Technical Design Specification – Reference Application

Prepared by the PNMR Services Company
Business Technology Services
9/27/09

Version 1.0

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1   Process Overview

Reference application is built to validate the environment setup in PNMR. A subset of warehouse is built and ETL process defined in this design document is used to populate the tables. The data in these tables is used by Cognos reporting application to generate reports.

1.1   Revision History

VERSION	DATE	AUTHOR	CHANGE REQUEST #	REASON FOR REVISION
1.0	09/27/2009	Surender Madasani		Original Draft

1.2   Document references

Document	Description	Link

1.3   Review History

Date	Reviewer(s)	Review Description

2.

DESIGN OVERVIEW

This section contains common information and logic that is used across the jobs listed in the next section. Any difference from these common points will be listed with each individual job design.

2.1 General Information

DataStage Folder Name:	Jobs\RefApp
Stream Name	
Tivoli Job Name:	
DataStage Component Name:	
Data Source System:	CISDEV1
Business Area Contact:	
Designer Contact:	Surender Madasani
Developer Contact:	Surender Madasani
Data Destination System:	bidev1

2.2 Detailed Specification

Process Type:	☐ Oracle ☐ Unix ☒ DataStage ☐ Other _____
Purpose:	Convert MMYT descriptions from the Feed / Legacy into ODS MMYT Id's.
Load:	☒ Manual ☐ Automated
Frequency:	☐ Daily ☐ Weekly ☐ Continuous: ☐ Monthly ☐ Quarterly ☒ Event based scheduling:

2.3 Source Definition

Source Type	☒ Database ☐ File
Source Database Type:	☒ Oracle ☐ Sql Server ☐ DB2
Source Schema Owner:	UIMSMGR
Source Table Name:	UCBCUST
Source File Name:	
Source File Location:	
File Delimiter	

#	FIELD NAME	DATATYPE	KEY	NULL
1.	UCBCUST_CUST_CODE	Integer		N
2.	UCBCUST_LAST_NAME	Varchar(60)		N
3.	UCBCUST_START_DATE	Timestamp		N
4.	UCBCUST_FIRST_NAME	Varchar(15)		Y

Source Type	☒ Database ☐ File

Source Database Type:	Oracle	Sql Server	DB2
Source Schema Owner:	UIMSMGR		
Source Table Name:	UCBPREM		
Source File Name:			
Source File Location:			
File Delimiter			

#	FIELD NAME	DATATYPE	KEY	NULL
1.	UCBPREM_CODE	Varchar(7)		N
2.	UCBPREM_STREET_NAME	Varchar(30)		N
3.	UCBPREM_STREET_NUMBER	Varchar(12)		Y
4.	UCBPREM_CITY	Varchar(20)		Y
5.	UCBPREM_STAT_CODE_ADDR	Varchar(3)		Y

Source Type	☒ Database	☐ File	
Source Database Type:	☒ Oracle	☐ Sql Server	☐ DB2
Source Schema Owner:	UIMSMGR		
Source Table Name:	URRSHIS		
Source File Name:			
Source File Location:			
File Delimiter			

#	FIELD NAME	DATATYPE	KEY	NULL
1.	URRSHIS_STYP_CODE	Varchar(4)		N
2.	URRSHIS_ACTION_DATE	Decimal(38)		Y
3.	URRSHIS_READING	Decimal(38)		Y
4.	URRSHIS_CONSUMPTION	Decimal(10)		Y
5.	URRSHIS_PREM_CODE	Varchar(7)		N
6.	URRSHIS_CUST_CODE	Integer		N

2.4 Target Definition

Target Type	☒ Database	☐ File	
Source Database Type:	☒ Oracle	☐ Sql Server	☐ DB2
Target Schema Owner:	METERREF		
Table Name:	CUSTOMER_DIM		
Target File Name:			
Target File Location:			
File Delimiter			

#	FIELD NAME	DATATYPE	KEY	NULL
1.	CUSTOMER_CODE	Integer		Y
2.	CUSTOMER_LAST_NAME	Varchar (60)		Y
3.	CUSTOMER_FIRST_NAME	Varchar (15)		Y

	CUSTOMER_START_DATE	Timestamp		Y
5.	CUSTOMER_KEY	Decimal(38)	1	N

Target Type	☒ Database ☐ File	
Source Database Type:	☒ Oracle ☐ Sql Server ☐ DB2	
Target Schema Owner:	METERREF	
Table Name:	PREMISE_DIM	
Target File Name:		
Target File Location:		
File Delimiter		

#	FIELD NAME	DATATYPE	KEY	NULL
1.	PREM_CODE	Varchar(7)		Y
2.	PREM_STREET_NAME	Varchar(30)		Y
6.	PREM_STREET_NUM	Varchar(12)		Y
7.	PREM_CITY	Varchar(20)		Y
8.	PREM_STATE	Varchar(3)		Y
9.	PREM_KEY	Decimal(38)	1	N

Target Type	☒ Database ☐ File	
Source Database Type:	☒ Oracle ☐ Sql Server ☐ DB2	
Target Schema Owner:	METERREF	
Table Name:	SERVICE_TYPE_DIM	
Target File Name:		
Target File Location:		
File Delimiter		

#	FIELD NAME	DATATYPE	KEY	NULL
1.	SERVICE_TYPE_CODE	Varchar(4)	1	Y
2.	SERVICE_TYPE_KEY	Decimal(38)	2	N

Target Type	☒ Database ☐ File	
Source Database Type:	☒ Oracle ☐ Sql Server ☐ DB2	
Target Schema Owner:	METERREF	
Table Name:	DATE_DIM	
Target File Name:		
Target File Location:		
File Delimiter		

#	FIELD NAME	DATATYPE	KEY	NULL
1.	DATE_KEY	Decimal(38)	1	N
2.	MONTH	Decimal(38)		Y
3.	YEAR	Decimal(38)		Y

Target Type	Database		File
Source Database Type:	☒ Oracle	☐ Sql Server	☐ DB2
Target Schema Owner:	METERREF		
Table Name:	METER_FACT		
Target File Name:			
Target File Location:			
File Delimiter			

#	FIELD NAME	DATATYPE	KEY	NULL
1.	PREM_KEY	Decimal(38)		Y
2.	CUSTOMER_KEY	Decimal(38)		Y
3.	SERVICE_TYPE_KEY	Decimal(38)		Y
4.	DATE_KEY	Decimal(38)		Y
5.	METER_READING	Decimal(38)		Y
6.	METER_CONSUMPTION	Decimal(38)		Y

2.5 Prerequisites and dependencies

2.5.1. tables

2.6 Table Functionality

Files/Tables Accessed	Read/ Select	Insert	Update	Delete	Truncate
Source:					
UIMSMGR. UCBCUST	X				
UIMSMGR. UCBPREM	X				
UIMSMGR. URRSHIS	X				
Lookup:					
METERREF. CUSTOMER_DIM	X				
METERREF. PREMISE_DIM	X				
METERREF. SERVICE_TYPE_DIM	X				
METERREF. DATE_DIM	X				
Target:					
METERREF. CUSTOMER_DIM		X	X		
METERREF. PREMISE_DIM		X	X		
METERREF. SERVICE_TYPE_DIM		X	X		
METERREF. DATE_DIM		X	X		
METERREF. METER_FACT		X			

2.7 Job Sequences

1) Seq_Load_Ref_App

3. DATASTAGE COMPONENT DETAILED DESIGN

3.1 Customer_Dim

3.1.1. Process Overview

- Process customers and load them into customer_dim Table. Read all the data from UIMSMGR.UCBCUST and upsert into METERREF. CUSTOMER_DIM.

3.2 Premise_Dim

3.2.1. Process Overview

- Process addresses and load them into premise_dim Table. Read all the data from UIMSMGR.UCBPREM and upsert into METERREF. PREMISE_DIM.

3.3 Service_Type_Dim

3.3.1. Process Overview

- Process service_types and load them into service_type_dim Table.
- Read all the data from UIMSMGR.URRSHIS and remove duplicates based on service_types.
- Load the unique date records into service_type_dim

3.4 Date_Dim

3.4.1. Process Overview

- Process dates and load them into date_dim Table.
- Read all the data from UIMSMGR.URRSHIS and remove duplicates based on dates.
- Load the unique date records into date_dim

3.5 Meter_Fact

3.5.1. Process Overview

- Process meter details and load them into meter_fact Table.
- Read all the data from UIMSMGR.URRSHIS
- Lookup METERREF. CUSTOMER_DIM to get the customer_key. If a lookup fails drop the record.
- Lookup METERREF. PREMISE_DIM to get the premise_key. If a lookup fails drop the record.
- Lookup METERREF. SERVICE_TYPE_DIM to get the service_type_key. If a lookup fails drop the record.
- Lookup METERREF. DATE_DIM to get the date_key. If a lookup fails drop the record.
- Load the meter_fact tables with the above keys.

3.6 Common Processes.

3.6.1. Dependencies

- N/A

3.6.2. Job Parameters

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- CISDEV1 DB connection values
- BIDEV1 DB connection values

3.6.3. Input Table/File Structures

(See Overview section)

3.6.4. Transformation rows

The transformation rules for the target table columns are described in the table below. The values for the default record are listed in the below table:

3.6.5. Lookups

LOOKUP ROUTINE	LOOKUP FIELD	SOURCE VALUE(S)	LOOKUP TABLE	LOOKUP TRANSFORMATION	DEFAULT
ServiceType_Lkp	Service_type_code	Service_type_key	METERREF. SERVICE_TYPE_DIM	Lookup servie_type_dim on service_type_code to get the service_type_key. Reject if the lookup fails.	
Premise_Lkp	Prem_code	Prem_key	METERREF. PREMISE_DIM	Lookup premise_dim on prem_code to get the prem_key. Reject if the lookup fails.	
Date_Lkp	Month Year	date_key	METERREF. DATE_DIM	Lookup date_dim on month and year to get the date_key. Reject if the lookup fails.	
Customer_Lkp	Customer_code	Customer_key	METERREF. CUSTOMER_DIM	Lookup customer_dim on customer_code to get the customer_key. Reject if the lookup fails.	

4. MODULES

TBD

5. QA MODULES

TBD

6. SCHEDULING

TBD

7. RUN TIMES AND RESTART INSTRUCTIONS FOR LOAD

Runtime: 20 min

Job Names:

Restart Instructions: Restart the jobs. No clean up needed.

8. TABLE SIZE ESTIMATE

TBD

9. QA TESTING SECTION

TBD

10. IMPLEMENTATION/BACKOUT SECTION

TBD

11. ISSUES/QUESTIONS