items defined in your master resource library. For an example of the standard XML file format, see XML File Format on page 12. Here are sample INI settings in your FSISYS.INI file:

```
< Data >
   AFGJOBFile           = .\deflib\afgjob.jdt
   ExtrFile             = .\extract\dummy.dat
< ExtractKeyField >
   SearchMask           = 1,XML_FILE_NAME
< Key1Table >
   XML                  = xml
< Key2Table >
   XML                  = xml
< KeyIDTable >
   XML                  = xml
< Trigger2Archive >
   Key1                 = Key1
   Key2                 = Key2
   KeyID                = KeyID
   RunDate              = RunDate
< TRN_Fields >
   Key1                 =  1,3,N
   Key2                 =  5,5,N
   KeyID                = 10,4,N
```

```
< TRN_File >
   BinaryExt            = N
   MaxExtRecLen         = 175
< XMLTags2GVM >
    Key1                = Key1,Req
    Key2                = Key2,Req
    KeyID               = TransactionID,Opt
```

Here is a sample of the DUMMY.DAT file, pointed to by the ExtrFile option in the Data control group in your FSISYS.INI file.

```
0   1
1   5
XML_FILE_NAME This is a dummy extract file.
```

Using the File Option

This example imports the F_FILE.XML file from the \export directory. Using this file, the GenData program creates the recipient batch, NA, POL, and NewTrn files needed for GenPrint and GenArc processing.

Here is an excerpt from a sample AFGJOB.JDT file using the File option:

```
< Base Rules >
;RULStandardJobProc;;;
…
< Base Form Set Rules >
;NoGenTrnTransactionProc;;;
;BuildFormList;;;
;ImportXMLFile;;File=.\Export\F_File.xml;
…
```

Using the INI Option

This example imports the F_INI.XML file from the \export directory. Using this file, the GenData program creates the recipient batch, NA, POL, and NewTrn files needed for GenPrint and GenArc processing.

In addition to the INI options defined previously, you must also include the this option:

```
< Import_Data >
    Import_File = .\Export\F_File.xml\
```

Here is an excerpt from a sample AFGJOB.JDT file:

```
< Base Rules >
;RULStandardJobProc;;;
…
< Base Form Set Rules >
;NoGenTrnTransactionProc;;;
;ResetOvFlw;;;
;BuildFormList;;;
;ImportNAPOLFile;;INI=Import_Data,Import_File;
…
```

Using the SCH Option

This example imports XML files (F_SCH1.XML, F_SCH2.XML, and F_SCH3.XML) based on the content of a line in the file pointed to by the ExtrFile option in the Data control group. Using these files, the GenData program creates the recipient batch, NA, POL, and NewTrn files needed for GenPrint and GenArc processing.

This INI option differs from the one defined in the assumed MRL definition:

```
< Data >
    ExtrFile = .\extract\F_Sch.DAT
```

Here is an excerpt from the F_SCH.DAT file in the \extract directory which contains an entry (path and file name) for each XML file to import:

```
XML_FILE_NAME .\export\F_SCH1.xml
XML_FILE_NAME .\export\F_SCH2.xml
XML_FILE_NAME .\export\F_SCH3.xml
…
```

NOTE: This option lets you import and process multiple XML files because of the way the file name and path are specified—one file per entry in the file specified in the ExtrFile option in the Data control group.

Here is an excerpt from a sample AFGJOB.JDT file:

```
< Base Rules >
;RULStandardJobProc;;;
…
< Base Form Set Rules >
;NoGenTrnTransactionProc;;;
;BuildFormList;;;
;ImportXMLFile;2;SCH=1,XML_FILE_Name 15,19
```

Using the GVM Option

This example imports data from a XML file based on file name contained in the GVM variable called Import_File. Using this file, the GenData program creates the recipient batch, NA, POL, and NewTrn files needed for GenPrint and GenArc processing.

Any valid GVM variable can be used no matter how it is created or assigned.

This example creates the GVM variable, ImportXMLFile_GVM, by including this INI option and adding its definition to the TRNDFDFL.DFD file:

```
< GentrnDummyFields >
    ImportXMLFile_GVM = .\export\F_GVM.xml
```

Here is an excerpt from a sample AFGJOB.JDT file:

```
< Base Rules >
;RULStandardJobProc;;;
…
< Base Form Set Rules >
;NoGenTrnTransactionProc;;;
;BuildFormList;;;
;ImportXMLFile;;GVM=ImportXMLFile_GVM
```

Chapter 4

Using XML Extract Files

You can set up Documaker Server to use extract files in XML format. To do so, you must first set up the system, see Setting Up the XML Add-On on page 6 for more information.

NOTE: During setup, keep in mind the SuppressDlg option is not applicable for XML extract files. This option only applies when you are importing and exporting XML files.

Once you have set up the XML Add-On, you can use these rules to create an alternative data search method so you can do direct XML mapping within the Documaker Server:

Rule	Description
UseXMLExtract	Uses the extract list loaded by the transaction as the source of the XML tree.
XMLFileExtract	Assumes the extract list contains the name of an external file which is the source of the XML tree.

For more information, see the Rules Reference.

This chapter contains information on these topics:

Mapping Formatted Data from Extract Files

You can map data with XML markup directly into multi-line variable fields. This lets you specify...

- End of paragraph or end of line syntax (including CR/LF)
- Text formatting
- Paragraph attributes
- Bullets

and so on. Whatever is supported in Skywire Software standard XML file format for text areas is now supported for multi-line fields.

This feature is designed for data mapping from an XML extract file into a multi-line variable field in a FAP file. The data on the XML node (element and its descendants) being mapped must comply with the standard Skywire Software XML format.

This feature adds new syntax for XPath, which is not W3C standard XPath syntax. When XPath is specified, you can append the following:

```
.xml()
```

and it will return a string of XML for data mapping.

Data mapping is done by supporting the mapped data that contains the XML string — just as if it had been loaded from a file on disk.

Keep in mind...

- The data must start with element named *FIELD*.
- If the text area can possibly overflow to next page, set the Can Grow and Can Span Pages attributes as desired on the multi-line field. Also determine whether to set the Can Grow attribute on the image. In most cases, you should choose to include the TextMergeParagraph rule to defer formatting of text areas until embedded fields are mapped. In addition, you can use the CanSplitImage rule when you are not using the Can Span options and want the image to break across pages if the position of the image on the page warrants this action.
- You cannot have other FAP objects below the multi-line field on the same image. When these are pushed down, extra pages can be created.
- You should include the CheckImageLoaded rule when mapping multi-line variable fields, unless the FAP files are loaded via INI options

Here is an example of an XML extract file:

```
<?xml version="1.0" encoding="UTF-8"?>
<My_Extract_Data>
<FIELD><P>First line of data.</P><P>End of <B><U>field</U></B>
data.</P></FIELD>
<KeyInfo PolicyNumber="APV 10003" State="OH" LOB="Auto"
AgencyCode="5432" PrintType="Duplex" PrintAgentCopy="False"
System_Date="06/02/2003"/>
<Print_Header>
....
```

Based on the example, this XPath syntax returns the text highlighted above in red:

```
/descendant::My_Extract_Data/FIELD.xml()
```

Since the XML string returned from XPath can exceed the 1K limit of regular data mapping, the Move_It rule was enhanced to handle the mapping of an unlimited size of data (but limited to available memory).

Using the Move_It rule

To get the desired result, you must add the B flag to the Move_It rule format mask. Here is an example DDT line using both examples from above:

```
;0;0;FIELD;0;1024;FIELD;0;1024;B;move_it;!/
descendant::My_Extract_Data/FIELD.xml();N;N;N;N;3715;2899;11010;
```

Searching an XML Extract File

Keep in mind the extract list and the XML tree are separate. Once the XML tree is loaded, it remains loaded and can be searched by subsequent rules — just like any extract list.

The system lets you use these search methods:

- An XDB token reference such as *?TOKEN* looked up in the XDB to get the actual search text
- The legacy Offset,Mask method such as *10,HEADERREC*)
- An XML search text, such as *!/descendant::Item*

In most cases, the XBD token reference will be the preferred method.

An XDB entry can return either a legacy offset/length search mask or an XML search path. XML search masks must begin with an exclamation mark (!). The leading exclamation mark is not actually sent to the search routine.

You can use text movement and formatting rules, like Move_It, MoveNum, FmtDate, and FmtNumber, to do simple operations, but keep in mind some of the more complicated options may not work.

For instance, Move_It supports a *same record* flag. This does not work in XML searches. Likewise, Move_Num supports several binary input data types like BCD and you cannot include those in XML at present.

More complicated rules that have multiple search criteria like SetAddr, SubExtractList, and Concat do not work with XML files.

HANDLING OVERFLOW

The XML search infrastructure has *position* support.

```
/descendant::Forms/child::form[position()=2]/child::field1
```

The *2* in this case indicates you want the second form child. Since you would not want to write the search to work with every explicit number, you must indicate where the overflow variable fits into the equation, as shown here:

```
/descendant::Forms/child::form[position()=****]/child::field1
```

The system first scans the search to see if a replacement is needed for the overflow value. In this case, it would insert the 2 (taken from the overflow variable value) and then do the actual XML search.

You can also handle overflow within overflow by specifying an overflow variable name in the search. For instance, suppose you have multiple cars and each car can have multiple drivers.

```
<car>
<driver>Tom<driver/>
<driver>Tim<driver/>
<car/>
<car>
<driver>Sally<driver/>
<car/>
```

If you had two overflow variables, one working for *car* and one for *driver*, you could create a search like this:

```
/descendant::car[**carvar**]/child::driver[**drivevar**]
```

Where the system gets two overflow variables and insert them into the search text.

Triggering Forms and Images

You can do simple triggering based upon the existence of a node. For example, this

```
/child::car
```

would trigger a form if *car* is a child of the root node. Referring back to the earlier example, you could make it trigger two of the same forms because there are two cars.

The system supports value matching. So you can do the following:

```
/child::car[child::driver="Tom"]
```

Or, you can use the RecipIf rule to trigger an image with custom rule parameters, as shown in this example:

```
A={!/child::car/child::driver 1,7}::if
(A='Tom')::return("^1^")::end::;
```

If there is such a value in that element in the XML file, the image would trigger. For this to work, define the offset of the variable attribute as 1 and the length of the data you want to compare.

You can also use XML search strings such as these:

This string	Finds
!descendant::PolicyNumber	The PolicyNumber value
!descendant::Forms/child::Form	All forms

Using the ElementText option

Note that when the XPath specifies an element node such as

```
//BookStore/Book
```

it returns the element handle and either its element text or its first attribute value if there is no element text. If you want to use this to map a field, you can use the ElementText INI option to better control what XPath returns. For instance, here is an excerpt from an XML file:

```
...
< BookStore >
    < Book Category = "Fiction"> </Book>
...
```

Since there is no text for the element/node *Book* in this excerpt, this XPath statement returns the first attribute value, which equals *Fiction*.

```
//BookStore/Book
```

With the ElementText option set to Yes, which is the default, nothing is returned. If you set this option to No, the first attribute is returned. Here is an example of the ElementText option:

```
< XPath >
    ElementText = Yes
```

USING XPATH

XML path locator (XPath) complies with the standard syntax specifications (W3C standards) found in the XML Path Language, but differs in some regards because it was developed to support the Rules Processor in Documaker Server. Because this version of XPath has some limitations, you should check the syntax using the XPATHW32 utility.

XPATH SYNTAX

Here are examples of the valid axes, function calls, signs, and operators to help you understand and use the XPath syntax.

Axes

You have these axes:

Name	Used to locate the
ancestor	Ancestors of the current context node
ancestor-or-self	Ancestors of the current context node and itself
parent	Parents of the current context node
descendant	Descendants of the current context node
descendant-or-self	Descendants of the current context node and itself
attribute	Attributes of the current context node
child	Children of the current context node
following-sibling	Following siblings of the current context node
following	Context nodes that follow the current node
preceding-sibling	Preceding siblings of the current context node
preceding	Context nodes that precede the current node
self	Self context node

When used, an axis is always followed by a context node name separated by two colons (::). For example, the syntax *descendant::para* locates all para descendants of the current context node.

Symbols

You can use these calculation operators:

= != < > + -

Where !=, <, >, + can be used as calculation operators in function position(), such as, *[position()=2]*, *[position()!=2]*, *[3+i]*, *[position()<5]*, and so on. The equals sign (=) is also used for evaluations such as *@Name='Auto'*.

You can use these symbols in a valid XPath:

/ // * :: [ ] @

Where the pair of brackets ([ ]) enclose a condition for evaluation, the at symbol (@) is an abbreviation of the attribute, the asterisk (*) is used for a wild card search, and others are used in a valid XPath, as shown below.

Functions

You can use these functions:

Function	Returns
concat(string, string, string…	The concatenation of the strings
last()	The last element in the selection
name()	The name of the selected elements
node()	The node names
position()	The position of selected elements
text()	The text of selected elements
string(object)	The string from the context node
xml()	The output buffer containing all descendents of the specified element

Expressions

You can use abbreviated syntax with XPath. Here are the valid expressions:

Abbreviated syntax	Full syntax
*	child::*
para	child::para
chapter/para	child::chapter/child::para
para[1]	child::para[position()=1]
/chapter/para[last()]	/child::chapter/child::para[position()=last()]
text()	child::text()
node()	child::node()
para[@type]	child::para[attribute::type]
para[@type="warning"]	child::para[attribute::type="warning"]
para[@type="warning"][2+i]	child::para[attribute::type="warning"][position()#2+i]
chapter[title]	child::chapter[child::title]
chapter[title='Introduction']	child::chapter[child::title="Introduction"]
doc//para	child::doc/descendant-or-self::node()/child::para
@*	attribute::*
@type	attribute::type
[@name='warning']	[attribute::name='warning']
//para	/descendant-or-self::node()/child::para
.	self::node()
.//para	self::node/descendant-or-self::node()/child::para
..	parent::node()
../chapter	parent::node()/child::chapter
../@type	parent::node()/attribute::type

USING THE XPATH TESTING UTILITY

Here is the syntax of the XPATHW32 testing utility:

```
xpathw32 /f= xml file /e=starting node /x= search path
```

The */e* parameter specifies the node where the search of the XPath starts. You can omit this parameter if you want the search to start from the beginning. A pair of double quotes is required to enclose the search mask. Here is an example:

```
xpathw32 /f="d:\test\test.xml" /x="Forms/Form/Car[@Name='Car1']/
text()"
```

This example searches the node *Car* with the attribute *Name="Car1"*. It then retrieves its text and returns a text string similar to this one:

```
Text string = Car 1 is Toyota
```

These examples illustrate some search paths most frequently used in Documaker RP applications. Run the testing tool yourself for the answer.

Example 1

These examples search for a list of nodes with or without conditions. Keep in mind a condition is always placed within brackets, as shown here: *[condition]*.

This	Returns
Forms/Form/Car	A list of the Car nodes
Forms/Form/ Car[@*][position()<3]	The first two nodes in the Car node list
Forms/Form/ Car[@Name][position()>1]	A list of the Car nodes above the first element
Forms/Form/ Car[text()][position()!=2]	A list of the Car nodes, excluding the second one
Forms/Form/Car[Model]	A list of Car nodes that have a child named Model
Forms/Form/Car/node()	A list of children nodes under the Car nodes
Forms/Form/Car/Coverage[1]	A list of first child Coverage under the Car nodes
Forms/Form/ Car[@Name='Car1']/Coverage	A list of nodes Coverage under Car1

Example 2 These examples search for the path for a single element:

This	Produces
Forms/Form/Car[@*][1]	The first node of the Car list with any attributes
Forms/Form/Car[@Name][last()]	The last node of the Car list with the attribute Name
Forms/Form/ Car[@Name='Car1']	The Car node with attribute name Car1
Forms/Form/ Car[Model='Toyota']	The Car node with a child Model that has a text string of Toyota.
Forms/Form/ Car[Model='Nissan']/Coverage[3]	The third child node of Coverage under the parent node Car that has a child named Model with a text string of Nissan

Example 3 These examples search for a list of attributes:

This	Produces
Forms/Form/ Car[Model='Nissan']/@*	A list of attributes of the Car node that have a Child node named Model with a value of Nissan
Forms/Form/Car/@Name	A list of the attribute Name that has a parent node of Car

Example 4 These examples search for a single attribute:

This	Produces
Forms/Form/ Car[Model='Honda']/@*[1]	The first attribute of the Car node that has a child named Model with a value of Honda
Forms/Form/Car [Model='Honda']/@Name	The attribute Name of the Car node that has a child named Model with a value of Honda
Forms/Form/Car[1]/@Name	The attribute Name of first Car node

Example 5 These examples search for a list of text strings:

This	Produces
Forms/Form/Car/text()	A list of text strings of Car nodes
Forms/Form/Car[Model]/text()	A list of text strings of Car nodes which have children named Model

Example 6 These examples search for a single text string:

This	Produces
Forms/Form/ Car[Model='Toyota']/text()	The text string of the Car node which has a child name Model with a value of Toyota
Forms/Form/ Car[Model='Honda']/parent::*/ text()	The text string of the node Form which has a child named Car that, in turn, has a child named Model with a value of Honda

NOTE: There are three types of returned lists: elements, attributes, and text. When a list includes only one element, the structure returns a single element instead of a list.

Example 7 These examples search for the name of elements:

This	Returns
//*[name()='Car']	"Car" nodes
Forms/Form/*[name()='Car'][2]/ text()	A text string of second "Car" nodes

Example 8 These examples concatenate text strings:

This	Returns
concat('Car1', 'and', 'Car2')"	A string "Car1 and Car2"
concat(//Car[@Name='Car1'], 'and',//Car[@Name='Car3'], 'are imported cars.'))	A string "Toyata and Nissan are imported cars."

Example 9 These examples search for strings:

This	Returns
string(‘ 12345’)	The string “ 12345”
string(//Car[2]/*[1])	The string of the first child of the second Car node

Example 10 This examples returns a buffer that contains all descendants of the specified element:

This	Produces
xpathw32 /f=cars.xml /x="//Car[2]/xml()	<Car Name=" Car2">Car 2 is Honda <Model>Honda</Model> <Coverage>Cover 4</Coverage> <Coverage>Cover 5</Coverage> <Coverage>Cover 6</Coverage> </Car>

Note that the XPath must point to a single element, such as *Car[2]* in the example.

EXAMPLE XML FILE

Here is an example XML file (TEST.XML):

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XML Spy v4.2 U (http://
www.xmlspy.com)-->
<Forms>
    <Form>
        <Car Name="Car1">Car 1 is Toyota
            <Model>Toyota</Model>
            <Coverage>Cover 1</Coverage>
            <Coverage>Cover 2</Coverage>
            <Coverage>Cover 3</Coverage>
        </Car>
        <Car Name="Car2">Car 2 is Honda
            <Model>Honda</Model>
            <Coverage>Cover 4</Coverage>
            <Coverage>Cover 5</Coverage>
            <Coverage>Cover 6</Coverage>
        </Car>
        <Car Name="Car3">Car 3 is Nissan
            <Model>Nissan</Model>
            <Coverage>Cover 7</Coverage>
            <Coverage>Cover 8</Coverage>
            <Coverage>Cover 9</Coverage>
        </Car>
    </Form>
</Forms>
```

Chapter 5

Using DAL XML Functions and XPath

The DAL XML API extends existing DAL functionality so Documaker Server applications can access a specified XML document and retrieve XML data via a DAL script.

This chapter discusses:

SCENARIOS

There are two scenarios in which you would use DAL XML API functions:

Scenario 1

A Documaker Server program, such as GenData, loads an XML document and extracts the XML tree at the transaction level using the XMLFileExtract rule. This rule creates a list type DAL variable with a default name of *%extract* and pushes it onto the DAL stack.

Then you can call other XML API functions in a DAL script to access the XML tree and extract XML data.

Here are examples of the form set and image rules you would add and a DAL script that would call the XML API functions.

- Add this in the AFGJOB.JDT file:

  ```
  ;XMLFileExtract;2;File=.\deflib\test.xml
  ```

  The rule loads the XML file and creates a list type DAL variable to pass the XML tree to the XML API function.

- Add this in your DDT file:

  ```
  ;0;0;DALXMLSCRIPT;0;9;DALXMLSCRIPT;0;9;;DAL;Call("TEST.DAL");N;N;N;
  N;4792;19444;11010;
  ```

  TEST.DAL is the name of the DAL script file.

- Here is an example of the DAL script:

  ```
  %listH=XMLFind(%extract, "Forms", "Form");
  #rc=XMLFirst(%listH);
  if #rc=0
  return("Failed to XMLFirst");
  end
  aStr=XMLGetCurText(%listH);
  return(aStr);
  ```

  %listH denotes a list type DAL variable. *#rc* denotes an integer type DAL variable. *aStr* denotes a string type DAL variable.

Scenario 2

You can also load the XML document and create the XML tree at a specific image field by calling the LoadXMLList rule from a DAL script. You must set the calling procedure in the DDT file as shown in Scenario 1.

Here is an example of DAL script file:

```
%xListH=LoadXMLList("test.xml");
%listH=XMLFind(%xListH,"Forms","Form/@*");
aStr=XMLNthAttrValue(%listH,2);
#rc=DestroyList(%xListH);
return(aStr);
```

Using XML Built-in Functions

The DAL XML API function are registered in keywords, called built-in functions. A DAL XML built-in function performs an operation on a set of parameters and returns a DAL variable in one of the three types: list, integer, or string.

NOTE: A list type DAL variable always begins with a percent sign (%) and an integer type DAL variable always begins with an octothorpe (#). Floating decimal numbers begin with a dollar sign ($). A string type DAL variable does not begin with a leading symbol.

Here are brief descriptions of the DAL XML built-in functions:

LoadXMLList

```
%xListH=LoadXMLList(filename);
```

This function loads a XML document and extracts a XML tree. The only required input parameter is the XML document file name. This function returns the XML tree in the list type DAL variable.

For an example, see the DAL script in scenario 2.

DestroyList

```
#rc=DestroyList(%xListH);
```

This function destroys the XML tree created by LoadXMLList. The input parameter is a list type DAL variable that passes the XML tree handle. This function returns one (1) for success or zero (0) for failure. The return DAL variable is of integer type.

For an example, see the DAL script in scenario 2.

GetListElem

```
aStr=GetListElem(%xListH, SrchCriteria);
```

This function has two input parameters. The first is a list type DAL variable that passes the XML tree handle. The second is a string type DAL variable that passes the search criteria.

The search criteria can be a node name, followed by up to five pairs of attribute names and values. If success, it returns a text string which contains the first element that matches the search criteria.

This example returns the text of the first matched element node *Form* with the attribute name *ID* and value *Agent*.

```
%xListH=LoadXMLList("test.xml");
aStr= GetListElem(%xListH, "Form", "ID", "Agent");
return(aStr);
```

IsXMLError

```
IsXMLError;
```

This function checks the list for error status. The input parameter is a list type DAL variable that passes the XML tree handle. This function returns one (1) if there no errors occur or zero (0) if errors do occur.

XMLFind

```
Result=XMLFind(%xListH, srchnode, xpath);
```

This function locates the XML path from the extracted XML tree and returns a list of matched elements to a list type DAL variable or a matched text to a string type DAL variable, depending on the search request.

This function has three input parameters. The first is a list type DAL variable passed from either the XMLFileExtract rule or the LoadXMLList built-in function. The second is a string type DAL variable that passes a node name from which the search starts. The third is also a string type DAL variable that passes the XML location. If you omit the second parameter, the search starts from the root of the XML tree.

Result can be a list type or a string type DAL variable.

For an example, see the next section.

XMLFirst

```
#rc=XMLFirst(%listH);
```

This function takes one input parameter, a list type DAL variable. The variable can be either a XML tree or a list of extracted elements. In any cases, it sets the current pointer to the first element in the specified list. This function returns one (1) for success or zero (0) for failure.

This example returns text from the last element in the list.

```
aStr="Text not found!";
%xListH=LoadXMLList("test.xml");
%listH=XMLFind(%xListH,"Forms","Form[text()]");
#rc=XMLFirst(%listH);
loop:
if #rc=0
goto endloop:
end
aStr=XMLGetCurName(%listH);
#rc=XMLNext(%listH);
goto loop:
endloop:
#rc=DestroyList(%xListH);
return(aStr);
```

XMLNext

```
#rc=XMLNext(%listH);
```

This function is similar to XMLFirst. It sets the current pointer to the next node or element in the specified list and returns one (1) for success or zero (0) for failure.

For an example, see XMLFirst.

XMLGetCurName

```
aStr=XMLGetCurName(%listH);
```

This function takes one input parameter of the list type. It can be either an XML tree or a list of elements. It returns the element name from the current element. The return value is the string type.

For an example see XMLFirst.

XMLGetCurText

```
aStr=XMLGetCurText(%listH);
```

This function is similar to XMLGetCurName. It returns the text from the current element. The return value is the string type. The message is similar to that from the XMLGetCurName function.

For an example see XMLFirst.

XMLFirstAttrib

```
rc=XMLFirstAttrib(%listH);
```

This function has one input parameter of a list type variable. It can be an element or attribute list. This function sets the attribute pointer to the first attribute for the current element in the element list or to the first attribute element in the attribute list.

If the input is an element list, use these functions to retrieve the attribute name and value:

- XMLAttrName
- XMLAttrValue

If the input is an attribute list, use these functions to retrieve attribute name and value:

- XMLNthAttrName
- XMLNthAttrValue

For examples, see XMLAttrName and XMLNthAttrName.

XMLNextAttrib

```
rc=XMLNextAttrib(%listH);
```

This function is similar to XMLFirstAttrib. It sets the current attribute pointer to the next attribute for the current element in the list or to the next attribute element in the attribute list.

For an example, see XMLAttrName and XMLNthAttrName.

XMLAttrName

```
aStr=XMLAttrName(%listH);
```

This function takes a list type DAL variable of input parameter. It returns the name of the current attribute pointed to by the XMLFirstAttrib and XMLNextAttrib functions.

The example returns the second attribute name of the first Form is the list.

```
aStr="Attribute not found!";
%xList=LoadXMLList("test.xml");
%listH=XMLFind(%xList,"Forms","Form");
#rc=XMLFirst(%listH);
#rc=XMLFirstAttrib(%listH);
#rc=XMLNextAttrib(%listH);
if #rc > 0
aStr=XMLAttrName(%listH);
end
#rt=DestroyList(%xList);
return(aStr);
```

XMLAttrValue

```
aStr=XMLAttrValue(%listH);
```

This function is similar to XMLAttrName. It returns the value of the current attribute pointed to by the XMLFirstAttrib and XMLNextAttrib functions.

For an example, see XMLAttrName. Use XMLAttrValue to replace XMLAttrName.

XMLNthText

```
aStr=XMLNthText(%listH,#index);
```

This function has two input parameters. One is a list type DAL variable that passes a text list. The other is an integer type DAL variable that passes an index number. It returns the nth text value indicated by the index number.

In this example, LoadXMLList returns a text list and XMLNthText gets the first text.

```
AStr=”Text not found”;
%xList=LoadXMLList("test.xml");
%listH=XMLFind(%xList,"Forms","Form/text()");
aStr=XMLNthtext(%listH, 1);
#rt=DestroyList(%xList);
return(aStr);
```

XMLNthAttrName

```
aStr=XMLNthAttrValue(%listH,#index);
```

This function has two input parameters. One is a list type DAL variable that passes an attribute list. The other is a integer type DAL variable that passes an index number. It returns the nth attribute name indicated by the index number.

In this example, XMLFind returns a list of attributes and XMLNthAttrName returns the name of the first attribute in the list.

```
aStr="Attribute not found!";
%xList=LoadXMLList("test.xml");
%listH=XMLFind(%xList,"Forms","Form/@*");
aStr=XMLNthAttrName(%listH, 1);
end
#rt=DestroyList(%xList);
return(aStr);
```

XMLNthAttrValue

```
aStr=XMLNthAttrValue(%list,#index);
```

This function is similar to XMLNthAttrName. It returns the nth attribute value indicated by the index number.

For an example, see XMLNthAttrName. Use XMLNthAttrValue to replace XMLNthAttrName.

Using the XML Path Locator

The XMLFind function is called the DAL XML path locator or *DAL XPath*. It is a limited version of the XML path and does not cover all aspects defined in the W3C literature.

Refer to W3C recommendations for the description of XPointer and XPath syntax. You can use the XPATHW32 testing tool to verify the applicable specifications of Skywire Software's DAL XPath. Run the XPATHW32 program to get the syntax.

Below is a summary of XML path specifications for DAL XPath:

Axes

These axes apply:

ancestor	ancestor-or-self	attribute
child	descendant	descendant-or-self
following	following-sibling	parent
preceding	preceding-sibling	self

Function calls

You can use these function calls:

last()	position()	node()
text()	name(***node-set***)	string(***object***)
concat(***string***, ***string***, ***string***…)		

Operators or signs

You can use these operators or signs:

= != < > + - / // * :: [ ]

Expressions

You can use abbreviated syntax, as this table shows:

For...	Use this abbreviation:
child::*	*
child::para	para
child::chapter/child::para	chapter/para
child::para[position()=1]	para[1]
/child::chapter/child::para[position()=last()]	/chapter/para[last()]
child::text()	text()
child::node()	node()
child::para[attribute::type]	para[@type]
child::para[attribute::type="warning"]	para[@type="warning"]
child::para[attribute::type="warning"][position()=2]	para[@type="warning"][2]

For...	Use this abbreviation:
child::chapter[child::title]	chapter[title]
child::chapter[child::title="Introduction"]	chapter[title="Introduction"]
child::doc/descendant-or-self::node()/child::para	doc//para
attribute::*	@*
attribute::type	@type
/descendant-or-self::node()/child::para	//para
self::node()	.
self::node/descendant-or-self::node()/child::para	.//para
parent::node()	..
parent::node()/child::chapter	../chapter
parent::node()/attribute::type	../@type

XMLFind locates the XML path from the extract XML tree and returns a valid DAL variable result. It requires three input parameters, a list type DAL variable and two string type variables. They in turn pass in an XML tree, a node name from which the search starts, and XML path location for searching.

If you omit the second parameter, the search starts from the root. The return DAL variable *Result* can be either list type or string type, depending on XML path.

Here are some examples that result in different return values:

Element list

```
%elemListH=XMLFind(%extract, , "descendant::Form[@ID=Agent]");
```

In this example, DAL XPath selects the *Form* element descendants that have an attribute with name *ID* and value *Agent* from the extract XML tree (root), and returns an element list.

Attribute list

```
%attrListH=XMLFind(%extract, "Forms", "Form/@type='warning'");
```

In this example, DAL XPath returns an attribute list that collects type attributes with value *warning* for *Form* children of current context node Forms.

Text list

```
%TextListH= XMLFind(%extract, "Forms", "Form/text()");
```

In this example, DAL XPath returns a text list that contains all text nodes of *Form* children of current context node *Forms*.

Text string

```
aStr=XMLFind(%extract, Forms, "string(Form[2])");
```

It returns the text of second child *Form* of the current context node *Forms*.

```
aStr=XMLFind(%extract, "Forms", "concat("Get form 2 text: ",
"Form[2])");
```

It returns the concatenation of the text string *Get form 2 text:* , and the text of the second child *Form* of current context node *Forms*.

```
aStr=XMLFind(%extract, "Forms", "name()");
```

It returns the name of current context node.

Chapter 6

Using XML Print Driver

The XMPLIB library allows you to use Documaker RP to create Docucorp Standard XML output. You can unload Docucorp Standard XML output from GenData or GenPrint programs (using the PrintFormset rule).

NOTE: You must have a Docupresentment (IDS) license to receive this feature.

Here is an example of the INI setup this feature requires:

```
< Printers >
PrtType = XMP
< PrtType:XMP >
Module = XMPW32
PrintFunc = XMPPrint
```

NOTE: No other INI options are needed.

When using with Documaker RP, it is recommended to use the MultiFilePrint functionality to create a separate XML file per transaction. If multiple XML files are written into the same file, the file will not load in an XML parser, browser, or editor.

Chapter 7

Additional Ways to Use XML and Documaker Server

This chapter describes other ways you can use XML and Documaker Server.

This chapter discusses:

Mapping Fields with XPath

The GenTrn program and the NoGenTrnTransactionProc rule let you use the TRN_Fields control group to map all of your fields with the XPath. To let the system know you are using the XML file, set the XMLTrnFields option in the TRN_File control group to Yes and also set the XMLExtract option in the RunMode control group to Yes.

Here is an example:

```
< RunMode >
    XMLExtract  = Yes
< TRN_File >
    XMLTrnFields= Yes
< TRN_Fields >
    Company     = !/Forms/Key1
    LOB         = !/Forms/Key2
    PolicyNum   = !/Forms/PolicyNum
    RunDate     = !/Forms/RunDate;DM-4;D4
```

NOTE: Use this format for the Trn_Fields options:

(*Field in the Transaction DFD File*) = XPath;Field Format

Be sure to include the leading exclamation mark (!). This tells the system to use an XML path search but is not part of the actual search routine. Do not specify whether a field is a key. The system does not support multiple (search) keys with the XML implementation.

If you are selectively excluding transactions, in your exclude file, instead of an offset and SearchMask, replace it with the XPath. Here is an example:

```
!/Forms[PolicyType="OLD"]
```

Referencing DAL and GVM Using XML

The system lets you reference the GVM and DAL expressions before it rebuilds XPath search masks. The format is as follows:

```
=XXX(expression)
```

where *XXX* is one of the supported ways of finding data from a symbol, such as DAL or GVM.

Here are the standard access methods:

- =("expression") returns the value of a DAL symbol represented by expression

  Here is an example:

  ```
  !/Forms/Data1[Data2="**=("dalVar")**"]/Data3
  ```

  dalVar is a DAL symbol. If the value of this variable is *Two*, the system resolves the expression and returns the following XPath search mask:

  ```
  !/Forms/Data1[Data2="Two"]/Data3
  ```

- =(expression) returns the value of a DAL variable named in the expression which contain a name of another DAL variable.

  Here is an example:

  ```
  !/Forms/Data1[Data2="**=(dalVar2)**"]/Data3
  ```

  If you assign dalVar2 equal to another DAL variable called dalVar which holds a value of *Two*, here is the result:

  ```
  !/Forms/Data1[Data2="Two"]/Data3
  ```

- =DAL("expression") returns the value of a DAL script named by expression.

  Here is an example:

  ```
  !/Forms/Data1[Data2="**=DAL("test.dal")**"]/Data3
  ```

  The system runs the named DAL script and returns the value as a result of that run. If *test.dal* returns a value of *Three*, the expression is resolved and this XPath search mask is the result:

  ```
  !/Forms/Data1[Data2="Three"]/Data3
  ```

- =GVM("expression") returns the value of a GVM symbol named by the expression.

  Here is an example:

  ```
  !/Forms/Data1[Data2="**=GVM("gvmVar")**"]/Data3
  ```

  gvmVar is a GVM symbol. If the value for this symbol is *One*, the system resolves the expression and returns this XPath search mask:

  ```
  !/Forms/Data1[Data2="One"]/Data3
  ```

- =GVM(expression) returns the DAL or GVM variable named in the expression which contains a name of another GVM variable.

  Here is an example:

  ```
  !/Forms/Data1[Data2="**=GVM(dalVar)**"]/Data3
  ```

  dalVar is a DAL variable. If dalVar was assigned a value equal to another GVM variable called gvmVar and the value for this variable is *One*, here is the result:

  ```
  !/Forms/Data1[Data2="One"]/Data3
  !/Forms/Data1[Data2="**=GVM(gvmVar2)**"]/Data3
  ```

  gvmVar2 is a GVM variable. If gvmVar2 was assigned a value equal to another GVM variable called gvmVar and the this variable holds a value of *One*, here is the result:

  ```
  !/Forms/Data1[Data2="One"]/Data3
  ```

- =() Retrieves the contents of a DAL variable that is, by default, the root name of the source name of the current DDT field.

  Here is an example:

  ```
  !/Forms/TestGVM[GVMField="**=()**"]/Data
  ```

  Assume, current DDT field has destination name *dalVar #003* and also source name *dalVar #003* and the content of this DAL variable, dalVar, is *One*, the system resolves the expression and returns this XPath search mask:

  ```
  !/Forms/TestGVM[GVMField="One"]/Data
  ```

If you have GVM, DAL, or other symbols in the XPath, you may want to know what symbolic data you are referencing. Use these INI options to have the system write the symbol and its referred data into the log file:

```
< Debug_Switches >
    Enable_Debug_Options = Yes
    XPath              = Yes
```

Running Documaker Server Using an XML Job Ticket

Now you can run Documaker Server from another application using an XML job ticket. You receive results in an XML job log file.

The layout of these files is the same as those used by IDS for running Documaker Server. See Using IDS to Run Documaker Server on page 70 for more information.

The name of the Job ticket is passed to the GenData program on the command line as

```
/jticket= parameter
```

The default name is *JOBTICKET.XML*.

To set this up replace the StandardJobProc rule with the TicketJobProc rule. Keep in mind you must run Documaker Server in single step mode, since only the GenData program is executed.

You can specify the name of the resulting job log file using this command line parameter:

```
/jlog=
```

The default is *JOBLOG.XML*.

Creating Multiple Print Files Using the PrintFormset Rule

The PrintFormset rule lets you create multiple print files when you run the GenData program in single-step mode.

NOTE: When running in multi-step mode, use the MultFilePrint callback functionality.

To use this feature, add these options to PrintFormset control group:

```
< PrintFormset >
    MultiFilePrint = Yes
    LogFileType    = XML
    LogFile        = (log file name and path)
```

Option	Description
MultiFilePrint	Set this option to Yes to allow multiple file print.
LogFileType	Specifies the type of the log file. Enter XML for an XML file. Any other entry results in a text file.
LogFile	Specifies the name of the log file. Include the full path. If you omit the path, the system uses DATAPATH. If you omit this option, the system creates a file named TMP.LOG. If you enter XML in the LogFileType option and a different extension here, the system uses XML.

The log file that is created is either a semicolon-delimited text file, formatted like the file created by the MultiFilePrint callback function or an XML file. Here is an example of the layout of the XML file:

```
  <?xml version="1.0" encoding="UTF-8" ?>
- <LOGFILE>
- <TRANSACTION INSTANCE="1">
  <BATCH NAME="Logical Batch Name">.\data\BATCH1.BCH</BATCH>
  <GROUP1 NAME="Company">SAMPCO</GROUP1>
  <GROUP2 NAME="Lob">LB1</GROUP2>
  <TRANSACTIONID NAME="PolicyNum">1234567</TRANSACTIONID>
  <TRANSACTIONTYPE NAME="TransactionType">T1</TRANSACTIONTYPE>
  <RECIPIENT NAME="INSURED">INSUREDS COPY</RECIPIENT>
 <FILE>DATA\0rDcP7WxytE8ECp5jexhWXVqkV840Vw_F-GykT_VMfd.PDF</FILE>
  </TRANSACTION>
- <TRANSACTION INSTANCE="2">
  <BATCH NAME="Logical Batch Name">.\data\BATCH2.BCH</BATCH>
  <GROUP1 NAME="Company">SAMPCO</GROUP1>
  <GROUP2 NAME="Lob">LB1</GROUP2>
  <TRANSACTIONID NAME="PolicyNum">1234567</TRANSACTIONID>
  <TRANSACTIONTYPE NAME="TransactionType">T1</TRANSACTIONTYPE>
  <RECIPIENT NAME="COMPANY">COMPANY COPY</RECIPIENT>
 <FILE>DATA\0v3l7pBdVqHceoRL5hf2xqjJ7WMxiRVO9U70iFiIcne.PDF</FILE>
  </TRANSACTION>

</LOGFILE>
```

Use the options in the DocSetNames control group to determine which XML elements are created. The values in this control group are the same as those written to a recipient batch or TRN file.

Chapter 8

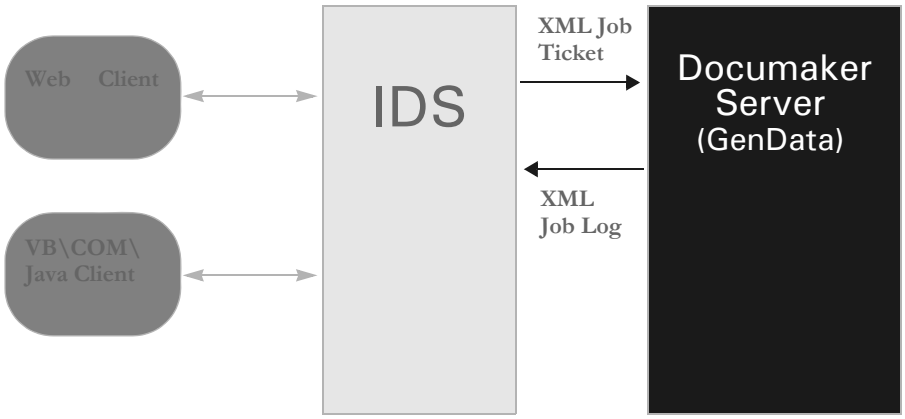
Using IDS to Run Documaker Server

This chapter tells you how to set up IDS and Documaker Server so IDS can run Documaker Server as a subordinate process.

This chapter discusses:

OVERVIEW

When using IDS to run Documaker Server, web clients communicate with IDS using queues. IDS communicates with Documaker Server via XML files called *job tickets* and *job logs*, as shown below.



IDS can start or stop Documaker Server as needed, without user interaction. One IDS session controls one Documaker Server process. You can, however, implement multiple IDS sessions and have multiple Documaker Server processes as well.

The ServerBaseProc rule replaces the RULStandardJobProc rule and lets IDS run Documaker Server as a separate, *stay alive* process. This means Documaker Server only has to start once and IDS can continue even if Documaker Server fails. See ServerBaseProc on page 93 for more information.

Keep in mind these limitations:

- You can only run Documaker Server in single step mode. Consult the Documaker Administration Guide for more information on single step processing.
- You must run Documaker on Windows 2000 or higher.
- If any IDS transaction specifies a different resource setup, the Documaker Server process will automatically re-initialize to change to those resources. Such resource changes can affect the overall performance of the system.
- During processing, some INI options can be changed by the client. Since some Documaker Server rules use static variables and store INI values in memory, it is possible that a client will be unable to change an INI option if those Documaker Server rules are used. To handle these situations, you must restart Documaker Server.

Setting Up IDS

To set up IDS so that it will run Documaker Server, you will need to make the following changes in the following INI files:

DOCSERV.INI file

Make these changes in the DOCSERV.INI file, or the INI file the IDS is configured to use. Here is an example of how to add a request type for Documaker Server:

```
< ReqType:RPD >
    function  = atcw32->ATCLogTransaction
    function  = atcw32->ATCLoadAttachment
    function  = atcw32->ATCUnloadAttachment
    function  = dprw32->DPRSetConfig
    function  = rpdw32->RPDCheckRPRun
    function  = rpdw32->RPDCreateJob
    function  = rpdw32->RPDProcessJob
```

If necessary, you can add two more request types, one to check if Documaker Server is running and one to stop Documaker Server. Here is an example:

```
< ReqType:CHECK >
    function  = atcw32->ATCLogTransaction
    function  = atcw32->ATCLoadAttachment
    function  = atcw32->ATCUnloadAttachment
    function  = dprw32->DPRSetConfig
    function  = rpdw32->RPDCheckRPRun
< ReqType:STOP >
    function  = atcw32->ATCLogTransaction
    function  = atcw32->ATCLoadAttachment
    function  = atcw32->ATCUnloadAttachment
    function  = dprw32->DPRSetConfig
    function  = rpdw32->RPDStopRPRun
```

You will also need to add the following IDS rule to the ReqType:INI control group:

```
    function   = rpdw32->RPDStopRPRun
```

DAP.INI file

Add a configuration option for a the master resource library you will use. Here is an example which is based on the RPEX1 master resource library:

```
< Configurations >
   CONFIG    = RPEX1
< Config:RPEX1 >
   INIFile   = RPEX1.INI
```

RPEX1.INI file

Make these changes in the RPEX1.INI file (or the INI file you are using for your configuration):

```
< IDSServer >
   ExtrPath     = e:\fap\mstrres\rpex1\extract\
   PrintPath    = e:\fap\mstrres\rpex1\data\
   WaitForStart = 60
   SleepingTime = 500
   MaxWaitTime  = 120
   GENSemaphoreName = gendata
   RPDSemaphoneName = rpdrunrp
   PrintFileCacheTime = 7200
   TextFileCacheTime = 7200
< RPDRunRP >
```

```
    Executable   = e:\rel101\shipw32\gendaw32.exe
    Directory    = e:\fap\mstrres\rpex1\
    UserINI     = e:\fap\mstrres\rpex1\fsiuser.ini
    BaseLocation = http://10.8.10.69/fap/mstrres/rpex1/data/
< Printer >
    PrtType     = PDF
< Debug >
    RPDProcessJob = Yes
```

Setting up multiple IDS servers

The semaphores used by IDS and Documaker Server are global for a computer, so if you need multiple IDS processes on the same computer, each IDS process and subordinate Documaker Server process should use different semaphore names.

The semaphore names are generated automatically by IDS for each additional IDS instance. These names are passed to Documaker Server as command line parameters. No user intervention is usually needed.

To specify the own naming conventions for these semaphores, do so by changing these INI options:

```
< IDSServer >
    GENSemaphoreName =
    RPDSemaphoreName =
```

Keep in mind the names must be unique for a computer, so two IDS servers will have to use two different INI files specifying semaphore names.

Setting Up Documaker Server

The first step is to set up Documaker Server to run in a single step mode. See the Documaker Administration Guide for more information

Keep in mind these considerations...

- If the Documaker Server executables and DLLs are located on the network, the start time for Documaker Server can be significant. Keep in mind, however, that the start time only affects the first transaction. Subsequent transactions will process much more quickly. If the start time exceeds 10 seconds, consider changing the WaitForStart option to a higher value.
- All of the standard Documaker Server performance-related INI options are available even when IDS runs Documaker Server as a subordinate process. For best results, optimize Documaker Server's performance before using it with IDS.
- Documaker Server will run fastest if the resource files for Documaker Server, as well as input and output files, are physically located on the computer where IDS and Documaker Server are running.

In addition, you will need to make changes to your FSISYS.INI or FSIUSER.INI files and to your AFGJOB.JDT file.

FSISYS.INI or FSIUSER.INI file

Be sure to turn off all Documaker Server stop options, as shown here:

```
< GenDataStopOn >
   BaseErrors        = No
   TransactionErrors = No
   ImageErrors       = No
   FieldErrors       = No
```

Also, add the following control groups and options:

```
< IDSServer >
    SleepingTime       = 500
    GENSemaphoreName   = gendata
    RPDSemaphoneName   = rpdrunrp
< Debug >
    RULServerJobProc   = Yes
< PrintFormsSet >
    MultiFilePrint     = Yes
    LogFileType        = XML
    LogFile            = .\data\printlog.xml
```

AFGJOB.JDT file

Change the base rule from RULStandardBaseProc, as shown here:

```
<Base Rules>
;RULServerJobProc;1;;
...
```

The ServerBaseProc rule replaces the RULStandardJobProc rule and lets IDS run Documaker Server as a separate, *stay alive* process. This means Documaker Server only has to start once and IDS can continue even if Documaker Server fails.

Naming Conventions for Output Files

The output files from Documaker Server use the names generated by the IDS rules and submitted to Documaker Server in the job ticket file. If you need different names, provide them in the IDS request. In this case, you must make sure the names are unique or else they will be overwritten. The names generated by IDS can consist of up to 45 characters and are similar to the names generated by the DPRPrint rule in IDS.

The directory where the output files are created is determined in this manner:

- If the file name and path was provided, the system uses that information.
- If the file name was provided, but the path was omitted, the system looks for the path in the PRINTPATH attachment variable.
- If the path is not in the PRINTPATH attachment variable, the system looks for the PrintPath INI option in the IDSServer control group.
- If no path was specified in the PrintPath INI option, the system places the output file in the current directory.

The extension of the output files is determined in this manner:

- If the name and extension was provided in the attachment, the system uses that information.
- If the name and extension were omitted, the system generates a name and uses the printer type as the extension for the print output files. For other files, the system looks for the FileExt option in the IDSServer control group to find the extension. The default is *DAT*.

Controlling Documaker Server

To control Documaker Server via IDS, use these IDS rules:

- RPDCheckAttachments - Checks the required input attachment variables and INI options before starting the GenData program.
- RPDCheckRPRun - Makes sure Documaker Server is running. If Documaker Server is not running, this rule starts it.
- RPDCreateJob - Finds the attachment variables for each of the values in the job ticket and adds them to the XML tree. The XML tree is added to the RPDJobTicket DSI variable so the next rule can use it.
- RPDProcessJob - Gets the XML tree from the RPDJobTicket variable and writes it to a file. This file is used as the job ticket which triggers the Documaker Server process.
- RPDStopRPRun - Receives the current process ID from the DSI variable RPDRunProcess and then terminates Documaker Server.

RPDCheckAttachments

Use this rule to check the required input attachment variables and INI options before starting the GenData program.

Syntax

```
_DSIEXPORT DWORD _DSIAPI RPDCheckAttachments (DSIHANDLE hdsi,
                                              char * pszParms,
                                              ULONG ulMsg,
                                              ULONG ulOptions)
```

Parameters

Parameter	Description
DSIHANDLE	hInstanceDSI instance handle
char * pszParms	Pointer to rule parameter string unsigned long
ulMsg	DSI_MSG, such as DSI_MSGRUNF unsigned long
ulOptions	options

This rule runs before the RPDCheckRPRun rule. Using this rule, ReqType becomes:

```
< ReqType:RPD >
    function = atcw32->ATCLogTransaction
    function = atcw32->ATCLoadAttachment
    function = atcw32->ATCUnloadAttachment
    function = irlw32->IRLCopyAttachment
    function = dprw32->DPRSetConfig
    function = RPDW32->RPDCheckAttachments
    function = RPDW32->RPDCheckRPRun
    function = RPDW32->RPDCreateJob
    function = RPDW32->RPDProcessJob
```

The expected attachment variables are checked only if they are in the RPDAttachments control group. Here is an example:

```
< RPDAttachments >
    Variable = ReqType
    Variable = Config
    Variable = PrintBatches
    Variable = ExtrFile
```

If the ExtrFile option is required, the rule checks to see if it exists. Keep in mind the ExtrFile option includes a full path. If you omit the path, the system uses the path specified in the ExtrPath option as the default path.

This rule also checks these options in the RPDRunRP control group:

```
< RPDRunRP >
    Executable  = d:\RP\Mstrres\gendaw32.exe
    Directory   = d:\RP\Mstrres\rpex1\
    UserINI     = fsiuser
```

If the UserINI option does not include a drive letter, the system will look at the Directory option to find the path, so the full UserINI name becomes:

```
d:\RP\Mstrres\rpex1\fsiuser.ini
```

In other cases, you can set the UserINI option, as shown here:

```
Directory  = d:\ProgIDS\RP\Mstrres\Validate\W32exe\
UserINI    = fsiuser
```

So the full UserINI name becomes:

```
d:\ProgIDS\RP\Mstrres\Validate\W32exe\fsiuser.ini
```

This rule also makes sure the USERINI.INI file exists. For UNIX, if the first byte is "/", the system looks at the UserINI option for the full path, for example:

```
UserINI = /ProgIDS/RP/Mstrres/Deflib
```

Otherwise, the system uses the path specified in the Directory option. Keep in mind that if you omit the UserINI option, the system uses the FSIUSER.INI file instead.

INI options

```
< RPDAttachments >
    Variable   = ReqType
    Variable   = Config
    Variable   = PrintBatches
    Variable   = ExtrFile
< IDSServer >
    ExtrPath   = d:\fap\mstrres\rpex1\extract\
< RPDRunRP >
    Executable = d:\rel101\rps100\shipw32\gendaw32.exe
    Directory  = d:\fap\mstrres\rpex1\
    UserINI    = fsiuser
```

Returns

Success or failure.

Error messages

Message	Description
RPD0001	Can not locate variable #VARIABLE,# in the attachment list at #LOCATION,#.
RPD0004	Can not add variable #VARIABLE,# to attachment at #LOCATION,#.
RPD0007	File #FILENAME,# does not exists. Failed to #LOCATION,#.
RPD0009	The INI option #INIOPTION,# could not be located in the group #INIGROUP,#.

RPDCheckRPRun

Use this rule to make sure Documaker Server is running. If Documaker Server is not running, this rule starts it.

Syntax

```
_DSIEXPORT DWORD _DSIAPI RPDCheckRPRun (DSIHANDLE hdsi,
                                        char * pszParms,
                                        ULONG ulMsg,
                                        ULONG ulOptions)
```

Parameters

Parameter	Description
DSIHANDLE	hInstance DSI instance handle
char * pszParms	Pointer to rule parameter string unsigned long
ulMsg	DSI_MSG, such as DSI_MSGRUNF unsigned long
ulOptions	options

To determine if Documaker Server is running, the rule looks at the CONFIG value. If the CONFIG value is not the same as it was in the previous run, this rule stops and then restarts Documaker Server.

On the RUNF message, this rule looks to see if a Documaker Server process exists and starts one if needed. On the RUNR message, this rule stops the Documaker Server process if there was an error.

On DSI_MSGRUNF, this rule first checks to see if Documaker Server is running by detecting the *gendata* semaphore created by RULServerBaseProc rule. If the semaphore does not exist, Documaker Server is not running. This rule then starts Documaker Server and creates a semaphore called *rpdrunrp*.

This lets Documaker Server check the status of the IDS by detecting the existence of the semaphore. It also lets Documaker Server terminate normally in case IDS stops.

To handle situations where you have multiple master resource libraries (MRLs), the rule checks the CONFIG value for every job process to see if a new MRL is requested. If the CONFIG value changes, the rule stops the current Documaker Server process and starts another one which uses the new MRL.

On DSI_MSGRUNR, this rule terminates Documaker Server if errors occur.

Input attachment variables

Variable	Description
CONFIG	The configuration for the master resource library (MRL). See also the DPRSetConfig rule and the setup with multiple master resource directories.

Output DSI variables

Variable	Description
RPDRunProcess	This value is the process ID for the Documaker Server process.
RPDSemaphoreName	The semaphore name from the RPDSemaphore INI option.
GENSemaphoreName	The semaphore name from the GENSemaphore INI option.
RPDRunSemaphore	Stores the RPDSemaphore handle.
RPDJobLogName	The name of the job log file name to use.
RPDJobTicketName	The name of the job ticket file name to use.

INI options

You can use these INI options:

```
< RPDRunRP >
    Executable =
    Directory =
    UserINI =
< IDSServer >
    GENSemaphoreName =
    RPDSemaphoreName =
```

Option	Description
RPDRunRP control group	
Executable	The name and path of the program you want to execute, such as d:\rpsetup\gendaw32.exe.
Directory	The path to the master resource library, where you want to run Documaker Server.
UserINI	(Optional) The name and path of the INI file you want to use. The default is the FSIUSER.INI located in the directory specified by the Directory option.
IDSServer control group	
GENSemaphoreName	The name of the semaphore. The default is *gendata*.
RPDSemaphoreName	The name of the semaphore. The default is *rpdrunrp*.

Returns

Success or failure.

Error messages

Message	Description
RPD0001	Cannot locate variable #VARIABLE,# in the attachment list at #LOCATION,#.
RPD0004	Cannot add variable #VARIABLE,# to attachment at #LOCATION,#.

Message	Description
RPD0008	The call by #LOCATION,# to API #APINAME,# failed.
RPD0009	The INI option #INIOPTION,# can not be located in the group #INIGROUP,#.
RPD0010	Cannot create DSI variable #VARIABLE,#. #LOCATION,# failed.

RPDCreateJob

Use this rule to find the attachment variables for each of the values in the job ticket and add them to the XML tree. The XML tree is added to the RPDJOBTICKET DSI variable so the next rule can use it.

Keep in mind that the RPDCreateJob rule always adds the DbLogFile XML element to the job ticket. If a value for this element is not in the job ticket, a unique file name is generated and added. If an attachment variable or INI option is present but set to a blank value, the RPDCreateJob rule does not add the DbLogFile element.

Syntax

```
_DSIEXPORT DWORD _DSIAPI RPDCreateJob (DSIHANDLE hdsi,
                                       char * pszParms,
                                       ULONG ulMsg,
                                       ULONG ulOptions)
```

Parameters

Parameter	Description
DSIHANDLE	hInstance DSI instance handle
char * pszParms	Pointer to rule parameter string unsigned long
ulMsg	DSI_MSG, such as DSI_MSGRUNF unsigned long
ulOptions	options

On DSI_MSGRUNF, this rule creates the XML document for the job ticket that triggers the job processing. You should direct your results to designated directories and use unique file names, especially if you want to support multiple MRL setups, multiple Documaker Server processes, or multiple job processes.

You can change INI options via attachment variables. These changes are added onto the XML tree so Documaker Server can update the INI options in memory.

On DSI_MSGRUNR, this rule processes the XML document of the job log, and all values of the XML tree are added to the output attachment.

Input attachment variables

You can use these input attachment variables:

Variable	Description
ExtrFile	Extract file name and path. This is a required input file.
MsgFile	(Optional) Message file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.
ErrFile	(Optional) Error file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.

Variable	Description
LogFile	(Optional) Log file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.
DBLogFile	(Optional) DB log file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.
NAFile	(Optional) NA file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.
POLFile	(Optional) POL file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.
NewTrn	(Optional) NewTrn file name and path. If you omit the path, the PrintPath attachment variable is used. If the PrintPath was omitted, the system uses the PrintPath defined in the IDSServer control group. If the file name is omitted, the system creates a 46-byte unique file name.
PrintBatchPath	The default path for print batches.
PrintBatches	The number of batches to print. If you enter zero or you do not enter this variable, no print batch information is updated. Your entry cannot exceed the number of printers listed in the PrinterInfo control group in the FSISYS.INI file.
PrintBatchesX	The name of a print batch, where *X* denotes the number of the print batch, continuing from one to *PrintBatches*. If omitted, the system creates a 46-byte unique name for the print batch. A print batch can have a full path. If it does not have a path, PrintPath is used. If PrintPath is omitted, the system uses the path specified in the PrintPath option in the Data control group.
BatchFiles	The number of batch files. If you enter zero or omit this option, no batch file information is updated. Your entry should not exceed the number of batch files listed in the Print_Batches control group in the FSISYS.INI file.
BatchFilesX	The name of the batch file. *X* denotes the number of the batch file, counting from one to the maximum. If you omit this option, the system creates a 46-byte unique name for the batch file. You can include a full path. If you omit the path, the system uses the PrintPath. If the PrintPath is omitted, the system uses the path specified in the PrintPath option in the IDSServer control group.
INIOptions	The number of other INI options to update.

Variable	Description
INIOptionsX.Group	The INI group name you want to update.
INIOptionsX.Option	The INI option name you want to update.
INIOptionsX.Value	The value of the INI option you want to update. *X* indicates the number of INI options, counting from one to the maximum.

Output DSI variables

Variable	Description
RPDJOBTICKET	Job ticket variable. Its value is a XML document handle for the job ticket.

Input DSI variables

Variable	Description
RPDJOBLOG	Job log variable. Returns an XML document handle for the job log.

Output attachment variables

Variable	Description
ExtrFile	Extract file name and path.
MsgFile	Message file name and path.
ErrFile	Error file name and path.
LogFile	Log file name and path.
DBLogFile	DB log file name and path.
NAFile	NA file name and path.
POLFile	Pol file name and path.
NewTrn	NewTrn file name and path.
PrinterX	Name and path of print batches. *X* denotes the number of the print batches from one to the maximum.
BatchX	The name and path of the batch files. *X* denotes the number of batch files, from one to the maximum.
Results	Success or an error code from the IDS rules.
RPResults	An error code from Documaker Server: 0=Success, 4=Warning, 8 or 16=Failure.

Note that the input attachments for PrintBatchX should be in the same order as those for PrinterX, as defined in the PrintInfo control group in the FSISYS.INI file. Also keep in mind that *PrinterX* and *BatchX* are option names you define in the PrintInfo and Print_Batches control groups.

INI options

```
< IDSServer >
    PrintPath           =
    PrintFileCacheTime  =
    TextFileCacheTime   =
< Printer >
    PrtType             =
< RPDRunRP >
    BaseLocation        =
```

Option	Description
IDSServer control group	
PrintPath	Used as a default path for print batches and the rest of the output files.
PrintFileCacheTime	The length of time, in seconds, you want the system to store the print files. At expiration time, the system removes the print batch files. The default is 1800 (30 minutes). Note that only print files with the 46-byte unique name created by the system are cached.
TextFileCacheTime	The length of time, in seconds, you want the system to store the text files. At expiration time, the system removes the text files. The default is 1800 (30 minutes). Note that only text files with the 46-byte unique name created by the system are cached.
Printer control group	
PrtType	The type of print batch file. Your entry must be consistent with the control group defined in the FSISYS.INI file. For instance, if you set up a PrtType:PDF control group there, enter PDF here.
RPDRunRP control group	
BaseLocation	The URL to the output data directory. Your entry must be consistent with the PrintPath or other defined data path.

Returns

Success or failure.

Error messages

Message	Description
RPD0002	Cannot create #TAGNAME,# at #LOCATION,#.
RPD0003	Cannot create DSI variable #VARIABLE,# at #LOCATION,#.
RPD0004	Cannot add variable #VARIABLE,# to attachment at #LOCATION,#.
RPD0005	Cannot locate DSI variable #VARIABLE,# at #LOCATION,#.
RPD0006	DSI variable #VARIABLE,# does not contain valid data. Failed to #LOCATION,#.

RPDProcessJob

Use this rule to get the XML tree from the DSI variable RPDJobTicket and write it to a file written on the RUNF message. On the RUNR message, this rule waits for the job log file. The job log file is located in the same directory and is loaded as an XML file on the RUNR message.

Syntax

```
_DSIEXPORT DWORD _DSIAPI RPDProcessJob (DSIHANDLE hdsi,
                                        char * pszParms,
                                        ULONG ulMsg,
                                        ULONG ulOptions)
```

Parameters

Parameter	Description
DSIHANDLE	hInstance DSI instance handle
char * pszParms	Pointer to rule parameter string unsigned long
ulMsg	DSI_MSG, such as DSI_MSGRUNF unsigned long
ulOptions	options

The IDS variable RPDJobLog is created with the XML job log. The RPDJobLog variable and the XML tree associated with it is destroyed in this rule on the TERM message.

You can set the maximum amount of time to wait using the MaxWaitTime option. On the RUNR message, this rule also removes the job log file from disk. You can also control the removal of the job log file with the RPDProcessJob INI option. This option is for debugging purposes only.

On DSI_MSGRUNF, this rule receives the XML document handle from the DSI variable RPDJobTicket, and writes the XML tree into the JOBTICKET.XML file specified in the Directory option.

On DSI_MSGRUNR, this rule waits until it receives the job log file (JOBLOG.XML), from Documaker Server. You specify how long the system should wait using the SleepingTime INI option. If the waiting time exceeds the limit, the rule stops Documaker Server.

The system locates a job log placed in the directory specified in the Directory INI option. The job log file is loaded into an XML document so the XML tree can be written out in attachments. Whether the JOBLOG.XML file should be removed, depends on your entry in the RPDProcessJob INI option.

Input IDS variables

Variable	Description
RPDJobTicket	A job ticket variable. It returns the XML document handle for the job ticket.

Output files

File	Description
JOBTICKET.XML	A job ticket, which is a trigger for the Documaker Server process. It contains request information and information used to update INI options.

Output DSI variables

Variable	Description
RPDJobLog	The job log variable. Its value is an XML document handle for the job log.

INI options

```
< RPDRunRP>
    Directory  =
< IDSServer >
    MaxWaitTime =
    SleepingTime =
    WaitForStart =
< Debug >
    RPDProcessJob =
```

Option	Description
RPDRunRP control group	
Directory	Enter the path where you want to load and unload the JOBTICKET.XML and JOBLOG.XML files.
IDSServer control group	
MaxWaitTime	Enter, in seconds, the maximum length of time you want IDS to wait for the JOBLOG.XML file. The default is 60 seconds.
SleepingTime	Enter the time, in milliseconds, to specify how often IDS should check for a job ticket. The default is 1000 (1 second).
WaitForStart	The length of time IDS should wait for Documaker Server to start before assuming Documaker Server is not running. The default is 10 seconds. Adjust this value if the Documaker Server requires more time to start. If Documaker Server does not start within the allotted time, this rule returns an error and stops processing.
Debug control group	
RPDProcessJob	Enter Yes to keep the JOBLOG.XML file. Enter No to remove it.

Return values

Success or failure.

Error messages

Message	Description
RPD0003	Cannot create the DSI variable #VARIABLE,# at #LOCATION,#.
RPD0004	Cannot add the variable #VARIABLE,# to attachment at #LOCATION,#.
RPD0005	Cannot locate the DSI variable #VARIABLE,# at #LOCATION,#.
RPD0006	The DSI variable #VARIABLE,# does not contain valid data. Failed to #LOCATION,#.
RPD0007	The file #FILENAME,# does not exist. Failed to #LOCATION,#.
RPD0008	The call by #LOCATION,# to API #APINAME,# failed.
RPD0009	The INI option #INIOPTION,# cannot be located in the group #INIGROUP,#.

RPDStopRPRun

Use this rule to stop Documaker Server. To do so, you need to execute the request type STOP as described in the topic, Setting Up IDS on page 72.

This rule is also used as an INIT/TERM rule and is registered on IDS under the ReqType:INI control group. You can use this rule to make sure that when IDS stops, Documaker Server also stops.

Syntax

```
_DSIEXPORT DWORD _DSIAPI RPDStopRPRun (DSIHANDLE hdsi,
                                       char * pszParms,
                                       ULONG ulMsg,
                                       ULONG ulOptions)
```

Parameters

Parameter	Description
DSIHANDLE	hInstance DSI instance handle
char * pszParms	Pointer to rule parameter string unsigned long
ulMsg	DSI_MSG, such as DSI_MSGRUNF unsigned long
ulOptions	options

This rule receives the current process ID from the DSI variable RPDRunProcess and then terminates Documaker Server.

Return values

Success or failure.

RULServerBaseProc

When you use IDS to run Documaker Server, this rule replaces the RULStandardBaseProc rule and is registered as RULServerJobProc.

Syntax

```
;RULServerBaseProc;;;
```

Insert this rule in the AFGJOB.JDT file as the first rule.

This rule looks for a job ticket file in the current working directory and loads it as an XML file. All of the values on the XML tree are added to or updated in the INI options. After Documaker Server finishes processing, the rule checks the status. If there are errors, it returns a *no more bases* return code on the next iteration. This terminates Documaker Server.

This rule uses a polling technique—sleep a while and check for the file existence— which you can configure using INI options. The rule loads the job ticket and sets INI options used when running subsequent rules. On the post message, this rule creates a job log XML tree and writes it to disk. If any necessary values are missing from the XML job ticket, these values are generated and changed (or appended) in the INI context.

On RP_PRE_PROC_B, this rule creates a semaphore (*gendata*), which makes it possible for the IDS RPDCheckRPRun rule to detect the status of Documaker Server when the next processing job starts.

This rule stays in waiting status and checks for the existence of job ticket file (JOBTICKET.XML) and the *rpdrunrp* semaphore. As soon as the job ticket file is detected, this rule loads it onto the XML tree and uses the contents of the XML tree to update INI options in memory.

If the rule does not detect the *rpdrunrp* semaphore, the rule terminates Documaker Server by returning a msgNO_MORE_BASES return code. It also creates a GVM variable (DSISERV) so the CUSInitPrint rule can re-initialize printers after the job process is complete. This GVM variable can be used by any of the Documaker Server rules to detect if the Documaker Server is running under IDS, if different logic is needed.

On RP_POST_PROC_B, the rule writes out the job log file and removes the job ticket file. If the RULServerJobPRoc option is set to Yes, a copy of the file will be obtained for debugging purposes.

INI options

Use these INI options with this rule:

```
< Data >
    DataPath =
    ExtrFile =
    MsgFile =
    ErrFile =
    LogFile =
    DBLogFile =
    NAFile =
    POLFile =
    NewTrn =
< PrinterInfo >
    Printer =
< Printer >
    Port =
```

```
< Print_Batches >
    Batch1 = batch1.bch
< IDSServer >
    SleepingTime =
    GENSemaphoreName =
    RPDSemaphoreName =
< Debug >
    RULServerJobProc =
< PrintFormSet >
    MultiFilePrint =
    LogFileType =
    LogFile =
```

Option	Description
Data control group	
DataPath	Used as the default path if you omit PrintPath.
ExtrFile	Enter the name and path of the extract file.
MsgFile	Enter the name and path of the message file.
ErrFile	Enter the name and path of the error file.
LogFile	Enter the name and path of the log file.
DBLogFile	Enter the name and path of the DB log file.
NAFile	Enter the name and path of the NA file.
POLFile	Enter the name and path of the POL file.
NewTrn	Enter the name and path of the NewTrn file.
PrinterInfo control group	
Printer	Enter the designated printers for print batches.
Printer control group	
Port	Enter the name of the print batch file for each designated printer. Note the group name is defined by the printer option in the PrinterInfo control group.
Print_Batches control group	
Batch1	Then name of the batch file.
IDSServer control group	
SleepingTime	Enter the amount of time in milliseconds you want the system to wait before it checks for a job ticket. The default is 1000 (1 second).
GENSemaphoreName	Enter the name of the semaphore. The default is *gendata*.
RPDSemaphoreName	Enter the name of the semaphore. The default is *rpdrunrp*.

Option	Description
Debug control group	
RULServerJobProc	Enter Yes if you want errors appended to the ErrFile, the LogTrace file to record the trace, and the JobLog file to be renamed and saved.
PrintFormSet control group	

MultiFilePrint	Enter Yes to generate multiple print files which use 46-byte unique names.
	To identify which recipients are in which print batch, enter No or omit this option.This causes the PrintFormSet rule to save the printer for the print batch along with its recipient information. The RULServerBaseProc rule then adds three new tags for each print batch file and adds them to the JOBLOG.XML file.
	For example, for the print batch file on PRINTER1, the system creates these new tags:
	`<PRINTER1RECIP>Insured</PRINTER1RECIP>`
	`<PRINTER1CODE>001</PRINTER1CODE>`
	`<PRINTER1DESC>Insured Copy</PRINTER1DESC>`

LogFileType	Specify the type of print log file, such as XML or TEXT.
LogFile	Enter the name and path of the print log file. If you omit the extension, the system uses the LogFileType option to determine the extension.

Input file JOBTICKET.XML

Output file JOBLOG.XML

ServerBaseProc

When you use IDS to run Documaker Server, this rule replaces the RULStandardJobProc rule.

Syntax

```
;ServerBaseProc;;;
```

Insert this rule in the AFGJOB.JDT file as the first rule.

This rule looks for a job ticket file in the current working directory and loads it as an XML file. All of the values on the XML tree are added to or updated in the INI options. After Documaker Server finishes processing, the rule checks the status. If there are errors, it returns a *no more bases* return code on the next iteration. This terminates Documaker Server.

This rule uses a polling technique—sleep a while and check for the file existence— which you can configure using INI options. The rule loads the job ticket and sets INI options used when running subsequent rules. On the post message, this rule creates a job log XML tree and writes it to disk. If any necessary values are missing from the XML job ticket, these values are generated and changed (or appended) in the INI context.

On RP_PRE_PROC_B, this rule creates a semaphore (*gendata*), which makes it possible for the IDS RPDCheckRPRun rule to detect the status of Documaker Server when the next processing job starts.

This rule stays in waiting status and checks for the existence of job ticket file (JOBTICKET.XML) and the *rpdrunrp* semaphore. As soon as the job ticket file is detected, this rule loads it onto the XML tree and uses the contents of the XML tree to update INI options in memory.

If the rule does not detect the *rpdrunrp* semaphore, the rule terminates Documaker Server by returning a msgNO_MORE_BASES return code. It also creates a GVM variable (DSISERV) so the CUSInitPrint rule can re-initialize printers after the job process is complete. This GVM variable can be used by any of the Documaker Server rules to detect if the Documaker Server is running under IDS, if different logic is needed.

On RP_POST_PROC_B, the rule writes out the job log file and removes the job ticket file. If the RULServerJobPRoc option is set to Yes, a copy of the file will be obtained for debugging purposes.

INI options

```
< Data >
    DataPath =
    ExtrFile =
    MsgFile =
    ErrFile =
    LogFile =
    DBLogFile =
    NAFile =
    POLFile =
    NewTrn =
< PrinterInfo >
    Printer =
< Printer >
    Port =
< Print_Batches >
    Batch1 = batch1.bch
```

```
< IDSServer >
    SleepingTime =
    GENSemaphoreName =
    RPDSemaphoreName =
< Debug >
    RULServerJobProc =
< PrintFormSet >
    MultiFilePrint =
    LogFileType =
    LogFile =
```

Option	Description
Data control group	
DataPath	Used as the default path if you omit PrintPath.
ExtrFile	Enter the name and path of the extract file.
MsgFile	Enter the name and path of the message file.
ErrFile	Enter the name and path of the error file.
LogFile	Enter the name and path of the log file.
DBLogFile	Enter the name and path of the DB log file.
NAFile	Enter the name and path of the NA file.
POLFile	Enter the name and path of the POL file.
NewTrn	Enter the name and path of the NewTrn file.
PrinterInfo control group	
Printer	Enter the designated printers for print batches.
Printer control group	
Port	Enter the name of the print batch file for each designated printer. Note the group name is defined by the printer option in the PrinterInfo control group.
Print_Batches control group	
Batch1	Then name of the batch file.
IDSServer control group	
SleepingTime	Enter the amount of time in milliseconds you want the system to wait before it checks for a job ticket. The default is 1000 (1 second).
GENSemaphoreName	Enter the name of the semaphore. The default is *gendata*.
RPDSemaphoreName	Enter the name of the semaphore. The default is *rpdrunrp*.
Debug control group	

Option	Description
RULServerJobProc	Enter Yes to get a copy of the job ticket file before the system removes it.
PrintFormSet control group	

MultiFilePrint	Enter Yes to generate multiple print files which use 46-byte unique names.
	To identify which recipients are in which print batch, enter No or omit this option.This causes the PrintFormSet rule to save the printer for the print batch along with its recipient information. The RULServerBaseProc rule then adds three new tags for each print batch file and adds them to the JOBLOG.XML file.
	For example, for the print batch file on PRINTER1, the system creates these new tags:
	`<PRINTER1RECIP>Insured</PRINTER1RECIP>`
	`<PRINTER1CODE>001</PRINTER1CODE>`
	`<PRINTER1DESC>Insured Copy</PRINTER1DESC>`

LogFileType	Specify the type of print log file, such as XML or TEXT.
LogFile	Enter the name and path of the print log file. If you omit the extension, the system uses the LogFileType option to determine the extension.

Input file JOBTICKET.XML

Output file JOBLOG.XML

Chapter 9

Frequently Asked Questions

This chapter provides answers to commonly asked questions.

Is XML the same as HTML?

No. XML is primarily a data exchange format and contains the data definitions and the data. HTML can contain data and layout, however the definitions of the data are not defined in *tags* (such as <author>) as they are in XML. These tags are defined in a *schema*.

To portray XML data in a page layout an XSL (Extensible Stylesheet Language) file is required. This would contain information such as position, fonts, and so on.

The benefits of XML over HTML are that it is becoming an industry standard accepted format for data transfer and it has a more defined structure. When an XML file has a valid structure it is known as being *well formed*.

Who developed the XML parser?

The system uses the Expat XML parser, which was originally developed for Netscape. It is a third-party library. You cannot plug in your own parser. Here are some links if you want more information on Expat:

http://expat.sourceforge.net/

http://sourceforge.net/projects/expat/

What is an XML tag?

XML tags are created like HTML tags. There is a start tag and a closing tag.

```
<TAG>content</TAG>
```

The closing tag uses a slash after the opening bracket. The text between the brackets is called an *element*. Keep in mind...

- Tags are case sensitive.
- Starting tags always need a closing tag.
- All tags must be nested properly.
- Comments can be used in the same way as HTML, for instance <!--Comments-->

Empty tags can be defined as <TAG/>. Empty tags do not require a closing tag.

What is an XML attribute?

Elements in XML can use attributes. The syntax is:

```
<element attribute-name="attribute-value">…</element>
```

The value of an attribute needs to be quoted, even if it contains only numbers. For example:

```
<car color = "red">Volvo</car>
```

The same entry could be defined without using attributes:

```
<car>
    <brand>Volvo</brand>
    <color>red</color>
</car>
```

What is a schema?

A schema is a map of the structure of the data. This is presented in an XML type layout. Using the sample XML file on the previous page the schema for this would be as shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.yourco.org//XMLSchema">
  <xs:element name="book">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="title" type="xs:string"/>
        <xs:element name="author" type="xs:string"/>
        <xs:element name="character" minOccurs="0"
maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="name" type="xs:string"/>
              <xs:element name="friend-of" type="xs:string"
minOccurs="0"
                   maxOccurs="unbounded"/>
              <xs:element name="since" type="xs:date"/>
              <xs:element name="qualification" type="xs:string"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
      <xs:attribute name="isbn" type="xs:string"/>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

What XML standards are accepted by Documaker and Docupresentment applications?

XML standards are set and defined by the W3C organization (www.w3c.org). This is a consortium of over 450 organizations that set and define common standards and protocols in use on the World Wide Web. Documaker and Docupresentment applications use the XML 1.0 standard and will support the following encoding:

- UTF-8
- ISO-8859-1
- US-ASCII

You should be able to use any of these encodings to pass information to Docupresentment, DSI APIs or Documaker Server. Docupresentment sends back UTF-8.

Are ampersands (&) and octothorpes (#) supported in XML files?

Yes, however some characters must be defined as *entity references* or *character references*. For instance, you can use octothorpes in XML files as shown here:

```
<message>Use #1 before using #2</message>
```

Entity references begin with an ampersand (&) and end with a semicolon (;). These are predefined codes within the XML specification for commonly used characters. Here are some examples:

Character	In XML
&	&amp;
“	&quot;
‘	&apos;
>	&gt;
<	&lt;

Character references begin with an ampersand and an octothorpe (&#) and end with a semicolon (;) . These are used for characters which are not commonly used and do not already have entity references pre-defined.

Here are some examples:

Character	In XML
é	&#233;
í	&#237;
ü	&#252;

Refer to the W3C (www.w3c.org) for more information on special characters.

What tag names cannot be used in XML?

There are a number of restrictions for tag names. These include:

- No tag names can start with *xml*.
- Tag names cannot start with underscores or numbers.
- Names cannot contain semicolons (:).
- There cannot be a space after the opening < character.

Reserved words are defined by the W3C. Some of the words that cannot be used include:

If	Typeswitch	Item	Node

Element	Attribute	Comment	Child
Text	Processing-instruction	ID	Key

For a full list of reserved words refer to the W3C (www.w3c.org).

How do you send an XML input file to Documaker?

You can use these two rules to send an XML file to Documaker:

- XMLFileExtract - Used when you point to a flat file which contains references to multiple XML files. For example, this method can be used if the key information is in the flat file and the triggering and variable data is in the XML file.
- UseXMLExtract - Used when you have one XML file containing all transactions.

See the Rules Reference for more information.

How do you export an XML file from Documaker Workstation?

To configure the import and export capabilities of Documaker Workstation:

1. Open the FSISYS.INI file in the resource library for which you want to use export files. You can use any text editor to open this file.
2. Locate the ExportFormats control group. Add the following line:

   ```
   XML =09=;XM;XML Export;WXMW32->WXMExportXML
   ```

   Here is an example, which assumes 09 is not already being used.

   ```
   < ExportFormats >
       09=;XM;XML Export;WXMW32->WXMExportXML
   ```

What are the Unicode capabilities of XML?

The Documaker and Docupresentment XML parser supports the following encodings: UTF-8, ISO-8859-1, and US-ASCII. The input XML file must use one of these encodings or should not specify an encoding at all. Here is an example of an XML header that specifies UTF-8 encoding:

```
<?xml version="1.0" encoding="UTF-8" ?>
```

If you do not specify an encoding, the system uses an encoding of ISO-8859-1. You can find more information on encoding standards in the Using Unicode Support manual located at:

http://www.skywiresoftware.com/Support/

How do you set up Docupresentment to use XML?

If you are using Docupresentment as the message server, you must also add the INI options shown below to let Documaker Workstation retrieve an archived record from Docupresentment and load data into a form set before any data is entered by a user.

The archived record is retrieved using the Key1, Key2, and KeyID entered on the New Form Set window. For this to happen, you must set up the following request type in the DOCSERV.INI file for Docupresentment:

```
< ReqType:GetXML >
    function = atcw32->ATCLogTransaction
    function = atcw32->ATCLoadAttachment
    function = atcw32->ATCUnloadAttachment
    function = dprw32->DPRSetConfig
    function = dprw32->DPRLocateOneRecord,Key1,Key2,KeyID
    function = dprw32->DPRRetrieveFormset
    function = dprw32->DPRPrint
    function = dprw32->DPRProcessTemplates
    function = atcw32->ATCSendFile, DOCC_XML, SENDBACKPAGE, TEXT
```

You can use any name for the archive library, as long as the same MRL name is used in Documaker Workstation. You can set up this feature as an entry or import hook:

```
< AFEProcedures >
    EntryFormset = WXMOS2->WXMEntryHookExtXMLLoad
```

or

```
< ImportFormats >
    07=;XR;XML Import from IDS;WXMW32->WXMImportXMLArchive
```

If you set it up as an entry or import hook, you must also set up these INI options:

```
< XML_IMP_EXP >
    DSIUseNTUserID         =
    DSIVars                =
    DSIIgnoreTimeoutError  =
    DSIAttachedVarFile     =
    DSIImportLevel         =
    DSITimeout             =
    DSIReqType             =
    DSIRecordDFD           =
```

Option	Description
DSIUseNTUserID	Set this option to Yes to use the NT user ID. The default is No. This gives you a way to pass the NT user ID in the queue instead of the normal DMWS ID.
DSIVars	Enter *variable;value*, where *variable* is the variable name and *value* is its value. This lets you identify a constant list of variables to be sent in the queue.
DSIIgnoreTimeoutError	Enter Yes to continue processing if a timeout occurs. The default is No. This gives you a way to ignore a timeout when waiting on a return queue.

Option	Description
DSIAttachedVarFile	The default is DOCC_XML. Set this option to the attachment name if it differs from DOCC_XML. This gives you a way to specify the variable name the XML file is attached to.
DSIImportLevel	This option is typically used by programmers. Enter 2 if you want the hook to operate on the FAP_MSGOPEN level. Enter 3 if you want it to operate on the FAP_MSGRUN level. The default is 2.
DSITimeout	Enter the number of milliseconds you want for the time-out. The default is 60000 milliseconds or 60 seconds.
DSIReqType	Enter the name of the request type of the message placed in the queue. The default is GETXML.
DSIRecordDFD	Enter the name of a DFD file. The system tries to match variable fields sent in the request to field values in this DFD file. It then attaches the DFD record to the end of the message.

If the request for an XML file comes back with an error, as opposed to a time out, Docupresentment displays an error message.

Can the SOAP standard be used with Docupresentment?

Docupresentment version 1.7 added a new open and documented queue control message format based on XML and the evolving SOAP standard. The XML message format is supported by the MSMQ and MQSeries queues, but *is not* supported by the generic queue system that ships with the base Docupresentment product. The base product queues use a proprietary message format.

You can find more information on the XML and SOAP on the W3C WEB site:

http://www.w3.org/

You can also find information about SOAP messages with attachments at:

http://www.w3.org/tr/soap-attachments

NOTE: Skywire Software will follow the evolving standards of SOAP and UDDI and move toward universal messaging. The first version of the DSI message format is based on XML and complies with many of the initial standards for SOAP message envelopes. Later versions will move transactions and servers toward fuller SOAP and UDDI compliance.

Skywire Software has used message queuing as a means of serializing requests and responses between loosely coupled clients and servers without requiring one-to-one connections. MQ Series has evolved into a standard program-to-program message bus for integrating loosely coupled applications.

Docupresentment includes the client and server sides of the DSI (document server interface) system and of the DQM (document queuing and messaging) system. These interface layers help manage connections between multiple simultaneous clients and multiple simultaneous servers. The DQM layer provides a logical abstract layer over the physical process of accessing the queue, so one implementation can support and switch between multiple queuing systems. This layer supports these models:

- A generic system that ships with Docupresentment (handled by DCBLIB)
- Support for Microsoft MSMQ (handled by MQLIB)
- Support for IBM MQ Series (handled by QSRLIB)

The DSI system provides a logical abstract layer over the physical process of assembling, delivering, and parsing of a message, so the initiator of the message does not have to know the physical format of the message, and is insulated from internal software changes to the message format between product versions.

For instance, you can use the DSI messaging client with Documaker Workstation so Documaker Workstation can work with

- External systems via either MQ Series or MSMQ messaging middleware.
- Docupresentment as a bridge to a legacy system to retrieve data for import.

The first ability means second is optional. You can also use your own internal programs and interface using MQSeries.

The advantage of having a logical abstract layer is that it lets you deploy applications for different message queuing systems without requiring program changes. Only minimal setup changes are required to test or deploy the same application with a different queuing system. By abstracting the message format, applications are insulated from internal changes to the message format and can use the Skywire Software APIs to correctly assemble or disassemble messages.

The disadvantage of message format abstraction is that non-Skywire Software applications might be required to use Skywire Software APIs to communicate with Skywire Software applications.

On some platforms, it may not be practical to invoke these APIs. The proprietary nature of the original message format further complicates the issue.

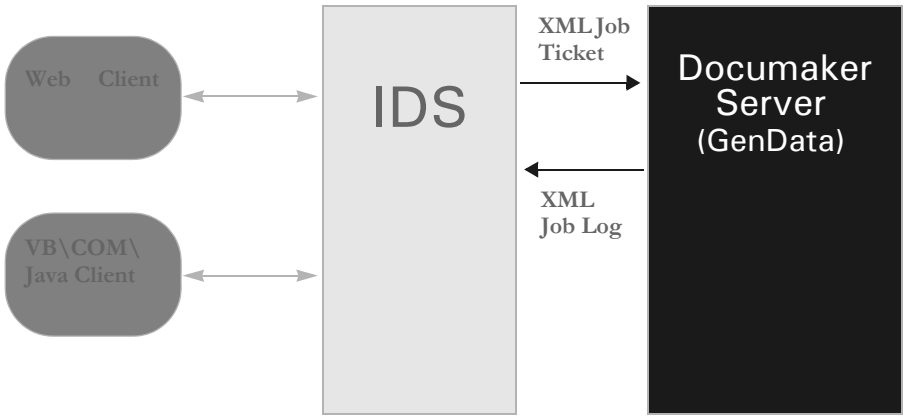
If you are integrating with Docupresentment as the server, the message format documentation is not necessary. If, however, you are integrating with another application, the message format may be needed if you do not use Docupresentment APIs and you can communicate via MQSeries.

For additional information on SOAP and Docupresentment, see the Internet Document Server Guide.

How can Docupresentment run Documaker using XML job-tickets?

You can set up Docupresentment to run Documaker as a subordinate process. Web clients communicate with Docupresentment using queues. Docupresentment communicates with Documaker via XML files called *job tickets* and *job logs*.

This diagram illustrates the process:



IDS can start or stop Documaker as needed, without user interaction. One IDS session controls one Documaker process. You can, however, implement multiple IDS sessions and have multiple Documaker processes as well. Keep in mind these limitations:

- You can only run Documaker in single step mode.
- You must run Documaker on Windows NT, Windows XP, or Windows 2000.
- Different resource setups for Documaker are supported, but Documaker processing restarts if resources are changed, eliminating the performance benefits. This should not be a problem because it is unlikely multiple Documaker setups will be used with a single Docupresentment implementation. You can, however, experience problems testing a system with multiple setups.
- During processing, some INI options can be changed by the client. Since some Documaker rules use static variables and store INI values in memory, it is possible that a client will be unable to change an INI option if those Documaker rules are used. To handle these situations, you must restart Documaker.

For more information, see the Internet Document Server Guide and the SDK Reference.

Can you use DAL with XML files?

You can use DAL XML API functions to let Documaker applications access specified XML documents and retrieve XML data via a DAL script. There are two scenarios in which you would use DAL XML API functions:

Scenario 1

A Documaker program, such as GenData, loads an XML document and extracts the XML tree at the transaction level using the XMLFileExtract rule. This rule creates a list type DAL variable with a default name of ***%extract*** and pushes it onto the DAL stack.

Then you can call other XML API functions in a DAL script to access the XML tree and extract XML data.

Here are examples of the form set and image rules you would add and a DAL script that would call the XML API functions.

Add this in the AFGJOB.JDT file:

```
;XMLFileExtract;2;File=.\deflib\test.xml
```

The rule loads the XML file and creates a list type DAL variable to pass the XML tree to the XML API function.

Add this in your DDT file:

```
;0;0;DALXMLSCRIPT;0;9;DALXMLSCRIPT;0;9;;DAL;Call("TEST.DAL");N;N;N;
N;4792;19444;11010;
```

TEST.DAL is the name of the DAL script file. DALXMLSCRIPT is the name of the variable field in the FAP file.

Here is an example of the DAL script:

```
%listH=XMLFind(%extract, "Forms", "Form");
#rc=XMLFirst(%listH);
if #rc=0
return("Failed to XMLFirst");
end
aStr=XMLGetCurText(%listH);
return(aStr);
```

%listH denotes a list type DAL variable. *#rc* denotes an integer type DAL variable.

aStr denotes a string type DAL variable.

Scenario 2

You can also load the XML document and create the XML tree at a specific field by calling the LoadXMLList rule from a DAL script. You must set the calling procedure in the DDT file as shown in Scenario 1.

Here is an example of DAL script file:

```
%xListH=LoadXMLList("test.xml");
%listH=XMLFind(%xListH,"Forms","Form/@*");
aStr=XMLNthAttrValue(%listH,2);
#rc=DestroyList(%xListH);
return(aStr);
```

For more information, see the DAL Reference.

Are triggers set the same way when you use XML files in Documaker?

No, triggers are set differently when you use XML. The XML file should contain the names of the forms to trigger.

If the FORM.DAT has all recipients set to zero copy counts, then those forms will be removed from the form set. The recipient copy count should be set in the FORM.DAT file. For example, based on

```
<car>
<driver>Tom<driver/>
<driver>Tim<driver/>
<car/>
<car>
<driver>Sally<driver/>
<car/>
```

You can do simple triggering based on the existence of a node. For example, this

```
/child::car
```

would trigger a form if *car* is a child of the root node. You could make it trigger two of the same forms because there are two cars.

The system supports value matching. So you can do the following:

```
/child::car[child::driver="Tom"]
```

Or, you can use the RecipIf rule to trigger an image with custom rule parameters, as shown in this example:

```
A={!/child::car/child::driver 1,7}::if
(A='Tom    ')::return("^1^")::end::;
```

If there is such a value in that element in the XML file, the image would trigger. For this to work, define the offset of the variable attribute as 1 and the length of the data you want to compare.

For more information, see the Documaker Administration Guide.

Can you use the Concat rule with XML?

You cannot use the Concat rule with XML files. Instead, use a DAL script. Here is an example:

```
;0;0;CITYSTATEZIP;0;30;CITYSTATEZIP;0;30;;DAL;csz=@("ADDR-CITY")&',
'&@("ADDR-STATE")&' '&@("ADDR-ZIP")::Return
csz)::;;N;N;N;N;135;1972;16010;
```

See the DAL Reference for more information.

Can you use the SetAddr rule with XML?

You cannot use the SetAddr rules with XML files. Instead, use the RemoveWhiteSpace rule to remove the white space from between fields. This rule works similarly to the SetAddr rules, but is not address specific.

See the Rules Reference for more information.

Can you use the PrintIf rule with XML?

You cannot use the PrintIf rule with XML files. Instead, use a DAL script. Here is an example:

```
;0;0;COMPANY;0;8;COMPANY;0;8;;DAL;if (@("PRINTIFSUB")="A")THEN
ANSWER1="Accident":: elseif (@("PRINTIFSUB")="C")THEN ANSWER1=
"Casualty"::end::return (ANSWER1):::N;N;N;N;11292;919;12010;
```

See the DAL Reference for more information.

How does Documaker deal with empty tags in XML files?

Documaker and Docupresentment use the same XML loading routine. The XML loading routine does not care whether you define all of the fields that might occur in a FAP file, nor does it care whether if field data is missing, so no error is produced when you load an XML file with missing field tags.

Just make sure the XML file you are loading is valid according to Documaker's XML standards.

If, however, you export the form set, you may get similar same results — if the FAP files were loaded, the empty fields are written into the XML file with no data. If the FAP files are not loaded, the system only includes those fields created during the run — which is usually limited to just the fields with data.

The entries you can use to indicate empty tags are:

```
<SingleTag />
<EmptyTags></EmptyTags>
<SpacedOut > </SpacedOut>
<NulEval >#  \NoSuchObject #</NulEval>
```

How are overflows defined?

When you define the SetOvFlow rule in the AFGJOB.JDT file, use the XML tag shown here:

```
;SetOvFlwSym;1;covsym,xml,1;
```

When you define the IncOvSym rule in the DDT file, use the XML tag, shown here:

```
;IncOvSym;covsym,xml;
```

If an image contains XML data on the same level, use the *!descendant* parameter instead of XPath:

```
<name>
    <fielda>
        <fieldb>xxxxx<\fieldb>
        <fieldc>yyyyy<\fieldc>
    <\fielda>
<\name>
```

The data for <*fieldb*> and <*fieldc*> are on the same level so you cannot use an XPath of:

```
!\name\fielda\fieldb[**ovsym**]
!\name\fielda\fieldc[**ovsym**]
```

You would have to use:

```
!descendant::fieldb[**ovsym**]
!descendant::fieldc[**ovsym**]
```

How do you handle overflow within overflow using XML?

Use the SetRecipFromImage rule with the XML overflow variable to get this to work.

Image A (which overflows will trigger image B using the SetRecipFromImage rule)

Image B (which overflows will trigger image C using the SetRecipFromImage rule)

and so on...

See the Rules Reference for more information.

Can you use the LoadExtractData and UseXMLExtract rules in single-step mode?

When running in single- or two-step mode, omit the LoadExtractData rule. Including it makes the GenData program enter a processing loop.

You can use the UseXMLExtract rule in single-step, two-step, or multi-step mode. When you use this rule in multi-step mode, place it after the LoadExtractData rule. In single-step or two-step mode, place it after the NoGenTrnTransactionProc rule.

You do not have to use the UseXMLExtract rule with the LoadExtractData rule when running in single-step or two-step mode.

Which version of XML does Transall support?

XML version 1.0 is compliant with Transall. Transall version 10.2 (20011101) supports both reading and writing XML files.

How do you write HTML pages to output XML via Docupresentment?

Modify the RECIPS.HTM page to add an XML option to the drop-down box on the page. Here is an example:

```
<BR>
<B> Output file type:</B>
<SELECT NAME="PRTTYPE">
<OPTION> PDF
<OPTION> XML
</SELECT>
<BR>
```

Then modify the DAP.INI file to make sure the PrtType control group is set to XML and not PDF, as follows:

```
< Printer >
    PrtType = XML
```

What are some common XML-related errors?

Here is a list of common errors reported to Oracle Support concerning XML, Documaker, and Docupresentment:

Problem	Solution

I get an error message when trying the InitQueue method of the DSICoAPI library. In the trace file this information is reported:
`1. Mon Nov 12 08:34:13 2001 DUTLoadLibrary error. Cannot load DCBW32.DLL (DCBW32.DLL).Error:`
`2. Mon Nov 12 08:34:13 2001 * DUTDefErrorExit`
`3. Mon Nov 12 08:34:13 2001 * Cannot QueryProcAddr <0> <0> DCBSysInit`
	This is caused by the security settings on the server sharing.
	Revise these settings and provide users with access to all areas with content.

I have a display problem in the Blackline version. The system is not correctly merging the XML file with the style sheet (TEXTMERGE.XSL).	Some features were added to the style sheet that require MSXML 3.0 to work properly. After installing MSXML 3.0, which installed the MSXML3.DLL, and un-registering the MSXML.DLL, the Blackline feature should work properly.
XML files are delete periodically, before another process can pick them up.	For XML, you have to include TimeOut option in the HTMLFileCache control group. Enter the timeout value in seconds.
I need to write a DAL script to do conditional triggering using native XML.	Use the UseXMLExtract or XMLFileExtract rule to load the XML file and extract the XML tree at the transaction level. As part of this process, the system creates a list type DAL variable with a default name of *%extract*.
The XML data does not get mapped if the value within the element starts on a new line with leading spaces.	A single exclamation mark (!) removes the leading white space. To keep the space, use two exclamation marks (!!).