Using BI Publisher for Outbound Interfaces

Abhishek Chandan (achandan@ideametrics.com)

ideametrics LLC
www.ideametrics.com

About Speaker

- Abhishek is a partner in Ideametrics LLC. Ideametrics is a boutique consulting company focused in media, cable, and telecom industry.
- Abhishek is a founding chair of BI Publisher (XML Publisher) SIG.

Outbound Interfaces using BI Publisher

- Business Requirement
- High Level Design
- Data Template Definition
- E-Text Template Definition
- Lessons Learned
- Signup for BI Publisher mailing list for copy of this presentation

Business Requirement

- Provide a list of valid projects and tasks to third party time tracking system so that appropriate time may be charged to correct project and task

High Level Design

- Traditional Approach
  - Utilize PL/SQL package, shell script, or Oracle*Reports to generate desired output.
  - Write a ftp script (setup as cron job) to transfer file to appropriate server.
- BI Publisher Approach
  - Utilize data template to generate XML file containing data required for interface
  - Utilize e-text template to generate properly formatted file.
  - Write a print driver to ftp output file to appropriate server

Data Template - Definition

- Official Definition
  - The data template is an XML document whose elements collectively define how the data engine will process the template to generate the XML.
- Unofficial Definition
  - The data template contains the query (or queries), parameters, and groupings that instruct the BI Publisher data engine to properly extract and present the data in XML format.
- Documentation – Chapter 4, Part No. B40017-01

Data Template - Structure

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Data Template – As Developed

```
<?xml version="1.0" encoding="WINDOWS-1252" ?>
<dataTemplate name="ActiveProjectTaskList"
              description="Active Project Task List"
              version="1.0">
<dataQuery>
   <sqlStatement name="Q1">
         select replace(a.segment1, '-', '') segment1,
              a.name description,
              b.task_number,
              b.task_id,
              decode(sign(a.start_date - b.start_date), 1, a.start_date, b.start_date) start_date,
              to_date(replace(decode(sign(a.completion_date - b.completion_date), 1,
              b.completion_date, a.completion_date),'99','18'),'DD-MON-RR') finish_date,
              substr(c.name, 1, 4) company
         from pa.pa_projects_all a,
              pa.pa_tasks b,
              hr_all_organization_units c
        where a.project_id = b.project_id
          and b.carrying_out_organization_id = c.organization_id
          and a.project_status_code = 'APPROVED'
          and template_flag = 'N'    </sqlStatement>
</dataQuery>
<dataStructure>
   <group name="G_PROJECT" source="Q1">
       <element name="PROJECT_NUMBER" value="segment1" />
       <element name="DESCRIPTION"    value="description" />
       <element name="TASK_NUMBER"    value="task_number" />
       <element name="TASK_ID"        value="task_id" />
       <element name="START_DATE"     value="start_date" />
       <element name="FINISH_DATE"    value="finish_date" />
       <element name="COMPANY"        value="company" />
   </group>
</dataStructure>
</dataTemplate>
```

Data Templates – Good, Bad and Ugly!

- Good
  - Single and multiple data queries, Query links, Parameters, Lexicals, Aggregate functions (SUM, AVG, MIN, MAX, COUNT), Event triggers, Multiple data groups
- Bad
  - No way to test output locally on desktop even when database is accessible
- Ugly
  - Must use a regular text editor to develop code, be prepared to act like a syntax checking tool

eText Template - Definition

- Official Definition
  - An eText template is an RTF-based template that is used to generate text output for Electronic Funds Transfer (EFT) and Electronic Data Interchange (EDI).
- Unofficial Definition
  - An eText template allows you to generate fixed-width or delimited output (a.k.a flat files, csv files, etc.) as opposed to nice pretty format you normally associate with BI Publisher
- Documentation - Chapter 9, Part No. B40017-01

eText Template - Structure

XDO file name:
APXNACHA.rtf

Mapping of Payment Format:
US NACHA Payments EFT Format

Date: 4/22/2004

Format Setup:

Hint: Define formatting options...

<TEMPLATE TYPE>	FIXED_POSITION_BASED
<OUTPUT CHARACTER SET>	iso-8859-1
<NEW RECORD CHARACTER>	Carriage Return

Sequences:

Hint: Define sequence generators...

<DEFINE SEQUENCE>	PaymentsSeq
<RESET AT LEVEL>	PayerInstrument
<INCREMENT BASIS>	LEVEL
<END DEFINE SEQUENCE>	PaymentsSeq

Commands

Format Data Records:

<LEVEL>		PayerInstrument			
<POSITION>	<LENGTH>	<FORMAT>	<PAD>	<DATA>	<COMMENTS>
<NEW RECORD>		FileHeaderRec			
1	1	Number		1	Record Type Code
2	2	Alpha	R, ' '	'01'	Priority Code
4	1	Alpha	R, ' '		Immediate blank
5	9	Alpha	R, ' '	BankAccount/BankNumber	Immediate
14	1	Alpha	R, ' '	'1'	Mutually Agreed
15	9	Alpha	R, ' '	Payer/TaxIdentifier	Immediate Origin
24	6	Date,		SYSDATE	File Creation Date

Data Elements or Functions

eText Template – As Developed

Format Setup:

Hint: Define formatting options...

<TEMPLATE TYPE>	FIXED_POSITION_BASED
<OUTPUT CHARACTER SET>	iso-8859-1
<NEW RECORD CHARACTER>	Carriage Return

Format Data Records:

<LEVEL>		G_PROJECT			
<POSITION>	<LENGTH>	<FORMAT>	<PAD>	<DATA>	<COMMENTS>
<NEW RECORD>		FileHeaderRec			
1	1	Alpha		'1'	
2	5	Alpha	R,' '	COMPANY	Task Owning Organization
7	1	Alpha		'2'	
8	14	Alpha	R,' '	PROJECT_NUMBER	Project Number (SEGMENT1)
22	30	Alpha	R,' '	DESCRIPTION	Project Name
52	10	Date, MM/DD/YYYY		START_DATE	Task Start Date
62	10	Date, MM/DD/YYYY		FINISH_DATE	Task Finish Date
72	1	Alpha		'3'	
73	13	Alpha	L,' '	TASK_NUMBER	Task Number
86	14	Number	L,' '	TASK_ID	Task ID
<END LEVEL>		G_PROJECT			

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eText Template – Good, Bad, and Ugly

- Good
  - Layout definition of flat file or csv file can serve as eText template with some minor modifications
- Bad
  - Must define a delimiter explicitly after every data element in DELIMITER_BASED templates
- Ugly
  - Documentation makes it appear more complex than it really is.

Lessons Learned

- There is no tools to define data templates. So you need to have good text editor such as UltraEdit available to support development.
- You are the "syntax checking tool." The XMLP messages can be hard to decipher.
- Make sure you have Purge Concurrent Request and/or Manager Data program running on a regular basis and FND_ENV_CONTEXT table is fairly clean. For some reason, XDODTEXE does full table scan on this FND_ENV_CONTEXT and causes huge performance drag. Even with the purge jobs running on regular basis, FND_ENV_CONTEXT may not be clean due to some known bugs in purge process. You may need to manually truncate the table on periodic basis.
- Use the XMLP forum on OTN. Very active involvement with users and development. Almost always you will get better help on XMLP forum than Oracle Support.

Contact Information

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