

# Oracle® Utilities Data Model Reference



Release 12.2  
E81922-02  
September 2017



Oracle Utilities Data Model Reference, Release 12.2

E81922-02

Copyright © 2011, 2017, Oracle and/or its affiliates. All rights reserved.

Primary Author: Thomas Van Raalte

Contributing Authors: Tanaya Bhattacharjee

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

# Contents

## Preface

---

Audience	xx
Documentation Accessibility	xx
Related Documents	xxi
Conventions	xxi

## Part I Logical and Physical Data Model

---

### 1 Introducing Oracle Utilities Data Model

---

1.1	Overview of Oracle Utilities Data Model	1-1
1.2	What Are the Benefits of Using Oracle Utilities Data Model?	1-2
1.3	What Are the Components of Oracle Utilities Data Model?	1-2
1.4	What Oracle Technologies are in Oracle Utilities Data Model	1-3
1.5	What is Oracle Utilities Data Model	1-4
1.5.1	About Business Areas and Subject Areas in Oracle Utilities Data Model	1-7
1.5.2	About the Logical Data Model and Physical Data Model	1-8
1.5.3	About Entity Relationships in Oracle Utilities Data Model	1-8
1.5.4	Understanding Named and Flexible Hierarchies	1-9
1.6	About Common Information Model (CIM) Users Group	1-12
1.7	About Business Areas in Oracle Utilities Data Model	1-12

### 2 Logical Data Model Foundation

---

2.1	Major Subject Areas and Related Entities	2-1
2.1.1	Subject Area: Account	2-3
2.1.2	Subject Area: Account Balance	2-4
2.1.3	Subject Area: Account Credit Limit	2-4
2.1.4	Subject Area: Agreement	2-4
2.1.5	Subject Area: Asset	2-5
2.1.6	Subject Area: Asset Information Classes	2-6
2.1.7	Subject Area: Billing	2-6

2.1.8	Subject Area: Business Events	2-7
2.1.9	Subject Area: Business Interaction	2-8
2.1.10	Subject Area: Channel	2-8
2.1.11	Subject Area: Connectivity Model	2-9
2.1.12	Subject Area: Cost	2-10
2.1.13	Subject Area: Curve Schedule	2-10
2.1.14	Subject Area: Customer	2-10
2.1.15	Subject Area: Customer Account and Agreement	2-11
2.1.16	Subject Area: Demand Response Program	2-12
2.1.17	Subject Area: Employee	2-12
2.1.18	Subject Area: End Device Control	2-12
2.1.19	Subject Area: End Device Event	2-13
2.1.20	Subject Area: Financial	2-13
2.1.21	Subject Area: Generating Unit	2-14
2.1.22	Subject Area: Line Model	2-14
2.1.23	Subject Area: Load Model	2-14
2.1.24	Subject Area: Location	2-15
2.1.25	Subject Area: Meter Asset	2-16
2.1.26	Subject Area: Meter Event and Reading	2-16
2.1.27	Subject Area: Meter Reading	2-16
2.1.28	Subject Area: Meter Reading and Events	2-17
2.1.29	Subject Area: Meter Reading and Control Overview	2-17
2.1.30	Subject Area: Meter Reading Register and Channel	2-18
2.1.31	Subject Area: Meter Reading Type	2-18
2.1.32	Subject Area: Network Operation	2-19
2.1.33	Subject Area: Outage Management	2-20
2.1.34	Subject Area: Party Organization Business Unit	2-20
2.1.35	Subject Area: Payment	2-21
2.1.36	Subject Area: Phase Model	2-22
2.1.37	Subject Area: Premise and Node	2-22
2.1.38	Subject Area: Pricing Structure	2-23
2.1.39	Subject Area: Promotion and Campaign	2-23
2.1.40	Subject Area: Regulating Equipment Model	2-24
2.1.41	Subject Area: SCADA	2-25
2.1.42	Subject Area: Schedule Model	2-25
2.1.43	Subject Area: Substation, Feeder, and Transformer Hierarchy Model	2-25
2.1.44	Subject Area: Switching Equipment Model	2-26
2.1.45	Subject Area: Tap Changer Model	2-26
2.1.46	Subject Area: Transformer Model	2-26
2.1.47	Subject Area: Usage Point, Agreement, Account, Customer, and Premise	2-27

2.1.48	Subject Area: Usage Point and End Device	2-27
2.1.49	Subject Area: Voltage Control Model	2-27
2.1.50	Subject Area: Weather Model	2-28
2.1.51	Subject Area: Work Management	2-28
2.2	Logical Entities for Business Areas	2-29
2.2.1	Business Area: Account Management	2-29
2.2.2	Business Area: Asset Management	2-30
2.2.3	Business Area: Customer Management	2-30
2.2.4	Business Area: Meter Reading and Control	2-30
2.2.5	Business Area: Network Operation	2-31
2.2.6	Business Area: Outage Management	2-31
2.2.7	Business Area: Weather Model	2-31
2.2.8	Business Area: Work Management	2-31
2.3	Logical Data Model Entity Dictionary	2-32

### 3 Logical Data Model Dimensions

---

3.1	Logical Data Model Dimensions	3-1
3.1.1	Account	3-2
3.1.1.1	Account Hierarchy	3-2
3.1.1.2	Account Levels	3-2
3.1.2	Customer	3-4
3.1.2.1	Customer Hierarchy	3-4
3.1.2.2	Customer Levels	3-5
3.1.3	Feeder	3-9
3.1.3.1	Feeder Hierarchy	3-9
3.1.3.2	Feeder Levels	3-10
3.1.4	Geography Zone	3-10
3.1.4.1	Geography Zone Hierarchy	3-10
3.1.4.2	Geography Zone Levels	3-11
3.1.5	Hour	3-13
3.1.5.1	Hour Hierarchy	3-13
3.1.5.2	Hour Levels	3-13
3.1.6	Household	3-14
3.1.6.1	Household Hierarchy	3-14
3.1.6.2	Household Levels	3-14
3.1.7	Manufacturer	3-15
3.1.7.1	Manufacturer Hierarchy	3-15
3.1.7.2	Manufacturer Levels	3-16
3.1.8	Meter	3-16
3.1.8.1	Meter Hierarchy	3-16

3.1.8.2	Meter Levels	3-17
3.1.9	Operational	3-17
3.1.9.1	Operational Hierarchy	3-17
3.1.9.2	Operational Levels	3-18
3.1.10	Organization	3-20
3.1.10.1	Organization Hierarchy	3-20
3.1.10.2	Organization Levels	3-21
3.1.11	Outage Record	3-24
3.1.11.1	Outage Record Hierarchy	3-24
3.1.11.2	Outage Record Levels	3-24
3.1.12	Postcode	3-25
3.1.12.1	Postcode Hierarchy	3-25
3.1.12.2	Postcode Levels	3-26
3.1.13	Product Asset Model	3-27
3.1.13.1	Product Asset Model Hierarchy	3-27
3.1.13.2	Product Asset Model Levels	3-27
3.1.14	Region	3-28
3.1.14.1	Region Hierarchy	3-28
3.1.14.2	Region Levels	3-28
3.1.15	Service Location	3-31
3.1.15.1	Service Location Hierarchy	3-31
3.1.15.2	Service Location Levels	3-31
3.1.16	Substation	3-32
3.1.16.1	Substation Hierarchy	3-32
3.1.16.2	Substation Levels	3-32
3.1.17	Time	3-33
3.1.17.1	Time Hierarchy	3-33
3.1.17.2	Time Levels	3-34
3.1.18	Time Month Day Hour	3-40
3.1.18.1	Time Month Hour Hierarchy	3-40
3.1.18.2	Time Month Hour Levels	3-40
3.1.19	Time Month	3-45
3.1.19.1	Time Month Hierarchy	3-45
3.1.19.2	Time Month Levels	3-45
3.1.20	Time Month Hour	3-46
3.1.20.1	Time Month Hour Hierarchy	3-46
3.1.20.2	Time Month Hour Levels	3-47
3.1.21	TOU	3-48
3.1.21.1	Time Of Use Hierarchy	3-48
3.1.21.2	Time Of Use Levels	3-48
3.1.22	TOU Time	3-49

3.1.22.1	TOU Time Hierarchy	3-49
3.1.22.2	TOU Time Levels	3-50
3.1.23	Time Season Month	3-55
3.1.23.1	Time Season Month Hierarchy	3-55
3.1.23.2	Time Season Month Levels	3-55
3.1.24	Time Season Month Hour	3-57
3.1.24.1	Time Season Month Hour Hierarchy	3-57
3.1.24.2	Time Season Month Hour Levels	3-57
3.1.25	Transformer	3-62
3.1.25.1	Transformer Hierarchy	3-62
3.1.25.2	Transformer Levels	3-63
3.1.26	Usage Point	3-63
3.1.26.1	Usage Point Hierarchy	3-63
3.1.26.2	Usage Point Levels	3-63
3.1.27	Usage Point Location	3-65
3.1.27.1	Usage Point Location Hierarchy	3-65
3.1.27.2	Usage Point Location Levels	3-65
3.2	IETL Use Dimensions	3-66
3.2.1	Address Location	3-66
3.2.1.1	Address Location Hierarchy	3-66
3.2.1.2	Address Location Levels	3-67
3.2.2	Asset Info	3-69
3.2.2.1	Asset Info Hierarchy	3-69
3.2.2.2	Asset Info Levels	3-69
3.2.3	Demand Response Program	3-70
3.2.3.1	Demand Response Program Hierarchy	3-70
3.2.3.2	Demand Response Program Levels	3-70
3.2.4	Outage Report	3-71
3.2.4.1	Outage Report Hierarchy	3-71
3.2.4.2	Outage Report Levels	3-71
3.2.5	Product Offering	3-72
3.2.5.1	Product Offering Hierarchy	3-72
3.2.5.2	Product Offering Level	3-73
3.2.6	Reading Type	3-74
3.2.6.1	Reading Type Hierarchy	3-74
3.2.6.2	Reading Type Levels	3-75
3.2.7	Usage Point Group	3-77
3.2.7.1	Usage Point Group Hierarchy	3-77
3.2.7.2	Usage Point Group Levels	3-77
3.2.8	Zone	3-78
3.2.8.1	Zone Hierarchy	3-78

## 4 Oracle Utilities Data Model Physical Data Model

---

4.1	Introduction to Oracle Utilities Data Model Physical Data Model	4-1
4.2	Reference Tables	4-2
4.3	Lookup Tables	4-17
4.4	Base Tables	4-23
4.5	Derived Tables	4-27
4.6	Aggregate Tables	4-28
4.7	Temporary and Other Tables	4-28
4.8	Sequences in Oracle Utilities Data Model	4-29
4.9	Compressed Tables	4-29
4.10	Oracle Utilities Data Model OLAP Cube MV, Cube View	4-31

## 5 Oracle Utilities Data Model Logical to Physical Mapping

---

5.1	Overview of Mapping and Inheritance in Oracle Utilities Data Model	5-1
5.2	Logical to Physical Mappings for Oracle Utilities Data Model	5-1

## 6 Oracle Utilities Data Model Partitioning

---

6.1	About Oracle Utilities Data Model Partitioning, Compression, and Parallelism	6-1
6.2	Partitioning Strategy for Oracle Utilities Data Model	6-1

## Part II Intra-ETL, OLAP, Data Mining, and Utility Scripts

---

## 7 Oracle Utilities Data Model Intra-ETL

---

7.1	About Oracle Utilities Data Model Intra-ETL	7-1
7.2	Intra-ETL PL/SQL Packages Business Rules and Source Tables	7-2
7.2.1	PKG_DWD_ACCT_ARRER_MO Package	7-2
7.2.2	PKG_DWD_ACCT_BAL_MO Package	7-3
7.2.3	PKG_DWD_ACCT_DEBT_DAY	7-3
7.2.4	PKG_DWD_ACCT_PMT_MTD_STAT_HST	7-6
7.2.5	PKG_DWD_ACCT_PYMT_DAY	7-6
7.2.6	PKG_DWD_ACCT_STAT_MO	7-7
7.2.7	PKG_DR_PROG_LD_RDCTN_RGN_DAY	7-8
7.2.8	PKG_DWD_END_DVC_EVT_CUST_DAY	7-9
7.2.9	PKG_DWD_END_DVC_EVT_DVC_DAY	7-9
7.2.10	PKG_DWD_MTR_RDNG_DAY	7-10

7.2.11	PKG_DWD_MTR_RDNG_HR	7-11
7.2.12	PKG_DWD_OUTG_DAY	7-12
7.2.13	PKG_DWD_OUTG_USG_PNT	7-13
7.2.14	PKG_DWD_RLBLTY_IND_CITY_MO	7-13
7.2.15	PKG_DWD_RLBLTY_IND_FEDR_MO	7-14

## 8 Oracle Utilities Data Model OLAP Model Dimensions

---

8.1	Introduction to OLAP Architecture	8-1
8.1.1	General Process to Populate the OLAP Module in Oracle utilities Data Model	8-1
8.1.2	Query Rewrite to Cube Organized Materialized Views	8-2
8.2	Oracle Utilities Data Model OLAP Dimensions	8-2
8.2.1	Account: ACCT	8-2
8.2.2	Customer: CUST	8-3
8.2.3	Geography Usage Point: GEOUP	8-3
8.2.4	Manufacturer: MNFCTR	8-4
8.2.5	Meter:MTR	8-5
8.2.6	Operational Usage Point: OPTUP	8-6
8.2.7	Regional Usage Point: RGUP	8-6
8.2.8	Time: TIME	8-7
8.2.9	Usage Point: UP	8-9

## 9 Oracle Utilities Data Model OLAP Model Cubes

---

9.1	Oracle Utilities Data Model OLAP Cubes	9-1
9.1.1	Meter Reading Account Cube: ACCTMTRR	9-2
9.1.2	End Device Event Customer Cube: CUST_ENDVC	9-3
9.1.3	End Device Event by Device Cube: DVC_ENDVC	9-5
9.1.4	Meter Reading Geo Usage Point Cube: GUSPMTRR	9-6
9.1.5	Meter Reading Operational Usage Point Cube: OUSPMTRR	9-7
9.1.6	Meter Reading Regional Usage Point Cube: RUSPMTRR	9-9
9.1.7	Meter Reading Customer Cube: CUSTMTRR	9-11

## 10 Oracle Utilities Data Model Data Mining Model

---

10.1	About Data Mining in Oracle Utilities Data Model	10-1
10.1.1	Understanding the Mining Architecture	10-1
10.2	Oracle Utilities Data Model Mining Result Tables	10-3
10.3	Model 1: Customer Savings and Customer Profile by DR Program	10-4
10.3.1	STEP1: Segmentation Using Oracle Data Mining Clustering Algorithm	10-5
10.3.1.1	Algorithms Used	10-7

10.3.1.2	Algorithm Setting Table	10-7
10.3.2	STEP2 Segmentation and Customer Saving Calculation	10-8
10.4	Oracle Utilities Data Model Mining Setting Tables	10-8

## 11 Oracle Utilities Data Model Utility Scripts

---

11.1	Calendar Population	11-1
11.1.1	Calendar Population Scripts	11-1
11.1.2	Populating Calendar Data	11-1

## Part III Sample Reports Users, Roles, and Metadata

---

## 12 Oracle Utilities Data Model Sample Reports

---

12.1	Credit and Collection Sample Reports	12-1
12.1.1	Top N Arrear Accounts	12-1
12.1.1.1	Top N Arrear Accounts	12-1
12.2	Demand Response (DR) Sample Reports	12-3
12.2.1	Customer Savings by Demand Response (DR) Program	12-3
12.2.1.1	Available Load Reduction by Program	12-3
12.3	Meter Data Analysis Sample Reports	12-3
12.3.1	Top N Customer by Usage	12-4
12.3.1.1	Top N Customers by Usage	12-4
12.3.2	Monthly Usage Season Profile	12-5
12.3.2.1	Season Monthly Usage by Geographical Zones Report	12-5
12.3.2.2	Monthly Usage Season Profile by Operational Zones Report	12-6
12.3.3	Usage Season Profile	12-7
12.3.3.1	Usage Season Profile by Operational Zones	12-7
12.3.3.2	Usage Season Profile by Geographical Zones	12-8
12.3.4	Monthly Total Usage	12-9
12.3.4.1	Operational Monthly Usage	12-10
12.3.4.2	Regional Monthly Usage	12-10
12.3.4.3	Geographical Monthly Usage	12-11
12.3.5	Low Usage by Usage Point	12-12
12.3.5.1	Low Usage by Usage Point	12-12
12.3.6	Time of Use Usage Profile	12-13
12.3.6.1	Time of Use Usage Profile	12-13
12.3.7	TOU Usage Trend	12-14
12.3.7.1	Time of Use Usage Trend	12-14
12.3.8	Top N Customer with Usage Change	12-15
12.3.8.1	Top N Customer with Usage Change	12-15

12.3.9	Customer Count by Usage Grouping	12-16
12.3.9.1	Customer Count by Usage Grouping	12-16
12.4	Outage Analysis Sample Reports	12-17
12.4.1	Reliability by City	12-18
12.4.1.1	Reliability by City	12-18
12.4.2	Worst Performing Feeder	12-19
12.4.2.1	Worst Performing Feeder	12-19
12.4.3	Top N Customers by Customer Minutes Interrupted (CMI)	12-19
12.4.3.1	Top N Usage Points by CMI	12-19
12.4.4	Top N Customers by Number of Outages	12-20
12.4.4.1	Top N Customers by Number of Outages	12-20
12.4.5	Top N Feeders by Outage Count	12-21
12.4.5.1	Top N Feeders by Outage Count	12-21
12.4.6	Top N Feeders by Total Minutes Lost	12-22
12.4.6.1	Top N Feeders by Total Minutes Lost	12-22
12.4.7	Top N Feeders by Reliability Indices	12-23
12.4.7.1	Top N Feeders by Reliability Indices	12-23
12.4.8	Top N City by Outage Count	12-24
12.4.8.1	Top N City by Outage Count	12-24
12.4.9	Top N City by Total Minutes Lost	12-25
12.4.9.1	Top N City by Total Minutes Lost	12-25
12.4.10	Top N City by Reliability Indices	12-26
12.4.10.1	Top N City by Reliability Indices	12-26
12.4.11	Top N Region by Outage Count	12-27
12.4.11.1	Top N Region by Outage Count	12-27
12.4.12	Top N Region by Total Minutes Lost	12-28
12.4.12.1	Top N Region by Total Minutes Lost	12-28
12.4.13	Top N Region by Reliability Indices	12-29
12.4.13.1	Top N Region by Reliability Indices	12-29
12.5	Revenue Protection Sample Reports	12-30
12.5.1	Meter Tamper Event	12-30
12.5.1.1	Meter Tamper Event: Region	12-30
12.5.1.2	Meter Tamper Event: Geography	12-31
12.5.1.3	Meter Tamper Event: Operational	12-32
12.5.2	Meter Stopped Event	12-33
12.5.2.1	Meter Stopped Event: Region	12-33
12.5.2.2	Meter Stopped Event: Geography	12-34
12.5.2.3	Meter Stopped Event: Operational	12-35
12.5.3	Meter Reversed Event	12-36
12.5.3.1	Meter Reversed Event: Region	12-36
12.5.3.2	Meter Reversed Event: Geography	12-37

12.5.3.3	Meter Reversed Event: Operational	12-38
12.5.4	Missing Meter Read	12-39
12.5.4.1	Missing Meter Read	12-39
12.5.5	Event Analysis	12-40
12.5.5.1	Event Analysis	12-40
12.6	Load Analysis Sample Reports	12-41
12.6.1	Daily Load Profile	12-41
12.6.1.1	Daily Load Profile	12-41
12.6.1.2	Daily Load Profile by Geography	12-43
12.7	OLAP Sample Reports	12-44
12.7.1	Monthly Total Usage Operational	12-45
12.7.2	Monthly Total Usage (Utility)	12-45
12.7.3	Monthly Total Usage Geography	12-46
12.7.4	Event Analysis	12-47
12.7.5	Usage Point Analysis	12-48

## 13 Oracle Utilities Data Model Users and Application Roles

---

13.1	Creating Oracle Utilities Data Model Application Roles	13-1
13.2	Creating Oracle Utilities Data Model Users	13-4
13.2.1	Refreshing the GUID	13-9

## 14 Metadata Collection and Reports

---

14.1	Overview of Managing Metadata for Oracle Utilities Data Model	14-1
14.1.1	Metadata Categories and Standards	14-1
14.1.2	Working with a Metadata Repository	14-2
14.2	Browsing Metadata Reports and Dashboard	14-3
14.2.1	Using the Measure-Entity Tab Business Areas and Measures Attributes and Entities	14-4
14.2.2	Using the Entity-Measure Tab Entity to Attribute Measures	14-4
14.2.3	Using the Program-Table Tab	14-4
14.2.4	Using the Table-Program Tab	14-4
14.3	Collecting and Populating Metadata	14-5
14.3.1	Load LDM/PDM Metadata (Table MD_ENTY)	14-9
14.3.1.1	GIVE_ABBRV	14-9
14.3.1.2	MD_DM_ALL_ENT_ATTR	14-10
14.3.1.3	PL/SQL Program to Update Column Name	14-10
14.3.1.4	PL/SQL program to insert initial data into MD_OIDM_ATTR_COL_NAM	14-10
14.3.1.5	PL/SQL program to load data into MD_ENTY	14-10
14.3.2	Load Program (Intra-ETL) Metadata (Table MD_PRG)	14-11

14.3.3 Load Reports and KPI Metadata (Table MD\_KPI and MD\_REF\_ENTY\_KPI):

14-12

## A Control Tables

---

A.1	Intra-ETL Load Parameters Control Table	A-1
A.2	Intra-ETL OLAP Mapping Control Table	A-2
A.3	Intra-ETL Monitoring Process Control Tables	A-3

## Index

---

## List of Tables

---

1-1	Oracle Development Tools Used with Oracle Utilities Data Model	1-3
1-2	Oracle Utilities Data Model Foundation Layer Components	1-6
1-3	Oracle Utilities Data Model Analytic Layer Components	1-7
1-4	Business Areas	1-13
2-1	Utilities Data Model Entities A-H	2-32
2-2	Utilities Data Model Entities I-P	2-59
2-3	Utilities Data Model Entities Q-Z	2-77
3-1	Account Total	3-2
3-2	Account Detail	3-2
3-3	Customer Total	3-5
3-4	Customer Detail	3-5
3-5	Feeder Total	3-10
3-6	Feeder Detail	3-10
3-7	Geography Zone All States	3-11
3-8	Geography Zone: State	3-11
3-9	Geography Zone: City	3-12
3-10	Geography Zone Usage Point	3-12
3-11	Hour Total	3-14
3-12	Hour Detail	3-14
3-13	Household Total	3-15
3-14	Household Detail	3-15
3-15	Manufacturer Total	3-16
3-16	Manufacturer Detail	3-16
3-17	Meter Total	3-17
3-18	Meter Detail	3-17
3-19	Operational Total	3-18
3-20	Operational Substation	3-18
3-21	Operational Feeder	3-19
3-22	Operational Transformer Tank	3-19
3-23	Operational Usage Point	3-19
3-24	Organization Total	3-21
3-25	Organization Business Unit Detail	3-21
3-26	Outage Record Total	3-25
3-27	Outage Record Detail	3-25
3-28	Postcode Total	3-26

3-29	Postcode Detail	3-26
3-30	Product Asset Model Total	3-27
3-31	Product Asset Model Detail	3-27
3-32	Region All Regions	3-29
3-33	Region Region	3-29
3-34	Region Sub Region	3-29
3-35	Region Usage Point	3-29
3-36	Service Location Total	3-31
3-37	Service Location Detail	3-32
3-38	Substation Total	3-33
3-39	Substation Detail	3-33
3-40	Time TTime	3-34
3-41	Time Year	3-34
3-42	Time Quarter	3-34
3-43	Time Month	3-35
3-44	Time Day	3-35
3-45	Time Month Hour Time	3-40
3-46	Time Month Hour Year	3-40
3-47	Time Month Hour Month	3-41
3-48	Time Month Hour Day	3-41
3-49	Time Month Total Time	3-45
3-50	Time Month TM Year	3-45
3-51	Time Month TM-Month	3-46
3-52	Time Month Hour Total Time Hour	3-47
3-53	Time Month Hour TMH-Year	3-47
3-54	Time Month Hour TMH-Month	3-48
3-55	Time Of Use Total Time	3-49
3-56	Time Of Use	3-49
3-57	TOU Time Total	3-50
3-58	TOU Time TOU-Year	3-50
3-59	TOU Time TOU-Quarter	3-51
3-60	TOU Time TOU-Month	3-51
3-61	TOU Time TOU-Day	3-52
3-62	Time Season Month Total	3-56
3-63	Time Season Month TSM-Year	3-56
3-64	Time Season Month TSM-Quarter	3-56
3-65	Time Season Month TSM-Month	3-56

3-66	Time Season Month Hour TSMH	3-58
3-67	Time Season Month Hour TSMH-Year	3-58
3-68	Time Season Month Hour TSMH-Quarter	3-58
3-69	Time Season Month Hour TSMH-TSMH-Month	3-58
3-70	Time Season Month Hour TSMH-Day	3-59
3-71	Transformer Total	3-63
3-72	Transformer Detail	3-63
3-73	Usage Point Total	3-64
3-74	Usage Point Detail	3-64
3-75	Usage Point Location Total	3-66
3-76	Usage Point Location Detail	3-66
3-77	Address Location Total	3-67
3-78	Address Location Detail	3-67
3-79	Asset InfoTotal	3-70
3-80	Asset Info Detail	3-70
3-81	Demand Response Program Total	3-71
3-82	Demand Response Program Detail	3-71
3-83	Outage Report Total	3-72
3-84	Outage Report Detail	3-72
3-85	Product Offering Total	3-73
3-86	Product Offering Detail	3-73
3-87	Reading Type Total	3-75
3-88	Reading Type Detail	3-75
3-89	Usage Point Group Total	3-77
3-90	Usage Point Location Detail	3-78
3-91	Zone Total	3-78
3-92	Zone Detail	3-78
4-1	Table Name Prefix Conventions	4-2
4-2	Other Table Name Prefix Conventions	4-2
4-3	Reference Tables	4-2
4-4	Lookup Tables	4-17
4-5	Base Tables	4-23
4-6	Oracle Utilities Data Model Derived Tables	4-27
4-7	Aggregate Tables	4-28
4-8	Temporary Oracle Utilities Data Model Tables	4-28
4-9	Control Tables	4-29
4-10	Sequence Name for Oracle Utilities Data Model	4-29

4-11	OLAP Cube Materialized Views in oudm_sys Schema	4-32
4-12	OLAP Cube Views in oudm_sys schema	4-32
5-1	Entity Mapping Table: Logical to Physical Mapping A to M	5-2
5-2	Entity Mapping Table: Logical to Physical Mapping: N to Z	5-16
6-1	Physical Data Model Partitioning	6-1
7-1	DWD_ACCT_ARRER_MO Package Business Rules	7-2
7-2	DWD_ACCT_BAL_MO Lookup Values	7-3
7-3	DWD_ACCT_DEBT_DAY Package Business Rules	7-4
7-4	DWD_ACCT_DEBT_DAY Lookup Values	7-5
7-5	DWD_ACCT_PMT_DAY Business Rules	7-6
7-6	PKG_DWD_ACCT_STAT_MO Business Rules	7-7
7-7	PKG_DR_PROG_LD_RDCTN_RGN_DAY Business Rules	7-9
7-8	PKG_DWD_END_DVC_EVT_CUST_DAY Package Business Rules	7-9
7-9	PKG_DWD_END_DVC_EVT_DVC_DAY Business Rules	7-10
7-10	DWD_END_DVC_EVT_DVC_DAY Lookup Values	7-10
7-11	PKG_DWD_MTR_RDNG_DAY Business Rules	7-11
7-12	PKG_DWD_MTR_RDNG_DAY Lookup Values	7-11
7-13	DWD_MTR_RDNG_HR Business Rules	7-12
7-14	DWD_MTR_RDNG_HR Lookup Values	7-12
7-15	PKG_DWD_OUTG_DAY Package Business Rules	7-12
7-16	DWD_END_DVC_EVT_DVC_DAY Business Rules	7-13
7-17	DWD_RLBLTY_IND_CITY_MO Business Rules	7-14
7-18	DWD_RLBLTY_IND_CITY_MO Business Rules	7-15
8-1	Account (ACCT) Levels and Hierarchies	8-2
8-2	Account Long Description Attribute Mapping	8-3
8-3	Account Short Description Attribute Mapping	8-3
8-4	Customer (CUST) Levels and Hierarchies	8-3
8-5	Customer Long Description Attribute Mapping	8-3
8-6	Customer Short Description Attribute Mapping	8-3
8-7	Geography Usage Point (GEOUP) Levels and Attributes	8-4
8-8	Geography Usage Point Long Description Attribute Mapping	8-4
8-9	Geography Usage Point Short Description Attribute Mapping	8-4
8-10	Manufacturer (MNFCTR) Levels and Hierarchies	8-4
8-11	Manufacturer Long Description Attribute Mapping	8-5
8-12	Manufacturer Short Description Attribute Mapping	8-5
8-13	Meter (MTR) levels and Hierarchies	8-5
8-14	Meter Long Description Attribute Mapping	8-5

8-15	Meter Short Description Attribute Mapping	8-5
8-16	Operational Usage Point (OPTUP) Levels and Hierarchies	8-6
8-17	Operational Usage Point Long Description Attribute Mapping	8-6
8-18	Operational Usage Point Short Description Attribute Mapping	8-6
8-19	Regional Usage Point (RGUP) Levels and Hierarchies	8-7
8-20	Regional Usage Point Long Description Attribute Mapping	8-7
8-21	Regional Usage Point Short Description Attribute Mapping	8-7
8-22	Time (TIME) Levels and Hierarchies	8-7
8-23	Time Long Description Attribute Mapping	8-8
8-24	Time Short Description Attribute Mapping	8-8
8-25	Time Time Number Attribute Mapping	8-8
8-26	Time Time Span Attribute Mapping	8-8
8-27	Time Start Date Attribute Mapping	8-9
8-28	Time End Date Attribute Mapping	8-9
8-29	Usage Point (USGPNT) Levels and Hierarchies	8-9
8-30	Usage Point Long Description Attribute Mapping	8-9
8-31	Usage Point Short Description Attribute Mapping	8-9
9-1	Meter Reading Account Cube Dimensions and Load Level	9-2
9-2	Meter Reading Account Cube Aggregation and Order	9-2
9-3	Meter Reading Account Cube Descriptions and Physical Columns	9-2
9-4	End Device Event Customer Cube Dimensions and Load Level	9-3
9-5	End Device Event Customer Cube Aggregation and Order	9-4
9-6	End Device Event Customer Cube Description and Physical Columns	9-4
9-7	End Device Event by Device Cube Dimensions and Load Level	9-5
9-8	End Device Event by Device Cube Aggregation and Order	9-5
9-9	End Device Event by Device Cube Description and Physical Columns	9-5
9-10	Meter Reading Geo Usage Point Cube Dimensions and Load Level	9-6
9-11	Meter Reading Geo Usage Point Cube Aggregation and Order	9-6
9-12	Meter Reading Geo Usage Point Cube Description and Physical Columns	9-7
9-13	Meter Reading Operational Usage Point Cube Dimensions and Load Level	9-8
9-14	Meter Reading Operational Usage Point Cube Aggregation and Order	9-8
9-15	Meter Reading Operational Usage Point Cube Description and Physical Columns	9-8
9-16	Meter Reading Regional Usage Point Cube Dimensions and Load Level	9-9
9-17	Meter Reading Regional Usage Point Cube Aggregation and Order	9-10
9-18	Meter Reading Regional Usage Point Cube Description and Physical Columns	9-10
9-19	Meter Reading Customer Cube Dimensions and Load Level	9-11
9-20	Meter Reading Customer Cube Aggregation and Order	9-11

9-21	Meter Reading Regional Usage Point Cube Description and Physical Columns	9-11
10-1	Oracle Utilities Data Model Algorithm Used	10-1
10-2	DWR_CUST_SGMNT Data Mining Model Details Table	10-3
10-3	DWR_CUST_SGMNT_DTL Data Mining Model Details Table	10-4
10-4	DWD_CUST_DR_PROG_PROFILE	10-5
10-5	Setting Values for STEP1 Segmentation	10-8
10-6	Data Mining Setting Table	10-8
12-1	Reliability Selections for Reports	12-17
13-1	Fields in Console Page to Create Data Model Users	13-6
A-1	DWC_ETL_PARAMETER Table	A-1
A-2	ETL Parameters in the DWC_OLAP_ETL_PARAMETER Table	A-2
A-3	DWC_INTRA_ETL_PROCESS Columns	A-3
A-4	DWC_INTRA_ETL_ACTIVITY Columns	A-4

# Preface

The *Oracle Utilities Data Model Reference* describes the data model structures for Oracle Utilities Data Model. Since the needs of each Oracle Utilities Data Model environment are unique, Oracle Utilities Data Model is configurable so it can be modified to address each customer's needs.

- [Audience](#) (page xx)
- [Documentation Accessibility](#) (page xx)
- [Related Documents](#) (page xxi)
- [Conventions](#) (page xxi)

## Audience

The audience for the *Oracle Utilities Data Model Reference* includes the following:

- IT specialists, who maintain and adjust Oracle Utilities Data Model. They are assumed to have a strong foundation in Oracle Database and PL/SQL, Analytic Workspace Manager, and Oracle Business Intelligence Suite Enterprise Edition.
- Database administrators, who will administer the data warehouse and the database objects that store the data. They are assumed to understand Intra-ETL, which is used to transfer data from one format to another; as well as PL/SQL and the Oracle Database.
- Business analysts, including information and data analysts, market analysts and sales analysts.

This document is also intended for data modelers, data warehouse administrators, IT staff, and ETL developers.

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

### Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

---

## Related Documents

For more information about Oracle Utilities Data Model, see the following documents in the Oracle Utilities Data Model documentation set:

- *Oracle Utilities Data Model Installation Guide*
- *Oracle Utilities Data Model Release Notes*
- *Oracle Utilities Data Model Implementation and Operations Guide*

## Conventions

The following text conventions are used in this document:

---

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>monospace</code>	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

---

# Part I

## Logical and Physical Data Model

This part provides introductory information and details for the Oracle Utilities Data Model Logical and Physical Data model.

Part I contains the following chapters:

- [Introducing Oracle Utilities Data Model](#) (page 1-1)
- [Logical Data Model Foundation](#) (page 2-1)
- [Logical Data Model Dimensions](#) (page 3-1)
- [Oracle Utilities Data Model Physical Data Model](#) (page 4-1)
- [Oracle Utilities Data Model Logical to Physical Mapping](#) (page 5-1)
- [Oracle Utilities Data Model Partitioning](#) (page 6-1)

# 1

## Introducing Oracle Utilities Data Model

This chapter introduces the Oracle Utilities Data Model, which is a standards-based, pre-built approach to utilities data warehousing.

This chapter includes the following sections:

- [Overview of Oracle Utilities Data Model](#) (page 1-1)
- [What Are the Benefits of Using Oracle Utilities Data Model?](#) (page 1-2)
- [What Are the Components of Oracle Utilities Data Model?](#) (page 1-2)
- [What Oracle Technologies are in Oracle Utilities Data Model](#) (page 1-3)
- [What is Oracle Utilities Data Model](#) (page 1-4)
- [About Common Information Model \(CIM\) Users Group](#) (page 1-12)
- [About Business Areas in Oracle Utilities Data Model](#) (page 1-12)

### 1.1 Overview of Oracle Utilities Data Model

Oracle Utilities Data Model is a pre-built, standards-based data warehouse solution designed and optimized for Oracle database and hardware. Oracle Utilities Data Model can be used in any applications environment and is easily extensible. Oracle Utilities Data Model enables utilities to establish a foundation for business intelligence and analytics across the enterprise, allowing each business domain to leverage a common analytics infrastructure and pre-defined cross-domain relationships, driving unprecedented levels of intelligence and discovery.

Oracle Utilities Data Model offers a single-vendor solution package that is tightly integrated with the business intelligence platform. With pre-built data mining, Oracle Online Analytical Processing (Oracle OLAP) and dimensional models, Oracle Utilities Data Model provides you with industry-specific metrics and insights that you can act on immediately to improve your bottom line. These business intelligence solution offerings take advantage of Oracle's scalability and reliability, using Oracle's familiar optimization, parallelism, and performance engineering within the database.

Oracle Utilities Data Model includes an exhaustive set of embedded advanced analytics, using Oracle's OLAP and data mining technology. You can take advantage of pre-built and pre-tested solution sets designed by industry experts that deliver relevant insights, are actionable, and aimed at improving both top-line and bottom-line results. You can see summarized, aggregated information or quickly navigate to drill-down transaction details to better understand business issues.

Oracle Utilities Data Model, combined with Oracle technology, provides all of the components required for a complete and extendable utilities Data Warehouse and Business Intelligence framework to eliminate complex and costly integration requirements, all designed to reduce your total cost of ownership.

## 1.2 What Are the Benefits of Using Oracle Utilities Data Model?

With Oracle Utilities Data Model, you can jump-start the design and implementation of a data warehouse to quickly achieve a positive ROI for your data warehousing and business intelligence project with a predictable implementation effort.

Oracle Utilities Data Model provides the following features:

- Query and Reporting for information: provides extraction of detailed and summary data.
- OLAP for data analysis: provides summaries, trends, and forecasts.
- Data Mining for insight and prediction: provides knowledge discovery of hidden patterns and insights.
- Oracle Utilities Data Model is aligned with the CIM Users Group. For more information, see "[About Common Information Model \(CIM\) Users Group](#) (page 1-12)".

Oracle Utilities Data Model provides an off-the-shelf data warehouse framework that is both adaptable and extendable. Alignment with utilities industry standards ensures interoperability with other systems. The pre-built, pretuned data model with intelligent insight into detailed utilities and market data, allows you to quickly gain value from your data warehousing effort, supports diverse analytical requirements, and assists in building future analytical applications. Fast, easy and predictable implementation reduces risks and enables you to achieve strategic value more rapidly by eliminating deployment delays and expenses associated with built-from-scratch or proprietary data warehouse solutions.

Benefit	Description
Delivers Compelling Business Improvements	<ul style="list-style-type: none"> <li>• Accelerate business value with configurable, pre-built data model and analytics samples</li> <li>• Provide better service and decision making by enabling the cross-domain data and business analysis</li> <li>• Increase operational efficiency with streamlined and enterprise scale Analytics/DW solution</li> </ul>
Provides Common, Accurate Data Definition Across All Applications	<ul style="list-style-type: none"> <li>• Improve quality and information accuracy between applications and establish a single source of truth</li> <li>• Join new, existing or 3rd party customer and operational information on a robust, open industry standards-based platform</li> </ul>
Provides Common, Accurate Data Definition Across All Applications	<ul style="list-style-type: none"> <li>• Reduce need for costly custom BI/DW development with pre-built model and architecture based on best practices</li> <li>• Accelerate user adoption of Analytics/DW strategy and drive holistic analytics use as strategic business differentiator</li> <li>• Simplify model extensions as future analytical needs change</li> </ul>

## 1.3 What Are the Components of Oracle Utilities Data Model?

Oracle Utilities Data Model includes the following components:

- Logical Data Model Foundation
- Logical Data Model Dimensions
- Physical Model
- Intra-ETL database packages and SQL scripts to extract, transform, and load (ETL) data from one layer of Oracle Utilities Data Model to another.
- OLAP Models for Oracle Utilities Data Model
- Pre-defined Data Mining Model
- Utility Scripts
- Reports and dashboards
- Installation scripts

## 1.4 What Oracle Technologies are in Oracle Utilities Data Model

Several Oracle technologies are involved in building the infrastructure:

### Oracle Database with OLAP, Data Mining and Partitioning Option

Oracle Utilities Data Model utilizes a complete Oracle technical stack. It leverages the following data warehousing features of the Oracle database: SQL model, compression, partitioning, advanced statistical functions, materialized views, data mining, and online analytical processing (OLAP).

#### Tip:

To achieve cost-effective scalability, availability, and reliability, you can consider using Oracle Real Application Clusters (Oracle RAC) and commodity hardware.

### Oracle Development Tools

Use the Oracle tools shown in [Table 1-1](#) (page 1-3) to customize the predefined logical and physical models provided with Oracle Utilities Data Model, or to populate the target relational tables, materialized views, or OLAP cubes.

**Table 1-1 Oracle Development Tools Used with Oracle Utilities Data Model**

Name	Use
Oracle SQL Data Modeler	To create the logical model
SQL Developer or SQL*Plus	To create or modify database objects
Analytic Workspace Manager	To populate the target OLAP cubes

### Oracle Business Intelligence Suite Enterprise Edition Presentation Tools

Oracle Business Intelligence Suite Enterprise Edition is a comprehensive suite of enterprise Business Intelligence products that delivers a full range of analysis and

reporting capabilities. You can use Oracle Business Intelligence Suite Enterprise Edition Answers and Dashboard presentation tools to customize the predefined dashboard reports that are provided with Oracle Utilities Data Model.

## 1.5 What is Oracle Utilities Data Model

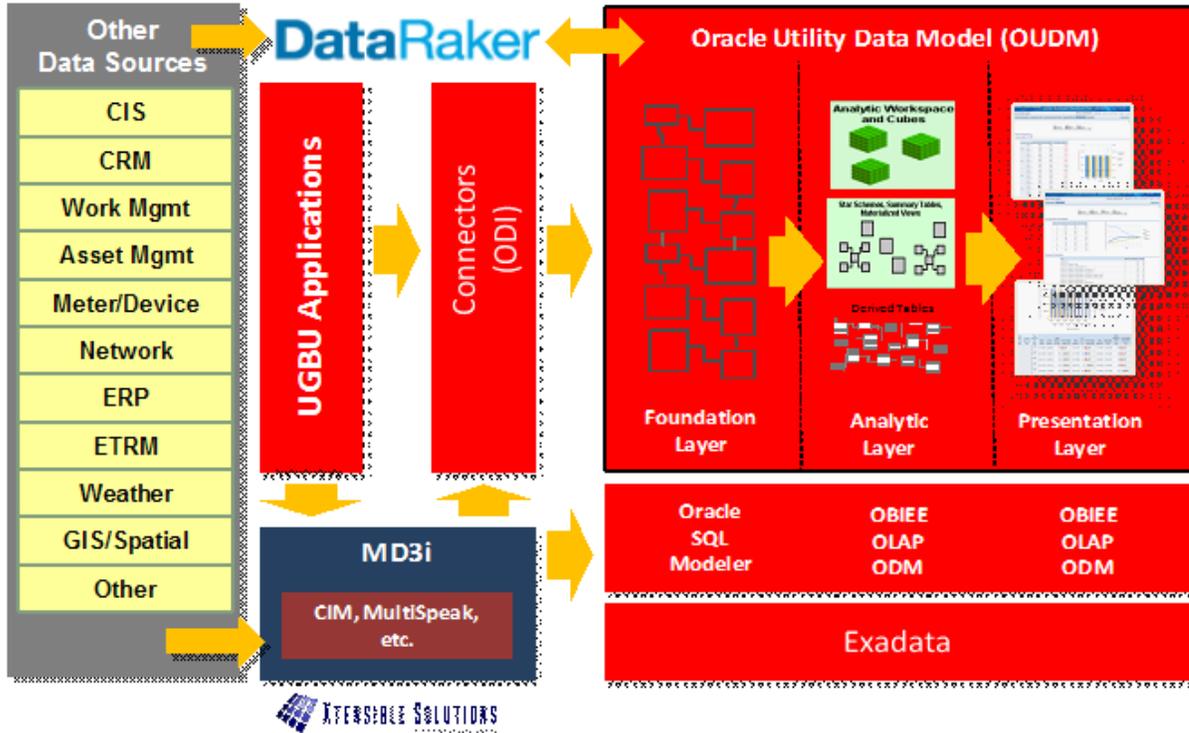
Oracle Utilities Data Model leverages several Oracle Database data warehouse and Business Intelligence concepts that need to be clarified to understand the structure and use of Oracle Utilities Data Model.

Oracle Utilities Data Model provides "One Single True Vision of the Business". This unique architecture provides the utilities Service Provider (CSP) Flexibility, Agility, Scalability and Accuracy to obtain a real competitive advantage.

A typical enterprise data warehouse architecture, as shown in [Figure 1-1](#) (page 1-5), is composed of several layers ordered by the growing actionable value of the information in the warehouse:

- The Data Source layer (operational systems, Commercial-Off-The shelf solution, unstructured and syndicated data, with possibly a Master Data Management system).
- The Staging layer: Typically used for transformation and data cleansing. It is also sometimes used as Operational Data Store, in particular for real-time operational reporting.
- The Foundation layer: It is typically used to store all transactions and reference data at the most atomic level. Best practices require that this level is 3rd normal form, to avoid data redundancy.
- The Access and Performance or Analytical layer: this is the layer optimized for the business end-users. It usually contains the star schema to answer business questions, as well as OLAP tools and mining models.
- The Information (or Information Access) layer: This is the metadata layer and above, accessed by end-users through their Business Intelligence and/or reporting tools, or even external analytical tools (other OLAP or Mining tools). This layer is usually changeable by normal end-users (within their roles and responsibility). This is where the performance management applications provide their reports, where user roles, alerts, guided analytics, dashboards and reports are defined (usually by a specific BI administrator).
- The data movement from one layer to the other is run through ETL / ELT tools. One distinguishes the standard ETL/ELT (from data sources to foundation layer) from the intra-ETLs (from foundation layer up to the reporting).

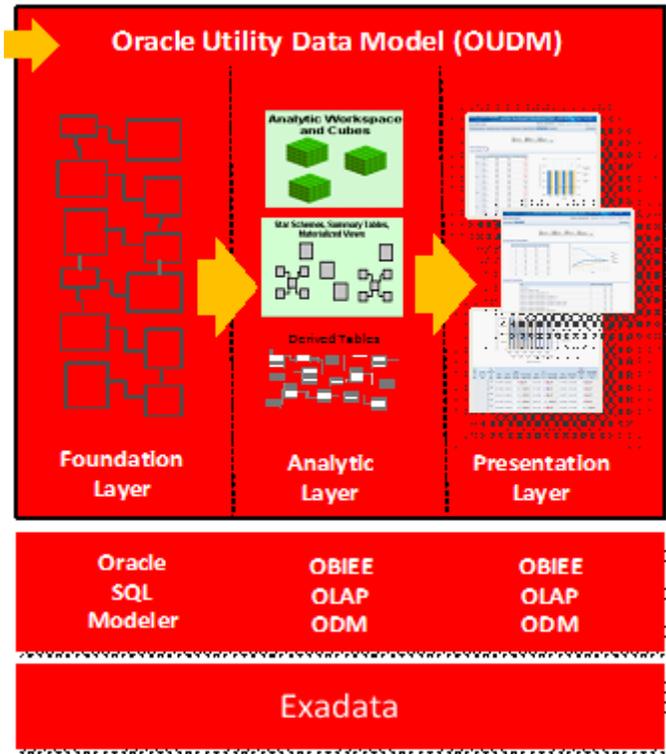
Figure 1-1 Data Warehouse Reference Architecture with Oracle Utilities Data Model



Within a standard enterprise data warehouse architecture, as shown in [Figure 1-1](#) (page 1-5), if an adapter is used, for example DataRaker, the Staging area is also provided. Oracle Utilities Data Model covers Foundation Layer, plus the intra-ETL part, and includes parts of the reporting area if OBIEE is used (Oracle Utilities Data Model also includes the pre-built OBIEE repository).

To summarize Oracle Utilities Data Model includes the parts shown in [Figure 1-2](#) (page 1-6).

Figure 1-2 Oracle Utilities Data Model Inner Structure



The Oracle Utilities Data Model Foundation Layer is composed of the components shown in Table 1-2 (page 1-6).

Table 1-2 Oracle Utilities Data Model Foundation Layer Components

Component	Usage
Reference entities and tables	<ul style="list-style-type: none"> <li>Used to store master reference entities required by a utility operation</li> <li>Non-changing infrequently-changing data</li> <li>These entities translate into dimensions and hierarchies</li> <li>Physically, table names start with "DWR_"</li> </ul>
Base entities and tables	<ul style="list-style-type: none"> <li>Store transactions from systems of record.</li> <li>It contains data at atomic level with the lowest level of granularity possible</li> <li>Required to perform detailed analysis, and uncovering causal effects and associations</li> <li>Physically, table names start with "DWB_"</li> </ul>
Lookup entities and tables	<ul style="list-style-type: none"> <li>Hold descriptions for common code lookups.</li> <li>Their goal is to save space since one does not have to store long descriptions in each transaction record.</li> <li>Physically, table names start with "DWL_"</li> </ul>
Control tables	<ul style="list-style-type: none"> <li>These are only used and filled by the intra-ETLs.</li> <li>Physically, tables names start with "DWC_"</li> </ul>

The Analytic Layer serves as an abstraction layer to simplify analytical access; this layer is a subject oriented representation of data ("shellfish" model). The analytic layer is easily understood by end-users and is simpler to navigate. This layer consists of

aggregates, summaries, hierarchical relationships, and so on. The analytic layer is composed of star schemas, materialized views, OLAP cubes, and so on and is populated using intra-ETL processes from data in the Foundation Data Layer (FDL). The Oracle Utilities Data Model Analytic layer is composed of the components shown in [Table 1-3](#) (page 1-7).

**Table 1-3 Oracle Utilities Data Model Analytic Layer Components**

Component	Usage
DERIVED entities and tables	<p>Provide a transition level to STARs. This layer is denormalized and is typically used for operational reporting and data mining, to uncover new insights and predict the future and:</p> <ul style="list-style-type: none"> <li>• Provides information that can only be derived from base data, usually at day level.</li> <li>• Leverages data mining, advanced statistics, and complex queries.</li> <li>• Physically, tables start with "DWD_".</li> </ul> <p>Examples of derived tables include: DWD_MTR_RDNG_DAY, for meter reading day, DWD_OUTG_DAY, for outage by day, and DWD_RLBLTY_IND_CITY_MO for reliability indices by city by month, and so on.</p> <p>There is also a mining model at this level:.</p>
AGGREGATE entities and tables	<p>Provide information to analyze and summarize, usually at the monthly level and:</p> <ul style="list-style-type: none"> <li>• Leverages base and derived data models to provide aggregated data such as summaries, averages, and so on.</li> <li>• Enables dimensional analysis on wide variety of subject areas.</li> <li>• Leverages Oracle OLAP cubes (pre-built OLAP cubes are available. For more information, see <a href="#">Oracle Utilities Data Model OLAP Model Cubes</a> (page 9-1).</li> <li>• Contains tables starting with "DWA_"; usually materialized views.</li> <li>• Represents the information access layer: It covers all the metadata.</li> </ul>

- [About Business Areas and Subject Areas in Oracle Utilities Data Model](#) (page 1-7)
- [About the Logical Data Model and Physical Data Model](#) (page 1-8)
- [About Entity Relationships in Oracle Utilities Data Model](#) (page 1-8)
- [Understanding Named and Flexible Hierarchies](#) (page 1-9)

## 1.5.1 About Business Areas and Subject Areas in Oracle Utilities Data Model

A **Business Area** is a broad slice through Oracle Utilities Data Model grouping where all tables that cover the associated business processes (reports, metadata, Mining, OLAP, 3NF) are all accessible through the same GUI (if OBIEE is used). A business area is a conceptual grouping, used at the default report level. The reports are organized by related subject areas gathered in "business areas". [Table 1-4](#) (page 1-13) lists the Oracle Utilities Data Model business areas.

A **Subject Area** is a thin slice through Oracle Utilities Data Model grouping all tables, mainly at the foundation layer, that cover a specific (logical) concept, business process or question. For example, the subject area PARTY defines the notion of a "PARTY". The "Individual" and "Organization" are both a subset of PARTY.

From an implementation perspective, Oracle Utilities Data Model can be filled by subject or business area, without taking care of having to feed all tables to have tangible and usable results.

After filling all reports of a given business area with data, this does not mean that the whole business area is covered. Feeding all the tables needed to have all reports of a given business area probably also feeds some reports of other business areas. For example, some PRODUCT, COST and COLLECTION AGENCY entities are required in the Business Area Revenue (for the Revenue OLAP cube). This also partly covers the Product Management, Cost and Contribution, as well as the Partner Management business areas.

## 1.5.2 About the Logical Data Model and Physical Data Model

A logical data model describes how to store information that defines business processes. The logical data model is an interface between business and technical staff, and allows these groups to provide a common understanding of business data elements and requirements.

The logical data model also provides the foundation for designing an Enterprise Data Warehouse. In Oracle Utilities Data Model, the logical data model is designed to avoid data redundancy, as much as possible, without impacting performance, and thus prevent data and business transaction inconsistency. The idea is to facilitate data reuse and sharing, hence reducing development and maintenance cycle and cost.

The logical data model is a single source for the model definition, with its own naming conventions that are valid for both business and IT.

In describing the business processes independently of the data sources and the technology, the logical data model clarifies the functional specifications, while avoiding (unnecessary) assumptions.

This implies that, in principle, the logical data model of Oracle Utilities Data Model could work on any platform. However, on top of the fact that it would not be supported by Oracle, such an implementation would not benefit from all the pre-built pre-integrated technologies leveraged with Oracle Utilities Data Model, in particular in the analytical layer, such as Partitioning, OLAP, Mining models, and so on.

The Oracle Utilities Data Model physical data model is the concrete implementation of the logical data model. It is fully technology dependent. The physical data model transforms business relationships into keys or indexes. It takes into account the infrastructure and technology to optimize the performance for end-users. The physical data model has its own naming convention in parallel to the one of the logical data model. Looking at the physical data model, one should be able to "build-back" the logical data model from the entity relationship, even if one could not have all the key understanding of a business process behind, unless one knows the business.

## 1.5.3 About Entity Relationships in Oracle Utilities Data Model

A relationship between two entities should exist in the model only if there is a direct (business) relationship between those entities. You can categorize the relationships as:

- Description or added information (typically for Lookup tables): An entity contains codes that describe or validate the various values that an attribute of the original entity has. Physically, the two entities are related through a Foreign Key.
- Direct relationship: Typically, when two entities are related from a business point of view, the model needs to ensure that this relationship is explicitly present and described. A direct relationship contains a direct business link between the entities

(typically serves, uses, owns, and so on). There must be a distinction between clear 1 to many (1:n) or 0 to many (0:n), and many to many (n:m) relationship.

- 0:n or 1:n relationships: typically business types like "owns", "has got", "serves", "uses"... It is usually directly linked to an attribute (like description), and may be a foreign key link.
- m:n relationships: If the relationship can be "many to many", use an "Assignment" Entity between the entities to transform this m:n relationship in m:1 (or 0) and (0 or) 1:n.

PARTY ASSIGNMENT represents the relationship between two parties uniquely identified in Oracle Utilities Data Model, whatever the role they play within the model: As Customer, Employee, dealer or even all three for the same individual!

The only exception to this rule is with ADDRESS LOCATION. One uses the "ADDRESS RELATED" table, for example to feed the fact that an alternative billing address has been given by customer when the first one fails or because he is in holiday.

Very often, two rows of a given entity (say "ENTITY") have to be related with one another. Most of the time, Oracle Utilities Data Model uses a table named "ENTITY ASSIGNMENT". For example, PARTY and PARTY ASSIGNMENT.

In Party, the *PARTY TYPE* is a "person", an "organization", or an "organization business unit". It is not "Customer". This is a Party role. A given Party can have several roles which are "chosen" depending on the type of business interaction that takes place. However, the type never changes.

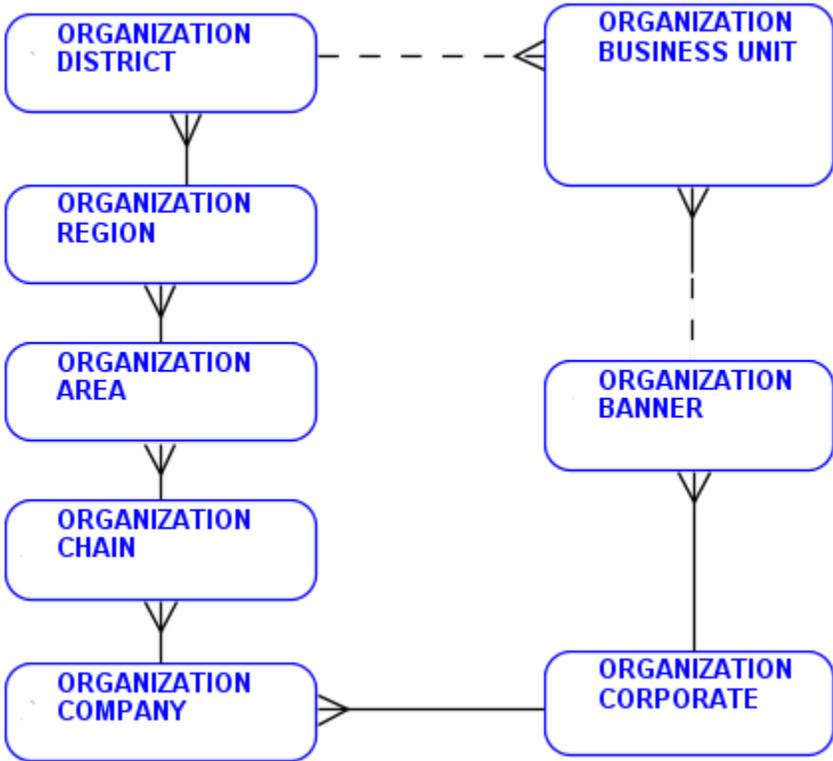
Self-Relationship: When an entity have a self-referencing attributes.

Sometimes a customer is referred by another customer. To keep the referral customer details Oracle Utilities Data Model has a self-referencing column *REFERRAL CUSTOMER CODE* in *CUSTOMER* entity, which refers to the primary key *CUSTOMER CODE* of *CUSTOMER* entity.

## 1.5.4 Understanding Named and Flexible Hierarchies

- A named hierarchy is a pre-built hierarchy of general interest, usually used/seen in the market, with fixed levels (with a specific name for each).
- A flexible hierarchy is a hierarchical structure that is freely definable: for levels, attributes per level, relationships and numbers of hierarchies (for the same base entity) with various possible versions.
- These hierarchies do the following
  - Follow Slowly Changing dimension Type II rules.
  - Have the same leaf level (Organization Business Unit for "Organization" and Address Location for "Geography")
  - Have pre-built tools to feed/change them easily (for implementation team).
  - Can be associated in parallel (for example, In an Organization, several hierarchies can be defined: Administrative Hierarchy and Sales Hierarchy)
- ORGANIZATION BUSINESS UNIT refers to lowest-level internal business unit of the organization that delivers a limited range of specific utilities services or merchandise through any sales channel (Web site, store, and so on), as shown in [Figure 1-3](#) (page 1-10).

Figure 1-3 Organization Business Unit Entity (Named Hierarchy)



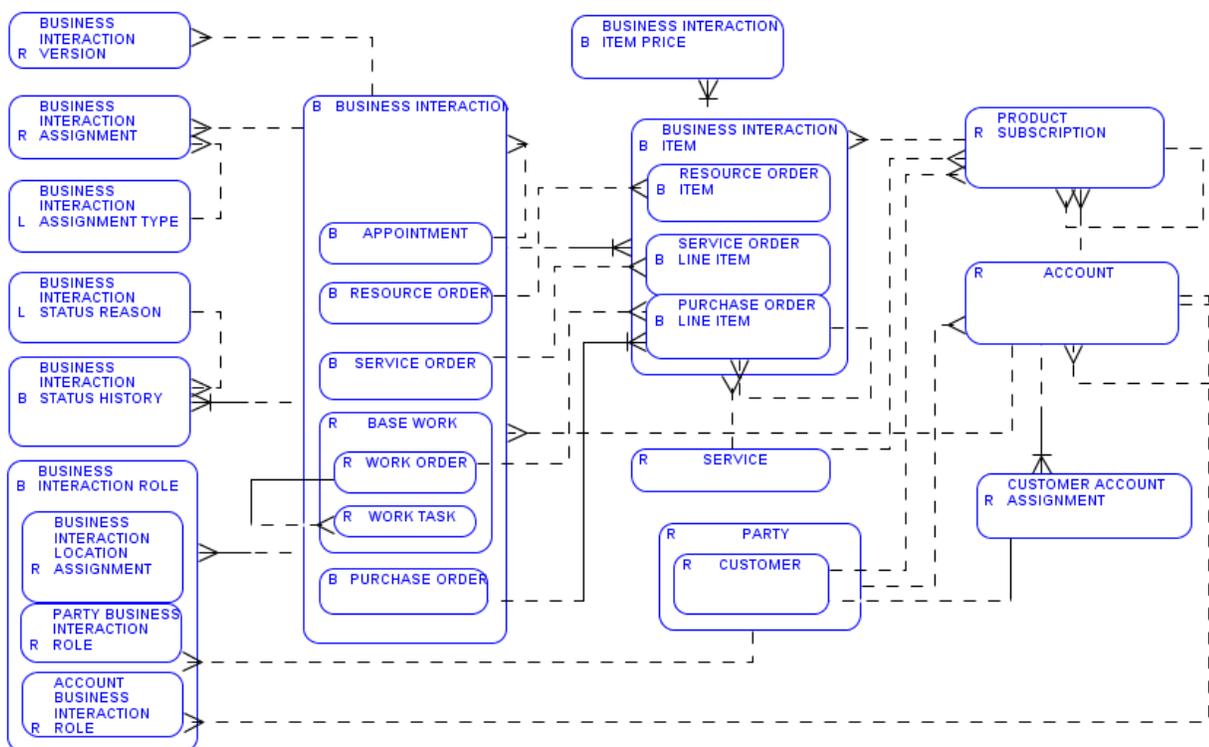
- ORGANIZATION BUSINESS ENTITY refers to any internal logical entity that is recognized as a part of the enterprise for business analysis and transactions. Classification for a business entity can include company, operation unit, store, or warehouse. This is part of "Flexible Hierarchy" of organization.



Sub-Type of SERVICE is CUSTOMER FACING SERVICE. ELECTRICITY SERVICE is sub-type of CUSTOMER FACING SERVICE and DEMAND RESPONSE PROGRAM is sub-type of ELECTRICITY SERVICE.

PRODUCT SUBSCRIPTION: is the record of customer using a product (or product package). Customer subscription is the basis of billing. One subscription may be based on contract.

Figure 1-5 Business Interaction Item Entity



## 1.6 About Common Information Model (CIM) Users Group

Oracle Utilities Data Model provides a standards-based utility industry data model using the Common Information Model (CIM). CIM is an abstract information model that provides data understanding through the identification of the relationships and associations of the data within a utility enterprise. For more information on CIM, see

<http://cimug.ucaiug.org/default.aspx>

## 1.7 About Business Areas in Oracle Utilities Data Model

A **Business Area** is a broad slice through Oracle Utilities Data Model grouping where all tables that cover the associated business processes (reports, metadata, Mining, OLAP, 3NF) are all accessible through the same GUI (if OBIEE is used). A business area is a conceptual grouping used at the default report level. The reports are organized by related subject areas gathered in "business areas".

Table 1-4 (page 1-13) lists the Oracle Utilities Data Model business areas.

**Table 1-4 Business Areas**

<b>Business Area</b>	<b>Description</b>
Account Management	Contains information to support utility customers with the tracking, status, and plans with matters such as service requests, service agreements, monthly billing, reported trouble, planned outages, outage history, and so on.
Asset Management	Specifies the information management for network data sets, assets, and asset catalogs.
Customer Management	Contain customer service, trouble management, and point of sale related information within the utility enterprise.
Meter Reading and Control	Covers customer service, trouble management, and point of sale related information within the utility enterprise.
Network Operation	This business area provides the information on network operation for both distribution and transmission within utility industry such as supervising main substation topology, control equipment status, handling network connectivity and loading conditions. It also makes it possible to locate and supervise the location of field crews.
Outage Management	This business area supports the utilities to identify disruptions in the system, to perform restoration switching actions and to provide customers with notification of disruptions detected.
Weather Model	This is a weather model to support utility operation.
Work Management	This package contains the core information classes that support work management and network extension planning applications.

# 2

## Logical Data Model Foundation

The logical data model of the Oracle Utilities Data Model defines the business entities and their relationships and provides an understanding of the business and data requirements for the Oracle Utilities Data Model data warehouse.

This chapter includes the following sections:

- [Major Subject Areas and Related Entities](#) (page 2-1)
- [Logical Entities for Business Areas](#) (page 2-29)
- [Logical Data Model Entity Dictionary](#) (page 2-32)

### 2.1 Major Subject Areas and Related Entities

The following describes the main entities related to some major or typical subject areas in Oracle Utilities Data Model:

 **Note:**

The entity-relationship figures of the major reference entities in those subject areas are available with the Oracle Utilities Data Model IP Patch. The IP Patch includes additional documentation. To obtain the IP Patch and for the latest information about Oracle Utilities Data Model patch sets, go to My Oracle Support at <https://support.oracle.com>.

- [Subject Area: Account](#) (page 2-3)
- [Subject Area: Account Balance](#) (page 2-4)
- [Subject Area: Account Credit Limit](#) (page 2-4)
- [Subject Area: Agreement](#) (page 2-4)
- [Subject Area: Asset](#) (page 2-5)
- [Subject Area: Asset Information Classes](#) (page 2-6)
- [Subject Area: Billing](#) (page 2-6)
- [Subject Area: Business Events](#) (page 2-7)
- [Subject Area: Business Interaction](#) (page 2-8)
- [Subject Area: Channel](#) (page 2-8)
- [Subject Area: Connectivity Model](#) (page 2-9)
- [Subject Area: Cost](#) (page 2-10)
- [Subject Area: Curve Schedule](#) (page 2-10)
- [Subject Area: Customer](#) (page 2-10)

- [Subject Area: Customer Account and Agreement](#) (page 2-11)
- [Subject Area: Demand Response Program](#) (page 2-12)
- [Subject Area: Employee](#) (page 2-12)
- [Subject Area: End Device Control](#) (page 2-12)
- [Subject Area: End Device Event](#) (page 2-13)
- [Subject Area: Financial](#) (page 2-13)
- [Subject Area: Generating Unit](#) (page 2-14)
- [Subject Area: Line Model](#) (page 2-14)
- [Subject Area: Load Model](#) (page 2-14)
- [Subject Area: Location](#) (page 2-15)
- [Subject Area: Meter Asset](#) (page 2-16)
- [Subject Area: Meter Event and Reading](#) (page 2-16)
- [Subject Area: Meter Reading](#) (page 2-16)
- [Subject Area: Meter Reading and Events](#) (page 2-17)
- [Subject Area: Meter Reading and Control Overview](#) (page 2-17)
- [Subject Area: Meter Reading Register and Channel](#) (page 2-18)
- [Subject Area: Meter Reading Type](#) (page 2-18)
- [Subject Area: Network Operation](#) (page 2-19)
- [Subject Area: Outage Management](#) (page 2-20)
- [Subject Area: Party Organization Business Unit](#) (page 2-20)
- [Subject Area: Payment](#) (page 2-21)
- [Subject Area: Phase Model](#) (page 2-22)
- [Subject Area: Premise and Node](#) (page 2-22)
- [Subject Area: Pricing Structure](#) (page 2-23)
- [Subject Area: Promotion and Campaign](#) (page 2-23)
- [Subject Area: Regulating Equipment Model](#) (page 2-24)
- [Subject Area: SCADA](#) (page 2-25)
- [Subject Area: Schedule Model](#) (page 2-25)
- [Subject Area: Substation, Feeder, and Transformer Hierarchy Model](#) (page 2-25)
- [Subject Area: Switching Equipment Model](#) (page 2-26)
- [Subject Area: Tap Changer Model](#) (page 2-26)
- [Subject Area: Transformer Model](#) (page 2-26)
- [Subject Area: Usage Point, Agreement, Account, Customer, and Premise](#) (page 2-27)
- [Subject Area: Usage Point and End Device](#) (page 2-27)
- [Subject Area: Voltage Control Model](#) (page 2-27)
- [Subject Area: Weather Model](#) (page 2-28)

- [Subject Area: Work Management](#) (page 2-28)

## 2.1.1 Subject Area: Account

### Entities of Subject Area: Account

This subject area contains major classes relevant to account and their relationships. This section lists the entities associated with the subject area Account.

[Account](#) (page 2-32)  
[Account Accounting Cycle History](#) (page 2-32)  
[Account Assignment](#) (page 2-32)  
[Account Assignment Reason](#) (page 2-32)  
[Account Assignment Type](#) (page 2-32)  
[Account Balance Adjustment](#) (page 2-32)  
[Account Balance Bucket](#) (page 2-32)  
[Account Balance Group](#) (page 2-32)  
[Account Balance Impact](#) (page 2-32)  
[Account Balance Type](#) (page 2-33)  
[Account Billing Cycle History](#) (page 2-33)  
[Account Billing Frequency History](#) (page 2-33)  
[Account Billing Occurrence](#) (page 2-33)  
[Account Billing Period History](#) (page 2-33)  
[Account Management History](#) (page 2-33)  
[Account Payment](#) (page 2-33)  
[Account Payment Method Status](#) (page 2-33)  
[Account Payment Method Status Reason](#) (page 2-34)  
[Account Payment Method Status Type](#) (page 2-34)  
[Account Preferred Invoice Delivery](#) (page 2-34)  
[Account Preferred Payment Method](#) (page 2-34)  
[Account Profile](#) (page 2-34)  
[Account Role Type](#) (page 2-34)  
[Account Segment](#) (page 2-34)  
[Account Segment Assignment History](#) (page 2-34)  
[Account Segmentation Model](#) (page 2-34)  
[Account Status History](#) (page 2-34)  
[Account Status Reason](#) (page 2-34)  
[Account Status Type](#) (page 2-34)  
[Account Type](#) (page 2-34)  
[Accounting Cycle](#) (page 2-35)  
[Address Location](#) (page 2-35)  
[Bank Direct Debit Channel](#) (page 2-37)  
[Billing Cycle](#) (page 2-38)  
[Billing Frequency](#) (page 2-38)  
[Billing Occurrence Type](#) (page 2-38)  
[Billing Period](#) (page 2-38)  
[Credit Category](#) (page 2-44)  
[Currency](#) (page 2-45)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Event Invoice Delivery](#) (page 2-52)  
[Invoice](#) (page 2-60)  
[Invoice Delivery Type](#) (page 2-61)  
[Language](#) (page 2-62)  
[Organization Business Unit](#) (page 2-66)

[Party](#) (page 2-69)  
[Party Account Assignment](#) (page 2-69)  
[Payment Method Type](#) (page 2-72)  
[Segment Criteria](#) (page 2-80)  
[Segment Type](#) (page 2-80)  
[Unit Of Measure](#) (page 2-86)

## 2.1.2 Subject Area: Account Balance

### Entities of Subject Area: Account Balance

[Account](#) (page 2-32)  
[Account Adjustment Reason](#) (page 2-32)  
[Account Balance Adjustment](#) (page 2-32)  
[Account Balance Adjustment Type](#) (page 2-32)  
[Account Balance Bucket](#) (page 2-32)  
[Account Balance Group](#) (page 2-32)  
[Account Balance History](#) (page 2-32)  
[Account Balance Type](#) (page 2-33)

## 2.1.3 Subject Area: Account Credit Limit

### Entities of Subject Area: Account Credit Limit

[Account](#) (page 2-32)  
[Account Credit Limit](#) (page 2-33)  
[Credit Category](#) (page 2-44)  
[Currency](#) (page 2-45)  
[Debt Aging Band](#) (page 2-47)  
[Payment Aging Class](#) (page 2-72)  
[Product Subscription](#) (page 2-75)

## 2.1.4 Subject Area: Agreement

### Entities of Subject Area: Agreement

[Account](#) (page 2-32)  
[Account Agreement Relationship](#) (page 2-32)  
[Agreement](#) (page 2-35)  
[Agreement Approval](#) (page 2-35)  
[Agreement Assignment](#) (page 2-35)  
[Agreement Assignment Reason](#) (page 2-35)  
[Agreement Assignment Type](#) (page 2-35)  
[Agreement Document](#) (page 2-35)  
[Agreement Item](#) (page 2-35)  
[Agreement Status](#) (page 2-35)  
[Agreement Status Type](#) (page 2-36)  
[Agreement Type](#) (page 2-36)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Customer Document](#) (page 2-45)  
[Customer Order](#) (page 2-46)  
[Document Type](#) (page 2-48)  
[Installment Agreement](#) (page 2-59)

[Invoice](#) (page 2-60)  
[Invoice Payment Term Type](#) (page 2-61)  
[Party Agreement Relationship](#) (page 2-69)  
[Promotion](#) (page 2-75)

## 2.1.5 Subject Area: Asset

This subject area contains the core information that support asset management applications that deal with the physical and lifecycle aspects of various network resources.

[Activity Record](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Activity Record Assignment](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Asset Function](#) (page 2-37)  
[Asset Info](#) (page 2-37)  
[Asset Location](#) (page 2-37)  
[Asset Model](#) (page 2-37)  
[Asset Model Catalog](#) (page 2-37)  
[Asset Model Catalog Item](#) (page 2-37)  
[Asset Organization Role](#) (page 2-37)  
[Asset Organization Role Assignment](#) (page 2-37)  
[Asset Owner](#) (page 2-37)  
[Asset PSR Assignment](#) (page 2-37)  
[Asset Type](#) (page 2-37)  
[Asset User](#) (page 2-37)  
[Bushing](#) (page 2-38)  
[Com Media](#) (page 2-42)  
[Com Module](#) (page 2-42)  
[Compatible Unit](#) (page 2-42)  
[Compatible Unit Procedure Assignment](#) (page 2-42)  
[Configuration Event](#) (page 2-43)  
[Customer](#) (page 2-45)  
[End Device](#) (page 2-50)  
[End Device Function](#) (page 2-50)  
[FACTS Device](#) (page 2-54)  
[Financial Info](#) (page 2-54)  
[Joint](#) (page 2-62)  
[Manufacturer](#) (page 2-63)  
[Measurement](#) (page 2-64)  
[Operation Tag](#) (page 2-65)  
[Pole](#) (page 2-73)  
[Power System Resource](#) (page 2-74)  
[Procedure](#) (page 2-75)  
[Procedure Asset Assignment](#) (page 2-75)  
[Product Asset Model](#) (page 2-75)  
[Product Asset Model Function Assignment](#) (page 2-75)  
[Scheduled Event](#) (page 2-79)  
[Scheduled Event Asset Assignment](#) (page 2-79)  
[Seal](#) (page 2-80)  
[Streetlight](#) (page 2-82)  
[Structure](#) (page 2-82)  
[Structure Support](#) (page 2-82)  
[Tower](#) (page 2-85)  
[Underground Structure](#) (page 2-86)

[Work Asset](#) (page 2-88)  
[Work Task](#) (page 2-88)  
[Work Task Asset Assignment](#) (page 2-88)

## 2.1.6 Subject Area: Asset Information Classes

### Entities of Subject Area: Asset Information Classes

[Asset Info](#) (page 2-37)  
[Busbar Section Info](#) (page 2-38)  
[Composite Switch Info](#) (page 2-42)  
[Current Transformer Info](#) (page 2-45)  
[End Device Info](#) (page 2-51)  
[Fault Indicator Info](#) (page 2-54)  
[Potential Transformer Info](#) (page 2-74)  
[Power Transformer Info](#) (page 2-74)  
[Protection Equipment Info](#) (page 2-77)  
[Shunt Compensator Info](#) (page 2-81)  
[Surge Arrester Info](#) (page 2-82)  
[Switch Info](#) (page 2-83)  
[Tap Changer Info](#) (page 2-84)  
[Transformer End Info](#) (page 2-85)  
[Transformer Tank Info](#) (page 2-86)  
[Wire Info](#) (page 2-88)  
[Wire Spacing Info](#) (page 2-88)

## 2.1.7 Subject Area: Billing

### Entities of Subject Area: Billing

[Account](#) (page 2-32)  
[Account Billing Cycle History](#) (page 2-33)  
[Account Billing Frequency History](#) (page 2-33)  
[Account Billing Occurrence](#) (page 2-33)  
[Account Billing Period History](#) (page 2-33)  
[Account Payment](#) (page 2-33)  
[Account Preferred Payment Method](#) (page 2-34)  
[Account Refund](#) (page 2-34)  
[Billing Cycle](#) (page 2-38)  
[Billing Frequency](#) (page 2-38)  
[Billing Period](#) (page 2-38)  
[Currency](#) (page 2-45)  
[Employee](#) (page 2-49)  
[Employee Job Role Assignment](#) (page 2-49)  
[Event Invoice Delivery](#) (page 2-52)  
[Invoice](#) (page 2-60)  
[Invoice Adjustment](#) (page 2-60)  
[Invoice Adjustment Quota](#) (page 2-61)  
[Invoice Delivery Format](#) (page 2-61)  
[Invoice Delivery Type](#) (page 2-61)  
[Invoice Discount](#) (page 2-61)  
[Invoice Discount Reason](#) (page 2-61)  
[Invoice Discount Type](#) (page 2-61)

[Invoice Item](#) (page 2-61)  
[Invoice Item Detail](#) (page 2-61)  
[Invoice Item Detail Type](#) (page 2-61)  
[Invoice Item Relationship](#) (page 2-61)  
[Invoice Item Type](#) (page 2-61)  
[Invoice Payment Assignment](#) (page 2-61)  
[Invoice Payment Term](#) (page 2-61)  
[Invoice Status History](#) (page 2-61)  
[Invoice Status Type](#) (page 2-61)  
[Job Role](#) (page 2-62)  
[Language](#) (page 2-62)  
[Organization Business Unit](#) (page 2-66)  
[Price Event](#) (page 2-74)  
[Price Type](#) (page 2-74)  
[Tax Category](#) (page 2-84)  
[Unit Of Measure](#) (page 2-86)

## 2.1.8 Subject Area: Business Events

### Entities of Subject Area: Business Events

This subject area provides the common base for business events.

[Account Event Type](#) (page 2-33)  
[Address Location](#) (page 2-35)  
[Campaign Channel](#) (page 2-40)  
[Channel](#) (page 2-41)  
[Event](#) (page 2-51)  
[Event Account](#) (page 2-51)  
[Event Assignment](#) (page 2-51)  
[Event Assignment Reason](#) (page 2-51)  
[Event Assignment Type](#) (page 2-51)  
[Event Category](#) (page 2-51)  
[Event Class](#) (page 2-52)  
[Event Employee Payroll](#) (page 2-52)  
[Event Equipment Instance](#) (page 2-52)  
[Event Geography](#) (page 2-52)  
[Event Invoice Delivery](#) (page 2-52)  
[Event Loyalty Program](#) (page 2-52)  
[Event Party Assignment](#) (page 2-52)  
[Event Party Interaction](#) (page 2-52)  
[Event Party Profile](#) (page 2-53)  
[Event Party Role](#) (page 2-53)  
[Event Reason](#) (page 2-53)  
[Event Reason Category](#) (page 2-53)  
[Event Resolution](#) (page 2-53)  
[Event Response Reason](#) (page 2-53)  
[Event Result](#) (page 2-53)  
[Event Status](#) (page 2-53)  
[Event Status Reason](#) (page 2-53)  
[Event Status Type](#) (page 2-53)  
[Event Type](#) (page 2-53)  
[GL Account](#) (page 2-56)  
[Invoice](#) (page 2-60)  
[Invoice Delivery Type](#) (page 2-61)

[Loyalty Program Event Type](#) (page 2-63)  
[Organization Business Unit](#) (page 2-66)  
[Party](#) (page 2-69)  
[Party Event Type](#) (page 2-70)

## 2.1.9 Subject Area: Business Interaction

### Entities of Subject Area: Business Interaction

This subject area provides the common base for business interaction as an arrangement, contract, communication, or joint activity.

[Account](#) (page 2-32)  
[Account Business Interaction Role](#) (page 2-33)  
[Appointment](#) (page 2-36)  
[Appointment Type](#) (page 2-36)  
[Base Work](#) (page 2-38)  
[Business Interaction](#) (page 2-39)  
[Business Interaction Assignment](#) (page 2-39)  
[Business Interaction Assignment Type](#) (page 2-39)  
[Business Interaction Item](#) (page 2-39)  
[Business Interaction Item Price](#) (page 2-39)  
[Business Interaction Location Assignment](#) (page 2-39)  
[Business Interaction Role](#) (page 2-39)  
[Business Interaction Status History](#) (page 2-39)  
[Business Interaction Status Reason](#) (page 2-39)  
[Business Interaction Status Type](#) (page 2-39)  
[Business Interaction Type](#) (page 2-39)  
[Business Interaction Version](#) (page 2-39)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Party](#) (page 2-69)  
[Party Business Interaction Role](#) (page 2-69)  
[Product Subscription](#) (page 2-75)  
[Purchase Order](#) (page 2-77)  
[Purchase Order Line Item](#) (page 2-77)  
[Resource Order](#) (page 2-79)  
[Resource Order Item](#) (page 2-79)  
[Service](#) (page 2-80)  
[Service Order](#) (page 2-80)  
[Service Order Line Item](#) (page 2-80)  
[Work Order](#) (page 2-88)  
[Work Task](#) (page 2-88)

## 2.1.10 Subject Area: Channel

### Entities of Subject Area: Channel

This subject area identifies all the channels through which customers interact with the utility company for campaign, promotion, sales, or services purposes.

[Bank Direct Debit Channel](#) (page 2-37)  
[Campaign Channel](#) (page 2-40)  
[Campaign Channel Type](#) (page 2-40)  
[Channel](#) (page 2-41)

[Channel Type](#) (page 2-41)  
[Event](#) (page 2-51)  
[Event Party Interaction](#) (page 2-52)  
[Interaction Channel](#) (page 2-59)  
[Party](#) (page 2-69)  
[Payment Channel](#) (page 2-72)  
[Sales Channel](#) (page 2-79)

## 2.1.11 Subject Area: Connectivity Model

### Entities of Subject Area: Connectivity Model

This subject area provides connectivity information among power systems resources through connectivity node.

[AC Line Segment](#) (page 2-32)  
[ACDC Terminal](#) (page 2-35)  
[Base Voltage](#) (page 2-38)  
[Breaker](#) (page 2-38)  
[Clamp](#) (page 2-42)  
[Conducting Equipment](#) (page 2-43)  
[Connectivity Node](#) (page 2-43)  
[Connectivity Node Container](#) (page 2-43)  
[Cut](#) (page 2-47)  
[DC Conducting Equipment](#) (page 2-47)  
[DC Line Segment](#) (page 2-47)  
[Energy Consumer](#) (page 2-51)  
[Equipment](#) (page 2-51)  
[Equipment Container](#) (page 2-51)  
[Generating Unit](#) (page 2-55)  
[Jumper](#) (page 2-62)  
[Jumper Action](#) (page 2-62)  
[Measurement](#) (page 2-64)  
[Operational Limit Set](#) (page 2-65)  
[Operational Restriction](#) (page 2-66)  
[Outage](#) (page 2-67)  
[PSR Type](#) (page 2-77)  
[Power System Resource](#) (page 2-74)  
[Power System Resource Location](#) (page 2-74)  
[Power Transformer](#) (page 2-74)  
[Power Transformer End](#) (page 2-74)  
[Protected Switch](#) (page 2-76)  
[Recloser](#) (page 2-78)  
[Regulating Cond Eq](#) (page 2-78)  
[Substation](#) (page 2-82)  
[Switch](#) (page 2-83)  
[Switch Action](#) (page 2-83)  
[Switch Phase](#) (page 2-83)  
[Switch Switching Operation Assignment](#) (page 2-83)  
[Switching Operation](#) (page 2-83)  
[Synchrocheck Relay](#) (page 2-83)  
[Terminal](#) (page 2-84)  
[Topological Node](#) (page 2-85)  
[Transformer Tank](#) (page 2-86)

[Usage Point](#) (page 2-86)  
[Usage Point Equipment Assignment](#) (page 2-86)

## 2.1.12 Subject Area: Cost

### Entities of Subject Area: Cost

This subject area contains major classes relevant to cost which might incurred from any operation or event which can be tracked at certain level.

[Account](#) (page 2-32)  
[Accounting Item Category](#) (page 2-35)  
[Cost](#) (page 2-44)  
[Cost Reason](#) (page 2-44)  
[Cost Subtype](#) (page 2-44)  
[Cost Type](#) (page 2-44)  
[GL Account](#) (page 2-56)  
[Party](#) (page 2-69)  
[Party Cost Assignment](#) (page 2-70)  
[Project](#) (page 2-75)  
[Project Element](#) (page 2-75)

## 2.1.13 Subject Area: Curve Schedule

### Entities of Subject Area: Generation Curve Schedule Model

A multi-purpose curve or functional relationship between an independent variable (X-axis) and dependent (Y-axis) variables.

[Basic Interval Schedule](#) (page 2-38)  
[Curve](#) (page 2-45)  
[Curve Data](#) (page 2-45)  
[Irregular Interval Schedule](#) (page 2-62)  
[Irregular Time Point](#) (page 2-62)  
[Regular Interval Schedule](#) (page 2-78)  
[Regular Time Point](#) (page 2-78)

## 2.1.14 Subject Area: Customer

This subject area contains the core information that supports customer management.

[Account](#) (page 2-32)  
[Account Payment](#) (page 2-33)  
[Address Location](#) (page 2-35)  
[Agreement](#) (page 2-35)  
[Agreement Usage Point Assignment](#) (page 2-36)  
[Baring Reason](#) (page 2-38)  
[Black List History](#) (page 2-38)  
[Calendar Month](#) (page 2-40)  
[Credit Score Provider](#) (page 2-44)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Customer Group](#) (page 2-45)

[Customer Group Assignment](#) (page 2-45)  
[Customer Individual](#) (page 2-45)  
[Customer Mining](#) (page 2-46)  
[Customer Occasion](#) (page 2-46)  
[Customer Occasion Type](#) (page 2-46)  
[Customer Organization](#) (page 2-46)  
[Customer Restricted Info](#) (page 2-46)  
[Customer Revenue Band](#) (page 2-46)  
[Customer Revenue Band Assignment](#) (page 2-46)  
[Customer SIC Assignment](#) (page 2-46)  
[Customer Score](#) (page 2-46)  
[Customer Segment](#) (page 2-46)  
[Customer Segmentation Model](#) (page 2-46)  
[Customer Source](#) (page 2-46)  
[Customer Type](#) (page 2-47)  
[Derived Value](#) (page 2-48)  
[Education](#) (page 2-49)  
[External Credit Profile](#) (page 2-53)  
[External Credit Profile Assignment](#) (page 2-54)  
[External Organization Type](#) (page 2-54)  
[Gender](#) (page 2-55)  
[Household](#) (page 2-59)  
[Initiative Result Type](#) (page 2-59)  
[Interaction Type](#) (page 2-60)  
[Invoice](#) (page 2-60)  
[Job](#) (page 2-62)  
[Language](#) (page 2-62)  
[Marital Status](#) (page 2-63)  
[Nationality](#) (page 2-65)  
[Party](#) (page 2-69)  
[Party Promotion Response](#) (page 2-71)  
[Party Status Change Reason](#) (page 2-71)  
[Party Status History](#) (page 2-71)  
[Promotion](#) (page 2-75)  
[Prospect](#) (page 2-76)  
[SOC Job](#) (page 2-81)  
[SOC Job Category](#) (page 2-81)  
[SOC Job Group](#) (page 2-81)  
[Segment Criteria](#) (page 2-80)  
[Unit Of Measure](#) (page 2-86)  
[Usage Point](#) (page 2-86)  
[Value Type](#) (page 2-87)

## 2.1.15 Subject Area: Customer Account and Agreement

### Entities of Subject Area: Customer Account and Agreement

This subject area presents a simplified view on the relationship between customer, account, and agreement.

[Account](#) (page 2-32)  
[Account Type](#) (page 2-34)  
[Agree Item Pricing Struct Assignment](#) (page 2-35)  
[Agreement](#) (page 2-35)  
[Agreement Item](#) (page 2-35)

[Agreement Type](#) (page 2-36)  
[Agreement Usage Point Assignment](#) (page 2-36)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Customer Type](#) (page 2-47)  
[Pricing Structure](#) (page 2-74)  
[Usage Point](#) (page 2-86)

## 2.1.16 Subject Area: Demand Response Program

### Entities of Subject Area: Demand Response Program

[Agreement](#) (page 2-35)  
[Customer](#) (page 2-45)  
[Customer Mining](#) (page 2-46)  
[DR Prog End Device Grp Assignment](#) (page 2-49)  
[DR Program Agreement Assignment](#) (page 2-49)  
[Demand Response Program](#) (page 2-47)  
[End Device Group](#) (page 2-51)  
[Usage Point Group](#) (page 2-86)

## 2.1.17 Subject Area: Employee

### Entities of Subject Area: Employee

[Business Unit Job Role](#) (page 2-40)  
[Employee](#) (page 2-49)  
[Employee Actual Labor Hourly](#) (page 2-49)  
[Employee Cost](#) (page 2-49)  
[Employee Designation](#) (page 2-49)  
[Employee Job Role Assignment](#) (page 2-49)  
[Employee Job Role Type](#) (page 2-49)  
[Employee Language Capability](#) (page 2-49)  
[Employee Restricted Info](#) (page 2-49)  
[Employee Schedule](#) (page 2-49)  
[Employee Training Record](#) (page 2-49)  
[Employee Type](#) (page 2-49)  
[Job Role](#) (page 2-62)  
[Organization Business Unit](#) (page 2-66)  
[Party](#) (page 2-69)

## 2.1.18 Subject Area: End Device Control

### Entities of Subject Area: End Device Control

This subject area contains core information on end device control (or an end device group) to perform a specified action.

[End Device](#) (page 2-50)  
[End Device Control](#) (page 2-50)  
[End Device Control Type](#) (page 2-50)  
[End Device Ctrl Primary Device Timing](#) (page 2-50)  
[End Device Ctrl Secondary Device Timing](#) (page 2-50)

[End Device End Device Ctrl Assignment](#) (page 2-50)  
[End Device End Device Grp Assignment](#) (page 2-50)  
[End Device Group](#) (page 2-51)  
[Meter](#) (page 2-64)  
[Usage Point](#) (page 2-86)  
[Usage Point Group](#) (page 2-86)  
[Usage Point Grp End Device Ctrl Assignment](#) (page 2-86)

## 2.1.19 Subject Area: End Device Event

### Entities of Subject Area: End Device Event

This subject area contains core information on end device event detected by a device function associated with end device.

[End Device](#) (page 2-50)  
[End Device End Device Ctrl Assignment](#) (page 2-50)  
[End Device Event](#) (page 2-50)  
[End Device Event Detail](#) (page 2-50)  
[End Device Event Type](#) (page 2-50)  
[End Device Group](#) (page 2-51)  
[Meter](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Usage Point](#) (page 2-86)

## 2.1.20 Subject Area: Financial

### Entities of Subject Area: Financial

This subject area contains the major classes on financial part of the utility business. Tariff and Pricing Structure are included and linked to Invoice and Agreement, respectively.

[Account](#) (page 2-32)  
[Agree Item Pricing Struct Assignment](#) (page 2-35)  
[Agreement](#) (page 2-35)  
[Agreement Item](#) (page 2-35)  
[Cost](#) (page 2-44)  
[GL Account](#) (page 2-56)  
[GL Journal Entry](#) (page 2-57)  
[GL Ledger](#) (page 2-58)  
[GL Ledger Account Assignment](#) (page 2-58)  
[Invoice](#) (page 2-60)  
[Invoice Item](#) (page 2-61)  
[Invoice Item Detail](#) (page 2-61)  
[Invoice Item Detail Type](#) (page 2-61)  
[Pricing Structure](#) (page 2-74)  
[Pricing Structure Tariff Assignment](#) (page 2-75)  
[Tariff](#) (page 2-84)  
[Tariff Profile](#) (page 2-84)  
[Tariff Tariff Profile Assignment](#) (page 2-84)

## 2.1.21 Subject Area: Generating Unit

### Entities of Subject Area: Generating Unit

[Air Compressor](#) (page 2-36)  
[CAES Plant](#) (page 2-40)  
[Cogeneration Plant](#) (page 2-42)  
[Combined Cycle Plant](#) (page 2-42)  
[Curve](#) (page 2-45)  
[Gen Unit Op Cost Curve](#) (page 2-54)  
[Gen Unit Op Schedule](#) (page 2-55)  
[Generating Unit](#) (page 2-55)  
[Generating Unit Rotating Machine Assignment](#) (page 2-55)  
[Gross To Net Active Power Curve](#) (page 2-58)  
[Hydro Generating Unit](#) (page 2-59)  
[Nuclear Generating Unit](#) (page 2-65)  
[Power System Resource](#) (page 2-74)  
[Regular Interval Schedule](#) (page 2-78)  
[Rotating Machine](#) (page 2-79)  
[Steam Sendout Schedule](#) (page 2-82)  
[Synchronous Machine](#) (page 2-83)  
[Thermal Generating Unit](#) (page 2-84)  
[Wind Generating Unit](#) (page 2-88)

## 2.1.22 Subject Area: Line Model

### Entities of Subject Area: Line Model

This area includes major classes relevant to the transmission line model to support network operation.

[AC Line Segment](#) (page 2-32)  
[Conducting Equipment](#) (page 2-43)  
[Conductor](#) (page 2-43)  
[Equipment](#) (page 2-51)  
[Equipment Container](#) (page 2-51)  
[Line](#) (page 2-62)  
[Per Length Impedance](#) (page 2-72)  
[Per Length Phase Impedance](#) (page 2-72)  
[Per Length Sequence Impedance](#) (page 2-72)  
[Phase Impedance Data](#) (page 2-72)  
[Power System Resource](#) (page 2-74)  
[Series Compensator](#) (page 2-80)  
[Sub Geographical Region](#) (page 2-82)

## 2.1.23 Subject Area: Load Model

### Entities of Subject Area: Load Model

[Conducting Equipment](#) (page 2-43)  
[Conform Load](#) (page 2-43)  
[Conform Load Group](#) (page 2-43)  
[Conform Load Schedule](#) (page 2-43)

[Day Type](#) (page 2-47)  
[Energy Area](#) (page 2-51)  
[Energy Consumer](#) (page 2-51)  
[Equipment](#) (page 2-51)  
[Equipment Container](#) (page 2-51)  
[Load Area](#) (page 2-62)  
[Load Group](#) (page 2-63)  
[Load Response Characteristic](#) (page 2-63)  
[Non Conform Load](#) (page 2-65)  
[Non Conform Load Group](#) (page 2-65)  
[Non Conform Load Schedule](#) (page 2-65)  
[Season](#) (page 2-80)  
[Season Day Type Schedule](#) (page 2-80)  
[Station Supply](#) (page 2-82)  
[Sub Load Area](#) (page 2-82)  
[Substation](#) (page 2-82)

This subject area provides modeling of the energy consumers and the system load as curves and associated curve data. Special circumstances such as seasons and day types are also included.

## 2.1.24 Subject Area: Location

### Entities of Subject Area: Location

[Address Location](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Location](#) (page 2-37)  
[Geography Building](#) (page 2-55)  
[Geography City](#) (page 2-55)  
[Geography Complex](#) (page 2-55)  
[Geography Country](#) (page 2-55)  
[Geography County](#) (page 2-55)  
[Geography Demographic Group](#) (page 2-55)  
[Geography Demography Attribute](#) (page 2-55)  
[Geography Demography Value](#) (page 2-55)  
[Geography Entity](#) (page 2-55)  
[Geography Entity Assignment](#) (page 2-56)  
[Geography Entity Hier Level Assignment](#) (page 2-56)  
[Geography Hierarchy](#) (page 2-56)  
[Geography Hierarchy Level](#) (page 2-56)  
[Geography Level](#) (page 2-56)  
[Geography Region](#) (page 2-56)  
[Geography State](#) (page 2-56)  
[Geography Street](#) (page 2-56)  
[Geography Sub Region](#) (page 2-56)  
[Geography World](#) (page 2-56)  
[Location](#) (page 2-63)  
[Measurement Location](#) (page 2-64)  
[Power System Resource](#) (page 2-74)  
[Power System Resource Location](#) (page 2-74)  
[Usage Point](#) (page 2-86)  
[Usage Point Location](#) (page 2-86)  
[Work Location](#) (page 2-88)  
[Zone](#) (page 2-89)

## 2.1.25 Subject Area: Meter Asset

### Entities of Subject Area: Meter Asset

This subject area presents meter from asset perspective.

[Asset](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Asset Info](#) (page 2-37)  
[Asset Model](#) (page 2-37)  
[Asset Type](#) (page 2-37)  
[End Device](#) (page 2-50)  
[End Device Function](#) (page 2-50)  
[Manufacturer](#) (page 2-63)  
[Meter](#) (page 2-64)  
[Meter Register Assignment](#) (page 2-65)  
[Product Asset Model](#) (page 2-75)  
[Reading Channel](#) (page 2-77)  
[Reading Type](#) (page 2-78)  
[Register](#) (page 2-78)

## 2.1.26 Subject Area: Meter Event and Reading

### Entities of Subject Area: Device Event and Measurement

This subject area contains the basic information on meter events and reading.

[Activity Record](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Base Reading](#) (page 2-38)  
[End Device](#) (page 2-50)  
[End Device Function](#) (page 2-50)  
[Final Reading](#) (page 2-54)  
[Initial Reading](#) (page 2-59)  
[Measurement Value](#) (page 2-64)  
[Meter](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Meter Register Assignment](#) (page 2-65)  
[Reading Channel](#) (page 2-77)  
[Reading Type](#) (page 2-78)  
[Register](#) (page 2-78)

## 2.1.27 Subject Area: Meter Reading

### Entities of Subject Area: Meter Reading

[Agreement](#) (page 2-35)  
[Base Reading](#) (page 2-38)  
[End Device](#) (page 2-50)  
[Final Reading](#) (page 2-54)  
[Identified Object](#) (page 2-59)

[Initial Reading](#) (page 2-59)  
[Invoice Item](#) (page 2-61)  
[Invoice Item Detail](#) (page 2-61)  
[Measurement Value](#) (page 2-64)  
[Meter](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Reading Quality](#) (page 2-78)  
[Reading Quality Type](#) (page 2-78)  
[Reading Reason Kind ENUM](#) (page 2-78)  
[Reading Type](#) (page 2-78)  
[Service Quantity](#) (page 2-80)  
[Usage Point](#) (page 2-86)  
[Usage Read Cycle](#) (page 2-86)

## 2.1.28 Subject Area: Meter Reading and Events

### Entities of Subject Area: Meter Reading and Events

This subject area contains core information on end device event detected by a device function associated with end device.

[Activity Record](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Activity Record Assignment](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Base Reading](#) (page 2-38)  
[End Device](#) (page 2-50)  
[End Device Domain](#) (page 2-50)  
[End Device Event](#) (page 2-50)  
[End Device Event Detail](#) (page 2-50)  
[End Device Event Or Action](#) (page 2-50)  
[End Device Event Type](#) (page 2-50)  
[End Device Sub Domain](#) (page 2-51)  
[Final Reading](#) (page 2-54)  
[Initial Reading](#) (page 2-59)  
[Meter](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Reading Quality](#) (page 2-78)  
[Reading Quality Type](#) (page 2-78)  
[Reading Type](#) (page 2-78)

## 2.1.29 Subject Area: Meter Reading and Control Overview

### Entities of Subject Area: Meter Reading and Control Overview

[Agreement](#) (page 2-35)  
[Agreement Usage Point Assignment](#) (page 2-36)  
[Base Reading](#) (page 2-38)  
[Campaign](#) (page 2-40)  
[Customer Facing Service](#) (page 2-45)  
[DR Prog End Device Grp Assignment](#) (page 2-49)  
[DR Program Agreement Assignment](#) (page 2-49)  
[Demand Response Program](#) (page 2-47)  
[Electricity Service](#) (page 2-49)

[End Device](#) (page 2-50)  
[End Device Control](#) (page 2-50)  
[End Device Control Type](#) (page 2-50)  
[End Device End Device Ctrl Assignment](#) (page 2-50)  
[End Device End Device Grp Assignment](#) (page 2-50)  
[End Device Event](#) (page 2-50)  
[End Device Event Detail](#) (page 2-50)  
[End Device Event Type](#) (page 2-50)  
[End Device Function](#) (page 2-50)  
[End Device Function Kind ENUM](#) (page 2-51)  
[End Device Group](#) (page 2-51)  
[End Device Grp End Device Ctrl Assignment](#) (page 2-51)  
[Final Reading](#) (page 2-54)  
[Initial Reading](#) (page 2-59)  
[Measurement Value](#) (page 2-64)  
[Meter](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Promotion](#) (page 2-75)  
[Reading Quality](#) (page 2-78)  
[Reading Quality Type](#) (page 2-78)  
[Reading Type](#) (page 2-78)  
[Service](#) (page 2-80)  
[Usage Point](#) (page 2-86)  
[Usage Point End Device Ctrl Assignment](#) (page 2-86)  
[Usage Point Group](#) (page 2-86)  
[Usage Point Grp End Device Ctrl Assignment](#) (page 2-86)  
[Usage Point Location](#) (page 2-86)  
[Usage Read Cycle](#) (page 2-86)

## 2.1.30 Subject Area: Meter Reading Register and Channel

### Entities of Subject Area: Meter Reading Register and Channel

This subject area contains the core information on meter reading, register, and reading channel.

[Com Function](#) (page 2-42)  
[Connect Disconnect Function](#) (page 2-43)  
[End Device](#) (page 2-50)  
[End Device Function](#) (page 2-50)  
[Meter](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Meter Register Assignment](#) (page 2-65)  
[Reading Channel](#) (page 2-77)  
[Reading Channel Identifier](#) (page 2-77)  
[Reading Type](#) (page 2-78)  
[Register](#) (page 2-78)  
[Simple End Device Function](#) (page 2-81)

## 2.1.31 Subject Area: Meter Reading Type

### Entities of Subject Area: Meter Reading Type

[Consumption Tier](#) (page 2-43)  
[Critical Peak Period](#) (page 2-45)

[Currency](#) (page 2-45)  
[Energy Flow Direction](#) (page 2-51)  
[Interharmonics](#) (page 2-60)  
[Measurement Kind](#) (page 2-64)  
[Phase](#) (page 2-72)  
[Reading Accumulation Behavior](#) (page 2-77)  
[Reading Data Qualifier](#) (page 2-78)  
[Reading Time Attribute](#) (page 2-78)  
[Reading Time Period](#) (page 2-78)  
[Reading Type](#) (page 2-78)  
[Time Of Use](#) (page 2-84)  
[Unit Multiplier](#) (page 2-86)  
[Unit Of Measure](#) (page 2-86)  
[Utility Commodity](#) (page 2-87)

## 2.1.32 Subject Area: Network Operation

### Entities of Subject Area: Network Operation

[AC Line Segment](#) (page 2-32)  
[AC Line Segment Phase](#) (page 2-32)  
[Active Power Limit](#) (page 2-35)  
[Apparent Power Limit](#) (page 2-36)  
[Asset](#) (page 2-36)  
[Asset PSR Assignment](#) (page 2-37)  
[Clamp](#) (page 2-42)  
[Clearance Action](#) (page 2-42)  
[Clearance Document](#) (page 2-42)  
[Conducting Equipment](#) (page 2-43)  
[Conductor](#) (page 2-43)  
[Connect Disconnect Function](#) (page 2-43)  
[Current Limit](#) (page 2-45)  
[Cut](#) (page 2-47)  
[Cut Action](#) (page 2-47)  
[End Device Function](#) (page 2-50)  
[Equipment](#) (page 2-51)  
[Generic Action](#) (page 2-55)  
[Incident](#) (page 2-59)  
[Jumper](#) (page 2-62)  
[Jumper Action](#) (page 2-62)  
[Operating Participant](#) (page 2-65)  
[Operating Share](#) (page 2-65)  
[Operation Tag](#) (page 2-65)  
[Operational Limit](#) (page 2-65)  
[Operational Limit Set](#) (page 2-65)  
[Operational Restriction](#) (page 2-66)  
[Outage](#) (page 2-67)  
[Outage Schedule](#) (page 2-68)  
[Power System Resource](#) (page 2-74)  
[Safety Document](#) (page 2-79)  
[Switch](#) (page 2-83)  
[Switch Action](#) (page 2-83)  
[Switch Connect Disconnect Func Assignment](#) (page 2-83)  
[Switch Phase](#) (page 2-83)  
[Switch Switching Operation Assignment](#) (page 2-83)

[Switching Activity](#) (page 2-83)  
[Switching Activity Safety Doc Assignment](#) (page 2-83)  
[Switching Operation](#) (page 2-83)  
[Switching Plan](#) (page 2-83)  
[Switching Step](#) (page 2-83)  
[Switching Step Group](#) (page 2-83)  
[Tag Action](#) (page 2-83)  
[Voltage Limit](#) (page 2-87)  
[Work Task](#) (page 2-88)  
[Work Task Asset Assignment](#) (page 2-88)

## 2.1.33 Subject Area: Outage Management

### Entities of Subject Area: Outage Management

[Conducting Equipment](#) (page 2-43)  
[Customer](#) (page 2-45)  
[Customer Outage Notification Assignment](#) (page 2-46)  
[End Device](#) (page 2-50)  
[Equipment](#) (page 2-51)  
[Fault](#) (page 2-54)  
[Incident](#) (page 2-59)  
[Incident Work Assignment](#) (page 2-59)  
[Meter](#) (page 2-64)  
[Outage](#) (page 2-67)  
[Outage Code](#) (page 2-68)  
[Outage Notification](#) (page 2-68)  
[Outage Plan](#) (page 2-68)  
[Outage Record](#) (page 2-68)  
[Outage Record Code Assignment](#) (page 2-68)  
[Outage Report](#) (page 2-68)  
[Outage Schedule](#) (page 2-68)  
[Outage Step](#) (page 2-68)  
[Outage Step Code Assignment](#) (page 2-68)  
[Phase Connected Fault](#) (page 2-72)  
[Planned Outage](#) (page 2-73)  
[Switch](#) (page 2-83)  
[Switch Action](#) (page 2-83)  
[Switching Plan](#) (page 2-83)  
[Trouble Ticket](#) (page 2-86)  
[Usage Point](#) (page 2-86)  
[Work Order](#) (page 2-88)

## 2.1.34 Subject Area: Party Organization Business Unit

### Party Organization Business Unit

[Address Location](#) (page 2-35)  
[Call Center](#) (page 2-40)  
[Call Center Service Capability](#) (page 2-40)  
[Cost Center](#) (page 2-44)  
[Language](#) (page 2-62)  
[Market Area](#) (page 2-63)  
[Market Area Level](#) (page 2-63)

[Organization Area](#) (page 2-66)  
[Organization Banner](#) (page 2-66)  
[Organization Business Entity](#) (page 2-66)  
[Organization Business Unit](#) (page 2-66)  
[Organization Business Unit Type](#) (page 2-66)  
[Organization Chain](#) (page 2-66)  
[Organization Company](#) (page 2-66)  
[Organization Corporate](#) (page 2-66)  
[Organization District](#) (page 2-66)  
[Organization Hierarchy](#) (page 2-66)  
[Organization Hierarchy Level](#) (page 2-66)  
[Organization Hierarchy Level Assignment](#) (page 2-66)  
[Organization Hierarchy Version](#) (page 2-66)  
[Organization Level](#) (page 2-66)  
[Organization Level Attribute Value](#) (page 2-66)  
[Organization Level Attributes](#) (page 2-67)  
[Organization Market Data](#) (page 2-67)  
[Organization Region](#) (page 2-67)  
[Organization Service Website](#) (page 2-67)  
[Organization Warehouse](#) (page 2-67)  
[Organizational Demography Value](#) (page 2-67)  
[Service Coverage Area](#) (page 2-80)  
[Service Coverage Geo Detail](#) (page 2-80)  
[Virtual Team](#) (page 2-87)

## 2.1.35 Subject Area: Payment

### Entities of Subject Area: Payment

[Account](#) (page 2-32)  
[Account Balance History](#) (page 2-32)  
[Account Balance Impact](#) (page 2-32)  
[Account Balance Type](#) (page 2-33)  
[Account Payment](#) (page 2-33)  
[Account Payment Balance Impact](#) (page 2-33)  
[Account Payment Method Status](#) (page 2-33)  
[Account Payment Method Status Type](#) (page 2-34)  
[Account Preferred Payment Method](#) (page 2-34)  
[Account Refund](#) (page 2-34)  
[Account Refund Reason](#) (page 2-34)  
[Agree Item Pricing Struct Assignment](#) (page 2-35)  
[Agreement](#) (page 2-35)  
[Agreement Item](#) (page 2-35)  
[Bank Direct Debit Channel](#) (page 2-37)  
[Currency](#) (page 2-45)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Debt Collection](#) (page 2-47)  
[Employee](#) (page 2-49)  
[Event](#) (page 2-51)  
[Invoice](#) (page 2-60)  
[Invoice Adjustment](#) (page 2-60)  
[Invoice Payment Assignment](#) (page 2-61)  
[Invoice Payment Term](#) (page 2-61)  
[Invoice Payment Term Type](#) (page 2-61)

[Organization Business Unit](#) (page 2-66)  
[Party Account Assignment](#) (page 2-69)  
[Party Account Assignment Type](#) (page 2-69)  
[Payment Method Type](#) (page 2-72)  
[Payment Transaction Type](#) (page 2-72)  
[Pricing Structure](#) (page 2-74)

## 2.1.36 Subject Area: Phase Model

### Entities of Subject Area: Phase Model

[AC Line Segment](#) (page 2-32)  
[AC Line Segment Phase](#) (page 2-32)  
[Conducting Equipment](#) (page 2-43)  
[Conductor](#) (page 2-43)  
[Energy Consumer](#) (page 2-51)  
[Energy Consumer Phase](#) (page 2-51)  
[Measurement](#) (page 2-64)  
[Power System Resource](#) (page 2-74)  
[Regulating Cond Eq](#) (page 2-78)  
[Shunt Compensator](#) (page 2-81)  
[Shunt Compensator Phase](#) (page 2-81)  
[Switch](#) (page 2-83)  
[Switch Phase](#) (page 2-83)  
[Terminal](#) (page 2-84)

## 2.1.37 Subject Area: Premise and Node

### Entities of Subject Area: Premise and Node

This subject area contains the core information on service location (premise) and its relationships such as the ones with usage point and end device.

[Address Location](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Asset Location](#) (page 2-37)  
[Connectivity Node](#) (page 2-43)  
[Connectivity Node Container](#) (page 2-43)  
[End Device](#) (page 2-50)  
[Equipment](#) (page 2-51)  
[Equipment Container](#) (page 2-51)  
[Power System Resource](#) (page 2-74)  
[Service Location](#) (page 2-80)  
[Service Location Identifier](#) (page 2-80)  
[Usage Point](#) (page 2-86)  
[Usage Point Equipment Assignment](#) (page 2-86)  
[Usage Point Location](#) (page 2-86)

## 2.1.38 Subject Area: Pricing Structure

### Entities of Subject Area: Pricing Structure

This subject area contains the core information on pricing structure such as tariff and relation to agreement class.

[Agree Item Pricing Struct Assignment](#) (page 2-35)  
[Agreement](#) (page 2-35)  
[Agreement Item](#) (page 2-35)  
[Consumption Tariff Interval](#) (page 2-43)  
[Demand Tariff Interval](#) (page 2-48)  
[Pricing Structure](#) (page 2-74)  
[Pricing Structure Tariff Assignment](#) (page 2-75)  
[Rate](#) (page 2-77)  
[Service Category](#) (page 2-80)  
[Service Type](#) (page 2-81)  
[Tariff](#) (page 2-84)  
[Tariff Profile](#) (page 2-84)  
[Tariff Tariff Profile Assignment](#) (page 2-84)  
[Time Tariff Interval](#) (page 2-85)

## 2.1.39 Subject Area: Promotion and Campaign

### Entities of Subject Area: Promotion and Campaign

[Campaign](#) (page 2-40)  
[Campaign Channel](#) (page 2-40)  
[Campaign Channel Assignment](#) (page 2-40)  
[Campaign Channel Type](#) (page 2-40)  
[Campaign Characteristic](#) (page 2-41)  
[Campaign Characteristic Value](#) (page 2-41)  
[Campaign Management History](#) (page 2-41)  
[Campaign Message](#) (page 2-41)  
[Campaign Message Creative](#) (page 2-41)  
[Campaign Message Depiction](#) (page 2-41)  
[Campaign Relationship](#) (page 2-41)  
[Campaign Status](#) (page 2-41)  
[Campaign Term Value](#) (page 2-41)  
[Campaign Type](#) (page 2-41)  
[Contact List](#) (page 2-43)  
[Contact List Change Reason](#) (page 2-43)  
[Contact List Recurrence Type](#) (page 2-44)  
[Customer Segment](#) (page 2-46)  
[Event Party Interaction](#) (page 2-52)  
[Geography Entity](#) (page 2-55)  
[Initiative Type](#) (page 2-59)  
[Market Area](#) (page 2-63)  
[Market Segment](#) (page 2-63)  
[Market Segment Inclusion](#) (page 2-63)  
[Media Object](#) (page 2-64)  
[Media Object Assignment](#) (page 2-64)  
[Media Object Type](#) (page 2-64)  
[Organization Business Unit](#) (page 2-66)

[Party](#) (page 2-69)  
[Party Contact List Participation](#) (page 2-70)  
[Party Contact List Role](#) (page 2-70)  
[Party Management Role](#) (page 2-71)  
[Party Market Segment Assignment](#) (page 2-71)  
[Party Promotion Response](#) (page 2-71)  
[Product Offering](#) (page 2-75)  
[Promotion](#) (page 2-75)  
[Promotion Cluster Usage](#) (page 2-75)  
[Promotion Contact List Utilization](#) (page 2-75)  
[Promotion Management History](#) (page 2-75)  
[Promotion Message Rendering](#) (page 2-75)  
[Promotion Product Offering Assignment](#) (page 2-76)  
[Promotion Relationship](#) (page 2-76)  
[Promotion Result Type](#) (page 2-76)  
[Promotion Sales Channel Assignment](#) (page 2-76)  
[Promotion Term Type](#) (page 2-76)  
[Promotion Term Value](#) (page 2-76)  
[Promotion Type](#) (page 2-76)  
[Proposal](#) (page 2-76)  
[Proposal Relationship](#) (page 2-76)  
[Prospect](#) (page 2-76)  
[Prospect Priority Type](#) (page 2-76)  
[Prospect Quality Score Type](#) (page 2-76)  
[Prospect Quality Score Value](#) (page 2-76)  
[Prospect Reject Reason](#) (page 2-76)  
[Publication](#) (page 2-77)  
[Sales Channel](#) (page 2-79)  
[Source System](#) (page 2-81)  
[Source System Type](#) (page 2-82)  
[Target Account](#) (page 2-84)  
[Target Agreement](#) (page 2-84)  
[Target Geography Area](#) (page 2-84)  
[Target Type](#) (page 2-84)

## 2.1.40 Subject Area: Regulating Equipment Model

### Entities of Subject Area: Regulating Equipment Model

The diagram shows all classes related to equipment regulation and reactive power compensation.

[Control](#) (page 2-44)  
[Frequency Converter](#) (page 2-54)  
[Regulating Cond Eq](#) (page 2-78)  
[Regulating Control](#) (page 2-78)  
[Regulation Schedule](#) (page 2-78)  
[Rotating Machine](#) (page 2-79)  
[Shunt Compensator](#) (page 2-81)  
[Static Var Compensator](#) (page 2-82)  
[Synchronous Machine](#) (page 2-83)  
[Tap Changer](#) (page 2-83)  
[Tap Changer Control](#) (page 2-84)  
[Tap Schedule](#) (page 2-84)  
[Terminal](#) (page 2-84)

## 2.1.41 Subject Area: SCADA

### Entities of Subject Area: SCADA

This subject area contains entities to model information used by Supervisory Control and Data Acquisition (SCADA) applications.

[Communication Link](#) (page 2-42)  
[Control](#) (page 2-44)  
[Identified Object](#) (page 2-59)  
[Measurement Value](#) (page 2-64)  
[Power System Resource](#) (page 2-74)  
[Remote Control](#) (page 2-79)  
[Remote Point](#) (page 2-79)  
[Remote Source](#) (page 2-79)  
[Remote Unit](#) (page 2-79)  
[Remote Unit Communication Link Assignment](#) (page 2-79)

## 2.1.42 Subject Area: Schedule Model

### Entities of Subject Area: Schedule Model

This area covers schedules relevant to wires model.

[Basic Interval Schedule](#) (page 2-38)  
[Day Type](#) (page 2-47)  
[Regular Interval Schedule](#) (page 2-78)  
[Regular Time Point](#) (page 2-78)  
[Regulating Control](#) (page 2-78)  
[Regulation Schedule](#) (page 2-78)  
[\Season](#) (page 2-80)  
[Season Day Type Schedule](#) (page 2-80)  
[Switch](#) (page 2-83)  
[Switch Schedule](#) (page 2-83)  
[Tap Changer](#) (page 2-83)  
[Tap Schedule](#) (page 2-84)

## 2.1.43 Subject Area: Substation, Feeder, and Transformer Hierarchy Model

### Entities of Subject Area: Substation Feeder and Transformer

[Connectivity Node Container](#) (page 2-43)  
[Equipment](#) (page 2-51)  
[Equipment Container](#) (page 2-51)  
[Feeder](#) (page 2-54)  
[Feeder Substation Assignment](#) (page 2-54)  
[Power System Resource](#) (page 2-74)  
[Substation](#) (page 2-82)  
[Transformer Feeder Assignment](#) (page 2-85)  
[Transformer Tank](#) (page 2-86)  
[Usage Point](#) (page 2-86)  
[Usage Point Transformer Assignment](#) (page 2-86)

## 2.1.44 Subject Area: Switching Equipment Model

### Entities of Subject Area: Switching Equipment Model

This area covers switching equipment inheritance structure.

[Breaker](#) (page 2-38)  
[Disconnecter](#) (page 2-48)  
[Fuse](#) (page 2-54)  
[Ground Disconnecter](#) (page 2-58)  
[Ground Switch](#) (page 2-58)  
[Jumper](#) (page 2-62)  
[Load Break Switch](#) (page 2-63)  
[Protected Switch](#) (page 2-76)  
[Recloser](#) (page 2-78)  
[Sectionalizer](#) (page 2-80)  
[Switch](#) (page 2-83)

## 2.1.45 Subject Area: Tap Changer Model

### Entities of Subject Area: Tap Changer Model

This area covers major classes related for the transformer tap model.

[Phase Tap Changer](#) (page 2-72)  
[Phase Tap Changer Asymmetrical](#) (page 2-73)  
[Phase Tap Changer Linear](#) (page 2-73)  
[Phase Tap Changer Non Linear](#) (page 2-73)  
[Phase Tap Changer Symmetrical](#) (page 2-73)  
[Phase Tap Changer Tabular](#) (page 2-73)  
[Phase Tap Changer Tabular Point](#) (page 2-73)  
[Power Transformer](#) (page 2-74)  
[Power Transformer End](#) (page 2-74)  
[Ratio Tap Changer](#) (page 2-77)  
[Ratio Tap Changer Tabular](#) (page 2-77)  
[Ratio Tap Changer Tabular Point](#) (page 2-77)  
[Regulating Control](#) (page 2-78)  
[Regulation Schedule](#) (page 2-78)  
[Tap Changer](#) (page 2-83)  
[Tap Schedule](#) (page 2-84)  
[Transformer End](#) (page 2-85)

## 2.1.46 Subject Area: Transformer Model

### Entities of Subject Area: Transformer Model

[Base Voltage](#) (page 2-38)  
[Conducting Equipment](#) (page 2-43)  
[Power Transformer](#) (page 2-74)  
[Power Transformer End](#) (page 2-74)  
[Terminal](#) (page 2-84)  
[Transformer Core Admittance](#) (page 2-85)  
[Transformer End](#) (page 2-85)

[Transformer Mesh Impedance](#) (page 2-85)  
[Transformer Star Impedance](#) (page 2-85)  
[Transformer Tank End](#) (page 2-86)

## 2.1.47 Subject Area: Usage Point, Agreement, Account, Customer, and Premise

**Entities of Subject Area: Usage Point, Agreement, Account, Customer, and Premise**

[Account](#) (page 2-32)  
[Agreement](#) (page 2-35)  
[Agreement Usage Point Assignment](#) (page 2-36)  
[Customer](#) (page 2-45)  
[Customer Account Assignment](#) (page 2-45)  
[Service Location](#) (page 2-80)  
[Usage Point](#) (page 2-86)

## 2.1.48 Subject Area: Usage Point and End Device

**Entities of Subject Area: Usage Point and End Device**

[Agreement](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Asset Status](#) (page 2-37)  
[Asset Type](#) (page 2-37)  
[Com Function](#) (page 2-42)  
[Connect Disconnect Function](#) (page 2-43)  
[End Device](#) (page 2-50)  
[End Device Event Type](#) (page 2-50)  
[Lifecycle Date](#) (page 2-62)  
[Market Role](#) (page 2-63)  
[Meter](#) (page 2-64)  
[Meter Identifier](#) (page 2-64)  
[Meter Reading](#) (page 2-64)  
[Meter Status](#) (page 2-65)  
[Reading Type](#) (page 2-78)  
[Service Category](#) (page 2-80)  
[Service Supplier](#) (page 2-81)  
[Status](#) (page 2-82)  
[Usage Point](#) (page 2-86)  
[Usage Read Cycle](#) (page 2-86)

## 2.1.49 Subject Area: Voltage Control Model

**Entities of Subject Area: Voltage Control Model**

[Busbar Section](#) (page 2-38)  
[Connector](#) (page 2-43)  
[Power System Resource](#) (page 2-74)

[Regulation Schedule](#) (page 2-78)  
[Season Day Type Schedule](#) (page 2-80)  
[Voltage Control Zone](#) (page 2-87)

## 2.1.50 Subject Area: Weather Model

### Entities of Subject Area: Weather Model

[Activity Record](#) (page 2-35)  
[Address Location](#) (page 2-35)  
[Asset](#) (page 2-36)  
[Asset Activity Record Assignment](#) (page 2-36)  
[Asset Container](#) (page 2-37)  
[Atmospheric Pressure](#) (page 2-37)  
[Cloud Information](#) (page 2-42)  
[End Device](#) (page 2-50)  
[Flood Information](#) (page 2-54)  
[Meter](#) (page 2-64)  
[Precipitation](#) (page 2-74)  
[Sea Condition](#) (page 2-80)  
[Spot Temperature](#) (page 2-82)  
[Usage Point](#) (page 2-86)  
[Weather Alert](#) (page 2-87)  
[Weather Forecast](#) (page 2-87)  
[Weather Information](#) (page 2-87)  
[Weather Location](#) (page 2-87)  
[Wind Information](#) (page 2-88)

## 2.1.51 Subject Area: Work Management

### Entities of Subject Area: Work Management

[Base Work](#) (page 2-38)  
[Business Case](#) (page 2-38)  
[Crew](#) (page 2-44)  
[Crew Work Task Assignment](#) (page 2-45)  
[Incident](#) (page 2-59)  
[Incident Work Assignment](#) (page 2-59)  
[Meter Service Work](#) (page 2-65)  
[Outage Record](#) (page 2-68)  
[Project](#) (page 2-75)  
[Tool](#) (page 2-85)  
[Vehicle](#) (page 2-87)  
[Work Asset](#) (page 2-88)  
[Work Billing Info](#) (page 2-88)  
[Work Cost Detail](#) (page 2-88)  
[Work Cost Summary](#) (page 2-88)  
[Work Flow Step](#) (page 2-88)  
[Work Location](#) (page 2-88)  
[Work Order](#) (page 2-88)  
[Work Status Entry](#) (page 2-88)  
[Work Task](#) (page 2-88)  
[Work Time Schedule](#) (page 2-88)

## 2.2 Logical Entities for Business Areas

The business area lists contain a list of subject areas that the business area contains.

 **Note:**

The notion of a business area is not strict. That is, some business areas are overlapping. Thus, a logical entity can belong to, or be needed in several business areas. Some logical entities are not explicitly listed because they either only represent a relationship between tables, are not critically important to any business area, or are simply lookup entities. For more information, see [About Business Areas and Subject Areas in Oracle Utilities Data Model](#) (page 1-7).

This section lists the business areas in Oracle Utilities Data Model:

 **Note:**

The subject area figures showing complete diagrams with attributes and entities are available with the Oracle Utilities Data Model IP Patch. The IP Patch includes additional documentation. To obtain the IP Patch and for the latest information about Oracle Utilities Data Model patch sets, go to My Oracle Support at <https://support.oracle.com>.

- [Business Area: Account Management](#) (page 2-29)
- [Business Area: Asset Management](#) (page 2-30)
- [Business Area: Customer Management](#) (page 2-30)
- [Business Area: Meter Reading and Control](#) (page 2-30)
- [Business Area: Network Operation](#) (page 2-31)
- [Business Area: Outage Management](#) (page 2-31)
- [Business Area: Weather Model](#) (page 2-31)
- [Business Area: Work Management](#) (page 2-31)

### 2.2.1 Business Area: Account Management

#### **Business Area: Account Management**

This business area contains information to support utility customers with the tracking, status, and plans with matters such as service requests, service agreements, monthly billing, reported trouble, planned outages, outage history, and so on.

[Subject Area: Account](#) (page 2-3)

[Subject Area: Account Balance](#) (page 2-4)

[Subject Area: Account Credit Limit](#) (page 2-4)

[Subject Area: Agreement](#) (page 2-4)  
[Subject Area: Billing](#) (page 2-6)  
[Subject Area: Cost](#) (page 2-10)  
[Subject Area: Location](#) (page 2-15)  
[Subject Area: Payment](#) (page 2-21)  
[Subject Area: Pricing Structure](#) (page 2-23)  
[Subject Area: Promotion and Campaign](#) (page 2-23)

## 2.2.2 Business Area: Asset Management

### **Business Area: Asset Management**

This business area is mainly on the information management for network data sets, assets, and asset catalogs.

[Subject Area: Asset](#) (page 2-5)  
[Subject Area: Asset Information Classes](#) (page 2-6)  
[Subject Area: Agreement](#) (page 2-4)

## 2.2.3 Business Area: Customer Management

### **Business Area: Customer Management**

This business area includes customer service, trouble management, and point of sale related information within the utility enterprise.

[Subject Area: Channel](#) (page 2-8)  
[Subject Area: Business Interaction](#) (page 2-8)  
[Subject Area: Customer](#) (page 2-10)  
[Subject Area: Customer Account and Agreement](#) (page 2-11)  
[Subject Area: Demand Response Program](#) (page 2-12)  
[Subject Area: Financial](#) (page 2-13)  
[Subject Area: Premise and Node](#) (page 2-22)  
[Subject Area: Usage Point, Agreement, Account, Customer, and Premise](#) (page 2-27)  
[Subject Area: Usage Point and End Device](#) (page 2-27)

## 2.2.4 Business Area: Meter Reading and Control

### **Business Area: Meter Reading and Control**

This business area focuses on meter reading, event, and control information within the utility enterprise.

[Subject Area: Meter Event and Reading](#) (page 2-16)  
[Subject Area: Business Interaction](#) (page 2-8)  
[Subject Area: End Device Control](#) (page 2-12)  
[Subject Area: End Device Event](#) (page 2-13)  
[Subject Area: Meter Reading and Control Overview](#) (page 2-17)  
[Subject Area: Meter Reading and Events](#) (page 2-17)  
[Subject Area: Meter Reading](#) (page 2-16)  
[Subject Area: Meter Reading Register and Channel](#) (page 2-18)  
[Subject Area: Meter Reading Type](#) (page 2-18)

## 2.2.5 Business Area: Network Operation

### **Business Area: Network Operation**

This business area provides the information on network operation for both distribution and transmission within utility industry such as supervising main substation topology, control equipment status, handling network connectivity, and loading conditions. It also makes it possible to locate and supervise the location of field crews.

[Subject Area: Business Interaction](#) (page 2-8)  
[Subject Area: Connectivity Model](#) (page 2-9)  
[Subject Area: Curve Schedule](#) (page 2-10)  
[Subject Area: Generating Unit](#) (page 2-14)  
[Subject Area: Line Model](#) (page 2-14)  
[Subject Area: Load Model](#) (page 2-14)  
[Subject Area: Network Operation](#) (page 2-19)  
[Subject Area: Phase Model](#) (page 2-22)  
[Subject Area: Regulating Equipment Model](#) (page 2-24)  
[Subject Area: SCADA](#) (page 2-25)  
[Subject Area: Schedule Model](#) (page 2-25)  
[Subject Area: Switching Equipment Model](#) (page 2-26)  
[Subject Area: Substation, Feeder, and Transformer Hierarchy Model](#) (page 2-25)  
[Subject Area: Tap Changer Model](#) (page 2-26)  
[Subject Area: Transformer Model](#) (page 2-26)  
[Subject Area: Voltage Control Model](#) (page 2-27)

## 2.2.6 Business Area: Outage Management

### **Business Area: Outage Management**

This business area supports the utilities to identify disruptions in the system, to carry out restoration switching actions and to provide customers with notification of disruptions detected.

[Subject Area: Outage Management](#) (page 2-20)

## 2.2.7 Business Area: Weather Model

### **Business Area: Weather Model**

This is a weather model to support utility operation.

[Subject Area: Weather Model](#) (page 2-28)

## 2.2.8 Business Area: Work Management

### **Business Area: Work Management**

This area contains the core information classes that support work management and network extension planning applications.

[Subject Area: Work Management](#) (page 2-28)

## 2.3 Logical Data Model Entity Dictionary

Table 2-1 (page 2-32), Table 2-2 (page 2-59), and Table 2-3 (page 2-77) list the logical data model entities, in alphabetical order.

**Table 2-1 Utilities Data Model Entities A-H**

Entity Name	Type	Description
AC Line Segment	Reference	A wire or combination of wires, with consistent electrical characteristics, building a single electrical system, used to carry alternating current between points in the power system. For symmetrical, transposed 3ph lines, it is sufficient to use attributes of the line segment, which describe impedances and admittances for the entire length of the segment. Additionally impedances can be computed by using length and associated per length impedances.
AC Line Segment Phase	Reference	Represents a single wire of an alternating current line segment.
Acceptance Test	Reference	Acceptance test for assets.
Account	Reference	The account tracks the financial interactions of a customer with the utility. It is normally generated by a contract between the utility and customer. One customer may have multiple accounts.
Account Accounting Cycle History	Base	Billing cycle status history for accounts.
Account Adjustment Reason	Lookup	The reason why the adjustment was put on the customer account.
Account Agreement Relationship	Reference	The association history from account the contract.
Account Arrears Month Drvd	Derived	Account arrears month derived.
Account Assignment	Reference	This entity keeps relationship between accounts. For example: parent account and child account.
Account Assignment Reason	Lookup	Explain why two accounts are related.
Account Assignment Type	Lookup	The type of relationship between two accounts. For example, a corporation account can have several affiliated accounts.
Account Balance Adjustment	Base	Add the adjustment to customer account Account/Receivable. The credit is positive values.
Account Balance Adjustment Type	Lookup	The categories of adjustment applied to a customer account.
Account Balance Bucket	Base	Balance of customer account which may be used in prepaid business.
Account Balance Group	Reference	The balance group concept allows one account have multiple balance groups, which applies to different groups of services. This is optional entity.
Account Balance History	Base	Balance history of account subjected to the primary currency. The balance value was classified by the balance type. The adjusted, due, received, used amounts in the same period are also captured.
Account Balance Impact	Base	The account balance change details, because of a specific event, such as an account payment.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Account Balance Month Drvd	Derived	Derived fact table on account balance by month. It aggregates over customer/account level.
Account Balance Type	Lookup	Type of account balance. For example: water, gas, kwh usage.
Account Billing Cycle History	Reference	Billing cycle status history for accounts.
Account Billing Frequency History	Reference	<a href="#">Billing Frequency</a> (page 2-38) history for accounts.
Account Billing Occurrence	Base	Each billing occurrence happened to the account. The billing occurrence might be triggered by billing cycle or some other events like account termination. In each billing occurrence, there may be multiple invoices generated.
Account Billing Period History	Reference	Billing period history for accounts.
Account Business Interaction Role	Reference	The <a href="#">Business Interaction Role</a> (page 2-39) which can be assigned by a Customer Account.
Account Credit Limit	Base	The credit limit on the customer, which is imposed on the account basis.
Account Debt	Base	Account Debt
Account Debt Day Drvd	Derived	The summarized daily debt status for each account. The account is deemed as in debt status when and only when there is a "debt collection" record to indicate the collection.
Account Event Type	Lookup	This entity keeps all categories of account event type.
Account Management History	Base	Sub type of Party Account assignment. The <a href="#">Account</a> (page 2-32) management history tracks the management relationship from employee to the accounts, including Account Creation (through sales channel), and Accounts update/termination.
Account Payment	Base	The payments table records details of each allocation of money from a receipt made by a <a href="#">Party</a> (page 2-69) to a specific account. It is the receipt of a single sum of money from a party as a credit against an outstanding balance for the provision and/or supply of products or services.
Account Payment Balance Impact	Base	The account balance impact originated from account payments.
Account Payment Day Drvd	Derived	Daily aggregation of payments made by all customers. Derive from <a href="#">Account Payment</a> (page 2-33). The difference between this entity and payment aging drvd, is that this one aggregates based on payment transactions, while the payment aging aggregates based on invoices, which is payment due.
Account Payment Method Status	Base	Status history of each account preferred payment method. For example: <ul style="list-style-type: none"> <li>• Active</li> <li>• Inactive</li> <li>• Invalid</li> </ul> For Direct Debit Status, it defines current and original payment status of account, and maybe changed or terminated according to contract.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Account Payment Method Status Hist Drvd	Derived	Current status of the payment methods for each account. The information helps tracking the progress of direct debit applications and thus in processing the application as soon as possible. Derived from <a href="#">Account Payment Method Status</a> (page 2-33). Direct debit status fact gives information about the current direct debit accounts and also the status of the new applications for the direct debit. Status can be accepted, rejected or pending.
Account Payment Method Status Reason	Lookup	This entity will be used to keep why the status is changed. For example: reject reason could be not sufficient balance.
Account Payment Method Status Type	Lookup	Lookup for types of account Payment Method Status. For example: Active, Inactive, payment rejected. Postpaid customers can pay their bills using the direct debit facility wherein they if they have their bank accounts in certain banks (listed with the company for Direct Debit), monthly bill can be directly deducted from the bank account of the customer.
Account Preferred Invoice Delivery	Reference	The preferred invoice delivery type history for account. This also include the billing address location information specific for an account.
Account Preferred Payment Method	Reference	This entity contains preferred payment methods for the accounts.
Account Profile	Reference	To record more details about the account. To be customized. This is currently a placeholder.
Account Recharge	Base	The recharge made into the customer account.
Account Refund	Base	The customer refund is the money transferred back to customer account, which is normally based on invoice adjustment made.
Account Refund Reason	Lookup	The reason why refund may occur. For example: <ul style="list-style-type: none"> <li>• INVC_ADJ: Invoice Adjustment</li> <li>• TAX_RFND: Tax Refund</li> </ul>
Account Role Type	Lookup	The type of ACCOUNT ROLES. For example, primary account, secondary account, and so on. This can build a secondary classification system other than account type.
Account Segment	Reference	The segments identifying distinct groupings of accounts with similar characteristics. Those segments are typically generated from the data mining analysis.
Account Segment Assignment History	Reference	Assign account segment to each account.
Account Segmentation Model	Reference	Used to cluster the account.
Account Status History	Base	The history of account status change, including disconnect, reconnect, and so on.
Account Status Month Drvd	Derived	The status change information about all accounts at every day. Derived from <a href="#">Account Status History</a> (page 2-34).
Account Status Reason	Lookup	The reason why the account reaches its status at the time.
Account Status Type	Lookup	This level broadly classifies the status into categories such as Connected and Disconnected customer accounts.
Account Type	Lookup	Type of account.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Accounting Cycle	Reference	Accounting cycle is internal billing cycle, which calculate the usage amount and update account balance for accounting G/L purpose.
Accounting Item Category	Lookup	A specific account code that can be associated with an incurred Cost. For example: Operations, Staffing, Supplies.
Accumulator	Base	Accumulator represents a accumulated (counted) measurement. For example, an energy value.
Accumulator Limit	Reference	Limit values for <a href="#">Accumulator</a> (page 2-35) measurements.
Accumulator Limit Set	Reference	Specifies a set of Limits that are associated with an <a href="#">Accumulator</a> (page 2-35) measurement.
Accumulator Limit Set Assignment	Reference	Accumulator limit set assignment.
Accumulator Value	Base	Accumulator Value represents an accumulated (counted) <a href="#">Measurement Value</a> (page 2-64).
ACDC Terminal	Reference	An electrical connection point (AC or DC) to a piece of conducting equipment. Terminals are connected at physical connection points called connectivity nodes.
Active Power Limit	Reference	Limit on active power flow.
Activity Record	Base	Records activity for an entity at a point in time; activity may be for an event that has already occurred or for a planned activity.
Address Location	Reference	Keeps all addresses. It has levels as country, state, city, address and so on.
Agree Item Pricing Struct Assignment	Reference	Pricing structure assigned to an agree item.
Agreement	Reference	Legal agreement between a Service Provider and an account. (its not for changed contract only)
Agreement Approval	Base	Approval to the contract from operator's authorized employee if the contract requires higher level approval or review.
Agreement Assignment	Base	Contracts are related to each other for various reasons, like one new contract to replace existing one.
Agreement Assignment Reason	Lookup	Lookup for reasons of why two contracts are related.
Agreement Assignment Type	Lookup	Lookup for types of the assignment between two contracts.
Agreement Document	Reference	The document provided by customer when contract was signed. For example: <ul style="list-style-type: none"> <li>• Photocopy image of customer ID</li> <li>• The contract itself</li> <li>• Any other document attached to the contract</li> </ul>
Agreement Item	Reference	Detail items for the contract between customer and utility. Each item may use a different service or product.
Agreement Status	Base	The status history of the contract.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Agreement Status Type	Lookup	Lookup type of all possible contract status. For example: 1. Newly created for new account 2. Renewed automatically. 3. Terminated.
Agreement Type	Lookup	The type of Contracts.
Agreement Usage Point Assignment	Reference	<a href="#">Agreement</a> (page 2-35) that a usage point has.
Air Compressor	Reference	Combustion turbine air compressor which is an integral part of a compressed air energy storage (CAES) plant.
AMI Billing Ready Kind ENUM	Lookup	Lifecycle states of the metering installation at a usage point with respect to readiness for billing through advanced metering infrastructure reads.
Analog	Base	Analog represents an analog measurement.
Analog Limit	Reference	Limit values for analog measurements.
Analog Limit Set	Reference	An Analog Limit Set specifies a set of limits that are associated with an analog measurement.
Analog Limit Set Assignment	Reference	Analog limit set assignment.
Analog Value	Base	Analog value represents an analog measurement Value.
Anchor Kind ENUM	Lookup	Kind of anchor.
ANZSIC Classification	Reference	The SIC code used in Australia and New Zealand.
Apparent Power Limit	Reference	Apparent power limit.
Appointment	Base	The appointment between two parties to define a future time conducting businesses. For example the customer visit appointment, between sales representative and the customer, and support appointment between the customer and the engineer. In the appointment, the parties involved are tracked in <a href="#">Party Business Interaction Role</a> (page 2-69)'. The <a href="#">Business Interaction</a> (page 2-39) Date inherited should contain the date when the appointment was created, and appointed date is "appointment start date".
Appointment Type	Lookup	Captures the appointment types. For example: <ul style="list-style-type: none"> <li>• Customer Sale</li> <li>• Repair</li> </ul>
Asset	Reference	Tangible resource of the utility, including power system equipment, various end devices, cabinets, buildings, and so on. For electrical network equipment, the role of the asset is defined through <a href="#">Power System Resource</a> (page 2-74) and its subclasses, defined mainly in the Wires model (refer to IEC61970-301 and model package IEC61970::Wires). Asset description places emphasis on the physical characteristics of the equipment fulfilling that role.
Asset Activity Record Assignment	Reference	Activity record of an asset.
Asset Appraisal History	Base	The valuation history of the asset.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Asset Condition History	Base	The condition history of an asset, as inspected by internal employee or contractors. Those are more important for vehicles or buildings.
Asset Container	Reference	Asset that is aggregation of other assets such as conductors, transformers, switchgear, land, fences, buildings, equipment, vehicles, and so on.
Asset Function	Reference	Function performed by an asset.
Asset Info	Reference	Set of attributes of an asset, representing typical data-sheet information of a physical device that can be instantiated and shared in different data exchange contexts:- as attributes of an asset instance (installed or in stock), as attributes of an asset model (product by a manufacturer), as attributes of a type asset (generic type of an asset as used in designs/extension planning).
Asset Location	Reference	Location of an asset.
Asset Model	Reference	Model of an asset, either a product of a specific manufacturer or a generic asset model or material item. Data-sheet characteristics are available through the associated <a href="#">Asset Info</a> (page 2-37) subclass and can be shared with asset or power system resource instances.
Asset Model Catalog	Reference	Catalog of available types of products and materials that are used to build or install, maintain or operate an <a href="#">Asset</a> (page 2-36). Each catalog item is for a specific product ( <a href="#">Asset Model</a> (page 2-37)) available from a specific supplier.
Asset Model Catalog Item	Reference	Provides pricing and other relevant information about a specific manufacturer's product (that is, <a href="#">Asset Model</a> (page 2-37)), and its price from a given supplier. A single <a href="#">Asset Model</a> (page 2-37) may be available from multiple suppliers. A manufacturer and supplier are both types of organization, which the association is inherited from Document.
Asset Model Usage Kind ENUM	Lookup	Usage for an asset model.
Asset Organization Role	Reference	Role an organization plays with respect to asset.
Asset Organization Role Assignment	Reference	Organization role of an asset such as owner, operator and so on.
Asset Owner	Reference	Owner of the asset.
Asset PSR Assignment	Reference	<a href="#">Power System Resource</a> (page 2-74) assigned to an asset.
Asset Status	Reference	Current status information relevant to an entity.
Asset Type	Lookup	Type of <a href="#">Asset</a> (page 2-36).
Asset User	Reference	Organization that is a user of the asset.
Assignment	Reference	This is a super class of assignment tables.
Atmospheric Pressure	Base	Atmospheric Pressure
Bank	Reference	Keep information of banks.
Bank Direct Debit Channel	Reference	Subtype to the payment channel, which tracks various bank channels where customer can pay by direct debt method. Customers can go to the bank and pay the bill by cash in the bank. This is allowed only through specific banks.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Baring Reason	Lookup	Lookup defining reasons a customer may be banned from using a service.
Base Reading	Base	Common representation for reading values. A reading value may have multiple qualities, as produced by various systems ('ReadingQuality.source').
Base Voltage	Reference	Defines a system base voltage which is referenced.
Base Work	Reference	Common representation for work and work tasks.
Basic Interval Schedule	Reference	Schedule of values at points in time.
Billing Cycle	Reference	The Bill Cycles table documents each billing cycle. Typically it's per month (Billing cycle). Sometimes customer may be billed at different date inside the billing cycle. For example: <ul style="list-style-type: none"> <li>• First day of month</li> <li>• 10th day of month</li> </ul> For example: <ul style="list-style-type: none"> <li>• Billing cycle is a month, which is one bill (Billing Frequency)</li> <li>• 30 Days (Billing Period)</li> </ul>
Billing Frequency	Reference	The billing frequency specifies the number of billing periods that comprise the billing cycle.
Billing Occurrence Type	Lookup	Specifies the type of billing occurrence, which could be classified by triggering type. For example, <ul style="list-style-type: none"> <li>• Triggered by customer enquiry</li> <li>• Triggered by automatic billing cycle</li> </ul>
Billing Period	Lookup	The billing period specifies the unit to be used to calculate the billing cycle (such as day or month).
Black List History	Base	To keep track of black listed customers. Those records might be because of late payment, default, or fraud.
Breaker	Reference	A mechanical switching device capable of making, carrying, and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions. For example, those of short circuit.
Busbar Section	Reference	A <a href="#">Conductor</a> (page 2-43), or group of <a href="#">Conductor</a> (page 2-43)s, with negligible impedance, that serve to connect other conducting equipment within a single substation. Voltage measurements are typically obtained from VoltageTransformers that are connected to busbar sections. A bus bar section may have many physical terminals but for analysis is modeled with exactly one logical terminal.
Busbar Section Info	Reference	Busbar section data.
Bushing	Reference	Bushing asset.
Bushing Insulation Kind ENUM	Lookup	Insulation kind for bushings.
Business Case	Reference	Business justification for capital expenditures, usually addressing operations and maintenance costs as well.
Business Half Month	Reference	Specifies information relating to a fortnight in a Business Calendar.
Business Half Year	Reference	Specifies information relating to half year in a Business Calendar.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Business Interaction	Base	An abstracted entity to provide the common base for customer order and contract. A Business Interaction is an arrangement, contract, communication or joint activity between one or more <a href="#">Party Role</a> (page 2-71)s, ResourceRoles, or CustomerAccounts. A Business Interaction may consist of one or more Business Interaction Items. A <a href="#">Business Interaction Item</a> (page 2-39) may refer to a Product, Service, Resource, or one of their specifications. A Business Interaction is further defined by one or more Places. One Business Interaction may reference another Business Interaction and one <a href="#">Business Interaction Item</a> (page 2-39) may reference another <a href="#">Business Interaction Item</a> (page 2-39) on the same or different Business Interaction. There are five types of Business Interactions: Requests, Responses, Notifications, <a href="#">Agreement</a> (page 2-35)s, and Instructions.
Business Interaction Assignment	Reference	Defines the relationship between two <a href="#">Business Interaction</a> (page 2-39)s.
Business Interaction Assignment Type	Lookup	Business interaction assignment type, such as subordinate business interaction, and so on.
Business Interaction Item	Base	The detail items included in the <a href="#">Business Interaction</a> (page 2-39). The purpose for the <a href="#">Business Interaction</a> (page 2-39) is expressed in terms of a Product Type, Service Type or may refer to a Product or Service.
Business Interaction Item Price	Base	The actual price charged to the <a href="#">Business Interaction Item</a> (page 2-39).
Business Interaction Location Assignment	Reference	The <a href="#">Business Interaction Role</a> (page 2-39) which can be assigned to an address. For example: <ul style="list-style-type: none"> <li>• Billing address</li> <li>• Shipment address</li> </ul>
Business Interaction Role	Base	The roles which can be played by <a href="#">Party</a> (page 2-69) or other <a href="#">Business Interaction</a> (page 2-39) elements like Resource, and so on.
Business Interaction Status History	Base	The status history of a <a href="#">Business Interaction</a> (page 2-39). For example: <ul style="list-style-type: none"> <li>• Submitted</li> <li>• Closed</li> <li>• Canceled</li> </ul> Both current status and historical status should be captured and they can be differentiated by effective to date.
Business Interaction Status Reason	Lookup	The reason to explain why a <a href="#">Business Interaction</a> (page 2-39) has had a change in status.
Business Interaction Status Type	Lookup	Lookup for available business interaction status types and descriptions. For example: Active Closed.
Business Interaction Type	Lookup	Business interaction type, such as Customer Order, Contract, and so on.
Business Interaction Version	Reference	Specifies the ability to distinguish between different instances of <a href="#">Business Interaction</a> (page 2-39).
Business Legal Status	Lookup	The legal status of the company. The value might be Public Company, Private.
Business Month	Reference	Specifies information relating to a month in a Business Calendar.
Business Quarter	Reference	Specifies information relating to a quarter in a Business Calendar.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Business Unit Job Role	Reference	Capture the specific job role for an organization.
Business Week	Reference	Specifies information relating to a week in a Business Calendar.
Business Year	Reference	Specifies information relating to a year in a Business Calendar.
CAES Plant	Reference	Compressed air energy storage plant.
Calendar Half Month	Reference	Captures information relating to a fortnight in a Normal Calendar.
Calendar Half Year	Reference	Captures information relating to half year in a Normal Calendar.
Calendar Month	Reference	Captures information relating to a month in a Normal Calendar.
Calendar Quarter	Reference	Captures information relating to a quarter in a Normal Calendar.
Calendar Week	Reference	Captures information relating to a week in a Normal Calendar.
Calendar Year	Reference	Specifies information relating to a year in a Normal Calendar.
Call Center	Reference	The utility may have multiple call centers in different locations, for different timezone or language purpose.
Call Center Agent	Reference	All the possible agents with whom the customer can make a contact. For example: IVR, Human Agent and so on.
Call Center Case Sub Type	Lookup	Lookup table that further characterizes the type of cases from the call center. It helps in splitting a given case type in various sub-types. For example, "outage".
Call Center Case Title	Lookup	Further classify the call center case sub type. In order to serve the customer properly call center has organized approach. Customer complaints called as cases are classified using three level classification structures. All the cases are broadly classified into <a href="#">Call Center Case Type</a> (page 2-40).
Call Center Case Type	Lookup	Lookup for types of call center cases. For example: <ul style="list-style-type: none"> <li>• Cmpl - Complain</li> <li>• Inqry - Inquiry</li> <li>• Srv - Service Request</li> </ul>
Call Center Service Capability	Reference	Assigns the languages, products, or geographical areas which the call center can serve to the call center.
Campaign	Reference	A campaign is a concentrated effort to enhance the image of the enterprise, in order to retain, acquire or consolidate customers.
Campaign Channel	Reference	The campaign channel is used for <a href="#">Campaign</a> (page 2-40), or by which customer can know the product. A channel can be a specific news group (/media company) which issues newspaper, TV channel and so on. A piece of newspaper of a block/slot on the paper is a publication/ media object. It can be categorized by <a href="#">Campaign Channel Type</a> (page 2-40).
Campaign Channel Assignment	Reference	The assignment to define which campaign is launched at which <a href="#">Campaign Channel</a> (page 2-40).
Campaign Channel Type	Lookup	This entity keeps the channel type, which is used to <a href="#">Campaign</a> (page 2-40). For example: <ul style="list-style-type: none"> <li>• Newspaper</li> <li>• TV</li> <li>• Magazine</li> </ul>

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Campaign Characteristic	Reference	A characteristic quality or distinctive feature of a <a href="#">Campaign</a> (page 2-40). The characteristic can take on a discrete value, such as number of press releases, can take on a range of values. For example, number of prospects reached 50,000 - 100,000), or can be derived from a formula (for example, number of brokerage house pickups = sum of all brokerage house instance characteristics).
Campaign Characteristic Value	Reference	A number or text that can be assigned to a <a href="#">Campaign Characteristic</a> (page 2-41).
Campaign Document	Reference	The customer documents provided during campaign activities.
Campaign Management History	Reference	The history of campaign party role about management of a <a href="#">Campaign</a> (page 2-40). The party here can be not only the sales or marketing employee at the utility, it can also be campaign partner.
Campaign Message	Reference	Holds details about the execution message used in a <a href="#">Campaign</a> (page 2-40).
Campaign Message Creative	Base	Information about the creative content of the message.
Campaign Message Depiction	Reference	Details about how the execution message is depicted for a <a href="#">Campaign</a> (page 2-40). This dimension table holds details about how the execution message is depicted, for a <a href="#">Campaign</a> (page 2-40).
Campaign Relationship	Reference	Defines the relationship between two <a href="#">Campaign</a> (page 2-40)s. For example, to replace/upgrade, to enhance, and so on.
Campaign Status	Lookup	This entity keeps strategy or business objective of the <a href="#">Campaign</a> (page 2-40).
Campaign Term Value	Reference	The term value for a given <a href="#">Campaign</a> (page 2-40).
Campaign Type	Lookup	This entity keeps types of <a href="#">Campaign</a> (page 2-40)s. For example: a targeted promotion (to specific individuals, account or group of accounts), a mass market promotion (to a massive audience usually through radio, television and newspaper).
Channel	Reference	Identifies all the channels through which customers interact with the provider for sales or services purposes. Each channel by itself is also a <a href="#">Party</a> (page 2-69), and Channel provide another way to group parties with same functionality to the service provider. In current model, for most of channels, the analytical hierarchy should be: <a href="#">Party</a> (page 2-69) (with internal levels)
Channel Type	Lookup	Channel Type is used to classify the channels according to their functionalities. For example: <ol style="list-style-type: none"> <li>1. Sales Channel</li> <li>2. Payment Channel</li> <li>3. Debt collection channel</li> <li>4. Loyalty Program Channel (where to join/change/redeem loyalty program).</li> </ol>
Charge Kind ENUM	Lookup	Kind of charge.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Clamp	Reference	A Clamp is a galvanic connection at a line segment where other equipment is connected. A Clamp does not cut the line segment. A Clamp is <a href="#">Conducting Equipment</a> (page 2-43) and has one Terminal with an associated <a href="#">Connectivity Node</a> (page 2-43). Any other <a href="#">Conducting Equipment</a> (page 2-43) can be connected to the Clamp <a href="#">Connectivity Node</a> (page 2-43).
Clearance Action	Reference	Action on cut as a switching step.
Clearance Action Kind ENUM	Lookup	Kind of action on cut or jumper.
Clearance Document	Reference	Safety document used to authorize work on conducting equipment in the field. Tagged equipment is not available for commercial service.
Cloud Information	Base	Cloud Information.
Cogeneration Plant	Reference	A set of thermal generating units for the production of electrical energy and process steam (usually from the output of the steam turbines). The steam sendout is typically used for industrial purposes or for municipal heating and cooling.
Collection Agency	Reference	Subtype of <a href="#">Party</a> (page 2-69), who collects customer debt on behalf of the operator under some financial agreements.
Com Direction Kind ENUM	Lookup	Kind of communication direction.
Com Function	Reference	Com Function
Com Media	Reference	Communication media such as fiber optic cable, power-line, telephone, and so on.
Com Module	Reference	An asset having communications capabilities that can be paired with a meter or other end device to provide the device with communication ability, through associated communication function. An end device that has communications capabilities through embedded hardware can use that function directly (without the communication module), or combine embedded communication function with additional communication functions provided through an external communication module.
Com Technology Kind ENUM	Lookup	Kind of communication technology.
Combined Cycle Plant	Reference	A set of combustion turbines and steam turbines where the exhaust heat from the combustion turbines is recovered to make steam for the steam turbines, resulting in greater overall plant efficiency.
Command	Base	A command is a discrete control used for supervisory control.
Communication Link	Reference	The connection to remote units is through one or more communication links. Redundant links may exist. The CommunicationLink class inherit <a href="#">Power System Resource</a> (page 2-74). The intention is to allow CommunicationLinks to have <a href="#">Measurement</a> (page 2-64)s. These <a href="#">Measurement</a> (page 2-64)s can be used to model link status as operational, out of service, unit failure and so on.
Compatible Unit	Reference	A pre-planned job model containing labor, material, and accounting requirements for standardized job planning.
Compatible Unit Procedure Assignment	Reference	Compatible Unit Procedure Assignment
Composite Switch Info	Reference	Properties of a composite switch.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Composite Switch Kind ENUM	Lookup	Kind of composite switch.
Conducting Eqp Protection Eqp Assignment	Reference	Protection equipment assigned to a conducting equipment.
Conducting Equipment	Reference	The parts of the AC power system that are designed to carry current or that are conductively connected through terminals.
Conductor	Reference	Combination of conducting material with consistent electrical characteristics, building a single electrical system, used to carry current between points in the power system.
Configuration Event	Base	Used to report details on creation, change or deletion of an entity or its configuration.
Conform Load	Reference	Conform load represent loads that follow a daily load change pattern where the pattern can be used to scale the load with a system load.
Conform Load Group	Reference	A group of loads conforming to an allocation pattern.
Conform Load Schedule	Reference	A curve of load versus time (X-axis) showing the active power values (Y1-axis) and reactive power (Y2-axis) for each unit of the period covered. This curve represents a typical pattern of load over the time period for a given day type and season.
Connect Disconnect Function	Reference	A function that will disconnect and reconnect the customer's load under defined conditions.
Connectivity Node	Reference	Connectivity nodes are points where terminals of AC conducting equipment are connected together with zero impedance.
Connectivity Node Container	Reference	A base class for all objects that may contain connectivity nodes or topological nodes.
Connector	Reference	A <a href="#">Conductor</a> (page 2-43), or group of <a href="#">Conductor</a> (page 2-43)s, with negligible impedance, that serve to connect other conducting equipment within a single substation and are modelled with a single logical terminal.
Consumption Tariff Interval	Reference	One of a sequence of intervals defined in terms of consumption quantity of a service such as electricity, water, gas, and so on. It is typically used in association with <a href="#">Tariff Profile</a> (page 2-84) to define the steps or blocks in a step tariff structure, where startValue simultaneously defines the entry value of this step and the closing value of the previous step. Where consumption is $\geq$ startValue it falls within this interval and where consumption is $<$ startValue it falls within the previous interval.
Consumption Tier	Reference	Tier define by consumption amount.
Contact List	Reference	Lists of potential and existing customer for <a href="#">Campaign</a> (page 2-40)s. Contact Lists can be created from marketing activity (running certain models), or obtained from another Organization.
Contact List Change Reason	Lookup	Lookup of possible reasons for changing the <a href="#">Contact List</a> (page 2-43). When contact list is changed, the SCD2 columns will capture the change and provide reason for change.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Contact List Recurrence Type	Lookup	A categorization of the recurrence of a <a href="#">Contact List</a> (page 2-43). For example: <ul style="list-style-type: none"> <li>• W = Once a Week</li> <li>• M = Once a Month</li> <li>• Y = Once a Year</li> <li>• MI = Once a month with Invoice</li> </ul>
Contact Roles	Lookup	Describes the various roles a contact individual may play in the relationship with the operator.
Control	Base	Control is used for supervisory/device control. It represents control outputs that are used to change the state in a process. For example, close or open breaker, a set point value or a raise lower command.
Control Type	Lookup	Specifies the type of Control. For example: <ul style="list-style-type: none"> <li>• BreakerOn/Off</li> <li>• GeneratorVoltageSetPoint</li> <li>• TieLineFlow</li> </ul> The ControlType.name shall be unique among all specified types and describe the type. The ControlType.aliasName is meant to be used for localization.
Coolant Type ENUM	Lookup	Method of cooling a machine.
Corporate Standard Kind ENUM	Lookup	Kind of corporate standard.
Cost	Base	Define the cost might incurred from any operation or event which is trackable at certain level.
Cost Center	Reference	To categorize the different cost charges inside the utility for different purpose. Organization can own multiple cost center for different project/product operation.
Cost Reason	Lookup	Lookup of all possible reasons why the cost occurred. For example, natural disaster, operator error, and so on.
Cost Subtype	Lookup	Further classify cost type. For example, For "cost to customer", subtype could be acquire cost, retention cost, and so on. For "cost to employee", subtype could be salary, and so on. For "cost to channel", subtype could be damage, new equipment, repairing fee.
Cost Type	Lookup	Lookup for types of costs. For example, the cost is to the customer, channel, or to the employee.
Credit Category	Reference	Category based on customer credit.
Credit Score Provider	Reference	Credit score provider provide reference financial rating scores for each customers to the service provider. It is also called Credit rating agency.
Crew	Reference	Group of people with specific skills, tools, and vehicles.
Crew Member	Reference	Crew Member
Crew Type	Reference	Custom description of the type of crew. This may be used to determine the type of work the crew can be assigned to. For example: <ul style="list-style-type: none"> <li>• Repair</li> <li>• Tree trimming</li> <li>• Switching</li> </ul>

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Crew Work Task Assignment	Reference	Work task assigned to a crew.
Critical Peak Period	Reference	Critical peak period usually associated with a peak pricing.
Currency	Lookup	The currencies represented by ISO currency codes.
Currency ENUM	Lookup	Monetary currencies.
Currency Exchange Rate	Base	Exchange rate against the primary currency, as determined by exchange rate type and value date.
Currency Geography Entity Assignment	Reference	To define currency usage in different area.
Current Limit	Reference	Operational limit on current.
Current Relay	Reference	A device that checks current flow values in any direction or designated direction.
Current Transformer Info	Reference	Properties of current transformer asset.
Curve	Reference	A multi-purpose curve or functional relationship between an independent variable (X-axis) and dependent (Y-axis) variables.
Curve Data	Base	Multi-purpose data points for defining a curve. The use of this generic class is discouraged if a more specific class can be used to specify the x and y axis values along with their specific data types.
Curve Style ENUM	Lookup	Style or shape of curve.
Customer	Reference	All the customers, including individual and organization customers. A customer is generally defined as a party using one or more services from the operator.
Customer Account Assignment	Reference	To define relationship between customer and account including the history on the relationship.
Customer Document	Reference	Various customer proof document provided for customer order, contract, and so on.
Customer Facing Service	Reference	This is the base class for defining Customer Facing Services. A Customer Facing Service is an abstraction that defines the characteristics and behavior of a particular Service as seen by the Customer or other appropriate <a href="#">Party Role</a> (page 2-71). This means that this <a href="#">Party Role</a> (page 2-71) purchases, leases, uses and/or is otherwise directly aware of this type of Service. This is in direct contrast to <a href="#">ElementFacingServices</a> , which support <a href="#">CustomerFacingServices</a> but are not seen or purchased directly by the Customer. Customer Facing Service is visible to the customer, therefore can be purchased to be a subscription.
Customer Group	Lookup	The lookup code for grouping the customers based on any criteria defined by the service operator.
Customer Group Assignment	Reference	A grouping of the customers based on any criteria defined by the service operator.
Customer Individual	Reference	Subtype of <a href="#">Customer</a> (page 2-45) (and <a href="#">Party</a> (page 2-69)), which contains details of individuals as opposed to organizations.
Customer Kind ENUM	Lookup	Customer kind (meant for enumerated list).

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Customer Mining	Derived	The result measures from mining analysis.
Customer Occasion	Reference	It stores an event celebrated or observed by a customer. For example: <ul style="list-style-type: none"> <li>• Birthday</li> <li>• Anniversary</li> <li>• Company establishment day, or other festivals</li> </ul>
Customer Occasion Type	Lookup	A categorization of Customer Occasions.
Customer Order	Base	Captures information about orders placed by customers.
Customer Order Document	Reference	The document provided while submitted customer order.
Customer Order Line Item	Base	Captures information about each item in the customer order.
Customer Organization	Reference	Subtype of <a href="#">Customer</a> (page 2-45) (and <a href="#">Party</a> (page 2-69)), which contains details of organizations as opposed to individuals. An organization can also consist of one individual only (for example, "independent").
Customer Outage Notification Assignment	Reference	To define which customers an outage notification sends to.
Customer Restricted Info	Reference	It captures the restricted information for the customer or prospects - typically personal information used in segmentation. (income level, and so on).
Customer Revenue Band	Lookup	Customer classification in its income/revenue term. For example: <a href="#">Customer</a> (page 2-45) with income/revenue of \$10000/Month, or 1Billion/Year (organizational). This is not to be confused with "ARPU Band", which bins the customer revenue (monthly payment as an example) to the operator.
Customer Revenue Band Assignment	Reference	To determine revenue band of customer. Customer's revenue band may drift month by month.
Customer Score	Reference	Scores or Score ranges that may be assigned to a customer based on credit, behavior, or other criteria. For example: 1,2,3,4,5 or 1~10,1 1~20. Customer score can be rated based on the Customer Behavior, Credit, or another criteria.
Customer Segment	Reference	The Segments table holds details of customer segments identified by business analysis activities, like Data Mining. A segment identifies distinct groupings of customers or accounts with similar characteristics. The segments are typically used in marketing <a href="#">Campaign</a> (page 2-40)s.
Customer Segmentation Model	Reference	The segmentation model used to profile the customers. For example, <ul style="list-style-type: none"> <li>• KMeans by Revenue from Market Department</li> <li>• O-Clustering by IT department</li> </ul>
Customer SIC Assignment	Reference	To keep track of how the customer is related to the SIC/NASIC, and also keep the history. One Organization may operate in multiple business area. For individual customer, this indicate the job he is taking.
Customer Source	Reference	How the customer came in touch to the sales team. For example: <ul style="list-style-type: none"> <li>• <a href="#">Campaign</a> (page 2-40)</li> <li>• Advertisement</li> <li>• <a href="#">Call Center</a> (page 2-40)</li> </ul> Very important for campaign planning and management.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Customer Type	Lookup	This level identifies or groups customers such as residential or corporate.
Customer Work Assignment	Reference	Customer Work Assignment
Cut	Reference	A cut separates a line segment into two parts. The cut appears as a switch inserted between these two parts and connects them together. As the cut is normally open there is no galvanic connection between the two line segment parts. But it is possible to close the cut to get galvanic connection. The cut terminals are oriented towards the line segment terminals with the same sequence number. Hence the cut terminal with sequence number equal to 1 is oriented to the line segment's terminal with sequence number equal to 1. The cut terminals also act as connection points for jumpers and other equipment. For example, a mobile generator. To enable this, connectivity nodes are placed at the cut terminals. Once the connectivity nodes are in place any conducting equipment can be connected at them.
Cut Action	Reference	Action on cut as a switching step.
Cut Jumper Action Kind ENUM	Lookup	Kind of action on cut or jumper.
Day	Reference	Calendar day in the day dimension.
Day Type	Lookup	Group of similar days. For example it could be used to represent weekdays, weekend, or holidays.
DC Conducting Equipment	Reference	The parts of the DC power system that are designed to carry current or that are conductively connected through terminals.
DC Line Segment	Reference	A wire or combination of wires not insulated from one another, with consistent electrical characteristics, used to carry direct current between points in the DC region of the power system.
Debt Aging Band	Lookup	Ranges of time used to group debt based on the age of the debt. For example: <ul style="list-style-type: none"> <li>• 0-90 days</li> <li>• 91-180 days</li> </ul> Postpaid customers are billed on a monthly basis for the usage of services in the month. At the end of the billing month for the customer an invoice is sent to the customer for which customer is supposed to pay by payment due date.
Debt Collection	Base	A special type of interaction to collect defaulted payment from customer by the in-house debt collector.
Debt Collection Assignment	Base	The assignment of debt collection case to external debt collection agency. Currently the status of the collection is tracked inside the assignment. If detailed status history is required, another 2 "Status History + Status Type" entities could be created.
Debt Collection Assignment Batch	Base	Normally the collection assignment are sent to collector in a batch.
Demand Response Program	Reference	Demand response program.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Demand Tariff Interval	Reference	One of a sequence of time intervals defined in terms of real time. It is typically used in association with <a href="#">Tariff Profile</a> (page 2-84) to define the intervals in a time of use tariff structure, where <code>startDateTime</code> simultaneously determines the starting point of this interval and the ending point of the previous interval.
Demographic Characteristic	Reference	A feature or quality used to make recognizable or to define somebody or something, such as age, income, education, revenue, and so forth.
Demography Attribute	Reference	A sub-level group or category further qualifying a set of data (Profile Group) collected about a customer to assist in marketing efforts. For example: <ul style="list-style-type: none"> <li>• NC - Number of Children</li> <li>• EDL - Education Level</li> </ul>
Demography Group	Reference	The domain of classifications used to group profile information about a <a href="#">Party</a> (page 2-69). For example: <ul style="list-style-type: none"> <li>• CH - Credit History</li> <li>• ED- Education, EM - Employment</li> <li>• EQ- Equipment</li> <li>• HB - Hobbies</li> <li>• HH - Household</li> <li>• OR - Organization, and other relevant demog</li> </ul>
Derived Value	Reference	This entity stores the derived value of the customer. These value could have multiple value types or value measures.
Direct Debit Status Reason	Lookup	Lookup for various reason the direct debit payment become the current status. For example: <ul style="list-style-type: none"> <li>• Customer preferred choice which means the customer may not like credit card.</li> <li>• Customer imposed when the CSP imposes this way, after issues with the credit card or cash payment.</li> </ul>
Disconnecter	Reference	A manually operated or motor operated mechanical switching device used for changing the connections in a circuit, or for isolating a circuit or equipment from a source of power. It is required to open or close circuits when negligible current is broken or made.
Discrete	Base	Discrete represents a discrete <a href="#">Measurement</a> (page 2-64). That is, a <a href="#">Measurement</a> (page 2-64) representing discrete values. For example, a Breaker position.
Discrete Value	Base	DiscreteValue represents a discrete <a href="#">Measurement Value</a> (page 2-64).
Document	Reference	Parent class for different groupings of information collected and managed as a part of a business process. It will frequently contain references to other objects, such as assets, people and power system resources.
Document Status	Base	Current status information relevant to an entity.
Document Type	Lookup	All types of the documents customer may provide to service provider for identification. For example: <ol style="list-style-type: none"> <li>1. Driver License Photocopy.</li> <li>2. Address certification.</li> <li>3. Bank Card photocopy.</li> </ol>

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Document Type Group	Lookup	The group of document types of which customer may provide to service provider for identification. For example Mandatory Document, Legal Requirement, Income Proof Document, and so on. For example: 1. Driver License Photocopy. 2. Address certification. 3. Bank Card photocopy.
Document Type Group Assignment	Reference	Assigns different document types into different document type groups.
DR Prog End Device Grp Assignment	Reference	End device group assigned to a demand response program.
DR Program Agreement Assignment	Reference	<a href="#">Agreement</a> (page 2-35) related to a demand response program.
DR Program Load Reduction By Region Day Drvd	Derived	Derived table on demand response program resulted load reduction by region by day.
Education	Lookup	The education level of the customer.
Electricity Service	Reference	Electricity service
Employee	Reference	Employee of the utility. Sub entity of party individual.
Employee Actual Labor Hourly	Base	The actual shifts the hourly employees have worked in, including break time.
Employee Cost	Base	Subtype of cost, which occurs to employee. For example, salary and bonus for employee.
Employee Designation	Lookup	The various designations present in an organization for the employees. For example, Consultant, Engineer and so on.
Employee Job Role Assignment	Reference	Keep the relationship between employee and job role.
Employee Job Role Type	Lookup	Delegate, primary role, or secondary role.
Employee Language Capability	Reference	The languages the employee can serve, especially for call center agent and sales representatives.
Employee Restricted Info	Reference	It captures the restricted information for the employee.
Employee Schedule	Reference	This entity stores the planned schedule for an employee, which consists of the store, job role and shift the employee is planned to be working for.
Employee Training Record	Base	A record that a particular employee has been trained in performing a particular Task.
Employee Type	Lookup	This lookup describes types of Employee. Possible values can be PartTime, Contractual, Full Time and so on.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
End Device	Reference	Asset container that performs one or more end device functions. One type of end device is a meter which can perform metering, load management, connect/disconnect, accounting functions, and so on. Some end devices, such as ones monitoring and controlling air conditioner, refrigerator, pool pumps may be connected to a meter. All end devices may have communication capability defined by the associated communication function(s). An end device may be owned by a consumer, a service provider, utility or otherwise. There may be a related end device function that identifies a sensor or control point within a metering application or communications systems (for example, water, gas, electricity). Some devices may use an optical port that conforms to the ANSI C12.18 standard for communications.
End Device Capability	Reference	End Device Capability
End Device Control	Base	Instructs an end device (or an end device group) to perform a specified action.
End Device Control Type	Reference	Detailed description for a control produced by an end device. Values in attributes allow for creation of recommended codes to be used for identifying end device controls as follows: <type>.<domain>.<subDomain>.<eventOrAction>.
End Device Ctrl Primary Device Timing	Base	Timing for the control actions of end devices.
End Device Ctrl Secondary Device Timing	Base	Timing for the control actions of end devices.
End Device Domain	Lookup	End Device Domain
End Device End Device Ctrl Assignment	Reference	To define relationship between End Device and End Device Ctrl and the history of the relationship.
End Device End Device Grp Assignment	Reference	To define relationship between End Device and End Device Group and the history of the relationship.
End Device Event	Base	Event detected by a device function associated with end device.
End Device Event By Customer Day Drvd	Derived	Derived table on end device event by customer by day.
End Device Event by Customer Month Aggr	Aggregate	Aggregate fact table on end device event by customer by month.
End Device Event By Device Day Drvd	Derived	Derived table on end device event by device by day.
End Device Event By Device Month Aggr	Aggregate	Aggregate fact table on end device event by device by month.
End Device Event Detail	Reference	Name-value pair, specific to end device events.
End Device Event Or Action	Lookup	End device event or action.
End Device Event Type	Lookup	Detailed description for an event produced by an end device. Values in attributes allow for creation of recommended codes to be used for identifying end device events as follows: <type>.<domain>.<subDomain>.<eventOrAction>.
End Device Function	Reference	Function performed by an end device such as a meter, communication equipment, controllers, and so on.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
End Device Function Kind ENUM	Lookup	Type of end device function.
End Device Group	Reference	Abstraction for management of group communications within a two-way Automated Meter Reading (AMR) system or the data for a group of related end devices. Commands can be issued to all of the end devices that belong to the group using a defined group address and the underlying AMR communication infrastructure.
End Device Grp End Device Ctrl Assignment	Reference	End device control capability assigned to an end device group.
End Device Info	Reference	End device data.
End Device Sub Domain	Lookup	End device sub domain.
End Device Type	Lookup	End device type.
Energy Area	Reference	The class describes an area having energy production or consumption.
Energy Consumer	Reference	Generic user of energy - a point of consumption on the power system model.
Energy Consumer Phase	Reference	A single phase of an energy consumer.
Energy Flow Direction	Lookup	Energy Flow Direction
Equipment	Reference	The parts of a power system that are physical devices, electronic or mechanical.
Equipment Container	Reference	A modeling construct to provide a root class for containing equipment.
Event	Base	This entity keeps track of all interactions with Service Provider. Event can occur related to a provider (for example, equipment down, service disruption) or a customer (for example, service order, paying bill). It will be used to track customer behavior, in order to make special campaigns or analyze cost of customers. Normally the event incurs some cost and may generate revenue for the operator.
Event Account	Base	The events occurring to account. For example: <ul style="list-style-type: none"> <li>Account suspension</li> <li>Resumption</li> <li>Account termination</li> </ul>
Event Assignment	Base	This entity relates events to other <a href="#">Event</a> (page 2-51)s. The Event Relationship reason describes why a relationship exist between two events.
Event Assignment Reason	Lookup	Lookup of all possible reasons why a relationship exists between two <a href="#">Event</a> (page 2-51)s. Such as premise, result in.
Event Assignment Type	Lookup	Lookup of all types of relationship between two <a href="#">Event</a> (page 2-51)s.
Event Category	Lookup	Root category of all Event Types, it's used to distinguish different events.
Event Chat	Base	The chat history between the service representative and the customer. It shares the pk from event, as event code.
Event Chat Detail	Base	The chat history details between the service representative and the customer. Each chat message is saved as one record.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Event Class	Lookup	A classification for the types of <a href="#">Event</a> (page 2-51)s that can occur. For example: <ul style="list-style-type: none"> <li>• IN: involves only utility</li> <li>• OUT: involves customer</li> </ul>
Event Employee Payroll	Base	The payroll made to employee, except sales commission.
Event Equipment Instance	Base	A sub-type of event, it keeps all events, occurred for a specific Equipment.
Event Geography	Base	A subtype entity of <a href="#">Event</a> (page 2-51), it keeps all events, which occurred for a specified Geographic Area which may affect the Business. For example: <ul style="list-style-type: none"> <li>• Earth Quake</li> <li>• Power Outage</li> <li>• Strike, those event may lead to unexpected network service failure</li> </ul>
Event Invoice Delivery	Base	The delivery of <a href="#">Invoice</a> (page 2-60) to customer. For example: <ol style="list-style-type: none"> <li>1. Printed letter</li> <li>2. Email</li> <li>3. Duplicate Printed Letter on request</li> </ol>
Event Loyalty Program	Base	Events associated with each event or transaction on customer loyalty program. For example: Customer earn Loyalty points Bonus points are awarded to the customer Points are redeemed by <a href="#">Customer</a> (page 2-45). This entity may be better named as "event account balance change".
Event Party Assignment	Base	This entity relates parties with events. A <a href="#">Party</a> (page 2-69) can have many events; and an event can involve many parties.
Event Party Interaction	Base	The Party Interactions table records all interactions or communications with the customer. The interactions include: - outages - inbound and outbound telemarketing - direct mail, SMS, email - service calls - complaints - Debt collection.
Event Party Interaction Call	Base	Sub type of <a href="#">Event Party Interaction</a> (page 2-52), which represents all phone call interactions from the customer with details information including: holding, queuing, interaction time, run by the Automated Voice Response.
Event Party Interaction Email	Base	Sub type of <a href="#">Event Party Interaction</a> (page 2-52), which represents the email interaction from customers.
Event Party Interaction Item	Base	When multiple threads are discussed in a single interaction event, this line item lists the involved threads and other information including accounts, subscriptions, and so on. This is also the M:M relationship between the interaction thread and the event.
Event Party Interaction Letter	Base	Sub Type of <a href="#">Event Party Interaction</a> (page 2-52), which represents the interaction with customer through letter.
Event Party Interaction Participation	Base	Tracks multiple employees who participate in a same interaction with a customer.
Event Party Interaction Visit	Base	Subtype of Interaction event, to record all the visits to the stores (for sales or supports). Some shops equipped with Queuing machine can track customers queue Time, No Show, and so on.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Event Party Profile	Base	The Party Event table track all changes to party information. For example: <ul style="list-style-type: none"> <li>Address update</li> <li>Marital status change</li> </ul>
Event Party Role	Lookup	The code for the role that a <a href="#">Party</a> (page 2-69) has with an <a href="#">Event</a> (page 2-51). For example: customer who reported the event, customer affected by event, party who caused the event.
Event Reason	Lookup	The reason that an event occurred and their descriptions. For example as account suspension because of arrearage.
Event Reason Category	Lookup	Provide an higher category for event reasons applied to each sub event entity.
Event Resolution	Lookup	The domain of results that may occur in the resolution of an <a href="#">Event</a> (page 2-51).
Event Response Reason	Lookup	A reason for a particular response obtained for an event.
Event Result	Lookup	Lookup for the description of a result or any events. For example: <ul style="list-style-type: none"> <li>Successfully processed</li> <li>Escalated</li> <li>Refused by CSP Refused by customer</li> <li>Impossible</li> <li>Failed</li> <li>Process error</li> </ul>
Event Status	Base	Describes the event status such as completed, pending, in progress, suspended, canceled, abandoned.
Event Status Reason	Lookup	This entity describes the reason for the event status. For example, if the event status is rejected, the event status reason will describe the reason the event was rejected. Reasons include insufficient funds, card reported as stolen, and so on.
Event Status Type	Lookup	This entity describes the event status such as completed, pending, in progress, suspended, canceled, abandoned, and so on.
Event Type	Lookup	This entity keeps all types of events under each category: For example: <ol style="list-style-type: none"> <li>In Loyalty Program event <ol style="list-style-type: none"> <li>Points Accumulation.</li> <li>Redemption.</li> </ol> </li> <li>Account Suspension (because of late payment, and so on).</li> </ol>
Event Web Registration	Base	The event of customer registering at website to apply for service. The potential customer can register at website to apply for service. The call center then call them to confirm the order. Before the order was generated, the application form info (date, and so on) was saved in web registration with pointer to <a href="#">Party</a> (page 2-69) and Initiate.
Event Web Visit	Base	Subtype of Customer Interaction event, to track the customer visit on service provider website. This Web Visit Event contains the customer visit Session, and details of visited pages are in Interaction Navigation History.
External Credit Profile	Reference	A source of information that helps define a credit worthiness of the customer.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
External Credit Profile Assignment	Reference	To indicate which external agency/institute provided the credit profile for the given customer.
External Information Source	Reference	Represents the source from which the Demographic Information or customer information is obtained.
External Organization Type	Lookup	Type of the external organization.
FACTS Device	Reference	FACTS device asset.
FACTS Device Kind ENUM	Lookup	Type of FACTS device.
Fault	Reference	Abnormal condition causing current flow through conducting equipment, such as caused by equipment failure or short circuits from objects not typically modeled. For example, a tree falling on a line.
Fault Indicator Info	Reference	Parameters of fault indicator asset.
Fault Indicator Reset Kind ENUM	Lookup	Type of resetting the fault indicators.
Feeder	Reference	Substation feeder.
Feeder Substation Assignment	Reference	Substation a feeder is connected.
Final Reading	Base	Value measured by a meter or other asset, or calculated by a system. Each Reading is associated with a specific <a href="#">Reading Type</a> (page 2-78).
Financial Info	Reference	Various current financial properties associated with a particular asset. Historical properties may be determined by <a href="#">Activity Record</a> (page 2-35)s associated with the asset.
Fiscal Quarter	Reference	Quarter level in the fiscal calendar.
Fiscal Year	Reference	Year level in the fiscal calendar.
Flexible Characteristic	Reference	An abstracted entity to provide common structure for all type of characteristics. All various type of characteristics may be applicable to the subject, including product, service, network element, and so on. This is a flexible way to define addition attributes for those entities with complex features.
Flexible Characteristic Value	Reference	Possible values that a characteristic may take, including predefined choices, or free numeric values.
Flood Information	Base	Flood Information
Frequency Converter	Reference	A device to convert from one frequency to another (for example, frequency F1 to F2) comprises a pair of FrequencyConverter instances. One converts from F1 to DC, the other converts the DC to F2.
Fuse	Reference	An overcurrent protective device with a circuit opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse is considered a switching device because it breaks current.
Gate Input Pin	Reference	Input pin for a special protection scheme gate.
Gen Unit Op Cost Curve	Reference	Relationship between unit operating cost (Y-axis) and unit output active power (X-axis). The operating cost curve for thermal units is derived from heat input and fuel costs. The operating cost curve for hydro units is derived from water flow rates and equivalent water costs.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Gen Unit Op Schedule	Reference	The generating unit's Operator-approved current operating schedule (or plan), typically produced with the aid of unit commitment type analyses. The X-axis represents absolute time. The Y1-axis represents the status (0=off-line and unavailable: 1=available: 2=must run: 3=must run at fixed power value: and so on.). The Y2-axis represents the must run fixed power value where required.
Gender	Lookup	Gender lookup table, male or female.
Generating Unit	Reference	A single or set of synchronous machines for converting mechanical power into alternating-current power. For example, individual machines within a set may be defined for scheduling purposes while a single control signal is derived for the set. In this case there would be a GeneratingUnit for each member of the set and an additional GeneratingUnit corresponding to the set.
Generating Unit Rotating Machine Assignment	Reference	Generating unit rotating machine assignment.
Generator Control Mode ENUM	Lookup	Unit control modes.
Generator Control Source ENUM	Lookup	The source of controls for a generating unit.
Generator Operating Mode ENUM	Lookup	Operating mode for secondary generator control.
Generic Action	Reference	An arbitrary switching step.
Geography Building	Reference	Building level in <a href="#">Geography Hierarchy</a> (page 2-56). This is commonly used in urban areas where the service operator can server many customers in the same building.
Geography City	Reference	City level in <a href="#">Geography Hierarchy</a> (page 2-56).
Geography Complex	Reference	Complex level in <a href="#">Geography Hierarchy</a> (page 2-56). Complex include the complexes (a few building forming enclosed area) in the city, Universities, or industrial parks, and so on. Neighborhood is also named as "Community" or "complex". A complex consists of several buildings in the urban area.
Geography Country	Reference	Country level in <a href="#">Geography Hierarchy</a> (page 2-56).
Geography County	Reference	County level in <a href="#">Geography Hierarchy</a> (page 2-56). County may be at different levels in different countries. In this model, the county is defined as a level below the city, which is close to "District".
Geography Demographic Group	Reference	A classification for a Geo-Demographic Profile attribute. Groups include: Population Characteristics, Urban/Rural, Gender, Race, Ethnic Background, Age.
Geography Demography Attribute	Reference	A classification for a Geography Profile Group. For example: for the profile group race: Percent White, Percent Black, Percent Native American, Percent Pacific Islander/Asian, Percent Persons Of Hispani.
Geography Demography Value	Reference	This entity stores the value of the Gwo demography Profile. For example: Population the value (ex 102977) will be stored here).
Geography Entity	Reference	This describes the various physical geography entities that can be created. For example Geo Entities could be Sales Region North, State, country, city, street, building, and so on.

Table 2-1 (Cont.) Utilities Data Model Entities A-H

Entity Name	Type	Description
Geography Entity Assignment	Reference	This entity defines the Geo entity name to a Hierarchy level and also defined the parent child relationship. Thus we link a hierarchy level to a physical geography entity.
Geography Entity Hier Level Assignment	Reference	Geography Entity Hierarchy Level Assignment
Geography Hierarchy	Reference	This stores the details of a Geographical hierarchy, like you might have Geo sales hierarchy, Geo customer hierarchy, Geo purchase hierarchy and so on.
Geography Hierarchy Level	Reference	Captures the geographical hierarchy along with the levels.
Geography Hierarchy Level Assignment	Reference	Assign the geography entity to the right level in the hierarchy.
Geography Level	Reference	This entity stores all the geographical levels as required by the analytics. Level definitions could be as simple as Level 1, level 2 or could be Geo 1, Geo 2 and so on.
Geography Level Attribute	Reference	This stores the attributes at a specific geographical level.
Geography Level Attribute Value	Reference	This entity stores the various <a href="#">Geography Level Attribute</a> (page 2-56)s. For example, in a Sales hierarchy you have North sales region and you want to store the population of that region. It can stored here in this entity.
Geography Region	Reference	Region level in <a href="#">Geography Hierarchy</a> (page 2-56).
Geography State	Reference	State level in <a href="#">Geography Hierarchy</a> (page 2-56).
Geography Street	Reference	City level in <a href="#">Geography Hierarchy</a> (page 2-56).
Geography Sub Region	Reference	Sub region level in <a href="#">Geography Hierarchy</a> (page 2-56).
Geography World	Reference	World level in <a href="#">Geography Hierarchy</a> (page 2-56).
GL Account	Reference	The GL accounts are defined to track financial status from a specific angle. All GL Journals are posted to various GL Accounts to reflect financial impact of each business transaction. Each account are defined by certain codes and flags, including whether the account is enabled, whether detail posting or detail budgeting is allowed, and others. Segment values are stored in the SEGMENT columns. Each Segment column links the GL Account to the corresponding GL Segment record. Moreover, the SEGMENT columns that are used are not guaranteed to be in any order. Summary accounts have SUMMARY_FLAG = 'Y' and TEMPLATE_ID not NULL. Detail accounts have SUMMARY_FLAG = 'N' and TEMPLATE_ID NULL.
GL Account Assignment	Reference	Defines the relationship between two <a href="#">GL Account</a> (page 2-56)s to form an Account Hierarchy. It stores lists of the detail accounts associated with each summary account.
GL Account Segment	Reference	Defines different types of <a href="#">GL Account</a> (page 2-56), including Cash, Bank, Equipment, and so on.
GL Account Type	Lookup	General Ledger Account type. For example: <ul style="list-style-type: none"> <li>• Asset</li> <li>• Liability</li> <li>• Equity</li> </ul>

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
GL Balance	Base	GL Balance stores actual, budget, and encumbrance balances for detail and summary accounts. This table stores ledger currency, foreign currency, and statistical balances for each accounting period that has ever been opened. ACTUAL_FLAG is either 'A', 'B', or 'E' for actual, budget, or encumbrance balances, respectively.
GL Cost Center Segment	Reference	Subtype of GL Segment which links <a href="#">GL Account</a> (page 2-56) to a specific Cost Center.
GL JE Line Subledger Assignment	Base	Defines the relationship between <a href="#">GL Journal Entry Line</a> (page 2-57)s and Subledger journal entry Lines. It stores individual transactions from subledgers that have been summarized into General Ledger journal entry lines.
GL Journal Entry	Base	GL Journal Entry Header stores journal entries. There is a one-to-many relationship between journal entry batches and journal entries. Each record includes the associated batch ID, the journal entry name and description, and other information about the journal entry. This table corresponds to the Journals window of the Enter Journals form. STATUS is 'U' for unposted and 'P' for posted. Other status indicate that an error condition was found. CONVERSION_FLAG equal to 'N' indicates that you manually changed a converted amount in the Journal Entry Lines zone of a foreign currency journal entry. In this case, the posting program does not re-convert your foreign amounts. This can happen only if your user profile option MULTIPLE_RATES_PER_JE is 'Yes'. BALANCING_SEGMENT_VALUE is null if there is only one balancing segment value in your journal entry. If there is more than one, BALANCING_SEGMENT_VALUE is the greatest balancing segment value in your journal entry.
GL Journal Entry Batch	Base	GL Journal Entry Batch stores journal entry batches. Each row includes the batch name, description, status, running total debits and credits, and other information. This table corresponds to the Batch window of the Enter Journals form. STATUS is 'U' for unposted, 'P' for posted, 'S' for selected, 'I' for in the process of being posted. Other values of status indicate an error condition. STATUS_VERIFIED is 'N' when you create or modify an unposted journal entry batch. The posting program changes STATUS_VERIFIED to 'I' when posting is in process and 'Y' after posting is complete.
GL Journal Entry Category	Lookup	GL_JE_CATEGORIES_TL stores journal entry categories. Each row includes the category name and description. Each journal entry in your General Ledger application is assigned a journal entry category to identify its purpose. For example, Purchase Invoices, Receiving, and so on.
GL Journal Entry Line	Base	GL Journal Entry Line stores the journal entry lines to track changes to each <a href="#">GL Account</a> (page 2-56) made by a certain GL Journal Entry. There is a one-to-many relationship between journal entries and journal entry lines. Each row in this table stores the associated journal entry header ID, the line number, the associated code combination ID, and the debits or credits associated with the journal line. STATUS is 'U' for unposted or 'P' for posted.

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
GL Ledger	Reference	GL Ledger stores information about the ledgers and the ledger sets defined in the Financial system. Each row includes the ledger or ledger set name, short name, description, ledger currency, calendar, period type, chart of accounts, and other information. A GL Ledger is defined by 4C, chart of accounts(COA), functional currency, accounting calendar, and Accounting method.
GL Ledger Account Assignment	Reference	Assign the GL accounts to Ledgers to form the Chart Of Account (COA).
GL Org Bsns Unit Segment	Reference	Assigns the <a href="#">GL Account</a> (page 2-56) to corresponding <a href="#">Organization Business Unit</a> (page 2-66).
GL Period	Reference	GL Period stores information about the accounting periods you define using the Accounting Calendar form. Each row includes the start date and end date of the period, the period type, the fiscal year, the period number, and other information.
GL Product Specification Segment	Reference	Assigns the <a href="#">GL Account</a> (page 2-56) to corresponding Product.
GL Project Segment	Reference	Assigns the <a href="#">GL Account</a> (page 2-56) to corresponding Projects.
GL Segment	Reference	Each <a href="#">GL Account</a> (page 2-56) consists of a few independent segments, which are determined by Financial System setup.
GL Segment Type	Lookup	Type of <a href="#">GL Segment</a> (page 2-58). For example, Project, Account, Project, and so on.
GL Subledger	Reference	GL Subledger is the subsidiary ledger, and stores original business transaction information that varies depending on the application. It includes at least a row for each application, who may feed financial journal entries into GL application.
GL Subledger Journal Entry	Base	GL Subledger Journal Entry stores subledger journal entries. The subledger Journal Ledger record the transaction at original level, that is, each invoice, or each Purchase Order should have one entry in subledger journal entry.
GL Subledger Journal Entry Line	Base	GL Subledger Journal Entry Line stores the subledger journal entry lines. There is a one-to-many relationship between subledger journal entry headers and subledger. The GL Subledger Journal Entry Line breaks down the subledger JE into different <a href="#">GL Account</a> (page 2-56)s.
Gross To Net Active Power Curve	Reference	Relationship between the generating unit's gross active power output on the X-axis (measured at the terminals of the machine(s)) and the generating unit's net active power output on the Y-axis (based on utility-defined measurements at the power station). Station service loads, when modeled, should be treated as non-conforming bus loads. There may be more than one curve, depending on the auxiliary equipment that is in service.
Ground Disconnecter	Reference	A manually operated or motor operated mechanical switching device used for isolating a circuit or equipment from ground.
Ground Switch	Reference	A switch used to connect to ground. These are not normally carry power, but are important for fault analysis, unbalanced analysis, or for grounding considerations.
Head End System	Reference	Headend system to collect meter data and send to utility through AMI (Advanced Metering Infrastructure).

**Table 2-1 (Cont.) Utilities Data Model Entities A-H**

Entity Name	Type	Description
Hour	Reference	This table contains information at the hour level.
Hour Time of Use Assignment	Reference	Assign time of use to an hour.
Household	Reference	Captures household information which the individual customer may belong to. Operator may recognize household by customer's shared address and then generate this data according to the customer's demographic value.
Hydro Energy Conversion Kind ENUM	Lookup	Specifies the capability of the hydro generating unit to convert energy as a generator or pump.
Hydro Generating Unit	Reference	A generating unit whose prime mover is a hydraulic turbine. For example: Francis, Pelton, Kaplan.

**Table 2-2 Utilities Data Model Entities I-P**

Entity Name	Type	Description
Identified Object	Reference	This is a root class to provide common identification for all classes needing identification and naming attributes.
Incident	Base	Description of a problem in the field that may be reported in a trouble ticket or come from another source. It may have to do with an outage.
Incident Work Assignment	Reference	To define relationship between Work and Incident including the history of the relationship.
Individual Demography Value	Reference	Individual demography value, the detailed information and its value collected about customers. For example age will have Demography group as AGE, Attribute as various bands and value as 15 years which will be stored in this entity.
Initial Reading	Base	Data captured at regular intervals of time. Interval data could be captured as incremental data, absolute data, or relative data. The source for the data is usually a tariff quantity or an engineering quantity. Data is typically captured in time-tagged, uniform, fixed-length intervals of 5 min, 10 min, 15 min, 30 min, or 60 min. Interval Data is sometimes also called "Interval Data Readings" (IDR).
Initiative Result Type	Lookup	Lookup for all possible result of initiatives.
Initiative Type	Lookup	The lookup for different types of Initiatives.
Installment Agreement	Reference	The installment payment scheme for customer bills.
Interaction Answer Choice	Base	Describes the pre-defined answers(Choices) for the Initiative Questions table. The Initiative Answers table is only used if the questions have answers in the multiple-choice format.
Interaction Channel	Reference	Keep channels which is used for interacting between provider and customer. For example, call center, online business system, counter.
Interaction Direction	Lookup	A reference table that documents whether the primary intent of an initiative is for inbound or outbound communications.
Interaction Navigation History	Base	The history of customer navigation path in each interaction call, or web visit. For example, in IVR call, customer may go through Welcome, then (1) Outages, then (1) Account balance query. Those actions are realized as three records here.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Interaction Navigation Item	Reference	Interaction Navigation Item tracks all the possible places where customer may go to in the IVR or Web service context.
Interaction Priority Type	Lookup	The different priorities which can be assigned to each party interaction.
Interaction Question Response	Base	Tracks the responses provided by the customer to the questions asked as part of the communication with the customer.
Interaction Reason	Lookup	Interaction reason table is to track why the interaction happened. For example: <ul style="list-style-type: none"> <li>• Debt Collection</li> <li>• Service Call</li> <li>• Inbound Marketing</li> <li>• Outbound Marketing (link to promotion) customer complaints</li> <li>• Customer Invoice Inquiry</li> </ul>
Interaction Result Type	Lookup	Type of response received from customer interaction. For example: Showed Interest without Decision, Offer accepted, Never call again, and so on.
Interaction Status	Lookup	Interaction Status is a reference table the documents the various states an interaction with a customer may be in. For example: <ul style="list-style-type: none"> <li>• Planned</li> <li>• In-progress</li> <li>• Executed</li> <li>• Closed</li> </ul>
Interaction Transfer History	Base	Interaction Transfer History
Interaction Transfer Reason	Lookup	The reason that an interaction is transferred from one agent to another one. For example, wrong routing, Another <a href="#">Business Interaction</a> (page 2-39)s, to supervisor, and so on.
Interaction Type	Lookup	Interaction Types s a reference table that describes the different types of interaction between the company and a customer. For example: <ol style="list-style-type: none"> <li>1. eMail</li> <li>2. Call Center Inbound               <ol style="list-style-type: none"> <li>2.1 Call center inbound complain</li> <li>2.2 Call center inbound query</li> </ol> </li> <li>3. Call Center Outbound               <ol style="list-style-type: none"> <li>3.1 Call Center outbound service quality survey</li> </ol> </li> <li>4. Walk-In</li> <li>5. Letter.</li> </ol>
Interharmonics	Lookup	Interharmonics are represented as a rational number with a numerator and a denominator.
Invoice	Base	The Invoices table documents each invoice issued to each account. An invoice represents the request for payment for goods and services during a specified period.
Invoice Adjustment	Base	This is to record all adjustment made on the invoices. In current design, Adjustment ID & Invoices code serve the primary, therefore, 1 adjustment could make change to multiple invoices.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Invoice Adjustment Quota	Reference	Invoice adjustment quota are assigned to employee according to their job role and levels.
Invoice Delivery Format	Lookup	The format specification (including header, font, and so on) of each invoice delivered to the customer.
Invoice Delivery Type	Lookup	Type of delivery of Invoice to customer. For example: 1. Printed letter 2. Email 3. Duplicate Printed Letter on request.
Invoice Discount	Base	This is to track all discount applied to the invoices. It's on the invoice level. For example, if you want to reward all your customers who pay by credit card, you can create the payment discount for all invoices belonging to those customers.
Invoice Discount Reason	Lookup	The reason why the discount was put on the invoice.
Invoice Discount Type	Lookup	The categories of discounts applied to a <a href="#">Customer</a> (page 2-45) Invoices.
Invoice Item	Base	Invoice Item holds all components that appear on the invoice.
Invoice Item Detail	Base	Provide additional information for specific <a href="#">Invoice Item</a> (page 2-61).
Invoice Item Detail Type	Lookup	Specify the type to the charge detail.
Invoice Item Relationship	Base	Defines the relationship between <a href="#">Invoice Item</a> (page 2-61)s.
Invoice Item Type	Lookup	Invoice Detail Types is a reference table that describes the different types of information available in the Invoice Details table.
Invoice Payment Assignment	Base	To indicate which payment reconcile which invoice.
Invoice Payment Term	Base	Payment Terms of each invoices. For example: payment days and late payment fee, and so on. The late payment fee might be calculated according to invoice value and payment date.
Invoice Payment Term Type	Lookup	The term for payment. It maybe be by the time aspect. For example Monthly, and with how to calculate the penalty for defaults for month/year.
Invoice Status History	Base	Status history for an invoice. For example, the invoice may experience status change from open to closed, or from open to extended.
Invoice Status Type	Lookup	Type of invoice status. For example <ul style="list-style-type: none"> <li>• Open (not paid)</li> <li>• Closed (paid)</li> <li>• Extended (due date is changed)</li> </ul>
Invoice Tax Item	Base	The Tax item applied to the Invoice.
Invoice Type	Lookup	Type of invoice according to invoice generation process. For example: 1. Summary Invoice for hierarchical account. 2. Standard Invoice. 3. Trial Billing Invoice.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Irregular Interval Schedule	Reference	The schedule has time points where the time between them varies.
Irregular Time Point	Reference	Time points for a schedule where the time between the points varies.
IVR Menu Item	Lookup	The IVR Menu Item, which can be used to construct the whole IVR navigation system. Each IVR menu item represent a group or a specific business function.
Job	Reference	The type of occupation that customer is currently taking, which is the principal activity customer do to earn money.
Job Role	Reference	The job role.
Joint	Reference	Joint connects two or more cables. It includes the portion of cable under wipes, welds, or other seals.
Joint Configuration Kind ENUM	Lookup	Configuration type for joints.
Joint Fill Kind ENUM	Lookup	Fill type for Joint.
Journal Entry Line Invoice Item Assignment	Base	Cross-Reference from Subledger Journal Entry Line to <a href="#">Invoice Item</a> (page 2-61).
Jumper	Reference	A short section of <a href="#">Conductor</a> (page 2-43) with negligible impedance which can be manually removed and replaced if the circuit is de-energized. Zero-impedance branches can potentially be modeled by other equipment types.
Jumper Action	Reference	Action on jumper as a switching step.
Language	Lookup	Speaking or written language.
Letter Type	Lookup	Type of Letter send to customer according to the content and purpose. For example: <ul style="list-style-type: none"> <li>• Direct Marketing</li> <li>• Legal Letter</li> <li>• Contract Confirmation letter (Welcome)</li> </ul>
Lifecycle Date	Reference	Dates for lifecycle events of an asset.
Limit	Reference	Specifies one limit value for a <a href="#">Measurement</a> (page 2-64). A <a href="#">Measurement</a> (page 2-64) typically has several limits that are kept together by the LimitSet class. The actual meaning and use of a Limit instance (that is, if it is an alarm or warning limit or if it is a high or low limit) is not captured in the Limit class. However the name of a Limit instance may indicate both meaning and use.
Limit Set	Reference	Specifies a set of Limits that are associated with a <a href="#">Measurement</a> (page 2-64). A <a href="#">Measurement</a> (page 2-64) may have several LimitSets corresponding to seasonal or other changing conditions. The condition is captured in the name and description attributes. The same LimitSet may be used for several <a href="#">Measurement</a> (page 2-64)s. In particular percentage limits are used this way.
Line	Reference	Contains equipment beyond a substation belonging to a power transmission line.
Load Area	Reference	The class is the root or first level in a hierarchical structure for grouping of loads for load flow load scaling.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Load Break Switch	Reference	A mechanical switching device capable of making, carrying, and breaking currents under normal operating conditions.
Load Group	Reference	The class is the third level in a hierarchical structure for grouping of loads for load flow load scaling.
Load Response Characteristic	Reference	Models the characteristic response of the load demand due to changes in system conditions such as voltage and frequency. This is not related to demand response. If LoadResponseCharacteristic.exponentModel is True, the voltage exponents are specified and used as to calculate: Active power component = Pnominal * (Voltage/cim:BaseVoltage.nominalVoltage) ** cim:LoadResponseCharacteristic.pVoltageExponent Reactive power component = Qnominal * (Voltage/cim:BaseVoltage.nominalVoltage)** cim:LoadResponseCharacteristic.qVoltageExponent Where * means "multiply" and ** is "raised to power of".
Location	Reference	The place, scene, or point of something where someone or something has been, is, and/or will be at a given moment in time. It can be defined with one or more position points (coordinates) in a given coordinate system.
Loyalty Program	Reference	The Loyalty Programs table identifies the marketing loyalty programs that a customer may be a member of.
Loyalty Program Event Type	Lookup	The Loyalty Program Event Types table is a reference table that describes the categories of events that can be applied against a <a href="#">Party</a> (page 2-69) and loyalty program.
Maintainer	Reference	Organization that maintains assets.
Manufacturer	Reference	Organization that manufactures asset products.
Marital Status	Lookup	Marital Status
Market Area	Reference	Market Area denotes a geographic area for which resident demographic data is available.
Market Area Level	Reference	Level of classification inside the market areas. This classification can be based on, 1. Community: This represented as the one set of demographic attributes as described in the demography entity. 2. Geographic 3. User defined.
Market Plan Document Requirement	Reference	Defines the customer document requirements of each service or product market plan.
Market Role	Reference	Market Role
Market Segment	Reference	A market segment is identified to group certain common areas where business can be conducted.  For example, a group of persons, a specific geographical area, and so on. Customer Segment and Marketing Segment: The market segments are defined according to manual marketing analysis, or external marketing source, while the Customer Segments are normally generated from Mining activities on existing customer base.
Market Segment Inclusion	Reference	The inclusion relationship between two market segments.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Measurement	Base	A Measurement represents any measured, calculated or non-measured non-calculated quantity. Any piece of equipment may contain <a href="#">Measurement</a> (page 2-64)s. For example, a substation may have temperature measurements and door open indications, a transformer may have oil temperature and tank pressure measurements, a bay may contain a number of power flow measurements and a <a href="#">Breaker</a> (page 2-38) may contain a switch status measurement. The PSR - Measurement association is intended to capture this use of <a href="#">Measurement</a> (page 2-64) and is included in the naming hierarchy based on <a href="#">Equipment Container</a> (page 2-51). The naming hierarchy typically has <a href="#">Measurement</a> (page 2-64)s as leafs. For example, Substation-VoltageLevel-Bay-Switch-Measurement. Some <a href="#">Measurement</a> (page 2-64) represent quantities related to a particular sensor location in the network. For example, a voltage transformer (PT) at a busbar or a current transformer (CT) at the bar between a breaker and an isolator. The sensing position is not captured in the PSR - Measurement association. Instead it is captured by the Measurement - Terminal association that is used to define the sensing location in the network topology. The location is defined by the connection of the Terminal to <a href="#">Conducting Equipment</a> (page 2-43). If both a Terminal and PSR are associated, and the PSR is of <a href="#">Conducting Equipment</a> (page 2-43), the associated Terminal should belong to that <a href="#">ConductingEquipment</a> instance. When the sensor location is needed both Measurement-PSR and Measurement-Terminal are used. The Measurement-Terminal association is never used alone.
Measurement Kind	Lookup	Kind of measurements.
Measurement Location	Reference	Location a measurement is made.
Measurement Value	Base	The current state for a measurement. A state value is an instance of a measurement from a specific source. Measurements can be associated with many state values, each representing a different source for the measurement.
Measurement Value Quality	Reference	Measurement value quality defined by its attributes.
Measurement Value Source	Reference	Measurement Value Source describes the alternative sources updating a <a href="#">Measurement Value</a> (page 2-64). User conventions for how to use the Measurement Value Source attributes are described in the introduction to IEC 61970-301.
Media Object	Reference	This is any object the campaign message may appear on. Like a Page in the newspaper, or a time slot in the TV broadcasting.
Media Object Assignment	Reference	Build the <a href="#">Media Object</a> (page 2-64) into a hierarchy, with certain levels.
Media Object Type	Lookup	Type of the media object. For example: <ul style="list-style-type: none"> <li>• Newspaper</li> <li>• TV</li> <li>• Journal</li> </ul>
Meter	Reference	Physical asset that performs the metering role of the usage point. Used for measuring consumption and detection of events.
Meter Identifier	Reference	Identifiers a meter may have.
Meter Reading	Base	Set of values obtained from the meter.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Meter Reading Day Drvd	Derived	Derived fact table on daily meter reading.
Meter Reading Hour Drvd	Derived	Derived fact table on hourly meter reading.
Meter Reading Month Aggr	Aggregate	Aggregate fact table on meter reading by month.
Meter Reading TOU Month Aggr	Aggregate	Aggregate fact table on time of use meter reading by month.
Meter Register Assignment	Reference	Meter Register Assignment.
Meter Service Work	Reference	Work involving meters.
Meter Status	Lookup	Lookup for status. For example: <ul style="list-style-type: none"> <li>• Buy</li> <li>• Not Buy</li> <li>• Suspended</li> <li>• Active</li> </ul>
NAICS Classification	Reference	The North American Industry Classification System (NAICS) has replaced the U.S. Standard Industrial Classification (SIC) system. This is an example for NAICS classification for banking: 52 Finance and Insurance 521 Monetary Authorities - Central Bank.
Nationality	Lookup	Nationality
Non Conform Load	Reference	Non conform load represent loads that do not follow a daily load change pattern and changes are not correlated with the daily load change pattern.
Non Conform Load Group	Reference	Loads that do not follow a daily and seasonal load variation pattern.
Non Conform Load Schedule	Reference	An active power (Y1-axis) and reactive power (Y2-axis) schedule (curves) versus time (X-axis) for non-conforming loads. For example, large industrial load or power station service (where modeled).
Nuclear Generating Unit	Reference	A nuclear generating unit.
Operating Participant	Reference	An operator of multiple power system resource objects. Multiple operating participants may operate the same power system resource object. This can be used for modeling jointly owned units where each owner operates as a contractual share.
Operating Share	Reference	Specifies the operations contract relationship between a power system resource and a contract participant.
Operation Tag	Reference	Operation Tag
Operational Limit	Reference	A value associated with a specific kind of limit.
Operational Limit Set	Reference	A set of limits associated with equipment. Sets of limits might apply to a specific temperature, or season. For example, a set of limits may contain different severities of limit levels that would apply to the same equipment. The set may contain limits of different types such as apparent power and current limits or high and low voltage limits that are logically applied together as a set.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Operational Restriction	Reference	A document that can be associated with a conducting equipment to describe any sort of restrictions compared with the original manufacturer's specification or with the usual operational practice. For example, temporary maximum loadings, maximum switching current, do not operate if bus couplers are open, and so on.
Oracle Geometry	Reference	Oracle Geometry is a super entity to all geographical entities, with SDO_GEOMETRY attribute as defined in Oracle Database 11g.
Organization Area	Reference	Areas within an organization chain.
Organization Banner	Reference	The name of company, organization, or subsidiary that is recognizable to the consumer or the name of the store as it appears on the catalog, web channel, or brick and mortar store. Holds the information about different organization banners under which product or service are sold.
Organization Business Entity	Reference	Any logical entity that is recognized as a part of the enterprise for business analysis and transactions. Classification for a business entity can include company, operation unit, store, or warehouse. Business Entity in an Organization represent any logical entity that is recognized as an enterprise for Business analysis and transactions. Possible classifications for a Business Entity can include, Company, Operation Units, Stores, Warehouse and so on.
Organization Business Unit	Reference	A business unit of the organization that delivers a limited range of specific services through any sales channel. For example: retail or distribution.
Organization Business Unit Type	Lookup	Type of <a href="#">Organization Business Unit</a> (page 2-66). For example: <ol style="list-style-type: none"> <li>1. Call center</li> <li>2. Branch Office.</li> <li>3. Warehouse</li> </ol>
Organization Chain	Reference	Organization hierarchy level within an organization company and is the parent of one or more organization areas.
Organization Company	Reference	Organization hierarchy level within an organization corporate and is the parent of one or more organization chains.
Organization Corporate	Reference	Highest level of organization hierarchy and is the parent of one or more organization companies.
Organization District	Reference	Organization hierarchy level within organization corporate.
Organization Hierarchy	Reference	User defined. Master list of all of the hierarchies in an organization.
Organization Hierarchy Level	Reference	The association table for the hierarchies and levels.
Organization Hierarchy Level Assignment	Reference	Assignment of Hierarchy Levels to organization hierarchy. Assignment table for Hierarchy levels to the Business Entities.
Organization Hierarchy Version	Reference	Version of organization hierarchy. The version table for the hierarchies.
Organization Level	Reference	List of all the business levels inside the organization.
Organization Level Attribute Value	Reference	Attributes of a business entity.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Organization Level Attributes	Reference	Attributes assigned to an organization level. Attributes applicable only to the corresponding level in the organization. Possible values that can be stored in this entity can be, Regional Language.
Organization Market Data	Reference	Publicly available and statistical information regarding the internal or external parties, such as DUNS number and number of employees. Market related information about an Organization. In LDM the Organization Market Data entity has the SIC code and DUNS number. Duns Numbers are specific to Organizations where as SIC codes are for Industry sectors.
Organization Region	Reference	Organization hierarchy level within an organization area and is the parent of one or more organization districts. Holds region within a company, chain area.
Organization Role	Reference	Identifies a way in which an organization may participate in the utility enterprise (for example, customer, manufacturer, and so on).
Organization Service Website	Reference	Sub-type of the organization business unit, it collects all information on (normally public) website managed by the operator. A website owned/commissioned by the organization from where product/services can be purchased and supported.
Organization Warehouse	Reference	The location at which un-deployed assets are maintained. A place in which goods or merchandise are stored; a storehouse.
Organizational Demography Value	Reference	User defined attribute definitions and corresponding values regarding demographic statistics as related to an organization business unit. This entity stores the detailed information and its value collected about organizations.
Other Individual	Reference	Individual party associated with a party organization other than those defined such as <a href="#">Customer</a> (page 2-45) or <a href="#">Employee</a> (page 2-49). For example, the contact person of a vendor, the chairman of a dealer.
Outage	Base	Document describing details of an active or planned outage in a part of the electrical network. A non-planned outage may be created upon:-a breaker trip, a fault indicator status change, a meter event indicating customer outage, a reception of one or more customer trouble calls, or an operator command, reflecting information obtained from the field crew. Outage restoration may be performed using a switching plan which complements the outage information with detailed switching activities, including the relationship to the crew and work. A planned outage may be created upon: a request for service, maintenance or construction work in the field, or an operator-defined outage for what-if/contingency network analysis. The associated outage plan defines operational restrictions and atomic switch actions to define the changes that, after applied, would result in a total or partial equipment outage as required for network analysis.
Outage By Day Drvd	Derived	Derived fact table on outage by day.
Outage By Month Aggr	Aggregate	Aggregate fact table on outage by month.
Outage By Usage Point Drvd	Derived	Derived fact table on outage by usage point.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Outage Code	Reference	Classification of outage types. Multiple outage codes may apply to a given outage or outage step. The primary overall outage type is recorded in 'OutageRecord.outageType'. There may be more than one classification per outage step and/or per outage record. Example codes/subcodes include: weather/ice, weather/lightning, wildlife/squirrel, wildlife/bird, burned/overload, burned/weather, wire down/accident, wire down/tree, wire down/vandalism, and so on. The typical outage code is in the inherited association to Name. The code is described in the inherited "description" attribute.
Outage Notification	Reference	A document containing information to be sent to customers notifying that an outage will take place. This generates mailing lists for customers.
Outage Plan	Reference	Document containing operational restrictions and atomic switch actions to define the changes in the network that, after applied, would result in a total or partial equipment outage, as required for network analysis.
Outage Record	Base	Document describing details of an outage in part of the electrical network, typically produced by a SCADA system following a breaker trip, or within a trouble call system by grouping customer calls. It has an associated outage step for each supply point. Primary cause of the outage is captured in 'type'. In some countries all outage restoration is performed using a switching schedule which complements the outage record and records the crew and any planned work. In other systems, it may be acceptable to manage outages including new work tasks without switching schedules. The relationship between OutageRecord and ErpPerson and Crew is inherited as each is a type of Document.
Outage Record Code Assignment	Reference	Outage Record Code Assignment.
Outage Report	Reference	Document with statistics of an outage.
Outage Schedule	Reference	The period that a piece of equipment is out of service. For example: for maintenance or testing; including the equipment's active power rating while under maintenance. The X-axis represents absolute time and the Y-axis represents the equipment's available rating while out of service.
Outage Step	Reference	Holds an outage start and end time for each supply point of an outage record. The supply point for a given step is the associated <a href="#">Power System Resource</a> (page 2-74) instance.
Outage Step Code Assignment	Reference	Code assigned to an outage step.
Outage Usage Point Assignment	Reference	Usage points involved in an outage including history.
Partner Promotion Program	Reference	Assigns costs of a given promotion to a Partner or <a href="#">Party</a> (page 2-69) participating in the promotion. The service provider may partner with another Service Provider or with sales partner to do joint promotion jointly.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Party	Reference	A party is a real person, organization, branch, subsidiary, legal entity, holding company, and so on. Any real thing that you would want to put a name to is a party. The attributes of a party are universal. In other words, they are independent of your selling (or ultimately buying) relationship with the party. A party is not necessarily a customer. It can represent prospects as well as parts of an organization's hierarchy (branches, head offices, corporate conglomerates) that may not necessarily have a billing relationship with the company. Any party that has an active account can be considered a customer. Historical information concerning the party is available in the Parties History table.
Party Account Assignment	Reference	This entity keeps relationship between party and account. For example: <ol style="list-style-type: none"> <li>1. A party owns the account. It does not have to be the customer. Then this assignment tracks the owning party of the account.</li> <li>2. A party is a warrantor of an account.</li> <li>3. A party is responsible for payment of the account.</li> </ol>
Party Account Assignment Type	Lookup	Lookup for type of relationship between <a href="#">Party</a> (page 2-69) and Account. Depending on type of party, the relationship can be: Customer owns the account multiple customers may share the same account.
Party Address Location Assignment	Reference	Associates one or more Addresses with a party. Captures history of the names and addresses associated with a party or customers.
Party Agreement Relationship	Reference	Assignment of a <a href="#">Party</a> (page 2-69) to a Contract. For example, <ol style="list-style-type: none"> <li>1. A contract belongs to a party, for example, Customer Own the Contract.</li> <li>2. The commission of Sales agent over signed contract will also be 1 relationship here.</li> </ol>
Party Assignment	Reference	Association of a <a href="#">Party</a> (page 2-69) with one or more other Parties. The relationships may include those among customers or between customer and the utility.
Party Assignment Reason	Lookup	Lookup for valid reasons parties may be associated with each other. For example: Cooptation (customer brings in a new customer) Financial Responsibility Hierarchical relationship in the organization contractual agreement.
Party Assignment Type	Lookup	Describe the type of the party relationship. For example: <ol style="list-style-type: none"> <li>1. father &amp; son</li> <li>2. organizational hierarchy, subsidiary.</li> <li>3. Customer referral. One customer might refer another party to join certain services to gain some bonus points.</li> <li>4. Warrantor to Warrantee.</li> </ol>
Party Business Interaction Role	Reference	The <a href="#">Business Interaction Role</a> (page 2-39) which can be assigned by a <a href="#">Party</a> (page 2-69).
Party Contact Information	Reference	Contact information for a party. For example, email, cell phone number.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Party Contact Information Type	Lookup	Keep the type of contact information. For example, <ul style="list-style-type: none"> <li>• Email</li> <li>• Home telephone No</li> <li>• Office telephone No</li> <li>• Cell phone No</li> <li>• Pager No.</li> </ul>
Party Contact List Participation	Lookup	Relationship between party and <a href="#">Contact List</a> (page 2-43). For example, a party belongs to a contact list.
Party Contact List Role	Lookup	The role of the party in a <a href="#">Contact List</a> (page 2-43).
Party Cost Assignment	Base	Assignment of cost items to a <a href="#">Party</a> (page 2-69). One party may incur multiple costs. For example, for a customer acquisition the customer might be given discounts or rebates. Cost might be assigned to multiple parties. For example, for operational cost several organizations may share the same expense on a promotion or <a href="#">Campaign</a> (page 2-40).
Party Demography Value	Reference	Defines individual and organization demography value for a given party demographic profile.
Party Event Type	Lookup	Lookup for valid event types that may be assigned to a party profile for the various event types that may be actioned against a party.
Party Geography Entity Assignment	Reference	Assigns a party to one or more geography entities. Depending on type of party, relationship might be: <ol style="list-style-type: none"> <li>1. Some customer belongs to some country, visited (roamed or not) other countries.</li> <li>2. Organization's HQ is located at a city.</li> <li>3. External operation has business at some country.</li> </ol>
Party Interaction Thread	Base	Grouping of multiple related contact events regarding the common purpose with a party into a single thread. For example, If customer makes multiple calls to complain about same issue, those calls are grouped into single thread. The status history of a thread (service request) is in <a href="#">Business Interaction Status History</a> (page 2-39). The party interaction thread status can also be tracked through each "Party interaction Event". For example: <ul style="list-style-type: none"> <li>• Submit a request</li> <li>• Response to a request</li> </ul>
Party Interaction Thread Subscription Assignment	Base	The relationship between a <a href="#">Party Interaction Thread</a> (page 2-70) and the involved subscriptions.
Party Interaction Thread Type	Lookup	The type of <a href="#">Party Interaction Thread</a> (page 2-70). For example: <ul style="list-style-type: none"> <li>• Debt Collection</li> <li>• Retention Program</li> <li>• Service Request</li> </ul>
Party Language Capability	Reference	Keeps the language capability score for each <a href="#">Party</a> (page 2-69).
Party Location Reason	Lookup	The reason why a <a href="#">Party</a> (page 2-69) and a <a href="#">Location</a> (page 2-63) are connected.
Party Location Type	Lookup	The type of relationship between the <a href="#">Party</a> (page 2-69) and the address. For example, office location, Primary Living location, Product Installation Address, and so on.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Party Management Role	Lookup	This entity keep all roles which a <a href="#">Party</a> (page 2-69) plays in a <a href="#">Campaign</a> (page 2-40). such as management or potential customer.
Party Market Segment Assignment	Reference	Assign a <a href="#">Party</a> (page 2-69) to its belonging market segment.
Party Project Participation	Reference	Party project participation describe the roles of each <a href="#">Party</a> (page 2-69) in the project.
Party Promotion Response	Base	Response of a <a href="#">Party</a> (page 2-69) to a promotion. For example, positive responses: The customer accepted the offer. The customer modified their usage. The customer changed a specified behavior. For example moved from payment by check to an electronic payment option.
Party Role	Lookup	Lookup for Roles a <a href="#">Party</a> (page 2-69) may be assigned in an <a href="#">Event</a> (page 2-51). For example: <ul style="list-style-type: none"> <li>• Customer</li> <li>• Reseller</li> <li>• Manager</li> <li>• Dealer</li> <li>• Employee</li> </ul>
Party Role Assignment	Reference	Assigns party roles that the <a href="#">Party</a> (page 2-69) acted as to the <a href="#">Party</a> (page 2-69). Party roles are X-X relationship and it may change due to contract change and so on.
Party Role Status	Reference	Status history of the each Role that a <a href="#">Party</a> (page 2-69) has taken. Historical information tracked along the whole lifecycle of the <a href="#">Party</a> (page 2-69) in the system.
Party Status Category	Lookup	Higher level of Party Status. For example: <ul style="list-style-type: none"> <li>• Financial Status</li> <li>• Credit Status</li> <li>• Payment Status</li> <li>• Personal Status</li> <li>• Legal Status</li> <li>• Prospect Status</li> </ul>
Party Status Change Reason	Lookup	Lookup for valid reasons that may be assigned for a Party Status change. For example: hire, transfer, new customer.
Party Status History	Base	Keep track of current party status history, regarding to what Operator may be interested. Historical information captured for all lifetime of the customer/dealer/... This information may be calculated from internal data, like payment, or obtained from external source, like credit rating agent.
Party Status Type	Lookup	Status type of the <a href="#">Party</a> (page 2-69). For example: <ol style="list-style-type: none"> <li>1. In category of Customer Status, Values may include Active, Inactive, Defaulted, New Customer, VIP customer, Black Listed, and so on.</li> <li>2. In category of Prospect Status, Values may include New Prospect, Contacted No interests, Interested, Purchased, Rejected, and so on.</li> </ol>
Party Type	Lookup	Lookup for party type that classifies involved parties according to their inherent characteristics and structure. For example: <ul style="list-style-type: none"> <li>• Person</li> <li>• Organization</li> <li>• Organization Business Unit (Internal)</li> </ul>

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Payment Aging Class	Lookup	The classification of accounts according to payment delay history. For example: 0-10 days, 11-20 days, and so on. Postpaid customers are billed on a monthly basis for the usage of services in the month. At the end of the billing month for the customer an invoice is sent to the customer for which customer is supposed to pay by payment due date.
Payment Channel	Reference	Channel which customer used to pay for the services. For example, For POS, payment channel could be POS001, POS002, and so on. For cash, payment channel could be STORE001, STORE002, which means paying by cash in the one store.
Payment Method Type	Lookup	Customers can pay their bills, deposits, other charges by different modes of payment. For example: <ul style="list-style-type: none"> <li>• Cash</li> <li>• Check</li> <li>• Credit card</li> <li>• Debit card</li> </ul>
Payment Transaction Type	Lookup	Lookup for type codes and description of Transaction Types associated with the Account Payment The payment maybe for Periodically Invoice, Installation Fee, Pre-deposit to the account Late Pay Penalty Payment. Regular Monthly Refund / Void. The payment type like Manual Cash In, direct debit are tracked in <a href="#">Payment Method Type</a> (page 2-72).
Per Length Impedance	Reference	Common type for per-length impedance electrical catalogs.
Per Length Phase Impedance	Reference	Impedance and admittance parameters per unit length for n-wire unbalanced lines, in matrix form.
Per Length Sequence Impedance	Reference	Sequence impedance and admittance parameters per unit length, for transposed lines of 1, 2, or 3 phases. For 1-phase lines, define $x=x0=xself$ . For 2-phase lines, define $x=xs-xm$ and $x0=xs+xm$ .
Phase	Lookup	Phase such as ABC phase, A phase and so on.
Phase Code ENUM	Lookup	Enumeration of phase identifiers. Allows designation of phases for both transmission and distribution equipment, circuits and loads. Residential and small commercial loads are often served from single-phase, or split-phase, secondary circuits. For example of s12N, phases 1 and 2 refer to hot wires that are 180 degrees out of phase, while N refers to the neutral wire. Through single-phase transformer connections, these secondary circuits may be served from one or two of the primary phases A, B, and C. For three-phase loads, use the A, B, C phase codes instead of s12N.
Phase Connected Fault	Reference	Fault connection among <a href="#">Phase</a> (page 2-72)s.
Phase Connected Fault Kind ENUM	Lookup	The type of fault connection among <a href="#">Phase</a> (page 2-72)s.
Phase Impedance Data	Reference	Triplet of resistance, reactance, and susceptance matrix element values.
Phase Shunt Connection Kind ENUM	Lookup	The configuration of <a href="#">Phase</a> (page 2-72) connections for a single terminal device such as a load or capacitor.
Phase Tap Changer	Reference	A transformer phase shifting tap model that controls the phase angle difference across the power transformer and potentially the active power flow through the power transformer. This phase tap model may also impact the voltage magnitude.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Phase Tap Changer Asymmetrical	Reference	Describes the tap model for an asymmetrical phase shifting transformer in which the difference voltage vector adds to the primary side voltage. The angle between the primary side voltage and the difference voltage is named the winding connection angle. The phase shift depends on both the difference voltage magnitude and the winding connection angle.
Phase Tap Changer Linear	Reference	Describes a tap changer with a linear relation between the tap step and the phase angle difference across the transformer. This is a mathematical model that is an approximation of a real <a href="#">Phase Tap Changer</a> (page 2-72).
Phase Tap Changer Non Linear	Reference	The non-linear <a href="#">Phase Tap Changer</a> (page 2-72) describes the non-linear behavior of a <a href="#">Phase Tap Changer</a> (page 2-72). This is a base class for the symmetrical and asymmetrical <a href="#">Phase Tap Changer</a> (page 2-72) models. The details of these models can be found in the IEC 61970-301 document.
Phase Tap Changer Symmetrical	Reference	Describes a symmetrical phase shifting transformer tap model in which the secondary side voltage magnitude is the same as at the primary side. The difference voltage magnitude is the base in an equal-sided triangle where the sides corresponds to the primary and secondary voltages. The phase angle difference corresponds to the top angle and can be expressed as twice the arctangent of half the total difference voltage.
Phase Tap Changer Tabular	Reference	Describes a tabular curve for how the phase angle difference and impedance varies with the tap step.
Phase Tap Changer Tabular Point	Reference	Describes each tap step in the <a href="#">Phase Tap Changer Tabular</a> (page 2-73) curve.
Pin Voltage	Reference	Input pin that maps to a network voltage for RAS.
Planned Outage	Reference	Planned outage involves network operations which will affect the supply of power to customers. The list of <a href="#">Power System Resource</a> (page 2-74)s for the Planned Outage may be the same or a superset of the ones per Outage Step.
Planned Outage Kind ENUM	Lookup	Kind of planned outage.
Pole	Reference	Pole asset.
Pole Base Kind ENUM	Lookup	Kind of base for poles.
Pole Preservative Kind ENUM	Lookup	Preservative kind for poles.
Pole Treatment Kind ENUM	Lookup	Kind of treatment for poles.
Postal Service Type	Lookup	Type of postal service type available to the carrier. For example: <ol style="list-style-type: none"> <li>1. First-class</li> <li>2. Registered mail</li> <li>3. Regular Mail</li> <li>4. Postal Card.</li> </ol>
Postcode	Reference	Postal Code, Zip Code, or similar geographical designation.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Potential Transformer Info	Reference	Properties of potential transformer asset.
Power Cut Zone	Reference	An area or zone of the power system which is used for load shedding purposes.
Power System Resource	Reference	A power system resource can be an item of equipment such as a switch, an equipment container containing many individual items of equipment such as a substation, or an organizational entity such as sub-control area. Power system resources can have measurements associated.
Power System Resource Location	Reference	Location of a <a href="#">Power System Resource</a> (page 2-74).
Power Transformer	Reference	An electrical device consisting of two or more coupled windings, with or without a magnetic core, for introducing mutual coupling between electric circuits. Transformers can be used to control voltage and phase shift (active power flow). A power transformer may be composed of separate transformer tanks that need not be identical. A power transformer can be modeled with or without tanks and is intended for use in both balanced and unbalanced representations. A power transformer typically has two terminals, but may have one (grounding), three or more terminals. The inherited association <a href="#">Conducting Equipment</a> (page 2-43). <a href="#">Base Voltage</a> (page 2-38) should not be used. The association from Transformer End to <a href="#">Base Voltage</a> (page 2-38) should be used instead.
Power Transformer End	Reference	A Power Transformer End is associated with each Terminal of a <a href="#">Power Transformer</a> (page 2-74). The impedance values r, r0, x, and x0 of a PowerTransformerEnd represents a star equivalent as follows 1) for a two Terminal PowerTransformer the high voltage Power Transformer End has non zero values on r, r0, x, and x0 while the low voltage PowerTransformerEnd has zero values for r, r0, x, and x0. 2) for a three Terminal PowerTransformer the three Power Transformer Ends represents a star equivalent with each leg in the star represented by r, r0, x, and x0 values. 3) for a Power Transformer with more than three Terminals the Power Transformer End impedance values cannot be used. Instead use the TransformerMeshImpedance or split the transformer into multiple Power Transformers.
Power Transformer Info	Reference	Set of power transformer data, from an equipment library.
Precipitation	Base	Precipitation such as rain and snow.
Price Event	Base	Type of event which may trigger a billing process. For example, event of customer using a product over its quota.
Price Type	Lookup	Lookup for type codes and descriptions for utility services and products.
Pricing Structure	Reference	Grouping of pricing components and prices used in the creation of customer charges and the eligibility criteria under which these terms may be offered to a customer. The reasons for grouping include state, customer classification, site characteristics, classification (that is, fee price structure, deposit price structure, electric service price structure, and so on) and accounting requirements.

Table 2-2 (Cont.) Utilities Data Model Entities I-P

Entity Name	Type	Description
Pricing Structure Tariff Assignment	Reference	Pricing Structure Tariff Assignment
Priority	Reference	Priority definition.
Procedure	Reference	Documented procedure for various types of Work or Work Tasks. One or more procedures guide a compatible unit, a standard way of performing a unit of work. The type of procedure is defined in Procedure.type. For example, when type=Inspection, this procedure coupled with Schedule and other information provides the key items of an inspection plan. Another type of Procedure is a Diagnosis. Each specific value and setting to be used in a procedure is intended to be described in an instance of UserAttribute. A maintenance ticket, a type of Work, is generated whenever maintenance is determined to be needed as a result of an inspection or diagnosis.
Procedure Asset Assignment	Reference	Asset assigned to a procedure.
Procedure Kind ENUM	Lookup	Kind of procedure.
Product Asset Model	Reference	Asset model by a specific manufacturer.
Product Asset Model Function Assignment	Reference	Function assigned to a product asset model.
Product Offering	Reference	Defines how a utility service or product is brought to market.
Product Subscription	Reference	The record of customer using a product (or product package). Customer subscription is the basis of billing. One subscription may be based on contract.
Project	Reference	The business activities (Tasks) may be categorized into a specific Project according to their common purpose. [20110407] Current design focus more on financial side.
Project Element	Reference	The business activity which may happen to the utility. It is the super type of project and tasks.
Promotion	Reference	The promotion reflects the tactics an operator undertakes to generate increased incremental sales or usage volume for specific product within a promotional event. Promotions are frequently communicated as part of a marketing campaign to ensure that awareness is generated with the target audience.
Promotion Cluster Usage	Base	Assigns a particular customer segment (cluster) to a given promotion or list of promotions. The customer segments are generated by certain analytical application (including Oracle Mining) and this assignment tracks the usage of customer segment in the promotion.
Promotion Contact List Utilization	Base	This entity keeps relationship between a <a href="#">Contact List</a> (page 2-43) and a <a href="#">Campaign</a> (page 2-40). Contact list can be used to do a campaign to some customers, who have the same characters.
Promotion Management History	Base	A history of campaign party role about management of a campaign episode.
Promotion Message Rendering	Reference	Details regarding each campaign message broadcast through a media object. For example, if channel is a newspaper, then media object will be the page and the picture. For a TV advertisement, how frequently it broadcast, how long time in each broadcast.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Promotion Product Offering Assignment	Reference	Associates product market plans to a promotion, typically, when a given market plan will be offered by the promotion only during a certain period.
Promotion Relationship	Reference	Defines the relationship between two promotions.
Promotion Result Type	Lookup	Lookup for the prospect reaction to a specific promotion during a sales campaign. For example: <ul style="list-style-type: none"> <li>• Accepted Not interested</li> <li>• Interested but not accepted</li> <li>• Not Interested but other product sold</li> <li>• No response</li> </ul>
Promotion Sales Channel Assignment	Reference	The allocation of promotion resource/actions onto each sales channel. The efficiency of promotion can be evaluated by comparing the promoted sales volume with the promotion cost.
Promotion Term Type	Lookup	Lookup for codes and descriptions of Promotion Term. For example: <ul style="list-style-type: none"> <li>• Number of customers</li> <li>• Period Planning</li> <li>• Selling amount</li> <li>• Planning contracts number</li> </ul>
Promotion Term Value	Lookup	Assigns promotion term type to a promotion with a value corresponding to the Term Type. For example: <ul style="list-style-type: none"> <li>• Maximum Number of customers</li> <li>• Period Planning selling amount</li> <li>• Planning contracts number</li> </ul>
Promotion Type	Lookup	Lookup for the type of promotion. Direct marketing by Phonecall, Direct marketing by mail, Media Broadcast by TV, Direct marketing by Phonecall.
Proposal	Reference	The proposals made available to prospects in the promotion. It could be a upsell offer like selling a new product, or a retention program.
Proposal Relationship	Reference	The relationship between two proposals.
Prospect	Reference	An individual, collection of individuals, company, or public institution who has not purchased services, but who may in the future. A prospect may also be a customer of one product (already purchased) that does not currently purchase another product (may purchase).
Prospect Priority Type	Lookup	The different priorities which can be assigned to the prospect and prospect interests.
Prospect Quality Score Type	Lookup	Lookup for type of quality scores which can be applied to prospects. For example: <ul style="list-style-type: none"> <li>• Income</li> <li>• Buying Probability</li> </ul>
Prospect Quality Score Value	Reference	The quality score value assigned to each prospect under different type of criteria.
Prospect Reject Reason	Lookup	The reason to explain why an offer or proposal is rejected by the prospect.
Protected Switch	Reference	A Protected Switch is a switching device that can be operated by Protection Equipment.

**Table 2-2 (Cont.) Utilities Data Model Entities I-P**

Entity Name	Type	Description
Protection Equipment	Reference	An electrical device designed to respond to input conditions in a prescribed manner and after specified conditions are met to cause contact operation or similar abrupt change in associated electric control circuits, or simply to display the detected condition. Protection equipment are associated with conducting equipment and usually operate circuit breakers.
Protection Equipment Info	Reference	Properties of protection equipment asset.
PSR Type	Lookup	Classifying instances of the same class. For example, overhead and underground AC Line Segments. This classification mechanism is intended to provide flexibility outside the scope of this standard, that is, provide customization that is non standard.
Publication	Reference	Publication to which the media object used in campaign belongs. It includes the journals, TV media, newspapers, and so on.
Publication Type	Lookup	Lookup for code and description describing the type of publication.
Purchase Order	Base	All the purchase orders that are raised on suppliers by the purchasing unit of a business organization (purchasing organization). The types of purchase orders can be many and would typically include one-time, regular, blanket, release and so on. It inherit PK from <a href="#">Business Interaction</a> (page 2-39).
Purchase Order Line Item	Base	Holds Purchase order line Item information.

**Table 2-3 Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Quality61850	Reference	Quality flags in this class are as defined in IEC 61850, except for estimatorReplaced, which has been included in this class for convenience.
Rate	Reference	A charge element associated with other entities such as tariff structures, auxiliary agreements or other charge elements. The total charge amount applicable to this instance of charge is the sum of fixed and variable portion.
Ratio Tap Changer	Reference	A tap changer that changes the voltage ratio impacting the voltage magnitude but not the phase angle across the transformer.
Ratio Tap Changer Tabular	Reference	Describes a curve for how the voltage magnitude and impedance varies with the tap step.
Ratio Tap Changer Tabular Point	Reference	Describes each tap step in the ratio tap changer tabular curve.
Rational Number	Reference	Rational number with a numerator and a denominator.
Reading Accumulation Behavior	Lookup	Meter reading accumulation behavior such as accumulative and delta.
Reading Channel	Reference	Reading Channel.
Reading Channel Identifier	Reference	ID of a reading channel.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Reading Data Qualifier	Lookup	A reading is viewed in the aggregate such as average, maximum, minimum and so on.
Reading Quality	Base	Quality of a specific reading value or interval reading value. More than one quality may be applicable to a given reading. Typically not used unless problems or unusual conditions occur (that is, quality for each reading is assumed to be good unless stated otherwise in associated reading quality type). It can also be used with the corresponding reading quality type to indicate that the validation has been performed and succeeded.
Reading Quality Type	Lookup	Detailed description for a quality of a reading value, produced by an end device or a system. Values in attributes allow for creation of recommended codes to be used for identifying reading value quality codes as follows: <systemId>.<category>.<subCategory>.
Reading Quality Type Category	Lookup	Reading quality type category.
Reading Quality Type Origin	Lookup	Provides an identification of the system which has declared the issue with the data.
Reading Quality Type Sub Category	Lookup	Reading quality type sub category.
Reading Reason Kind ENUM	Lookup	Reason for the reading being taken.
Reading Time Attribute	Lookup	Reading time attribute such as hourly read and 15 minute read.
Reading Time Period	Lookup	Reading time period such as daily and monthly.
Reading Type	Reference	Detailed description for a type of a reading value.
Recloser	Reference	Pole-mounted fault interrupter with built-in phase and ground relays, current transformer (CT), and supplemental controls.
Register	Reference	Meter register.
Regular Interval Schedule	Reference	The schedule has time points where the time between them is constant.
Regular Time Point	Reference	Time point for a schedule where the time between the consecutive points is constant.
Regulating Cond Eq	Reference	A type of conducting equipment that can regulate a quantity (that is, voltage or flow) at a specific point in the network.
Regulating Control	Reference	Specifies a set of equipment that works together to control a power system quantity such as voltage or flow.
Regulating Control Mode Kind ENUM	Lookup	The kind of regulation model. For example <ul style="list-style-type: none"> <li>• Regulating voltage</li> <li>• Reactive power</li> <li>• Active power</li> </ul>
Regulation Schedule	Reference	A pre-established pattern over time for a controlled variable. For example, busbar voltage.
Reliability Indices By City Month Drvd	Derived	Derived fact table on utility reliability indices by city by month.
Reliability Indices By Feeder Month Drvd	Derived	Derived fact table on utility reliability indices by feeder by month.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Remote Connect Disconnect Info	Reference	Details of remote connect and disconnect function.
Remote Control	Reference	Remote controls are outputs that are sent by the remote unit to actuators in the process.
Remote Point	Reference	For a RTU remote points correspond to telemetered values or control outputs. Other units (for example, control centers) usually also contain calculated values.
Remote Source	Reference	Remote sources are state variables that are telemetered or calculated within the remote unit.
Remote Unit	Reference	A remote unit can be a RTU, IED, substation control system, control center and so on. The communication with the remote unit can be through various standard protocols (for example, IEC 61870, IEC 61850) or non standard protocols (for example, DNP, RP570 and so on.). A remote unit contain remote data points that might be telemetered, collected or calculated. The RemoteUnit class inherit <a href="#">Power System Resource</a> (page 2-74). The intention is to allow RemotUnits to have <a href="#">Measurement</a> (page 2-64)s. These <a href="#">Measurement</a> (page 2-64)s can be used to model unit status as operational, out of service, unit failure and so on.
Remote Unit Communication Link Assignment	Reference	Remote unit communication link assignment.
Remote Unit Type ENUM	Lookup	Type of remote unit.
Resource Order	Base	The service order can be translated into resource order to determine how it can be fulfilled. A type of Request that represents a Service Order's services decomposed into the elements on which the services will be provisioned.
Resource Order Item	Base	The purpose for the <a href="#">Resource Order</a> (page 2-79) expressed in terms of an equipment order.
Revenue Kind ENUM	Lookup	Accounting classification of the type of revenue collected for the customer agreement, typically used to break down accounts for revenue accounting.
Rotating Machine	Reference	A rotating machine which may be used as a generator or motor.
Safety Document	Reference	Document restricting or authorizing works on electrical equipment (for example a permit to work, sanction for test, limitation of access, or certificate of isolation), defined based upon organizational practices.
Sales Channel	Reference	Channel through which the utility uses to communicate with other parties for sales purposes. The external sales channel should roll up to an internal legal subsidiary organization business unit.
SCD2	Reference	Abstracted entity to provide SCD2 capability for all its children.
Scheduled Event	Base	Signifies an event to trigger one or more activities, such as reading a meter, recalculating a bill, requesting work, when generating units must be scheduled for maintenance, when a transformer is scheduled to be refurbished, and so on.
Scheduled Event Asset Assignment	Reference	Asset assigned to a scheduled event.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Script	Reference	A list of specific groupings of questions or statements that will be presented to individuals during a Survey.
Script Question	Reference	Initiative Questions documents the questions that will be asked of the customer as part of the initiative.
Sea Condition	Base	Sea Condition
Seal	Reference	Physically controls access to AssetContainers.
Seal Condition Kind ENUM	Lookup	Kind of seal condition.
Seal Kind ENUM	Lookup	Kind of seal.
Season	Lookup	This dimension table holds seasons and their attributes. Seasons are arbitrary periods of time around which some retailers organize their buying and selling patterns. Each day should fall within no more than one season.
Season Day Type Schedule	Reference	A time schedule covering a 24 hour period, with curve data for a specific type of season and day.
Sectionalizer	Reference	Automatic switch that will lock open to isolate a faulted section. It may, or may not, have load breaking capability. Its primary purpose is to provide fault sectionalising at locations where the fault current is either too high, or too low, for proper coordination of fuses.
Segment Criteria	Reference	Minimum and Maximum scores for each segment associated with an account segment or customer segment.
Segment Type	Lookup	Lookup for type codes and descriptions used to define account segmentation model or customer segmentation model.
Series Compensator	Reference	A Series Compensator is a series capacitor or reactor or an AC transmission line without charging susceptance. It is a two terminal device.
Service	Reference	Service is an internal technical presentation of available services or products to the customer.
Service Category	Lookup	Category of Service, sample values: Customer facing service, Resource facing service, Composite service.
Service Coverage Area	Reference	Service coverage area defines the coverage area of a given Service Spec. The geographic area covered by service provider with certain product combination. Service areas are defined so that service providers can determine the demographic / psychographic / population data the geography served by the network.
Service Coverage Geo Detail	Reference	The detail about service territory a utility covers.
Service Location	Reference	A real estate location, commonly referred to as premise.
Service Location Identifier	Reference	ID assigned to a service location.
Service Order	Base	A type of Request that represents a Customer Order's products decomposed into the services through which the products are realized.
Service Order Line Item	Base	The purpose for the Service Order expressed in terms of a Service Specification or a Service.
Service Quantity	Reference	Set of values obtained from the meter.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Service Supplier	Reference	Organization that provides services to customers.
Service Type	Lookup	Type of Service. Sample value should be from subtype of customer facing service, resource facing service and composite service.
Set Point	Base	A Set Point is an analog control used for supervisory control.
Short Circuit Rotor Kind ENUM	Lookup	Type of rotor, used by short circuit applications.
Shunt Compensator	Reference	A shunt capacitor or reactor or switchable bank of shunt capacitors or reactors. A section of a shunt compensator is an individual capacitor or reactor. A negative value for reactivePerSection indicates that the compensator is a reactor. ShuntCompensator is a single terminal device. Ground is implied.
Shunt Compensator Info	Reference	Properties of shunt capacitor, shunt reactor or switchable bank of shunt capacitor or reactor assets.
Shunt Compensator Phase	Reference	Single phase of a multi-phase shunt compensator when its attributes might be different per phase.
SIC Assignment	Reference	Assigns one industry to another one in Standard Industrial Classification (SIC). How 2 industries are related. For example, the Petroleum Industry and Automobile, the Mining and the Steal. This might be too difficult for Communication Service Provider to capture. <to be further considered>.
SIC Assignment Reason	Lookup	Lookup for reason code and description as to why two industries were assigned together in Standard Industrial Classification (SIC).
SIC Classification	Lookup	Standard Industrial Classification (SIC).
Simple End Device Function	Reference	Simple end device function distinguished by 'kind'. Use this class for instances that cannot be represented by another end device function specializations.
Single Phase Kind ENUM	Lookup	Enumeration of single phase identifiers. Allows designation of single phases for both transmission and distribution equipment, circuits and loads.
SOC Job	Reference	The most detailed level of job code from Standard Occupational Classification (SOC) System. For example: 15-1041 Computer Support Specialists 15-1011 Computer and Information Scientists, Research 15-1021 Computer Programmers.
SOC Job Category	Reference	The 2nd level of job code from Standard Occupational Classification (SOC) System.
SOC Job Group	Reference	The top level of job code from Standard Occupational Classification (SOC) System.
Source ENUM	Lookup	Source gives information related to the origin of a value.
Source System	Reference	System of Record from which Oracle Utilities Data Model data was loaded. For example, AMI system, CRM system, and so on.
Source System Key Mapping	Reference	Track Key of the <a href="#">Party</a> (page 2-69) (customer or employee) in the originating source system. This key can be used back to track information back to source management system. The party can consolidate different people from different source systems, like CRM, Billing, into a unique one. Therefore, the multiple keys for the same unique party is saved here.

Table 2-3 (Cont.) Utilities Data Model Entities Q-Z

Entity Name	Type	Description
Source System Type	Lookup	Lookup for type code and description used to describe source system. For example: Competitor Customer Listing Third-Party Purchased Mailing List Government Roll Tax List.
Spot Temperature	Base	Spot Temperature
Static Var Compensator	Reference	A facility for providing variable and controllable shunt reactive power. The SVC typically consists of a stepdown transformer, filter, thyristor-controlled reactor, and thyristor-switched capacitor arms. The SVC may operate in fixed MVar output mode or in voltage control mode. When in voltage control mode, the output of the SVC will be proportional to the deviation of voltage at the controlled bus from the voltage setpoint. The SVC characteristic slope defines the proportion. If the voltage at the controlled bus is equal to the voltage setpoint, the SVC MVar output is zero.
Station Supply	Reference	Station supply with load derived from the station output.
Status	Reference	Current status information relevant to an entity.
Steam Sendout Schedule	Reference	The cogeneration plant's steam sendout schedule in volume per time unit.
Streetlight	Reference	Streetlight asset.
Streetlight Lamp Kind ENUM	Lookup	Kind of lamp for the streetlight.
String Measurement	Base	String Measurement represents a measurement with values of type string.
String Measurement Value	Base	String Measurement Value represents a measurement value of type string.
Structure	Reference	Construction holding assets such as <a href="#">Conductor</a> (page 2-43)s, transformers, switchgear, and so on. Where applicable, number of <a href="#">Conductor</a> (page 2-43)s can be derived from the number of associated wire spacing instances.
Structure Material Kind ENUM	Lookup	Kind of material used for structures.
Structure Support	Reference	Support for structure assets.
Structure Support Kind ENUM	Lookup	Kind of structure support.
Sub Geographical Region	Reference	A subset of a geographical region of a power system network model.
Sub Load Area	Reference	The class is the second level in a hierarchical structure for grouping of loads for load flow load scaling.
Substation	Reference	A collection of equipment for purposes other than generation or utilization, through which electric energy in bulk is passed for switching or modifying its characteristics.
Surge Arrester Info	Reference	Properties of surge arrester.
Survey	Reference	A survey is a subtype to the <a href="#">Promotion</a> (page 2-75). An initiation of a survey on a <a href="#">Party</a> (page 2-69) is implemented as an <a href="#">Event Party Interaction</a> (page 2-52). The response from a survey is in Interaction Question Response.
SVC Control Mode ENUM	Lookup	Static VAr Compensator control mode.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Switch	Reference	A generic device designed to close, or open, or both, one or more electric circuits.
Switch Action	Reference	Action on switch as a switching step.
Switch Action Kind ENUM	Lookup	Kind of action on switch.
Switch Connect Disconnect Func Assignment	Reference	Connect disconnect func a switch has, including history.
Switch Info	Reference	Switch data.
Switch Phase	Reference	Single phase of a multi-phase switch when its attributes might be different per phase.
Switch Schedule	Reference	A schedule of switch positions.
Switch State ENUM	Lookup	Possible states for a switch.
Switch Switching Operation Assignment	Reference	Switching operation assigned to a switching.
Switching Activity	Reference	Activity within the switching plan.
Switching Activity Safety Doc Assignment	Reference	Safety document assigned to a switching activity.
Switching Operation	Reference	A Switching Operation is used to define individual switch operations for an Outage Schedule. This OutageSchedule may be associated with another item of Substation such as a Transformer, Line, or Generator; or with the Switch itself as a <a href="#">Power System Resource</a> (page 2-74)e. A Switch may be referenced by many Outage Schedules.
Switching Plan	Reference	Switching Plan
Switching Step	Reference	Atomic switching step; can be part of a switching step group, or of the switching plan.
Switching Step Group	Reference	A logical step, grouping atomic switching steps that are important to distinguish when they may change topology (for example, placing a jumper between two cuts).
Synchrocheck Relay	Reference	A device that operates when two AC circuits are within the desired limits of frequency, phase angle, and voltage, to permit or to cause the paralleling of these two circuits. Used to prevent the paralleling of non-synchronous topological islands.
Synchronous Machine	Reference	An electromechanical device that operates with shaft rotating synchronously with the network. It is a single machine operating either as a generator or synchronous condenser or pump.
Synchronous Machine Kind ENUM	Lookup	Synchronous machine type.
Synchronous Machine Operating Mode ENUM	Lookup	Synchronous machine operating mode.
Tag Action	Reference	Action on operation tag as a switching step.
Tag Action Kind ENUM	Lookup	Kind of action on tag.
Tap Changer	Reference	Mechanism for changing transformer winding tap positions.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Tap Changer Control	Reference	Describes behavior specific to tap changers. For example, how the voltage at the end of a line varies with the load level and compensation of the voltage drop by tap adjustment.
Tap Changer Info	Reference	Tap changer data.
Tap Schedule	Reference	A pre-established pattern over time for a tap step.
Target Account	Reference	The customer accounts included in a specific campaign cell.
Target Agreement	Reference	The Contracts included in a specific promotion.
Target Geography Area	Reference	The geography information included in a specific campaign cell.
Target Market Segment	Reference	The market segments included in a specific campaign.
Target Type	Lookup	Indicates the type of targets in a specific <a href="#">Promotion</a> (page 2-75): For example: <ul style="list-style-type: none"> <li>• Customer</li> <li>• Accounts</li> <li>• Access Method</li> <li>• Geography area</li> </ul>
Tariff	Reference	Document, approved by the responsible regulatory agency, listing the terms and conditions, including a schedule of prices, under which utility services will be provided. It has a unique number within the state or province. For rate schedules it is frequently allocated by the affiliated Public utilities commission (PUC).
Tariff Profile	Reference	A schedule of charges; structure associated with Tariff that allows the definition of complex tariff structures such as step and time of use when used in conjunction with Time Tariff Interval and Charge. Inherited 'status. value' is defined for the utility's business rules. For example: active, inactive, and so on.
Tariff Tariff Profile Assignment	Reference	A profile assigned to a tariff, including history.
Task	Reference	The specific tasks inside a project.
Tax Authority	Lookup	A government authority that levies sales taxes and on whose behalf the store collects these sales taxes. For example National, State, Province, City, County, Other.
Tax Category	Lookup	The tax categories which may be applied to invoices items.
Terminal	Reference	An AC electrical connection point to a piece of conducting equipment. Terminals are connected at physical connection points called connectivity nodes.
Thermal Generating Unit	Reference	A generating unit whose prime mover could be a steam turbine, combustion turbine, or diesel engine.
Time Of Use	Lookup	Time Of Use.
Time Schedule	Reference	Description of anything that changes through time. Time schedule is used to perform a single-valued function of time. Use inherited 'type' attribute to give additional information on this schedule, such as: periodic (hourly, daily, weekly, monthly, and so on.), day of the month, by date, calendar (specific times and dates).
Time Slot	Reference	Time period.

Table 2-3 (Cont.) Utilities Data Model Entities Q-Z

Entity Name	Type	Description
Time Tariff Interval	Reference	One of a sequence of time intervals defined in terms of real time. It is typically used in association with <a href="#">Tariff Profile</a> (page 2-84) to define the intervals in a time of use tariff structure, where startDateTime simultaneously determines the starting point of this interval and the ending point of the previous interval.
Tool	Reference	Tool asset.
Topological Node	Reference	For a detailed substation model a topological node is a set of connectivity nodes that, in the current network state, are connected together through any type of closed switches, including jumpers. Topological nodes change as the current network state changes (that is, switches, breakers, and so on. change state). For a planning model, switch statuses are not used to form topological nodes. Instead they are manually created or deleted in a model builder tool. Topological nodes maintained this way are also called "busses".
Tower	Reference	Tower asset. Dimensions of the Tower are specified in associated DimensionsInfo class. When used for planning purposes, a transmission tower carrying two 3-phase circuits will have 2 instances of Connection, each of which will have 3 MountingPoint instances, one for each phase all with coordinates relative to a common origin on the tower. (It may also have a 3rd Connection with a single MountingPoint for the Neutral line).
Tower Construction Kind ENUM	Lookup	Kind of tower construction.
Transformer Control Mode ENUM	Lookup	Control modes for a transformer.
Transformer Core Admittance	Reference	The transformer core admittance. Used to specify the core admittance of a transformer in a manner that can be shared among power transformers.
Transformer End	Reference	A conducting connection point of a power transformer. It corresponds to a physical transformer winding terminal. In earlier CIM versions, the Transformer Winding class served a similar purpose, but this class is more flexible because it associates to terminal but is not a specialization of <a href="#">Conducting Equipment</a> (page 2-43).
Transformer End Info	Reference	Transformer End Info
Transformer Feeder Assignment	Reference	A feeder that a transformer connects including history.
Transformer Mesh Impedance	Reference	Transformer mesh impedance (Delta-model) between transformer ends. The typical case is that this class describes the impedance between two transformer ends pair-wise, that is, the cardinalities at both transformer end associations are 1. But in cases where two or more transformer ends are modeled the cardinalities are larger than 1.
Transformer Star Impedance	Reference	Transformer star impedance (Pi-model) that accurately reflects impedance for transformers with 2 or 3 windings. For transformers with four or more windings, you must use <a href="#">Transformer Mesh Impedance</a> (page 2-85). For transmission networks use <a href="#">Power Transformer End</a> (page 2-74) impedances (r, r0, x, x0, b, b0, g and g0).

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Transformer Tank	Reference	An assembly of two or more coupled windings that transform electrical power between voltage levels. These windings are bound on a common core and place in the same tank. Transformer tank can be used to model both single-phase and 3-phase transformers.
Transformer Tank End	Reference	Transformer tank end represents an individual winding for unbalanced models or for transformer tanks connected into a bank (and bank is modeled with the <a href="#">Power Transformer</a> (page 2-74)).
Transformer Tank Info	Reference	Set of transformer tank data, from an equipment library.
Trouble Reporting Kind ENUM	Lookup	Kind of trouble reporting.
Trouble Ticket	Reference	Trouble Ticket
Underground Structure	Reference	Underground Structure
Underground Structure Kind ENUM	Lookup	Kind of underground structure.
Unit Multiplier	Lookup	Multiplier of a unit, such as kilo.
Unit Multiplier ENUM	Lookup	The unit multipliers defined for the CIM.
Unit Of Measure	Lookup	This table stores and describes all possible measurement units valid for the data within the system. For example: valid units of measure are inch, kilowatt-hour, days, cubic centimeters.
Unit Symbol ENUM	Lookup	The units defined for usage in the CIM.
Usage Point	Reference	Logical or physical point in the network to which readings or events may be attributed. Used at the place where a physical or virtual meter may be located; however, it is not required that a meter be present.
Usage Point Connected Kind ENUM	Lookup	State of the usage point with respect to connection to the network.
Usage Point End Device Ctrl Assignment	Reference	End device ctrl assigned to usage point.
Usage Point Equipment Assignment	Reference	Equipment linked to a usage point.
Usage Point Group	Reference	Abstraction for management of group communications within a two-way AMR system or the data for a group of related usage points. Commands can be issued to all of the usage points that belong to a usage point group using a defined group address and the underlying AMR communication infrastructure.
Usage Point Group Assignment	Reference	Group a usage point assigned.
Usage Point Group DR Program Assignment	Reference	DR program a usage point group assigned.
Usage Point Grp End Device Ctrl Assignment	Reference	End device ctrl capability a usage point group has or assigned, including history.
Usage Point Location	Reference	Location of an individual usage point.
Usage Point Transformer Assignment	Reference	Transformer a usage point connected, including history.
Usage Read Cycle	Reference	Meter read cycle.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

Entity Name	Type	Description
Utility Commodity	Lookup	Utility Commodity
Validity ENUM	Lookup	Validity for <a href="#">Measurement Value</a> (page 2-64).
Value Alias Set	Reference	<p>Describes the translation of a set of values into a name and is intended to facilitate custom translations. Each Value Alias Set has a name, description and so on. A specific <a href="#">Measurement</a> (page 2-64) may represent a discrete state like Open, Closed, Intermediate and so on. This requires a translation from the <a href="#">Measurement Value</a> (page 2-64) value number to a string. For example,</p> <ul style="list-style-type: none"> <li>• 0-&gt;"Invalid"</li> <li>• 1-&gt;"Open"</li> <li>• 2-&gt;"Closed"</li> <li>• 3-&gt;"Intermediate"</li> </ul> <p>Each Value To Alias member in Value Alias Set. Value describe a mapping for one particular value to a name.</p>
Value To Alias	Reference	Describes the translation of one particular value into a name. For example, 1 as "Open".
Value Type	Lookup	Value type describes the type of value. Value type could be time or money.
VEE Exception	Base	Validation, estimation, and editing (VEE) exception.
VEE Exception Type	Lookup	Validation, estimation, and editing (VEE) exception types.
VEE Group	Lookup	Validation, estimation, and editing (VEE) groups.
VEE Rule	Lookup	Validation, estimation, and editing (VEE) rules.
Vehicle	Reference	The vehicles owned and used by the operators to fulfill its business requirement.
Vendor	Reference	Any vendor utilized by the enterprise.
Vendor Item	Reference	Vendor Item
Virtual Team	Reference	<p>The virtual team beside department hierarchy formed for specific purpose. For example:</p> <ol style="list-style-type: none"> <li>1. Sales Team A, B, C</li> <li>2. Customer Support Team A, B, C</li> <li>3. Project team.</li> <li>4. Strategic Account management team including sales and support.</li> </ol>
Voltage Control Zone	Reference	An area of the power system network which is defined for secondary voltage control purposes. A voltage control zone consists of a collection of substations with a designated bus bar section whose voltage will be controlled.
Voltage Limit	Reference	Operational limit applied to voltage.
Weather Alert	Lookup	Weather Alert
Weather Forecast	Lookup	Weather Forecast
Weather Information	Lookup	Weather Information
Weather Location	Lookup	Location where weather information collected.
Web Page	Reference	A web page on service operator website. It may present a product, or take customer service request.

Table 2-3 (Cont.) Utilities Data Model Entities Q-Z

Entity Name	Type	Description
Wind Gen Unit Kind ENUM	Lookup	Type of fuel.
Wind Generating Unit	Reference	A wind driven generating unit.
Wind Information	Base	Information on a work.
Winding Connection ENUM	Lookup	Winding connection type.
Wire Info	Reference	Wire data that can be specified per line segment phase, or for the line segment as a whole in case its phases all have the same wire characteristics.
Wire Insulation Kind ENUM	Lookup	Kind of wire insulation.
Wire Material Kind ENUM	Lookup	Kind of wire material.
Wire Spacing Info	Reference	Wire spacing data that associates multiple wire positions with the line segment, and allows to calculate line segment impedances. Number of phases can be derived from the number of associated wire positions whose phase is not neutral.
Wire Usage Kind ENUM	Lookup	Kind of wire usage.
Work Asset	Reference	Asset used to perform work.
Work Billing Info	Reference	Billing information for work performed for the customer. The history of Work Billing Info, <a href="#">Invoice</a> (page 2-60)s, and Payments is to be maintained in associated <a href="#">Activity Record</a> (page 2-35)s.
Work Cost Detail	Reference	A collection of all of the individual cost items collected from multiple sources.
Work Cost Summary	Base	A roll up by cost type for the entire cost of a work order. For example, total labor.
Work Document	Reference	Shadow class for <a href="#">Document</a> (page 2-48), to isolate subclassing from this package. If any subclass gets normative and needs inheritance, it will inherit directly from <a href="#">Document</a> (page 2-48).
Work Flow Step	Reference	A pre-defined set of work steps for a given type of work.
Work Identified Object	Reference	Shadow class for <a href="#">Identified Object</a> (page 2-59), to isolate subclassing from this package. If any subclass gets normative and needs inheritance, it will inherit directly from <a href="#">Identified Object</a> (page 2-59).
Work Kind ENUM	Lookup	Kind of work.
Work Location	Reference	Information about a particular location for various forms of work.
Work Order	Reference	<a href="#">Document</a> (page 2-48) used to request, initiate, track and record work.
Work Status Entry	Reference	A type of <a href="#">Activity Record</a> (page 2-35) that records information about the status of an item, such as a Work or <a href="#">Work Task</a> (page 2-88), at a point in time.
Work Status Kind ENUM	Lookup	Kind of status, specific to work.
Work Task	Reference	Work Task.
Work Task Asset Assignment	Reference	Asset assigned to a work task including the history.
Work Task Kind ENUM	Lookup	Work task kind.
Work Time Schedule	Reference	Time schedule of a work.

**Table 2-3 (Cont.) Utilities Data Model Entities Q-Z**

<b>Entity Name</b>	<b>Type</b>	<b>Description</b>
Work Time Schedule Kind ENUM	Lookup	Kind of work schedule.
Zone	Reference	Area divided off from other areas. It may be part of the electrical network, a land area where special restrictions apply, weather areas, and so on. For weather, it is an area where a set of relatively homogenous weather measurements apply.
Zone Kind ENUM	Lookup	Kind of zone.

# 3

## Logical Data Model Dimensions

This chapter describes the logical dimensions and hierarchies of Oracle Utilities Data Model.

- [Logical Data Model Dimensions](#) (page 3-1)
- [IETL Use Dimensions](#) (page 3-66)

### 3.1 Logical Data Model Dimensions

This sections lists the logical data model dimensions.

- [Account](#) (page 3-2)
- [Customer](#) (page 3-4)
- [Feeder](#) (page 3-9)
- [Geography Zone](#) (page 3-10)
- [Hour](#) (page 3-13)
- [Household](#) (page 3-14)
- [Manufacturer](#) (page 3-15)
- [Meter](#) (page 3-16)
- [Operational](#) (page 3-17)
- [Organization](#) (page 3-20)
- [Outage Record](#) (page 3-24)
- [Postcode](#) (page 3-25)
- [Product Asset Model](#) (page 3-27)
- [Region](#) (page 3-28)
- [Service Location](#) (page 3-31)
- [Substation](#) (page 3-32)
- [Time](#) (page 3-33)
- [Time Month Day Hour](#) (page 3-40)
- [Time Month](#) (page 3-45)
- [Time Month Hour](#) (page 3-46)
- [TOU](#) (page 3-48)
- [TOU Time](#) (page 3-49)
- [Time Season Month](#) (page 3-55)
- [Time Season Month Hour](#) (page 3-57)
- [Transformer](#) (page 3-62)

- [Usage Point](#) (page 3-63)
- [Usage Point Location](#) (page 3-65)

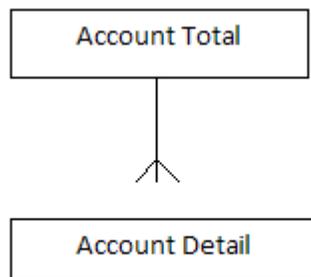
## 3.1.1 Account

Description: [Account](#) (page 2-32)

- [Account Hierarchy](#) (page 3-2)
- [Account Levels](#) (page 3-2)

### 3.1.1.1 Account Hierarchy

Standard Account Hierarchy



### 3.1.1.2 Account Levels

[Table 3-1](#) (page 3-2) shows Account Total: All ACCOUNT is the most aggregate level of the dimension.

**Table 3-1 Account Total**

Sr. Number	Attribute	Description
1.	ALL ACCOUNT CODE	Identification for the top level value.

[Table 3-2](#) (page 3-2) shows Account Detail: The account tracks the financial interactions of a customer with the utility. It is normally generated by a contract between the utility and customer. One customer may have multiple accounts.

**Table 3-2 Account Detail**

Sr. Number	Attribute	Description
1.	Account Code	Sample value: 2006012514
2.	Account Code1	No value
3.	Organization Business Unit Code	No value
4.	Account Segment Code	No value

Table 3-2 (Cont.) Account Detail

Sr. Number	Attribute	Description
5.	Account Type Code	Sample value: Electricity
6.	Accounting Cycle Code	No value
7.	Billing Cycle Code	No value
8.	Billing Period Code	No value
9.	Currency Code	Sample value USD
10.	Credit Category Code	Code for credit category.
11.	Party Code	A code for any person or business that is of interest to the utility.
12.	Source System Code	No value
13.	Payment Method Type Code	No value
14.	Billing Frequency Code	No value
15.	Account Role Type Code	Sample value: PRPD
16.	Account Status Type Code	No value
17.	Account Status Reason Code	No value
18.	Customer Visible Code	The account number visible to the customer.
19.	Secondary Currency Code	Secondary currency for this bill info. A/R can be viewed and payments/disputes/adjustments made in the secondary currency, but all impacts are translated to the primary currency for actual A/R tracking. Only euro and EMU currencies are supported as secondary.
20.	Billing Status Code	Used to track the billing status of a bill info. Legal values are BILL_ACTIVE - indicates that billing should be provided for the account in a standard (regular) way. This is a default value. BILL_INACTIVE.
21.	Billing Status Reason Code	Indicates a reason for changing of BILLING_STATUS.
22.	Create Staff	The employee who created the account.
23.	Advertising Status	The account setting regarding advertisement, for example, allow SMS marketing, forbid SMS marketing.
24.	Account Charge Type	The charge type of the account. For example: Prepaid, or Postpaid.
25.	Source System Identifier	The identifier in the source system, as specified by source system key (code).
26.	Payment Comment	The textual note attached to the payment.
27.	Account Description	No value
28.	Create Date	For example: 22-JAN-08
29.	Termination Date	For example: 21-SEP-08
30.	Account Effective Date	Effective time of modification of this account on an external system. For example, if this account is created by billing system, this date may refer to when this account is activated in CRM system.
31.	Initial Activation Date	The date when the account was activated.

Table 3-2 (Cont.) Account Detail

Sr. Number	Attribute	Description
32.	Last Activate Date	The last time this account is activated.
33.	Last Suspend Date	No value
34.	Last Reopen Date	No value
35.	Group Plan Indicator	No value
36.	Multiple Customer Indicator	To indicate this account is used by multiple customers.
37.	Payment Days	The default payment due days for invoices.
38.	Close Grace Period	Number of days (months) before the account is suspended if the balance is below zero. During this period account may be functional with limitations, like no outgoing calls.
39.	Balance Expire Period	Number of days (months) before the account balance expires.
40.	Close Period	Number of days (months) before the account is closed (or suspended), if the balance is below zero. Accounts in this state maybe recovered.
41.	Close Purge Period	Number of days (months) before the account is closed and purged if the balance is below zero.
42.	Warning Balance Level	The balance level bar for warning period. For example, if customer balance is < \$5, then customer receive warning messages.
43.	Close Balance Level	The balance level below which the customer account may be closed after a period.
44.	Effective From Date	No value
45.	Effective To Date	No value
46.	Status Code	For example: A
47.	Account Name	No value
48.	In Platform Code	Id for IN platform.

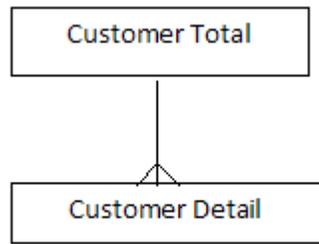
## 3.1.2 Customer

Description: [Customer](#) (page 2-45)

- [Customer Hierarchy](#) (page 3-4)
- [Customer Levels](#) (page 3-5)

### 3.1.2.1 Customer Hierarchy

Standard Customer Hierarchy



### 3.1.2.2 Customer Levels

[Table 3-3](#) (page 3-5) shows Customer Total: All CUSTOMER is the most aggregate level of the dimension.

**Table 3-3 Customer Total**

Sr. Number	Attribute	Description
1.	ALL CUSTOMER CODE	Identification for the top level value.

[Table 3-4](#) (page 3-5) shows Customer Detail: All the customers, including individual and organization customers. A customer is generally defined as a party using one or more services from the operator.

**Table 3-4 Customer Detail**

Sr. Number	Attribute	Description
1.	Customer Code	For example: CUST-10561
2.	Customer Kind Code	Kind of customer.
3.	Customer Score Code	No value
4.	Customer Segment Code	No value
5.	Customer Source Code	No value
6.	Customer Type Code	For example: Commercial
7.	External Organization Type Code	No value
8.	Language Code	No value
9.	Prospect Code	No value
10.	Status Code	No value
11.	Planned Outage Code	No value
12.	Address Location Code	No value
13.	Job Code	Code for job of subscriber.
14.	Household Code	No value
15.	Customer Revenue Band Code	No value
16.	Nationality Code	Code for nationality of subscriber.

Table 3-4 (Cont.) Customer Detail

Sr. Number	Attribute	Description
17.	Education Code	Code for educational qualification of subscriber.
18.	Other Individual Code	No value
19.	SOC Job Code	No value
20.	Marital Status Code	Code for marital status of subscriber.
21.	Gender Code	Code for gender.
22.	Billing Address Location Code	The address where the billing is sent to.
23.	Chairman Code	No value
24.	Party Organization Type Code	No value
25.	Death Certificate Code	No value
26.	Manager Code	No value
27.	Campaign Partner Code	The campaign partner code if this customer at the same time is also a campaign partner.
28.	Sales Volume Code	No value
29.	Contact Code	No value
30.	Referral Customer Code	Some commission or loyalty program depends on this information to calculate the bonus.
31.	Company Registry Number	No value
32.	Driver License Number	No value
33.	DUNS Number	The data universal numbering system code, as from D&B.
34.	Employer Tax Number	The tax number of the employer from tax authority.
35.	Prev Employer Tax Number	No value
36.	Social Security Number	Social security number for individual customer.
37.	Job Contract Type	No value
38.	Tax Exempt Status	No value
39.	Tax Number	Tax number of the party, for both individual and organizational.
40.	Initiative Number	The initiative code as defined in initiative entity. For example, when a person register himself on the operator's website, he becomes an initiative. Later on, once he places the order, he becomes the customer. In the customer table, imitative number track.
41.	Primary Occasion Name	Default customer occasion type name. For example, the marriage anniversary.
42.	Primary Status Code	Unique identifier for the primary Status.
43.	Primary Status Name	Default Status Name.
44.	Primary Status Reason Code	Unique identifier for the primary Status Reason.
45.	Primary Status Reason Name	Name of the primary status reason.
46.	Seal Image	The image files of customer signature, or stamp.

Table 3-4 (Cont.) Customer Detail

Sr. Number	Attribute	Description
47.	Manager Name	No value
48.	Contact Name	No value
49.	Stock Exchange Name	No value
50.	Name Prefix	No value
51.	Name Suffix	No value
52.	First Name	Sydney
53.	Last Name	Kerry
54.	Middle Name	No value
55.	Family Name In Maiden	No value
56.	Given Name In Maiden	No value
57.	Name Of Workplace	No value
58.	Place Of Birth	No value
59.	Job Position	Financial Analyst
60.	Legal Title To Housing	No value
61.	Ethnic Background	No value
62.	Number Of Children	No value
63.	Number Of Dependents	No value
64.	Dwelling Tenure	28
65.	Dwelling Size	For example: 33290
66.	Ethnicity	No value
67.	Form Of Employment	No value
68.	Dwelling Type	For example: LEASED
69.	Dwelling Status	No value
70.	Office Tel No	This is the office number, and more contact information can be found in _party contact information_.
71.	Cell Phone No	The cell phone number, and more contact information can be found in _party contact information_.
72.	Personal Identification Number	No value
73.	Source Of Income	For example: Business Income
74.	Payment Account Number	Account number for payments. Deprecated: This one is only used for backward compatibility.
75.	PUC Number	(if applicable) Public utility commission (PUC) identification number.
76.	Special Need	True if customer organization has special service needs such as life support, hospitals, and so on.
77.	Living At Current Address Since	No value
78.	End Of Job Contract	No value
79.	Start Of Employment	No value

Table 3-4 (Cont.) Customer Detail

Sr. Number	Attribute	Description
80.	Prev Employment Start Date	No value
81.	Prev Employment End Date	No value
82.	Final Settlement Start Date	The start date of the period when this customer lives in the last known area.
83.	Final Settlement End Date	The end date of the period when this customer lives in the last known area.
84.	Date Of Birth	The birthday of the customer, for individual customers.
85.	Establishment Date	Time of establish for organizational customer.
86.	Termination Date	The natural termination date of organizational and individual customer.
87.	Validation Start Date	The business license validation period start date.
88.	Validation End Date	The business license validation period end date.
89.	Liquidation Start Date	The start date of liquidation process.
90.	Liquidation End Date	The end date of liquidation process.
91.	Contact Address Effective Date	Date on which the contact address referenced in the <code>billing_address_id</code> column became active. This facilitates queries such as ``find customers who changed address in the last 3 months``.
92.	Billing Address Effective Date	Date on which the billing address referenced in the <code>billing_address_id</code> column became active. This facilitates queries such as ``find customers who changed address in the last 3 months``.
93.	Payment Account Open Date	Opening date of the first account with valid payment information. Deprecated: This one is only used for backward compatibility.
94.	Payment Account Close Date	Closing date of the first account with valid payment information. Deprecated: This one is only used for backward compatibility.
95.	Create Date	The date when this customer record is created. This can be same as first account create date, or first contract setup date.
96.	Economically Active Indicator	For example: N
97.	Public Indicator	To indicate this is public listed company (listed and traded in stock exchange market).
98.	Domestic Indicator	To indicate this is a domestic company (compared with overseas, or those from other country).
99.	Campaign Partner Indicator	To indicate this is a campaign partner.
100.	Mail Allowed Indicator	Indicates if marketing information can be sent to the customer.
101.	Third Party Marketing Allowed Indicator	Specifies whether to allow third party to do marketing to the customer.
102.	Customer Payment Responsible Indicator	Indicate if this customer is responsible for payment of a customer organization or household.

**Table 3-4 (Cont.) Customer Detail**

Sr. Number	Attribute	Description
103.	VIP	True if this is an important customer. Importance is for matters different than those in `SpecialNeed` attribute.
104.	Employee Count	No value
105.	Annual Revenue	No value
106.	Annual Revenue Local	No value
107.	Annual Revenue Reporting	No value
108.	Annual Sales	For example: 246140617
109.	Annual Sales Local	No value
110.	Annual Sales Reporting	No value
111.	Equity Amount	For example: 659037373
112.	Equity Amount Local	No value
113.	Equity Amount Reporting	No value
114.	Effective From Date	No value
115.	Effective To Date	No value
116.	ARPU Band Code	No value
117.	Churn Date	In porting in/out case, customer churn can be detected in real time. In some prepaid business, operator may only know customer churn after 6 months or even longer. In the later one, the churn date will be different with customer effective to date.
118.	Customer Importance Rank	Integer that gives the relative importance of this customer with respect to others.
119.	Party Role Code	No value
120.	Number Of Lines	Number of phone lines belonging to this customer.
121.	Primary Line Number	Default fixed line number.
122.	Primary MSISDN Number	Default subscriber number.
123.	Religious Affiliation Code	No value
124.	Demand Response Program Code	No value

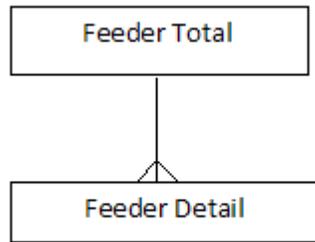
### 3.1.3 Feeder

Description: [Feeder](#) (page 2-54)

- [Feeder Hierarchy](#) (page 3-9)
- [Feeder Levels](#) (page 3-10)

#### 3.1.3.1 Feeder Hierarchy

Standard Feeder Hierarchy



### 3.1.3.2 Feeder Levels

[Table 3-5](#) (page 3-10) shows Feeder Total: All FEEDER is the most aggregate level of the dimension.

**Table 3-5 Feeder Total**

Sr. Number	Attribute	Description
1.	ALL FEEDER CODE	Identification for the top level value.

[Table 3-6](#) (page 3-10) shows Feeder Detail: Shows Feeder Detail: Substation feeder.

**Table 3-6 Feeder Detail**

Sr. Number	Attribute	Sample Value
1.	Feeder Code	FDR-0001
2.	Feeder Name	FDR-0001
3.	Feeder Description	FDR-0001

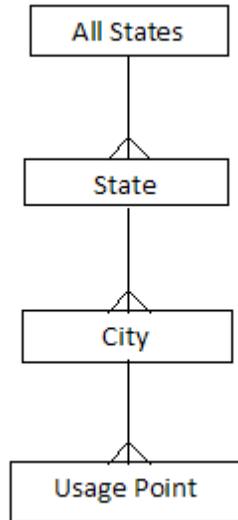
### 3.1.4 Geography Zone

Description: [Geography Entity](#) (page 2-55)

- [Geography Zone Hierarchy](#) (page 3-10)
- [Geography Zone Levels](#) (page 3-11)

#### 3.1.4.1 Geography Zone Hierarchy

Standard Geography Zone Hierarchy



### 3.1.4.2 Geography Zone Levels

[Table 3-7](#) (page 3-11) shows Geography Zone All States: All States Geography Zone is the most aggregate level of the dimension.

**Table 3-7 Geography Zone All States**

Sr. Number	Attribute
1.	All States

[Table 3-8](#) (page 3-11) shows State: State level in Geography hierarchy.

**Table 3-8 Geography Zone: State**

Sr. Number	Attribute
1.	Geography State Code
2.	Geography Country Code
3.	Geography State Name
4.	Geography State Description
5.	Effective From Date
6.	Effective To Date
7.	Status Code

[Table 3-9](#) (page 3-12) shows City: City level in Geography hierarchy.

**Table 3-9 Geography Zone: City**

Sr. Number	Attribute
1.	Geography City Code
2.	Geography State Code
3.	Geography City Name
4.	Geography City Description
5.	Effective From Date
6.	Effective To Date
7.	Status Code

[Table 3-10](#) (page 3-12) shows Usage Point: Logical or physical point in the network to which readings or events may be attributed. Used at the place where a physical or virtual meter may be located; however, it is not required that a meter be present.

**Table 3-10 Geography Zone Usage Point**

Sr. Number	Attribute	Description
1.	Usage Point Code	For example: UP-1240
2.	Phase Code	Phases carried, if applicable. For example: A
3.	AMI Billing Ready Kind Code	Tracks the lifecycle of the metering installation at a usage point with respect to readiness for billing through advanced metering infrastructure reads. For example: 2
4.	Usage Point Connected Kind Code	State of the usage point with respect to connection to the network.
5.	Account Code	No value
6.	Usage Point Location Code	No value
7.	Service Category Code	No value
8.	Service Location Code	No value
9.	Minimal Usage Expected	If true, minimal or zero usage is expected at this usage point for situations such as premise vacancy, logical or physical disconnect. It is used for readings validation and estimation.
10.	Is SDP	If true, this usage point is a service delivery point, that is, a usage point where the ownership of the service changes hands.
11.	Is Virtual	If true, this usage point is virtual, that is, no physical location exists in the network where a meter could be located to collect the meter readings. For example, one may define a virtual usage point to serve as an aggregation of usage for all of a company.
12.	Grounded	True if grounded.

**Table 3-10 (Cont.) Geography Zone Usage Point**

Sr. Number	Attribute	Description
13.	Check Billing	True if as a result of an inspection or otherwise, there is a reason to suspect that a previous billing may have been performed with erroneous data. Value should be reset once this potential discrepancy has been resolved.
14.	Service Priority	Priority of service for this usage point. Note that usage points at the same service location can have different priorities. For example: MEDIUM
15.	Service Delivery Remark	Remarks about this usage point, for example the reason for it being rated with a non-nominal priority.
16.	Outage Region	Outage region in which this usage point is located.
17.	Facility Level	For example: XFM-A148
18.	Estimated Load KW	Estimated load. For example 9.
19.	Rated Current	The maximum continuous current carrying capacity in amps governed by the device material and construction. For example 220
20.	Nominal Service Voltage	Nominal service voltage. For example 120
21.	Rated Power KVA	Active power that this usage point is configured to deliver. For example 26
22.	Rated Power	Active power that this usage point is configured to deliver. For example: 23, 76.

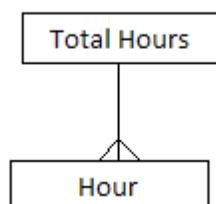
## 3.1.5 Hour

Description: [Hour](#) (page 2-59)

- [Hour Hierarchy](#) (page 3-13)
- [Hour Levels](#) (page 3-13)

### 3.1.5.1 Hour Hierarchy

Standard Hour Hierarchy



### 3.1.5.2 Hour Levels

[Table 3-11](#) (page 3-14) shows Hour Total: Total Hours.

**Table 3-11 Hour Total**

Sr. Number	Attribute
1.	Total Hours

[Table 3-12](#) (page 3-14) shows Hour: This table contains information at the hour level.

**Table 3-12 Hour Detail**

Sr. Number	Attribute	Sample Value
1.	Hour Code	1
2.	Hour Number	1
3.	Hour Description	01:00 - 01:59 AM

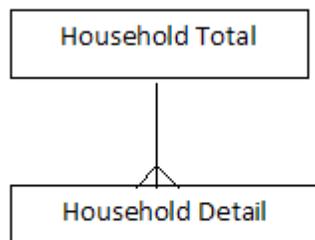
## 3.1.6 Household

Description: [Household](#) (page 2-59)

- [Household Hierarchy](#) (page 3-14)
- [Household Levels](#) (page 3-14)

### 3.1.6.1 Household Hierarchy

Standard Household Hierarchy



### 3.1.6.2 Household Levels

[Table 3-13](#) (page 3-15) shows Household Total: All HOUSEHOLD is the most aggregate level of the dimension.

**Table 3-13 Household Total**

Sr. Number	Attribute	Description
1.	ALL HOUSEHOLD CODE	Identification for the top level value.

[Table 3-14](#) (page 3-15) shows Household Detail: Captures household information which the individual customer may belong to. Operator may recognize household by customer's shared address and then generate this data according to the customer's demographic value.

**Table 3-14 Household Detail**

Sr. Number	Attribute	Description	Sample Value
1.	Household Code	Unique identifier for house hold.	HH1
2.	Dwelling Type	Type of dwelling.	No value
3.	Composition Group	Composition of the group.	No value
4.	Income Group	Income of the group.	BELOWMIDDLECLAS S
5.	Dwelling Status	Status of dwelling.	No value
6.	Household Size	Size of a house hold.	No value
7.	Dwelling Size	Size of the dwelling.	No value
8.	Dwelling Tenure	Length of stay at present location.	No value
9.	Number Of Children	Number of children in house.	3
10.	Number Of Teens	Number of teens in house.	3
11.	Number Of Adults	Number of adults in house.	2
12.	Number Of Seniors	Number of seniors in house.	1
13.	Number Of Persons	Number of persons sharing the customer's household.	9
14.	Number Of Earners	Number of wage earners in the household.	1

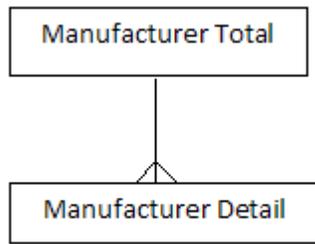
## 3.1.7 Manufacturer

Description: [Manufacturer](#) (page 2-63)

- [Manufacturer Hierarchy](#) (page 3-15)
- [Manufacturer Levels](#) (page 3-16)

### 3.1.7.1 Manufacturer Hierarchy

Standard Manufacturer Hierarchy



### 3.1.7.2 Manufacturer Levels

[Table 3-15](#) (page 3-16) shows Manufacturer Total: All MANUFACTURER is the most aggregate level of the dimension.

**Table 3-15 Manufacturer Total**

Sr. Number	Attribute	Description
1.	ALL MANUFACTURER CODE	Identification for the top level value.

[Table 3-16](#) (page 3-16) shows Manufacturer Detail: Organization that manufactures asset products.

**Table 3-16 Manufacturer Detail**

Sr. Number	Attribute	Sample Value
1.	Manufacturer Code	MNFCTR1

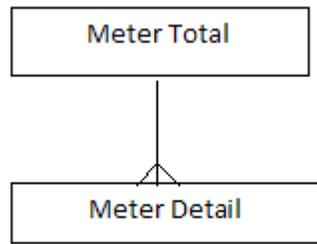
## 3.1.8 Meter

Description: [Meter](#) (page 2-64)

- [Meter Hierarchy](#) (page 3-16)
- [Meter Levels](#) (page 3-17)

### 3.1.8.1 Meter Hierarchy

Standard Meter Hierarchy



### 3.1.8.2 Meter Levels

[Table 3-17](#) (page 3-17) shows Meter Total: All METER is the most aggregate level of the dimension.

**Table 3-17 Meter Total**

Sr. Number	Attribute	Description
1.	ALL METER CODE	Identification for the top level value.

[Table 3-18](#) (page 3-17) shows Meter Detail: Physical asset that performs the metering role of the usage point. Used for measuring consumption and detection of events.

**Table 3-18 Meter Detail**

Sr. Number	Attribute	Description	Sample Value
1.	Meter Code	No value	M-220-2153
2.	Form Number	Meter form designation per ANSI C12.10 or other applicable standard. An alphanumeric designation denoting the circuit arrangement for which the meter is applicable and its specific terminal arrangement.	No value

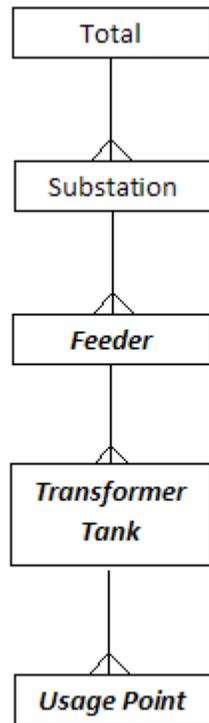
### 3.1.9 Operational

Description: Operational

- [Operational Hierarchy](#) (page 3-17)
- [Operational Levels](#) (page 3-18)

#### 3.1.9.1 Operational Hierarchy

Standard Operational Hierarchy



### 3.1.9.2 Operational Levels

[Table 3-19](#) (page 3-18) shows Total: aggregate level of the dimension.

**Table 3-19 Operational Total**

Sr. Number	Attribute	Description
1.	Total	Code for All Access Method

[Table 3-20](#) (page 3-18) shows Operational Substation: A collection of equipment for purposes other than generation or utilization, through which electric energy in bulk is passed for the purposes of switching or modifying its characteristics.

**Table 3-20 Operational Substation**

Sr. Number	Attribute	Sample Value
1.	Substation Code	SUB-001

[Table 3-21](#) (page 3-19) shows Operational Feeder: Feeder level of the dimension. Stores the Operational Information.

**Table 3-21 Operational Feeder**

Sr. Number	Attribute	Sample Value
1.	Feeder Code	FDR-0001
2.	Feeder Name	FDR-0001
3.	Feeder Description	FDR-0001

[Table 3-21](#) (page 3-19) shows Operational Transformer Tank: An assembly of two or more coupled windings that transform electrical power between voltage levels. These windings are bound on a common core and place in the same tank. Transformer tank can be used to model both single-phase and 3-phase transformers.

**Table 3-22 Operational Transformer Tank**

Sr. Number	Attribute	Sample Value
1.	Transformer Tank Code	XFM-001
2.	Power Transformer Code	No value

[Table 3-21](#) (page 3-19) shows Operational Usage Point: Logical or physical point in the network to which readings or events may be attributed. Used at the place where a physical or virtual meter may be located; however, it is not required that a meter be present.

**Table 3-23 Operational Usage Point**

Sr. Number	Attribute	Description
1.	Usage Point Code	UP-1240
2.	Phase Code	Phases carried, if applicable.
3.	AMI Billing Ready Kind Code	Tracks the lifecycle of the metering installation at a usage point with respect to readiness for billing through advanced metering infrastructure reads.
4.	Usage Point Connected Kind Code	State of the usage point with respect to connection to the network.
5.	Account Code	No value
6.	Usage Point Location Code	No value
7.	Service Category Code	No value
8.	Service Location Code	No value
9.	Minimal Usage Expected	If true, minimal or zero usage is expected at this usage point for situations such as premise vacancy, logical or physical disconnect. It is used for readings validation and estimation.
10.	Is SDP	If true, this usage point is a service delivery point, that is, a usage point where the ownership of the service changes hands.

Table 3-23 (Cont.) Operational Usage Point

Sr. Number	Attribute	Description
11.	Is Virtual	If true, this usage point is virtual, that is, no physical location exists in the network where a meter could be located to collect the meter readings. For example, one may define a virtual usage point to serve as an aggregation of usage for all of a company.
12.	Grounded	True if grounded.
13.	Check Billing	True if as a result of an inspection or otherwise, there is a reason to suspect that a previous billing may have been performed with erroneous data. Value should be reset once this potential discrepancy has been resolved.
14.	Service Priority	Priority of service for this usage point. Note that usage points at the same service location can have different priorities.
15.	Service Delivery Remark	Remarks about this usage point, for example the reason for it being rated with a non-nominal priority.
16.	Outage Region	Outage region in which this usage point is located.
17.	Facility Level	XFM-A148
18.	Estimated Load KW	Estimated load.
19.	Rated Current	The maximum continuous current carrying capacity in amps governed by the device material and construction.
20.	Nominal Service Voltage	Nominal service voltage.
21.	Rated Power KVA	Active power that this usage point is configured to deliver.
22.	Rated Power	Active power that this usage point is configured to deliver.

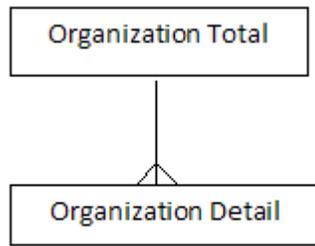
### 3.1.10 Organization

Description: [Organization Business Entity](#) (page 2-66)

- [Organization Hierarchy](#) (page 3-20)
- [Organization Levels](#) (page 3-21)

#### 3.1.10.1 Organization Hierarchy

Standard Organization Hierarchy



### 3.1.10.2 Organization Levels

[Table 3-24](#) (page 3-21) shows Organization Total: All Organization is the most aggregate level of the dimension.

**Table 3-24 Organization Total**

Sr. Number	Attribute	Description
1.	ALL ORGANIZATION CODE	Identification for the top level value.

[Table 3-25](#) (page 3-21) shows Organization Detail: A business unit of the organization that delivers a limited range of specific services through any sales channel. Examples could be retail or distribution.

**Table 3-25 Organization Business Unit Detail**

Sr. Number	Attribute	Description
1.	Organization Business Unit Code	Unique identifier for business unit. To identify whether the site is a store, distribution center or warehouse. For example: SUD1BU1
2.	Organization Business Unit Type Code	No value
3.	Address Location Code	No value
4.	Organization District Code	No value
5.	Organization Banner Code	No value
6.	Organization Business Entity Code	No value
7.	Organization Role Code	No value
8.	Channel Type Code	No value
9.	Organizational Demography Value Code	No value
10.	Chairman Code	No value
11.	Address Type Code	Unique identifier of the address type.
12.	Postcode	Postal codes of interest to the retail organization.

**Table 3-25 (Cont.) Organization Business Unit Detail**

Sr. Number	Attribute	Description
13.	Postal Plus Code	Four digit extension to the United States postal zip code.
14.	Location Type Code	Unique identifier for location type.
15.	Primary Trade Area Code	Primary trade area code, under which the business unit falls.
16.	Contact Type Code	This is the general method to use to contact a site. For example: Phone, Fax, Telex, and so on.
17.	Primary Market Area Code	Market area code under which the business unit falls.
18.	Account Clerk Code	Person managing the accounts of the cost center. This field is client specific. The definition and use of this field is customizable for each client.
19.	Organization Code	The unique identifier of the organization.
20.	Primary Currency ISO Code	The unique ISO standard identifier of the currency.
21.	Primary Business Unit Calendar Code	Default Site calendar code.
22.	Organization Division Code	No value
23.	Judicial Distraint Code	Case identifier of the judicial distraint.
24.	Contact Code	The identifier of the contact person.
25.	Court Code	Code of the law of court.
26.	Manager Code	Identifier of manager, as one individual party.
27.	Company Registry Number	The registration number, according to the local authority.
28.	DUNS Number	No value
29.	Manager Employee Number	Unique key denoting the employee number of the employee's manager.
30.	Payment Account Number	No value
31.	Contact Number	This is the number for the method specified to contact this site. There can be more than one number of each type for each site.
32.	Time Zone	It denotes which time zone the site is in.
33.	Shopping Center Type	Shopping center is group of retail and other commercial establishments that is planned, developed, owned, and managed as a single property. - Strip Center (Neighborhood, Community) - Mall (Power, Super Regional, Regional, Fashion/Sp
34.	Short Description	The 3 character abbreviation of the store name. For example: Business Unit 1
35.	Long Description	The 10 character abbreviation of the store name.
36.	Secondary Description	The secondary description or name of the store or warehouse.
37.	Address Line1	Line one of the detail postal addresses.
38.	Address Line2	Line 2 of the detailed postal address.
39.	Address Line3	Line 3 of the detailed postal address.
40.	Address Usage	Describes how the address is used.

**Table 3-25 (Cont.) Organization Business Unit Detail**

Sr. Number	Attribute	Description
41.	Primary Address Telephone	Default addresses telephone number.
42.	Primary Email Address	Default Email Address.
43.	Construction Status	Identifies the status of the site such as `Under Construction`, `New`, and so on.
44.	Tax Exempt Status	No value
45.	Contact Name	No value
46.	External Name	Name/Number assigned to site for electronic communication. For example: EDI transactions;
47.	Manager Name	No value
48.	Stock Exchange Name	No value
49.	Business Unit Concept	Possible values include, Convenience, General Merchandise, Category dominant anchors with few small tenants, Fashion, Higher-end (Upscale), Fashion oriented, Manufacturer`s Outlet, Leisure, Tourist oriented and Discount.
50.	Total Linear Distance	The total linear selling space of the location.
51.	Vat Region	The number of the value added tax region in which this store or warehouse is contained.
52.	Seal Image	No value
53.	Liquidation Start Date	No value
54.	Termination Date	Termination date of the company in case of company was founded with termination date.
55.	Liquidation End Date	No value
56.	Bankruptcy Start Date	No value
57.	Bankruptcy End Date	No value
58.	Final Settlement Start Date	No value
59.	Final Settlement End Date	No value
60.	Payment Account Open Date	Opening date of the account for payments.
61.	Payment Account Close Date	Closing date of the account for payments.
62.	Judicial Distraint Date	Date of the judicial distraint.
63.	Validation Start Date	Date of the registration of the company` record deletion from the company register.
64.	Validation End Date	Effective date of the deletion of the company`s record from the company register.
65.	Vat Include Indicator	Indicates whether value added tax will be included in the retail prices for the store. Valid values are `Y` or `N`.
66.	Domestic Indicator	Whether this organization is operated in a foreign country.
67.	Employee Count	No value
68.	Equity Amount	No value

**Table 3-25 (Cont.) Organization Business Unit Detail**

Sr. Number	Attribute	Description
69.	Equity Amount Local	No value
70.	Equity Amount Reporting	No value
71.	Annual Revenue	No value
72.	Annual Revenue Local	No value
73.	Annual Revenue Reporting	No value
74.	Annual Sales	No value
75.	Annual Sales Local	No value
76.	Annual Sales Reporting	No value
77.	Organization Name	Name of the organization.
78.	Party Type Code	No value

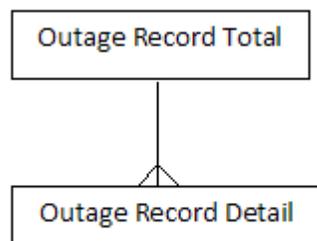
### 3.1.11 Outage Record

Description: [Outage Record](#) (page 2-68)

- [Outage Record Hierarchy](#) (page 3-24)
- [Outage Record Levels](#) (page 3-24)

#### 3.1.11.1 Outage Record Hierarchy

Standard Outage Record Hierarchy



#### 3.1.11.2 Outage Record Levels

[Table 3-26](#) (page 3-25) shows Outage Record Total: All Outage Record is the most aggregate level of the dimension.

**Table 3-26 Outage Record Total**

Sr. Number	Attribute	Description
1.	ALL OUTAGE RECORD CODE	Identification for the top level value.

[Table 3-27](#) (page 3-25) shows Outage Record Detail: Document describing details of an outage in part of the electrical network, typically produced by a SCADA system following a breaker trip, or within a trouble call system by grouping customer calls. It has an associated outage step for each supply point. Primary cause of the outage is captured in 'type'. In some countries all outage restoration is performed using a switching schedule which complements the outage record and records the crew and any planned work. In other systems, it may be acceptable to manage outages including new work tasks without switching schedules. Note: The relationship between Outage Record and Erp Person and Crew is inherited as each is a type of Document.

**Table 3-27 Outage Record Detail**

Sr. Number	Attribute	Description
1.	Outage Record Code	For example: 19901
2.	Outage Report Code	No value
3.	Damage Code	The damage code relative to the associated power system resource(s). Examples include broken, burnout, failure, flashed (burned), manually operated, wire down, no damage - rolling blackout, none.
4.	Action Taken	Overall action taken to resolve outage (details are in work tasks).
5.	Mode	Value of Erporganization.mode at the time of `startDateTime`.

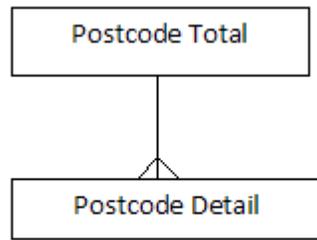
## 3.1.12 Postcode

Description: [Postcode](#) (page 2-73)

- [Postcode Hierarchy](#) (page 3-25)
- [Postcode Levels](#) (page 3-26)

### 3.1.12.1 Postcode Hierarchy

Standard Postcode Hierarchy



### 3.1.12.2 Postcode Levels

[Table 3-28](#) (page 3-26) shows Postcode Total: All Postcode is the most aggregate level of the dimension.

**Table 3-28 Postcode Total**

Sr. Number	Attribute	Description
1.	ALL POSTCODE CODE	Identification for the top level value.

[Table 3-29](#) (page 3-26) shows Postcode Detail: Postal Code, Zip Code, or similar geographical designation.

**Table 3-29 Postcode Detail**

Sr. Number	Attribute
1.	Postcode Code
2.	Address Location Code
3.	ISO Country Code
4.	Postcode Value
5.	Postcode Description
6.	Disease Hazard Indicator
7.	Earthquake Hazard Indicator
8.	Environmental Hazard Indicator
9.	Flood Hazard Indicator
10.	Hazardous Weather Area Indicator
11.	Hurricane Hazard Indicator
12.	Other Hazard Indicator
13.	Radon Hazard Indicator
14.	Storm Hazard Indicator
15.	Tornado Hazard Indicator
16.	Effective From Date

**Table 3-29 (Cont.) Postcode Detail**

Sr. Number	Attribute
17.	Effective To Date
18.	Status Code

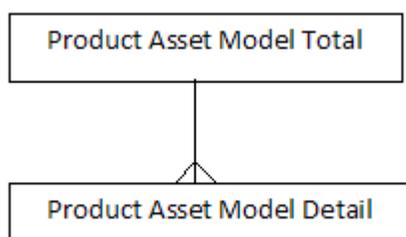
### 3.1.13 Product Asset Model

Description: [Product Asset Model](#) (page 2-75)

- [Product Asset Model Hierarchy](#) (page 3-27)
- [Product Asset Model Levels](#) (page 3-27)

#### 3.1.13.1 Product Asset Model Hierarchy

Standard Product Asset Model Hierarchy



#### 3.1.13.2 Product Asset Model Levels

[Table 3-30](#) (page 3-27) shows Product Asset Model Total: All Product Asset Model is the most aggregate level of the dimension.

**Table 3-30 Product Asset Model Total**

Sr. Number	Attribute	Description
1.	ALL PRODUCT ASSET MODEL	Identification for the top level value.

[Table 3-31](#) (page 3-27) shows Product Asset Model Detail: Asset model by a specific manufacturer.

**Table 3-31 Product Asset Model Detail**

Sr. Number	Attribute	Description
1.	Product Asset Model Code	For example: PROD1

**Table 3-31 (Cont.) Product Asset Model Detail**

Sr. Number	Attribute	Description
2.	Unit Symbol Code	No value
3.	Unit Multiplier Code	No value
4.	Corporate Standard Kind Code	Kind of corporate standard for this asset model.
5.	Asset Model Usage Kind Code	Intended usage for this asset model.
6.	Manufacturer Code	No value
7.	Model Number	Version number for product model, which indicates vintage of the product.
8.	Model Version	No value
9.	Weight Total Weight Value	The value to supervise.

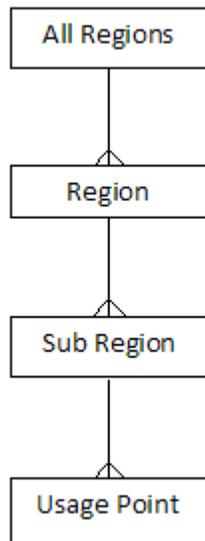
### 3.1.14 Region

Description: [Geography Region](#) (page 2-56)

- [Region Hierarchy](#) (page 3-28)
- [Region Levels](#) (page 3-28)

#### 3.1.14.1 Region Hierarchy

Standard Region Hierarchy



#### 3.1.14.2 Region Levels

[Table 3-32](#) (page 3-29) shows Region All Regions:

**Table 3-32 Region All Regions**

Sr. Number	Attribute
1.	All Regions

[Table 3-33](#) (page 3-29) shows Region. Region level in Geography hierarchy.

**Table 3-33 Region Region**

Sr. Number	Attribute	Sample Value
1.	Geography Region Code	1
2.	Geography World Code	No value
3.	Geography Region Name	RGN-1
4.	Geography Region Description	RGN-1
5.	Effective From Date	No value
6.	Effective To Date	No value
7.	Status Code	No value

[Table 3-34](#) (page 3-29) shows Region Sub Region: Sub region level in Geography hierarchy.

**Table 3-34 Region Sub Region**

Sr. Number	Attribute	Sample Value
1.	Geography Sub Region Code	1
2.	Geography Region Code	No value
3.	Geography Sub Region Name	SB-RGN-1
4.	Geography Sub Region Description	SB-RGN-1
5.	Effective From Date	No value
6.	Effective To Date	No value
7.	Status Code	No value

[Table 3-34](#) (page 3-29) shows Usage Point: Logical or physical point in the network to which readings or events may be attributed. Used at the place where a physical or virtual meter may be located; however, it is not required that a meter be present.

**Table 3-35 Region Usage Point**

Sr. Number	Attribute	Description
1.	Usage Point Code	For example: UP-1240
2.	Phase Code	Phases carried, if applicable. For example: A

Table 3-35 (Cont.) Region Usage Point

Sr. Number	Attribute	Description
3.	AMI Billing Ready Kind Code	Tracks the lifecycle of the metering installation at a usage point with respect to readiness for billing through advanced metering infrastructure reads. For example: 2
4.	Usage Point Connected Kind Code	State of the usage point with respect to connection to the network. For example: connected
5.	Account Code	No value
6.	Usage Point Location Code	No value
7.	Service Category Code	No value
8.	Service Location Code	No value
9.	Minimal Usage Expected	If true, minimal or zero usage is expected at this usage point for situations such as premise vacancy, logical or physical disconnect. It is used for readings validation and estimation.
10.	Is SDP	If true, this usage point is a service delivery point, that is, a usage point where the ownership of the service changes hands.
11.	Is Virtual	If true, this usage point is virtual, that is, no physical location exists in the network where a meter could be located to collect the meter readings. For example, one may define a virtual usage point to serve as an aggregation of usage for all of a company.
12.	Grounded	True if grounded.
13.	Check Billing	True if as a result of an inspection or otherwise, there is a reason to suspect that a previous billing may have been performed with erroneous data. Value should be reset once this potential discrepancy has been resolved.
14.	Service Priority	Priority of service for this usage point. Note that usage points at the same service location can have different priorities. For example: MEDIUM
15.	Service Delivery Remark	Remarks about this usage point, for example the reason for it being rated with a non-nominal priority.
16.	Outage Region	Outage region in which this usage point is located.
17.	Facility Level	For example: XFM-A148
18.	Estimated Load KW	Estimated load. For example: 9
19.	Rated Current	The maximum continuous current carrying capacity in amps governed by the device material and construction. For example: 220

**Table 3-35 (Cont.) Region Usage Point**

Sr. Number	Attribute	Description
20.	Nominal Service Voltage	Nominal service voltage. For example: 120
21.	Rated Power KVA	Active power that this usage point is configured to deliver. For example: 26
22.	Rated Power	Active power that this usage point is configured to deliver. For example: 23.76

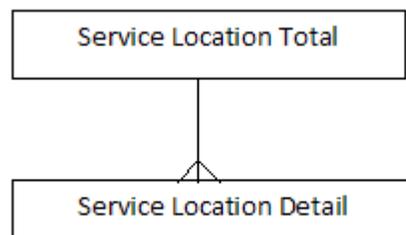
### 3.1.15 Service Location

Description: [Service Location](#) (page 2-80)

- [Service Location Hierarchy](#) (page 3-31)
- [Service Location Levels](#) (page 3-31)

#### 3.1.15.1 Service Location Hierarchy

Standard Service Location Hierarchy



#### 3.1.15.2 Service Location Levels

[Table 3-36](#) (page 3-31) shows Service Location Total: All Service Location is the most aggregate level of the dimension.

**Table 3-36 Service Location Total**

Sr. Number	Attribute	Description
1.	ALL SERVICE LOCATION	Identification for the top level value.

[Table 3-37](#) (page 3-32) shows Service Location Detail: A real estate location commonly referred to as premise.

**Table 3-37 Service Location Detail**

Sr. Number	Attribute	Description	Sample Value
1.	Service Location Code	No value	SLC-2001434
2.	Access Method	Method for the service person to access this usage point location. For example, a description of where to obtain a key if the facility is unmanned and secured.	No value
3.	Site Access Problem	Problems previously encountered when visiting or performing work on this location.	Examples include: bad dog, violent customer, verbally abusive occupant, obstructions, safety hazards, and so on.
4.	Needs Inspection	True if inspection is needed of facilities at this service location. This could be requested by a customer, due to suspected tampering, environmental concerns (for example: a fire in the vicinity), or to correct incompatible data.	No value

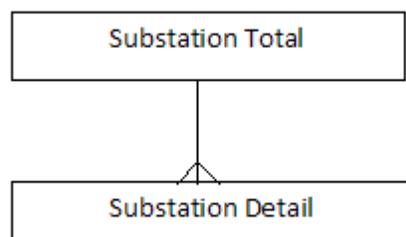
## 3.1.16 Substation

Description: [Substation](#) (page 2-82)

- [Substation Hierarchy](#) (page 3-32)
- [Substation Levels](#) (page 3-32)

### 3.1.16.1 Substation Hierarchy

Standard Substation Hierarchy



### 3.1.16.2 Substation Levels

[Table 3-38](#) (page 3-33) shows Substation Total: All Substation is the most aggregate level of the dimension.

**Table 3-38 Substation Total**

Sr. Number	Attribute	Description
1.	ALL SUBSTATION	Identification for the top level value.

[Table 3-39](#) (page 3-33) shows Substation Detail: A collection of equipment for purposes other than generation or utilization, through which electric energy in bulk is passed for the purposes of switching or modifying its characteristics.

**Table 3-39 Substation Detail**

Sr. Number	Attribute	Sample Value
1.	Substation Code	SUB-001

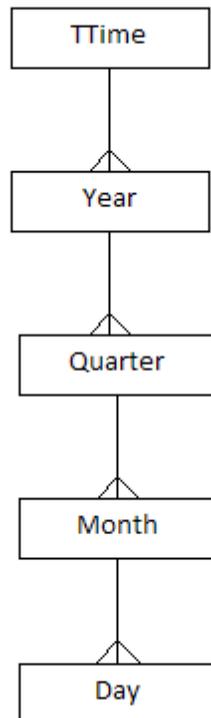
### 3.1.17 Time

Description: Time

- [Time Hierarchy](#) (page 3-33)
- [Time Levels](#) (page 3-34)

#### 3.1.17.1 Time Hierarchy

Standard Time Hierarchy



### 3.1.17.2 Time Levels

[Table 3-40](#) (page 3-34) shows Time Total: .

**Table 3-40 Time TTime**

Sr. Number	Attribute
1.	TTime

[Table 3-41](#) (page 3-34) shows Year: It captures information relating to a year in a Normal Calendar.

**Table 3-41 Time Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00
7.	Calendar Year Timespan	366

[Table 3-42](#) (page 3-34) shows Quarter: Captures information relating to a quarter in a Normal Calendar.

**Table 3-42 Time Quarter**

Sr. Number	Attribute	Sample Value
1.	Calendar Quarter Code	20000101
2.	Calendar Half Year Start Day Code	No value
3.	Calendar Quarter Description	CY 2000 Q1
4.	Calendar Quarter End Date	31-MAR-00
5.	Calendar Quarter Number	1
6.	Calendar Quarter Start Date	01-JAN-00
7.	Calendar Quarter Timespan	91
8.	Calendar Year Start Day Code	No value

[Table 3-42](#) (page 3-34) shows Month: Captures information relating to a month in a Normal Calendar.

**Table 3-43 Time Month**

Sr. Number	Attribute	Description
1.	Calendar Month Code	Unique warehouse key of the month, in the calendar. For example: 20000101
2.	Calendar Quarter Code	For example: 20000101
3.	Calendar Year Start Day Code	No value
4.	Calendar Half Year Start Day Code	No value
5.	Calendar Quarter Start Day Code	No value
6.	Calendar Month Number	A numeric representation of the month number in the calendar. It ranges from 1 to 12.
7.	Calendar Month Description	For example Jan 2016
8.	Calendar Month Timespan	The length, in terms of days, of this month in the calendar. For example: 31
9.	Calendar Month Start Date	For example: 01-JAN-16
10.	Calendar Month End Date	For example: 31-JAN-16

[Table 3-42](#) (page 3-34) shows Day: Calendar day in the day dimension.

**Table 3-44 Time Day**

Sr. Number	Attribute	Description
1.	Day Code	The unique identifier for a calendar date.
2.	Calendar Week Day Code	No value
3.	Calendar Week Day	For example: SAT
4.	Calendar Week Day Description	For example: SATURDAY
5.	Calendar Julian Day	For example: 2451825
6.	Calendar Day Timespan	For example: 1
7.	Calendar Day Of Year	For example: 281
8.	Calendar Working Day Indicator	For example: N
9.	Calendar Holiday Indicator	For example: Y

**Table 3-44 (Cont.) Time Day**

<b>Sr. Number</b>	<b>Attribute</b>	<b>Description</b>
10.	Calendar Weekend Indicator	For example: Y
11.	Calendar Date	Represents a calendar date.
12.	Calendar Date Description	A description of the calendar date.
13.	Calendar Start Date	Start date of calendar.
14.	Calendar End Date	End date of calendar.
15.	Calendar Load Date	No value
16.	Calendar Last Update Date	No value
17.	Calendar Last Update By	For example: OUDM_UPD
18.	Calendar Current Indicator	No value
19.	Calendar Week Number	No value
20.	Calendar Week Description	No value
21.	Calendar Week Start Date	No value
22.	Calendar Week End Date	No value
23.	Calendar Week Timespan	No value
24.	Calendar Half Month Number	No value
25.	Calendar Half Month Description	No value
26.	Calendar Half Month Start Date	No value
27.	Calendar Half Month End Date	No value
28.	Calendar Half Month Timespan	No value
29.	Calendar Month Number	No value
30.	Calendar Month Description	No value
31.	Calendar Month Start Date	No value
32.	Calendar Month End Date	No value
33.	Calendar Month Timespan	No value
34.	Calendar Quarter Code	No value
35.	Calendar Quarter Number	No value
36.	Calendar Quarter Description	For example: CY 2016 Q4
37.	Calendar Quarter Start Date	No value

**Table 3-44 (Cont.) Time Day**

<b>Sr. Number</b>	<b>Attribute</b>	<b>Description</b>
38.	Calendar Quarter End Date	No value
39.	Calendar Quarter Timespan	No value
40.	Calendar Half Year Code	No value
41.	Calendar Half Year Number	No value
42.	Calendar Half Year Description	No value
43.	Calendar Half Year Start Date	No value
44.	Calendar Half Year End Date	No value
45.	Calendar Half Year Timespan	No value
46.	Calendar Year Code	No value
47.	Calendar Year Number	No value
48.	Calendar Year Description	No value
49.	Calendar Year Start Date	No value
50.	Calendar Year End Date	No value
51.	Calendar Year Timespan	No value
52.	Calendar Month Start Day Code	No value
53.	Calendar Quarter Start Day Code	No value
54.	Calendar Year Start Day Code	No value
55.	Calendar Week Start Day Code	No value
56.	Calendar Half Month Start Day Code	No value
57.	Calendar Half Year Start Day Code	No value
58.	Business Day Code	No value
59.	Business Week Day Code	No value
60.	Business Week Day	No value
61.	Business Week Day Description	No value
62.	Business Julian Day	No value
63.	Business Day Timespan	No value
64.	Business Day Of Year	No value

**Table 3-44 (Cont.) Time Day**

<b>Sr. Number</b>	<b>Attribute</b>	<b>Description</b>
65.	Business Working Day Indicator	No value
66.	Business Holiday Indicator	No value
67.	Business Weekend Indicator	No value
68.	Business Date	No value
69.	Business Date Description	No value
70.	Business Start Date	No value
71.	Business End Date	No value
72.	Business Load Date	No value
73.	Business Last Update Date	No value
74.	Business Last Update By	No value
75.	Business Current Indicator	No value
76.	Business Week Number	No value
77.	Business Week Description	No value
78.	Business Week Start Date	No value
79.	Business Week End Date	No value
80.	Business Week Timespan	No value
81.	Business Half Month Code	No value
82.	Business Half Month Number	No value
83.	Business Half Month Description	No value
84.	Business Half Month Start Date	No value
85.	Business Half Month End Date	No value
86.	Business Half Month Timespan	No value
87.	Business Month Code	No value
88.	Business Month Number	No value
89.	Business Month Description	No value
90.	Business Month Start Date	No value
91.	Business Month End Date	No value
92.	Business Month Timespan	No value
93.	Business Quarter Code	No value
94.	Business Quarter Number	No value

**Table 3-44 (Cont.) Time Day**

<b>Sr. Number</b>	<b>Attribute</b>	<b>Description</b>
95.	Business Quarter Description	No value
96.	Business Quarter Start Date	No value
97.	Business Quarter End Date	No value
98.	Business Quarter Timespan	No value
99.	Business Half Year Code	No value
100.	Business Half Year Number	No value
101.	Business Half Year Description	No value
102.	Business Half Year Start Date	No value
103.	Business Half Year End Date	No value
104.	Business Half Year Timespan	No value
105.	Business Year Code	No value
106.	Business Year Number	No value
107.	Business Year Description	No value
108.	Business Year Start Date	No value
109.	Business Year End Date	No value
110.	Business Year Timespan	No value
111.	Business Month Start Day Code	No value
112.	Business Quarter Start Day Code	No value
113.	Business Year Start Day Code	No value
114.	Business Week Start Day Code	No value
115.	Business Half Month Start Day Code	No value
116.	Business Half Year Start Day Code	No value
117.	Business Week Code	No value
118.	Calendar Week Code	No value
119.	Calendar Month Code	No value

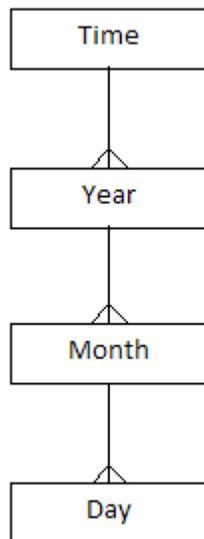
### 3.1.18 Time Month Day Hour

Description: [Calendar Year](#) (page 2-40)

- [Time Month Hour Hierarchy](#) (page 3-40)
- [Time Month Hour Levels](#) (page 3-40)

#### 3.1.18.1 Time Month Hour Hierarchy

Standard Time Month Hour Hierarchy



#### 3.1.18.2 Time Month Hour Levels

[Table 3-45](#) (page 3-40) shows Time Month Hour Time.

**Table 3-45 Time Month Hour Time**

Sr. Number	Attribute
1.	Time

[Table 3-46](#) (page 3-40) shows Time Month Hour Year: It captures information relating to a year in a Normal Calendar.

**Table 3-46 Time Month Hour Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101

**Table 3-46 (Cont.) Time Month Hour Year**

Sr. Number	Attribute	Sample Value
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00
7.	Calendar Year Timespan	366

[Table 3-47](#) (page 3-41) shows Time Month Hour Month: Detail level of the dimension. Stores the Time Month Hour Information.

**Table 3-47 Time Month Hour Month**

Sr. Number	Attribute	Description
1.	Calendar Month Code	Unique warehouse key of the month, in the calendar. For example: 20000101
2.	Calendar Quarter Code	For example: 20000101
3.	Calendar Year Start Day Code	No value
4.	Calendar Half Year Start Day Code	No value
5.	Calendar Quarter Start Day Code	No value
6.	Calendar Month Number	A numeric representation of the month number in the calendar. It ranges from 1 to 12.
7.	Calendar Month Description	Jan 2000
8.	Calendar Month Timespan	The length, in terms of days, of this month in the calendar. For example: 30 days
9.	Calendar Month Start Date	For example: 01-JAN-00
10.	Calendar Month End Date	For example: 31-JAN-00

[Table 3-48](#) (page 3-41) shows Time Month Hour Day: Calendar day in the day dimension.

**Table 3-48 Time Month Hour Day**

Sr. Number	Attribute
1.	Day Code
2.	Calendar Week Day Code
3.	Calendar Week Day
4.	Calendar Week Day Description
5.	Calendar Julian Day

**Table 3-48 (Cont.) Time Month Hour Day**

<b>Sr. Number</b>	<b>Attribute</b>
6.	Calendar Day Timespan
7.	Calendar Day Of Year
8.	Calendar Working Day Indicator
9.	Calendar Holiday Indicator
10.	Calendar Weekend Indicator
11.	Calendar Date
12.	Calendar Date Description
13.	Calendar Start Date
14.	Calendar End Date
15.	Calendar Load Date
16.	Calendar Last Update Date
17.	Calendar Last Update By
18.	Calendar Current Indicator
19.	Calendar Week Number
20.	Calendar Week Description
21.	Calendar Week Start Date
22.	Calendar Week End Date
23.	Calendar Week Timespan
24.	Calendar Half Month Number
25.	Calendar Half Month Description
26.	Calendar Half Month Start Date
27.	Calendar Half Month End Date
28.	Calendar Half Month Timespan
29.	Calendar Month Number
30.	Calendar Month Description
31.	Calendar Month Start Date
32.	Calendar Month End Date
33.	Calendar Month Timespan
34.	Calendar Quarter Code
35.	Calendar Quarter Number
36.	Calendar Quarter Description
37.	Calendar Quarter Start Date
38.	Calendar Quarter End Date
39.	Calendar Quarter Timespan
40.	Calendar Half Year Code
41.	Calendar Half Year Number
42.	Calendar Half Year Description
43.	Calendar Half Year Start Date

**Table 3-48 (Cont.) Time Month Hour Day**

<b>Sr. Number</b>	<b>Attribute</b>
44.	Calendar Half Year End Date
45.	Calendar Half Year Timespan
46.	Calendar Year Code
47.	Calendar Year Number
48.	Calendar Year Description
49.	Calendar Year Start Date
50.	Calendar Year End Date
51.	Calendar Year Timespan
52.	Calendar Month Start Day Code
53.	Calendar Quarter Start Day Code
54.	Calendar Year Start Day Code
55.	Calendar Week Start Day Code
56.	Calendar Half Month Start Day Code
57.	Calendar Half Year Start Day Code
58.	Business Day Code
59.	Business Week Day Code
60.	Business Week Day
61.	Business Week Day Description
62.	Business Julian Day
63.	Business Day Timespan
64.	Business Day Of Year
65.	Business Working Day Indicator
66.	Business Holiday Indicator
67.	Business Weekend Indicator
68.	Business Date
69.	Business Date Description
70.	Business Start Date
71.	Business End Date
72.	Business Load Date
73.	Business Last Update Date
74.	Business Last Update By
75.	Business Current Indicator
76.	Business Week Number
77.	Business Week Description
78.	Business Week Start Date
79.	Business Week End Date
80.	Business Week Timespan
81.	Business Half Month Code

**Table 3-48 (Cont.) Time Month Hour Day**

<b>Sr. Number</b>	<b>Attribute</b>
82.	Business Half Month Number
83.	Business Half Month Description
84.	Business Half Month Start Date
85.	Business Half Month End Date
86.	Business Half Month Timespan
87.	Business Month Code
88.	Business Month Number
89.	Business Month Description
90.	Business Month Start Date
91.	Business Month End Date
92.	Business Month Timespan
93.	Business Quarter Code
94.	Business Quarter Number
95.	Business Quarter Description
96.	Business Quarter Start Date
97.	Business Quarter End Date
98.	Business Quarter Timespan
99.	Business Half Year Code
100.	Business Half Year Number
101.	Business Half Year Description
102.	Business Half Year Start Date
103.	Business Half Year End Date
104.	Business Half Year Timespan
105.	Business Year Code
106.	Business Year Number
107.	Business Year Description
108.	Business Year Start Date
109.	Business Year End Date
110.	Business Year Timespan
111.	Business Month Start Day Code
112.	Business Quarter Start Day Code
113.	Business Year Start Day Code
114.	Business Week Start Day Code
115.	Business Half Month Start Day Code
116.	Business Half Year Start Day Code
117.	Business Week Code
118.	Calendar Week Code
119.	Calendar Month Code

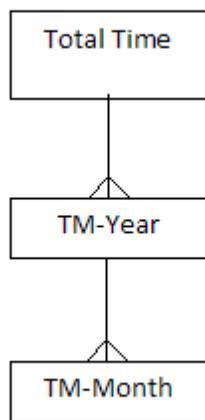
### 3.1.19 Time Month

Description: [Calendar Year](#) (page 2-40)

- [Time Month Hierarchy](#) (page 3-45)
- [Time Month Levels](#) (page 3-45)

#### 3.1.19.1 Time Month Hierarchy

Standard Time Month Hierarchy



#### 3.1.19.2 Time Month Levels

[Table 3-49](#) (page 3-45) shows Time Month Total Time.

**Table 3-49 Time Month Total Time**

Sr. Number	Attribute
1.	Total Time

[Table 3-50](#) (page 3-45) shows Time Month TM-Year: It captures information relating to a year in a Normal Calendar.

**Table 3-50 Time Month TM Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00

**Table 3-50 (Cont.) Time Month TM Year**

Sr. Number	Attribute	Sample Value
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00
7.	Calendar Year Timespan	366

[Table 3-51](#) (page 3-46) shows Time Month Month. Captures information relating to a month in a Normal Calendar.

**Table 3-51 Time Month TM-Month**

Sr. Number	Attribute	Description
1.	Calendar Month Code	Unique warehouse key of the month, in the calendar. For example: 20000101
2.	Calendar Quarter Code	For example: 20000101
3.	Calendar Year Start Day Code	
4.	Calendar Half Year Start Day Code	
5.	Calendar Quarter Start Day Code	
6.	Calendar Month Number	A numeric representation of the month number in the calendar. It ranges from 1 to 12.
7.	Calendar Month Description	
8.	Calendar Month Timespan	The length, in terms of days, of this month in the calendar. For example: 30 days
9.	Calendar Month Start Date	01-JAN-00
10.	Calendar Month End Date	31-JAN-00

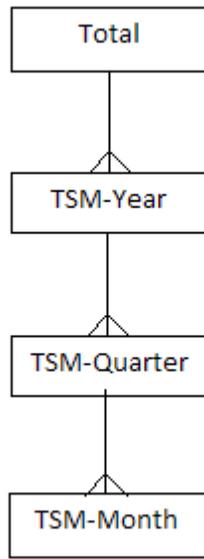
### 3.1.20 Time Month Hour

Description: [Calendar Year](#) (page 2-40)

- [Time Month Hour Hierarchy](#) (page 3-46)
- [Time Month Hour Levels](#) (page 3-47)

#### 3.1.20.1 Time Month Hour Hierarchy

Standard Time Month Hour Hierarchy



### 3.1.20.2 Time Month Hour Levels

[Table 3-52](#) (page 3-47) shows Time Month Hour Total Time Hour.

**Table 3-52 Time Month Hour Total Time Hour**

Sr. Number	Attribute
1.	Total Time Hour

[Table 3-53](#) (page 3-47) shows Time Month Hour TMH-Year: It captures information relating to a year in a Normal Calendar.

**Table 3-53 Time Month Hour TMH-Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00
7.	Calendar Year Timespan	366

[Table 3-54](#) (page 3-48) shows Time Month Hour TMH-Month: Captures information relating to a month in a Normal Calendar.

**Table 3-54 Time Month Hour TMH-Month**

Sr. Number	Attribute	Description
1.	Calendar Month Code	Unique warehouse key of the month, in the calendar.
2.	Calendar Quarter Code	No value
3.	Calendar Year Start Day Code	No value
4.	Calendar Half Year Start Day Code	No value
5.	Calendar Quarter Start Day Code	No value
6.	Calendar Month Number	A numeric representation of the month number in the calendar. It ranges from 1 to 12.
7.	Calendar Month Description	
8.	Calendar Month Timespan	The length, in terms of days, of this month in the calendar. For example: 30 days
9.	Calendar Month Start Date	For example: 01-JAN-00
10.	Calendar Month End Date	For example: 31-JAN-00

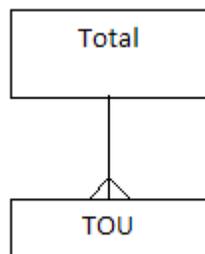
### 3.1.21 TOU

Description: [Time Of Use](#) (page 2-84)

- [Time Of Use Hierarchy](#) (page 3-48)
- [Time Of Use Levels](#) (page 3-48)

#### 3.1.21.1 Time Of Use Hierarchy

Standard Time Of Use Hierarchy



#### 3.1.21.2 Time Of Use Levels

[Table 3-55](#) (page 3-49) shows TOU: Time of Use.

**Table 3-55 Time Of Use Total Time**

Sr. Number	Attribute
1.	Total

[Table 3-56](#) (page 3-49) shows Time Of Use.

**Table 3-56 Time Of Use**

Sr. Number	Attribute	Sample Value
1.	Time Of Use Code	1
2.	Code	1
3.	Value	OnPeak
4.	Description	On peak time of use
5.	Comment	On peak

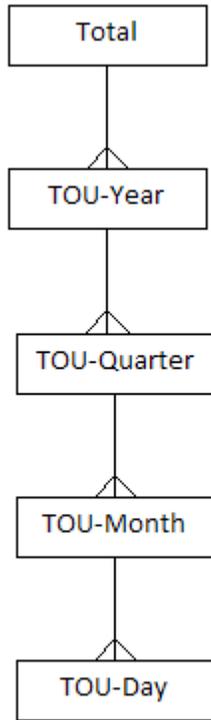
### 3.1.22 TOU Time

Description: TOU Time

- [TOU Time Hierarchy](#) (page 3-49)
- [TOU Time Levels](#) (page 3-50)

#### 3.1.22.1 TOU Time Hierarchy

Standard TOU Time Hierarchy



### 3.1.22.2 TOU Time Levels

[Table 3-57](#) (page 3-50) shows TOU Time Total.

**Table 3-57 TOU Time Total**

Sr. Number	Attribute
1.	Total

[Table 3-58](#) (page 3-50) shows TOU-Year: It captures information relating to a year in a Normal Calendar.

**Table 3-58 TOU Time TOU-Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00

**Table 3-58 (Cont.) TOU Time TOU-Year**

Sr. Number	Attribute	Sample Value
7.	Calendar Year Timespan	366

[Table 3-59](#) (page 3-51) shows TOU-Quarter: Captures information relating to a quarter in a Normal Calendar.

**Table 3-59 TOU Time TOU-Quarter**

Sr. Number	Attribute	Sample Value
1.	Calendar Quarter Code	20000101
2.	Calendar Half Year Start Day Code	
3.	Calendar Quarter Description	CY 2000 Q1
4.	Calendar Quarter End Date	31-MAR-00
5.	Calendar Quarter Number	1
6.	Calendar Quarter Start Date	01-JAN-00
7.	Calendar Quarter Timespan	91
8.	Calendar Year Start Day Code	20000101

[Table 3-60](#) (page 3-51) shows TOU-Month: Captures information relating to a month in a Normal Calendar.

**Table 3-60 TOU Time TOU-Month**

Sr. Number	Attribute	Description
1.	Calendar Month Code	Unique warehouse key of the month, in the calendar. For example: 20000101
2.	Calendar Quarter Code	For example: 20000101
3.	Calendar Year Start Day Code	No value
4.	Calendar Half Year Start Day Code	No value
5.	Calendar Quarter Start Day Code	No value
6.	Calendar Month Number	A numeric representation of the month number in the calendar. It ranges from 1 to 12.
7.	Calendar Month Description	No value
8.	Calendar Month Timespan	The length, in terms of days, of this month in the calendar.
9.	Calendar Month Start Date	No value
10.	Calendar Month End Date	No value

[Table 3-61](#) (page 3-52) shows TOU-Day: Calendar day in the day dimension.

Table 3-61 TOU Time TOU-Day

Sr. Number	Attribute
1.	Day Code
2.	Calendar Week Day Code
3.	Calendar Week Day
4.	Calendar Week Day Description
5.	Calendar Julian Day
6.	Calendar Day Timespan
7.	Calendar Day Of Year
8.	Calendar Working Day Indicator
9.	Calendar Holiday Indicator
10.	Calendar Weekend Indicator
11.	Calendar Date
12.	Calendar Date Description
13.	Calendar Start Date
14.	Calendar End Date
15.	Calendar Load Date
16.	Calendar Last Update Date
17.	Calendar Last Update By
18.	Calendar Current Indicator
19.	Calendar Week Number
20.	Calendar Week Description
21.	Calendar Week Start Date
22.	Calendar Week End Date
23.	Calendar Week Timespan
24.	Calendar Half Month Number
25.	Calendar Half Month Description
26.	Calendar Half Month Start Date
27.	Calendar Half Month End Date
28.	Calendar Half Month Timespan
29.	Calendar Month Number
30.	Calendar Month Description
31.	Calendar Month Start Date
32.	Calendar Month End Date
33.	Calendar Month Timespan
34.	Calendar Quarter Code
35.	Calendar Quarter Number
36.	Calendar Quarter Description
37.	Calendar Quarter Start Date
38.	Calendar Quarter End Date

**Table 3-61 (Cont.) TOU Time TOU-Day**

<b>Sr. Number</b>	<b>Attribute</b>
39.	Calendar Quarter Timespan
40.	Calendar Half Year Code
41.	Calendar Half Year Number
42.	Calendar Half Year Description
43.	Calendar Half Year Start Date
44.	Calendar Half Year End Date
45.	Calendar Half Year Timespan
46.	Calendar Year Code
47.	Calendar Year Number
48.	Calendar Year Description
49.	Calendar Year Start Date
50.	Calendar Year End Date
51.	Calendar Year Timespan
52.	Calendar Month Start Day Code
53.	Calendar Quarter Start Day Code
54.	Calendar Year Start Day Code
55.	Calendar Week Start Day Code
56.	Calendar Half Month Start Day Code
57.	Calendar Half Year Start Day Code
58.	Business Day Code
59.	Business Week Day Code
60.	Business Week Day
61.	Business Week Day Description
62.	Business Julian Day
63.	Business Day Timespan
64.	Business Day Of Year
65.	Business Working Day Indicator
66.	Business Holiday Indicator
67.	Business Weekend Indicator
68.	Business Date
69.	Business Date Description
70.	Business Start Date
71.	Business End Date
72.	Business Load Date
73.	Business Last Update Date
74.	Business Last Update By
75.	Business Current Indicator
76.	Business Week Number

Table 3-61 (Cont.) TOU Time TOU-Day

Sr. Number	Attribute
77.	Business Week Description
78.	Business Week Start Date
79.	Business Week End Date
80.	Business Week Timespan
81.	Business Half Month Code
82.	Business Half Month Number
83.	Business Half Month Description
84.	Business Half Month Start Date
85.	Business Half Month End Date
86.	Business Half Month Timespan
87.	Business Month Code
88.	Business Month Number
89.	Business Month Description
90.	Business Month Start Date
91.	Business Month End Date
92.	Business Month Timespan
93.	Business Quarter Code
94.	Business Quarter Number
95.	Business Quarter Description
96.	Business Quarter Start Date
97.	Business Quarter End Date
98.	Business Quarter Timespan
99.	Business Half Year Code
100.	Business Half Year Number
101.	Business Half Year Description
102.	Business Half Year Start Date
103.	Business Half Year End Date
104.	Business Half Year Timespan
105.	Business Year Code
106.	Business Year Number
107.	Business Year Description
108.	Business Year Start Date
109.	Business Year End Date
110.	Business Year Timespan
111.	Business Month Start Day Code
112.	Business Quarter Start Day Code
113.	Business Year Start Day Code
114.	Business Week Start Day Code

**Table 3-61 (Cont.) TOU Time TOU-Day**

Sr. Number	Attribute
115.	Business Half Month Start Day Code
116.	Business Half Year Start Day Code
117.	Business Week Code
118.	Calendar Week Code
119.	Calendar Month Code

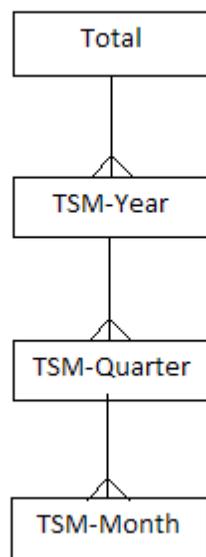
### 3.1.23 Time Season Month

Description: Time Season Month

- [Time Season Month Hierarchy](#) (page 3-55)
- [Time Season Month Levels](#) (page 3-55)

#### 3.1.23.1 Time Season Month Hierarchy

Standard Time Season Month Hierarchy



#### 3.1.23.2 Time Season Month Levels

[Table 3-62](#) (page 3-56) shows Time Season Month Total.

**Table 3-62 Time Season Month Total**

Sr. Number	Attribute
1.	Total

[Table 3-63](#) (page 3-56) shows Time Season Month TSM-Year: It captures information relating to a year in a Normal Calendar.

**Table 3-63 Time Season Month TSM-Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00
7.	Calendar Year Timespan	366

[Table 3-64](#) (page 3-56) shows Time Season Month TSM-Quarter: Captures information relating to a quarter in a Normal Calendar.

**Table 3-64 Time Season Month TSM-Quarter**

Sr. Number	Attribute	Sample Value
1.	Calendar Quarter Code	20000101
2.	Calendar Half Year Start Day Code	No value
3.	Calendar Quarter Description	CY 2000 Q1
4.	Calendar Quarter End Date	31-MAR-00
5.	Calendar Quarter Number	1
6.	Calendar Quarter Start Date	01-JAN-00
7.	Calendar Quarter Timespan	91
8.	Calendar Year Start Day Code	20000101

[Table 3-65](#) (page 3-56) shows Time Season Month TSM-Month: Captures information relating to a month in a Normal Calendar.

**Table 3-65 Time Season Month TSM-Month**

Sr. Number	Attribute
1.	Calendar Month Code
2.	Calendar Quarter Code
3.	Calendar Year Start Day Code

**Table 3-65 (Cont.) Time Season Month TSM-Month**

Sr. Number	Attribute
4.	Calendar Half Year Start Day Code
5.	Calendar Quarter Start Day Code
6.	Calendar Month Number
7.	Calendar Month Description
8.	Calendar Month Timespan
9.	Calendar Month Start Date
10.	Calendar Month End Date

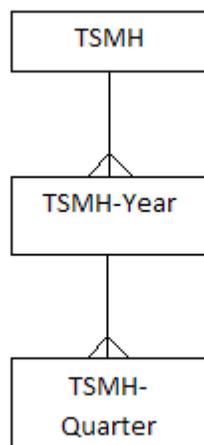
### 3.1.24 Time Season Month Hour

Description: Time Season Month Hour

- [Time Season Month Hour Hierarchy](#) (page 3-57)
- [Time Season Month Hour Levels](#) (page 3-57)

#### 3.1.24.1 Time Season Month Hour Hierarchy

Standard Time Season Month Hour Hierarchy



#### 3.1.24.2 Time Season Month Hour Levels

[Table 3-66](#) (page 3-58) shows Time Season Month Hour TSMH.

**Table 3-66 Time Season Month Hour TSMH**

Sr. Number	Attribute
1.	TSMH

[Table 3-67](#) (page 3-58) shows Time Season Month Hour TSMH-Year: It captures information relating to a year in a Normal Calendar.

**Table 3-67 Time Season Month Hour TSMH-Year**

Sr. Number	Attribute	Sample Value
1.	Calendar Year Code	20000101
2.	Calendar Name	CALENDAR
3.	Calendar Year Description	CY 2000
4.	Calendar Year End Date	31-DEC-00
5.	Calendar Year Number	1
6.	Calendar Year Start Date	01-JAN-00
7.	Calendar Year Timespan	366

[Table 3-68](#) (page 3-58) shows Time Season Month Hour TSMH-Quarter: Captures information relating to a quarter in a Normal Calendar.

**Table 3-68 Time Season Month Hour TSMH-Quarter**

Sr. Number	Attribute	Sample Value
1.	Calendar Quarter Code	20000101
2.	Calendar Half Year Start Day Code	No value
3.	Calendar Quarter Description	CY 2000 Q1
4.	Calendar Quarter End Date	31-MAR-00
5.	Calendar Quarter Number	1
6.	Calendar Quarter Start Date	01-JAN-00
7.	Calendar Quarter Timespan	91
8.	Calendar Year Start Day Code	20000101

[Table 3-69](#) (page 3-58) shows Time Season Month Hour TSMH-Month: Captures information relating to a month in a Normal Calendar.

**Table 3-69 Time Season Month Hour TSMH-TSMH-Month**

Sr. Number	Attribute
1.	Calendar Month Code
2.	Calendar Quarter Code
3.	Calendar Year Start Day Code

**Table 3-69 (Cont.) Time Season Month Hour TSMH-TSMH-Month**

Sr. Number	Attribute
4.	Calendar Half Year Start Day Code
5.	Calendar Quarter Start Day Code
6.	Calendar Month Number
7.	Calendar Month Description
8.	Calendar Month Timespan
9.	Calendar Month Start Date
10.	Calendar Month End Date

[Table 3-70](#) (page 3-59) shows Time Season Month Hour TSMH-Day: Calendar day in the day dimension.

**Table 3-70 Time Season Month Hour TSMH-Day**

Sr. Number	Attribute
1.	Day Code
2.	Calendar Week Day Code
3.	Calendar Week Day
4.	Calendar Week Day Description
5.	Calendar Julian Day
6.	Calendar Day Timespan
7.	Calendar Day Of Year
8.	Calendar Working Day Indicator
9.	Calendar Holiday Indicator
10.	Calendar Weekend Indicator
11.	Calendar Date
12.	Calendar Date Description
13.	Calendar Start Date
14.	Calendar End Date
15.	Calendar Load Date
16.	Calendar Last Update Date
17.	Calendar Last Update By
18.	Calendar Current Indicator
19.	Calendar Week Number
20.	Calendar Week Description
21.	Calendar Week Start Date
22.	Calendar Week End Date
23.	Calendar Week Timespan
24.	Calendar Half Month Number
25.	Calendar Half Month Description

**Table 3-70 (Cont.) Time Season Month Hour TSMH-Day**

<b>Sr. Number</b>	<b>Attribute</b>
26.	Calendar Half Month Start Date
27.	Calendar Half Month End Date
28.	Calendar Half Month Timespan
29.	Calendar Month Number
30.	Calendar Month Description
31.	Calendar Month Start Date
32.	Calendar Month End Date
33.	Calendar Month Timespan
34.	Calendar Quarter Code
35.	Calendar Quarter Number
36.	Calendar Quarter Description
37.	Calendar Quarter Start Date
38.	Calendar Quarter End Date
39.	Calendar Quarter Timespan
40.	Calendar Half Year Code
41.	Calendar Half Year Number
42.	Calendar Half Year Description
43.	Calendar Half Year Start Date
44.	Calendar Half Year End Date
45.	Calendar Half Year Timespan
46.	Calendar Year Code
47.	Calendar Year Number
48.	Calendar Year Description
49.	Calendar Year Start Date
50.	Calendar Year End Date
51.	Calendar Year Timespan
52.	Calendar Month Start Day Code
53.	Calendar Quarter Start Day Code
54.	Calendar Year Start Day Code
55.	Calendar Week Start Day Code
56.	Calendar Half Month Start Day Code
57.	Calendar Half Year Start Day Code
58.	Business Day Code
59.	Business Week Day Code
60.	Business Week Day
61.	Business Week Day Description
62.	Business Julian Day
63.	Business Day Timespan

**Table 3-70 (Cont.) Time Season Month Hour TSMH-Day**

<b>Sr. Number</b>	<b>Attribute</b>
64.	Business Day Of Year
65.	Business Working Day Indicator
66.	Business Holiday Indicator
67.	Business Weekend Indicator
68.	Business Date
69.	Business Date Description
70.	Business Start Date
71.	Business End Date
72.	Business Load Date
73.	Business Last Update Date
74.	Business Last Update By
75.	Business Current Indicator
76.	Business Week Number
77.	Business Week Description
78.	Business Week Start Date
79.	Business Week End Date
80.	Business Week Timespan
81.	Business Half Month Code
82.	Business Half Month Number
83.	Business Half Month Description
84.	Business Half Month Start Date
85.	Business Half Month End Date
86.	Business Half Month Timespan
87.	Business Month Code
88.	Business Month Number
89.	Business Month Description
90.	Business Month Start Date
91.	Business Month End Date
92.	Business Month Timespan
93.	Business Quarter Code
94.	Business Quarter Number
95.	Business Quarter Description
96.	Business Quarter Start Date
97.	Business Quarter End Date
98.	Business Quarter Timespan
99.	Business Half Year Code
100.	Business Half Year Number
101.	Business Half Year Description

**Table 3-70 (Cont.) Time Season Month Hour TSMH-Day**

Sr. Number	Attribute
102.	Business Half Year Start Date
103.	Business Half Year End Date
104.	Business Half Year Timespan
105.	Business Year Code
106.	Business Year Number
107.	Business Year Description
108.	Business Year Start Date
109.	Business Year End Date
110.	Business Year Timespan
111.	Business Month Start Day Code
112.	Business Quarter Start Day Code
113.	Business Year Start Day Code
114.	Business Week Start Day Code
115.	Business Half Month Start Day Code
116.	Business Half Year Start Day Code
117.	Business Week Code
118.	Calendar Week Code
119.	Calendar Month Code

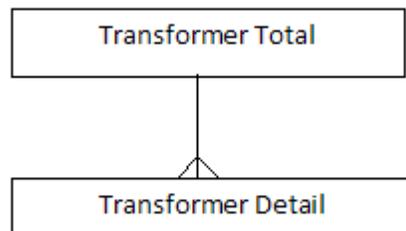
## 3.1.25 Transformer

Description: Transformer

- [Transformer Hierarchy](#) (page 3-62)
- [Transformer Levels](#) (page 3-63)

### 3.1.25.1 Transformer Hierarchy

Standard Transformer Hierarchy



### 3.1.25.2 Transformer Levels

[Table 3-71](#) (page 3-63) shows Transformer Total: All Transformer is the most aggregate level of the dimension.

**Table 3-71 Transformer Total**

Sr. Number	Attribute	Description
1.	ALL TRANSFORMER	Identification for the top level value.

[Table 3-72](#) (page 3-63) shows Transformer Detail: An assembly of two or more coupled windings that transform electrical power between voltage levels. These windings are bound on a common core and place in the same tank. Transformer tank can be used to model both single-phase and 3-phase transformers.

**Table 3-72 Transformer Detail**

Sr. Number	Attribute	Description
1.	Transformer Tank Code	For example: XFM-001
2.	Power Transformer Code	No value

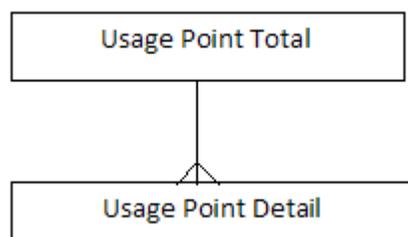
### 3.1.26 Usage Point

Description: [Usage Point](#) (page 2-86)

- [Usage Point Hierarchy](#) (page 3-63)
- [Usage Point Levels](#) (page 3-63)

#### 3.1.26.1 Usage Point Hierarchy

Standard Usage Point Hierarchy



#### 3.1.26.2 Usage Point Levels

[Table 3-73](#) (page 3-64) shows Usage Point Total: All Usage Point is the most aggregate level of the dimension.

**Table 3-73 Usage Point Total**

Sr. Number	Attribute	Description
1.	ALL USAGE POINT	Identification for the top level value.

[Table 3-74](#) (page 3-64) shows Usage Point Detail: Logical or physical point in the network to which readings or events may be attributed. Used at the place where a physical or virtual meter may be located; however, it is not required that a meter be present.

**Table 3-74 Usage Point Detail**

Sr. Number	Attribute	Description
1.	Usage Point Code	No value
2.	Phase Code	Phases carried, if applicable.
3.	AMI Billing Ready Kind Code	Tracks the lifecycle of the metering installation at a usage point with respect to readiness for billing through advanced metering infrastructure reads.
4.	Usage Point Connected Kind Code	State of the usage point with respect to connection to the network.
5.	Account Code	No value
6.	Usage Point Location Code	No value
7.	Service Category Code	No value
8.	Service Location Code	No value
9.	Minimal Usage Expected	If true, minimal or zero usage is expected at this usage point for situations such as premise vacancy, logical or physical disconnect. It is used for readings validation and estimation.
10.	Is SDP	If true, this usage point is a service delivery point, that is, a usage point where the ownership of the service changes hands.
11.	Is Virtual	If true, this usage point is virtual, that is, no physical location exists in the network where a meter could be located to collect the meter readings. For example, one may define a virtual usage point to serve as an aggregation of usage for all of a company.
12.	Grounded	True if grounded.
13.	Check Billing	True if as a result of an inspection or otherwise, there is a reason to suspect that a previous billing may have been performed with erroneous data. Value should be reset once this potential discrepancy has been resolved.
14.	Service Priority	Priority of service for this usage point. Note that usage points at the same service location can have different priorities.
15.	Service Delivery Remark	Remarks about this usage point, for example the reason for it being rated with a non-nominal priority.
16.	Outage Region	Outage region in which this usage point is located.

**Table 3-74 (Cont.) Usage Point Detail**

Sr. Number	Attribute	Description
17.	Facility Level	No value
18.	Estimated Load KW	Estimated load.
19.	Rated Current	The maximum continuous current carrying capacity in amps governed by the device material and construction.
20.	Nominal Service Voltage	Nominal service voltage.
21.	Rated Power KVA	Active power that this usage point is configured to deliver.
22.	Rated Power	Active power that this usage point is configured to deliver.

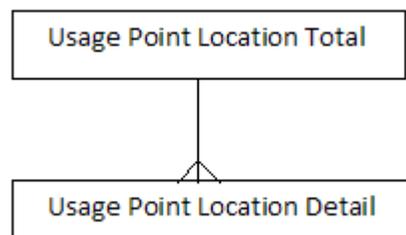
### 3.1.27 Usage Point Location

Description: [Usage Point Location](#) (page 2-86)

- [Usage Point Location Hierarchy](#) (page 3-65)
- [Usage Point Location Levels](#) (page 3-65)

#### 3.1.27.1 Usage Point Location Hierarchy

Standard Usage Point Location Hierarchy



#### 3.1.27.2 Usage Point Location Levels

[Table 3-75](#) (page 3-66) shows Usage Point Location Total: All Usage Point Location is the most aggregate level of the dimension.

**Table 3-75 Usage Point Location Total**

Sr. Number	Attribute	Description
1.	ALL USAGE POINT LOCATION	Identification for the top level value.

[Table 3-76](#) (page 3-66) shows Usage Point Location Detail: Location of an individual usage point.

**Table 3-76 Usage Point Location Detail**

Sr. Number	Attribute	Description
1.	Usage Point Location Code	For example: SLC-1266
2.	Access Method	Method for the service person to access this usage point location. For example, a description of where to obtain a key if the facility is unmanned and secured.
3.	Site Access Problem	Problems previously encountered when visiting or performing work on this location.  Examples include: bad dog, violent customer, verbally abusive occupant, obstructions, safety hazards, and so on.
4.	Remark	Remarks about this location.

## 3.2 IETL Use Dimensions

- [Address Location](#) (page 3-66)
- [Asset Info](#) (page 3-69)
- [Demand Response Program](#) (page 3-70)
- [Outage Report](#) (page 3-71)
- [Product Offering](#) (page 3-72)
- [Reading Type](#) (page 3-74)
- [Usage Point Group](#) (page 3-77)
- [Zone](#) (page 3-78)

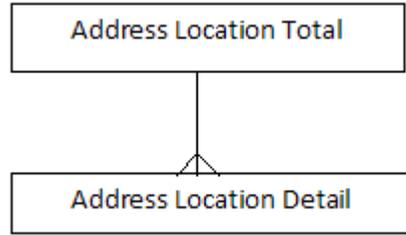
### 3.2.1 Address Location

Description: [Address Location](#) (page 2-35)

- [Address Location Hierarchy](#) (page 3-66)
- [Address Location Levels](#) (page 3-67)

#### 3.2.1.1 Address Location Hierarchy

Standard Address Location Hierarchy



### 3.2.1.2 Address Location Levels

[Table 3-77](#) (page 3-67) shows Address Location Total: All ADDRESS LOCATION is the most aggregate level of the dimension.

**Table 3-77 Address Location Total**

Sr. Number	Attribute	Description
1.	ALL ADDRESS LOCATION	Identification for the top level value.

[Table 3-78](#) (page 3-67) Shows Address Location Detail: Keep all address. It has levels as country, state, city, address and so on.

**Table 3-78 Address Location Detail**

Sr. Number	Attribute
1.	Address Location Code
2.	Address Location Code1
3.	Geography Entity Code
4.	Postcode Code
5.	Tax Authority Code
6.	Geography Location Code
7.	Postal Plus Code
8.	Elevation UOM Code
9.	Post Office Box
10.	Post Office Box Type
11.	Address Name
12.	Address Description
13.	Address Line1
14.	Address Line2
15.	Address Line3
16.	Address Line4
17.	Address Style
18.	Address Lines Phonetic

**Table 3-78 (Cont.) Address Location Detail**

<b>Sr. Number</b>	<b>Attribute</b>
19.	Primary Address Telephone
20.	Geography World Code
21.	World Name
22.	World Description
23.	Geography Region Code
24.	Region Name
25.	Region Description
26.	Geography Sub Region Code
27.	Sub region Name
28.	Sub region Description
29.	Geography State Code
30.	State Name
31.	State Description
32.	Geography Country Code
33.	Country Name
34.	Country Description
35.	Geography County Code
36.	County Name
37.	County Description
38.	Geography City Code
39.	City Name
40.	City Description
41.	Geography Street Code
42.	Street Name
43.	Street Description
44.	Geography Building Code
45.	Building Name
46.	Building Description
47.	Flat Room Code
48.	Flat Room Name
49.	Flat Room Description
50.	Floor Code
51.	Floor Name
52.	Floor Description
53.	Elevation
54.	Primary Email Address
55.	Longitude
56.	Latitude

**Table 3-78 (Cont.) Address Location Detail**

Sr. Number	Attribute
57.	Accuracy
58.	Source System Identifier
59.	Address Longitude Measure
60.	Address Latitude Measure
61.	Effective From Date
62.	Effective To Date
63.	Status Code
64.	Address Type Code
65.	Employee Code
66.	Source System Code
67.	Time Zone Code

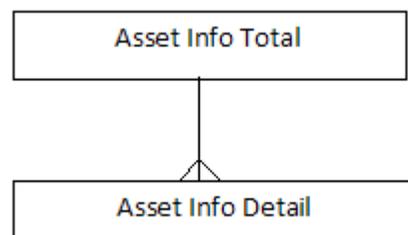
## 3.2.2 Asset Info

Description: [Asset Info](#) (page 2-37)

- [Asset Info Hierarchy](#) (page 3-69)
- [Asset Info Levels](#) (page 3-69)

### 3.2.2.1 Asset Info Hierarchy

Standard Asset Info Hierarchy



### 3.2.2.2 Asset Info Levels

[Table 3-79](#) (page 3-70) shows Asset Info Total: All ASSET INFO is the most aggregate level of the dimension.

**Table 3-79 Asset InfoTotal**

Sr. Number	Attribute	Description
1.	ALL ASSET INFO	Identification for the top level value.

[Table 3-80](#) (page 3-70) shows Asset Info Detail: Set of attributes of an asset, representing typical data-sheet information of a physical device that can be instantiated and shared in different data exchange contexts:- as attributes of an asset instance (installed or in stock), as attributes of an asset model (product by a manufacturer), as attributes of a type asset (generic type of an asset as used in designs/extension planning).

**Table 3-80 Asset Info Detail**

Sr. Number	Attribute	Sample Value
1.	Asset Info Code	ASST_INFO1
2.	Asset Model Code	No value

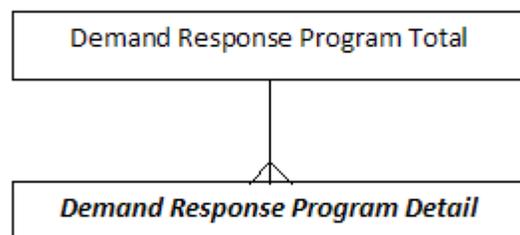
### 3.2.3 Demand Response Program

Description: [Demand Response Program](#) (page 2-47)

- [Demand Response Program Hierarchy](#) (page 3-70)
- [Demand Response Program Levels](#) (page 3-70)

#### 3.2.3.1 Demand Response Program Hierarchy

Standard Demand Response Program Hierarchy



#### 3.2.3.2 Demand Response Program Levels

[Table 3-81](#) (page 3-71) shows Demand Response Program Total: All DEMAND RESPONSE PROGRAM is the most aggregate level of the dimension.

**Table 3-81 Demand Response Program Total**

Sr. Number	Attribute	Description
1.	ALL DEMAND RESPONSE PROGRAM	Identification for the top level value.

[Table 3-82](#) (page 3-71) shows Demand Response Program Detail

**Table 3-82 Demand Response Program Detail**

Sr. Number	Attribute	Description
1.	Demand Response Program Code	1001
2.	Type	Utility-specific classification of this document, according to their corporate standards, practices, and existing IT systems. SUMMER SAVING
3.	Start Date	01-JUL-07
4.	End Date	30-SEP-07

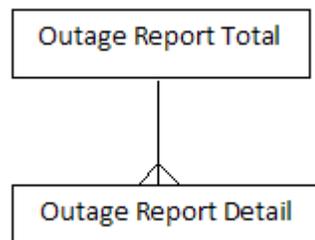
## 3.2.4 Outage Report

Description: [Outage Report](#) (page 2-68)

- [Outage Report Hierarchy](#) (page 3-71)
- [Outage Report Levels](#) (page 3-71)

### 3.2.4.1 Outage Report Hierarchy

Standard Outage Report Hierarchy



### 3.2.4.2 Outage Report Levels

[Table 3-83](#) (page 3-72) shows Outage Report Total: All OUTAGE REPORT is the most aggregate level of the dimension.

**Table 3-83 Outage Report Total**

Sr. Number	Attribute	Description
1.	ALL OUTAGE REPORT CODE	Identification for the top level value.

[Table 3-84](#) (page 3-72) shows Outage Report Detail: Location of an individual usage point.

**Table 3-84 Outage Report Detail**

Sr. Number	Attribute	Description
1.	Outage Report Code	14803
2.	Customer Count	8
3.	Outage Duration	Total outage duration. 166
4.	Average CML	Average customer minutes lost (CML) for this point of supply for this outage. 20.75
5.	Total CML	Total customer minutes lost (CML). 1328

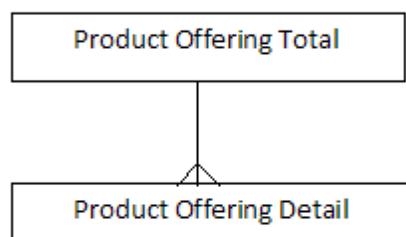
## 3.2.5 Product Offering

Description: [Product Offering](#) (page 2-75)

- [Product Offering Hierarchy](#) (page 3-72)
- [Product Offering Level](#) (page 3-73)

### 3.2.5.1 Product Offering Hierarchy

Standard Product Offering Hierarchy



### 3.2.5.2 Product Offering Level

[Table 3-85](#) (page 3-73) Product Offering Detail: Defines how a utility service/product is brought to the market.

**Table 3-85 Product Offering Total**

Sr. Number	Attribute	Description
1.	ALL PRODUCT OFFERING	Identification for the top level value.

[Table 3-86](#) (page 3-73) shows Product Offering Detail: Defines how a utility service/product is brought to the market.

**Table 3-86 Product Offering Detail**

Sr. Number	Attribute	Description
1.	Product Offering Code	For example PROD_OFR-1
2.	Primary Product Specification Code	No value
3.	Product Offering Price List Code	No value
4.	Product Offering Type Code	No value
5.	Product Offering Price Code	No value
6.	Product Offering Name	No value
7.	Product Offering Description	No value
8.	Remark	No value
9.	Service Time UOM	No value
10.	Premium Pay Method	No value
11.	New Customer Only Indicator	To indicate this market plan is applicable only to new customers and not for old customers.
12.	Joint Program Indicator	To indicate that this product market plan is a joint program with another partner.
13.	Loyalty Program Indicator	To indicate that this product market plan is available onto to certain loyalty program members.
14.	Vas Indicator	No value
15.	Gross ARPU	The expected monthly charge to the customer.
16.	Gross ARPU Local	No value
17.	Gross ARPU Reporting	No value
18.	Net ARPU	The revenue from the customer, excluding various cost or revenue sharing.
19.	Net ARPU Local	No value
20.	Net ARPU Reporting	No value
21.	Total Cost Upgrade	No value
22.	Total Cost Upgrade Local	No value
23.	Total Cost Upgrade Reporting	No value

**Table 3-86 (Cont.) Product Offering Detail**

Sr. Number	Attribute	Description
24.	Prepay Amount	How much prepayment must be made.
25.	Prepay Amount Local	No value
26.	Prepay Amount Reporting	No value
27.	Initial Deposit Amount	No value
28.	Initial Deposit Amount Local	No value
29.	Initial Deposit Amount Reporting	No value
30.	Premium Pay Amount	Customer has to pay a certain amount to get premium.
31.	Premium Pay Amount Local	No value
32.	Premium Pay Amount Reporting	No value
33.	Discount Amount	The discount amount allowed on this product market plan.
34.	Discount Amount Local	No value
35.	Discount Amount Reporting	No value
36.	Expected Total Cost	No value
37.	Expected Total Cost Local	No value
38.	Expected Total Cost Reporting	No value
39.	Expected Total Revenue	No value
40.	Expected Total Revenue Local	No value
41.	Expected Total Revenue Reporting	No value
42.	Early Departure Penalty	The penalty amount if the customer decides to terminate the contract before the expected date.
43.	Early Departure Penalty Local	No value
44.	Early Departure Penalty Reporting	No value
45.	Service Time Unit Charge	No value
46.	Service Time Unit Charge Local	No value
47.	Service Time Unit Charge Reporting	No value
48.	Effective From Date	No value
49.	Effective To Date	No value
50.	Status Code	No value

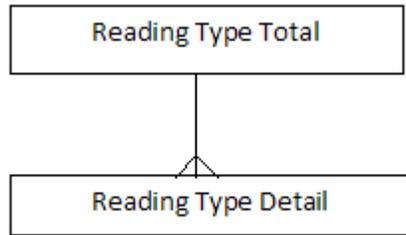
## 3.2.6 Reading Type

Description: [Reading Type](#) (page 2-78)

- [Reading Type Hierarchy](#) (page 3-74)
- [Reading Type Levels](#) (page 3-75)

### 3.2.6.1 Reading Type Hierarchy

Standard Reading Type Hierarchy



### 3.2.6.2 Reading Type Levels

[Table 3-87](#) (page 3-75) shows Reading Type Total: All READING TYPE is the most aggregate level of the dimension.

**Table 3-87 Reading Type Total**

Sr. Number	Attribute	Description
1.	ALL READING TYPE	Identification for the top level value.

[Table 3-88](#) (page 3-75) shows Reading Type Detail: Detailed description for a type of a reading value.

**Table 3-88 Reading Type Detail**

Sr. Number	Attribute	Description
1.	Reading Type Code	For example: 0.0.0.1.1.1.1.12.0.0.0.0.0.0.0.0.0.3.72.0
2.	Consumption Tier Code	No value
3.	Critical Peak Period Code	No value
4.	Currency Code	No value
5.	Energy Flow Direction Code	No value
6.	Interharmonics Code	No value
7.	Measurement Kind Code	No value
8.	Phase Code	No value
9.	Reading Accumulation Behavior Code	No value
10.	Reading Data Qualifier Code	No value
11.	Reading Time Attribute Code	No value
12.	Reading Time Period Code	No value
13.	Time Of Use Code	No value
14.	Unit Multiplier Code	No value
15.	Unit Of Measure Code	No value
16.	Utility Commodity Code	No value
17.	Rational Number Code	No value

Table 3-88 (Cont.) Reading Type Detail

Sr. Number	Attribute	Description
18.	Reading Channel Code	No value
19.	Macro Period	Time period of interest that reflects how the reading is viewed or captured over a long period of time.
20.	Aggregate	Salient attribute of the reading data aggregated from individual endpoints. This is mainly used to define a mathematical operation carried out over `macroPeriod`, but may also be used to describe an attribute of the data when the `macroPeriod` is not defined.
21.	Measuring Period	Time attribute inherent or fundamental to the reading value (as opposed to `macroPeriod` that supplies an adjective to describe aspects of a time period with regard to the measurement).
22.	Accumulation	Accumulation behavior of a reading over time, usually `measuringPeriod`, to be used with individual endpoints (as opposed to `macroPeriod` and `aggregate` that are used to describe aggregations of data from individual endpoints).
23.	Flow Direction	Flow direction for a reading where the direction of flow of the commodity is important (for electricity measurements this includes current, energy, power, and demand).
24.	Commodity	Commodity being measured.
25.	Measurement Kind	Identifies what is being measured, as refinement of `commodity`. When combined with `unit`, it provides detail to the unit of measure. For example, `energy` with a unit of measure of `kWh` indicates to the user that active energy is being measured.
26.	Interharmonic	Indication of a harmonic or interharmonic basis for the measurement. Value 0 in `numerator` and `denominator` means not applicable.
27.	Argument	Argument used to introduce numbers into the unit of measure description where they are needed (for example, 4 where the measure needs an argument such as CEMI(n=4)). Most arguments used in practice however will be integers (that is, `denominator`=1). Value 0 in `nu`
28.	Phases	Metering-specific phase code.
29.	Multiplier	Metering-specific multiplier.
30.	Unit	Metering-specific unit.
31.	Currency	Metering-specific currency.
32.	TOU	Time of use (TOU) bucket the reading value is attributed to. Value 0 means not applicable.
33.	CPP	Critical peak period (CPP) bucket the reading value is attributed to. Value 0 means not applicable. Even though CPP is usually considered a specialized form of time of use `tou`, this attribute is defined explicitly for flexibility.

**Table 3-88 (Cont.) Reading Type Detail**

Sr. Number	Attribute	Description
34.	Consumption Tier	In case of common flat-rate pricing for power, in which all purchases are at a given rate, `consumptionTier`=0. Otherwise, the value indicates the consumption tier, which can be used in conjunction with TOU or CPP pricing.

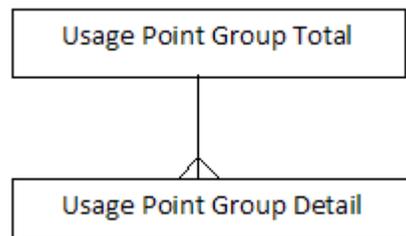
## 3.2.7 Usage Point Group

Description: [Usage Point Group](#) (page 2-86)

- [Usage Point Group Hierarchy](#) (page 3-77)
- [Usage Point Group Levels](#) (page 3-77)

### 3.2.7.1 Usage Point Group Hierarchy

Standard Usage Point Group Hierarchy



### 3.2.7.2 Usage Point Group Levels

[Table 3-89](#) (page 3-77) shows Usage Point Group Total: All USAGE POINT GROUP is the most aggregate level of the dimension.

**Table 3-89 Usage Point Group Total**

Sr. Number	Attribute	Description
1.	ALL USAGE POINT GROUP	Identification for the top level value.

[Table 3-90](#) (page 3-78) shows Usage Point Group Detail: Abstraction for management of group communications within a two-way AMR system or the data for a group of related usage points. Commands can be issued to all of the usage points that belong to a usage point group using a defined group address and the underlying AMR communication infrastructure.

**Table 3-90 Usage Point Location Detail**

Sr. Number	Attribute	Sample Value
1.	Usage Point Group Code	1001

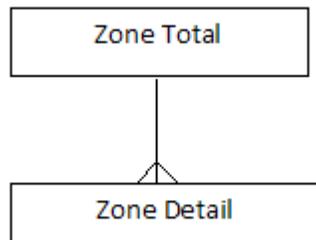
## 3.2.8 Zone

Description: [Zone](#) (page 2-89)

- [Zone Hierarchy](#) (page 3-78)
- [Zone Levels](#) (page 3-78)

### 3.2.8.1 Zone Hierarchy

Standard Usage Point Location Hierarchy



### 3.2.8.2 Zone Levels

[Table 3-91](#) (page 3-78) shows Zone Total: All Usage Point Location is the most aggregate level of the dimension.

**Table 3-91 Zone Total**

Sr. Number	Attribute	Description
1.	ALL_ZONE	Identification for the top level value.

[Table 3-92](#) (page 3-78) shows Zone Detail: Location of an individual usage point.

**Table 3-92 Zone Detail**

Sr. Number	Attribute	Description	Sample Value
1.	Zone Code	No value	8838
2.	Zone Kind Code	Kind of this zone.	weatherZone

# 4

## Oracle Utilities Data Model Physical Data Model

This chapter provides information about the physical data model of Oracle Utilities Data Model.

This chapter includes the following sections:

- [Introduction to Oracle Utilities Data Model Physical Data Model](#) (page 4-1)
- [Reference Tables](#) (page 4-2)
- [Lookup Tables](#) (page 4-17)
- [Base Tables](#) (page 4-23)
- [Derived Tables](#) (page 4-27)
- [Aggregate Tables](#) (page 4-28)
- [Temporary and Other Tables](#) (page 4-28)  
Briefly describes the temporary and control tables in Oracle Utilities Data Model.
- [Sequences in Oracle Utilities Data Model](#) (page 4-29)
- [Compressed Tables](#) (page 4-29)
- [Oracle Utilities Data Model OLAP Cube MV, Cube View](#) (page 4-31)

### 4.1 Introduction to Oracle Utilities Data Model Physical Data Model

The Physical Data Model of the Oracle Utilities Data Model is the physical manifestation of the logical data model into database tables and relationships (or foreign key constraints). Partitions, indexes, and Materialized Views have been added to aid performance.

 **Note:**

Do not make changes to the schemas as such changes are not supported.

Oracle Utilities Data Model provides the following types of tables:

- Reference tables contain information that is usually used as dimensions. They usually do not change often (or at all). Typically, Reference tables are PARTY, CUSTOMER, ADDRESS LOCATION, ACCOUNT, SUBSCRIPTION, and so on
- Lookup tables in the foundation layer are added to save the definition of short codes used in other tables.

- Base tables store information about any type of transactions (Invoices, Payments, Business Interactions, and so on). They are usually transformed into facts.
- Derived Tables in the analytic layer are usually transition tables to STARS. They are also leveraged for the Mining models.
- Aggregate Tables, or materialized views, are the STAR schema themselves at a higher level of aggregation. They may be related to the OLAP cubes.
- Other table types, as show in [Table 4-2](#) (page 4-2).

For more information on Oracle Utilities Data Model table types, see "[What is Oracle Utilities Data Model](#) (page 1-4)".

[Table 4-1](#) (page 4-2) shows the table name prefix conventions. When you examine the predefined physical model, keep in mind the naming conventions shown in [Table 4-1](#) (page 4-2) that use DW (Data Warehouse) prefixes to identify the types of tables and views.

**Table 4-1 Table Name Prefix Conventions**

Prefix	Description
DWA_	Aggregate table
DWB_	Base transaction table
DWD_	Derived table (Mining included)
DWL_	Lookup table
DWR_	Reference data table

**Table 4-2 Other Table Name Prefix Conventions**

Prefix	Description
DM\$ and DR\$	Created when the mining models are trained. Used to store trained model and logs.
CUBE	Created when OLAP cubes are built. Used to store logs and results.

## 4.2 Reference Tables

[Table 4-3](#) (page 4-2) briefly describes the Reference tables in Oracle Utilities Data Model.

**Table 4-3 Reference Tables**

Table Name	More Information
DWR_AC_LN_SGMNT	<a href="#">AC Line Segment</a> (page 2-32)
DWR_AC_LN_SGMNT_PHS	<a href="#">AC Line Segment Phase</a> (page 2-32)
DWR_ACCMLTR_LMT	<a href="#">Accumulator Limit</a> (page 2-35)
DWR_ACCMLTR_LMT_SET	<a href="#">Accumulator Limit Set</a> (page 2-35)
DWR_ACCMLTR_LMT_SET_ASGN	<a href="#">Accumulator Limit Set Assignment</a> (page 2-35)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_ACCT	<a href="#">Account</a> (page 2-32)
DWR_ACCT_AGRMNT_RLTN	<a href="#">Account Agreement Relationship</a> (page 2-32)
DWR_ACCT_ASGN	<a href="#">Account Assignment</a> (page 2-32)
DWR_ACCT_BAL_GRP	<a href="#">Account Balance Group</a> (page 2-32)
DWR_ACCT_BLLG_CYCL_HIST	<a href="#">Account Billing Cycle History</a> (page 2-33)
DWR_ACCT_BLLG_FREQNCY_HIST	<a href="#">Account Billing Frequency History</a> (page 2-33)
DWR_ACCT_BLLG_PRD_HIST	<a href="#">Account Billing Period History</a> (page 2-33)
DWR_ACCT_BSNS_INTRACN_RL	<a href="#">Account Business Interaction Role</a> (page 2-33)
DWR_ACCT_CYCL	<a href="#">Accounting Cycle</a> (page 2-35)
DWR_ACCT_PREF_INVC_DLVRV	<a href="#">Account Preferred Invoice Delivery</a> (page 2-34)
DWR_ACCT_PREF_PYMT_MTHD	<a href="#">Account Preferred Payment Method</a> (page 2-34)
DWR_ACCT_PRFL	<a href="#">Account Profile</a> (page 2-34)
DWR_ACCT_SGMNT	<a href="#">Account Segment</a> (page 2-34)
DWR_ACCT_SGMNT_ASGN_HIST	<a href="#">Account Segment Assignment History</a> (page 2-34)
DWR_ACCT_SGMNT_MDL	<a href="#">Account Segmentation Model</a> (page 2-34)
DWR_ACPT_TEST	<a href="#">Acceptance Test</a> (page 2-32)
DWR_ACTV_POWR_LMT	<a href="#">Active Power Limit</a> (page 2-35)
DWR_ADDR_LOC	<a href="#">Address Location</a> (page 2-35)
DWR_AGRMNT	<a href="#">Agreement</a> (page 2-35)
DWR_AGRMNT_DOC	<a href="#">Agreement Document</a> (page 2-35)
DWR_AGRMNT_ITEM	<a href="#">Agreement Item</a> (page 2-35)
DWR_AGRMNT_ITEM_PRCNG_STRUCT_ASGN	<a href="#">Agree Item Pricing Struct Assignment</a> (page 2-35)
DWR_AGRMNT_USG_PNT_ASGN	<a href="#">Agreement Usage Point Assignment</a> (page 2-36)
DWR_AIR_CMPRSR	<a href="#">Air Compressor</a> (page 2-36)
DWR_ANLG_LMT	<a href="#">Analog Limit</a> (page 2-36)
DWR_ANLG_LMT_SET	<a href="#">Analog Limit Set</a> (page 2-36)
DWR_ANLG_LMT_SET_ASGN	<a href="#">Analog Limit Set Assignment</a> (page 2-36)
DWR_ANZSC_CLSFCTN	<a href="#">ANZSIC Classification</a> (page 2-36)
DWR_APRNT_POWR_LMT	<a href="#">Apparent Power Limit</a> (page 2-36)
DWR_ASST	<a href="#">Asset</a> (page 2-36)
DWR_ASST_ACTVTY_REC_ASGN	<a href="#">Asset Activity Record Assignment</a> (page 2-36)
DWR_ASST_FNCTN	<a href="#">Asset Function</a> (page 2-37)
DWR_ASST_INFO	<a href="#">Asset Info</a> (page 2-37)
DWR_ASST_LOC	<a href="#">Asset Location</a> (page 2-37)
DWR_ASST_MDL	<a href="#">Asset Model</a> (page 2-37)
DWR_ASST_MDL_CTLG	<a href="#">Asset Model Catalog</a> (page 2-37)
DWR_ASST_MDL_CTLG_ITEM	<a href="#">Asset Model Catalog Item</a> (page 2-37)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_ASST_ORG_RL	<a href="#">Asset Organization Role</a> (page 2-37)
DWR_ASST_ORG_RL_ASGN	<a href="#">Asset Organization Role Assignment</a> (page 2-37)
DWR_ASST_OWNR	<a href="#">Asset Owner</a> (page 2-37)
DWR_ASST_PSR_ASGN	<a href="#">Asset PSR Assignment</a> (page 2-37)
DWR_ASST_STAT	<a href="#">Asset Status</a> (page 2-37)
DWR_ASST_USER	<a href="#">Asset User</a> (page 2-37)
DWR_BASE_VLTG	<a href="#">Base Voltage</a> (page 2-38)
DWR_BLLG_CYCL	<a href="#">Billing Cycle</a> (page 2-38)
DWR_BLLG_FREQNCY	<a href="#">Billing Frequency</a> (page 2-38)
DWR_BNK	<a href="#">Bank</a> (page 2-37)
DWR_BNK_DRCT_DEBT_CHNL	<a href="#">Bank Direct Debit Channel</a> (page 2-37)
DWR_BRKR	<a href="#">Breaker</a> (page 2-38)
DWR_BSBR_SECTN	<a href="#">Busbar Section</a> (page 2-38)
DWR_BSBR_SECTN_INFO	<a href="#">Busbar Section</a> (page 2-38)
DWR_BSHNG	<a href="#">Bushing</a> (page 2-38)
DWR_BSNS_CASE	<a href="#">Business Case</a> (page 2-38)
DWR_BSNS_HLF_MO	<a href="#">Business Half Month</a> (page 2-38)
DWR_BSNS_HLF_YR	<a href="#">Business Half Year</a> (page 2-38)
DWR_BSNS_INTRACN_ASGN	<a href="#">Business Interaction Assignment</a> (page 2-39)
DWR_BSNS_INTRACN_LOC_ASGN	<a href="#">Business Interaction Location Assignment</a> (page 2-39)
DWR_BSNS_INTRACN_VRSN	<a href="#">Business Interaction Version</a> (page 2-39)
DWR_BSNS_MO	<a href="#">Business Month</a> (page 2-39)
DWR_BSNS_QTR	<a href="#">Business Quarter</a> (page 2-39)
DWR_BSNS_UNIT_JB_RL	<a href="#">Business Unit Job Role</a> (page 2-40)
DWR_BSNS_WK	<a href="#">Business Week</a> (page 2-40)
DWR_BSNS_YR	<a href="#">Business Year</a> (page 2-40)
DWR_CAES_PLNT	<a href="#">CAES Plant</a> (page 2-40)
DWR_CALL_CNTR	<a href="#">Call Center</a> (page 2-40)
DWR_CALL_CNTR_AGNT	<a href="#">Call Center Agent</a> (page 2-40)
DWR_CALL_CNTR_SRVC_CAPBLTY	<a href="#">Call Center Service Capability</a> (page 2-40)
DWR_CGNRTN_PLNT	<a href="#">Cogeneration Plant</a> (page 2-42)
DWR_CHNL	<a href="#">Channel</a> (page 2-41)
DWR_CLMP	<a href="#">Clamp</a> (page 2-42)
DWR_CLNDR_HLF_MO	<a href="#">Calendar Half Month</a> (page 2-40)
DWR_CLNDR_HLF_YR	<a href="#">Calendar Half Year</a> (page 2-40)
DWR_CLNDR_MO	<a href="#">Calendar Month</a> (page 2-40)
DWR_CLNDR_QTR	<a href="#">Calendar Quarter</a> (page 2-40)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_CLNDR_WK	<a href="#">Calendar Week</a> (page 2-40)
DWR_CLNDR_YR	<a href="#">Calendar Year</a> (page 2-40)
DWR_CLRNCE_ACTN	<a href="#">Clearance Action</a> (page 2-42)
DWR_CLRNCE_DOC	<a href="#">Clearance Document</a> (page 2-42)
DWR_CMBND_CYCL_PLNT	<a href="#">Combined Cycle Plant</a> (page 2-42)
DWR_CMPGN	<a href="#">Campaign</a> (page 2-40)
DWR_CMPGN_CHNL	<a href="#">Campaign Channel</a> (page 2-40)
DWR_CMPGN_CHNL_ASGN	<a href="#">Campaign Channel Assignment</a> (page 2-40)
DWR_CMPGN_CHTRSTC	<a href="#">Campaign Characteristic</a> (page 2-41)
DWR_CMPGN_CHTRSTC_VAL	<a href="#">Campaign Characteristic Value</a> (page 2-41)
DWR_CMPGN_DOC	<a href="#">Campaign Document</a> (page 2-41)
DWR_CMPGN_MGMT_HIST	<a href="#">Campaign Management History</a> (page 2-41)
DWR_CMPGN_MSG	<a href="#">Campaign Message</a> (page 2-41)
DWR_CMPGN_MSG_DPCT	<a href="#">Campaign Message Depiction</a> (page 2-41)
DWR_CMPGN_RLTN	<a href="#">Campaign Relationship</a> (page 2-41)
DWR_CMPGN_TERM_VAL	<a href="#">Campaign Term Value</a> (page 2-41)
DWR_CMPST_SWTCH_INFO	<a href="#">Composite Switch Info</a> (page 2-42)
DWR_CMPTBL_UNIT	<a href="#">Compatible Unit</a> (page 2-42)
DWR_CMPTBL_UNIT_PROC_ASGN	<a href="#">Compatible Unit Procedure Assignment</a> (page 2-42)
DWR_CNCT_LST	<a href="#">Contact List</a> (page 2-43)
DWR_CNCTR	<a href="#">Connector</a> (page 2-43)
DWR_CNDCTR	<a href="#">Conductor</a> (page 2-43)
DWR_CNDTNG_EQP_PRTCTN_EQP_ASGN	<a href="#">Conducting Eqp Protection Eqp Assignment</a> (page 2-43)
DWR_CNFRM_LD	<a href="#">Conform Load</a> (page 2-43)
DWR_CNFRM_LD_GRP	<a href="#">Conform Load Group</a> (page 2-43)
DWR_CNFRM_LD_SCHL	<a href="#">Conform Load Schedule</a> (page 2-43)
DWR_CNSMPTN_TIER	<a href="#">Consumption Tier</a> (page 2-43)
DWR_CNSMPTN_TRF_INTRVL	<a href="#">Consumption Tariff Interval</a> (page 2-43)
DWR_COLLCTN_AGENCY	<a href="#">Collection Agency</a> (page 2-42)
DWR_COMUNICTN_FNCTN	<a href="#">Com Function</a> (page 2-42)
DWR_COMUNICTN_LNK	<a href="#">Communication Link</a> (page 2-42)
DWR_COMUNICTN_MEDIA	<a href="#">Com Media</a> (page 2-42)
DWR_COMUNICTN_MODULE	<a href="#">Com Module</a> (page 2-42)
DWR_CONCT_DSCNCT_FNCTN	<a href="#">Connect Disconnect Function</a> (page 2-43)
DWR_CONCTVT_ND	<a href="#">Connectivity Node</a> (page 2-43)
DWR_CONCTVT_ND_CONTNR	<a href="#">Connectivity Node Container</a> (page 2-43)
DWR_COST_CNTR	<a href="#">Cost Center</a> (page 2-44)

Table 4-3 (Cont.) Reference Tables

Table Name	More Information
DWR_CRDT_CTGRY	<a href="#">Credit Category</a> (page 2-44)
DWR_CRDT_SCR_PRVDR	<a href="#">Credit Score Provider</a> (page 2-44)
DWR_CREW	<a href="#">Crew</a> (page 2-44)
DWR_CREW_MBR	<a href="#">Crew Member</a> (page 2-44)
DWR_CREW_TYP	<a href="#">Crew Type</a> (page 2-44)
DWR_CREW_WRK_TASK_ASGN	<a href="#">Crew Work Task Assignment</a> (page 2-45)
DWR_CRNCY_GEO_ENT_ASGN	<a href="#">Currency Geography Entity Assignment</a> (page 2-45)
DWR_CRTCL_PK_PRD	<a href="#">Critical Peak Period</a> (page 2-45)
DWR_CRVE	<a href="#">Curve</a> (page 2-45)
DWR_CURR_LMT	<a href="#">Current Limit</a> (page 2-45)
DWR_CURR_RLY	<a href="#">Current Relay</a> (page 2-45)
DWR_CURR_TRNSFRMR_INFO	<a href="#">Current Transformer Info</a> (page 2-45)
DWR_CUST	<a href="#">Customer</a> (page 2-45)
DWR_CUST_ACCT_ASGN	<a href="#">Customer Account Assignment</a> (page 2-45)
DWR_CUST_DOC	<a href="#">Customer Document</a> (page 2-45)
DWR_CUST_FCNG_SRVC	<a href="#">Customer Facing Service</a> (page 2-45)
DWR_CUST_GRP_ASGN	<a href="#">Customer Group Assignment</a> (page 2-45)
DWR_CUST_INDVL	<a href="#">Customer Individual</a> (page 2-45)
DWR_CUST_OCCSN	<a href="#">Customer Occasion</a> (page 2-46)
DWR_CUST_ORDR_DOC	<a href="#">Customer Order Document</a> (page 2-46)
DWR_CUST_ORG	<a href="#">Customer Organization</a> (page 2-46)
DWR_CUST_OUTG_NOTFCTN_ASGN	<a href="#">Customer Outage Notification Assignment</a> (page 2-46)
DWR_CUST_RSTRCT_INFO	<a href="#">Customer Restricted Info</a> (page 2-46)
DWR_CUST_RVN_BND_ASGN	<a href="#">Customer Revenue Band Assignment</a> (page 2-46)
DWR_CUST_SCR	<a href="#">Customer Score</a> (page 2-46)
DWR_CUST_SGMNT	<a href="#">Customer Segment</a> (page 2-46)
DWR_CUST_SGMNT_MDL	<a href="#">Customer Segmentation Model</a> (page 2-46)
DWR_CUST_SIC_ASGN	<a href="#">Customer SIC Assignment</a> (page 2-46)
DWR_CUST_SRC	<a href="#">Customer Source</a> (page 2-46)
DWR_CUST_WRK_ASGN	<a href="#">Customer Work Assignment</a> (page 2-47)
DWR_CUT	<a href="#">Cut</a> (page 2-47)
DWR_CUT_ACTN	<a href="#">Cut Action</a> (page 2-47)
DWR_DAY	<a href="#">Day</a> (page 2-47)
DWR_DC_CNDCTNG_EQPMNT	<a href="#">DC Conducting Equipment</a> (page 2-47)
DWR_DC_LN_SGMNT	<a href="#">DC Line Segment</a> (page 2-47)
DWR_DEMAND_RESPN_PROG	<a href="#">Demand Response Program</a> (page 2-47)
DWR_DEMAND_TRF_INTRVL	<a href="#">Demand Tariff Interval</a> (page 2-48)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_DEMOG_ATTRIB	<a href="#">Demography Attribute</a> (page 2-48)
DWR_DEMOG_CHTRSTC	<a href="#">Demographic Characteristic</a> (page 2-48)
DWR_DEMOG_GRP	<a href="#">Demography Group</a> (page 2-48)
DWR_DOC_TYP_GRP_ASGN	<a href="#">Document Type Group Assignment</a> (page 2-49)
DWR_DR_PROG_AGRMNT_ASGN	<a href="#">DR Program Agreement Assignment</a> (page 2-49)
DWR_DR_PROG_END_DVC_GRP_ASGN	<a href="#">DR Prog End Device Grp Assignment</a> (page 2-49)
DWR_DRVD_VAL	<a href="#">Derived Value</a> (page 2-48)
DWR_DSCNCTR	<a href="#">Disconnecter</a> (page 2-48)
DWR_ELCTRCTY_SRVC	<a href="#">Electricity Service</a> (page 2-49)
DWR_EMP	<a href="#">Employee</a> (page 2-49)
DWR_EMP_JB_RL_ASGN	<a href="#">Employee Job Role Assignment</a> (page 2-49)
DWR_EMP_LANG_CAPBLTY	<a href="#">Employee Language Capability</a> (page 2-49)
DWR_EMP_RSTRCT_INFO	<a href="#">Employee Restricted Info</a> (page 2-49)
DWR_EMP_SCHL	<a href="#">Employee Schedule</a> (page 2-49)
DWR_END_DVC	<a href="#">End Device</a> (page 2-50)
DWR_END_DVC_CAPBLTY	<a href="#">End Device Capability</a> (page 2-50)
DWR_END_DVC_CNTRL_TYP	<a href="#">End Device Control Type</a> (page 2-50)
DWR_END_DVC_END_DVC_CTRL_ASGN	<a href="#">End Device End Device Ctrl Assignment</a> (page 2-50)
DWR_END_DVC_END_DVC_GRP_ASGN	<a href="#">End Device End Device Grp Assignment</a> (page 2-50)
DWR_END_DVC_EVT_DTL	<a href="#">End Device Event Detail</a> (page 2-50)
DWR_END_DVC_FNCTN	<a href="#">End Device Function</a> (page 2-50)
DWR_END_DVC_GP_END_DVC_CTL_ASN	<a href="#">End Device Grp End Device Ctrl Assignment</a> (page 2-51)
DWR_END_DVC_GRP	<a href="#">End Device Group</a> (page 2-51)
DWR_END_DVC_INFO	<a href="#">End Device Info</a> (page 2-51)
DWR_ENRGY_AREA	<a href="#">Energy Area</a> (page 2-51)
DWR_ENRGY_CONSMR	<a href="#">Energy Consumer</a> (page 2-51)
DWR_ENRGY_CONSMR_PHS	<a href="#">Energy Consumer Phase</a> (page 2-51)
DWR_EQPMNT_CONTNR	<a href="#">Equipment Container</a> (page 2-51)
DWR_EXTRNL_CRDT_PRFL	<a href="#">External Credit Profile</a> (page 2-53)
DWR_EXTRNL_CRDT_PRFL_ASGN	<a href="#">External Credit Profile Assignment</a> (page 2-54)
DWR_EXTRNL_INFO_SRC	<a href="#">External Information Source</a> (page 2-54)
DWR_FCT_DVC	<a href="#">FACTS Device</a> (page 2-54)
DWR_FEDR	<a href="#">Feeder</a> (page 2-54)
DWR_FEDR_SBSTN_ASGN	<a href="#">Feeder Substation Assignment</a> (page 2-54)
DWR_FINCL_INFO	<a href="#">Financial Info</a> (page 2-54)
DWR_FLT	<a href="#">Fault</a> (page 2-54)
DWR_FLT_IND_INFO	<a href="#">Fault Indicator Info</a> (page 2-54)

Table 4-3 (Cont.) Reference Tables

Table Name	More Information
DWR_FREQNCY_CONVRTR	<a href="#">Frequency Converter</a> (page 2-54)
DWR_FSCL_QTR	<a href="#">Fiscal Quarter</a> (page 2-54)
DWR_FSCL_YR	<a href="#">Fiscal Year</a> (page 2-54)
DWR_FUSE	<a href="#">Fuse</a> (page 2-54)
DWR_FXBLE_CHTRSTC	<a href="#">Flexible Characteristic</a> (page 2-54)
DWR_GATE_INPUT_PIN	<a href="#">Gate Input Pin</a> (page 2-54)
DWR_GEN_UNIT_OP_COST_CRVE	<a href="#">Gen Unit Op Cost Curve</a> (page 2-54)
DWR_GEN_UNIT_OP_SCHL	<a href="#">Gen Unit Op Schedule</a> (page 2-55)
DWR_GEO_BLDG	<a href="#">Geography Building</a> (page 2-55)
DWR_GEO_CITY	<a href="#">Geography City</a> (page 2-55)
DWR_GEO_CMPLX	<a href="#">Geography Complex</a> (page 2-55)
DWR_GEO_CNTRY	<a href="#">Geography Country</a> (page 2-55)
DWR_GEO_CNTY	<a href="#">Geography County</a> (page 2-55)
DWR_GEO_DEMOG_ATTRIB	<a href="#">Geography Demography Attribute</a> (page 2-55)
DWR_GEO_DEMOG_GRP	<a href="#">Geography Demographic Group</a> (page 2-55)
DWR_GEO_DEMOG_VAL	<a href="#">Geography Demography Value</a> (page 2-55)
DWR_GEO_ENT	<a href="#">Geography Entity</a> (page 2-55)
DWR_GEO_ENT_ASGN	<a href="#">Geography Entity Assignment</a> (page 2-56)
DWR_GEO_ENT_HRCHY_LVL_ASGN	<a href="#">Geography Entity Hier Level Assignment</a> (page 2-56)
DWR_GEO_HRCHY	<a href="#">Geography Hierarchy</a> (page 2-56)
DWR_GEO_HRCHY_LVL	<a href="#">Geography Hierarchy Level</a> (page 2-56)
DWR_GEO_HRCHY_LVL_ASGN	<a href="#">Geography Hierarchy Level Assignment</a> (page 2-56)
DWR_GEO_LVL	<a href="#">Geography Level</a> (page 2-56)
DWR_GEO_LVL_ATTRIB	<a href="#">Geography Level Attribute</a> (page 2-56)
DWR_GEO_LVL_ATTRIB_VAL	<a href="#">Geography Level Attribute Value</a> (page 2-56)
DWR_GEO_RGN	<a href="#">Geography Region</a> (page 2-56)
DWR_GEO_SB_RGN	<a href="#">Geography Sub Region</a> (page 2-56)
DWR_GEO_STATE	<a href="#">Geography State</a> (page 2-56)
DWR_GEO_STREET	<a href="#">Geography Street</a> (page 2-56)
DWR_GEO_WORLD	<a href="#">Geography World</a> (page 2-56)
DWR_GL_ACCT	<a href="#">GL Account</a> (page 2-56)
DWR_GL_ACCT_ASGN	<a href="#">GL Account Assignment</a> (page 2-56)
DWR_GL_ACCT_SGMNT	<a href="#">GL Account Segment</a> (page 2-56)
DWR_GL_COST_CNTR_SGMNT	<a href="#">GL Cost Center Segment</a> (page 2-57)
DWR_GL_LDGR	<a href="#">GL Ledger</a> (page 2-58)
DWR_GL_LDGR_ACCT_ASGN	<a href="#">GL Ledger Account Assignment</a> (page 2-58)
DWR_GL_ORG_BSNS_UNIT_SGMNT	<a href="#">GL Org Bsns Unit Segment</a> (page 2-58)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_GL_PRD	<a href="#">GL Period</a> (page 2-58)
DWR_GL_PROD_SPECFTN_SGMNT	<a href="#">GL Product Specification Segment</a> (page 2-58)
DWR_GL_PROJ_SGMNT	<a href="#">GL Project Segment</a> (page 2-58)
DWR_GL_SBLDGR	<a href="#">GL Subledger</a> (page 2-58)
DWR_GL_SGMNT	<a href="#">GL Segment</a> (page 2-58)
DWR_GNRC_ACTN	<a href="#">Generic Action</a> (page 2-55)
DWR_GNRTNG_UNIT	<a href="#">Generating Unit</a> (page 2-55)
DWR_GNRTNG_UNIT_ROTNG_MC_ASGN	<a href="#">Generating Unit Rotating Machine Assignment</a> (page 2-55)
DWR_GRND_DSCNCTR	<a href="#">Ground Disconnect</a> (page 2-58)
DWR_GRND_SWTCH	<a href="#">Ground Switch</a> (page 2-58)
DWR_GRS_TO_NET_ACTV_POWR_CRVE	<a href="#">Gross To Net Active Power Curve</a> (page 2-58)
DWR_HEAD_END_SYS	<a href="#">Head End System</a> (page 2-58)
DWR_HH	<a href="#">Household</a> (page 2-59)
DWR_HR	<a href="#">Hour</a> (page 2-59)
DWR_HR_TIME_OF_USE_ASGN	<a href="#">Hour Time of Use Assignment</a> (page 2-59)
DWR_HYDRO_GNRTNG_UNIT	<a href="#">Hydro Generating Unit</a> (page 2-59)
DWR_INCDNT_WRK_ASGN	<a href="#">Incident Work Assignment</a> (page 2-59)
DWR_INDVL_DEMOG_VAL	<a href="#">Individual Demography Value</a> (page 2-59)
DWR_INSTLMNT_AGRMNT	<a href="#">Installment Agreement</a> (page 2-59)
DWR_INTRACN_CHNL	<a href="#">Interaction Channel</a> (page 2-59)
DWR_INTRACN_NAVGTN_ITEM	<a href="#">Interaction Navigation Item</a> (page 2-60)
DWR_INVC_ADJ_QTA	<a href="#">Invoice Adjustment Quota</a> (page 2-61)
DWR_IRGLR_INTRVL_SCHL	<a href="#">Irregular Interval Schedule</a> (page 2-62)
DWR_IRGLR_TIME_PNT	<a href="#">Irregular Time Point</a> (page 2-62)
DWR_JB	<a href="#">Job</a> (page 2-62)
DWR_JB_RL	<a href="#">Job Role</a> (page 2-62)
DWR_JMPR	<a href="#">Jumper</a> (page 2-62)
DWR_JMPR_ACTN	<a href="#">Jumper Action</a> (page 2-62)
DWR_JNT	<a href="#">Joint</a> (page 2-62)
DWR_LD_AREA	<a href="#">Load Area</a> (page 2-62)
DWR_LD_BRK_SWTCH	<a href="#">Load Break Switch</a> (page 2-63)
DWR_LD_GRP	<a href="#">Load Group</a> (page 2-63)
DWR_LD_RESPN_CHTRSTC	<a href="#">Load Response Characteristic</a> (page 2-63)
DWR_LIFE_CYCL_DT	<a href="#">Lifecycle Date</a> (page 2-62)
DWR_LMT	<a href="#">Limit</a> (page 2-62)
DWR_LMT_SET	<a href="#">Limit Set</a> (page 2-62)
DWR_LN	<a href="#">Line</a> (page 2-62)

Table 4-3 (Cont.) Reference Tables

Table Name	More Information
DWR_LOC	<a href="#">Location</a> (page 2-63)
DWR_LYLTY_PROG	<a href="#">Loyalty Program</a> (page 2-63)
DWR_MEDIA_OBJ	<a href="#">Media Object</a> (page 2-64)
DWR_MEDIA_OBJ_ASGN	<a href="#">Media Object Assignment</a> (page 2-64)
DWR_MKT_AREA	<a href="#">Market Area</a> (page 2-63)
DWR_MKT_AREA_LVL	<a href="#">Market Area Level</a> (page 2-63)
DWR_MKT_PLN_DOC_REQRMNT	<a href="#">Market Plan Document Requirement</a> (page 2-63)
DWR_MKT_RL	<a href="#">Market Role</a> (page 2-63)
DWR_MKT_SGMNT	<a href="#">Market Segment</a> (page 2-63)
DWR_MKT_SGMNT_INCLSN	<a href="#">Market Segment Inclusion</a> (page 2-63)
DWR_MNFCTR	<a href="#">Manufacturer</a> (page 2-63)
DWR_MNTNR	<a href="#">Maintainer</a> (page 2-63)
DWR_MSRMNT_LOC	<a href="#">Measurement Location</a> (page 2-64)
DWR_MSRMNT_VAL_QLTY	<a href="#">Measurement Value Quality</a> (page 2-64)
DWR_MSRMNT_VAL_SRC	<a href="#">Measurement Value Source</a> (page 2-64)
DWR_MTR	<a href="#">Meter</a> (page 2-64)
DWR_MTR_IDNT	<a href="#">Meter Identifier</a> (page 2-64)
DWR_MTR_RGSTER_ASGN	<a href="#">Meter Register Assignment</a> (page 2-65)
DWR_MTR_SRVC_WRK	<a href="#">Meter Service Work</a> (page 2-65)
DWR_NAICS_CLSFCTN	<a href="#">NAICS Classification</a> (page 2-65)
DWR_NON_CNFRM_LD	<a href="#">Non Conform Load</a> (page 2-65)
DWR_NON_CNFRM_LD_GRP	<a href="#">Non Conform Load Group</a> (page 2-65)
DWR_NON_CNFRM_LD_SCHL	<a href="#">Non Conform Load Schedule</a> (page 2-65)
DWR_NUCLR_GNRTNG_UNIT	<a href="#">Nuclear Generating Unit</a> (page 2-65)
DWR_OPERTNG_PRTCPNT	<a href="#">Operating Participant</a> (page 2-65)
DWR_OPERTNG_SHR	<a href="#">Operating Share</a> (page 2-65)
DWR_OPRN_TAG	<a href="#">Operation Tag</a> (page 2-65)
DWR_OPRTNL_LMT	<a href="#">Operational Limit</a> (page 2-65)
DWR_OPRTNL_LMT_SET	<a href="#">Operational Limit Set</a> (page 2-65)
DWR_OPRTNL_RSTRCT	<a href="#">Operational Restriction</a> (page 2-66)
DWR_ORCL_GMTRY	<a href="#">Oracle Geometry</a> (page 2-66)
DWR_ORG_AREA	<a href="#">Organization Area</a> (page 2-66)
DWR_ORG_BNR	<a href="#">Organization Banner</a> (page 2-66)
DWR_ORG_BSNS_ENT	<a href="#">Organization Business Entity</a> (page 2-66)
DWR_ORG_BSNS_UNIT	<a href="#">Organization Business Unit</a> (page 2-66)
DWR_ORG_CHAIN	<a href="#">Organization Chain</a> (page 2-66)
DWR_ORG_CMPNY	<a href="#">Organization Company</a> (page 2-66)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_ORG_CRPRT	<a href="#">Organization Corporate</a> (page 2-66)
DWR_ORG_DEMOG_VAL	<a href="#">Organizational Demography Value</a> (page 2-67)
DWR_ORG_DSTRCT	<a href="#">Organization District</a> (page 2-66)
DWR_ORG_HRCHY	<a href="#">Organization Hierarchy</a> (page 2-66)
DWR_ORG_HRCHY_LVL	<a href="#">Organization Hierarchy Level</a> (page 2-66)
DWR_ORG_HRCHY_LVL_ASGN	<a href="#">Organization Hierarchy Level Assignment</a> (page 2-66)
DWR_ORG_HRCHY_VRSN	<a href="#">Organization Hierarchy Version</a> (page 2-66)
DWR_ORG_LVL	<a href="#">Organization Level</a> (page 2-66)
DWR_ORG_LVL_ATRIB_VAL	<a href="#">Organization Level Attribute Value</a> (page 2-66)
DWR_ORG_LVL_ATTR	<a href="#">Organization Level Attributes</a> (page 2-67)
DWR_ORG_MKT_DATA	<a href="#">Organization Market Data</a> (page 2-67)
DWR_ORG_RGN	<a href="#">Organization Region</a> (page 2-67)
DWR_ORG_RL	<a href="#">Organization Role</a> (page 2-67)
DWR_ORG_SRVC_WBSITE	<a href="#">Organization Service Website</a> (page 2-67)
DWR_ORG_WRHS	<a href="#">Organization Warehouse</a> (page 2-67)
DWR_OTHR_INDVL	<a href="#">Other Individual</a> (page 2-67)
DWR_OUTG_CD	<a href="#">Outage Code</a> (page 2-68)
DWR_OUTG_NOTFCTN	<a href="#">Outage Notification</a> (page 2-68)
DWR_OUTG_PLN	<a href="#">Outage Plan</a> (page 2-68)
DWR_OUTG_REC_CD_ASGN	<a href="#">Outage Record Code Assignment</a> (page 2-68)
DWR_OUTG_RPT	<a href="#">Outage Report</a> (page 2-68)
DWR_OUTG_SCHL	<a href="#">Outage Schedule</a> (page 2-68)
DWR_OUTG_STEP	<a href="#">Outage Step</a> (page 2-68)
DWR_OUTG_STEP_CD_ASGN	<a href="#">Outage Step Code Assignment</a> (page 2-68)
DWR_OUTG_USG_PNT_ASGN	<a href="#">Outage Usage Point Assignment</a> (page 2-68)
DWR_PBLCTN	<a href="#">Publication</a> (page 2-77)
DWR_PER_LGTH_IMPNDNC	<a href="#">Per Length Impedance</a> (page 2-72)
DWR_PER_LGTH_PHS_IMPNDNC	<a href="#">Per Length Phase Impedance</a> (page 2-72)
DWR_PER_LGTH_SEQ_IMPNDNC	<a href="#">Per Length Sequence Impedance</a> (page 2-72)
DWR_PHS_CNCTD_FLT	<a href="#">Phase Connected Fault</a> (page 2-72)
DWR_PHS_IMPNDNC_DATA	<a href="#">Phase Impedance Data</a> (page 2-72)
DWR_PHS_TAP_CHNG	<a href="#">Phase Tap Changer</a> (page 2-72)
DWR_PHS_TAP_CHNG_ASYMTRCL	<a href="#">Phase Tap Changer Asymmetrical</a> (page 2-73)
DWR_PHS_TAP_CHNG_LNR	<a href="#">Phase Tap Changer Linear</a> (page 2-73)
DWR_PHS_TAP_CHNG_NON_LNR	<a href="#">Phase Tap Changer Non Linear</a> (page 2-73)
DWR_PHS_TAP_CHNG_SYMTRCL	<a href="#">Phase Tap Changer Symmetrical</a> (page 2-73)
DWR_PHS_TAP_CHNG_TBLR	<a href="#">Phase Tap Changer Tabular</a> (page 2-73)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_PHS_TAP_CHNG_TBLR_PNT	<a href="#">Phase Tap Changer Tabular Point</a> (page 2-73)
DWR_PIN_VLTG	<a href="#">Pin Voltage</a> (page 2-73)
DWR_PLND_OUTG	<a href="#">Planned Outage</a> (page 2-73)
DWR_POLE	<a href="#">Pole</a> (page 2-73)
DWR_POSTCD	<a href="#">Postcode</a> (page 2-73)
DWR_POWER_CUT_ZN	<a href="#">Power Cut Zone</a> (page 2-74)
DWR_POWER_SYS_RESRE_LOC	<a href="#">Power System Resource Location</a> (page 2-74)
DWR_POWER_TRNSFRMR	<a href="#">Power Transformer</a> (page 2-74)
DWR_POWER_TRNSFRMR_END	<a href="#">Power Transformer End</a> (page 2-74)
DWR_POWER_TRNSFRMR_INFO	<a href="#">Power Transformer Info</a> (page 2-74)
DWR_PRCNG_STRCTR_TRF_ASGN	<a href="#">Pricing Structure Tariff Assignment</a> (page 2-75)
DWR_PRCNG_STRUCTR	<a href="#">Pricing Structure</a> (page 2-74)
DWR_PRIORITY	<a href="#">Priority</a> (page 2-75)
DWR_PRMTN	<a href="#">Promotion</a> (page 2-75)
DWR_PRMTN_MSG_RNDRNG	<a href="#">Promotion Message Rendering</a> (page 2-75)
DWR_PRMTN_PROD_OFRNG_ASGN	<a href="#">Promotion Product Offering Assignment</a> (page 2-76)
DWR_PRMTN_RLTN	<a href="#">Promotion Relationship</a> (page 2-76)
DWR_PRMTN_SL_CHNL_ASGN	<a href="#">Promotion Sales Channel Assignment</a> (page 2-76)
DWR_PROC	<a href="#">Procedure</a> (page 2-75)
DWR_PROC_ASST_ASGN	<a href="#">Procedure Asset Assignment</a> (page 2-75)
DWR_PROD_ASST_MDL	<a href="#">Product Asset Model</a> (page 2-75)
DWR_PROD_ASST_MDL_FNCTN_ASGN	<a href="#">Product Asset Model Function Assignment</a> (page 2-75)
DWR_PROD_OFRNG	<a href="#">Product Offering</a> (page 2-75)
DWR_PROD_SBRP	<a href="#">Product Subscription</a> (page 2-75)
DWR_PROJ	<a href="#">Project</a> (page 2-75)
DWR_PROJ_ELMNT	<a href="#">Project Element</a> (page 2-75)
DWR_PROTCTN_EQPMNT	<a href="#">Protection Equipment</a> (page 2-77)
DWR_PROTCTN_EQPMNT_INFO	<a href="#">Protection Equipment Info</a> (page 2-77)
DWR_PRPSL	<a href="#">Proposal</a> (page 2-76)
DWR_PRPSL_RLTN	<a href="#">Proposal Relationship</a> (page 2-76)
DWR_PRSPCT	<a href="#">Prospect</a> (page 2-76)
DWR_PRSPCT_QLTY_SCR_VAL	<a href="#">Prospect Quality Score Value</a> (page 2-76)
DWR_PRTCTD_SWTCH	<a href="#">Protected Switch</a> (page 2-76)
DWR_PRTNR_PRMTN_PROG	<a href="#">Partner Promotion Program</a> (page 2-68)
DWR_PRTY	<a href="#">Party</a> (page 2-69)
DWR_PRTY_ACCT_ASGN	<a href="#">Party Account Assignment</a> (page 2-69)
DWR_PRTY_ADDR_LOC_ASGN	<a href="#">Party Address Location Assignment</a> (page 2-69)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_PRTY_AGRMNT_RLTN	<a href="#">Party Agreement Relationship</a> (page 2-69)
DWR_PRTY_ASGN	<a href="#">Party Assignment</a> (page 2-69)
DWR_PRTY_BSNS_INTRACN_RL	<a href="#">Party Business Interaction Role</a> (page 2-69)
DWR_PRTY_CNCT_INFO	<a href="#">Party Contact Information</a> (page 2-69)
DWR_PRTY_GEO_ENT_ASGN	<a href="#">Party Geography Entity Assignment</a> (page 2-70)
DWR_PRTY_MKT_SGMNT_ASGN	<a href="#">Party Market Segment Assignment</a> (page 2-71)
DWR_PRTY_PROJ_PRTCPTN	<a href="#">Party Project Participation</a> (page 2-71)
DWR_PRTY_RL_ASGN	<a href="#">Party Role Assignment</a> (page 2-71)
DWR_PRTY_RL_STAT	<a href="#">Party Role Status</a> (page 2-71)
DWR_PTNTL_TRNSFRMR_INFO	<a href="#">Potential Transformer Info</a> (page 2-74)
DWR_PYMT_CHNL	<a href="#">Payment Channel</a> (page 2-72)
DWR_RATE	<a href="#">Rate</a> (page 2-77)
DWR_RATIO_TAP_CHNG	<a href="#">Ratio Tap Changer</a> (page 2-77)
DWR_RATIO_TAP_CHNG_TBLR	<a href="#">Ratio Tap Changer Tabular</a> (page 2-77)
DWR_RATIO_TAP_CHNG_TBLR_PNT	<a href="#">Ratio Tap Changer Tabular Point</a> (page 2-77)
DWR_RCLSR	<a href="#">Recloser</a> (page 2-78)
DWR_RDNG_CHNL	<a href="#">Reading Channel</a> (page 2-77)
DWR_RDNG_CHNL_IDNT	<a href="#">Reading Channel Identifier</a> (page 2-77)
DWR_RDNG_TYP	<a href="#">Reading Type</a> (page 2-78)
DWR_REGULTN_SCHL	<a href="#">Regulation Schedule</a> (page 2-78)
DWR_RGLR_INTRVL_SCHL	<a href="#">Regular Interval Schedule</a> (page 2-78)
DWR_RGLR_TIME_PNT	<a href="#">Regular Time Point</a> (page 2-78)
DWR_RGLTNG_CNTRL	<a href="#">Regulating Control</a> (page 2-78)
DWR_RGLTNG_COND_EQ	<a href="#">Regulating Cond Eq</a> (page 2-78)
DWR_RGSTER	<a href="#">Register</a> (page 2-78)
DWR_RMT_CNTRL	<a href="#">Remote Control</a> (page 2-79)
DWR_RMT_CONCT_DSCNCT_INFO	<a href="#">Remote Connect Disconnect Info</a> (page 2-79)
DWR_RMT_PNT	<a href="#">Remote Point</a> (page 2-79)
DWR_RMT_SRC	<a href="#">Remote Source</a> (page 2-79)
DWR_RMT_UNIT	<a href="#">Remote Unit</a> (page 2-79)
DWR_RMT_UNIT_COMUNCTN_LNK_ASGN	<a href="#">Remote Unit Communication Link Assignment</a> (page 2-79)
DWR_ROTNG_MC	<a href="#">Rotating Machine</a> (page 2-79)
DWR_RTNL_NBR	<a href="#">Rational Number</a> (page 2-77)
DWR_SB_GEOCL_RGN	<a href="#">Sub Geographical Region</a> (page 2-82)
DWR_SB_LD_AREA	<a href="#">Sub Load Area</a> (page 2-82)
DWR_SBSTN	<a href="#">Substation</a> (page 2-82)
DWR_SCHL_EVT_ASST_ASGN	<a href="#">Scheduled Event Asset Assignment</a> (page 2-79)

Table 4-3 (Cont.) Reference Tables

Table Name	More Information
DWR_SCRPT	<a href="#">Script</a> (page 2-80)
DWR_SCRPT_QUES	<a href="#">Script Question</a> (page 2-80)
DWR_SEAL	<a href="#">Seal</a> (page 2-80)
DWR_SEASON_DAY_TYP_SCHL	<a href="#">Season Day Type Schedule</a> (page 2-80)
DWR_SECTNR	<a href="#">Sectionaliser</a> (page 2-80)
DWR_SERIES_CMPNSTR	<a href="#">Series Compensator</a> (page 2-80)
DWR_SFTY_DOC	<a href="#">Safety Document</a> (page 2-79)
DWR_SGMNT_CRTRA	<a href="#">Segment Criteria</a> (page 2-80)
DWR_SHNT_CMPNSTR	<a href="#">Shunt Compensator</a> (page 2-81)
DWR_SHNT_CMPNSTR_INFO	<a href="#">Shunt Compensator Info</a> (page 2-81)
DWR_SHNT_CMPNSTR_PHS	<a href="#">Shunt Compensator Phase</a> (page 2-81)
DWR_SIC_ASGN	<a href="#">SIC Assignment</a> (page 2-81)
DWR_SL_CHNL	<a href="#">Sales Channel</a> (page 2-79)
DWR_SMPL_END_DVC_FNCTN	<a href="#">Simple End Device Function</a> (page 2-81)
DWR_SOC_JB	<a href="#">SOC Job</a> (page 2-81)
DWR_SOC_JB_CTGRY	<a href="#">SOC Job Category</a> (page 2-81)
DWR_SOC_JB_GRP	<a href="#">SOC Job Group</a> (page 2-81)
DWR_SRC_SYS	<a href="#">Source System</a> (page 2-81)
DWR_SRC_SYS_KEY_MAP	<a href="#">Source System Key Mapping</a> (page 2-81)
DWR_SRG_ARSTR_INFO	<a href="#">Surge Arrester Info</a> (page 2-82)
DWR_SRVC	<a href="#">Service</a> (page 2-80)
DWR_SRVC_COVRG_AREA	<a href="#">Service Coverage Area</a> (page 2-80)
DWR_SRVC_COVRG_GEO_DTL	<a href="#">Service Coverage Geo Detail</a> (page 2-80)
DWR_SRVC_LOC	<a href="#">Service Location</a> (page 2-80)
DWR_SRVC_LOC_IDNT	<a href="#">Service Location Identifier</a> (page 2-80)
DWR_SRVC_QTY	<a href="#">Service Quantity</a> (page 2-80)
DWR_SRVC_SPPLR	<a href="#">Service Supplier</a> (page 2-81)
DWR_STAT	<a href="#">Status</a> (page 2-82)
DWR_STATIC_VAR_CMPNSTR	<a href="#">Static Var Compensator</a> (page 2-82)
DWR_STEAM_SNDOUT_SCHL	<a href="#">Steam Sendout Schedule</a> (page 2-82)
DWR_STN_SPPLY	<a href="#">Station Supply</a> (page 2-82)
DWR_STRCTR	<a href="#">Structure</a> (page 2-82)
DWR_STRCTR_SPPRT	<a href="#">Structure Support</a> (page 2-82)
DWR_STREETLGH	<a href="#">Streetlight</a> (page 2-82)
DWR_SURVEY	<a href="#">Survey</a> (page 2-82)
DWR_SWTCH	<a href="#">Switch</a> (page 2-83)
DWR_SWTCH_ACTN	<a href="#">Switch Action</a> (page 2-83)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_SWTCH_ACTVTY_SFTY_DOC_ASGN	<a href="#">Switching Activity Safety Doc Assignment</a> (page 2-83)
DWR_SWTCH_CNCT_DSCNCT_FNC_ASGN	<a href="#">Switch Connect Disconnect Func Assignment</a> (page 2-83)
DWR_SWTCH_INFO	<a href="#">Switch Info</a> (page 2-83)
DWR_SWTCH_PHS	<a href="#">Switch Phase</a> (page 2-83)
DWR_SWTCH_SCHL	<a href="#">Switch Schedule</a> (page 2-83)
DWR_SWTCH_SWTCHNG_OPRN_ASGN	<a href="#">Switch Switching Operation Assignment</a> (page 2-83)
DWR_SWTCHNG_ACTVTY	<a href="#">Switching Activity</a> (page 2-83)
DWR_SWTCHNG_OPRN	<a href="#">Switching Operation</a> (page 2-83)
DWR_SWTCHNG_PLN	<a href="#">Switching Plan</a> (page 2-83)
DWR_SWTCHNG_STEP	<a href="#">Switching Step</a> (page 2-83)
DWR_SWTCHNG_STEP_GRP	<a href="#">Switching Step Group</a> (page 2-83)
DWR_SYNCHRCHCK_RLY	<a href="#">Synchrocheck Relay</a> (page 2-83)
DWR_SYNCHRNS_MC	<a href="#">Synchronous Machine</a> (page 2-83)
DWR_TAG_ACTN	<a href="#">Tag Action</a> (page 2-83)
DWR_TAP_CHNG	<a href="#">Tap Changer</a> (page 2-83)
DWR_TAP_CHNG_CNTRL	<a href="#">Tap Changer Control</a> (page 2-84)
DWR_TAP_CHNG_INFO	<a href="#">Tap Changer Info</a> (page 2-84)
DWR_TAP_SCHL	<a href="#">Tap Schedule</a> (page 2-84)
DWR_TASK	<a href="#">Task</a> (page 2-84)
DWR_THRML_GNRTNG_UNIT	<a href="#">Thermal Generating Unit</a> (page 2-84)
DWR_TIME_SCHL	<a href="#">Time Schedule</a> (page 2-84)
DWR_TIME_SLT	<a href="#">Time Slot</a> (page 2-84)
DWR_TIME_TRF_INTRVL	<a href="#">Time Tariff Interval</a> (page 2-85)
DWR_TOOL	<a href="#">Tool</a> (page 2-85)
DWR_TPLGCL_ND	<a href="#">Topological Node</a> (page 2-85)
DWR_TRBL_TCKT	<a href="#">Trouble Ticket</a> (page 2-86)
DWR_TRF	<a href="#">Tariff</a> (page 2-84)
DWR_TRF_PRFL	<a href="#">Tariff Profile</a> (page 2-84)
DWR_TRF_TRF_PRFL_ASGN	<a href="#">Tariff Tariff Profile Assignment</a> (page 2-84)
DWR_TRGT_ACCT	<a href="#">Target Account</a> (page 2-84)
DWR_TRGT_AGRMNT	<a href="#">Target Agreement</a> (page 2-84)
DWR_TRGT_GEO_AREA	<a href="#">Target Geography Area</a> (page 2-84)
DWR_TRGT_MKT_SGMNT	<a href="#">Target Market Segment</a> (page 2-84)
DWR_TRML	<a href="#">Terminal</a> (page 2-84)
DWR_TRNSFRMR_CORE_ADMTTNC	<a href="#">Transformer Core Admittance</a> (page 2-85)
DWR_TRNSFRMR_END	<a href="#">Transformer End</a> (page 2-85)
DWR_TRNSFRMR_END_INFO	<a href="#">Transformer End Info</a> (page 2-85)

**Table 4-3 (Cont.) Reference Tables**

<b>Table Name</b>	<b>More Information</b>
DWR_TRNSFRMR_FEDR_ASGN	<a href="#">Transformer Feeder Assignment</a> (page 2-85)
DWR_TRNSFRMR_MESH_IMPNDNC	<a href="#">Transformer Mesh Impedance</a> (page 2-85)
DWR_TRNSFRMR_STAR_IMPNDNC	<a href="#">Transformer Star Impedance</a> (page 2-85)
DWR_TRNSFRMR_TANK	<a href="#">Transformer Tank</a> (page 2-86)
DWR_TRNSFRMR_TANK_END	<a href="#">Transformer Tank End</a> (page 2-86)
DWR_TRNSFRMR_TANK_INFO	<a href="#">Transformer Tank Info</a> (page 2-86)
DWR_TWR	<a href="#">Tower</a> (page 2-85)
DWR_UNDRGRND_STRCTR	<a href="#">Underground Structure</a> (page 2-86)
DWR_USG_PNT	<a href="#">Usage Point</a> (page 2-86)
DWR_USG_PNT_END_DVC_CTRL_ASGN	<a href="#">Usage Point End Device Ctrl Assignment</a> (page 2-86)
DWR_USG_PNT_EQPMNT_ASGN	<a href="#">Usage Point Equipment Assignment</a> (page 2-86)
DWR_USG_PNT_GRP	<a href="#">Usage Point Group</a> (page 2-86)
DWR_USG_PNT_GRP_ASGN	<a href="#">Usage Point Group Assignment</a> (page 2-86)
DWR_USG_PNT_GRP_DR_PROG_ASGN	<a href="#">Usage Point Group DR Program Assignment</a> (page 2-86)
DWR_USG_PNT_LOC	<a href="#">Usage Point Location</a> (page 2-86)
DWR_USG_PNT_TRNSFRMR_ASGN	<a href="#">Usage Point Transformer Assignment</a> (page 2-86)
DWR_USG_PT_GP_END_DVC_CTL_ASGN	<a href="#">Usage Point Transformer Assignment</a> (page 2-86)
DWR_USG_READ_CYCL	<a href="#">Usage Read Cycle</a> (page 2-86)
DWR_VAL_ALS_SET	<a href="#">Value Alias Set</a> (page 2-87)
DWR_VAL_TO_ALS	<a href="#">Value To Alias</a> (page 2-87)
DWR_VHCL	<a href="#">Vehicle</a> (page 2-87)
DWR_VLTG_CNTRL_ZN	<a href="#">Voltage Control Zone</a> (page 2-87)
DWR_VLTG_LMT	<a href="#">Voltage Limit</a> (page 2-87)
DWR_VNDR	<a href="#">Vendor</a> (page 2-87)
DWR_VNDR_ITEM	<a href="#">Vendor Item</a> (page 2-87)
DWR_VRTL_TEAM	<a href="#">Virtual Team</a> (page 2-87)
DWR_WEB_PG	<a href="#">Web Page</a> (page 2-87)
DWR_WND_GNRTNG_UNIT	<a href="#">Wind Generating Unit</a> (page 2-88)
DWR_WR_INFO	<a href="#">Wire Info</a> (page 2-88)
DWR_WR_SPCNG_INFO	<a href="#">Wire Spacing Info</a> (page 2-88)
DWR_WRK_ASST	<a href="#">Work Asset</a> (page 2-88)
DWR_WRK_BLLG_INFO	<a href="#">Work Billing Info</a> (page 2-88)
DWR_WRK_COST_DTL	<a href="#">Work Cost Detail</a> (page 2-88)
DWR_WRK_FLOW_STEP	<a href="#">Work Flow Step</a> (page 2-88)
DWR_WRK_LOC	<a href="#">Work Location</a> (page 2-88)
DWR_WRK_ORDR	<a href="#">Work Order</a> (page 2-88)
DWR_WRK_STAT_ENTRY	<a href="#">Work Status Entry</a> (page 2-88)

**Table 4-3 (Cont.) Reference Tables**

Table Name	More Information
DWR_WRK_TASK	<a href="#">Work Task</a> (page 2-88)
DWR_WRK_TASK_AS_SET_ASGN	<a href="#">Work Task Asset Assignment</a> (page 2-88)
DWR_WRK_TIME_SCHL	<a href="#">Work Time Schedule</a> (page 2-88)
DWR_ZN	<a href="#">Zone</a> (page 2-89)

## 4.3 Lookup Tables

[Table 4-4](#) (page 4-17) briefly describes the Lookup tables in Oracle Utilities Data Model.

**Table 4-4 Lookup Tables**

Table Name	More Information
DWL_ACCT_ADJ_RSN	<a href="#">Account Adjustment Reason</a> (page 2-32)
DWL_ACCT_ASGN_RSN	<a href="#">Account Assignment Reason</a> (page 2-32)
DWL_ACCT_ASGN_TYP	<a href="#">Account Assignment Type</a> (page 2-32)
DWL_ACCT_BAL_ADJ_TYP	<a href="#">Account Balance Adjustment Type</a> (page 2-32)
DWL_ACCT_BAL_TYP	<a href="#">Account Balance Type</a> (page 2-33)
DWL_ACCT_EVT_TYP	<a href="#">Account Event Type</a> (page 2-33)
DWL_ACCT_ITEM_CTGRY	<a href="#">Accounting Item Category</a> (page 2-35)
DWL_ACCT_PYMT_MTHD_STAT_RSN	<a href="#">Account Payment Method Status Reason</a> (page 2-34)
DWL_ACCT_PYMT_MTHD_STAT_TYP	<a href="#">Account Payment Method Status Type</a> (page 2-34)
DWL_ACCT_RFND_RSN	<a href="#">Account Refund Reason</a> (page 2-34)
DWL_ACCT_RL_TYP	<a href="#">Account Role Type</a> (page 2-34)
DWL_ACCT_STAT_RSN	<a href="#">Account Status Reason</a> (page 2-34)
DWL_ACCT_STAT_TYP	<a href="#">Account Status Type</a> (page 2-34)
DWL_ACCT_TYP	<a href="#">Account Type</a> (page 2-34)
DWL_AGRMNT_ASGN_RSN	<a href="#">Agreement Assignment Reason</a> (page 2-35)
DWL_AGRMNT_ASGN_TYP	<a href="#">Agreement Assignment Type</a> (page 2-35)
DWL_AGRMNT_STAT_TYP	<a href="#">Agreement Status Type</a> (page 2-36)
DWL_AGRMNT_TYP	<a href="#">Agreement Type</a> (page 2-36)
DWL_AMI_BLLG_RDY_KIND_ENUM	<a href="#">AMI Billing Ready Kind ENUM</a> (page 2-36)
DWL_ANCHOR_KIND_ENUM	<a href="#">Anchor Kind ENUM</a> (page 2-36)
DWL_APNMNT_TYP	<a href="#">Appointment Type</a> (page 2-36)
DWL_ASST_MDL_USG_KIND_ENUM	<a href="#">Asset Model Usage Kind ENUM</a> (page 2-37)
DWL_ASST_TYP	<a href="#">Asset Type</a> (page 2-37)
DWL_BARNG_RSN	<a href="#">Baring Reason</a> (page 2-38)
DWL_BLLG_OCCRNCE_TYP	<a href="#">Billing Occurrence Type</a> (page 2-38)

**Table 4-4 (Cont.) Lookup Tables**

<b>Table Name</b>	<b>More Information</b>
DWL_BLLG_PRD	<a href="#">Billing Period</a> (page 2-38)
DWL_BSHNG_INSLTN_KIND_ENUM	<a href="#">Bushing Insulation Kind ENUM</a> (page 2-38)
DWL_BSNS_INTRACN_ASGN_TYP	<a href="#">Business Interaction Assignment Type</a> (page 2-39)
DWL_BSNS_INTRACN_STAT_RSN	<a href="#">Business Interaction Status Reason</a> (page 2-39)
DWL_BSNS_INTRACN_STAT_TYP	<a href="#">Business Interaction Status Type</a> (page 2-39)
DWL_BSNS_INTRACN_TYP	<a href="#">Business Interaction Type</a> (page 2-39)
DWL_BSNS_LEGAL_STAT	<a href="#">Business Legal Status</a> (page 2-39)
DWL_CALL_CNTR_CASE_SB_TYP	<a href="#">Call Center Case Sub Type</a> (page 2-40)
DWL_CALL_CNTR_CASE_TTL	<a href="#">Call Center Case Title</a> (page 2-40)
DWL_CALL_CNTR_CASE_TYP	<a href="#">Call Center Case Type</a> (page 2-40)
DWL_CHNL_TYP	<a href="#">Channel Type</a> (page 2-41)
DWL_CHRG_KIND_ENUM	<a href="#">Charge Kind ENUM</a> (page 2-41)
DWL_CLRNCE_ACTN_KIND_ENUM	<a href="#">Clearance Action Kind ENUM</a> (page 2-42)
DWL_CMPGN_CHNL_TYP	<a href="#">Campaign Channel Type</a> (page 2-40)
DWL_CMPGN_STAT	<a href="#">Campaign Status</a> (page 2-41)
DWL_CMPGN_TYP	<a href="#">Campaign Type</a> (page 2-41)
DWL_CMPST_SWTCH_KIND_ENUM	<a href="#">Composite Switch Kind ENUM</a> (page 2-43)
DWL_CNCT_LST_CHNG_RSN	<a href="#">Contact List Change Reason</a> (page 2-43)
DWL_CNCT_LST_RCRNC_TYP	<a href="#">Contact List Recurrence Type</a> (page 2-44)
DWL_CNCT_RLS	<a href="#">Contact Roles</a> (page 2-44)
DWL_CNTRL_TYP	<a href="#">Control Type</a> (page 2-44)
DWL_COLNT_TYP_ENUM	<a href="#">Coolant Type ENUM</a> (page 2-44)
DWL_COMUNICTN_DRCTN_KIND_ENUM	<a href="#">Com Direction Kind ENUM</a> (page 2-42)
DWL_COMUNICTN_TCHNLGY_KIND_ENUM	<a href="#">Com Technology Kind ENUM</a> (page 2-42)
DWL_COST_RSN	<a href="#">Cost Reason</a> (page 2-44)
DWL_COST_SB_TYP	<a href="#">Cost Subtype</a> (page 2-44)
DWL_COST_TYP	<a href="#">Cost Type</a> (page 2-44)
DWL_CRNCY	<a href="#">Currency</a> (page 2-45)
DWL_CRNCY_ENUM	<a href="#">Currency ENUM</a> (page 2-45)
DWL_CRPRT_STNDRD_KIND_ENUM	<a href="#">Corporate Standard Kind ENUM</a> (page 2-44)
DWL_CRVE_STYLE_ENUM	<a href="#">Curve Style ENUM</a> (page 2-45)
DWL_CUST_GRP	<a href="#">Customer Group</a> (page 2-45)
DWL_CUST_KIND_ENUM	<a href="#">Customer Kind ENUM</a> (page 2-45)
DWL_CUST_OCCSN_TYP	<a href="#">Customer Occasion Type</a> (page 2-46)
DWL_CUST_RVN_BND	<a href="#">Customer Revenue Band</a> (page 2-46)
DWL_CUST_TYP	<a href="#">Customer Type</a> (page 2-47)
DWL_CUT_JMPR_ACTN_KIND_ENUM	<a href="#">Cut Jumper Action Kind ENUM</a> (page 2-47)

Table 4-4 (Cont.) Lookup Tables

Table Name	More Information
DWL_DAY_TYP	<a href="#">Day Type</a> (page 2-47)
DWL_DEBT_AGNG_BND	<a href="#">Debt Aging Band</a> (page 2-47)
DWL_DOC_TYP	<a href="#">Document Type</a> (page 2-48)
DWL_DOC_TYP_GRP	<a href="#">Document Type Group</a> (page 2-49)
DWL_DRCT_DEBT_STAT_RSN	<a href="#">Direct Debit Status Reason</a> (page 2-48)
DWL_EDU	<a href="#">Education</a> (page 2-49)
DWL_EMP_DESIG	<a href="#">Employee Designation</a> (page 2-49)
DWL_EMP_JB_RL_TYP	<a href="#">Employee Job Role Type</a> (page 2-49)
DWL_EMP_TYP	<a href="#">Employee Type</a> (page 2-49)
DWL_END_DVC_DOMAIN	<a href="#">End Device Domain</a> (page 2-50)
DWL_END_DVC_EVT_OR_ACTN	<a href="#">End Device Event Or Action</a> (page 2-50)
DWL_END_DVC_EVT_TYP	<a href="#">End Device Event Type</a> (page 2-50)
DWL_END_DVC_FNCTN_KIND_ENUM	<a href="#">End Device Function Kind ENUM</a> (page 2-51)
DWL_END_DVC_SB_DOMAIN	<a href="#">End Device Sub Domain</a> (page 2-51)
DWL_END_DVC_TYP	<a href="#">End Device Type</a> (page 2-51)
DWL_ENRGY_FLOW_DRCTN	<a href="#">Energy Flow Direction</a> (page 2-51)
DWL_EVT_ASGN_RSN	<a href="#">Event Assignment Reason</a> (page 2-51)
DWL_EVT_ASGN_TYP	<a href="#">Event Assignment Type</a> (page 2-51)
DWL_EVT_CLASS	<a href="#">Event Class</a> (page 2-52)
DWL_EVT_CTGRY	<a href="#">Event Category</a> (page 2-51)
DWL_EVT_PRTY_RL	<a href="#">Event Party Role</a> (page 2-53)
DWL_EVT_RESPN_RSN	<a href="#">Event Response Reason</a> (page 2-53)
DWL_EVT_RSLT	<a href="#">Event Result</a> (page 2-53)
DWL_EVT_RSLTN	<a href="#">Event Resolution</a> (page 2-53)
DWL_EVT_RSN	<a href="#">Event Reason</a> (page 2-53)
DWL_EVT_RSN_CTGRY	<a href="#">Event Reason Category</a> (page 2-53)
DWL_EVT_STAT_RSN	<a href="#">Event Status Reason</a> (page 2-53)
DWL_EVT_STAT_TYP	<a href="#">Event Status Type</a> (page 2-53)
DWL_EVT_TYP	<a href="#">Event Type</a> (page 2-53)
DWL_EXTRNL_ORG_TYP	<a href="#">External Organization Type</a> (page 2-54)
DWL_FCT_DVC_KIND_ENUM	<a href="#">FACTS Device Kind ENUM</a> (page 2-54)
DWL_FLT_IND_RESET_KIND_ENUM	<a href="#">Fault Indicator Reset Kind ENUM</a> (page 2-54)
DWL_GL_ACCT_TYP	<a href="#">GL Account Type</a> (page 2-56)
DWL_GL_JE_CTGRY	<a href="#">GL Journal Entry Category</a> (page 2-57)
DWL_GL_SGMNT_TYP	<a href="#">GL Segment Type</a> (page 2-58)
DWL_GNDR	<a href="#">Gender</a> (page 2-55)
DWL_GNRTR_CNTRL_MD_ENUM	<a href="#">Generator Control Mode ENUM</a> (page 2-55)

Table 4-4 (Cont.) Lookup Tables

Table Name	More Information
DWL_GNRTR_CNTRL_SRC_ENUM	<a href="#">Generator Control Source ENUM</a> (page 2-55)
DWL_GNRTR_OPERTNG_MD_ENUM	<a href="#">Generator Operating Mode ENUM</a> (page 2-55)
DWL_HYDR_ENRG_CNVRSN_KIND_ENUM	<a href="#">Hydro Energy Conversion Kind ENUM</a> (page 2-59)
DWL_INTRACN_DRCTN	<a href="#">Interaction Direction</a> (page 2-59)
DWL_INTRACN_PRIORITY_TYP	<a href="#">Interaction Priority Type</a> (page 2-60)
DWL_INTRACN_RSLT_TYP	<a href="#">Interaction Result Type</a> (page 2-60)
DWL_INTRACN_RSN	<a href="#">Interaction Reason</a> (page 2-60)
DWL_INTRACN_STAT	<a href="#">Interaction Status</a> (page 2-60)
DWL_INTRACN_TRNSFR_RSN	<a href="#">Interaction Transfer Reason</a> (page 2-60)
DWL_INTRACN_TYP	<a href="#">Interaction Type</a> (page 2-60)
DWL_INTRHRMNC	<a href="#">Interharmonics</a> (page 2-60)
DWL_INTTV_RSLT_TYP	<a href="#">Initiative Result Type</a> (page 2-59)
DWL_INTTV_TYP	<a href="#">Initiative Type</a> (page 2-59)
DWL_INVC_DISC_RSN	<a href="#">Invoice Discount Reason</a> (page 2-61)
DWL_INVC_DISC_TYP	<a href="#">Invoice Discount Type</a> (page 2-61)
DWL_INVC_DLVRY_FRMT	<a href="#">Invoice Delivery Format</a> (page 2-61)
DWL_INVC_DLVRY_TYP	<a href="#">Invoice Delivery Type</a> (page 2-61)
DWL_INVC_ITEM_DTL_TYP	<a href="#">Invoice Item Detail Type</a> (page 2-61)
DWL_INVC_ITEM_TYP	<a href="#">Invoice Item Type</a> (page 2-61)
DWL_INVC_PYMT_TERM_TYP	<a href="#">Invoice Payment Term Type</a> (page 2-61)
DWL_INVC_STAT_TYP	<a href="#">Invoice Status Type</a> (page 2-61)
DWL_INVC_TYP	<a href="#">Invoice Type</a> (page 2-61)
DWL_IVR_MENU_ITEM	<a href="#">IVR Menu Item</a> (page 2-62)
DWL_JNT_CNFGRTN_KIND_ENUM	<a href="#">Joint Configuration Kind ENUM</a> (page 2-62)
DWL_JNT_FILL_KIND_ENUM	<a href="#">Joint Fill Kind ENUM</a> (page 2-62)
DWL_LANG	<a href="#">Language</a> (page 2-62)
DWL_LTTR_TYP	<a href="#">Letter Type</a> (page 2-62)
DWL_LYLTYP_PROG_EVT_TYP	<a href="#">Loyalty Program Event Type</a> (page 2-63)
DWL_MEDIA_OBJ_TYP	<a href="#">Media Object Type</a> (page 2-64)
DWL_MRTL_STAT	<a href="#">Marital Status</a> (page 2-63)
DWL_MSRMNT_KIND	<a href="#">Measurement Kind</a> (page 2-64)
DWL_MTR_STAT	<a href="#">Meter Status</a> (page 2-65)
DWL_NTNLTY	<a href="#">Nationality</a> (page 2-65)
DWL_ORG_BSNS_UNIT_TYP	<a href="#">Organization Business Unit Type</a> (page 2-66)
DWL_PBLCTN_TYP	<a href="#">Publication Type</a> (page 2-77)
DWL_PHS	<a href="#">Phase</a> (page 2-72)
DWL_PHS_CD_ENUM	<a href="#">Phase Code ENUM</a> (page 2-72)

**Table 4-4 (Cont.) Lookup Tables**

<b>Table Name</b>	<b>More Information</b>
DWL_PHS_CNCTD_FLT_KIND_ENUM	<a href="#">Phase Connected Fault Kind ENUM</a> (page 2-72)
DWL_PHS_SHNT_CNCTN_KIND_ENUM	<a href="#">Phase Shunt Connection Kind ENUM</a> (page 2-72)
DWL_PLND_OUTG_KIND_ENUM	<a href="#">Planned Outage Kind ENUM</a> (page 2-73)
DWL_POLE_BASE_KIND_ENUM	<a href="#">Pole Base Kind ENUM</a> (page 2-73)
DWL_POLE_PRSRVTV_KIND_ENUM	<a href="#">Pole Preservative Kind ENUM</a> (page 2-73)
DWL_POLE_TRTMNT_KIND_ENUM	<a href="#">Pole Treatment Kind ENUM</a> (page 2-73)
DWL_POSTL_SRVC_TYP	<a href="#">Postal Service Type</a> (page 2-73)
DWL_PRICE_TYP	<a href="#">Price Type</a> (page 2-74)
DWL_PRMTN_RSLT_TYP	<a href="#">Promotion Result Type</a> (page 2-76)
DWL_PRMTN_TERM_TYP	<a href="#">Promotion Term Type</a> (page 2-76)
DWL_PRMTN_TERM_VAL	<a href="#">Promotion Term Value</a> (page 2-76)
DWL_PRMTN_TYP	<a href="#">Promotion Type</a> (page 2-76)
DWL_PROC_KIND_ENUM	<a href="#">Procedure Kind ENUM</a> (page 2-75)
DWL_PRSPCT_PRIORITY_TYP	<a href="#">Prospect Priority Type</a> (page 2-76)
DWL_PRSPCT_QLTY_SCR_TYP	<a href="#">Prospect Quality Score Type</a> (page 2-76)
DWL_PRSPCT_REJECT_RSN	<a href="#">Prospect Reject Reason</a> (page 2-76)
DWL_PRTY_ACCT_ASGN_TYP	<a href="#">Party Account Assignment Type</a> (page 2-69)
DWL_PRTY_ASGN_RSN	<a href="#">Party Assignment Reason</a> (page 2-69)
DWL_PRTY_ASGN_TYP	<a href="#">Party Assignment Type</a> (page 2-69)
DWL_PRTY_CNCT_INFO_TYP	<a href="#">Party Contact Information Type</a> (page 2-70)
DWL_PRTY_CNCT_LST_PRTCPTN	<a href="#">Party Contact List Participation</a> (page 2-70)
DWL_PRTY_CNCT_LST_RL	<a href="#">Party Contact List Role</a> (page 2-70)
DWL_PRTY_EVT_TYP	<a href="#">Party Event Type</a> (page 2-70)
DWL_PRTY_INTRACN_THRD_TYP	<a href="#">Party Interaction Thread Type</a> (page 2-70)
DWL_PRTY_LOC_RSN	<a href="#">Party Location Reason</a> (page 2-70)
DWL_PRTY_LOC_TYP	<a href="#">Party Location Type</a> (page 2-70)
DWL_PRTY_MGMT_RL	<a href="#">Party Management Role</a> (page 2-71)
DWL_PRTY_RL	<a href="#">Party Role</a> (page 2-71)
DWL_PRTY_STAT_CHNG_RSN	<a href="#">Party Status Change Reason</a> (page 2-71)
DWL_PRTY_STAT_CTGRY	<a href="#">Party Status Category</a> (page 2-71)
DWL_PRTY_STAT_TYP	<a href="#">Party Status Type</a> (page 2-71)
DWL_PRTY_TYP	<a href="#">Party Type</a> (page 2-71)
DWL_PSR_TYP	<a href="#">PSR Type</a> (page 2-77)
DWL_PYMT_AGNG_CLASS	<a href="#">Payment Aging Class</a> (page 2-72)
DWL_PYMT_MTHD_TYP	<a href="#">Payment Method Type</a> (page 2-72)
DWL_PYMT_TRX_TYP	<a href="#">Payment Transaction Type</a> (page 2-72)
DWL_RDNG_ACMLTN_BHVR	<a href="#">Reading Accumulation Behavior</a> (page 2-77)

**Table 4-4 (Cont.) Lookup Tables**

<b>Table Name</b>	<b>More Information</b>
DWL_RDNG_DATA_QLFR	<a href="#">Reading Data Qualifier</a> (page 2-78)
DWL_RDNG_QLTY_TYP	<a href="#">Reading Quality Type</a> (page 2-78)
DWL_RDNG_QLTY_TYP_CTGRY	<a href="#">Reading Quality Type Category</a> (page 2-78)
DWL_RDNG_QLTY_TYP_ORIGIN	<a href="#">Reading Quality Type Origin</a> (page 2-78)
DWL_RDNG_QLTY_TYP_SB_CTGRY	<a href="#">Reading Quality Type Sub Category</a> (page 2-78)
DWL_RDNG_RSN_KIND_ENUM	<a href="#">Reading Reason Kind ENUM</a> (page 2-78)
DWL_RDNG_TIME_ATTRIB	<a href="#">Reading Time Attribute</a> (page 2-78)
DWL_RDNG_TIME_PRD	<a href="#">Reading Time Period</a> (page 2-78)
DWL_RGLTNG_CNTRL_MD_KIND_ENUM	<a href="#">Regulating Control Mode Kind ENUM</a> (page 2-78)
DWL_RMT_UNIT_TYP_ENUM	<a href="#">Remote Unit Type ENUM</a> (page 2-79)
DWL_RVN_KIND_ENUM	<a href="#">Revenue Kind ENUM</a> (page 2-79)
DWL_SEAL_CNDTN_KIND_ENUM	<a href="#">Seal Condition Kind ENUM</a> (page 2-80)
DWL_SEAL_KIND_ENUM	<a href="#">Seal Kind ENUM</a> (page 2-80)
DWL_SEASON	<a href="#">Season</a> (page 2-80)
DWL_SGMNT_TYP	<a href="#">Segment Type</a> (page 2-80)
DWL_SHORT_CRCUT_RTR_KIND_ENUM	<a href="#">Short Circuit Rotor Kind ENUM</a> (page 2-81)
DWL_SIC_ASGN_RSN	<a href="#">SIC Assignment Reason</a> (page 2-81)
DWL_SIC_CLSFCTN	<a href="#">SIC Classification</a> (page 2-81)
DWL_SNCHRNS_MC_OPERTNG_MD_ENUM	<a href="#">Synchronous Machine Operating Mode ENUM</a> (page 2-83)
DWL_SNGL_PHS_KIND_ENUM	<a href="#">Single Phase Kind ENUM</a> (page 2-81)
DWL_SRC_ENUM	<a href="#">Source ENUM</a> (page 2-81)
DWL_SRC_SYS_TYP	<a href="#">Source System Type</a> (page 2-82)
DWL_SRVC_CTGRY	<a href="#">Service Category</a> (page 2-80)
DWL_SRVC_TYP	<a href="#">Service Type</a> (page 2-81)
DWL_STRCTR_MTRL_KIND_ENUM	<a href="#">Structure Material Kind ENUM</a> (page 2-82)
DWL_STRCTR_SPPRT_KIND_ENUM	<a href="#">Structure Support Kind ENUM</a> (page 2-82)
DWL_STREETLGH_T_LAMP_KIND_ENUM	<a href="#">Streetlight Lamp Kind ENUM</a> (page 2-82)
DWL_SVC_CNTRL_MD_ENUM	<a href="#">SVC Control Mode ENUM</a> (page 2-82)
DWL_SWTCH_ACTN_KIND_ENUM	<a href="#">Switch Action Kind ENUM</a> (page 2-83)
DWL_SWTCH_STATE_ENUM	<a href="#">Switch State ENUM</a> (page 2-83)
DWL_SYNCHRNS_MC_KIND_ENUM	<a href="#">Synchronous Machine Kind ENUM</a> (page 2-83)
DWL_TAG_ACTN_KIND_ENUM	<a href="#">Tag Action Kind ENUM</a> (page 2-83)
DWL_TAX_AUTH	<a href="#">Tax Authority</a> (page 2-84)
DWL_TAX_CTGRY	<a href="#">Tax Category</a> (page 2-84)
DWL_TIME_OF_USE	<a href="#">Time Of Use</a> (page 2-84)
DWL_TRBL_RPT_KIND_ENUM	<a href="#">Trouble Reporting Kind ENUM</a> (page 2-86)
DWL_TRGT_TYP	<a href="#">Target Type</a> (page 2-84)

**Table 4-4 (Cont.) Lookup Tables**

Table Name	More Information
DWL_TRNSFRMR_CNTRL_MD_ENUM	<a href="#">Transformer Control Mode ENUM</a> (page 2-85)
DWL_TWR_CONSTRCTN_KIND_ENUM	<a href="#">Tower Construction Kind ENUM</a> (page 2-85)
DWL_UNDRGRND_STRCTR_KIND_ENUM	<a href="#">Underground Structure Kind ENUM</a> (page 2-86)
DWL_UNIT_MLTPLR	<a href="#">Unit Multiplier</a> (page 2-86)
DWL_UNIT_MLTPLR_ENUM	<a href="#">Unit Multiplier ENUM</a> (page 2-86)
DWL_UNIT_SYMBL_ENUM	<a href="#">Unit Symbol ENUM</a> (page 2-86)
DWL_UOM	<a href="#">Unit Of Measure</a> (page 2-86)
DWL_USG_PNT_CNCTD_KIND_ENUM	<a href="#">Usage Point Connected Kind ENUM</a> (page 2-86)
DWL_UTLTY_CMDTY	<a href="#">Utility Commodity</a> (page 2-87)
DWL_VAL_TYP	<a href="#">Value Type</a> (page 2-87)
DWL_VEE_EXPTN_TYP	<a href="#">VEE Exception Type</a> (page 2-87)
DWL_VEE_GRP	<a href="#">VEE Group</a> (page 2-87)
DWL_VEE_RULE	<a href="#">VEE Rule</a> (page 2-87)
DWL_VLDTY_ENUM	<a href="#">Validity ENUM</a> (page 2-87)
DWL_WEATHR_ALRT	<a href="#">Weather Alert</a> (page 2-87)
DWL_WEATHR_FRCST	<a href="#">Weather Forecast</a> (page 2-87)
DWL_WEATHR_INFO	<a href="#">Weather Information</a> (page 2-87)
DWL_WEATHR_LOC	<a href="#">Weather Location</a> (page 2-87)
DWL_WND_GEN_UNIT_KIND_ENUM	<a href="#">Wind Gen Unit Kind ENUM</a> (page 2-88)
DWL_WNDNG_CNCTN_ENUM	<a href="#">Winding Connection ENUM</a> (page 2-88)
DWL_WR_INSLTN_KIND_ENUM	<a href="#">Wire Insulation Kind ENUM</a> (page 2-88)
DWL_WR_MTRL_KIND_ENUM	<a href="#">Wire Material Kind ENUM</a> (page 2-88)
DWL_WR_USG_KIND_ENUM	<a href="#">Wire Usage Kind ENUM</a> (page 2-88)
DWL_WRK_KIND_ENUM	<a href="#">Work Kind ENUM</a> (page 2-88)
DWL_WRK_STAT_KIND_ENUM	<a href="#">Work Status Kind ENUM</a> (page 2-88)
DWL_WRK_TASK_KIND_ENUM	<a href="#">Work Task Kind ENUM</a> (page 2-88)
DWL_WRK_TIME_SCHL_KIND_ENUM	<a href="#">Work Time Schedule Kind ENUM</a> (page 2-89)
DWL_ZN_KIND_ENUM	<a href="#">Zone Kind ENUM</a> (page 2-89)

## 4.4 Base Tables

[Table 4-5](#) (page 4-23) briefly describes the Base tables in Oracle Utilities Data Model.

**Table 4-5 Base Tables**

Table Name	More Information
DWB_ACCMLTR	<a href="#">Accumulator</a> (page 2-35)
DWB_ACCMLTR_VAL	<a href="#">Accumulator Value</a> (page 2-35)

Table 4-5 (Cont.) Base Tables

Table Name	More Information
DWB_ACCT_ACCT_CYCL_HIST	<a href="#">Account Accounting Cycle History</a> (page 2-32)
DWB_ACCT_BAL_ADJ	<a href="#">Account Balance Adjustment</a> (page 2-32)
DWB_ACCT_BAL_BKT	<a href="#">Account Balance Bucket</a> (page 2-32)
DWB_ACCT_BAL_HIST	<a href="#">Account Balance History</a> (page 2-32)
DWB_ACCT_BAL_IMPT	<a href="#">Account Balance Impact</a> (page 2-32)
DWB_ACCT_BLLG_OCCRNCE	<a href="#">Account Billing Occurrence</a> (page 2-33)
DWB_ACCT_CRDT_LMT	<a href="#">Account Credit Limit</a> (page 2-33)
DWB_ACCT_DEBT	<a href="#">Account Debt</a> (page 2-33)
DWB_ACCT_MGMT_HIST	<a href="#">Account Management History</a> (page 2-33)
DWB_ACCT_PYMT	<a href="#">Account Payment</a> (page 2-33)
DWB_ACCT_PYMT_BAL_IMPT	<a href="#">Account Payment Balance Impact</a> (page 2-33)
DWB_ACCT_PYMT_MTHD_STAT	<a href="#">Account Payment Method Status</a> (page 2-33)
DWB_ACCT_RCHRG	<a href="#">Account Recharge</a> (page 2-34)
DWB_ACCT_RFND	<a href="#">Account Refund</a> (page 2-34)
DWB_ACCT_STAT_HIST	<a href="#">Account Status History</a> (page 2-34)
DWB_ACTVTY_REC	<a href="#">Activity Record</a> (page 2-35)
DWB_AGRMNT_APRVL	<a href="#">Agreement Approval</a> (page 2-35)
DWB_AGRMNT_ASGN	<a href="#">Agreement Assignment</a> (page 2-35)
DWB_AGRMNT_STAT	<a href="#">Agreement Status</a> (page 2-35)
DWB_ANLG	<a href="#">Analog</a> (page 2-36)
DWB_ANLG_VAL	<a href="#">Analog Value</a> (page 2-36)
DWB_APNMNT	<a href="#">Appointment</a> (page 2-36)
DWB_ASST_APPRSL_HIST	<a href="#">Asset Appraisal History</a> (page 2-36)
DWB_ASST_CNDTN_HIST	<a href="#">Asset Condition History</a> (page 2-37)
DWB_ATMSPHRC_PRSSR	<a href="#">Atmospheric Pressure</a> (page 2-37)
DWB_BLK_LST_HIST	<a href="#">Black List History</a> (page 2-38)
DWB_BSNS_INTRACN	<a href="#">Business Interaction</a> (page 2-39)
DWB_BSNS_INTRACN_ITEM	<a href="#">Business Interaction Item</a> (page 2-39)
DWB_BSNS_INTRACN_ITEM_PRICE	<a href="#">Business Interaction Item Price</a> (page 2-39)
DWB_BSNS_INTRACN_RL	<a href="#">Business Interaction Role</a> (page 2-39)
DWB_BSNS_INTRACN_STAT_HIST	<a href="#">Business Interaction Status History</a> (page 2-39)
DWB_CLOUD_INFO	<a href="#">Cloud Information</a> (page 2-42)
DWB_CMND	<a href="#">Command</a> (page 2-42)
DWB_CMPGN_MSG_CRTVE	<a href="#">Campaign Message Creative</a> (page 2-41)
DWB_CNFGRTN_EVT	<a href="#">Configuration Event</a> (page 2-43)
DWB_CNTRL	<a href="#">Control</a> (page 2-44)
DWB_COST	<a href="#">Cost</a> (page 2-44)

**Table 4-5 (Cont.) Base Tables**

<b>Table Name</b>	<b>More Information</b>
DWB_CRNCY_EXCHNG_RATE	<a href="#">Currency Exchange Rate</a> (page 2-45)
DWB_CRVE_DATA	<a href="#">Curve Data</a> (page 2-45)
DWB_CUST_ORDR	<a href="#">Customer Order</a> (page 2-46)
DWB_CUST_ORDR_LI	<a href="#">Customer Order Line Item</a> (page 2-46)
DWB_DEBT_COLLCTN	<a href="#">Debt Collection</a> (page 2-47)
DWB_DEBT_COLLCTN_ASGN	<a href="#">Debt Collection Assignment</a> (page 2-47)
DWB_DEBT_COLLCTN_ASGN_BTCH	<a href="#">Debt Collection Assignment Batch</a> (page 2-47)
DWB_DOC_STAT	<a href="#">Document Status</a> (page 2-48)
DWB_DSCRT	<a href="#">Discrete</a> (page 2-48)
DWB_DSCRT_VAL	<a href="#">Discrete Value</a> (page 2-48)
DWB_EMP_ACT_LBR_HRLY	<a href="#">Employee Actual Labor Hourly</a> (page 2-49)
DWB_EMP_COST	<a href="#">Employee Cost</a> (page 2-49)
DWB_EMP_TRNG_REC	<a href="#">Employee Training Record</a> (page 2-49)
DWB_END_DVC_CNTRL	<a href="#">End Device Control</a> (page 2-50)
DWB_END_DVC_CNTRL_PRMRY_DVC_TM NG	<a href="#">End Device Ctrl Primary Device Timing</a> (page 2-50)
DWB_END_DVC_CNTRL_SCNDRY_DVC_T MNG	<a href="#">End Device Ctrl Secondary Device Timing</a> (page 2-50)
DWB_END_DVC_EVT	<a href="#">End Device Event</a> (page 2-50)
DWB_EVT	<a href="#">Event</a> (page 2-51)
DWB_EVT_ACCT	<a href="#">Event Account</a> (page 2-51)
DWB_EVT_ASGN	<a href="#">Event Assignment</a> (page 2-51)
DWB_EVT_CHAT	<a href="#">Event Chat</a> (page 2-51)
DWB_EVT_CHAT_DTL	<a href="#">Event Chat Detail</a> (page 2-51)
DWB_EVT_EMP_PYRL	<a href="#">Event Employee Payroll</a> (page 2-52)
DWB_EVT_EQPMNT_INSTNC	<a href="#">Event Equipment Instance</a> (page 2-52)
DWB_EVT_GEO	<a href="#">Event Geography</a> (page 2-52)
DWB_EVT_INVC_DLVRV	<a href="#">Event Invoice Delivery</a> (page 2-52)
DWB_EVT_LYLT_Y_PROG	<a href="#">Event Loyalty Program</a> (page 2-52)
DWB_EVT_PRTY_ASGN	<a href="#">Event Party Assignment</a> (page 2-52)
DWB_EVT_PRTY_INTRACN	<a href="#">Event Party Interaction</a> (page 2-52)
DWB_EVT_PRTY_INTRACN_CALL	<a href="#">Event Party Interaction Call</a> (page 2-52)
DWB_EVT_PRTY_INTRACN_EML	<a href="#">Event Party Interaction Email</a> (page 2-52)
DWB_EVT_PRTY_INTRACN_ITEM	<a href="#">Event Party Interaction Item</a> (page 2-52)
DWB_EVT_PRTY_INTRACN_LTTR	<a href="#">Event Party Interaction Letter</a> (page 2-52)
DWB_EVT_PRTY_INTRACN_PRTCPTN	<a href="#">Event Party Interaction Participation</a> (page 2-52)
DWB_EVT_PRTY_INTRACN_VST	<a href="#">Event Party Interaction Visit</a> (page 2-52)

Table 4-5 (Cont.) Base Tables

Table Name	More Information
DWB_EVT_PRTY_PRFL	<a href="#">Event Party Profile</a> (page 2-53)
DWB_EVT_STAT	<a href="#">Event Status</a> (page 2-53)
DWB_EVT_WEB_RGSTRN	<a href="#">Event Web Registration</a> (page 2-53)
DWB_EVT_WEB_VST	<a href="#">Event Web Visit</a> (page 2-53)
DWB_FLOD_INFO	<a href="#">Flood Information</a> (page 2-54)
DWB_FNL_RDNG	<a href="#">Final Reading</a> (page 2-54)
DWB_GL_BAL	<a href="#">GL Balance</a> (page 2-57)
DWB_GL_JE	<a href="#">GL Journal Entry</a> (page 2-57)
DWB_GL_JE_BTCH	<a href="#">GL Journal Entry Batch</a> (page 2-57)
DWB_GL_JE_LN	<a href="#">GL Journal Entry Line</a> (page 2-57)
DWB_GL_JE_LN_SBLDGR_ASGN	<a href="#">GL JE Line Subledger Assignment</a> (page 2-57)
DWB_GL_SBLDGR_JE	<a href="#">GL Subledger Journal Entry</a> (page 2-58)
DWB_GL_SBLDGR_JE_LN	<a href="#">GL Subledger Journal Entry Line</a> (page 2-58)
DWB_INCDNT	<a href="#">Incident</a> (page 2-59)
DWB_INITIAL_RDNG	<a href="#">Initial Reading</a> (page 2-59)
DWB_INTRACN_ANSWR_CHOICE	<a href="#">Interaction Answer Choice</a> (page 2-59)
DWB_INTRACN_NAVGTN_HIST	<a href="#">Interaction Navigation History</a> (page 2-59)
DWB_INTRACN_QUES_RESPN	<a href="#">Interaction Question Response</a> (page 2-60)
DWB_INTRACN_TRNSFR_HIST	<a href="#">Interaction Transfer History</a> (page 2-60)
DWB_INVC	<a href="#">Invoice</a> (page 2-60)
DWB_INVC_ADJ	<a href="#">Invoice Adjustment</a> (page 2-60)
DWB_INVC_DISC	<a href="#">Invoice Discount</a> (page 2-61)
DWB_INVC_ITEM	<a href="#">Invoice Item</a> (page 2-61)
DWB_INVC_ITEM_DTL	<a href="#">Invoice Item Detail</a> (page 2-61)
DWB_INVC_ITEM_RLTN	<a href="#">Invoice Item Relationship</a> (page 2-61)
DWB_INVC_PYMT_ASGN	<a href="#">Invoice Payment Assignment</a> (page 2-61)
DWB_INVC_PYMT_TERM	<a href="#">Invoice Payment Term</a> (page 2-61)
DWB_INVC_STAT_HIST	<a href="#">Invoice Status History</a> (page 2-61)
DWB_INVC_TAX_ITEM	<a href="#">Invoice Tax Item</a> (page 2-61)
DWB_JE_LN_INVC_ITEM_ASGN	<a href="#">Journal Entry Line Invoice Item Assignment</a> (page 2-62)
DWB_MSRMNT	<a href="#">Measurement</a> (page 2-64)
DWB_MSRMNT_VAL	<a href="#">Measurement Value</a> (page 2-64)
DWB_MTR_RDNG	<a href="#">Meter Reading</a> (page 2-64)
DWB_OUTG	<a href="#">Outage</a> (page 2-67)
DWB_OUTG_REC	<a href="#">Outage Record</a> (page 2-68)
DWB_PCHSE_ORDR	<a href="#">Purchase Order</a> (page 2-77)
DWB_PCHSE_ORDR_LI	<a href="#">Purchase Order Line Item</a> (page 2-77)

**Table 4-5 (Cont.) Base Tables**

Table Name	More Information
DWB_PPTN	<a href="#">Precipitation</a> (page 2-74)
DWB_PRICE_EVT	<a href="#">Price Event</a> (page 2-74)
DWB_PRMTN_CLSTR_USG	<a href="#">Promotion Cluster Usage</a> (page 2-75)
DWB_PRMTN_CNCT_LST_UTLZTN	<a href="#">Promotion Contact List Utilization</a> (page 2-75)
DWB_PRMTN_MGMT_HIST	<a href="#">Promotion Management History</a> (page 2-75)
DWB_PRTY_COST_ASGN	<a href="#">Party Cost Assignment</a> (page 2-70)
DWB_PRTY_INTRACN_THRD	<a href="#">Party Interaction Thread</a> (page 2-70)
DWB_PRTY_INTRCN_THRD_SBRP_ASGN	<a href="#">Party Interaction Thread Subscription Assignment</a> (page 2-70)
DWB_PRTY_PRMTN_RESPN	<a href="#">Party Promotion Response</a> (page 2-71)
DWB_PRTY_STAT_HIST	<a href="#">Party Status History</a> (page 2-71)
DWB_RDNG_QLTY	<a href="#">Reading Quality</a> (page 2-78)
DWB_RESRE_ORDR	<a href="#">Resource Order</a> (page 2-79)
DWB_RESRE_ORDR_ITEM	<a href="#">Resource Order Item</a> (page 2-79)
DWB_SCHL_EVT	<a href="#">Scheduled Event</a> (page 2-79)
DWB_SEA_CNDTN	<a href="#">Sea Condition</a> (page 2-80)
DWB_SET_PNT	<a href="#">Set Point</a> (page 2-81)
DWB_SPOT_TEMP	<a href="#">Spot Temperature</a> (page 2-82)
DWB_SRVC_ORDR	<a href="#">Service Order</a> (page 2-80)
DWB_SRVC_ORDR_LI	<a href="#">Service Order Line Item</a> (page 2-80)
DWB_STRNG_MSRMNT	<a href="#">String Measurement</a> (page 2-82)
DWB_STRNG_MSRMNT_VAL	<a href="#">String Measurement Value</a> (page 2-82)
DWB_VEE_EXPTN	<a href="#">VEE Exception</a> (page 2-87)
DWB_WND_INFO	<a href="#">Wind Information</a> (page 2-88)
DWB_WRK_COST_SUMM	<a href="#">Work Cost Summary</a> (page 2-88)
Not physicalized	<a href="#">Base Reading</a> (page 2-38)

## 4.5 Derived Tables

**Table 4-6 Oracle Utilities Data Model Derived Tables**

Table Name	More Information
DWD_ACCT_ARRER_MO	<a href="#">Account Arrears Month Drvd</a> (page 2-32)
DWD_ACCT_BAL_MO	<a href="#">Account Balance Month Drvd</a> (page 2-33)
DWD_ACCT_DEBT_DAY	<a href="#">Account Debt Day Drvd</a> (page 2-33)
DWD_ACCT_PYMT_DAY	<a href="#">Account Payment Day Drvd</a> (page 2-33)
DWD_ACCT_PYMT_MTHD_STAT_HIST	<a href="#">Account Payment Method Status Hist Drvd</a> (page 2-34)
DWD_ACCT_STAT_MO	<a href="#">Account Status Month Drvd</a> (page 2-34)

**Table 4-6 (Cont.) Oracle Utilities Data Model Derived Tables**

Table Name	More Information
DWD_CUST_MNNG	<a href="#">Customer Mining</a> (page 2-46)
DWD_DR_PROG_LD_RDCTN_RGN_DAY	<a href="#">DR Program Load Reduction By Region Day Drvd</a> (page 2-49)
DWD_END_DVC_EVT_CUST_DAY	<a href="#">End Device Event By Customer Day Drvd</a> (page 2-50)
DWD_END_DVC_EVT_DVC_DAY	<a href="#">End Device Event By Device Day Drvd</a> (page 2-50)
DWD_MTR_RDNG_DAY	<a href="#">Meter Reading Day Drvd</a> (page 2-65)
DWD_MTR_RDNG_HR	<a href="#">Meter Reading Hour Drvd</a> (page 2-65)
DWD_OUTG_DAY	<a href="#">Outage By Day Drvd</a> (page 2-67)
DWD_OUTG_USG_PNT	<a href="#">Outage By Usage Point Drvd</a> (page 2-67)
DWD_RLBLTY_IND_CITY_MO	<a href="#">Reliability Indices By City Month Drvd</a> (page 2-78)
DWD_RLBLTY_IND_FEDR_MO	<a href="#">Reliability Indices By Feeder Month Drvd</a> (page 2-78)

## 4.6 Aggregate Tables

[Table 4-7](#) (page 4-28) briefly describes the Aggregate tables in Oracle Utilities Data Model.

**Table 4-7 Aggregate Tables**

Table Name	More Information
DWA_END_DVC_EVT_CUST_MO	<a href="#">End Device Event by Customer Month Aggr</a> (page 2-50)
DWA_END_DVC_EVT_DVC_MO	<a href="#">End Device Event By Device Month Aggr</a> (page 2-50)
DWA_MTR_RDNG_MO	<a href="#">Meter Reading Month Aggr</a> (page 2-65)
DWA_MTR_RDNG_TOU_MO	<a href="#">Meter Reading TOU Month Aggr</a> (page 2-65)
DWA_OUTG_MO	<a href="#">Outage By Month Aggr</a> (page 2-67)

## 4.7 Temporary and Other Tables

Briefly describes the temporary and control tables in Oracle Utilities Data Model.

[Table 4-8](#) (page 4-28) and [Table 4-9](#) (page 4-29) briefly describes the temporary and control tables in Oracle Utilities Data Model.

**Table 4-8 Temporary Oracle Utilities Data Model Tables**

Table Name	Description
DWA_CUST_GROSS_ORDRS_QTR	This entity gives order measures, number of orders and total order amount, in same quarters of consecutive years.
DWA_CUST_NET_ORDRS_QTR	This entity gives order measures, number of orders and total order amount, in consecutive quarters.

**Table 4-8 (Cont.) Temporary Oracle Utilities Data Model Tables**

Table Name	Description
DWA_CUST_ORDR_MO	This entity summarizes orders placed by customers at month level aggregation. Using this entity, order measures, number of orders and total order amount, across order status, order type, product, product type dimensions can be computed.
TMP_DWD_CUST_RFMP_SCR_1	No value
TMP_DWD_CUST_RFMP_SCR_2	No value

**Table 4-9 Control Tables**

Table Name	Description
DWC_ETL_PARAMETER	Store ETL parameters such as etl start date and etl end date. For more information, see " <a href="#">Intra-ETL Load Parameters Control Table (page A-1)</a> ".
DWC_INTRA_ETL_ACTIVITY	Reports errors at the individual program level. For more information, see " <a href="#">Intra-ETL Monitoring Process Control Tables (page A-3)</a> ".
DWC_INTRA_ETL_PROCESS	Reports errors at the whole batch load level. For more information, see " <a href="#">Intra-ETL Monitoring Process Control Tables (page A-3)</a> ".
DWC_MESSAGE	" <a href="#">Intra-ETL Monitoring Process Control Tables (page A-3)</a> "
DWC_OLAP_ETL_PARAMETER	Reports OLAP ETL parameter. For more information, see " <a href="#">Intra-ETL OLAP Mapping Control Table (page A-2)</a> ".

## 4.8 Sequences in Oracle Utilities Data Model

[Table 4-10](#) (page 4-29) lists the sequence names in Oracle Utilities Data Model.

**Table 4-10 Sequence Name for Oracle Utilities Data Model**

Table Name	Sequence Name
DWC_INTRA_ETL_ACTIVITY	INTRA_ETL_ACTIVITY_SEQ
DWC_INTRA_ETL_PROCESS	INTRA_ETL_PROCESS_SEQ
DWR_CUST_SGMNT	CUST_SGMNT_SEQ

## 4.9 Compressed Tables

This section lists the Compressed Tables in Oracle Utilities Data Model. Oracle Utilities Data Model uses Database Compression on these tables to save space and load times.

DWA\_END\_DVC\_EVT\_CUST\_MO  
 DWA\_END\_DVC\_EVT\_DVC\_MO  
 DWA\_MTR\_RDNG\_MO  
 DWA\_MTR\_RDNG\_MO\_ACCT  
 DWA\_MTR\_RDNG\_MO\_CUST

DWA\_MTR\_RDNG\_MO\_UP  
DWA\_MTR\_RDNG\_TOU\_MO  
DWA\_OUTG\_MO  
DWB\_ACCT\_BAL\_ADJ  
DWB\_ACCT\_BAL\_HIST  
DWB\_ACCT\_BLLG\_OCCRNCE  
DWB\_ACCT\_CRDT\_LMT  
DWB\_ACCT\_PYMT  
DWB\_ACCT\_PYMT\_BAL\_IMPT  
DWB\_ACCT\_PYMT\_MTHD\_STAT  
DWB\_ACCT\_RFND  
DWB\_ACCT\_STAT\_HIST  
DWB\_AGRMNT\_APRVL  
DWB\_AGRMNT\_STAT  
DWB\_BLK\_LST\_HIST  
DWB\_BSNS\_INTRACN  
DWB\_CMPGN\_MSG\_CRTVE  
DWB\_COST  
DWB\_CRNCY\_EXCHNG\_RATE  
DWB\_CUST\_ORDR  
DWB\_CUST\_ORDR\_LI  
DWB\_DEBT\_COLLCTN  
DWB\_DEBT\_COLLCTN\_ASGN  
DWB\_DEBT\_COLLCTN\_ASGN\_BTCH  
DWB\_EMP\_ACT\_LBR\_HRLY  
DWB\_EMP\_COST  
DWB\_EMP\_TRNG\_REC  
DWB\_END\_DVC\_EVT  
DWB\_EVT  
DWB\_EVT\_ACCT  
DWB\_EVT\_ASGN  
DWB\_EVT\_EMP\_PYRL  
DWB\_EVT\_EQPMNT\_INSTNC  
DWB\_EVT\_GEO  
DWB\_EVT\_INVC\_DLVRV  
DWB\_EVT\_LYLTYPROG  
DWB\_EVT\_PRTY\_ASGN  
DWB\_EVT\_PRTY\_INTRACN  
DWB\_EVT\_PRTY\_INTRACN\_CALL  
DWB\_EVT\_PRTY\_INTRACN\_EML  
DWB\_EVT\_PRTY\_INTRACN\_LTTR  
DWB\_EVT\_PRTY\_INTRACN\_VST  
DWB\_EVT\_PRTY\_PRFL  
DWB\_EVT\_STAT  
DWB\_EVT\_WEB\_RGSTRN  
DWB\_EVT\_WEB\_VST  
DWB\_FNL\_RDNG  
DWB\_INCDNT  
DWB\_INITIAL\_RDNG  
DWB\_INTRACN\_QUES\_RESPN  
DWB\_INVC  
DWB\_INVC\_ADJ  
DWB\_INVC\_DISC  
DWB\_INVC\_ITEM  
DWB\_INVC\_ITEM\_DTL

DWB\_INVC\_PYMT\_ASGN  
DWB\_INVC\_STAT\_HIST  
DWB\_MTR\_RDNG  
DWB\_OUTG  
DWB\_OUTG\_REC  
DWB\_PRICE\_EVT  
DWB\_PRMTN\_CLSTR\_USG  
DWB\_PRMTN\_CNCT\_LST\_UTLZTN  
DWB\_PRMTN\_MGMT\_HIST  
DWB\_PRTY\_COST\_ASGN  
DWB\_PRTY\_INTRACN\_THRD  
DWB\_PRTY\_PRMTN\_RESPN  
DWB\_PRTY\_STAT\_HIST  
DWB\_RESRE\_ORDR  
DWB\_SRVC\_ORDR  
DWD\_ACCT\_ARRER\_MO  
DWD\_ACCT\_BAL\_MO  
DWD\_ACCT\_DEBT\_DAY  
DWD\_ACCT\_PYMT\_DAY  
DWD\_ACCT\_PYMT\_MTHD\_STAT\_HIST  
DWD\_ACCT\_STAT\_MO  
DWD\_CUST\_DR\_PROG\_PROFILE  
DWD\_DR\_PROG\_LD\_RDCTN\_RGN\_DAY  
DWD\_END\_DVC\_EVT\_CUST\_DAY  
DWD\_END\_DVC\_EVT\_DVC\_DAY  
DWD\_MTR\_RDNG\_DAY  
DWD\_MTR\_RDNG\_HR  
DWD\_OUTG\_DAY  
DWD\_OUTG\_USG\_PNT  
DWD\_RLBLTY\_IND\_CITY\_MO  
DWD\_RLBLTY\_IND\_FEDR\_MO  
DWR\_SRVC\_QTY

## 4.10 Oracle Utilities Data Model OLAP Cube MV, Cube View

This section includes information on the following:

- Oracle OLAP Cube Views: Oracle OLAP cube views provide organizations with the ability to both improve the performance and analytic content of SQL-based business intelligence applications. OLAP cube views are relational views of OLAP cubes, dimensions, and hierarchies that reveal the full content of cubes and dimensions.
- Cube MV (Materialized Cube Views): Cube-organized materialized views, introduced, in Oracle Database 11g, play the same role as table-based materialized views. That is, a summary management solution that is transparent to the querying application. Like table-based materialized views, the application queries the detail tables and the database automatically rewrites the query to access summary data in the materialized view. In the case of cube-organized materialized views, the data is managed in the cube rather than a table.

[Table 4-11](#) (page 4-32) shows the cube materialized views in `oudm_sys` schema.

**Table 4-11 OLAP Cube Materialized Views in oudm\_sys Schema**

Cube Materialized View Name	OLAP Object Name	OLAP Object Type
CB\$ACM	ACM	Cube

[Table 4-12](#) (page 4-32) shows the OLAP cube views in `oudm_sys` schema.

**Table 4-12 OLAP Cube Views in oudm\_sys schema**

Cube View Name	OLAP Object Name	OLAP Object Type
ORG_VIEW	ORG	Dimension
PMTYP_HPMTYP_VIEW	PMTYP_HPMTYP	Hierarchy

# 5

## Oracle Utilities Data Model Logical to Physical Mapping

This chapter provides a table listing the Oracle Utilities Data Model entities in the logical data model, and the physical database tables or views to which the logical entities have been implemented or "physicalized".

This chapter includes the following section:

- [Overview of Mapping and Inheritance in Oracle Utilities Data Model](#) (page 5-1)
- [Logical to Physical Mappings for Oracle Utilities Data Model](#) (page 5-1)

### 5.1 Overview of Mapping and Inheritance in Oracle Utilities Data Model

The physical manifestation of the logical data model into database tables and relationships is not necessarily a pure 1:1 mapping from logical entities to physical tables. Physically, Oracle Utilities Data Model is setup for best performance, and minimal data disk storage, leveraging the database options and consulting best practices wherever possible. The foundation layer follows the Third normal Form rule ("the key, only the key and nothing but the key") while the analytics layer is setup for optimal reporting performance. Partitions, Indexes, primary and foreign keys, constraints, and Materialized Views are used to map the logical model in the best possible way by default.

The complete Oracle Utilities Data Model model is installed into the database schema:

- `OUDM_SYS`: Schema includes the Oracle Utilities Data Model tables from the foundation and analytics layers, including the OLAP cubes. This also includes the mining model and related objects like source tables, model building database packages, target tables and the specific views.

#### **Inheritance with Subtypes and SuperEntities**

Some logical entities are sub-types of super-entities. Physically, there are different ways to realize this. The decision on how to materialize the logical entity is based on consulting experience.

### 5.2 Logical to Physical Mappings for Oracle Utilities Data Model

[Table 5-1](#) (page 5-2) and [Table 5-2](#) (page 5-16) list the Oracle Utilities Data Model entities in the logical data model, and the physical database tables or views to which the logical entities have been implemented or "physicalized".

**Table 5-1 Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">AC Line Segment</a> (page 2-32)	DWR_AC_LN_SGMNT
<a href="#">AC Line Segment Phase</a> (page 2-32)	DWR_AC_LN_SGMNT_PHS
<a href="#">Acceptance Test</a> (page 2-32)	DWR_ACPT_TEST
<a href="#">Account</a> (page 2-32)	DWR_ACCT
<a href="#">Account Accounting Cycle History</a> (page 2-32)	DWB_ACCT_ACCT_CYCL_HIST
<a href="#">Account Adjustment Reason</a> (page 2-32)	DWL_ACCT_ADJ_RSN
<a href="#">Account Agreement Relationship</a> (page 2-32)	DWR_ACCT_AGRMNT_RLTN
<a href="#">Account Arrears Month Drvd</a> (page 2-32)	DWD_ACCT_ARRER_MO
<a href="#">Account Assignment</a> (page 2-32)	DWR_ACCT_ASGN
<a href="#">Account Assignment Reason</a> (page 2-32)	DWL_ACCT_ASGN_RSN
<a href="#">Account Assignment Type</a> (page 2-32)	DWL_ACCT_ASGN_TYP
<a href="#">Account Balance Adjustment</a> (page 2-32)	DWB_ACCT_BAL_ADJ
<a href="#">Account Balance Adjustment Type</a> (page 2-32)	DWL_ACCT_BAL_ADJ_TYP
<a href="#">Account Balance Bucket</a> (page 2-32)	DWB_ACCT_BAL_BKT
<a href="#">Account Balance Group</a> (page 2-32)	DWR_ACCT_BAL_GRP
<a href="#">Account Balance History</a> (page 2-32)	DWB_ACCT_BAL_HIST
<a href="#">Account Balance Impact</a> (page 2-32)	DWB_ACCT_BAL_IMPT
<a href="#">Account Balance Month Drvd</a> (page 2-33)	DWD_ACCT_BAL_MO
<a href="#">Account Balance Type</a> (page 2-33)	DWL_ACCT_BAL_TYP
<a href="#">Account Billing Cycle History</a> (page 2-33)	DWR_ACCT_BLLG_CYCL_HIST
<a href="#">Account Billing Frequency History</a> (page 2-33)	DWR_ACCT_BLLG_FREQNCY_HIST
<a href="#">Account Billing Occurrence</a> (page 2-33)	DWB_ACCT_BLLG_OCCRNCE
<a href="#">Account Billing Period History</a> (page 2-33)	DWR_ACCT_BLLG_PRD_HIST
<a href="#">Account Business Interaction Role</a> (page 2-33)	DWR_ACCT_BSNS_INTRACN_RL
<a href="#">Account Credit Limit</a> (page 2-33)	DWB_ACCT_CRDT_LMT
<a href="#">Account Debt</a> (page 2-33)	DWB_ACCT_DEBT
<a href="#">Account Debt Day Drvd</a> (page 2-33)	DWD_ACCT_DEBT_DAY
<a href="#">Account Event Type</a> (page 2-33)	DWL_ACCT_EVT_TYP
<a href="#">Account Management History</a> (page 2-33)	DWB_ACCT_MGMT_HIST
<a href="#">Account Payment</a> (page 2-33)	DWB_ACCT_PYMT
<a href="#">Account Payment Balance Impact</a> (page 2-33)	DWB_ACCT_PYMT_BAL_IMPT
<a href="#">Account Payment Day Drvd</a> (page 2-33)	DWD_ACCT_PYMT_DAY
<a href="#">Account Payment Method Status</a> (page 2-33)	DWB_ACCT_PYMT_MTHD_STAT
<a href="#">Account Payment Method Status Hist Drvd</a> (page 2-34)	DWD_ACCT_PYMT_MTHD_STAT_HIST
<a href="#">Account Payment Method Status Reason</a> (page 2-34)	DWL_ACCT_PYMT_MTHD_STAT_RSN
<a href="#">Account Payment Method Status Type</a> (page 2-34)	DWL_ACCT_PYMT_MTHD_STAT_TYP
<a href="#">Account Preferred Invoice Delivery</a> (page 2-34)	DWR_ACCT_PREF_INVC_DLVRY

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Account Preferred Payment Method</a> (page 2-34)	DWR_ACCT_PREF_PYMT_MTHD
<a href="#">Account Profile</a> (page 2-34)	DWR_ACCT_PRFL
<a href="#">Account Recharge</a> (page 2-34)	DWB_ACCT_RCHR
<a href="#">Account Refund</a> (page 2-34)	DWB_ACCT_RFND
<a href="#">Account Refund Reason</a> (page 2-34)	DWL_ACCT_RFND_RSN
<a href="#">Account Role Type</a> (page 2-34)	DWL_ACCT_RL_TYP
<a href="#">Account Segment</a> (page 2-34)	DWR_ACCT_SGMNT
<a href="#">Account Segment Assignment History</a> (page 2-34)	DWR_ACCT_SGMNT_ASGN_HIST
<a href="#">Account Segmentation Model</a> (page 2-34)	DWR_ACCT_SGMNT_MDL
<a href="#">Account Status History</a> (page 2-34)	DWB_ACCT_STAT_HIST
<a href="#">Account Status Month Drvd</a> (page 2-34)	DWD_ACCT_STAT_MO
<a href="#">Account Status Reason</a> (page 2-34)	DWL_ACCT_STAT_RSN
<a href="#">Account Status Type</a> (page 2-34)	DWL_ACCT_STAT_TYP
<a href="#">Account Type</a> (page 2-34)	DWL_ACCT_TYP
<a href="#">Accounting Cycle</a> (page 2-35)	DWR_ACCT_CYCL
<a href="#">Accounting Item Category</a> (page 2-35)	DWL_ACCT_ITEM_CTGRY
<a href="#">Accumulator</a> (page 2-35)	DWB_ACCMLTR
<a href="#">Accumulator Limit</a> (page 2-35)	DWR_ACCMLTR_LMT
<a href="#">Accumulator Limit Set</a> (page 2-35)	DWR_ACCMLTR_LMT_SET
<a href="#">Accumulator Limit Set Assignment</a> (page 2-35)	DWR_ACCMLTR_LMT_SET_ASGN
<a href="#">Accumulator Value</a> (page 2-35)	DWB_ACCMLTR_VAL
<a href="#">ACDC Terminal</a> (page 2-35)	Not physicalized
<a href="#">Active Power Limit</a> (page 2-35)	DWR_ACTV_POWR_LMT
<a href="#">Activity Record</a> (page 2-35)	DWB_ACTVTY_REC
<a href="#">Address Location</a> (page 2-35)	DWR_ADDR_LOC
<a href="#">Agree Item Pricing Struct Assignment</a> (page 2-35)	DWR_AGRMNT_ITEM_PRCNG_STRUCT_ASGN
<a href="#">Agreement</a> (page 2-35)	DWR_AGRMNT
<a href="#">Agreement Approval</a> (page 2-35)	DWB_AGRMNT_APRVL
<a href="#">Agreement Assignment</a> (page 2-35)	DWB_AGRMNT_ASGN
<a href="#">Agreement Assignment Reason</a> (page 2-35)	DWL_AGRMNT_ASGN_RSN
<a href="#">Agreement Assignment Type</a> (page 2-35)	DWL_AGRMNT_ASGN_TYP
<a href="#">Agreement Document</a> (page 2-35)	DWR_AGRMNT_DOC
<a href="#">Agreement Item</a> (page 2-35)	DWR_AGRMNT_ITEM
<a href="#">Agreement Status</a> (page 2-35)	DWB_AGRMNT_STAT
<a href="#">Agreement Status Type</a> (page 2-36)	DWL_AGRMNT_STAT_TYP
<a href="#">Agreement Type</a> (page 2-36)	DWL_AGRMNT_TYP
<a href="#">Agreement Usage Point Assignment</a> (page 2-36)	DWR_AGRMNT_USG_PNT_ASGN
<a href="#">Air Compressor</a> (page 2-36)	DWR_AIR_CMPRSR

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">AMI Billing Ready Kind ENUM</a> (page 2-36)	DWL_AMI_BLLG_RDY_KIND_ENUM
<a href="#">Analog</a> (page 2-36)	DWB_ANLG
<a href="#">Analog Limit</a> (page 2-36)	DWR_ANLG_LMT
<a href="#">Analog Limit Set</a> (page 2-36)	DWR_ANLG_LMT_SET
<a href="#">Analog Limit Set Assignment</a> (page 2-36)	DWR_ANLG_LMT_SET_ASGN
<a href="#">Analog Value</a> (page 2-36)	DWB_ANLG_VAL
<a href="#">Anchor Kind ENUM</a> (page 2-36)	DWL_ANCHOR_KIND_ENUM
<a href="#">ANZSIC Classification</a> (page 2-36)	DWR_ANZSC_CLSFCTN
<a href="#">Apparent Power Limit</a> (page 2-36)	DWR_APRNT_POWR_LMT
<a href="#">Appointment</a> (page 2-36)	DWB_APNMNT
<a href="#">Appointment Type</a> (page 2-36)	DWL_APNMNT_TYP
<a href="#">Asset</a> (page 2-36)	DWR_ASST
<a href="#">Asset Activity Record Assignment</a> (page 2-36)	DWR_ASST_ACTVTY_REC_ASGN
<a href="#">Asset Appraisal History</a> (page 2-36)	DWB_ASST_APPRSL_HIST
<a href="#">Asset Condition History</a> (page 2-37)	DWB_ASST_CNDTN_HIST
<a href="#">Asset Container</a> (page 2-37)	Not physicalized
<a href="#">Asset Function</a> (page 2-37)	DWR_ASST_FNCTN
<a href="#">Asset Info</a> (page 2-37)	DWR_ASST_INFO
<a href="#">Asset Location</a> (page 2-37)	DWR_ASST_LOC
<a href="#">Asset Model</a> (page 2-37)	DWR_ASST_MDL
<a href="#">Asset Model Catalog</a> (page 2-37)	DWR_ASST_MDL_CTLG
<a href="#">Asset Model Catalog Item</a> (page 2-37)	DWR_ASST_MDL_CTLG_ITEM
<a href="#">Asset Model Usage Kind ENUM</a> (page 2-37)	DWL_ASST_MDL_USG_KIND_ENUM
<a href="#">Asset Organization Role</a> (page 2-37)	DWR_ASST_ORG_RL
<a href="#">Asset Organization Role Assignment</a> (page 2-37)	DWR_ASST_ORG_RL_ASGN
<a href="#">Asset Owner</a> (page 2-37)	DWR_ASST_OWNR
<a href="#">Asset PSR Assignment</a> (page 2-37)	DWR_ASST_PSR_ASGN
<a href="#">Asset Status</a> (page 2-37)	DWR_ASST_STAT
<a href="#">Asset Type</a> (page 2-37)	DWL_ASST_TYP
<a href="#">Asset User</a> (page 2-37)	DWR_ASST_USER
<a href="#">Assignment</a> (page 2-37)	Not physicalized
<a href="#">Atmospheric Pressure</a> (page 2-37)	DWB_ATMSPHRC_PRSSR
<a href="#">Bank</a> (page 2-37)	DWR_BNK
<a href="#">Bank Direct Debit Channel</a> (page 2-37)	DWR_BNK_DRCT_DEBT_CHNL
<a href="#">Baring Reason</a> (page 2-38)	DWL_BARNG_RSN
<a href="#">Base Reading</a> (page 2-38)	Not physicalized
<a href="#">Base Voltage</a> (page 2-38)	DWR_BASE_VLTG
<a href="#">Base Work</a> (page 2-38)	Not physicalized

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Basic Interval Schedule</a> (page 2-38)	Not physicalized
<a href="#">Billing Cycle</a> (page 2-38)	DWR_BLLG_CYCL
<a href="#">Billing Frequency</a> (page 2-38)	DWR_BLLG_FREQNCY
<a href="#">Billing Occurrence Type</a> (page 2-38)	DWL_BLLG_OCCRNCE_TYP
<a href="#">Billing Period</a> (page 2-38)	DWL_BLLG_PRD
<a href="#">Black List History</a> (page 2-38)	DWB_BLK_LST_HIST
<a href="#">Breaker</a> (page 2-38)	DWR_BRKR
<a href="#">Busbar Section</a> (page 2-38)	DWR_BSBR_SECTN
<a href="#">Busbar Section</a> (page 2-38)	DWR_BSBR_SECTN_INFO
<a href="#">Bushing</a> (page 2-38)	DWR_BSHNG
<a href="#">Bushing Insulation Kind ENUM</a> (page 2-38)	DWL_BSHNG_INSLTN_KIND_ENUM
<a href="#">Business Case</a> (page 2-38)	DWR_BSNS_CASE
<a href="#">Business Half Month</a> (page 2-38)	DWR_BSNS_HLF_MO
<a href="#">Business Half Year</a> (page 2-38)	DWR_BSNS_HLF_YR
<a href="#">Business Interaction</a> (page 2-39)	DWB_BSNS_INTRACN
<a href="#">Business Interaction Assignment</a> (page 2-39)	DWR_BSNS_INTRACN_ASGN
<a href="#">Business Interaction Assignment Type</a> (page 2-39)	DWL_BSNS_INTRACN_ASGN_TYP
<a href="#">Business Interaction Item</a> (page 2-39)	DWB_BSNS_INTRACN_ITEM
<a href="#">Business Interaction Item Price</a> (page 2-39)	DWB_BSNS_INTRACN_ITEM_PRICE
<a href="#">Business Interaction Location Assignment</a> (page 2-39)	DWR_BSNS_INTRACN_LOC_ASGN
<a href="#">Business Interaction Role</a> (page 2-39)	DWB_BSNS_INTRACN_RL
<a href="#">Business Interaction Status History</a> (page 2-39)	DWB_BSNS_INTRACN_STAT_HIST
<a href="#">Business Interaction Status Reason</a> (page 2-39)	DWL_BSNS_INTRACN_STAT_RSN
<a href="#">Business Interaction Status Type</a> (page 2-39)	DWL_BSNS_INTRACN_STAT_TYP
<a href="#">Business Interaction Type</a> (page 2-39)	DWL_BSNS_INTRACN_TYP
<a href="#">Business Interaction Version</a> (page 2-39)	DWR_BSNS_INTRACN_VRSN
<a href="#">Business Legal Status</a> (page 2-39)	DWL_BSNS_LEGAL_STAT
<a href="#">Business Month</a> (page 2-39)	DWR_BSNS_MO
<a href="#">Business Quarter</a> (page 2-39)	DWR_BSNS_QTR
<a href="#">Business Unit Job Role</a> (page 2-40)	DWR_BSNS_UNIT_JB_RL
<a href="#">Business Week</a> (page 2-40)	DWR_BSNS_WK
<a href="#">Business Year</a> (page 2-40)	DWR_BSNS_YR
<a href="#">CAES Plant</a> (page 2-40)	DWR_CAES_PLNT
<a href="#">Calendar Half Month</a> (page 2-40)	DWR_CLNDR_HLF_MO
<a href="#">Calendar Half Year</a> (page 2-40)	DWR_CLNDR_HLF_YR
<a href="#">Calendar Month</a> (page 2-40)	DWR_CLNDR_MO
<a href="#">Calendar Quarter</a> (page 2-40)	DWR_CLNDR_QTR

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Calendar Week</a> (page 2-40)	DWR_CLNDR_WK
<a href="#">Calendar Year</a> (page 2-40)	DWR_CLNDR_YR
<a href="#">Call Center</a> (page 2-40)	DWR_CALL_CNTR
<a href="#">Call Center Agent</a> (page 2-40)	DWR_CALL_CNTR_AGNT
<a href="#">Call Center Case Sub Type</a> (page 2-40)	DWL_CALL_CNTR_CASE_SB_TYP
<a href="#">Call Center Case Title</a> (page 2-40)	DWL_CALL_CNTR_CASE_TTL
<a href="#">Call Center Service Capability</a> (page 2-40)	DWR_CALL_CNTR_SRVC_CAPBLTY
<a href="#">Campaign</a> (page 2-40)	DWR_CMPGN
<a href="#">Campaign Channel</a> (page 2-40)	DWR_CMPGN_CHNL
<a href="#">Campaign Channel Assignment</a> (page 2-40)	DWR_CMPGN_CHNL_ASGN
<a href="#">Campaign Channel Type</a> (page 2-40)	DWL_CMPGN_CHNL_TYP
<a href="#">Campaign Characteristic</a> (page 2-41)	DWR_CMPGN_CHTRSTC
<a href="#">Campaign Characteristic Value</a> (page 2-41)	DWR_CMPGN_CHTRSTC_VAL
<a href="#">Campaign Document</a> (page 2-41)	DWR_CMPGN_DOC
<a href="#">Campaign Management History</a> (page 2-41)	DWR_CMPGN_MGMT_HIST
<a href="#">Campaign Message</a> (page 2-41)	DWR_CMPGN_MSG
<a href="#">Campaign Message Creative</a> (page 2-41)	DWB_CMPGN_MSG_CRTVE
<a href="#">Campaign Message Depiction</a> (page 2-41)	DWR_CMPGN_MSG_DPCT
<a href="#">Campaign Relationship</a> (page 2-41)	DWR_CMPGN_RLTN
<a href="#">Campaign Status</a> (page 2-41)	DWL_CMPGN_STAT
<a href="#">Campaign Term Value</a> (page 2-41)	DWR_CMPGN_TERM_VAL
<a href="#">Campaign Type</a> (page 2-41)	DWL_CMPGN_TYP
<a href="#">Channel</a> (page 2-41)	DWR_CHNL
<a href="#">Channel Type</a> (page 2-41)	DWL_CHNL_TYP
<a href="#">Charge Kind ENUM</a> (page 2-41)	DWL_CHRG_KIND_ENUM
<a href="#">Clamp</a> (page 2-42)	DWR_CLMP
<a href="#">Clearance Action</a> (page 2-42)	DWR_CLRNCE_ACTN
<a href="#">Clearance Action Kind ENUM</a> (page 2-42)	DWL_CLRNCE_ACTN_KIND_ENUM
<a href="#">Clearance Document</a> (page 2-42)	DWR_CLRNCE_DOC
<a href="#">Cloud Information</a> (page 2-42)	DWB_CLOUD_INFO
<a href="#">Cogeneration Plant</a> (page 2-42)	DWR_CGNRTN_PLNT
<a href="#">Collection Agency</a> (page 2-42)	DWR_COLLCTN_AGENCY
<a href="#">Com Direction Kind ENUM</a> (page 2-42)	DWL_COMUNICTN_DRCTN_KIND_ENUM
<a href="#">Com Function</a> (page 2-42)	DWR_COMUNICTN_FNCTN
<a href="#">Com Media</a> (page 2-42)	DWR_COMUNICTN_MEDIA
<a href="#">Com Module</a> (page 2-42)	DWR_COMUNICTN_MODULE
<a href="#">Com Technology Kind ENUM</a> (page 2-42)	DWL_COMUNICTN_TCHNLGY_KIND_ENUM
<a href="#">Combined Cycle Plant</a> (page 2-42)	DWR_CMBND_CYCL_PLNT

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Command</a> (page 2-42)	DWB_CMND
<a href="#">Communication Link</a> (page 2-42)	DWR_COMUNICTN_LNK
<a href="#">Compatible Unit</a> (page 2-42)	DWR_CMPTBL_UNIT
<a href="#">Compatible Unit Procedure Assignment</a> (page 2-42)	DWR_CMPTBL_UNIT_PROC_ASGN
<a href="#">Composite Switch Info</a> (page 2-42)	DWR_CMPST_SWTCH_INFO
<a href="#">Composite Switch Kind ENUM</a> (page 2-43)	DWL_CMPST_SWTCH_KIND_ENUM
<a href="#">Conducting Eqp Protection Eqp Assignment</a> (page 2-43)	DWR_CNDTNG_EQP_PRTCTN_EQP_ASGN
<a href="#">Conducting Equipment</a> (page 2-43)	Not physicalized
<a href="#">Conductor</a> (page 2-43)	DWR_CNDCTR
<a href="#">Configuration Event</a> (page 2-43)	DWB_CNFGRTN_EVT
<a href="#">Conform Load</a> (page 2-43)	DWR_CNFRM_LD
<a href="#">Conform Load Group</a> (page 2-43)	DWR_CNFRM_LD_GRP
<a href="#">Conform Load Schedule</a> (page 2-43)	DWR_CNFRM_LD_SCHL
<a href="#">Connect Disconnect Function</a> (page 2-43)	DWR_CONCT_DSCNCT_FNCTN
<a href="#">Connectivity Node</a> (page 2-43)	DWR_CONCTVT_ND
<a href="#">Connectivity Node Container</a> (page 2-43)	DWR_CONCTVT_ND_CONTNR
<a href="#">Connector</a> (page 2-43)	DWR_CNCTR
<a href="#">Consumption Tariff Interval</a> (page 2-43)	DWR_CNSMPTN_TRF_INTRVL
<a href="#">Consumption Tier</a> (page 2-43)	DWR_CNSMPTN_TIER
<a href="#">Contact List</a> (page 2-43)	DWR_CNCT_LST
<a href="#">Contact List Change Reason</a> (page 2-43)	DWL_CNCT_LST_CHNG_RSN
<a href="#">Contact List Recurrence Type</a> (page 2-44)	DWL_CNCT_LST_RCRNC_TYP
<a href="#">Contact Roles</a> (page 2-44)	DWL_CNCT_RLS
<a href="#">Control</a> (page 2-44)	DWB_CNTRL
<a href="#">Control Type</a> (page 2-44)	DWL_CNTRL_TYP
<a href="#">Coolant Type ENUM</a> (page 2-44)	DWL_COLNT_TYP_ENUM
<a href="#">Corporate Standard Kind ENUM</a> (page 2-44)	DWL_CRPRT_STNDRD_KIND_ENUM
<a href="#">Cost</a> (page 2-44)	DWB_COST
<a href="#">Cost Center</a> (page 2-44)	DWR_COST_CNTR
<a href="#">Cost Reason</a> (page 2-44)	DWL_COST_RSN
<a href="#">Cost Subtype</a> (page 2-44)	DWL_COST_SB_TYP
<a href="#">Cost Type</a> (page 2-44)	DWL_COST_TYP
<a href="#">Credit Category</a> (page 2-44)	DWR_CRDT_CTGRY
<a href="#">Credit Score Provider</a> (page 2-44)	DWR_CRDT_SCR_PRVDR
<a href="#">Crew</a> (page 2-44)	DWR_CREW
<a href="#">Crew Member</a> (page 2-44)	DWR_CREW_MBR
<a href="#">Crew Type</a> (page 2-44)	DWR_CREW_TYP

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Crew Work Task Assignment</a> (page 2-45)	DWR_CREW_WRK_TASK_ASGN
<a href="#">Critical Peak Period</a> (page 2-45)	DWR_CRTCL_PK_PRD
<a href="#">Currency</a> (page 2-45)	DWL_CRNCY
<a href="#">Currency ENUM</a> (page 2-45)	DWL_CRNCY_ENUM
<a href="#">Currency Exchange Rate</a> (page 2-45)	DWB_CRNCY_EXCHNG_RATE
<a href="#">Currency Geography Entity Assignment</a> (page 2-45)	DWR_CRNCY_GEO_ENT_ASGN
<a href="#">Current Limit</a> (page 2-45)	DWR_CURR_LMT
<a href="#">Current Relay</a> (page 2-45)	DWR_CURR_RLY
<a href="#">Current Transformer Info</a> (page 2-45)	DWR_CURR_TRNSFRMR_INFO
<a href="#">Curve</a> (page 2-45)	DWR_CRVE
<a href="#">Curve Data</a> (page 2-45)	DWB_CRVE_DATA
<a href="#">Curve Style ENUM</a> (page 2-45)	DWL_CRVE_STYLE_ENUM
<a href="#">Customer</a> (page 2-45)	DWR_CUST
<a href="#">Customer Account Assignment</a> (page 2-45)	DWR_CUST_ACCT_ASGN
<a href="#">Customer Document</a> (page 2-45)	DWR_CUST_DOC
<a href="#">Customer Facing Service</a> (page 2-45)	DWR_CUST_FCNG_SRVC
<a href="#">Customer Group</a> (page 2-45)	DWL_CUST_GRP
<a href="#">Customer Group Assignment</a> (page 2-45)	DWR_CUST_GRP_ASGN
<a href="#">Customer Individual</a> (page 2-45)	DWR_CUST_INDVL
<a href="#">Customer Kind ENUM</a> (page 2-45)	DWL_CUST_KIND_ENUM
<a href="#">Customer Mining</a> (page 2-46)	DWD_CUST_MNNG
<a href="#">Customer Occasion</a> (page 2-46)	DWR_CUST_OCCSN
<a href="#">Customer Occasion Type</a> (page 2-46)	DWL_CUST_OCCSN_TYP
<a href="#">Customer Order</a> (page 2-46)	DWB_CUST_ORDR
<a href="#">Customer Order Document</a> (page 2-46)	DWR_CUST_ORDR_DOC
<a href="#">Customer Order Line Item</a> (page 2-46)	DWB_CUST_ORDR_LI
<a href="#">Customer Organization</a> (page 2-46)	DWR_CUST_ORG
<a href="#">Customer Outage Notification Assignment</a> (page 2-46)	DWR_CUST_OUTG_NOTFCTN_ASGN
<a href="#">Customer Restricted Info</a> (page 2-46)	DWR_CUST_RSTRCT_INFO
<a href="#">Customer Revenue Band</a> (page 2-46)	DWL_CUST_RVN_BND
<a href="#">Customer Revenue Band Assignment</a> (page 2-46)	DWR_CUST_RVN_BND_ASGN
<a href="#">Customer Score</a> (page 2-46)	DWR_CUST_SCR
<a href="#">Customer Segment</a> (page 2-46)	DWR_CUST_SGMNT
<a href="#">Customer Segmentation Model</a> (page 2-46)	DWR_CUST_SGMNT_MDL
<a href="#">Customer SIC Assignment</a> (page 2-46)	DWR_CUST_SIC_ASGN
<a href="#">Customer Source</a> (page 2-46)	DWR_CUST_SRC
<a href="#">Customer Type</a> (page 2-47)	DWL_CUST_TYP

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Customer Work Assignment</a> (page 2-47)	DWR_CUST_WRK_ASGN
<a href="#">Cut</a> (page 2-47)	DWR_CUT
<a href="#">Cut Action</a> (page 2-47)	DWR_CUT_ACTN
<a href="#">Cut Jumper Action Kind ENUM</a> (page 2-47)	DWL_CUT_JMPR_ACTN_KIND_ENUM
<a href="#">Day</a> (page 2-47)	DWR_DAY
<a href="#">Day Type</a> (page 2-47)	DWL_DAY_TYP
<a href="#">DC Conducting Equipment</a> (page 2-47)	DWR_DC_CNDCTNG_EQPMNT
<a href="#">DC Line Segment</a> (page 2-47)	DWR_DC_LN_SGMNT
<a href="#">Debt Aging Band</a> (page 2-47)	DWL_DEBT_AGNG_BND
<a href="#">Debt Collection</a> (page 2-47)	DWB_DEBT_COLLCTN
<a href="#">Debt Collection Assignment</a> (page 2-47)	DWB_DEBT_COLLCTN_ASGN
<a href="#">Debt Collection Assignment Batch</a> (page 2-47)	DWB_DEBT_COLLCTN_ASGN_BTCH
<a href="#">Demand Response Program</a> (page 2-47)	DWR_DEMAND_RESPN_PROG
<a href="#">Demand Tariff Interval</a> (page 2-48)	DWR_DEMAND_TRF_INTRVL
<a href="#">Demographic Characteristic</a> (page 2-48)	DWR_DEMOG_CHTRSTC
<a href="#">Demography Attribute</a> (page 2-48)	DWR_DEMOG_ATRIB
<a href="#">Demography Group</a> (page 2-48)	DWR_DEMOG_GRP
<a href="#">Derived Value</a> (page 2-48)	DWR_DRVD_VAL
<a href="#">Direct Debit Status Reason</a> (page 2-48)	DWL_DRCT_DEBT_STAT_RSN
<a href="#">Disconnecter</a> (page 2-48)	DWR_DSCNCTR
<a href="#">Discrete</a> (page 2-48)	DWB_DSCRT
<a href="#">Discrete Value</a> (page 2-48)	DWB_DSCRT_VAL
<a href="#">Document</a> (page 2-48)	Not physicalized
<a href="#">Document Status</a> (page 2-48)	DWB_DOC_STAT
<a href="#">Document Type</a> (page 2-48)	DWL_DOC_TYP
<a href="#">Document Type Group</a> (page 2-49)	DWL_DOC_TYP_GRP
<a href="#">Document Type Group Assignment</a> (page 2-49)	DWR_DOC_TYP_GRP_ASGN
<a href="#">DR Prog End Device Grp Assignment</a> (page 2-49)	DWR_DR_PROG_END_DVC_GRP_ASGN
<a href="#">DR Program Agreement Assignment</a> (page 2-49)	DWR_DR_PROG_AGRMNT_ASGN
<a href="#">DR Program Load Reduction By Region Day Drvd</a> (page 2-49)	DWD_DR_PROG_LD_RDCTN_RGN_DAY
<a href="#">Call Center Case Type</a> (page 2-40)	DWL_CALL_CNTR_CASE_TYP
<a href="#">Education</a> (page 2-49)	DWL_EDU
<a href="#">Electricity Service</a> (page 2-49)	DWR_ELCTRCTY_SRVC
<a href="#">Employee</a> (page 2-49)	DWR_EMP
<a href="#">Employee Actual Labor Hourly</a> (page 2-49)	DWB_EMP_ACT_LBR_HRLY
<a href="#">Employee Cost</a> (page 2-49)	DWB_EMP_COST
<a href="#">Employee Designation</a> (page 2-49)	DWL_EMP_DESIG

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Employee Job Role Assignment</a> (page 2-49)	DWR_EMP_JB_RL_ASGN
<a href="#">Employee Job Role Type</a> (page 2-49)	DWL_EMP_JB_RL_TYP
<a href="#">Employee Language Capability</a> (page 2-49)	DWR_EMP_LANG_CAPBLTY
<a href="#">Employee Restricted Info</a> (page 2-49)	DWR_EMP_RSTRCT_INFO
<a href="#">Employee Schedule</a> (page 2-49)	DWR_EMP_SCHL
<a href="#">Employee Training Record</a> (page 2-49)	DWB_EMP_TRNG_REC
<a href="#">Employee Type</a> (page 2-49)	DWL_EMP_TYP
<a href="#">End Device</a> (page 2-50)	DWR_END_DVC
<a href="#">End Device Capability</a> (page 2-50)	DWR_END_DVC_CAPBLTY
<a href="#">End Device Control</a> (page 2-50)	DWB_END_DVC_CNTRL
<a href="#">End Device Control Type</a> (page 2-50)	DWR_END_DVC_CNTRL_TYP
<a href="#">End Device Ctrl Primary Device Timing</a> (page 2-50)	DWB_END_DVC_CNTRL_PRMRY_DVC_TMNG
<a href="#">End Device Ctrl Secondary Device Timing</a> (page 2-50)	DWB_END_DVC_CNTRL_SCNDRY_DVC_TMNG
<a href="#">End Device Domain</a> (page 2-50)	DWL_END_DVC_DOMAIN
<a href="#">End Device End Device Ctrl Assignment</a> (page 2-50)	DWR_END_DVC_END_DVC_CTRL_ASGN
<a href="#">End Device End Device Grp Assignment</a> (page 2-50)	DWR_END_DVC_END_DVC_GRP_ASGN
<a href="#">End Device Event</a> (page 2-50)	DWB_END_DVC_EVT
<a href="#">End Device Event By Customer Day Drvd</a> (page 2-50)	DWD_END_DVC_EVT_CUST_DAY
<a href="#">End Device Event by Customer Month Aggr</a> (page 2-50)	DWA_END_DVC_EVT_CUST_MO
<a href="#">End Device Event By Device Day Drvd</a> (page 2-50)	DWD_END_DVC_EVT_DVC_DAY
<a href="#">End Device Event By Device Month Aggr</a> (page 2-50)	DWA_END_DVC_EVT_DVC_MO
<a href="#">End Device Event Detail</a> (page 2-50)	DWR_END_DVC_EVT_DTL
<a href="#">End Device Event Or Action</a> (page 2-50)	DWL_END_DVC_EVT_OR_ACTN
<a href="#">End Device Event Type</a> (page 2-50)	DWL_END_DVC_EVT_TYP
<a href="#">End Device Function</a> (page 2-50)	DWR_END_DVC_FNCTN
<a href="#">End Device Function Kind ENUM</a> (page 2-51)	DWL_END_DVC_FNCTN_KIND_ENUM
<a href="#">End Device Group</a> (page 2-51)	DWR_END_DVC_GRP
<a href="#">End Device Grp End Device Ctrl Assignment</a> (page 2-51)	DWR_END_DVC_GP_END_DVC_CTL_ASN
<a href="#">End Device Info</a> (page 2-51)	DWR_END_DVC_INFO
<a href="#">End Device Sub Domain</a> (page 2-51)	DWL_END_DVC_SB_DOMAIN
<a href="#">End Device Type</a> (page 2-51)	DWL_END_DVC_TYP
<a href="#">Energy Area</a> (page 2-51)	DWR_ENRGY_AREA
<a href="#">Energy Consumer</a> (page 2-51)	DWR_ENRGY_CONSMR

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Energy Consumer Phase</a> (page 2-51)	DWR_ENRGY_CONSMR_PHS
<a href="#">Energy Flow Direction</a> (page 2-51)	DWL_ENRGY_FLOW_DRCTN
<a href="#">Equipment</a> (page 2-51)	Not physicalized
<a href="#">Equipment Container</a> (page 2-51)	DWR_EQPMNT_CONTNR
<a href="#">Event</a> (page 2-51)	DWB_EVT
<a href="#">Event Account</a> (page 2-51)	DWB_EVT_ACCT
<a href="#">Event Assignment</a> (page 2-51)	DWB_EVT_ASGN
<a href="#">Event Assignment Reason</a> (page 2-51)	DWL_EVT_ASGN_RSN
<a href="#">Event Assignment Type</a> (page 2-51)	DWL_EVT_ASGN_TYP
<a href="#">Event Category</a> (page 2-51)	DWL_EVT_CTGRY
<a href="#">Event Chat</a> (page 2-51)	DWB_EVT_CHAT
<a href="#">Event Chat Detail</a> (page 2-51)	DWB_EVT_CHAT_DTL
<a href="#">Event Class</a> (page 2-52)	DWL_EVT_CLASS
<a href="#">Event Employee Payroll</a> (page 2-52)	DWB_EVT_EMP_PYRL
<a href="#">Event Equipment Instance</a> (page 2-52)	DWB_EVT_EQPMNT_INSTNC
<a href="#">Event Geography</a> (page 2-52)	DWB_EVT_GEO
<a href="#">Event Invoice Delivery</a> (page 2-52)	DWB_EVT_INVC_DLVRY
<a href="#">Event Loyalty Program</a> (page 2-52)	DWB_EVT_LYLTYP_PROG
<a href="#">Event Party Assignment</a> (page 2-52)	DWB_EVT_PRTY_ASGN
<a href="#">Event Party Interaction</a> (page 2-52)	DWB_EVT_PRTY_INTRACN
<a href="#">Event Party Interaction Call</a> (page 2-52)	DWB_EVT_PRTY_INTRACN_CALL
<a href="#">Event Party Interaction Email</a> (page 2-52)	DWB_EVT_PRTY_INTRACN_EML
<a href="#">Event Party Interaction Item</a> (page 2-52)	DWB_EVT_PRTY_INTRACN_ITEM
<a href="#">Event Party Interaction Letter</a> (page 2-52)	DWB_EVT_PRTY_INTRACN_LTTR
<a href="#">Event Party Interaction Participation</a> (page 2-52)	DWB_EVT_PRTY_INTRACN_PRTCPTN
<a href="#">Event Party Interaction Visit</a> (page 2-52)	DWB_EVT_PRTY_INTRACN_VST
<a href="#">Event Party Profile</a> (page 2-53)	DWB_EVT_PRTY_PRFL
<a href="#">Event Party Role</a> (page 2-53)	DWL_EVT_PRTY_RL
<a href="#">Event Reason</a> (page 2-53)	DWL_EVT_RSN
<a href="#">Event Reason Category</a> (page 2-53)	DWL_EVT_RSN_CTGRY
<a href="#">Event Resolution</a> (page 2-53)	DWL_EVT_RSLTN
<a href="#">Event Response Reason</a> (page 2-53)	DWL_EVT_RESPN_RSN
<a href="#">Event Result</a> (page 2-53)	DWL_EVT_RSLT
<a href="#">Event Status</a> (page 2-53)	DWB_EVT_STAT
<a href="#">Event Status Reason</a> (page 2-53)	DWL_EVT_STAT_RSN
<a href="#">Event Status Type</a> (page 2-53)	DWL_EVT_STAT_TYP
<a href="#">Event Type</a> (page 2-53)	DWL_EVT_TYP
<a href="#">Event Web Registration</a> (page 2-53)	DWB_EVT_WEB_RGSTRTN

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Event Web Visit</a> (page 2-53)	DWB_EVT_WEB_VST
<a href="#">External Credit Profile</a> (page 2-53)	DWR_EXTRNL_CRDT_PRFL
<a href="#">External Credit Profile Assignment</a> (page 2-54)	DWR_EXTRNL_CRDT_PRFL_ASGN
<a href="#">External Information Source</a> (page 2-54)	DWR_EXTRNL_INFO_SRC
<a href="#">External Organization Type</a> (page 2-54)	DWL_EXTRNL_ORG_TYP
<a href="#">FACTS Device</a> (page 2-54)	DWR_FCT_DVC
<a href="#">FACTS Device Kind ENUM</a> (page 2-54)	DWL_FCT_DVC_KIND_ENUM
<a href="#">Fault</a> (page 2-54)	DWR_FLT
<a href="#">Fault Indicator Info</a> (page 2-54)	DWR_FLT_IND_INFO
<a href="#">Fault Indicator Reset Kind ENUM</a> (page 2-54)	DWL_FLT_IND_RESET_KIND_ENUM
<a href="#">Feeder</a> (page 2-54)	DWR_FEDR
<a href="#">Feeder Substation Assignment</a> (page 2-54)	DWR_FEDR_SBSTN_ASGN
<a href="#">Final Reading</a> (page 2-54)	DWB_FNL_RDNG
<a href="#">Financial Info</a> (page 2-54)	DWR_FINCL_INFO
<a href="#">Fiscal Quarter</a> (page 2-54)	DWR_FSCL_QTR
<a href="#">Fiscal Year</a> (page 2-54)	DWR_FSCL_YR
<a href="#">Flexible Characteristic</a> (page 2-54)	DWR_FXBLE_CHTRSTC
<a href="#">Flexible Characteristic Value</a> (page 2-54)	Not physicalized
<a href="#">Flood Information</a> (page 2-54)	DWB_FLOD_INFO
<a href="#">Frequency Converter</a> (page 2-54)	DWR_FREQNCY_CONVRTR
<a href="#">Fuse</a> (page 2-54)	DWR_FUSE
<a href="#">Gate Input Pin</a> (page 2-54)	DWR_GATE_INPUT_PIN
<a href="#">Gen Unit Op Cost Curve</a> (page 2-54)	DWR_GEN_UNIT_OP_COST_CRVE
<a href="#">Gen Unit Op Schedule</a> (page 2-55)	DWR_GEN_UNIT_OP_SCHL
<a href="#">Gender</a> (page 2-55)	DWL_GNDR
<a href="#">Generating Unit</a> (page 2-55)	DWR_GNRTNG_UNIT
<a href="#">Generating Unit Rotating Machine Assignment</a> (page 2-55)	DWR_GNRTNG_UNIT_ROTNG_MC_ASGN
<a href="#">Generator Control Mode ENUM</a> (page 2-55)	DWL_GNRTR_CNTRL_MD_ENUM
<a href="#">Generator Control Source ENUM</a> (page 2-55)	DWL_GNRTR_CNTRL_SRC_ENUM
<a href="#">Generator Operating Mode ENUM</a> (page 2-55)	DWL_GNRTR_OPERTNG_MD_ENUM
<a href="#">Generic Action</a> (page 2-55)	DWR_GNRC_ACTN
<a href="#">Geography Building</a> (page 2-55)	DWR_GEO_BLDG
<a href="#">Geography City</a> (page 2-55)	DWR_GEO_CITY
<a href="#">Geography Complex</a> (page 2-55)	DWR_GEO_CMPLX
<a href="#">Geography Country</a> (page 2-55)	DWR_GEO_CNTRY
<a href="#">Geography County</a> (page 2-55)	DWR_GEO_CNTY
<a href="#">Geography Demographic Group</a> (page 2-55)	DWR_GEO_DEMOG_GRP

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Geography Demography Attribute</a> (page 2-55)	DWR_GEO_DEMOG_ATTRIB
<a href="#">Geography Demography Value</a> (page 2-55)	DWR_GEO_DEMOG_VAL
<a href="#">Geography Entity</a> (page 2-55)	DWR_GEO_ENT
<a href="#">Geography Entity Assignment</a> (page 2-56)	DWR_GEO_ENT_ASGN
<a href="#">Geography Entity Hier Level Assignment</a> (page 2-56)	DWR_GEO_ENT_HRCHY_LVL_ASGN
<a href="#">Geography Hierarchy</a> (page 2-56)	DWR_GEO_HRCHY
<a href="#">Geography Hierarchy Level</a> (page 2-56)	DWR_GEO_HRCHY_LVL
<a href="#">Geography Hierarchy Level Assignment</a> (page 2-56)	DWR_GEO_HRCHY_LVL_ASGN
<a href="#">Geography Level</a> (page 2-56)	DWR_GEO_LVL
<a href="#">Geography Level Attribute</a> (page 2-56)	DWR_GEO_LVL_ATTRIB
<a href="#">Geography Level Attribute Value</a> (page 2-56)	DWR_GEO_LVL_ATTRIB_VAL
<a href="#">Geography Region</a> (page 2-56)	DWR_GEO_RGN
<a href="#">Geography State</a> (page 2-56)	DWR_GEO_STATE
<a href="#">Geography Street</a> (page 2-56)	DWR_GEO_STREET
<a href="#">Geography Sub Region</a> (page 2-56)	DWR_GEO_SB_RGN
<a href="#">Geography World</a> (page 2-56)	DWR_GEO_WORLD
<a href="#">GL Account</a> (page 2-56)	DWR_GL_ACCT
<a href="#">GL Account Assignment</a> (page 2-56)	DWR_GL_ACCT_ASGN
<a href="#">GL Account Segment</a> (page 2-56)	DWR_GL_ACCT_SGMNT
<a href="#">GL Account Type</a> (page 2-56)	DWL_GL_ACCT_TYP
<a href="#">GL Balance</a> (page 2-57)	DWB_GL_BAL
<a href="#">GL Cost Center Segment</a> (page 2-57)	DWR_GL_COST_CNTR_SGMNT
<a href="#">GL JE Line Subledger Assignment</a> (page 2-57)	DWB_GL_JE_LN_SBLDGR_ASGN
<a href="#">GL Journal Entry</a> (page 2-57)	DWB_GL_JE
<a href="#">GL Journal Entry Batch</a> (page 2-57)	DWB_GL_JE_BTCH
<a href="#">GL Journal Entry Category</a> (page 2-57)	DWL_GL_JE_CTGRY
<a href="#">GL Journal Entry Line</a> (page 2-57)	DWB_GL_JE_LN
<a href="#">GL Ledger</a> (page 2-58)	DWR_GL_LDGR
<a href="#">GL Ledger Account Assignment</a> (page 2-58)	DWR_GL_LDGR_ACCT_ASGN
<a href="#">GL Org Bsns Unit Segment</a> (page 2-58)	DWR_GL_ORG_BSNS_UNIT_SGMNT
<a href="#">GL Period</a> (page 2-58)	DWR_GL_PRD
<a href="#">GL Product Specification Segment</a> (page 2-58)	DWR_GL_PROD_SPECFTN_SGMNT
<a href="#">GL Project Segment</a> (page 2-58)	DWR_GL_PROJ_SGMNT
<a href="#">GL Segment</a> (page 2-58)	DWR_GL_SGMNT
<a href="#">GL Segment Type</a> (page 2-58)	DWL_GL_SGMNT_TYP
<a href="#">GL Subledger</a> (page 2-58)	DWR_GL_SBLDGR
<a href="#">GL Subledger Journal Entry</a> (page 2-58)	DWB_GL_SBLDGR_JE

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">GL Subledger Journal Entry Line</a> (page 2-58)	DWB_GL_SBLDGR_JE_LN
<a href="#">Gross To Net Active Power Curve</a> (page 2-58)	DWR_GRS_TO_NET_ACTV_POWR_CRVE
<a href="#">Ground Disconnecter</a> (page 2-58)	DWR_GRND_DSCNCTR
<a href="#">Ground Switch</a> (page 2-58)	DWR_GRND_SWTCH
<a href="#">Head End System</a> (page 2-58)	DWR_HEAD_END_SYS
<a href="#">Hour</a> (page 2-59)	DWR_HR
<a href="#">Hour Time of Use Assignment</a> (page 2-59)	DWR_HR_TIME_OF_USE_ASGN
<a href="#">Household</a> (page 2-59)	DWR_HH
<a href="#">Hydro Energy Conversion Kind ENUM</a> (page 2-59)	DWL_HYDR_ENRG_CNVRSN_KIND_ENUM
<a href="#">Hydro Generating Unit</a> (page 2-59)	DWR_HYDRO_GNRTNG_UNIT
<a href="#">Identified Object</a> (page 2-59)	Not physicalized
<a href="#">Incident</a> (page 2-59)	DWB_INCDNT
<a href="#">Incident Work Assignment</a> (page 2-59)	DWR_INCDNT_WRK_ASGN
<a href="#">Individual Demography Value</a> (page 2-59)	DWR_INDVL_DEMOG_VAL
<a href="#">Initial Reading</a> (page 2-59)	DWB_INITIAL_RDNG
<a href="#">Initiative Result Type</a> (page 2-59)	DWL_INTTV_RSLT_TYP
<a href="#">Initiative Type</a> (page 2-59)	DWL_INTTV_TYP
<a href="#">Installment Agreement</a> (page 2-59)	DWR_INSTLMNT_AGRMNT
<a href="#">Interaction Answer Choice</a> (page 2-59)	DWB_INTRACN_ANSWR_CHOICE
<a href="#">Interaction Channel</a> (page 2-59)	DWR_INTRACN_CHNL
<a href="#">Interaction Direction</a> (page 2-59)	DWL_INTRACN_DRCTN
<a href="#">Interaction Navigation History</a> (page 2-59)	DWB_INTRACN_NAVGTN_HIST
<a href="#">Interaction Navigation Item</a> (page 2-60)	DWR_INTRACN_NAVGTN_ITEM
<a href="#">Interaction Priority Type</a> (page 2-60)	DWL_INTRACN_PRIORITY_TYP
<a href="#">Interaction Question Response</a> (page 2-60)	DWB_INTRACN_QUES_RESPN
<a href="#">Interaction Reason</a> (page 2-60)	DWL_INTRACN_RSN
<a href="#">Interaction Result Type</a> (page 2-60)	DWL_INTRACN_RSLT_TYP
<a href="#">Interaction Status</a> (page 2-60)	DWL_INTRACN_STAT
<a href="#">Interaction Transfer History</a> (page 2-60)	DWB_INTRACN_TRNSFR_HIST
<a href="#">Interaction Transfer Reason</a> (page 2-60)	DWL_INTRACN_TRNSFR_RSN
<a href="#">Interaction Type</a> (page 2-60)	DWL_INTRACN_TYP
<a href="#">Interharmonics</a> (page 2-60)	DWL_INTRHRMNCS
<a href="#">Invoice</a> (page 2-60)	DWB_INVC
<a href="#">Invoice Adjustment</a> (page 2-60)	DWB_INVC_ADJ
<a href="#">Invoice Adjustment Quota</a> (page 2-61)	DWR_INVC_ADJ_QTA
<a href="#">Invoice Delivery Format</a> (page 2-61)	DWL_INVC_DLVRY_FRMT
<a href="#">Invoice Delivery Type</a> (page 2-61)	DWL_INVC_DLVRY_TYP
<a href="#">Invoice Discount</a> (page 2-61)	DWB_INVC_DISC

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Invoice Discount Reason</a> (page 2-61)	DWL_INVC_DISC_RSN
<a href="#">Invoice Discount Type</a> (page 2-61)	DWL_INVC_DISC_TYP
<a href="#">Invoice Item</a> (page 2-61)	DWB_INVC_ITEM
<a href="#">Invoice Item Detail</a> (page 2-61)	DWB_INVC_ITEM_DTL
<a href="#">Invoice Item Detail Type</a> (page 2-61)	DWL_INVC_ITEM_DTL_TYP
<a href="#">Invoice Item Relationship</a> (page 2-61)	DWB_INVC_ITEM_RLTN
<a href="#">Invoice Item Type</a> (page 2-61)	DWL_INVC_ITEM_TYP
<a href="#">Invoice Payment Assignment</a> (page 2-61)	DWB_INVC_PYMT_ASGN
<a href="#">Invoice Payment Term</a> (page 2-61)	DWB_INVC_PYMT_TERM
<a href="#">Invoice Payment Term Type</a> (page 2-61)	DWL_INVC_PYMT_TERM_TYP
<a href="#">Invoice Status History</a> (page 2-61)	DWB_INVC_STAT_HIST
<a href="#">Invoice Status Type</a> (page 2-61)	DWL_INVC_STAT_TYP
<a href="#">Invoice Tax Item</a> (page 2-61)	DWB_INVC_TAX_ITEM
<a href="#">Invoice Type</a> (page 2-61)	DWL_INVC_TYP
<a href="#">Irregular Interval Schedule</a> (page 2-62)	DWR_IRGLR_INTRVL_SCHL
<a href="#">Irregular Time Point</a> (page 2-62)	DWR_IRGLR_TIME_PNT
<a href="#">IVR Menu Item</a> (page 2-62)	DWL_IVR_MENU_ITEM
<a href="#">Job</a> (page 2-62)	DWR_JB
<a href="#">Job Role</a> (page 2-62)	DWR_JB_RL
<a href="#">Joint</a> (page 2-62)	DWR_JNT
<a href="#">Joint Configuration Kind ENUM</a> (page 2-62)	DWL_JNT_CNFGRTN_KIND_ENUM
<a href="#">Joint Fill Kind ENUM</a> (page 2-62)	DWL_JNT_FILL_KIND_ENUM
<a href="#">Journal Entry Line Invoice Item Assignment</a> (page 2-62)	DWB_JE_LN_INVC_ITEM_ASGN
<a href="#">Jumper</a> (page 2-62)	DWR_JMPR
<a href="#">Jumper Action</a> (page 2-62)	DWR_JMPR_ACTN
<a href="#">Language</a> (page 2-62)	DWL_LANG
<a href="#">Letter Type</a> (page 2-62)	DWL_LTTR_TYP
<a href="#">Lifecycle Date</a> (page 2-62)	DWR_LIFE_CYCL_DT
<a href="#">Limit</a> (page 2-62)	DWR_LMT
<a href="#">Limit Set</a> (page 2-62)	DWR_LMT_SET
<a href="#">Line</a> (page 2-62)	DWR_LN
<a href="#">Load Area</a> (page 2-62)	DWR_LD_AREA
<a href="#">Load Break Switch</a> (page 2-63)	DWR_LD_BRK_SWTCH
<a href="#">Load Group</a> (page 2-63)	DWR_LD_GRP
<a href="#">Load Response Characteristic</a> (page 2-63)	DWR_LD_RESPN_CHTRSTC
<a href="#">Location</a> (page 2-63)	DWR_LOC
<a href="#">Loyalty Program</a> (page 2-63)	DWR_LYLTY_PROG

**Table 5-1 (Cont.) Entity Mapping Table: Logical to Physical Mapping A to M**

Entity	Table or View
<a href="#">Loyalty Program Event Type</a> (page 2-63)	DWL_LYLTYP_PROG_EVT_TYP
<a href="#">Maintainer</a> (page 2-63)	DWR_MNTNR
<a href="#">Manufacturer</a> (page 2-63)	DWR_MNFCTR
<a href="#">Marital Status</a> (page 2-63)	DWL_MRTL_STAT
<a href="#">Market Area</a> (page 2-63)	DWR_MKT_AREA
<a href="#">Market Area Level</a> (page 2-63)	DWR_MKT_AREA_LVL
<a href="#">Market Plan Document Requirement</a> (page 2-63)	DWR_MKT_PLN_DOC_REQRMNT
<a href="#">Market Role</a> (page 2-63)	DWR_MKT_RL
<a href="#">Market Segment</a> (page 2-63)	DWR_MKT_SGMNT
<a href="#">Market Segment Inclusion</a> (page 2-63)	DWR_MKT_SGMNT_INCLSN
<a href="#">Measurement</a> (page 2-64)	DWB_MSRMNT
<a href="#">Measurement Kind</a> (page 2-64)	DWL_MSRMNT_KIND
<a href="#">Measurement Location</a> (page 2-64)	DWR_MSRMNT_LOC
<a href="#">Measurement Value</a> (page 2-64)	DWB_MSRMNT_VAL
<a href="#">Measurement Value Quality</a> (page 2-64)	DWR_MSRMNT_VAL_QLTY
<a href="#">Measurement Value Source</a> (page 2-64)	DWR_MSRMNT_VAL_SRC
<a href="#">Media Object</a> (page 2-64)	DWR_MEDIA_OBJ
<a href="#">Media Object Assignment</a> (page 2-64)	DWR_MEDIA_OBJ_ASGN
<a href="#">Media Object Type</a> (page 2-64)	DWL_MEDIA_OBJ_TYP
<a href="#">Meter</a> (page 2-64)	DWR_MTR
<a href="#">Meter Identifier</a> (page 2-64)	DWR_MTR_IDNT
<a href="#">Meter Reading</a> (page 2-64)	DWB_MTR_RDNG
<a href="#">Meter Reading Day Drvd</a> (page 2-65)	DWD_MTR_RDNG_DAY
<a href="#">Meter Reading Hour Drvd</a> (page 2-65)	DWD_MTR_RDNG_HR
<a href="#">Meter Reading Month Aggr</a> (page 2-65)	DWA_MTR_RDNG_MO
<a href="#">Meter Reading TOU Month Aggr</a> (page 2-65)	DWA_MTR_RDNG_TOU_MO
<a href="#">Meter Register Assignment</a> (page 2-65)	DWR_MTR_RGSTER_ASGN
<a href="#">Meter Service Work</a> (page 2-65)	DWR_MTR_SRVC_WRK
<a href="#">Meter Status</a> (page 2-65)	DWL_MTR_STAT

**Table 5-2 Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">NAICS Classification</a> (page 2-65)	DWR_NAICS_CLSFCTN
<a href="#">Nationality</a> (page 2-65)	DWL_NTNLTY
<a href="#">Non Conform Load</a> (page 2-65)	DWR_NON_CNFRM_LD
<a href="#">Non Conform Load Group</a> (page 2-65)	DWR_NON_CNFRM_LD_GRP

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Non Conform Load Schedule</a> (page 2-65)	DWR_NON_CNFRM_LD_SCHL
<a href="#">Nuclear Generating Unit</a> (page 2-65)	DWR_NUCLR_GNRTNG_UNIT
<a href="#">Operating Participant</a> (page 2-65)	DWR_OPERTNG_PRTCPNT
<a href="#">Operating Share</a> (page 2-65)	DWR_OPERTNG_SHR
<a href="#">Operation Tag</a> (page 2-65)	DWR_OPRN_TAG
<a href="#">Operational Limit</a> (page 2-65)	DWR_OPRTNL_LMT
<a href="#">Operational Limit Set</a> (page 2-65)	DWR_OPRTNL_LMT_SET
<a href="#">Operational Restriction</a> (page 2-66)	DWR_OPRTNL_RSTRCT
<a href="#">Oracle Geometry</a> (page 2-66)	DWR_ORCL_GMTRY
<a href="#">Organization Area</a> (page 2-66)	DWR_ORG_AREA
<a href="#">Organization Banner</a> (page 2-66)	DWR_ORG_BNR
<a href="#">Organization Business Entity</a> (page 2-66)	DWR_ORG_BSNS_ENT
<a href="#">Organization Business Unit</a> (page 2-66)	DWR_ORG_BSNS_UNIT
<a href="#">Organization Business Unit Type</a> (page 2-66)	DWL_ORG_BSNS_UNIT_TYP
<a href="#">Organization Chain</a> (page 2-66)	DWR_ORG_CHAIN
<a href="#">Organization Company</a> (page 2-66)	DWR_ORG_CMPNY
<a href="#">Organization Corporate</a> (page 2-66)	DWR_ORG_CRPRT
<a href="#">Organization District</a> (page 2-66)	DWR_ORG_DSTRCT
<a href="#">Organization Hierarchy</a> (page 2-66)	DWR_ORG_HRCHY
<a href="#">Organization Hierarchy Level</a> (page 2-66)	DWR_ORG_HRCHY_LVL
<a href="#">Organization Hierarchy Level Assignment</a> (page 2-66)	DWR_ORG_HRCHY_LVL_ASGN
<a href="#">Organization Hierarchy Version</a> (page 2-66)	DWR_ORG_HRCHY_VRSN
<a href="#">Organization Level</a> (page 2-66)	DWR_ORG_LVL
<a href="#">Organization Level Attribute Value</a> (page 2-66)	DWR_ORG_LVL_ATTRIB_VAL
<a href="#">Organization Level Attributes</a> (page 2-67)	DWR_ORG_LVL_ATTR
<a href="#">Organization Market Data</a> (page 2-67)	DWR_ORG_MKT_DATA
<a href="#">Organization Region</a> (page 2-67)	DWR_ORG_RGN
<a href="#">Organization Role</a> (page 2-67)	DWR_ORG_RL
<a href="#">Organization Service Website</a> (page 2-67)	DWR_ORG_SRVC_WBSITE
<a href="#">Organization Warehouse</a> (page 2-67)	DWR_ORG_WRHS
<a href="#">Organizational Demography Value</a> (page 2-67)	DWR_ORG_DEMOG_VAL
<a href="#">Other Individual</a> (page 2-67)	DWR_OTHR_INDVL
<a href="#">Outage</a> (page 2-67)	DWB_OUTG
<a href="#">Outage By Day Drvd</a> (page 2-67)	DWD_OUTG_DAY
<a href="#">Outage By Month Aggr</a> (page 2-67)	DWA_OUTG_MO
<a href="#">Outage By Usage Point Drvd</a> (page 2-67)	DWD_OUTG_USG_PNT
<a href="#">Outage Code</a> (page 2-68)	DWR_OUTG_CD
<a href="#">Outage Notification</a> (page 2-68)	DWR_OUTG_NOTFCTN

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Outage Plan</a> (page 2-68)	DWR_OUTG_PLN
<a href="#">Outage Record</a> (page 2-68)	DWB_OUTG_REC
<a href="#">Outage Record Code Assignment</a> (page 2-68)	DWR_OUTG_REC_CD_ASGN
<a href="#">Outage Report</a> (page 2-68)	DWR_OUTG_RPT
<a href="#">Outage Schedule</a> (page 2-68)	DWR_OUTG_SCHL
<a href="#">Outage Step</a> (page 2-68)	DWR_OUTG_STEP
<a href="#">Outage Step Code Assignment</a> (page 2-68)	DWR_OUTG_STEP_CD_ASGN
<a href="#">Outage Usage Point Assignment</a> (page 2-68)	DWR_OUTG_USG_PNT_ASGN
<a href="#">Partner Promotion Program</a> (page 2-68)	DWR_PRTNR_PRMTN_PROG
<a href="#">Party</a> (page 2-69)	DWR_PRTY
<a href="#">Party Account Assignment</a> (page 2-69)	DWR_PRTY_ACCT_ASGN
<a href="#">Party Account Assignment Type</a> (page 2-69)	DWL_PRTY_ACCT_ASGN_TYP
<a href="#">Party Address Location Assignment</a> (page 2-69)	DWR_PRTY_ADDR_LOC_ASGN
<a href="#">Party Agreement Relationship</a> (page 2-69)	DWR_PRTY_AGRMNT_RLTN
<a href="#">Party Assignment</a> (page 2-69)	DWR_PRTY_ASGN
<a href="#">Party Assignment Reason</a> (page 2-69)	DWL_PRTY_ASGN_RSN
<a href="#">Party Assignment Type</a> (page 2-69)	DWL_PRTY_ASGN_TYP
<a href="#">Party Business Interaction Role</a> (page 2-69)	DWR_PRTY_BSNS_INTRACN_RL
<a href="#">Party Contact Information</a> (page 2-69)	DWR_PRTY_CNCT_INFO
<a href="#">Party Contact Information Type</a> (page 2-70)	DWL_PRTY_CNCT_INFO_TYP
<a href="#">Party Contact List Participation</a> (page 2-70)	DWL_PRTY_CNCT_LST_PRTCPTN
<a href="#">Party Contact List Role</a> (page 2-70)	DWL_PRTY_CNCT_LST_RL
<a href="#">Party Cost Assignment</a> (page 2-70)	DWB_PRTY_COST_ASGN
<a href="#">Party Demography Value</a> (page 2-70)	Not physicalized
<a href="#">Party Event Type</a> (page 2-70)	DWL_PRTY_EVT_TYP
<a href="#">Party Geography Entity Assignment</a> (page 2-70)	DWR_PRTY_GEO_ENT_ASGN
<a href="#">Party Interaction Thread</a> (page 2-70)	DWB_PRTY_INTRACN_THRD
<a href="#">Party Interaction Thread Subscription Assignment</a> (page 2-70)	DWB_PRTY_INTRCN_THRD_SBRP_ASGN
<a href="#">Party Interaction Thread Type</a> (page 2-70)	DWL_PRTY_INTRACN_THRD_TYP
<a href="#">Party Language Capability</a> (page 2-70)	Not physicalized
<a href="#">Party Location Reason</a> (page 2-70)	DWL_PRTY_LOC_RSN
<a href="#">Party Location Type</a> (page 2-70)	DWL_PRTY_LOC_TYP
<a href="#">Party Management Role</a> (page 2-71)	DWL_PRTY_MGMT_RL
<a href="#">Party Market Segment Assignment</a> (page 2-71)	DWR_PRTY_MKT_SGMNT_ASGN
<a href="#">Party Project Participation</a> (page 2-71)	DWR_PRTY_PROJ_PRTCPTN
<a href="#">Party Promotion Response</a> (page 2-71)	DWB_PRTY_PRMTN_RESPN
<a href="#">Party Role</a> (page 2-71)	DWL_PRTY_RL

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Party Role Assignment</a> (page 2-71)	DWR_PRTY_RL_ASGN
<a href="#">Party Role Status</a> (page 2-71)	DWR_PRTY_RL_STAT
<a href="#">Party Status Category</a> (page 2-71)	DWL_PRTY_STAT_CTGRY
<a href="#">Party Status Change Reason</a> (page 2-71)	DWL_PRTY_STAT_CHNG_RSN
<a href="#">Party Status History</a> (page 2-71)	DWB_PRTY_STAT_HIST
<a href="#">Party Status Type</a> (page 2-71)	DWL_PRTY_STAT_TYP
<a href="#">Party Type</a> (page 2-71)	DWL_PRTY_TYP
<a href="#">Payment Aging Class</a> (page 2-72)	DWL_PYMT_AGNG_CLASS
<a href="#">Payment Channel</a> (page 2-72)	DWR_PYMT_CHNL
<a href="#">Payment Method Type</a> (page 2-72)	DWL_PYMT_MTHD_TYP
<a href="#">Payment Transaction Type</a> (page 2-72)	DWL_PYMT_TRX_TYP
<a href="#">Per Length Impedance</a> (page 2-72)	DWR_PER_LGTH_IMPNDNC
<a href="#">Per Length Phase Impedance</a> (page 2-72)	DWR_PER_LGTH_PHS_IMPNDNC
<a href="#">Per Length Sequence Impedance</a> (page 2-72)	DWR_PER_LGTH_SEQ_IMPNDNC
<a href="#">Phase</a> (page 2-72)	DWL_PHS
<a href="#">Phase Code ENUM</a> (page 2-72)	DWL_PHS_CD_ENUM
<a href="#">Phase Connected Fault</a> (page 2-72)	DWR_PHS_CNCTD_FLT
<a href="#">Phase Connected Fault Kind ENUM</a> (page 2-72)	DWL_PHS_CNCTD_FLT_KIND_ENUM
<a href="#">Phase Impedance Data</a> (page 2-72)	DWR_PHS_IMPNDNC_DATA
<a href="#">Phase Shunt Connection Kind ENUM</a> (page 2-72)	DWL_PHS_SHNT_CNCTN_KIND_ENUM
<a href="#">Phase Tap Changer</a> (page 2-72)	DWR_PHS_TAP_CHNG
<a href="#">Phase Tap Changer Asymmetrical</a> (page 2-73)	DWR_PHS_TAP_CHNG_ASYMTRCL
<a href="#">Phase Tap Changer Linear</a> (page 2-73)	DWR_PHS_TAP_CHNG_LNR
<a href="#">Phase Tap Changer Non Linear</a> (page 2-73)	DWR_PHS_TAP_CHNG_NON_LNR
<a href="#">Phase Tap Changer Symmetrical</a> (page 2-73)	DWR_PHS_TAP_CHNG_SYMTRCL
<a href="#">Phase Tap Changer Tabular</a> (page 2-73)	DWR_PHS_TAP_CHNG_TBLR
<a href="#">Phase Tap Changer Tabular Point</a> (page 2-73)	DWR_PHS_TAP_CHNG_TBLR_PNT
<a href="#">Pin Voltage</a> (page 2-73)	DWR_PIN_VLTG
<a href="#">Planned Outage</a> (page 2-73)	DWR_PLND_OUTG
<a href="#">Planned Outage Kind ENUM</a> (page 2-73)	DWL_PLND_OUTG_KIND_ENUM
<a href="#">Pole</a> (page 2-73)	DWR_POLE
<a href="#">Pole Base Kind ENUM</a> (page 2-73)	DWL_POLE_BASE_KIND_ENUM
<a href="#">Pole Preservative Kind ENUM</a> (page 2-73)	DWL_POLE_PRSRVTV_KIND_ENUM
<a href="#">Pole Treatment Kind ENUM</a> (page 2-73)	DWL_POLE_TRTMNT_KIND_ENUM
<a href="#">Postal Service Type</a> (page 2-73)	DWL_POSTL_SRVC_TYP
<a href="#">Postcode</a> (page 2-73)	DWR_POSTCD
<a href="#">Potential Transformer Info</a> (page 2-74)	DWR_PTNTL_TRNSFRMR_INFO
<a href="#">Power Cut Zone</a> (page 2-74)	DWR_POWR_CUT_ZN

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Power System Resource</a> (page 2-74)	Not physicalized
<a href="#">Power System Resource Location</a> (page 2-74)	DWR_POWR_SYS_RESRE_LOC
<a href="#">Power Transformer</a> (page 2-74)	DWR_POWR_TRNSFRMR
<a href="#">Power Transformer End</a> (page 2-74)	DWR_POWR_TRNSFRMR_END
<a href="#">Power Transformer Info</a> (page 2-74)	DWR_POWR_TRNSFRMR_INFO
<a href="#">Precipitation</a> (page 2-74)	DWB_PPTN
<a href="#">Price Event</a> (page 2-74)	DWB_PRICE_EVT
<a href="#">Price Type</a> (page 2-74)	DWL_PRICE_TYP
<a href="#">Pricing Structure</a> (page 2-74)	DWR_PRCNG_STRUCTR
<a href="#">Pricing Structure Tariff Assignment</a> (page 2-75)	DWR_PRCNG_STRCTR_TRF_ASGN
<a href="#">Priority</a> (page 2-75)	DWR_PRIORITY
<a href="#">Procedure</a> (page 2-75)	DWR_PROC
<a href="#">Procedure Asset Assignment</a> (page 2-75)	DWR_PROC_ASST_ASGN
<a href="#">Procedure Kind ENUM</a> (page 2-75)	DWL_PROC_KIND_ENUM
<a href="#">Product Asset Model</a> (page 2-75)	DWR_PROD_ASST_MDL
<a href="#">Product Asset Model Function Assignment</a> (page 2-75)	DWR_PROD_ASST_MDL_FNCTN_ASGN
<a href="#">Product Offering</a> (page 2-75)	DWR_PROD_OFRNG
<a href="#">Product Subscription</a> (page 2-75)	DWR_PROD_SBRP
<a href="#">Project</a> (page 2-75)	DWR_PROJ
<a href="#">Project Element</a> (page 2-75)	DWR_PROJ_ELMNT
<a href="#">Promotion</a> (page 2-75)	DWR_PRMTN
<a href="#">Promotion Cluster Usage</a> (page 2-75)	DWB_PRMTN_CLSTR_USG
<a href="#">Promotion Contact List Utilization</a> (page 2-75)	DWB_PRMTN_CNCT_LST_UTLZTN
<a href="#">Promotion Management History</a> (page 2-75)	DWB_PRMTN_MGMT_HIST
<a href="#">Promotion Message Rendering</a> (page 2-75)	DWR_PRMTN_MSG_RNDRNG
<a href="#">Promotion Product Offering Assignment</a> (page 2-76)	DWR_PRMTN_PROD_OFRNG_ASGN
<a href="#">Promotion Relationship</a> (page 2-76)	DWR_PRMTN_RLTN
<a href="#">Promotion Result Type</a> (page 2-76)	DWL_PRMTN_RSLT_TYP
<a href="#">Promotion Sales Channel Assignment</a> (page 2-76)	DWR_PRMTN_SL_CHNL_ASGN
<a href="#">Promotion Term Type</a> (page 2-76)	DWL_PRMTN_TERM_TYP
<a href="#">Promotion Term Value</a> (page 2-76)	DWL_PRMTN_TERM_VAL
<a href="#">Promotion Type</a> (page 2-76)	DWL_PRMTN_TYP
<a href="#">Proposal</a> (page 2-76)	DWR_PRPSL
<a href="#">Proposal Relationship</a> (page 2-76)	DWR_PRPSL_RLTN
<a href="#">Prospect</a> (page 2-76)	DWR_PRSPCT
<a href="#">Prospect Priority Type</a> (page 2-76)	DWL_PRSPCT_PRIORITY_TYP
<a href="#">Prospect Quality Score Type</a> (page 2-76)	DWL_PRSPCT_QLTY_SCR_TYP
<a href="#">Prospect Quality Score Value</a> (page 2-76)	DWR_PRSPCT_QLTY_SCR_VAL

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Prospect Reject Reason</a> (page 2-76)	DWL_PRSPCT_REJECT_RSN
<a href="#">Protected Switch</a> (page 2-76)	DWR_PRTCTD_SWTCH
<a href="#">Protection Equipment</a> (page 2-77)	DWR_PROTCTN_EQPMNT
<a href="#">Protection Equipment Info</a> (page 2-77)	DWR_PROTCTN_EQPMNT_INFO
<a href="#">PSR Type</a> (page 2-77)	DWL_PSR_TYP
<a href="#">Publication</a> (page 2-77)	DWR_PBLCTN
<a href="#">Publication Type</a> (page 2-77)	DWL_PBLCTN_TYP
<a href="#">Purchase Order</a> (page 2-77)	DWB_PCHSE_ORDR
<a href="#">Purchase Order Line Item</a> (page 2-77)	DWB_PCHSE_ORDR_LI
<a href="#">Quality61850</a> (page 2-77)	Not physicalized
<a href="#">Rate</a> (page 2-77)	DWR_RATE
<a href="#">Ratio Tap Changer</a> (page 2-77)	DWR_RATIO_TAP_CHNG
<a href="#">Ratio Tap Changer Tabular</a> (page 2-77)	DWR_RATIO_TAP_CHNG_TBLR
<a href="#">Ratio Tap Changer Tabular Point</a> (page 2-77)	DWR_RATIO_TAP_CHNG_TBLR_PNT
<a href="#">Rational Number</a> (page 2-77)	DWR_RTNL_NBR
<a href="#">Reading Accumulation Behavior</a> (page 2-77)	DWL_RDNG_ACMLTN_BHVR
<a href="#">Reading Channel</a> (page 2-77)	DWR_RDNG_CHNL
<a href="#">Reading Channel Identifier</a> (page 2-77)	DWR_RDNG_CHNL_IDNT
<a href="#">Reading Data Qualifier</a> (page 2-78)	DWL_RDNG_DATA_QLFR
<a href="#">Reading Quality</a> (page 2-78)	DWB_RDNG_QLTY
<a href="#">Reading Quality Type</a> (page 2-78)	DWL_RDNG_QLTY_TYP
<a href="#">Reading Quality Type Category</a> (page 2-78)	DWL_RDNG_QLTY_TYP_CTGRY
<a href="#">Reading Quality Type Origin</a> (page 2-78)	DWL_RDNG_QLTY_TYP_ORIGIN
<a href="#">Reading Quality Type Sub Category</a> (page 2-78)	DWL_RDNG_QLTY_TYP_SB_CTGRY
<a href="#">Reading Reason Kind ENUM</a> (page 2-78)	DWL_RDNG_RSN_KIND_ENUM
<a href="#">Reading Time Attribute</a> (page 2-78)	DWL_RDNG_TIME_ATRIB
<a href="#">Reading Time Period</a> (page 2-78)	DWL_RDNG_TIME_PRD
<a href="#">Reading Type</a> (page 2-78)	DWR_RDNG_TYP
<a href="#">Recloser</a> (page 2-78)	DWR_RCLSR
<a href="#">Register</a> (page 2-78)	DWR_RGSTER
<a href="#">Regular Interval Schedule</a> (page 2-78)	DWR_RGLR_INTRVL_SCHL
<a href="#">Regular Time Point</a> (page 2-78)	DWR_RGLR_TIME_PNT
<a href="#">Regulating Cond Eq</a> (page 2-78)	DWR_RGLTNG_COND_EQ
<a href="#">Regulating Control</a> (page 2-78)	DWR_RGLTNG_CNTRL
<a href="#">Regulating Control Mode Kind ENUM</a> (page 2-78)	DWL_RGLTNG_CNTRL_MD_KIND_ENUM
<a href="#">Regulation Schedule</a> (page 2-78)	DWR_REGULTN_SCHL
<a href="#">Reliability Indices By City Month Drvd</a> (page 2-78)	DWD_RLBLTY_IND_CITY_MO
<a href="#">Reliability Indices By Feeder Month Drvd</a> (page 2-78)	DWD_RLBLTY_IND_FEDR_MO

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Remote Connect Disconnect Info</a> (page 2-79)	DWR_RMT_CONCT_DSCNCT_INFO
<a href="#">Remote Control</a> (page 2-79)	DWR_RMT_CNTRL
<a href="#">Remote Point</a> (page 2-79)	DWR_RMT_PNT
<a href="#">Remote Source</a> (page 2-79)	DWR_RMT_SRC
<a href="#">Remote Unit</a> (page 2-79)	DWR_RMT_UNIT
<a href="#">Remote Unit Communication Link Assignment</a> (page 2-79)	DWR_RMT_UNIT_COMUNCTN_LNK_ASGN
<a href="#">Remote Unit Type ENUM</a> (page 2-79)	DWL_RMT_UNIT_TYP_ENUM
<a href="#">Resource Order</a> (page 2-79)	DWB_RESRE_ORDR
<a href="#">Resource Order Item</a> (page 2-79)	DWB_RESRE_ORDR_ITEM
<a href="#">Revenue Kind ENUM</a> (page 2-79)	DWL_RVN_KIND_ENUM
<a href="#">Rotating Machine</a> (page 2-79)	DWR_ROTNG_MC
<a href="#">Safety Document</a> (page 2-79)	DWR_SFTY_DOC
<a href="#">Sales Channel</a> (page 2-79)	DWR_SL_CHNL
<a href="#">SCD2</a> (page 2-79)	Not physicalized
<a href="#">Scheduled Event</a> (page 2-79)	DWB_SCHL_EVT
<a href="#">Scheduled Event Asset Assignment</a> (page 2-79)	DWR_SCHL_EVT_ASST_ASGN
<a href="#">Script</a> (page 2-80)	DWR_SCRPT
<a href="#">Script Question</a> (page 2-80)	DWR_SCRPT_QUES
<a href="#">Sea Condition</a> (page 2-80)	DWB_SEA_CNDTN
<a href="#">Seal</a> (page 2-80)	DWR_SEAL
<a href="#">Seal Condition Kind ENUM</a> (page 2-80)	DWL_SEAL_CNDTN_KIND_ENUM
<a href="#">Seal Kind ENUM</a> (page 2-80)	DWL_SEAL_KIND_ENUM
<a href="#">Season</a> (page 2-80)	DWL_SEASON
<a href="#">Season Day Type Schedule</a> (page 2-80)	DWR_SEASON_DAY_TYP_SCHL
<a href="#">Sectionaliser</a> (page 2-80)	DWR_SECTNR
<a href="#">Segment Criteria</a> (page 2-80)	DWR_SGMNT_CRTRA
<a href="#">Segment Type</a> (page 2-80)	DWL_SGMNT_TYP
<a href="#">Series Compensator</a> (page 2-80)	DWR_SERIES_CMPNSTR
<a href="#">Service</a> (page 2-80)	DWR_SRVC
<a href="#">Service Category</a> (page 2-80)	DWL_SRVC_CTGRY
<a href="#">Service Coverage Area</a> (page 2-80)	DWR_SRVC_COVRG_AREA
<a href="#">Service Coverage Geo Detail</a> (page 2-80)	DWR_SRVC_COVRG_GEO_DTL
<a href="#">Service Location</a> (page 2-80)	DWR_SRVC_LOC
<a href="#">Service Location Identifier</a> (page 2-80)	DWR_SRVC_LOC_IDNT
<a href="#">Service Order</a> (page 2-80)	DWB_SRVC_ORDR
<a href="#">Service Order Line Item</a> (page 2-80)	DWB_SRVC_ORDR_LI
<a href="#">Service Quantity</a> (page 2-80)	DWR_SRVC_QTY
<a href="#">Service Supplier</a> (page 2-81)	DWR_SRVC_SPPLR

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Service Type</a> (page 2-81)	DWL_SRVC_TYP
<a href="#">Set Point</a> (page 2-81)	DWB_SET_PNT
<a href="#">Short Circuit Rotor Kind ENUM</a> (page 2-81)	DWL_SHORT_CRCUT_RTR_KIND_ENUM
<a href="#">Shunt Compensator</a> (page 2-81)	DWR_SHNT_CMPNSTR
<a href="#">Shunt Compensator Info</a> (page 2-81)	DWR_SHNT_CMPNSTR_INFO
<a href="#">Shunt Compensator Phase</a> (page 2-81)	DWR_SHNT_CMPNSTR_PHS
<a href="#">SIC Assignment</a> (page 2-81)	DWR_SIC_ASGN
<a href="#">SIC Assignment Reason</a> (page 2-81)	DWL_SIC_ASGN_RSN
<a href="#">SIC Classification</a> (page 2-81)	DWL_SIC_CLSFCTN
<a href="#">Simple End Device Function</a> (page 2-81)	DWR_SMPL_END_DVC_FNCTN
<a href="#">Single Phase Kind ENUM</a> (page 2-81)	DWL_SNGL_PHS_KIND_ENUM
<a href="#">SOC Job</a> (page 2-81)	DWR_SOC_JB
<a href="#">SOC Job Category</a> (page 2-81)	DWR_SOC_JB_CTGRY
<a href="#">SOC Job Group</a> (page 2-81)	DWR_SOC_JB_GRP
<a href="#">Source ENUM</a> (page 2-81)	DWL_SRC_ENUM
<a href="#">Source System</a> (page 2-81)	DWR_SRC_SYS
<a href="#">Source System Key Mapping</a> (page 2-81)	DWR_SRC_SYS_KEY_MAP
<a href="#">Source System Type</a> (page 2-82)	DWL_SRC_SYS_TYP
<a href="#">Spot Temperature</a> (page 2-82)	DWB_SPOT_TEMP
<a href="#">Static Var Compensator</a> (page 2-82)	DWR_STATIC_VAR_CMPNSTR
<a href="#">Station Supply</a> (page 2-82)	DWR_STN_SPPLY
<a href="#">Status</a> (page 2-82)	DWR_STAT
<a href="#">Steam Sendout Schedule</a> (page 2-82)	DWR_STEAM_SNDOUT_SCHL
<a href="#">Streetlight</a> (page 2-82)	DWR_STREETLGHT
<a href="#">Streetlight Lamp Kind ENUM</a> (page 2-82)	DWL_STREETLGHT_LAMP_KIND_ENUM
<a href="#">String Measurement</a> (page 2-82)	DWB_STRNG_MSRMNT
<a href="#">String Measurement Value</a> (page 2-82)	DWB_STRNG_MSRMNT_VAL
<a href="#">Structure</a> (page 2-82)	DWR_STRCTR
<a href="#">Structure Material Kind ENUM</a> (page 2-82)	DWL_STRCTR_MTRL_KIND_ENUM
<a href="#">Structure Support</a> (page 2-82)	DWR_STRCTR_SPPRT
<a href="#">Structure Support Kind ENUM</a> (page 2-82)	DWL_STRCTR_SPPRT_KIND_ENUM
<a href="#">Sub Geographical Region</a> (page 2-82)	DWR_SB_GEOCL_RGN
<a href="#">Sub Load Area</a> (page 2-82)	DWR_SB_LD_AREA
<a href="#">Substation</a> (page 2-82)	DWR_SBSTN
<a href="#">Surge Arrester Info</a> (page 2-82)	DWR_SRG_ARSTR_INFO
<a href="#">Survey</a> (page 2-82)	DWR_SURVEY
<a href="#">SVC Control Mode ENUM</a> (page 2-82)	DWL_SVC_CNTRL_MD_ENUM
<a href="#">Switch</a> (page 2-83)	DWR_SWTCH

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Switch Action</a> (page 2-83)	DWR_SWTCH_ACTN
<a href="#">Switch Action Kind ENUM</a> (page 2-83)	DWL_SWTCH_ACTN_KIND_ENUM
<a href="#">Switch Connect Disconnect Func Assignment</a> (page 2-83)	DWR_SWTCH_CNCT_DSCNCT_FNC_ASGN
<a href="#">Switch Info</a> (page 2-83)	DWR_SWTCH_INFO
<a href="#">Switch Phase</a> (page 2-83)	DWR_SWTCH_PHS
<a href="#">Switch Schedule</a> (page 2-83)	DWR_SWTCH_SCHL
<a href="#">Switch State ENUM</a> (page 2-83)	DWL_SWTCH_STATE_ENUM
<a href="#">Switch Switching Operation Assignment</a> (page 2-83)	DWR_SWTCH_SWTCHNG_OPRN_ASGN
<a href="#">Switching Activity</a> (page 2-83)	DWR_SWTCHNG_ACTVTY
<a href="#">Switching Activity Safety Doc Assignment</a> (page 2-83)	DWR_SWTCH_ACTVTY_SFTY_DOC_ASGN
<a href="#">Switching Operation</a> (page 2-83)	DWR_SWTCHNG_OPRN
<a href="#">Switching Plan</a> (page 2-83)	DWR_SWTCHNG_PLN
<a href="#">Switching Step</a> (page 2-83)	DWR_SWTCHNG_STEP
<a href="#">Switching Step Group</a> (page 2-83)	DWR_SWTCHNG_STEP_GRP
<a href="#">Synchrocheck Relay</a> (page 2-83)	DWR_SYNCHRCHCK_RLY
<a href="#">Synchronous Machine</a> (page 2-83)	DWR_SYNCHRNS_MC
<a href="#">Synchronous Machine Kind ENUM</a> (page 2-83)	DWL_SYNCHRNS_MC_KIND_ENUM
<a href="#">Synchronous Machine Operating Mode ENUM</a> (page 2-83)	DWL_SNCHRNS_MC_OPERTNG_MD_ENUM
<a href="#">Tag Action</a> (page 2-83)	DWR_TAG_ACTN
<a href="#">Tag Action Kind ENUM</a> (page 2-83)	DWL_TAG_ACTN_KIND_ENUM
<a href="#">Tap Changer</a> (page 2-83)	DWR_TAP_CHNG
<a href="#">Tap Changer Control</a> (page 2-84)	DWR_TAP_CHNG_CNTRL
<a href="#">Tap Changer Info</a> (page 2-84)	DWR_TAP_CHNG_INFO
<a href="#">Tap Schedule</a> (page 2-84)	DWR_TAP_SCHL
<a href="#">Target Account</a> (page 2-84)	DWR_TRGT_ACCT
<a href="#">Target Agreement</a> (page 2-84)	DWR_TRGT_AGRMNT
<a href="#">Target Geography Area</a> (page 2-84)	DWR_TRGT_GEO_AREA
<a href="#">Target Market Segment</a> (page 2-84)	DWR_TRGT_MKT_SGMNT
<a href="#">Target Type</a> (page 2-84)	DWL_TRGT_TYP
<a href="#">Tariff</a> (page 2-84)	DWR_TRF
<a href="#">Tariff Profile</a> (page 2-84)	DWR_TRF_PRFL
<a href="#">Tariff Tariff Profile Assignment</a> (page 2-84)	DWR_TRF_TRF_PRFL_ASGN
<a href="#">Task</a> (page 2-84)	DWR_TASK
<a href="#">Tax Authority</a> (page 2-84)	DWL_TAX_AUTH
<a href="#">Tax Category</a> (page 2-84)	DWL_TAX_CTGRY
<a href="#">Terminal</a> (page 2-84)	DWR_TRML
<a href="#">Thermal Generating Unit</a> (page 2-84)	DWR_THRML_GNRTNG_UNIT
<a href="#">Time Of Use</a> (page 2-84)	DWL_TIME_OF_USE

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Time Schedule</a> (page 2-84)	DWR_TIME_SCHL
<a href="#">Time Slot</a> (page 2-84)	DWR_TIME_SLT
<a href="#">Time Tariff Interval</a> (page 2-85)	DWR_TIME_TRF_INTRVL
<a href="#">Tool</a> (page 2-85)	DWR_TOOL
<a href="#">Topological Node</a> (page 2-85)	DWR_TPLGCL_ND
<a href="#">Tower</a> (page 2-85)	DWR_TWR
<a href="#">Tower Construction Kind ENUM</a> (page 2-85)	DWL_TWR_CONSTRCTN_KIND_ENUM
<a href="#">Transformer Control Mode ENUM</a> (page 2-85)	DWL_TRNSFRMR_CNTRL_MD_ENUM
<a href="#">Transformer Core Admittance</a> (page 2-85)	DWR_TRNSFRMR_CORE_ADMTTNC
<a href="#">Transformer End</a> (page 2-85)	DWR_TRNSFRMR_END
<a href="#">Transformer End Info</a> (page 2-85)	DWR_TRNSFRMR_END_INFO
<a href="#">Transformer Feeder Assignment</a> (page 2-85)	DWR_TRNSFRMR_FEDR_ASGN
<a href="#">Transformer Mesh Impedance</a> (page 2-85)	DWR_TRNSFRMR_MESH_IMPNDNC
<a href="#">Transformer Star Impedance</a> (page 2-85)	DWR_TRNSFRMR_STAR_IMPNDNC
<a href="#">Transformer Tank</a> (page 2-86)	DWR_TRNSFRMR_TANK
<a href="#">Transformer Tank End</a> (page 2-86)	DWR_TRNSFRMR_TANK_END
<a href="#">Transformer Tank Info</a> (page 2-86)	DWR_TRNSFRMR_TANK_INFO
<a href="#">Trouble Reporting Kind ENUM</a> (page 2-86)	DWL_TRBL_RPT_KIND_ENUM
<a href="#">Trouble Ticket</a> (page 2-86)	DWR_TRBL_TCKT
<a href="#">Underground Structure</a> (page 2-86)	DWR_UNDRGRND_STRCTR
<a href="#">Underground Structure Kind ENUM</a> (page 2-86)	DWL_UNDRGRND_STRCTR_KIND_ENUM
<a href="#">Unit Multiplier</a> (page 2-86)	DWL_UNIT_MLTPLR
<a href="#">Unit Multiplier ENUM</a> (page 2-86)	DWL_UNIT_MLTPLR_ENUM
<a href="#">Unit Of Measure</a> (page 2-86)	DWL_UOM
<a href="#">Unit Symbol ENUM</a> (page 2-86)	DWL_UNIT_SYMBL_ENUM
<a href="#">Usage Point</a> (page 2-86)	DWR_USG_PNT
<a href="#">Usage Point Connected Kind ENUM</a> (page 2-86)	DWL_USG_PNT_CNCTD_KIND_ENUM
<a href="#">Usage Point End Device Ctrl Assignment</a> (page 2-86)	DWR_USG_PNT_END_DVC_CTRL_ASGN
<a href="#">Usage Point Equipment Assignment</a> (page 2-86)	DWR_USG_PNT_EQPMNT_ASGN
<a href="#">Usage Point Group</a> (page 2-86)	DWR_USG_PNT_GRP
<a href="#">Usage Point Group Assignment</a> (page 2-86)	DWR_USG_PNT_GRP_ASGN
<a href="#">Usage Point Group DR Program Assignment</a> (page 2-86)	DWR_USG_PNT_GRP_DR_PROG_ASGN
<a href="#">Usage Point Location</a> (page 2-86)	DWR_USG_PNT_LOC
<a href="#">Usage Point Transformer Assignment</a> (page 2-86)	DWR_USG_PNT_TRNSFRMR_ASGN
<a href="#">Usage Point Transformer Assignment</a> (page 2-86)	DWR_USG_PT_GP_END_DVC_CTL_ASGN
<a href="#">Usage Read Cycle</a> (page 2-86)	DWR_USG_READ_CYCL
<a href="#">Utility Commodity</a> (page 2-87)	DWL_UTLTY_CMDTY
<a href="#">Validity ENUM</a> (page 2-87)	DWL_VLDTY_ENUM

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

Entity	Table or View
<a href="#">Value Alias Set</a> (page 2-87)	DWR_VAL_ALS_SET
<a href="#">Value To Alias</a> (page 2-87)	DWR_VAL_TO_ALS
<a href="#">Value Type</a> (page 2-87)	DWL_VAL_TYP
<a href="#">VEE Exception</a> (page 2-87)	DWB_VEE_EXPTN
<a href="#">VEE Exception Type</a> (page 2-87)	DWL_VEE_EXPTN_TYP
<a href="#">VEE Group</a> (page 2-87)	DWL_VEE_GRP
<a href="#">VEE Rule</a> (page 2-87)	DWL_VEE_RULE
<a href="#">Vehicle</a> (page 2-87)	DWR_VHCL
<a href="#">Vendor</a> (page 2-87)	DWR_VNDR
<a href="#">Vendor Item</a> (page 2-87)	DWR_VNDR_ITEM
<a href="#">Virtual Team</a> (page 2-87)	DWR_VRTL_TEAM
<a href="#">Voltage Control Zone</a> (page 2-87)	DWR_VLTG_CNTRL_ZN
<a href="#">Voltage Limit</a> (page 2-87)	DWR_VLTG_LMT
<a href="#">Weather Alert</a> (page 2-87)	DWL_WEATHR_ALRT
<a href="#">Weather Forecast</a> (page 2-87)	DWL_WEATHR_FRCST
<a href="#">Weather Information</a> (page 2-87)	DWL_WEATHR_INFO
<a href="#">Weather Location</a> (page 2-87)	DWL_WEATHR_LOC
<a href="#">Web Page</a> (page 2-87)	DWR_WEB_PG
<a href="#">Wind Gen Unit Kind ENUM</a> (page 2-88)	DWL_WND_GEN_UNIT_KIND_ENUM
<a href="#">Wind Generating Unit</a> (page 2-88)	DWR_WND_GNRTNG_UNIT
<a href="#">Wind Information</a> (page 2-88)	DWB_WND_INFO
<a href="#">Winding Connection ENUM</a> (page 2-88)	DWL_WNDNG_CNCTN_ENUM
<a href="#">Wire Info</a> (page 2-88)	DWR_WR_INFO
<a href="#">Wire Insulation Kind ENUM</a> (page 2-88)	DWL_WR_INSLTN_KIND_ENUM
<a href="#">Wire Material Kind ENUM</a> (page 2-88)	DWL_WR_MTRL_KIND_ENUM
<a href="#">Wire Spacing Info</a> (page 2-88)	DWR_WR_SPCNG_INFO
<a href="#">Wire Usage Kind ENUM</a> (page 2-88)	DWL_WR_USG_KIND_ENUM
<a href="#">Work Asset</a> (page 2-88)	DWR_WRK_ASST
<a href="#">Work Billing Info</a> (page 2-88)	DWR_WRK_BLLG_INFO
<a href="#">Work Cost Detail</a> (page 2-88)	DWR_WRK_COST_DTL
<a href="#">Work Cost Summary</a> (page 2-88)	DWB_WRK_COST_SUMM
<a href="#">Work Document</a> (page 2-88)	Not physicalized
<a href="#">Work Flow Step</a> (page 2-88)	DWR_WRK_FLOW_STEP
<a href="#">Work Identified Object</a> (page 2-88)	Not physicalized
<a href="#">Work Kind ENUM</a> (page 2-88)	DWL_WRK_KIND_ENUM
<a href="#">Work Location</a> (page 2-88)	DWR_WRK_LOC
<a href="#">Work Order</a> (page 2-88)	DWR_WRK_ORDR
<a href="#">Work Status Entry</a> (page 2-88)	DWR_WRK_STAT_ENTRY

**Table 5-2 (Cont.) Entity Mapping Table: Logical to Physical Mapping: N to Z**

<b>Entity</b>	<b>Table or View</b>
<a href="#">Work Status Kind ENUM</a> (page 2-88)	DWL_WRK_STAT_KIND_ENUM
<a href="#">Work Task</a> (page 2-88)	DWR_WRK_TASK
<a href="#">Work Task Asset Assignment</a> (page 2-88)	DWR_WRK_TASK_AS_SET_ASGN
<a href="#">Work Task Kind ENUM</a> (page 2-88)	DWL_WRK_TASK_KIND_ENUM
<a href="#">Work Time Schedule</a> (page 2-88)	DWR_WRK_TIME_SCHL
<a href="#">Work Time Schedule Kind ENUM</a> (page 2-89)	DWL_WRK_TIME_SCHL_KIND_ENUM
<a href="#">Zone</a> (page 2-89)	DWR_ZN
<a href="#">Zone Kind ENUM</a> (page 2-89)	DWL_ZN_KIND_ENUM

# 6

## Oracle Utilities Data Model Partitioning

This chapter provides the partitioning strategy for the Oracle Utilities Data Model physical base, derived, and aggregate tables.

This chapter includes the following section:

- [About Oracle Utilities Data Model Partitioning, Compression, and Parallelism](#) (page 6-1)
- [Partitioning Strategy for Oracle Utilities Data Model](#) (page 6-1)

### 6.1 About Oracle Utilities Data Model Partitioning, Compression, and Parallelism

All base, derived, and aggregate tables are partitioned, with the (standard) compression and parallel option activated by default. These tables are partitioned due to their nature (size) for performance and scalability and to improve performance. The default partition method used is INTERVAL partitioning, which creates automatically equi-sized partitions as data arrives. For partitioning, usually, a column of data type DATE is used (DAY or MONTH level).

If Exadata is used with the Hybrid Columnar Compression option, the option is leveraged for use with Oracle Utilities Data Model.

For more information, see *Oracle Communications Data Model Implementation and Operations Guide*.

### 6.2 Partitioning Strategy for Oracle Utilities Data Model

[Table 6-1](#) (page 6-1) shows the partitioning strategy for the Oracle Utilities Data Model physical base, derived, and aggregate tables..

 **Note:**

The partitioning type for all tables shown in [Table 6-1](#) (page 6-1) is RANGE

**Table 6-1 Physical Data Model Partitioning**

Physical Table Name	Sub partitioning Type	Partitioning Key Column	Sub partitioning Key Column	Partition Level	Default Tablespace
DWA_END_DVC_EVT_CUST_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS

**Table 6-1 (Cont.) Physical Data Model Partitioning**

Physical Table Name	Sub partitioning Type	Partitioning Key Column	Sub partitioning Key Column	Partition Level	Default Tablespace
DWA_END_DVC_EVT_DVC_MONTH	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWA_MTR_RDNG_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWA_MTR_RDNG_MO_ACCT	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWA_MTR_RDNG_MO_CUST	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWA_MTR_RDNG_MO_UP	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWA_MTR_RDNG_TOU_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWA_OUTG_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_AGGREGATE_TBS
DWB_ACCT_BAL_ADJ	HASH	ADJ_DT	ACCT_KEY	MONTH	OUDM_BASE_TBS
DWB_ACCT_BAL_HIST	HASH	BAL_DT	ACCT_KEY	MONTH	OUDM_BASE_TBS
DWB_ACCT_BLLG_OCCRNCE	NONE	BLLG_DT	N/A	QUARTER	OUDM_BASE_TBS
DWB_ACCT_CRDT_LMT	NONE	CRDT_RTNG_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_ACCT_PYMT	HASH	PYMT_DT	ACCT_KEY	MONTH	OUDM_BASE_TBS
DWB_ACCT_PYMT_BAL_IMPT	HASH	IMPT_DT	ACCT_KEY	MONTH	OUDM_BASE_TBS
DWB_ACCT_PYMT_MTHD_STAT	HASH	EFF_FROM_DT	ACCT_KEY	MONTH	OUDM_BASE_TBS
DWB_ACCT_RFND	HASH	PYMT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_ACCT_STAT_HIST	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_AGRMNT_APRVL	HASH	AGRMNT_APRVL_DT	AGRMNT_KEY	MONTH	OUDM_BASE_TBS
DWB_AGRMNT_STAT	NONE	EFF_TO_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_BLK_LST_HIST	HASH	EFF_FROM_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_BSNS_INTRACN	NONE	INTRACN_DT	N/A	QUARTER	OUDM_BASE_TBS
DWB_CMPGN_MSG_CRTVE	NONE	CRTN_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_COST	NONE	INCURR_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_CRNCY_EXCHNG_RATE	NONE	EXCHNG_RATE_DT	N/A	MONTH	OUDM_BASE_TBS

**Table 6-1 (Cont.) Physical Data Model Partitioning**

Physical Table Name	Sub partitioning Type	Partitioning Key Column	Sub partitioning Key Column	Partition Level	Default Tablespace
DWB_CUST_ORDR	HASH	ORDR_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_CUST_ORDR_LI	NONE	ORDR_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_DEBT_COLLCTN	NONE	INTRACN_THRD_STRT_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_DEBT_COLLCTN_ASGN	NONE	ASGN_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_DEBT_COLLCTN_ASGN_BTCH	NONE	ASGN_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_EMP_ACT_LBR_HRLY	NONE	EMP_KEY	N/A	HUNDRED EMPLOYEES	OUDM_BASE_TBS
DWB_EMP_COST	NONE	INCURR_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_EMP_TRNG_REC	NONE	TRNG_STRT_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_END_DVC_EVT	NONE	CRTD_DT_TIME	N/A	MONTH	OUDM_BASE_TBS
DWB_EVT	HASH	STRT_DT	ORG_BSN_S_UNIT_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_ACCT	HASH	STRT_DT	ORG_BSN_S_UNIT_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_ASGN	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_EVT_EMP_PYRL	HASH	STRT_DT	ORG_BSN_S_UNIT_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_EQPMNT_INSTNC	HASH	STRT_DT	ORG_BSN_S_UNIT_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_GEO	HASH	STRT_DT	ORG_BSN_S_UNIT_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_INVC_DLVRV	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_LYLTYPROG	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_PRTY_ASGN	NONE	EFF_DT	N/A	DAY	OUDM_BASE_TBS
DWB_EVT_PRTY_INTRACN	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_PRTY_INTRACN_ALL	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_PRTY_INTRACN_EML	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS

**Table 6-1 (Cont.) Physical Data Model Partitioning**

Physical Table Name	Sub partitioning Type	Partitioning Key Column	Sub partitioning Key Column	Partition Level	Default Tablespace
DWB_EVT_PRTY_INTRACN_LTR	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_PRTY_INTRACN_VST	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_PRTY_PRFL	HASH	STRT_DT	ORG_BSN S_UNIT_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_STAT	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_EVT_WEB_RGSTRN	HASH	STRT_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_EVT_WEB_VST	NONE	STRT_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_FNL_RDNG	HASH	TIME_STMP	FNL_RDN G_KEY	WEEK	OUDM_BASE_TBS
DWB_INCDNT	NONE	CRTD_DT_TIME	N/A	MONTH	OUDM_BASE_TBS
DWB_INITIAL_RDNG	HASH	TIME_STMP	INITIAL_R DNG_KEY	WEEK	OUDM_BASE_TBS
DWB_INTRACN_QUES_RESPN	NONE	RESPN_DT	N/A	QUARTER	OUDM_BASE_TBS
DWB_INVC	HASH	BLLG_DT	CUST_KEY	MONTH	OUDM_BASE_TBS
DWB_INVC_ADJ	NONE	STRT_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_INVC_DISC	NONE	BLLG_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_INVC_ITEM	NONE	BLLG_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_INVC_ITEM_DTL	NONE	BLLG_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_INVC_PYMT_ASGN	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_INVC_STAT_HIST	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_MTR_RDNG	HASH	STRT_DT	MTR_RDN G_KEY	MONTH	OUDM_BASE_TBS
DWB_OUTG	NONE	DT_TIME	N/A	MONTH	OUDM_BASE_TBS
DWB_OUTG_REC	NONE	DT_TIME	N/A	MONTH	OUDM_BASE_TBS
DWB_PRICE_EVT	NONE	STRT_DT	N/A	DAY	OUDM_BASE_TBS
DWB_PRMTN_CLSTR_USG	NONE	USG_DT	N/A	HALF YEAR	OUDM_BASE_TBS
DWB_PRMTN_CNCT_LST_UTL ZTN	NONE	USG_DT	N/A	HALF YEAR	OUDM_BASE_TBS
DWB_PRMTN_MGMT_HIST	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_PRTY_COST_ASGN	NONE	ASGN_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_PRTY_INTRACN_THRD	NONE	INTRACN_THRD_ STRT_DT	N/A	MONTH	OUDM_BASE_TBS

**Table 6-1 (Cont.) Physical Data Model Partitioning**

Physical Table Name	Sub partitioning Type	Partitioning Key Column	Sub partitioning Key Column	Partition Level	Default Tablespace
DWB_PRTY_PRMTN_RESPN	HASH	RESPN_DT	PRTY_KEY	MONTH	OUDM_BASE_TBS
DWB_PRTY_STAT_HIST	NONE	EFF_FROM_DT	N/A	MONTH	OUDM_BASE_TBS
DWB_RESRE_ORDR	NONE	CRTD_DT_TIME	N/A	QUARTER	OUDM_BASE_TBS
DWB_SRVC_ORDR	NONE	CRTD_DT_TIME	N/A	QUARTER	OUDM_BASE_TBS
DWD_ACCT_ARRER_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_ACCT_BAL_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_ACCT_DEBT_DAY	HASH	DAY_KEY	CUST_KEY	MONTH	OUDM_DERIVED_TBS
DWD_ACCT_PYMT_DAY	HASH	DAY_KEY	CUST_KEY	MONTH	OUDM_DERIVED_TBS
DWD_ACCT_PYMT_MTHD_STAT_HIST	HASH	CLNDR_MO_KEY	CUST_KEY	MONTH	OUDM_DERIVED_TBS
DWD_ACCT_STAT_MO	NONE	CLNDR_MO_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_CUST_DR_PROG_PROFILE	HASH	DEMAND_RESPN_PROG_KEY	CUST_KEY	ONE DEMAND RESPONSE PROGRAM	OUDM_DERIVED_TBS
DWD_DR_PROG_LD_RDCTN_RGN_DAY	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_END_DVC_EVT_CUST_DAY	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_END_DVC_EVT_DVC_DAY	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_MTR_RDNG_DAY	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_MTR_RDNG_HR	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_OUTG_DAY	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_OUTG_USG_PNT	NONE	DAY_KEY	N/A	MONTH	OUDM_DERIVED_TBS
DWD_RLBLTY_IND_CITY_MO	NONE	CLNDR_MO_KEY	N/A	YEAR	OUDM_DERIVED_TBS

**Table 6-1 (Cont.) Physical Data Model Partitioning**

Physical Table Name	Sub partitioning Type	Partitioning Key Column	Sub partitioning Key Column	Partition Level	Default Tablespace
DWD_RLBLTY_IND_FEDR_MO	NONE	CLNDR_MO_KEY	N/A	YEAR	OUDM_DERIVED_TBS
DWR_SRVC_QTY	HASH	TMSTMP	SRVC_QTY_KEY	MONTH	OUDM_REFERENCE_TBS

# Part II

## Intra-ETL, OLAP, Data Mining, and Utility Scripts

This part provides information on Oracle Utilities Data Model Intra-ETL Mapping, OLAP, Data Mining, and Utility Scripts.

Part II contains the following chapters:

- [Oracle Utilities Data Model Intra-ETL](#) (page 7-1)
- [Oracle Utilities Data Model OLAP Model Dimensions](#) (page 8-1)
- [Oracle Utilities Data Model OLAP Model Cubes](#) (page 9-1)
- [Oracle Utilities Data Model Data Mining Model](#) (page 10-1)
- [Oracle Utilities Data Model Utility Scripts](#) (page 11-1)

# 7

## Oracle Utilities Data Model Intra-ETL

This chapter includes the following sections:

- [About Oracle Utilities Data Model Intra-ETL](#) (page 7-1)  
In Oracle Utilities Data Model, reference and lookup tables store master, reference, and dimensional data; and the base, derived, and aggregate tables store transaction and fact data at different granularities.
- [Intra-ETL PL/SQL Packages Business Rules and Source Tables](#) (page 7-2)  
Shows the PL/SQL mapping packages to populate the derived tables.

### 7.1 About Oracle Utilities Data Model Intra-ETL

In Oracle Utilities Data Model, reference and lookup tables store master, reference, and dimensional data; and the base, derived, and aggregate tables store transaction and fact data at different granularities.

The base tables store the transaction data at the lowest level of granularity, while the derived and aggregate tables store consolidated and summary transaction data.

Two types of Extract, Transform, and Load (ETL) operations populate the tables with data. The source-ETL operations populate the reference, lookup, and base tables with data from the source On-Line Transaction Processing (OTLP) applications. Additional Intra-ETL operations populate the derived and aggregate tables with the data in the base, reference, and lookup tables. While the source ETL operations are not a part of Oracle Utilities Data Model, the Intra-ETL operations are.

There are two categories of Intra-ETL operations (scripts):

- **Derived Population:** A database package containing scripts that populate the derived tables based on the content of the base, reference, and lookup tables.
- **Aggregate Population:** A database package containing scripts to refresh the Oracle Utilities Data Model aggregate tables, mostly Materialized Views, based on the content of the derived tables and some reference tables.

Derived tables are implemented using Oracle tables. Some of the Aggregate tables Oracle tables and others are implemented using Materialized Views.

#### Note:

Changes to intra-ETL cannot be supported. But it is expected that if the business needs require a change in the business logic of the intra-ETLs some customer adaptations could be necessary even if they are not be supported.

## 7.2 Intra-ETL PL/SQL Packages Business Rules and Source Tables

Shows the PL/SQL mapping packages to populate the derived tables.

Shows the PL/SQL mapping packages to populate the derived tables. The naming convention by default is the physical name of the target table plus the prefix, "PKG\_".

- [PKG\\_DWD\\_ACCT\\_ARRER\\_MO Package](#) (page 7-2)
- [PKG\\_DWD\\_ACCT\\_BAL\\_MO Package](#) (page 7-3)
- [PKG\\_DWD\\_ACCT\\_DEBT\\_DAY](#) (page 7-3)
- [PKG\\_DWD\\_ACCT\\_PMT\\_MTD\\_STAT\\_HST](#) (page 7-6)
- [PKG\\_DWD\\_ACCT\\_PYMT\\_DAY](#) (page 7-6)
- [PKG\\_DWD\\_ACCT\\_STAT\\_MO](#) (page 7-7)
- [PKG\\_DR\\_PROG\\_LD\\_RDCTN\\_RGN\\_DAY](#) (page 7-8)
- [PKG\\_DWD\\_END\\_DVC\\_EVT\\_CUST\\_DAY](#) (page 7-9)
- [PKG\\_DWD\\_END\\_DVC\\_EVT\\_DVC\\_DAY](#) (page 7-9)
- [PKG\\_DWD\\_MTR\\_RDNG\\_DAY](#) (page 7-10)
- [PKG\\_DWD\\_MTR\\_RDNG\\_HR](#) (page 7-11)
- [PKG\\_DWD\\_OUTG\\_DAY](#) (page 7-12)
- [PKG\\_DWD\\_OUTG\\_USG\\_PNT](#) (page 7-13)
- [PKG\\_DWD\\_RLBLTY\\_IND\\_CITY\\_MO](#) (page 7-13)
- [PKG\\_DWD\\_RLBLTY\\_IND\\_FEDR\\_MO](#) (page 7-14)

### 7.2.1 PKG\_DWD\_ACCT\_ARRER\_MO Package

Populate target table `DWD_ACCT_ARRER_MO`. For more information, see [Account Arrears Month Drvd](#) (page 2-32).

#### DWD\_ACCT\_ARRER\_MO Package Source Table

DWB\_INV  
 DWB\_INV\_PYMT\_ASGN  
 DWR\_ACCT\_AGRMNT\_RLTN  
 DWR\_CLNDR\_MO  
 DWR\_CUST  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_SRVC\_LOC  
 DWR\_USG\_PNT

**Table 7-1 DWD\_ACCT\_ARRER\_MO Package Business Rules**

Column	Description
CURR_BAL_AMT	Account Balance Before Payment

**Table 7-1 (Cont.) DWD\_ACCT\_ARRER\_MO Package Business Rules**

Column	Description
PAYOFF_BAL_AMT	Principal plus interest.
AMT_0_TO_30_DAYS	Amount 0 to 30 Days
AMT_31_TO_60_DAYS	Amount 31 to 60 Days
AMT_61_TO_90_DAYS	Amount 61 to 90 Days
AMT_91_TO_120_DAYS	Amount 91 to 120 Days
AMT_121_TO_150_DAYS	Amount 121 to 150 Days
AMT_151_TO_180_DAYS	Amount 151 to 180 Days
AMT_181_PLUS_DAYS	Amount 181 Plus Days

## 7.2.2 PKG\_DWD\_ACCT\_BAL\_MO Package

Populate target table `DWD_ACCT_BAL_MO`. For more information, see [Account Balance Month Drvd](#) (page 2-33).

### DWD\_ACCT\_BAL\_MO Package Source Tables

DWB\_ACCT\_BAL\_HIST  
 DWB\_ACCT\_BAL\_IMPT  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_ACCT  
 DWR\_PROD\_OFRNG

**Table 7-2 DWD\_ACCT\_BAL\_MO Lookup Values**

Table	Column	Operator	Value
DWB_ACCT_BAL_IMP T	ACCT_BAL_TYP_CD	LIKE	%LYTY%
DWB_ACCT_BAL_IMP T	ACCT_BAL_TYP_CD	LIKE	%LYTY BONUS%

Loyalty balance should normally be stored in the specific subject area, to allow the `LOYALTY` derived to work. Nothing prevents storing loyalty account balance type in `ACCOUNT_BALANCE` when the Loyalty Account and the Account are the same. But it will not be taken into account by the other derived.

## 7.2.3 PKG\_DWD\_ACCT\_DEBT\_DAY

Populate target table `DWD_ACCT_DEBT_DAY`. For more information, see [Account Debt Day Drvd](#) (page 2-33).

### DWD\_ACCT\_DEBT\_DAY Package Source Tables

DWB\_ACCT\_DEBT  
 DWB\_COST  
 DWB\_EVT\_PRTY\_INTRACN

DWB\_INVC  
 DWB\_INVC\_PYMT\_ASGN  
 DWB\_INVC\_ADJ  
 DWB\_ACCT\_PYMT  
 DWB\_ACCT\_BAL\_HIST  
 DWB\_ACCT\_BAL\_IMPT  
 DWR\_ACCT  
 DWR\_ADDR\_LOC  
 DWR\_CUST  
 DWR\_CUST\_ACCT\_ASGN  
 DWB\_INVC\_PYMT\_ASGN  
 DWB\_ACCT\_DEBT  
 DWB\_EVT\_PRTY\_INTRACN  
 DWB\_COST

### DWD\_ACCT\_DEBT\_DAY Package Business Rules

**Table 7-3 DWD\_ACCT\_DEBT\_DAY Package Business Rules**

Column	Description
MIN_INVC_DEBT_AGE	Minimum invoice aging debt (Date - lowest DUE_DATE) in days.
DEBT_CNT	Calculation: $\Sigma(\text{Recovered Amount})$ Grouped By Account / Customer / Organization Business Unit / Collection Agency (via Account Payment) / Debt Aging Band (via Account Credit Limit) for a day derived from Balance Date
RCV_AMT	No value
ADJ_AMT	Calculation: $\Sigma(\text{Adjustment Amount})$ Grouped By Account / Customer / Organization Business Unit / Collection Agency (via Account Payment) / Debt Aging Band (via Account Credit Limit) for a day derived from Balance Date
DEBT_AMT	No value
PNLTY_AMT	No value
WRTOFF_AMT	Calculation: $\Sigma(\text{Writeoff Amount})$ Grouped By Account / Customer / Organization Business Unit / Collection Agency (via Account Payment) / Debt Aging Band (via Account Credit Limit) for a day derived from Balance Date
AVG_DEBT_AGE	No value
AVG_INVC_DEBT_AGE	Average of invoice aging (date minus due date). If only one invoice, this should be equal to debt age.
CLCTR_CMISN_AMT	Amount paid to the collection agency or to the employee in charge of collection.
CURR_INVC_AMT	Latest available invoice amount.
CUST3MO_CNT	No value
CUST_CNT_3MO	No value
DEBT_AGE	Age of debt of this account in days.
INVC_IN_DEBT_CNT	Number of invoices in debt (not yet paid and date>DUE_DATE, independently of extended due date).
NB_AGNT_CMNTS	Count the total number of comments agents wrote in the CRM system.

**Table 7-3 (Cont.) DWD\_ACCT\_DEBT\_DAY Package Business Rules**

Column	Description
NB_OF_AGRMNT_FAILED	Number of agreed payment extension that was not fulfilled by customer in (extended) due date.
NB_OF_AGRMNT_SUCESS	Number of agreed payment extension that was fulfilled by customer in (extended) due date.
NB_OF_CNTCT	Total number of (successful) contacts (any direction, any mean) with the customer.
NB_OF_EMP_INVLVD	Total number of employee from the CSP that have been directly involved with this debt. It helps estimating the cost and also the efficiency of debt tracking.
NEW_CUST_CNT	Similar to 3 Month old customer count but for 1 month old customer.
OUTSTNDNG_DRTN	Total unpaid invoice aging in days (over all unpaid invoices to date).
PNDNG_COLLCTN_CNT	Total number of invoices within a collection process.
PRMS_PYMT_CNT	Number of times the customer promised to pay (or an agreement has been put in place). This is a custom field. It is not filled by default in Oracle Utilities Data Model.
PYMT_COLCTD_CNT	No value
TOT_BILLUNIT_CNT	This is at the moment one to one with the number of invoices. Ignore this field.
TOT_CNTCT_DRTN	Total duration of the contacts (any direction, any mean) with the customer. Letter and emails cannot be considered as having a contact duration.
TOT_DEBT_AGE	Sum of all unpaid invoices (date minus due date). If only one invoice, this should be equal to debt age.
TOT_LENGTH_AGNT_C MNTS	No value
TOT_WORK_DRTN	No value
WVNG_CNT	No value
MAX_INVC_AMT_IN_DEBT	For a given invoice, maximum due amount available.
MAX_INVC_DEBT_AGE	Maximum invoice aging debt (Date - lowest DUE_DATE) in days.
MIN_INVC_AMT_IN_DEBT	For a given invoice, minimum due amount available.
TOT_DSPT_AMT	Original amount deposit available (if any).
TOT_FRAUD_COST	Sum of all cost due to fraud (specific debt case).
TOT_LEGAL_PRCSCOST	No value
TOT_PYMT_COLCTD_AMT	No value
TOT_TRNSFRD_AMT	Amount transferred to this account by another (as payment) since the beginning of the debt.
TOT_WVNG_AMT	Total amount waived to the customer (not written-off).

**Table 7-4 DWD\_ACCT\_DEBT\_DAY Lookup Values**

Table	Column	Operator	Value
DWB_INVC_ADJ	INVC_ADJ_RSN_CD	=	'3000'
DWB_INVC	FULL_PAY_RCVD_IND	=	'Y'

**Table 7-4 (Cont.) DWD\_ACCT\_DEBT\_DAY Lookup Values**

Table	Column	Operator	Value
DWB_INV	FULL_PAY_RCVD_IND	<>	Y'
DWB_INV	INVC_STAT_CD	NOT LIKE	5%'
DWB_ACCT_PYMT	PYMT_RSLT_CD	=	SUCCESS'
DWB_ACCT_PYMT	PYMT_MTHD_TYP_CD	=	'2'
DWB_COST	COST_SUBTYP_CD	=	3800'
DWB_ACCT_DEBT	LEGAL_IND	IS	NULL
DWB_EVT_PRTY_INTRA CN	INTRACN_RSN_CD	LIKE	LIKE '6%'
DWB_EVT_PRTY_INTRA CN	INTRACN_EVT_RMRK	IS	NOT NULL

## 7.2.4 PKG\_DWD\_ACCT\_PMT\_MTD\_STAT\_HST

Populate target table `DWD_ACCT_PYMT_MTHD_STAT_HIST`. For more information, see [Account Payment Method Status Hist Drvd](#) (page 2-34).

### DWD\_ACCT\_PMT\_MTD\_STAT\_HST Package Source Tables

DWB\_ACCT\_CRDT\_LMT  
DWB\_ACCT\_PYMT\_MTHD\_STAT  
DWR\_ACCT\_PREF\_PYMT\_MTHDDWR\_ACCT  
DWR\_CLNDR\_MO  
DWR\_CUST  
DWR\_CUST\_ACCT\_ASGN

## 7.2.5 PKG\_DWD\_ACCT\_PYMT\_DAY

Populate target table `DWD_ACCT_PYMT_DAY`. For more information, see [Account Payment Day Drvd](#) (page 2-33).

### DWD\_ACCT\_PMT\_DAY Package Source Tables

DWB\_ACCT\_PYMT  
DWB\_INV  
DWB\_INV\_PYMT\_ASGN  
DWR\_ACCT

**Table 7-5 DWD\_ACCT\_PMT\_DAY Business Rules**

Column	Description	Calculation
PYMT_CNT	Count of payment transactions.	No value

**Table 7-5 (Cont.) DWD\_ACCT\_PMT\_DAY Business Rules**

Column	Description	Calculation
PYMT_AMT	Total payment amount.	$\Sigma$ (Payment Amount) Grouped By Customer / Account / Payment Method Type / Employee / Collection Agency / Bank Direct Debit Channel (via Account Preferred Payment Method) for a day derived from Payment Date
TOT_RFND_CNT	Count of refund transactions	No value
TOT_RFND_AMT	Total amount of money refunded to this account on this day.	No value
PYMT_SUCC_CNT	Count of payment transactions that succeeded.	No value
TOT_SUCC_PYMT_CNT	No value	No value
TOT_TRNSFR_CNT	Count of transfer transactions.	No value
TOT_TRNSFR_AMT	Amount of money transferred to this account.	No value
MAX_NB_DAYS_TO_DUE_DT	The furthest due date associated with all payments of this type for this account. It is in the past in most cases.	No value

## 7.2.6 PKG\_DWD\_ACCT\_STAT\_MO

Populate target table `DWD_ACCT_STAT_MO`. For more information, see [Account Status Month Drvd](#) (page 2-34).

### DWD\_ACCT\_STAT\_MO Package Source Tables

DWB\_ACCT\_PYMT  
 DWB\_INVC  
 DWB\_INVC\_PYMT\_ASGN  
 DWR\_ACCT

**Table 7-6 PKG\_DWD\_ACCT\_STAT\_MO Business Rules**

Column	Description	Calculation
ACTVTNS_CNT	1 if it is a new activation account.	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
DISCNCTNS_CNT	1 if it is a disconnected account.	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date

Table 7-6 (Cont.) PKG\_DWD\_ACCT\_STAT\_MO Business Rules

Column	Description	Calculation
INVL_DEACTV_CNT	Number of involuntary deactivation of service	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
INVL_SUSPND_CNT	Number of involuntary suspensions of service	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
REACTV_FROM_INVL_SUSPND_CNT	Number of reactivations from involuntary suspensions of service	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
DEACTV_CNT	Number of total deactivations of service	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
RECNCT_CNT	Number of Reconnects	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
SSPNSN_CNT	Number of Suspensions	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
SUSPND_CNT	Number of total suspensions of service	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
REACTV_FROM_SUSPND_CNT	Number of total reactivations from suspensions of service	Number of instance with Status Code = corresponding status such as activation Grouped By Account / Organization Business Unit / Service Location (via Usage Point) / Customer Segment (via Customer) / Loyalty Program for a day derived from Effective From/To Date
TOT_RFND	Cash Refund Amount	No value

## 7.2.7 PKG\_DR\_PROG\_LD\_RDCTN\_RGN\_DAY

Populate target table `DWD_DR_PROG_LD_RDCTN_RGN_DAY`. For more information, see [DR Program Load Reduction By Region Day Drvd](#) (page 2-49).

**PKG\_DR\_PROG\_LD\_RDCTN\_RGN\_DAY Package Source Tables**

DWD\_MTR\_RDNG\_DAY  
 DWR\_DAY  
 DWR\_DEMAND\_RESPN\_PROG  
 DWR\_USG\_PNT\_GRP  
 DWR\_USG\_PNT\_GRP\_ASGN  
 DWR\_USG\_PNT\_GRP\_DR\_PROG\_ASGN  
 DWV\_REGIONAL\_ZONES\_DIM

**Table 7-7 PKG\_DR\_PROG\_LD\_RDCTN\_RGN\_DAY Business Rules**

Column	Description	Calculation
AVG_RDCTN_AMT	Derived table on demand response program resulted load reduction by region by day.	"Meter Reading Day Drvd (via common dimension Usage Point) / Total kWh - baseline kWh" Grouped By Demand Response Program / Geography Region / Geography Sub Region (through Usage Point Location) / Day

**7.2.8 PKG\_DWD\_END\_DVC\_EVT\_CUST\_DAY**

Populate target table `DWD_END_DVC_EVT_CUST_DAY`. For more information, see [End Device Event By Customer Day Drvd](#) (page 2-50).

**PKG\_DWD\_END\_DVC\_EVT\_CUST\_DAY Package Source Tables**

DWB\_END\_DVC\_EVT  
 DWR\_ACCT  
 DWR\_CLNDR\_MO  
 DWR\_CUST  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_DAY  
 DWR\_USG\_PNT

**Table 7-8 PKG\_DWD\_END\_DVC\_EVT\_CUST\_DAY Package Business Rules**

Column	Calculations
RVS_MTR_CNT	# of instances Where EndDeviceEventType is type of reversedMeter Grouped By Day / Calendar Month / Customer / Usage Point
MTR_TMPR_EVT_CNT	# of instances Where EndDeviceEventType is type of meterTamper (for example = 3.12.43.257 for <ElectricMeter>.<Security>.<Event>.<TamperDetected>) Grouped By Day / Calendar Month / Customer / Usage Point
STPD_MTR_CNT	# of instances Where EndDeviceEventType is type of stoppedMeter Grouped By Day / Calendar Month / Customer / Usage Point

**7.2.9 PKG\_DWD\_END\_DVC\_EVT\_DVC\_DAY**

Populate target table `DWD_END_DVC_EVT_DVC_DAY`. For more information, see [End Device Event By Device Day Drvd](#) (page 2-50).

**PKG\_DWD\_END\_DVC\_EVT\_DVC\_DAY Package Source Tables**

DWB\_END\_DVC\_EVT  
 DWR\_CLNDR\_MO  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_DAY  
 DWR\_MNFCTR  
 DWR\_MTR  
 DWR\_PROD\_ASST\_MDL  
 DWR\_USG\_PNT

**Table 7-9 PKG\_DWD\_END\_DVC\_EVT\_DVC\_DAY Business Rules**

Column	Description	Calculation
RVS_MTR_CNT	Reversed Meter Count	# of instances Where EndDeviceEventType is type of reversedMeter Grouped By Day / Calendar Month / Meter / Product Asset Model / Manufacturer
MTR_TMPR_EVT_CNT	Meter Tamper Event Count	# of instances Where EndDeviceEventType is type of meterTamper (e.g. = 3.12.43.257 for <ElectricMeter>.<Security>.<Event>.<TamperDetected>) Grouped By Day / Calendar Month / Meter / Product Asset Model / Manufacturer
STPD_MTR_CNT	Stopped Meter Count	# of instances Where EndDeviceEventType is type of stoppedMeter Grouped By Day / Calendar Month / Meter / Product Asset Model / Manufacturer

**Table 7-10 DWD\_END\_DVC\_EVT\_DVC\_DAY Lookup Values**

Table	Column	Operator	Value
DWB_END_DVC_EVT	TYP	=	Tamper Event'
DWB_END_DVC_EVT	TYP	=	Reversed Meter Event'
DWB_END_DVC_EVT	TYP	=	'Stopped Meter Event'

**7.2.10 PKG\_DWD\_MTR\_RDNG\_DAY**

Populate target table `DWD_MTR_RDNG_DAY`. For more information, see [Meter Reading Day Drvd](#) (page 2-65).

**PKG\_DWD\_MTR\_RDNG\_DAY Package Source Tables**

DWB\_FNL\_RDNG  
 DWB\_MTR\_RDNG  
 DWR\_ACCT  
 DWR\_CLNDR\_MO  
 DWR\_CUST  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_DAY  
 DWR\_MTR  
 DWR\_RDNG\_TYP  
 DWR\_SRVC\_LOC

DWR\_USG\_PNT  
 DWV\_OPERATIONAL\_DIM

**Table 7-11 PKG\_DWD\_MTR\_RDNG\_DAY Business Rules**

Column	Description	Calculation
TOT_KWH	Total kWh	Value Where ReadingType is type of daily kWh (for example = 0.0.0.1.1.1.12.0.0.0.0.0.0.0.0.3.72.0 for bulkQuantity forward electricitySecondaryMetered energy (kWh) Grouped by Meter / Usage Point / Customer / Account / Service Location / Day
MAX_KW	Max kW	Value Where ReadingType is type of daily kW (for example = 0.8.4.6.1.1.8.0.0.0.0.0.0.0.0.3.38.0 for maximum sixtyMinute indicating forward electricitySecondaryMetered demand (kW) Grouped by Meter / Usage Point / Customer / Account / Service Location / Day

**Table 7-12 PKG\_DWD\_MTR\_RDNG\_DAY Lookup Values**

Table	Column	Operator	Value
DWR_RDNG_TY P	RDNG_TYP_CD	=	0.8.4.6.1.1.8.0.0.0.0.0.0.0.0.3.38.0'
DWR_RDNG_TY P	RDNG_TYP_CD	=	'0.0.0.1.1.1.12.0.0.0.0.0.0.0.0.3.72.0'

## 7.2.11 PKG\_DWD\_MTR\_RDNG\_HR

Populate target table `DWD_MTR_RDNG_HR`. For more information, see [Meter Reading Hour Dvrd](#) (page 2-65).

### PKG\_DWD\_MTR\_RDNG\_HR Package Source Tables

DWB\_FNL\_RDNG  
 DWB\_MTR\_RDNG  
 DWL\_TIME\_OF\_USE  
 DWR\_ACCT  
 DWR\_CLNDR\_MO  
 DWR\_CUST  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_DAY  
 DWR\_HR  
 DWR\_HR\_TIME\_OF\_USE\_ASGN  
 DWR\_MTR  
 DWR\_RDNG\_TYP  
 DWR\_SRVC\_LOC  
 DWR\_USG\_PNT  
 DWV\_OPERATIONAL\_DIM

**Table 7-13 DWD\_MTR\_RDNG\_HR Business Rules**

Column	Description	Calculation
TOT_KWH	Total kWh	Value Where ReadingType is type of interval kWh (e.g. = 0.0.7.4.1.1.12.0.0.0.0.0.0.0.0.0.3.72.0 for sixtyMinute deltaData forward electricitySecondaryMetered energy (kWh) Grouped By Hour of a Day in a particular Month (and Usage Point / Meter / Customer / Account / Time Of Use)
MAX_KW	Max kW	Value Where ReadingType is type of interval kW (for example = 0.8.7.6.1.1.8.0.0.0.0.0.0.0.0.0.3.38.0 for maximum sixtyMinute indicating forward electricitySecondaryMetered demand (kW) Grouped By Hour of a Day in a particular Month (and Usage Point / Meter / Customer / Account / Time Of Use)

**Table 7-14 DWD\_MTR\_RDNG\_HR Lookup Values**

Table	Columns	Operator	Value
DWR_RDNG_TYP	RDNG_TYP_ CD	=	0.8.4.6.1.1.8.0.0.0.0.0.0.0.0.0.3.38.0'
DWR_RDNG_TYP	RDNG_TYP_ CD	=	'0.0.0.1.1.1.12.0.0.0.0.0.0.0.0.0.0.3.72.0'

## 7.2.12 PKG\_DWD\_OUTG\_DAY

Populate target table `DWD_OUTG_DAY`. For more information, see [Outage By Day Drvd](#) (page 2-67).

### PKG\_DWD\_OUTG\_DAY Package Source Tables

DWB\_OUTG\_REC  
DWR\_ADDR\_LOC  
DWR\_DAY  
DWR\_ORG\_BSNS\_UNIT  
DWR\_OUT\_USG\_PNT\_ASGN  
DWR\_OUTG\_RPT  
DWB\_REGIONAL\_ZONES\_DIM

**Table 7-15 PKG\_DWD\_OUTG\_DAY Package Business Rules**

Column	Description	Calculation
OUTG_DRTN	Outage Duration	Outage Report.Outage Duration Grouped By Outage Report (via Outage Record) / Organization Business Unit (via UsagePoint, Geo Region and Sub Region) / Day
CUST_MNTS_LOST	Customer Minutes Lost	Outage Report.Total Cml Grouped By Outage Report (via Outage Record) (via UsagePoint, Geo Region and Sub Region) / Organization Business Unit / Day
OUTG_CNT	Outage Count	# of outage instance

**Table 7-15 (Cont.) PKG\_DWD\_OUTG\_DAY Package Business Rules**

Column	Description	Calculation
CUST_OUT_CNT	Customer Out Count	Outage Report.Customer Count Grouped By Outage Report (via Outage Record) / Organization Business Unit (via UsagePoint, Geo Region and Sub Region) / Day

## 7.2.13 PKG\_DWD\_OUTG\_USG\_PNT

Populate target table `DWD_OUTG_USG_PNT`. For more information, see [Outage By Usage Point Drvd](#) (page 2-67).

### PKG\_DWD\_OUTG\_USG\_PNT Package Source Tables

DWB\_OUTG\_REC  
 DWR\_ACCT  
 DWR\_CUST  
 DWR\_CUST\_ACCT\_ASGN  
 DWR\_DAY  
 DWR\_MTR  
 DWR\_OPERATIONAL\_DIM  
 DWR\_ORG\_BSNS\_UNIT  
 DWR\_OUTG\_RPT  
 DWR\_OUTG\_USG\_PNT\_ASGN  
 DWR\_USG\_PNT  
 DWR\_ZN  
 DWV\_GEOGRAPHY\_ZONES\_DIM

**Table 7-16 DWD\_END\_DVC\_EVT\_DVC\_DAY Business Rules**

Column	Description	Calculation
OUTG_DRTN	Outage Duration	Outage Report.Outage Duration Grouped By Outage Report (via Outage Record) / Organization Business Unit / Day
OUTG_CNT	Outage Count	# of outage instance
CUST_OUT_CNT	Customer Out Count	Outage Report.Customer Count Grouped By Outage Report (via Outage Record) / Organization Business Unit / Day

## 7.2.14 PKG\_DWD\_RLBLTY\_IND\_CITY\_MO

Populate target table `DWD_RLBLTY_IND_CITY_MO`. For more information, see [Reliability Indices By City Month Drvd](#) (page 2-78).

### PKG\_DWD\_RLBLTY\_IND\_CITY\_MO Package Source Tables

DWB\_GEOGRAPHY\_ZONES\_DIM  
 DWB\_OUTG\_REC  
 DWD\_OUTG\_USG\_PNT  
 DWR\_CLNDR\_MO  
 DWR\_CLNDR\_YR  
 DWR\_DAY

DWR\_USG\_PNT  
DWW\_REGIONAL\_ZONES\_DIM

**Table 7-17 DWD\_RLBLTY\_IND\_CITY\_MO Business Rules**

Column	Description	Calculation
NBR_CUST_IMPT	Number Customer Impacted	sum(oup.outg_cnt) group by geo_city_key, substr(day_key,1,6);
NBR_CUST_SRV	Number Customer Served	count(usg_pnt_key) group by geo_city_key;
NBR_EVT	Number Events	count(oup.outg_rec_key) group by geo_city_key, substr(day_key,1,6);
NBR_TRBL_CALLS	Number Trouble Calls	No value
SAIDI	System Average Interruption Duration Index (SAIDI)	SAIDI = $\Sigma(ri * Ni) / Ns$ Where, ri = Restoration time, minutes Ni = Total number of customer interrupted Ns = Total number of customer served
CAIDI	Customer Average Interruption Duration Index (CAIDI)	CAIDI = $\Sigma(ri * Ni) / \Sigma(Ni)$ Where, ri = Restoration time, minutes Ni = Total number of customer interrupted Note: CAIDI = SAIDI / SAIFI
SAIFI	System Average Interruption Frequency Index (SAIFI)	SAIFI = $\Sigma(Ni) / Ns$ Where, Ni = Total number of customer interrupted Ns = Total number of customer served
CAIFI	Customer Average Interruption Frequency Index (CAIFI)	CAIFI = $\Sigma(No) / Ni$ Where, No = Number of interruptions Ni = Total number of customer interrupted
MAIFI	Momentary Average Interruption Frequency Index (MAIFI)	MAIFI = $\Sigma(IDi * Ni) / Ns$ Where, IDi = Number if interrupting device operations Ni = Total number of customer interrupted Ns = Total number of customer served
ASAI	Average Service Availability Index (ASAI)	ASAI = $[1 - (\Sigma(ri * Ni) / (NT * T))]$ * 100 Where, T = Time period under study, hours. ri = Restoration time, hours Ni = Total number of customers interrupted NT = Total number of customers served The ASAI usually calculated on either a monthly basis (730 hours) or a yearly basis (8,760 hours) For yearly value, = $[1 - (\Sigma(SAIDImonth)/8760)] * 100$
CMI	Customer Minutes of Interruption (CMI)	No value

## 7.2.15 PKG\_DWD\_RLBLTY\_IND\_FEDR\_MO

Populate target table DWD\_RLBLTY\_IND\_FEDR\_MO. For more information, see [Reliability Indices By Feeder Month Drvd](#) (page 2-78)

### PKG\_DWD\_RLBLTY\_IND\_FEDR\_MO Package Source Tables

DWB\_OUTG\_REC  
DWD\_OUTG\_USG\_PNT  
DWR\_CLNDR\_MO  
DWR\_CLNDR\_YR  
DWR\_DAY

DWR\_USG\_PNT  
 DWV\_OPERATIONAL\_DIM

**Table 7-18 DWD\_RLBLTY\_IND\_CITY\_MO Business Rules**

Column	Description	Calculation
NBR_CUST_IMPT	Number Customer Impacted	sum(oup.outg_cnt) group by fedr_key, substr(day_key,1,6)
NBR_CUST_SRV	Number Customer Served	count(usg_pnt_key) group by fedr_key
NBR_EVT	Number Events	count(oup.outg_rec_key) group by fedr_key, substr(day_key,1,6)
NBR_TRBL_CALLS	Number Trouble Calls	No value
SAIDI	System Average Interruption Duration Index (SAIDI)	SAIDI = $\Sigma(\text{ri} * \text{Ni}) / \text{Ns}$ Where, ri = Restoration time, minutes Ni = Total number of customer interrupted Ns = Total number of customer served
CAIDI	Customer Average Interruption Duration Index (CAIDI)	CAIDI = $\Sigma(\text{ri} * \text{Ni}) / \Sigma(\text{Ni})$ Where, ri = Restoration time, minutes Ni = Total number of customer interrupted Note: CAIDI = SAIDI / SAIFI
SAIFI	System Average Interruption Frequency Index (SAIFI)	SAIFI = $\Sigma(\text{Ni}) / \text{Ns}$ Where, Ni = Total number of customer interrupted Ns = Total number of customer served
CAIFI	Customer Average Interruption Frequency Index (CAIFI)	CAIFI = $\Sigma(\text{No}) / \text{Ni}$ Where, No = Number of interruptions Ni = Total number of customer interrupted
MAIFI	Momentary Average Interruption Frequency Index (MAIFI)	MAIFI = $\Sigma(\text{IDi} * \text{Ni}) / \text{Ns}$ Where, IDi = Number if interrupting device operations Ni = Total number of customer interrupted Ns = Total number of customer served
ASAI	Average Service Availability Index (ASAI)	ASAI = $[1 - (\Sigma(\text{ri} * \text{Ni}) / (\text{NT} * \text{T}))] * 100$ Where, T = Time period under study, hours. ri = Restoration time, hours Ni = Total number of customers interrupted NT = Total number of customers served The ASAI usually calculated on either a monthly basis (730 hours) or a yearly basis (8,760 hours) For yearly value, = $[1 - (\Sigma(\text{SAIDI} / \text{month}) / 8760)] * 100$
CMI	Customer Minutes of Interruption (CMI)	No value

# 8

## Oracle Utilities Data Model OLAP Model Dimensions

This chapter describes the Data Flow from the fact tables and dimension tables of Oracle Utilities Data Model foundation layer to the target materialize views and cubes of the Analytical Layer to support Oracle Utilities Data Model OLAP.

This chapter includes the following sections:

For more information, see [Oracle Utilities Data Model OLAP Model Cubes](#) (page 9-1).

- [Introduction to OLAP Architecture](#) (page 8-1)
- [Oracle Utilities Data Model OLAP Dimensions](#) (page 8-2)

### 8.1 Introduction to OLAP Architecture

Oracle Data Warehouse for utilities (Oracle Utilities Data Model Relational) contains the lowest level Meter Reading details measuring consumption and detection of events, low level combination of base tables and the summary, average, and so on, of Base and Derived data. Oracle Utilities Data Model was developed in a relational database.

- [General Process to Populate the OLAP Module in Oracle utilities Data Model](#) (page 8-1)
- [Query Rewrite to Cube Organized Materialized Views](#) (page 8-2)

#### 8.1.1 General Process to Populate the OLAP Module in Oracle utilities Data Model

Oracle Utilities Data Model `oudm_sys` schema does the following:

- Directly maps the leaf level data from the relational table/mv into the OLAP cube.
- Cube organized materialized views represent the cube to SQL-based applications as materialized views that you can use for both refresh and query rewrite. With Query Re-write enabled, Oracle will automatically re-write SQL queries targeted against relational tables. to use the Cube-Organized Materialized View. To use this feature the OLAP cubes and relational components are in a single schema (`oudm_sys`).
- All cubes are available for the end user SQL based Query Tool access through CUBE\_TABLE based SQL Views, which are created and maintained automatically during the cube build/update process.
- Cubes are built from level 0 DWA materialized views or DWR tables (which, when a date is present, usually means at the month level).

Using SQL to access the cubes and dimensions is a significant feature of Oracle OLAP because it enables reporting tools that only generate SQL to use all of the powerful features of the analytic workspace. In Oracle Database 11g this is achieved by the use of the CUBE\_TABLE function that extracts multidimensional data from a cube in an analytic workspace and presents it to the relational SQL engine in the form of a two dimensional table, such as, a set of rows and columns. It provides a mapping between the cube in the analytic workspace and the rows and columns that the SQL sees.

## 8.1.2 Query Rewrite to Cube Organized Materialized Views

Oracle Utilities Data Model uses SQL to query the relational base tables and the optimizer transparently translates the SQL to access either the table materialized views or the cube materialized views (and hence the analytic workspace cubes and dimensions) depending upon which provides the better performance. This allows all of the benefits of the analytic workspace to be easily available to any product using regular SQL.

## 8.2 Oracle Utilities Data Model OLAP Dimensions

The dimensions section describes the detail information for all the dimensions. Each dimension includes the following information:

- Levels
- Hierarchies
- Attributes and Attribute mappings

This section lists the dimensions.

- [Account: ACCT](#) (page 8-2)
- [Customer: CUST](#) (page 8-3)
- [Geography Usage Point: GEOUP](#) (page 8-3)
- [Manufacturer: MNFCTR](#) (page 8-4)
- [Meter:MTR](#) (page 8-5)
- [Operational Usage Point: OPTUP](#) (page 8-6)
- [Regional Usage Point: RGUP](#) (page 8-6)
- [Time: TIME](#) (page 8-7)
- [Usage Point: UP](#) (page 8-9)

### 8.2.1 Account: ACCT

This dimension keeps all the account information.

**Table 8-1 Account (ACCT) Levels and Hierarchies**

Level	Description	Account Hierarchy (HACCT)
TACCT	Total Account	TACCT
ACCT	Account	ACCT

Attribute Name: Long Description(LONG\_DESCRIPTION)

**Table 8-2 Account Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TACCT	'Total Account'
ACCT	DWR_ACCT.ACCT_DSCR

Attribute Name: Short Description(SHORT\_DESCRIPTION)

**Table 8-3 Account Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TACCT	'Total Account'
ACCT	DWR_ACCT.ACCT_CD

## 8.2.2 Customer: CUST

This dimension keeps all the information of individual customers.

**Table 8-4 Customer (CUST) Levels and Hierarchies**

Level	Description	Hierarchy (HCUSTOMER)
CUST	Customer	CUST
TCUST	Total customer	TCUST

Attribute Name: Long Description(LONG\_DESCRIPTION)

**Table 8-5 Customer Long Description Attribute Mapping**

Level	Mapping (Physical Column)
CUST	DWR_CUST.LAST_NAME
TCUST	"Total Customer"

Attribute Name: Short Description(SHORT\_DESCRIPTION)

**Table 8-6 Customer Short Description Attribute Mapping**

Level	Mapping (Physical Column)
CUST	DWR_CUST.CUST_CD
TCUST	"Total Customer"

## 8.2.3 Geography Usage Point: GEOUP

This dimension keeps all the usage point information at lower levels with geography information at higher levels, such as city, state, and so on.

**Table 8-7 Geography Usage Point (GEOUP) Levels and Attributes**

Level	Description	Geography Usage Point Hierarchy (HGOUP)
TGEOUP	Total Geographical Usage Point	TGEOUP
STATE	STATE	STATE
CITY	CITY	CITY
GUP	GEOGRAPHY USAGE POINT	GUP

Attribute Name: Long Description (LONG\_DESCRIPTION)

**Table 8-8 Geography Usage Point Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TGEOUP	'Total Geography UsagePoint'
STATE	DWV_GEOGRAPHY_ZONES_DIM.GEO_STATE_NAME
CITY	DWV_GEOGRAPHY_ZONES_DIM.GEO_CITY_NAME
GUP	DWV_GEOGRAPHY_ZONES_DIM.USG_PNT_CD

Attribute Name: Short Description(SHORT\_DESCRIPTION)

**Table 8-9 Geography Usage Point Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TGEOUP	'Total Geography UsagePoint'
STATE	DWV_GEOGRAPHY_ZONES_DIM.GEO_STATE_CD
CITY	DWV_GEOGRAPHY_ZONES_DIM.GEO_CITY_CD
GUP	DWV_GEOGRAPHY_ZONES_DIM.USG_PNT_CD

## 8.2.4 Manufacturer: MNFCTR

This dimension keeps the information of product asset model at lower level and manufacturer information at higher level.

**Table 8-10 Manufacturer (MNFCTR) Levels and Hierarchies**

Level	Description	Manufacturer Hierarchy (HMNFCTR)
TMNFCTR	Total Manufacturers	'TMNFCTR
MNFCTR	Manufacturer	MNFCTR
PRASTMDL	Product Asset Model	PRASTMDL

Attribute Name: Long Description (LONG\_DESCRIPTION)

**Table 8-11 Manufacturer Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TMNFCTR	'Total Manufacturer'
MNFCTR	DWR_MNFCTR.NAME
PRASTMDL	DWR_PROD_ASST_MDL.ASST_MDL_USG_KIND_CD

Attribute Name: Short Description (SHORT\_DESCRIPTION)

**Table 8-12 Manufacturer Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TMNFCTR	'Total Manufacturer'
MNFCTR	DWR_MNFCTR.MNFCTR_CD
PRASTMDL	DWR_PROD_ASST_MDL.ALS_NAME

## 8.2.5 Meter:MTR

This dimension keeps all the meter related information.

**Table 8-13 Meter (MTR) levels and Hierarchies**

Level	Description	Meter Hierarchy (HMTR)
TMTR	Total Meters	TMTR
MTR	Meter	MTR

Attribute Name: Long Description (LONG\_DESCRIPTION)

**Table 8-14 Meter Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TMTR	'Total Meter'
MTR	DWR_MTR.NAME

Attribute Name: Short Description (SHORT\_DESCRIPTION)

**Table 8-15 Meter Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TMTR	'Total Meter'
MTR	DWR_MTR.MTR_CD

## 8.2.6 Operational Usage Point: OPTUP

This dimension keeps information of usage point at lower level and electricity power operational information at higher levels. For example, transformer, feeder, and substation.

**Table 8-16 Operational Usage Point (OPTUP) Levels and Hierarchies**

Level	Description	Operational Usage Point Hierarchy (HOPTUP)
TOPTUP	Total Operational Usage Point	TOPTUP
SBSTN	Substation	SBSTN
FDR	Feeder	FDR
TRTK	Transformer Tank	TRTK
OPTUP	Operation Usage Point	OPTUP

Attribute Name: Long Description (LONG\_DESCRIPTION)

**Table 8-17 Operational Usage Point Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TOPTUP	'Total Operational UsagePoint'
SBSTN	DWV_OPERATIONAL_DIM.SBSTN_NAME
FDR	DWV_OPERATIONAL_DIM.FEDR_NAME
TRTK	DWV_OPERATIONAL_DIM.TRNSFRMR_TANK_CD
OPTUP	DWV_OPERATIONAL_DIM.USG_PNT_CD

Attribute Name: Short Description (SHORT\_DESCRIPTION)

**Table 8-18 Operational Usage Point Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TOPTUP	'Total Operational UsagePoint'
SBSTN	DWV_OPERATIONAL_DIM.SBSTN_CD
FDR	DWV_OPERATIONAL_DIM.FEDR_CD
TRTK	DWV_OPERATIONAL_DIM.TRNSFRMR_TANK_CD
OPTUP	DWV_OPERATIONAL_DIM.USG_PNT_CD

## 8.2.7 Regional Usage Point: RGUP

This dimension keeps information of usage point at lower level and regional information at higher levels. For example, sub-region and region.

**Table 8-19 Regional Usage Point (RGUP) Levels and Hierarchies**

Level	Description	Regional Usage Point Hierarchy (HRGUP)
TRGUP	Total Regional Usage Point	TRGUP
RG	Region	RG
SUBRG	Sub Region	SUBRG
RGUP	Regional Usage Point	RGUP

Attribute Name: Long Description (LONG\_DESCRIPTION)

**Table 8-20 Regional Usage Point Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TRGUP	'Total Regional UsagePoint'
RG	DWV_REGIONAL_ZONES_DIM.GEO_RGN_NAME
SUBRG	DWV_REGIONAL_ZONES_DIM.GEO_SB_RGN_NAME
RGUP	DWV_REGIONAL_ZONES_DIM.USG_PNT_LOC_KEY

Attribute Name: Short Description (SHORT\_DESCRIPTION)

**Table 8-21 Regional Usage Point Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TRGUP	'Total Regional UsagePoint'
RG	DWV_REGIONAL_ZONES_DIM.GEO_RGN_NAME
SUBRG	DWV_REGIONAL_ZONES_DIM.GEO_SB_RGN_NAME
RGUP	DWV_REGIONAL_ZONES_DIM.USG_PNT_LOC_KEY

## 8.2.8 Time: TIME

This dimension keeps all the information of time.

**Table 8-22 Time (TIME) Levels and Hierarchies**

Level	Description	Time Business Hierarchy (HTCLNDR)
TTIME	Total Time	TTIME
CLNDR_YR	Calendar Year	CLNDR_YR
CLNDR_HLF_YR	Calendar Half Year	CLNDR_HLF_YR
CLNDR_QTR	Calendar Quarter	CLNDR_QTR
CLNDR_MO	Calendar Month	CLNDR_MO

Attribute Name: Long Description (LONG\_DESCRIPTION)

**Table 8-23 Time Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TTIME	DWR_TIME_TOT.TOT_DSCR
CLNDR_YR	DWR_CLNDR_YR.CLNDR_YR_DSCR
CLNDR_HLF_YR	DWR_CLNDR_HLF_YR.CLNDR_HLF_YR_DSCR
CLNDR_QTR	DWR_CLNDR_QTR.CLNDR_QTR_DSCR
CLNDR_MO	DWR_CLNDR_MO.CLNDR_MO_DSCR

Attribute Name: Short Description(SHORT\_DESCRIPTION)

**Table 8-24 Time Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TTIME	DWR_TIME_TOT.TOT_CD
CLNDR_YR	DWR_CLNDR_YR.CLNDR_YR_KEY
CLNDR_HLF_YR	DWR_CLNDR_HLF_YR.CLNDR_HLF_YR_KEY
CLNDR_QTR	DWR_CLNDR_QTR.CLNDR_QTR_KEY
CLNDR_MO	DWR_CLNDR_MO.CLNDR_MO_KEY

Attribute Name: Time Number (TIME\_NBR)

**Table 8-25 Time Time Number Attribute Mapping**

Level	Mapping (Physical Column)
TTIME	DWR_TIME_TOT.TOT_NBR
CLNDR_YR	DWR_CLNDR_YR.CLNDR_YR_NBR
CLNDR_HLF_YR	DWR_CLNDR_HLF_YR.CLNDR_HLF_YR_NBR
CLNDR_QTR	DWR_CLNDR_QTR.CLNDR_QTR_NBR
CLNDR_MO	DWR_CLNDR_MO.CLNDR_MO_NBR

Attribute Name: Time Span (TIME\_SPAN)

**Table 8-26 Time Time Span Attribute Mapping**

Level	Mapping (Physical Column)
TTIME	DWR_TIME_TOT.TOT_TIMESPN
CLNDR_YR	DWR_CLNDR_YR.CLNDR_YR_TIMESPN
CLNDR_HLF_YR	DWR_CLNDR_HLF_YR.CLNDR_HLF_YR_TIMESPN
CLNDR_QTR	DWR_CLNDR_QTR.CLNDR_QTR_TIMESPN
CLNDR_MO	DWR_CLNDR_MO.CLNDR_MO_TIMESPN

Attribute Name: Start Date(START\_DATE)

**Table 8-27 Time Start Date Attribute Mapping**

Level	Mapping (Physical Column)
TTIME	DWR_TIME_TOT.TOT_STRT_DT
CLNDR_YR	DWR_CLNDR_YR.CLNDR_YR_STRT_DT
CLNDR_HLF_YR	DWR_CLNDR_HLF_YR.CLNDR_HLF_YR_STRT_DT
CLNDR_QTR	DWR_CLNDR_QTR.CLNDR_QTR_STRT_DT
CLNDR_MO	DWR_CLNDR_MO.CLNDR_MO_STRT_DT

Attribute Name: End Date (END\_DATE)

**Table 8-28 Time End Date Attribute Mapping**

Level	Mapping (Physical Column)
TTIME	DWR_TIME_TOT.TOT_END_DT
CLNDR_YR	DWR_CLNDR_YR.CLNDR_YR_END_DT
CLNDR_HLF_YR	DWR_CLNDR_HLF_YR.CLNDR_HLF_YR_END_DT
CLNDR_QTR	No value
CLNDR_MO	DWR_CLNDR_MO.CLNDR_MO_END_DT

## 8.2.9 Usage Point: UP

**Table 8-29 Usage Point (USGPNT) Levels and Hierarchies**

Level	Description	Usage Point Hierarchy (HUP)
TUSGPT	Total Usage Point	TUSGPT
USGPT	Usage Point	USGPT

Attribute Name: Long Description(LONG\_DESCRIPTION)

**Table 8-30 Usage Point Long Description Attribute Mapping**

Level	Mapping (Physical Column)
TUSGPT	'Total UsagePoint'
USGPT	DWR_USG_PNT.USG_PNT_CD

Attribute Name: Short Description(SHORT\_DESCRIPTION)

**Table 8-31 Usage Point Short Description Attribute Mapping**

Level	Mapping (Physical Column)
TUSGPT	'Total UsagePoint'
USGPT	DWR_USG_PNT.USG_PNT_CD

# 9

## Oracle Utilities Data Model OLAP Model Cubes

This chapter of Oracle Utilities Data Model Reference describes the Data Flow between fact tables and dimension tables of Oracle Utilities Data Model relational part to target materialize views and cubes to support the module Oracle Utilities Data Model OLAP.

This chapter includes the following section:

For more information, see [Oracle Utilities Data Model OLAP Model Dimensions](#) (page 8-1).

### Note:

All materialized views underlying the OLAP cubes are disabled by default. To enable the cube materialized views, you must follow the steps outlined in *Oracle Utilities Data Model Implementation and Operations Guide*.

- [Oracle Utilities Data Model OLAP Cubes](#) (page 9-1)

## 9.1 Oracle Utilities Data Model OLAP Cubes

For each cube, each section includes the following cube information:

- Description
- Dimensions (leaf load level and load sequence)
- Base Measures with Physical Mapping and Description
- Derived Measure with the Logical Name and the Calculations

This section lists the Oracle Utilities Data Model OLAP cubes.

### Note:

Oracle Utilities Data Model includes base measures with format such as, `XXXX1`. These base measures are intended for internal; Oracle Utilities Data Model uses these base measures to calculate `EOP_XXXX` (end of period value). Do not use these measures for reporting.

- [Meter Reading Account Cube: ACCTMTRR](#) (page 9-2)
- [End Device Event Customer Cube: CUST\\_ENDVC](#) (page 9-3)

- [End Device Event by Device Cube: DVC\\_ENDVC](#) (page 9-5)
- [Meter Reading Geo Usage Point Cube: GUSPMTRR](#) (page 9-6)
- [Meter Reading Operational Usage Point Cube: OUSPMTRR](#) (page 9-7)
- [Meter Reading Regional Usage Point Cube: RUSPMTRR](#) (page 9-9)
- [Meter Reading Customer Cube: CUSTMTRR](#) (page 9-11)

## 9.1.1 Meter Reading Account Cube: ACCTMTRR

This cube provides information on the aggregate meter readings of different accounts by month. It is based on dimensions like time, meter, and account.

**Physical Name: ACCTMTRR**

### Dimensions and Load Level

The fact data of Meter Reading Account Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-1 Meter Reading Account Cube Dimensions and Load Level**

Dimension Name	Load Level
Account	Account
Meter	Meter
Time	Calendar Month

### Aggregation Order/Operator

The Meter Reading Account Cube is aggregated by the order and operators on dimensions shown in [Table 9-2](#) (page 9-2).

**Table 9-2 Meter Reading Account Cube Aggregation and Order**

Dimension Name	Operator	Order
Time	Sum	1
Account	Sum	2
Meter	Sum	3

**Table 9-3 Meter Reading Account Cube Descriptions and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW	Max KW	Measure	DWA_MTR_RDNG_MO_ACCT.MAX_KW
TMXKW	Total Max KW	Measure	DWA_MTR_RDNG_MO_ACCT.TOT_KWH
MXKW_LP	Max KW Last Period	Calculated Measure	LAG(ACCTMTRR.MXKW, 1) OVER (HIERARCHY "TIME".HTCLNDR)
MXKW_LY	Max KW Last Year	Calculated Measure	LAG(ACCTMTRR.MXKW, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

**Table 9-3 (Cont.) Meter Reading Account Cube Descriptions and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW_YTD	Max KW YTD	Calculated Measure	SUM(ACCTMTRR.MXKW) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
MXKW_YTD_LY	MAX KW YTD Last Year	Calculated Measure	LAG(ACCTMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD_PC_T_LY	MXKW YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(ACCTMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_LP	Total KWH Last Period	Calculated Measure	LAG(ACCTMTRR.TKWH, 1) OVER HIERARCHY ("TIME".HTCLNDR)
TKWH_LY	Total KWH Last Year	Calculated Measure	LAG(ACCTMTRR.TKWH, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD	Total KWH YTD	Calculated Measure	SUM(ACCTMTRR.TKWH) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
TKWH_YTD_LY	Total KWH YTD Last Year	Calculated Measure	LAG(ACCTMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD_PC_T_LY	Total KWH YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(ACCTMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

## 9.1.2 End Device Event Customer Cube: CUST\_ENDVC

This cube stores the aggregates on the end device events by customer by month. It is based on time, customer, and operational usage point dimensions.

**Physical Name: CUST\_ENDVC**

### Dimensions and Load Level

The fact data of End Device Event Customer Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-4 End Device Event Customer Cube Dimensions and Load Level**

Dimension Name	Load Level
Time	Business Month
Customer	Customer Code

**Table 9-4 (Cont.) End Device Event Customer Cube Dimensions and Load Level**

Dimension Name	Load Level
Operational Usage Point	Sub Station

**Aggregation Order/Operator**

The End Device Event Customer Cube is aggregated by the order and operators on dimensions shown in [Table 9-5](#) (page 9-4).

**Table 9-5 End Device Event Customer Cube Aggregation and Order**

Dimension Name	Operator	Order
Time	Sum	1
Customer	Sum	2
Operational Usage Point	Sum	3

**Table 9-6 End Device Event Customer Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
RVS_MTR_CNT	Reversed Meter Count	Measure	DWA_END_DVC_EVT_DVC_MO.RVS_MTR_CNT
STPD_MTR_CNT	Stopped Meter Event Count	Measure	DWA_END_DVC_EVT_DVC_MO.STPD_MTR_CNT
TMPR_MTR_CNT	Tamper Meter Count	Measure	DWA_END_DVC_EVT_DVC_MO.MTR_TMPR_EVT_CNT
RVS_MTR_CNT_LP	RVS MTR CNT Last Period	Calculated Measure	LAG(CUST_ENDVC.RVS_MTR_CNT, 1) OVER (HIERARCHY "TIME".HTCLNDR)
RVS_MTR_CNT_LY	RVS MTR CNT Last Year	Calculated Measure	LAG(CUST_ENDVC.RVS_MTR_CNT, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
STPD_MTR_CNT_LP	Stopped MTR CNT Last Period	Calculated Measure	LAG(CUST_ENDVC.STPD_MTR_CNT, 1) OVER (HIERARCHY "TIME".HTCLNDR)
STPD_MTR_CNT_LY	Stopped MTR CNT Last Year	Calculated Measure	LAG(CUST_ENDVC.STPD_MTR_CNT, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TMPR_MTR_CNT_LP	TMPR MTR CNT Last Period	Calculated Measure	LAG(CUST_ENDVC.TMPR_MTR_CNT, 1) OVER (HIERARCHY "TIME".HTCLNDR)
TMPR_MTR_CNT_LY	TMPR MTR CNT Last Year	Calculated Measure	LAG(CUST_ENDVC.TMPR_MTR_CNT, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

## 9.1.3 End Device Event by Device Cube: DVC\_ENDVC

This cube stores the aggregates on the end device events by different devices by month. It is based on time, meter, and manufacturer dimensions.

**Physical Name:** DVC\_ENDVC

### Dimensions and Load Level

The fact data of End device Event by Device Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-7 End Device Event by Device Cube Dimensions and Load Level**

Dimension Name	Load Level
Manufacturer Product	Asset Model
Meter	Meter
Time	Calendar Month

### Aggregation Order/Operator

The End Device Event by Cube is aggregated by the order and operators on dimensions shown in [Table 9-8](#) (page 9-5).

**Table 9-8 End Device Event by Device Cube Aggregation and Order**

Dimension Name	Operator	Order
Manufacturer	Sum	1
Meter	Sum	2
Time	Sum	3

**Table 9-9 End Device Event by Device Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
RVS_MTR_CNT	Reversed Meter Count	Measure	DWA_END_DVC_EVT_DVC_MO.RVS_MTR_CNT
STPD_MTR_CNT	Stopped Meter Event Count	Measure	DWA_END_DVC_EVT_DVC_MO.STPD_MTR_CNT
TMPR_MTR_CNT	Tamper Meter Count	Measure	DWA_END_DVC_EVT_DVC_MO.MTR_TMPR_EVT_CNT
RVS_MTR_CNT_LP	RVS MTR CNT Last Period	Calculated Measure	LAG(DVC_ENDVC.RVS_MTR_CNT, 1) OVER (HIERARCHY "TIME".HTCLNDR)
RVS_MTR_CNT_LY	RVS MTR CNT Last Year	Calculated Measure	LAG(DVC_ENDVC.RVS_MTR_CNT, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

**Table 9-9 (Cont.) End Device Event by Device Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
STPD_MTR_CNT_LP	Stopped MTR CNT Last Period	Calculated Measure	LAG(DVC_ENDVC.STPD_MTR_CNT, 1) OVER (HIERARCHY "TIME".HTCLNDR)
STPD_MTR_CNT_LY	Stopped MTR CNT Last Year	Calculated Measure	LAG(DVC_ENDVC.STPD_MTR_CNT, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TMPR_MTR_CNT_LP	TMPR MTR CNT Last Period	Calculated Measure	LAG(DVC_ENDVC.TMPR_MTR_CNT, 1) OVER (HIERARCHY "TIME".HTCLNDR)
TMPR_MTR_CNT_LY	TMPR MTR CNT Last Year	Calculated Measure	LAG(DVC_ENDVC.TMPR_MTR_CNT, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

### 9.1.4 Meter Reading Geo Usage Point Cube: GUSPMTRR

This cube provides information on the aggregate meter reading by different geographies by month. It is based on the following dimensions like time, meter, and geography usage point.

**Physical Name:** GUSPMTRR

#### Dimensions and Load Level

The fact data of Meter Reading Geo Usage Point Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-10 Meter Reading Geo Usage Point Cube Dimensions and Load Level**

Dimension Name	Load Level
Geography Usage Point	Geography Usage Point
Meter	Meter
Time	Calendar Month

#### Aggregation Order/Operator

The Meter Reading Geo Usage Point Cube is aggregated by the order and operators on dimensions shown in [Table 9-11](#) (page 9-6).

**Table 9-11 Meter Reading Geo Usage Point Cube Aggregation and Order**

Dimension Name	Operator	Order
Time	Sum	1
Meter	Sum	2
Geography Usage Point	Sum	3

**Table 9-12 Meter Reading Geo Usage Point Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW	Max KW	Measure	DWA_MTR_RDNG_MO_UP.MAX_KW
TMXKW	Total KW Hour	Measure	DWA_MTR_RDNG_MO_UP.TOT_KWH
MXKW_LP	Max KW Last Period	Calculated Measure	LAG(GUSPMTRR.MXKW, 1) OVER (HIERARCHY "TIME".HTCLNDR)
MXKW_LY	Max KW Last Year	Calculated Measure	LAG(GUSPMTRR.MXKW, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD	Max KW YTD	Calculated Measure	SUM(GUSPMTRR.MXKW) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
MXKW_YTD_LY	MAX KW YTD Last Year	Calculated Measure	LAG(GUSPMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD_PCT_LY	MXKW YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(GUSPMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_LP	Total KWH Last Period	Calculated Measure	LAG(GUSPMTRR.TKWH, 1) OVER (HIERARCHY "TIME".HTCLNDR)
TKWH_LY	Total KWH Last Year	Calculated Measure	LAG(GUSPMTRR.TKWH, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD	Total KWH YTD	Calculated Measure	SUM(GUSPMTRR.TKWH) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
TKWH_YTD_LY	Total KWH YTD Last Year	Calculated Measure	LAG(GUSPMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD_PCT_LY	Total KWH YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(GUSPMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

### 9.1.5 Meter Reading Operational Usage Point Cube: OUSPMTRR

This cube provides information on the aggregate meter reading by operational usage points by month. It is based on time, meter, and operational usage point dimensions.

**Physical Name: OUSPMTRR**

**Dimensions and Load Level**

The fact data of Meter Reading Operational Usage Point Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-13 Meter Reading Operational Usage Point Cube Dimensions and Load Level**

Dimension Name	Load Level
Usage	Point
Meter	Meter
Time	Calendar Month

**Aggregation Order/Operator**

The Meter Reading Operational Usage Point Cube is aggregated by the order and operators on dimensions shown in [Table 9-14](#) (page 9-8).

**Table 9-14 Meter Reading Operational Usage Point Cube Aggregation and Order**

Dimension Name	Operator	Order
Time	Sum	1
Meter	Sum	2
Operational Usage Point	Sum	3

**Table 9-15 Meter Reading Operational Usage Point Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW	Max KW	Measure	DWA_MTR_RDNG_MO_UP.MAX_KW
TMXKW	Total KW Hour	Measure	DWA_MTR_RDNG_MO_UP.TOT_KWH
MXKW_LP	Max KW Last Period	Calculated Measure	LAG(OUSPMTRR.MXKW, 1) OVER (HIERARCHY "TIME".HTCLNDR)
MXKW_LY	Max KW Last Year	Calculated Measure	LAG(OUSPMTRR.MXKW, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD	Max KW YTD	Calculated Measure	SUM(OUSPMTRR.MXKW) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
MXKW_YTD_LY	MAX KW YTD Last Year	Calculated Measure	LAG(OUSPMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD_PCT_LY	MXKW YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(OUSPMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

**Table 9-15 (Cont.) Meter Reading Operational Usage Point Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
TKWH_LP	Total KWH Last Period	Calculated Measure	LAG(OUSPMTRR.TKWH, 1) OVER (HIERARCHY "TIME".HTCLNDR)
TKWH_LY	Total KWH Last Year	Calculated Measure	LAG(OUSPMTRR.TKWH, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD	Total KWH YTD	Calculated Measure	SUM(OUSPMTRR.TKWH) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
TKWH_YTD_LY	Total KWH YTD Last Year	Calculated Measure	LAG(OUSPMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD_PCT_LY	Total KWH YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(OUSPMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

## 9.1.6 Meter Reading Regional Usage Point Cube: RUSPMTRR

This cube stores the aggregate meter reading by different regions by month. This cube is based on dimensions, time, region, and meter.

**Physical Name:** RUSPMTRR

### Dimensions and Load Level

The fact data of Meter Reading Regional Usage Point Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-16 Meter Reading Regional Usage Point Cube Dimensions and Load Level**

Dimension Name	Load Level
Regional Usage Point	Regional Usage Point
Meter	Meter
Time	Calendar Month

### Aggregation Order/Operator

The Meter Reading Regional Usage Point Cube is aggregated by the order and operators on dimensions shown in [Table 9-17](#) (page 9-10).

**Table 9-17 Meter Reading Regional Usage Point Cube Aggregation and Order**

Dimension Name	Operator	Order
Time	Sum	1
Meter	Sum	2
Regional Usage Point	Sum	3

**Table 9-18 Meter Reading Regional Usage Point Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW	Max KW	Measure	DWA_MTR_RDNG_MO_UP.MAX_KW
TMXKW	Total KW Hour	Measure	DWA_MTR_RDNG_MO_UP.TOT_KWH
MXKW_LP	Max KW Last Period	Calculated Measure	LAG(RUSPMTRR.MXKW, 1) OVER (HIERARCHY "TIME".HTCLNDR)
MXKW_LY	Max KW Last Year	Calculated Measure	LAG(RUSPMTRR.MXKW, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD	Max KW YTD	Calculated Measure	SUM(RUSPMTRR.MXKW) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
MXKW_YTD_L Y	MAX KW YTD Last Year	Calculated Measure	LAG(RUSPMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD_P CT_LY	MXKW YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(RUSPMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_LP	Total KWH Last Period	Calculated Measure	LAG(RUSPMTRR.TKWH, 1) OVER (HIERARCHY "TIME".HTCLNDR)
TKWH_LY	Total KWH Last Year	Calculated Measure	LAG(RUSPMTRR.TKWH, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD	Total KWH YTD	Calculated Measure	SUM(RUSPMTRR.TKWH) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
TKWH_YTD_LY	Total KWH YTD Last Year	Calculated Measure	LAG(RUSPMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD_P CT_LY	Total KWH YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(RUSPMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

## 9.1.7 Meter Reading Customer Cube: CUSTMTRR

This cube stores the aggregate meter reading by different regions by month. This cube is based on dimensions, time, region, and meter.

**Physical Name:** CUSTMTRR

### Dimensions and Load Level

The fact data of Meter Reading Customer Cube will be loaded from the relational schema at these dimension levels (leaf level).

**Table 9-19 Meter Reading Customer Cube Dimensions and Load Level**

Dimension Name	Load Level
Customer	Customer
Meter	Meter
Time	Calendar Month

### Aggregation Order/Operator

The Meter Reading Customer Cube is aggregated by the order and operators on dimensions shown in [Table 9-20](#) (page 9-11).

**Table 9-20 Meter Reading Customer Cube Aggregation and Order**

Dimension Name	Operator	Order
Time	Sum	1
Customer	Sum	2
Meter	Sum	3

**Table 9-21 Meter Reading Regional Usage Point Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW	Max KW	Measure	DWA_MTR_RDNG_MO_CUST.TOT_KWH
TMKW	Total kilo watt hour	Measure	DWA_MTR_RDNG_MO_CUST.MAX_KW
MXKW_LP	Max KW Last Period	Calculated Measure	LAG(CUSTMTRR.MXKW, 1) OVER (HIERARCHY "TIME".HTCLNDR)
MXKW_LY	Max KW Last Year	Calculated Measure	LAG(CUSTMTRR.MXKW, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD	Max KW YTD	Calculated Measure	SUM(CUSTMTRR.MXKW) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)

**Table 9-21 (Cont.) Meter Reading Regional Usage Point Cube Description and Physical Columns**

Physical Name	Description	Measure Type	Physical Column
MXKW_YTD_LY	MAX KW YTD Last Year	Calculated Measure	LAG(CUSTMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
MXKW_YTD_P CT_LY	MXKW YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(CUSTMTRR.MXKW_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_LP	Total KWH Last Period	Calculated Measure	LAG(CUSTMTRR.TKWH, 1) OVER (HIERARCHY "TIME".HTCLNDR)
TKWH_LY	Total KWH Last Year	Calculated Measure	LAG(CUSTMTRR.TKWH, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD	Total KWH YTD	Calculated Measure	SUM(CUSTMTRR.TKWH) OVER HIERARCHY ("TIME".HTCLNDR BETWEEN UNBOUNDED PRECEDING AND CURRENT MEMBER WITHIN ANCESTOR AT LEVEL "TIME".CLNDR_YR)
TKWH_YTD_LY	Total KWH YTD Last Year	Calculated Measure	LAG(CUSTMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)
TKWH_YTD_PC T_LY	Total KWH YTD Percent Change Last Year	Calculated Measure	LAG_VARIANCE_PERCENT(CUSTMTRR.TKWH_YTD, 1) OVER HIERARCHY ("TIME".HTCLNDR BY ANCESTOR AT LEVEL "TIME".HTCLNDR.CLNDR_YR POSITION FROM BEGINNING)

# 10

## Oracle Utilities Data Model Data Mining Model

This chapter provides reference information about the data mining models provided with Oracle Utilities Data Model.

This chapter includes the following sections:

- [About Data Mining in Oracle Utilities Data Model](#) (page 10-1)
- [Oracle Utilities Data Model Mining Result Tables](#) (page 10-3)
- [Model 1: Customer Savings and Customer Profile by DR Program](#) (page 10-4)
- [Oracle Utilities Data Model Mining Setting Tables](#) (page 10-8)

### 10.1 About Data Mining in Oracle Utilities Data Model

Oracle Utilities Data Model data mining includes data mining intra-ETL package, data mining core package, source data views, apply data views, target tables, support tables, and setting tables. The source views are defined on source derived tables. These source views are used to train the models. The target tables contain the mining model rules and mining prediction results. Data mining core package builds mining models using data in source views as training data, and applies mining models on the data in apply views. Mining target tables are populated with mining model rules and prediction results. The data in the target tables can be presented in reports.

As shown in [Table 10-1](#) (page 10-1), the Oracle Utilities Data Model mining models use the specified algorithms for the specific mining problem.

**Table 10-1 Oracle Utilities Data Model Algorithm Used**

Model	Algorithms Used by Data Mining Model
<a href="#">Model 1: Customer Savings and Customer Profile by DR Program</a> (page 10-4)	Decision Tree (DT), Support Vector Machine (SVM)

- [Understanding the Mining Architecture](#) (page 10-1)  
Provides details on the architecture of data mining in Oracle Utilities Data Model.

#### 10.1.1 Understanding the Mining Architecture

Provides details on the architecture of data mining in Oracle Utilities Data Model.

[Figure 10-1](#) (page 10-3) shows the architecture of data mining in Oracle Utilities Data Model. Oracle Utilities Data Model schema, *oudm\_sys*, includes the following:

- Mining Model Source Views: Views defined on source derived table, *DWD\_CUST\_DR\_PROG\_PROFILE*. These views are used to train mining models.

- **Mining Model Apply Views:** Views defined on source derived tables, `DWD_CUST_DR_PROG_PROFILE`. These views are used to apply trained mining models.
- **Mining Model Support Tables:** Mining algorithm settings for different algorithms used in Oracle Utilities Data Model are stored in the support tables. These support tables start with "DM". Building a mining model creates few tables and views which start with "DM\$".

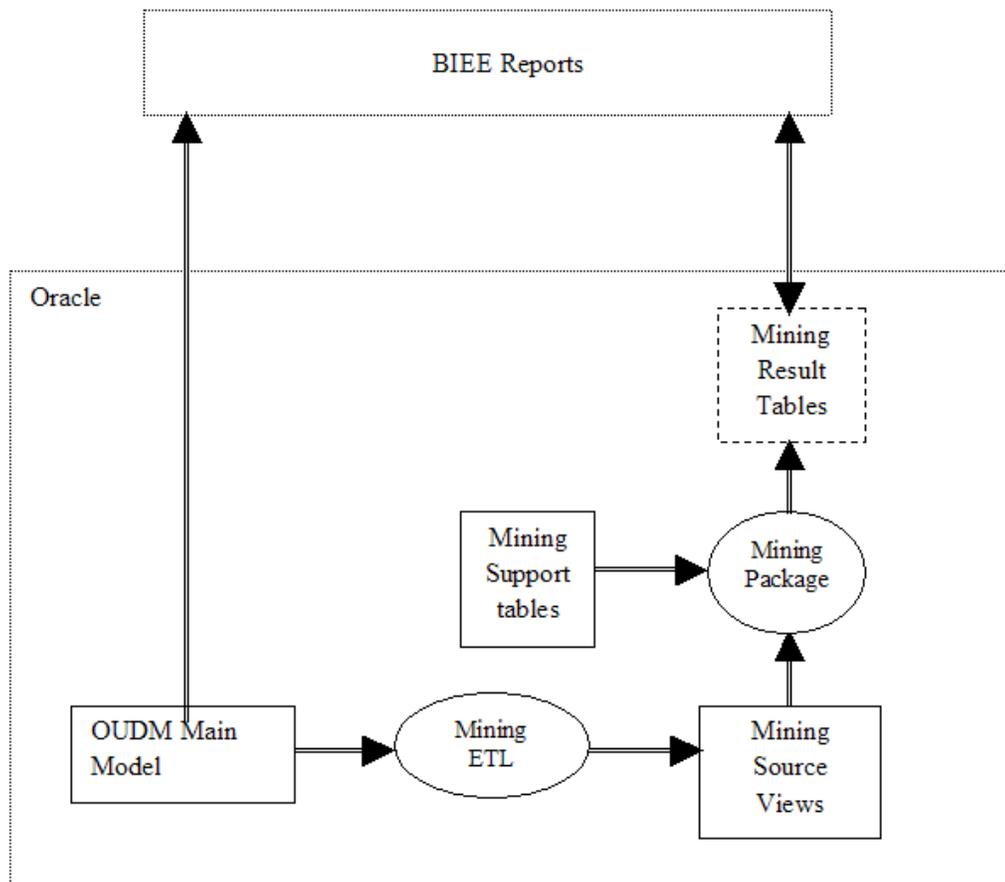


**Note:**

Do not delete tables and views that start with "DM" and "DM\$". Deleting "DM\$" tables and views would also delete the trained mining model.

- **Mining Model Target Tables:** Mining model target tables used for storing mining model rules and prediction results. Mining model rules are generated from the trained model and predictions results are produced when a trained model is applied on apply data.
- **Mining Model Core Package:** This is the core package for Oracle Utilities Data Model data mining. Each mining model has separate procedure in this package. Each procedure builds, tests, and applied mining model. It uses source views as training data, and applies trained model on apply views.

**Figure 10-1 Oracle utilities Data Model Mining Packages Tables and Views**



## 10.2 Oracle Utilities Data Model Mining Result Tables

Table 10-2 (page 10-3) shows the `DWR_CUST_SGMNT` table.

**Table 10-2 DWR\_CUST\_SGMNT Data Mining Model Details Table**

Name	Data Type	Description
DEMAND_RESPN_PROG_KEY	NUMBER(30)	Surrogate key of demand response program
CUST_SGMNT_KEY	NUMBER (30,0)	Surrogate key for customer segment
CUST_SGMNT_CD	VARCHAR2 (120)	Natural key for customer segment
CUST_SGMNT_MDL_KEY	NUMBER (30,0)	Customer segment model key
PRNT_CUST_SGMNT_KEY	NUMBER (30,0)	Parent segment key
CUST_SGMNT_NAME	VARCHAR2 (400)	Customer segment name
SGMNT_CRTRA_KEY	NUMBER (30,0)	Segment criteria key
CUST_SGMNT_DSCR	VARCHAR2 (1000)	Customer segment description

**Table 10-2 (Cont.) DWR\_CUST\_SGMNT Data Mining Model Details Table**

Name	Data Type	Description
IS_LEAF_IND	CHAR (1)	Indicates whether the node is a leaf indicator. The prediction of lead node is the final prediction
TREE_LVL	NUMBER (4,0)	Tree level
SGMNT_DISPRSN	VARCHAR2 (500)	Segment dispersion, which is also known as intra cluster distance
SPPRTG_REC_CNT	NUMBER (16,0)	Supporting record count - number of customers in the segment
STAT_CD	VARCHAR2 (120)	Status code of the record
EFF_FROM_DT	DATE	Effective from date
EFF_TO_DT	DATE	Effective to date

Table 10-2 (page 10-3) shows the DWR\_CUST\_SGMNT\_DTL table.

**Table 10-3 DWR\_CUST\_SGMNT\_DTL Data Mining Model Details Table**

Name	Data Type	Description
DEMAND_RESPN_PROG_KEY	NUMBER(30)	Surrogate key of demand response program
SGMNT_ID	NUMBER	Customer segment Identifier
ATTRIBUTE_NAME	VARCHAR2(4000)	Name of customer attribute
MEAN	NUMBER	Mean of the customer attribute if the attribute is numeric
MODE_VALUE	VARCHAR2(4000)	Model of the customer attribute if the attribute is categorical

## 10.3 Model 1: Customer Savings and Customer Profile by DR Program

Customers can reduce their usage by participating in a Demand Response (DR) program. The utility company needs to let customers know the savings the customer can obtain by participating in the demand response program. For this purpose, there is the need to segment whole customer population in two steps.

- **STEP1: Segmentation Using Oracle Data Mining Clustering Algorithm (page 10-5)** based on customers' demographic attributes. This will be done using Oracle Data Mining clustering algorithm (K-means or Hierarchical clustering)
- **STEP2 Segmentation and Customer Saving Calculation (page 10-8)** For each STEP1 segment, segment based on customers' participation in DR programs:
  - Customers participating in DR programs.
  - Customers not participating in DR programs.

For each segment in STEP1, determine the average actual usage of customers not participating in DR program during the time of DR program instance; let us call it

*Average actual usage of non participants.* In the same segment, for each participant customer determine delta (**Average actual usage of non participants - customer actual usage**) as a percentage of **Average actual usage of non participants** during the time of DR program instance.

**%saving = 100\*(Average actual usage of non participants - customer actual usage)/Average actual usage of non participants**

"%saving" measure gives the energy saved by customer during the time of DR program instance due to participation.

- [STEP1: Segmentation Using Oracle Data Mining Clustering Algorithm](#) (page 10-5)
- [STEP2 Segmentation and Customer Saving Calculation](#) (page 10-8)

### 10.3.1 STEP1: Segmentation Using Oracle Data Mining Clustering Algorithm

In this segmentation, the complete customer population is segmented into a predefined number of segments using customers' demographic attributes. By default, Oracle Data Mining chooses K-Means algorithm as the clustering function and 10 as number of segments. The default settings can be overridden using a setting a table.

[Table 10-4](#) (page 10-5) shows the structure of source table, which is used as training data.

**Table 10-4 DWD\_CUST\_DR\_PROG\_PROFILE**

Attribute Name	Description	Column Name	Source Table	Mapping
Customer Key	Customer Identifier	CUST_KEY	DWR_CUST	CUST_KEY
Demand Response Program Key	DR program Identifier	DEMAND_RESPN_P ROG_KEY	No value	No value
DEMOGRAPHIC ATTRIBUTES	No value	No value	No value	No value
Customer Kind	Kind of Customer	CUST_KIND_CD	DWR_CUST	CUST_KIND_CD
Customer Type	Type of customer. For example: Industrial, Commercial, Residential	CUST_TYP_CD	DWR_CUST	CUST_TYP_CD
Dwelling Type	Facility Type	DWLNG_TYP	DWR_CUST	DWLNG_TYP
Dwelling Status	Facility Status	DWLNG_STAT	DWR_CUST	DWLNG_STAT
Dwelling Size	Facility Size	DWLNG_SZ	DWR_CUST	DWLNG_SZ
Dwelling Tenure	Facility Tenure	DWLNG_TENR	DWR_CUST	DWLNG_TENR
Income Group	Income Group	INCM_GRP	DWR_HH	INCM_GRP
Number of Children	Number of children in the household	NBR_OF_CHLDRN	DWR_HH	NBR_OF_CHLDRN
Number of Teens	Number of teens in the household	NBR_OF_TEENS	DWR_HH	NBR_OF_TEENS

Table 10-4 (Cont.) DWD\_CUST\_DR\_PROG\_PROFILE

Attribute Name	Description	Column Name	Source Table	Mapping
Number of Adults	Number of adults in the household	NBR_OF_ADLTS	DWR_HH	NBR_OF_ADLTS
Number of Seniors	Number of seniors in the household	NBR_OF_SNRS	DWR_HH	NBR_OF_SNRS
Number of Persons	Number of persons in the household	NBR_OF_PRSN	DWR_HH	NBR_OF_PRSN
Number of Earners	Number of earners in the household	NBR_OF_ERNR	DWR_HH	NBR_OF_ERNR
Business Legal Status	The legal status of the company. For example: Public, Private, and so on.	BSNS_LEGAL_STAT_CD	DWR_CUST	BSNS_LEGAL_STAT_CD
Customer Revenue Band	Customer Revenue Band	CUST_RVN_BND_CD	DWR_CUST	CUST_RVN_BND_CD (Derive it from payment and cost)
Nationality	Nationality	NTNLTY_CD	DWR_CUST	NTNLTY_CD
Education	Education Qualification	EDU_CD	DWR_CUST	EDU_CD
Marital Status	Marital Status	MRTL_STAT_CD	DWR_CUST	MRTL_STAT_CD
Gender	Gender	GNDR_CD	DWR_CUST	GNDR_CD
Job Position	Job Position	JB_POSN	DWR_CUST	JB_POSN
Annual Revenue	Annual Revenue	ANNUAL_RVN	DWR_CUST	ANNUAL_RVN (o for residential customers)
Annual Sales	Annual Sales	ANNUAL_SL	DWR_CUST	ANNUAL_SL (o for residential customers)
Equity Amount	Equity Amount	EQTY_AMT	DWR_CUST	EQTY_AMT (o for residential customers)
City	City	CITY	DWR_CUST	CITY
State	State	STATE	DWR_CUST	STATE
Country	Country	COUNTRY	DWR_CUST	COUNTRY
Ethnic Background	Ethnic Background	ETHNIC_BCKGRND	DWR_CUST	ETHNIC_BCKGRND
Source of Income	Source of Income	SRC_OF_INCM	DWR_CUST	SRC_OF_INCM
Special Need	Special Need	SPL_NEED	DWR_CUST	SPL_NEED
Economically Active Indicator	Economically Active Indicator	ECNMCLY_ACTV_IND	DWR_CUST	ECNMCLY_ACTV_IND
Domestic Indicator	Domestic company Indicator	DMSTC_IND	DWR_CUST	DMSTC_IND
Mail Allowed Indicator	Mail Allowed Indicator	MAIL_ALWD_IND	DWR_CUST	MAIL_ALWD_IND
Third Party Marketing Allowed Indicator	Third Party Marketing Allowed Indicator	THIRD_PRTY_MKTG_ALWD_IND	DWR_CUST	THIRD_PRTY_MKTG_ALWD_IND

**Table 10-4 (Cont.) DWD\_CUST\_DR\_PROG\_PROFILE**

Attribute Name	Description	Column Name	Source Table	Mapping
Customer Payment Responsible Indicator	Customer Payment Responsible Indicator	CUST_PYMT_RESPBL_IND	DWR_CUST	CUST_PYMT_RESPBL_IND
VIP	VIP Flag	VIP	DWR_CUST	VIP
<b>TARGET/OUTPUT ATTRIBUTES</b>	No value	No value	No value	No value
Customer Segment Code	Customer Segment Code	CUST_SGMNT_CD	No value	No value
<b>TECHNICAL QUALITY</b>	No value	No value	No value	No value
Creation Date	Date when this record is created	CREATED_DT	SYSDATE	No value
Created By	User who created this record	CREATED_BY	USER	No value
Updated Date	Date when this record updated	UPDATE_DT	SYSDATE	No value
Updated By	User who updated this record	UPDATE_BY	USER	No value
Effective from Date	Date from when this record is effective	EFF_FROM_DT	SYSDATE	No value
Effective to Date	Date until when the record is effective	EFF_TO_DT	NULL	No value
Current Indicator	Whether this record is current or not. 'Y' - Yes, 'N' - No	CURR_IND	'Y'	No value
Status Code	Status of this record. 'A' - Active, 'I' - Inactive	STAT_CD	'A'	No value

- [Algorithms Used](#) (page 10-7)
- [Algorithm Setting Table](#) (page 10-7)

### 10.3.1.1 Algorithms Used

Following algorithm is used to segment customers:

- K-Means

### 10.3.1.2 Algorithm Setting Table

DM\_STNG\_CUST\_PROFILE is the setting table used for STEP1 segmentation using Oracle Data Mining segmentation algorithm. Following table shows the different settings used:

Table 10-5 (page 10-8) shows setting values for STEP1 segmentation.

**Table 10-5 Setting Values for STEP1 Segmentation**

SETTING_NAME	SETTING_VALUE
DBMS_DATA_MINING.ALGO_NAME	ALGO_KMEANS
DBMS_DATA_MINING.KMNS_DISTANCE	KMNS_EUCLIDEAN
DBMS_DATA_MINING.KMNS_ITERATIONS	4
DBMS_DATA_MINING.CLUS_NUM_CLUSTERS	5

## 10.3.2 STEP2 Segmentation and Customer Saving Calculation

As mentioned earlier, each STEP1 segment can have both DR program participant customers and non-participant customers. Each STEP1 segment is further segmented into two segments using customer participation indicator; that is, one sub-segment for participant customers and the other sub-segment for non-participant customers.

For each STEP1 segment:

- Calculate the average of actual usage of non-participant customers during the DR program, let us call it **Average actual usage of non participants**
- For each participant customer, compute **%saving** as follows:

**%saving =**

$$100 * \frac{(Average\ actual\ usage\ of\ non\ participants - customer\ actual\ usage)}{Average\ actual\ usage\ of\ non\ participants}$$

For each participant customer, PERCNT\_CUST\_SAVNG column in mining target table DWD\_CUST\_DR\_PROG\_PROFILE is updated with the calculated **%saving**.

## 10.4 Oracle Utilities Data Model Mining Setting Tables

Use the algorithm settings tables to override default values of different settings of mining algorithms.

The following two setting tables have the same structure:

- DM\_STNG\_USER\_ALL
- DM\_STNG\_PROFILE\_KMEANS

Table 10-6 (page 10-8) shows the structure of the two setting tables.

**Table 10-6 Data Mining Setting Table**

Name	Data Type	Description
SETTING_NAME	VARCHAR2(500)	Setting Name
SETTING_VALUE	VARCHAR2(500)	Setting Value

# 11

## Oracle Utilities Data Model Utility Scripts

This chapter describes the Oracle Utilities Data Model utility scripts.

This chapter includes the following sections:

- [Calendar Population](#) (page 11-1)

### 11.1 Calendar Population

The Calendar population scripts consist of two one-time installation packages.

- [Calendar Population Scripts](#) (page 11-1)
- [Populating Calendar Data](#) (page 11-1)

#### 11.1.1 Calendar Population Scripts

The Calendar population scripts include the following packages:

- `calendar_population_header.sql`
- `calendar_population_body.sql`

Running these packages does the following:

1. Prepares necessary changes for the OUDM\_SYS schema.
2. Creates the Calendar\_Population package that contains the following procedures:
  - `RUN(in_setup_start_date, in_setup_no_years)` is the main procedure to populate everything about calendar.
  - `RBIW_Populate_Time_Hier_Clnr(in_setup_start_date, in_setup_no_years)` sets up the data in base table for the Calendar hierarchy as specified in setup or install section.
  - `RBIW_Time_hier_Star` sets up the Time hierarchy reporting layer tables.

#### 11.1.2 Populating Calendar Data

To populate calendar data:

1. Log in to OUDM\_SYS user.
2. Execute the following SQL statement:

```
exec Calendar_Population.run(date,num_years);
```

where, *date* is the start date with which you want to populate calendar data. It is of type CHAR and should be input in the format 'YYYY-MM-DD' (for example, '2005-05-18'). *num\_years* is the number of years to populate calendar data, which should be INTEGER.

# Part III

## Sample Reports Users, Roles, and Metadata

This part includes information on Oracle Utilities Data Model sample reports and setting up users and roles.

Part III contains the following chapters:

- [Oracle Utilities Data Model Sample Reports](#) (page 12-1)
- [Oracle Utilities Data Model Users and Application Roles](#) (page 13-1)
- [Metadata Collection and Reports](#) (page 14-1)

# 12

## Oracle Utilities Data Model Sample Reports

This chapter provides Oracle Utilities Data Model sample reports.

### Note:

Some of the reports shown may appear incomplete. The sample reports shown use manually generated data, and for data privacy and regulatory reasons, it shows only made up customers (with real data). Hence, if you notice data inconsistency between the reports, this is not due to Oracle Utilities Data Model, but due to the sample data.

The reports shown in this chapter appear as shown when you install Oracle Utilities Data Model with the sample data.

This chapter includes the following sections:

- [Credit and Collection Sample Reports](#) (page 12-1)
- [Demand Response \(DR\) Sample Reports](#) (page 12-3)
- [Meter Data Analysis Sample Reports](#) (page 12-3)
- [Outage Analysis Sample Reports](#) (page 12-17)
- [Revenue Protection Sample Reports](#) (page 12-30)
- [Load Analysis Sample Reports](#) (page 12-41)
- [OLAP Sample Reports](#) (page 12-44)

## 12.1 Credit and Collection Sample Reports

- [Top N Arrear Accounts](#) (page 12-1)

### 12.1.1 Top N Arrear Accounts

This area includes the report:

- [Top N Arrear Accounts](#) (page 12-1)

#### 12.1.1.1 Top N Arrear Accounts

This report, as shown in [Figure 12-1](#) (page 12-2) provides the total arrear amounts by month and the top 100 accounts with the highest 31+ days arrears amount in the selected month.

Report dimensions are:

- Calendar Month
- Customer

Figure 12-1 Credit and Collection: Top N Arrear Accounts Sample Report (top)

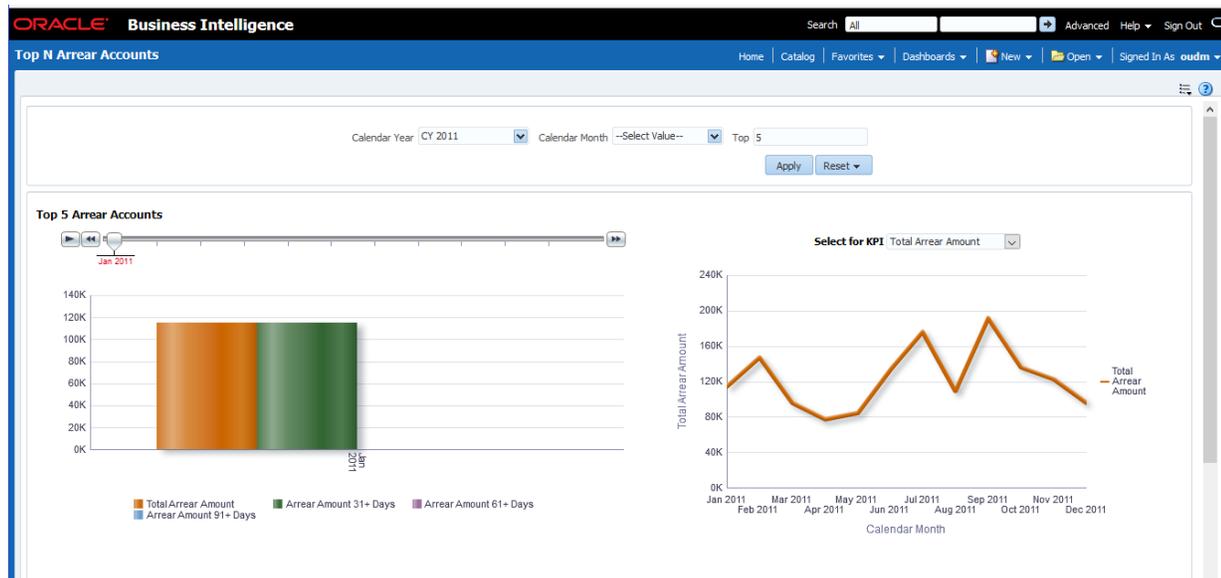


Figure 12-2 Credit and Collection: Top N Arrear Accounts Sample Report (bottom)

Calendar Month	Customer	Total Arrear Amount	Arrear Amount 31+ Days	Arrear Amount 61+ Days	Arrear Amount 91+ Days
Jan 2011	Delora Burtns	38,437	38,437	0	0
	Tobey Maddox	22,532	22,532	0	0
	Talia Obrien	20,764	20,764	0	0
	Theodorick Poe	16,788	16,788	0	0
	Marcella Ingold	15,904	15,904	0	0
Feb 2011	Caland Cowl	13,568	13,568	0	0
	Delora Walker	13,567	13,567	0	0
	Bartholomew Greeley	11,972	11,972	0	0
	Chitra Haberstroh	11,972	11,972	0	0
	Nicholas Zwolinsky	11,972	11,972	0	0
	Pavani Krishnan	11,972	11,972	0	0
	Psyche Orm	11,972	11,972	0	0
	Thurlow Salvadore	11,972	11,972	0	0
	Ulysses Luke	11,972	11,972	0	0
	Ulysses Oddell	11,972	11,972	0	0
	Valentina Gottlieb	11,972	11,972	0	0
	Zenas Tavener	11,972	11,972	0	0
	Mar 2011	Cal Yang	22,973	22,973	0
Delora Pack		20,764	20,764	0	0
Morris Mulligan		18,555	18,555	0	0
Barrett Feathers		16,788	16,788	0	0
Apr 2011	Merrell Fepoi	16,788	16,788	0	0
	Delora Walker	18,812	18,812	0	0
	Maxwell Jessup	16,247	16,247	0	0
	Bert Faimon	14,537	14,537	0	0

Rows 1 - 25  
[Refresh](#) - [Export](#)

## 12.2 Demand Response (DR) Sample Reports

The demand response (DR) sample reports include the following areas:

- [Customer Savings by Demand Response \(DR\) Program](#) (page 12-3)

### 12.2.1 Customer Savings by Demand Response (DR) Program

This area includes the report:

- [Available Load Reduction by Program](#) (page 12-3)

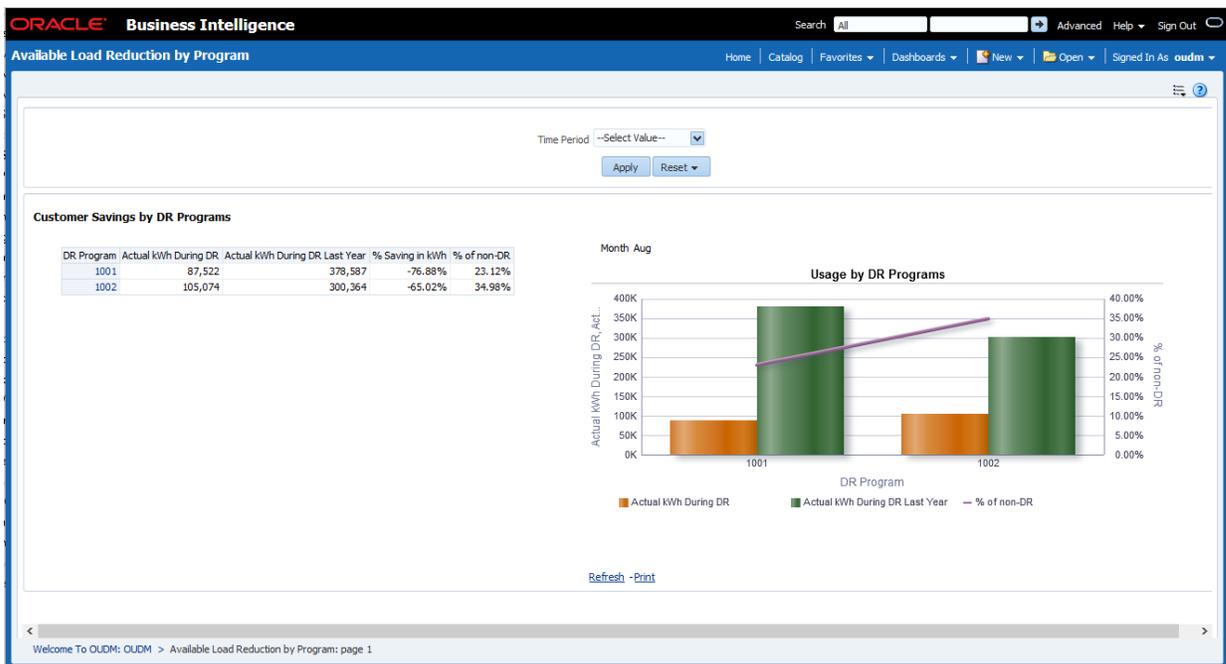
#### 12.2.1.1 Available Load Reduction by Program

This report, as shown in [Figure 12-3](#) (page 12-3) provides the available load reduction for a given time by program.

Report dimensions are:

- Day
- Demand Response Program

**Figure 12-3 Demand Response: Available Load Reduction by Program Sample Report**



## 12.3 Meter Data Analysis Sample Reports

The meter data analysis sample reports include the following areas:

- [Top N Customer by Usage](#) (page 12-4)

- [Monthly Usage Season Profile](#) (page 12-5)
- [Usage Season Profile](#) (page 12-7)
- [Monthly Total Usage](#) (page 12-9)
- [Low Usage by Usage Point](#) (page 12-12)
- [Time of Use Usage Profile](#) (page 12-13)
- [TOU Usage Trend](#) (page 12-14)
- [Top N Customer with Usage Change](#) (page 12-15)
- [Customer Count by Usage Grouping](#) (page 12-16)

## 12.3.1 Top N Customer by Usage

- [Top N Customers by Usage](#) (page 12-4)

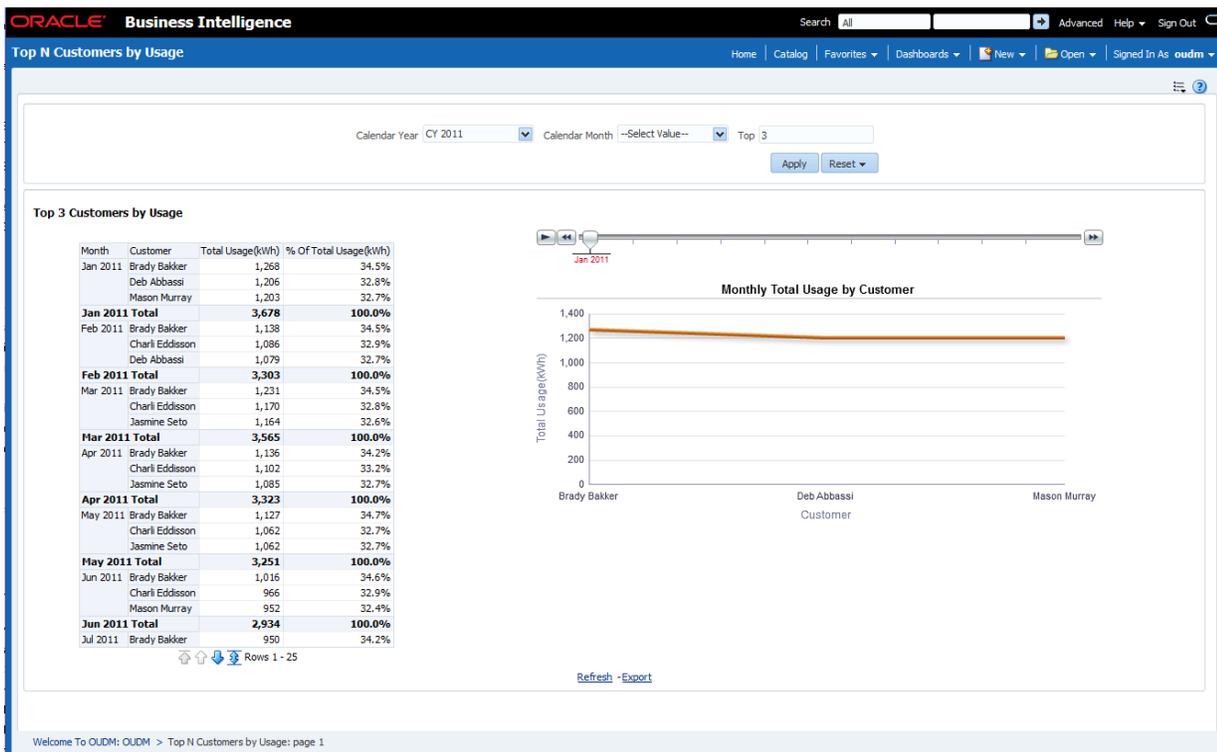
### 12.3.1.1 Top N Customers by Usage

This report, as shown in [Figure 12-4](#) (page 12-4) provides the top 50 customers based on total usage in a given time period.

Report dimensions are:

- Calendar Month
- Customer

**Figure 12-4 Meter Data Analysis: Top N Customers by Usage Sample Report**



## 12.3.2 Monthly Usage Season Profile

- [Season Monthly Usage by Geographical Zones Report](#) (page 12-5)
- [Monthly Usage Season Profile by Operational Zones Report](#) (page 12-6)

### 12.3.2.1 Season Monthly Usage by Geographical Zones Report

This report as shown in [Figure 12-5](#) (page 12-6) shows the average difference between summer and winter monthly usage during the selected year.

Report dimensions are:

- Calendar Month
- Geographical Zones
  - Usage Point
  - City
  - State

Figure 12-5 Meter Data Analysis: Season Monthly Usage by Geographical Zones



### 12.3.2.2 Monthly Usage Season Profile by Operational Zones Report

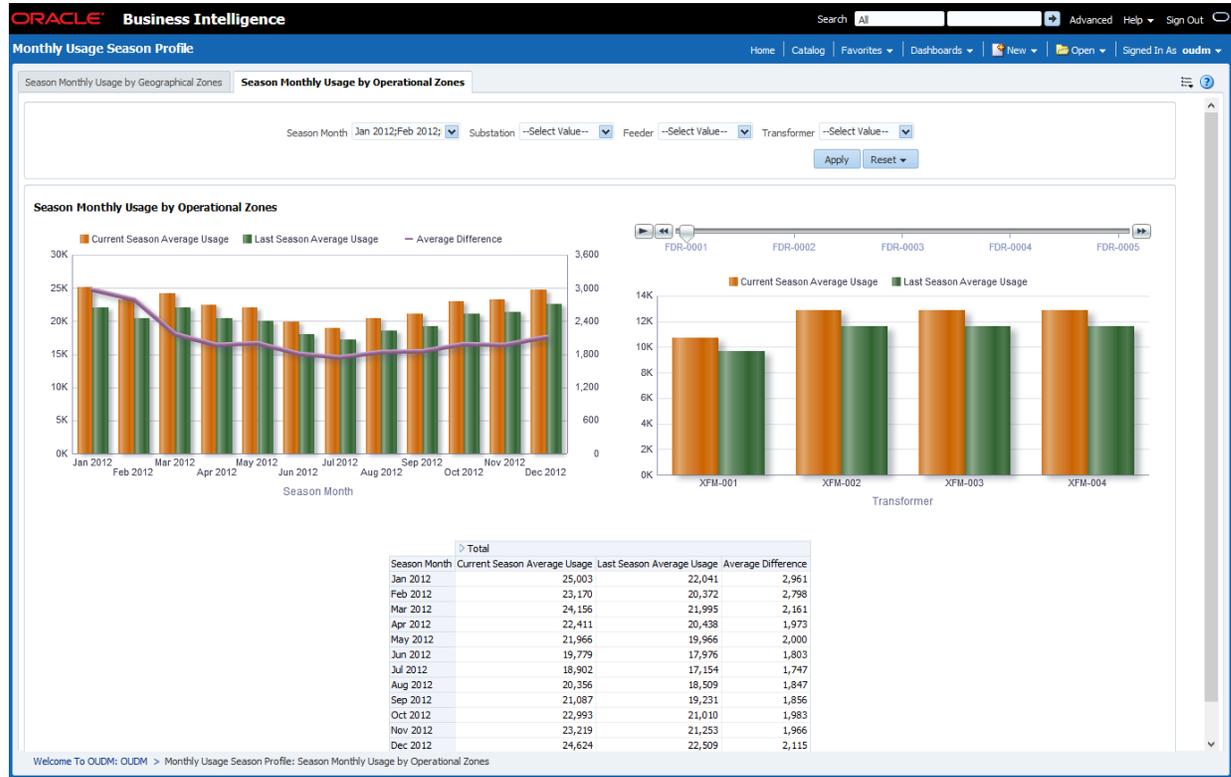
This report as shown in [Figure 12-6](#) (page 12-7) shows the average difference between summer and winter monthly usage during the selected year.

Report dimensions are:

- Calendar Month
- Operational
  - Usage Point
  - Transformer
  - Feeder

– Substation

**Figure 12-6 Meter Data Analysis: Monthly Usage Season Profile by Operational Zones Report**



### 12.3.3 Usage Season Profile

- [Usage Season Profile by Operational Zones](#) (page 12-7)
- [Usage Season Profile by Geographical Zones](#) (page 12-8)

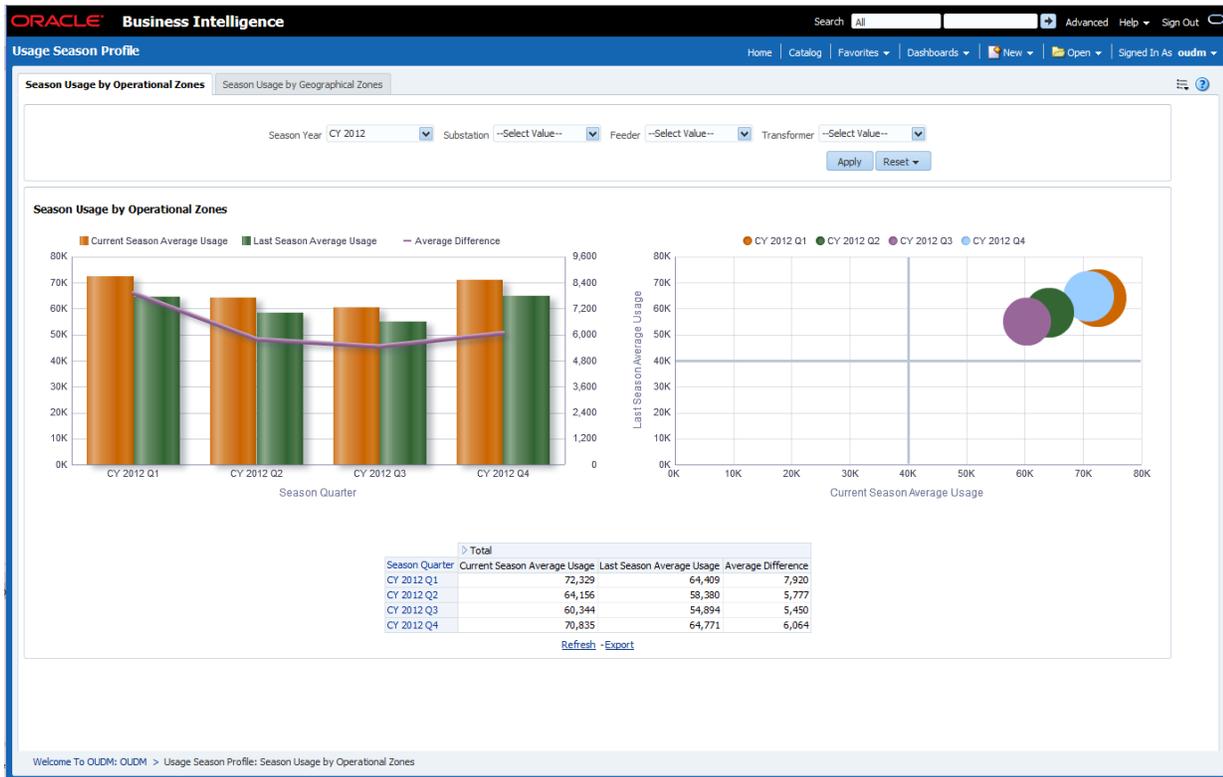
#### 12.3.3.1 Usage Season Profile by Operational Zones

This report, as shown in [Figure 12-7](#) (page 12-8) provides the average difference between summer and winter daily usage during the selected year.

Report dimensions are:

- Calendar
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-7 Meter Data Analysis: Usage Season Profile by Operational Zones



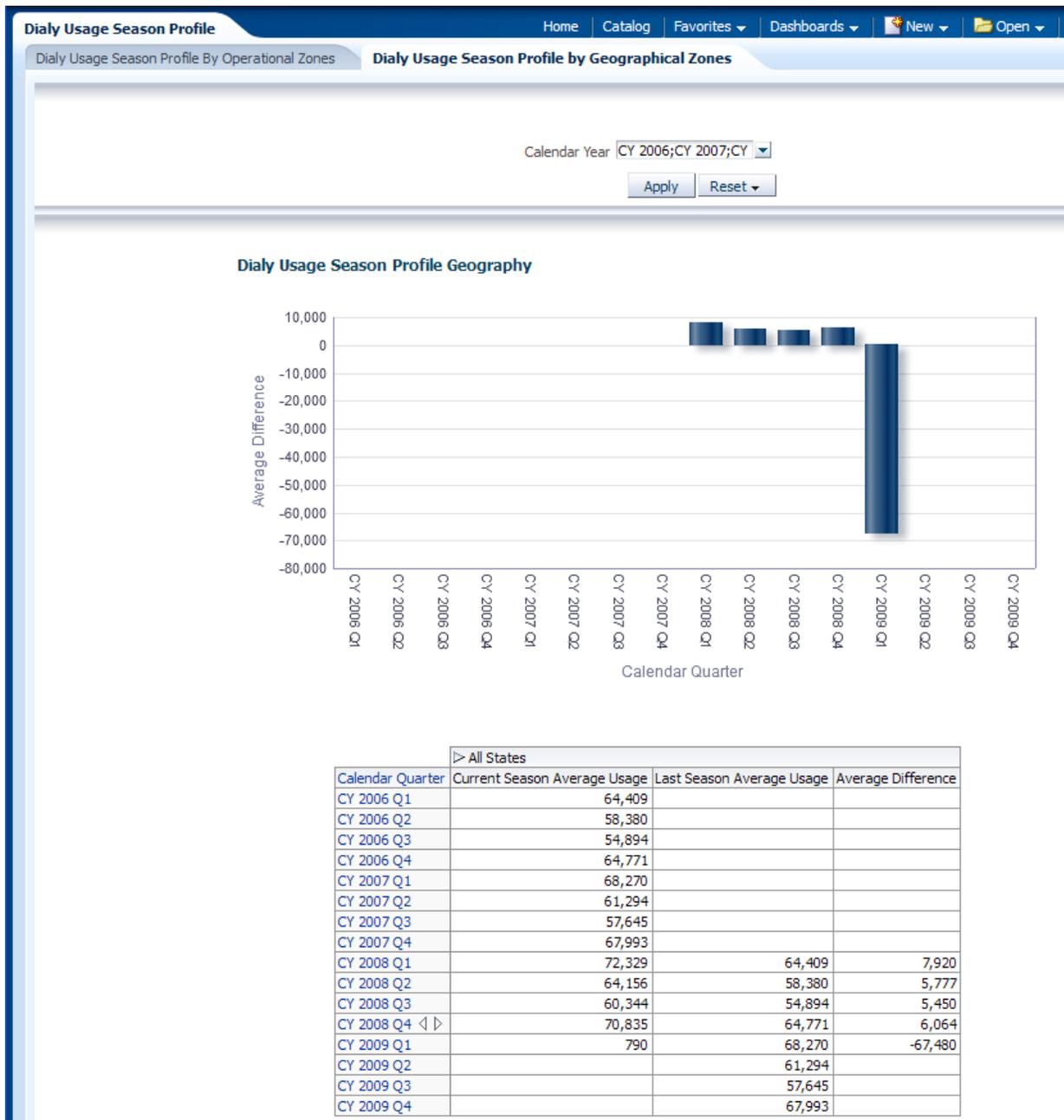
### 12.3.3.2 Usage Season Profile by Geographical Zones

This as shown in Figure 12-8 (page 12-9) provides the average difference between summer and winter daily usage during the selected year.

Report dimensions are:

- Calendar Month
- Day
- Geographical Zones
  - Usage Point
  - City
  - State

Figure 12-8 Meter Data Analysis: Usage Season Profile by Geographical Zones Report



### 12.3.4 Monthly Total Usage

- [Operational Monthly Usage](#) (page 12-10)
- [Regional Monthly Usage](#) (page 12-10)
- [Geographical Monthly Usage](#) (page 12-11)

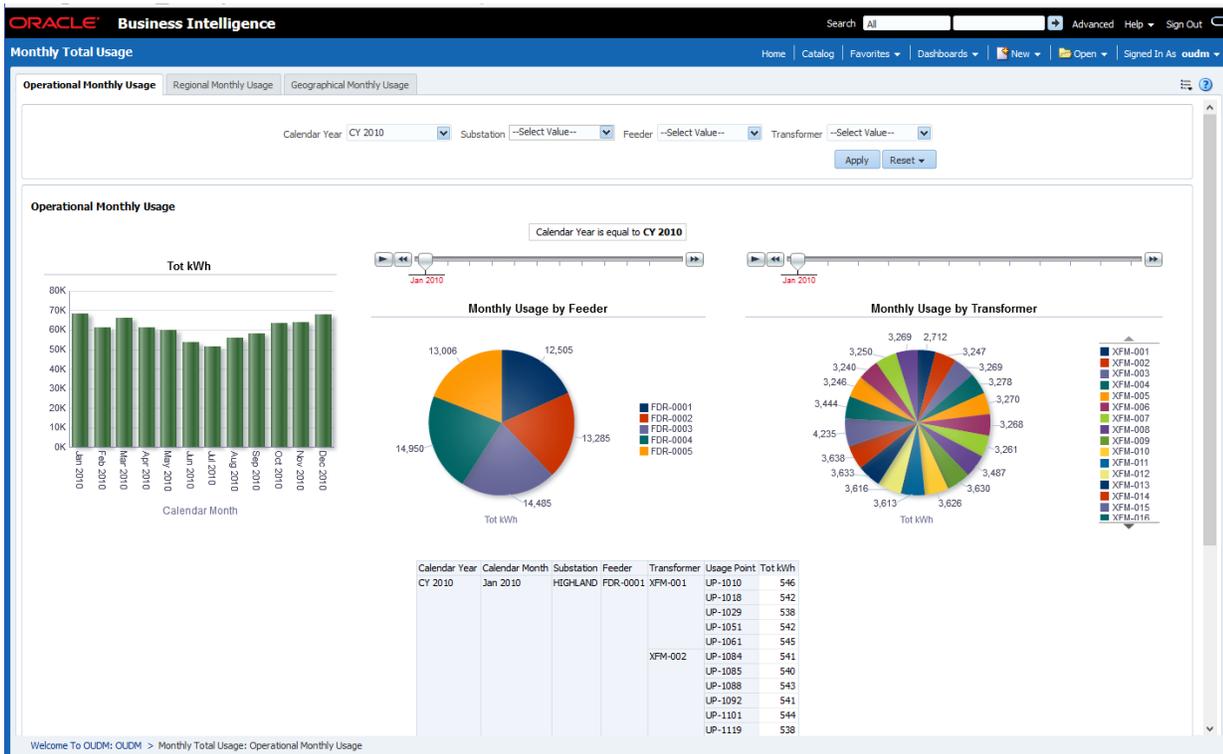
### 12.3.4.1 Operational Monthly Usage

This report, as shown in [Figure 12-9](#) (page 12-10) provides monthly total usage.

Report dimensions are:

- Calendar Month
  - Usage Point
  - Transformer
  - Feeder
  - Substation

**Figure 12-9** Meter Data Analysis: Monthly Total Usage Operational Monthly Usage Report



### 12.3.4.2 Regional Monthly Usage

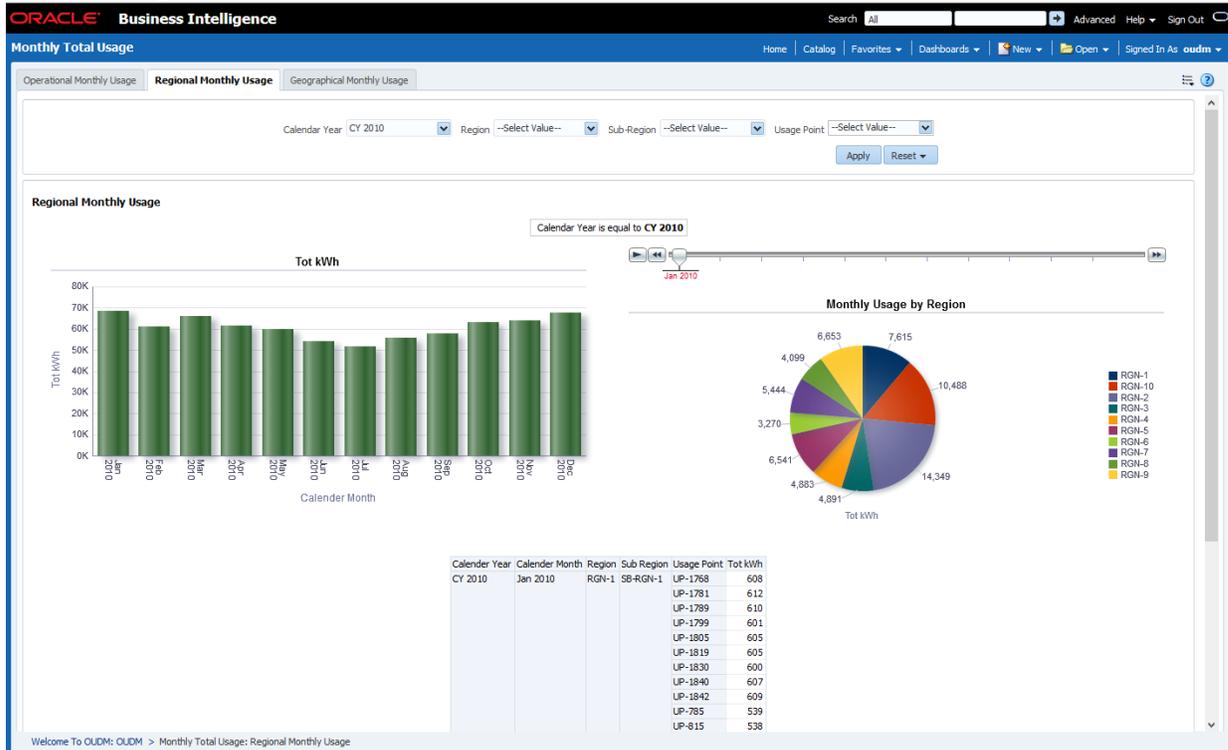
This as shown in [Figure 12-10](#) (page 12-11) provides monthly total usage.

Report dimensions are:

- Calendar Month
  - Usage Point
- Regional Zones

- Region
- Subregion

**Figure 12-10 Meter Data Analysis Monthly Total Usage: Regional Monthly Usage**



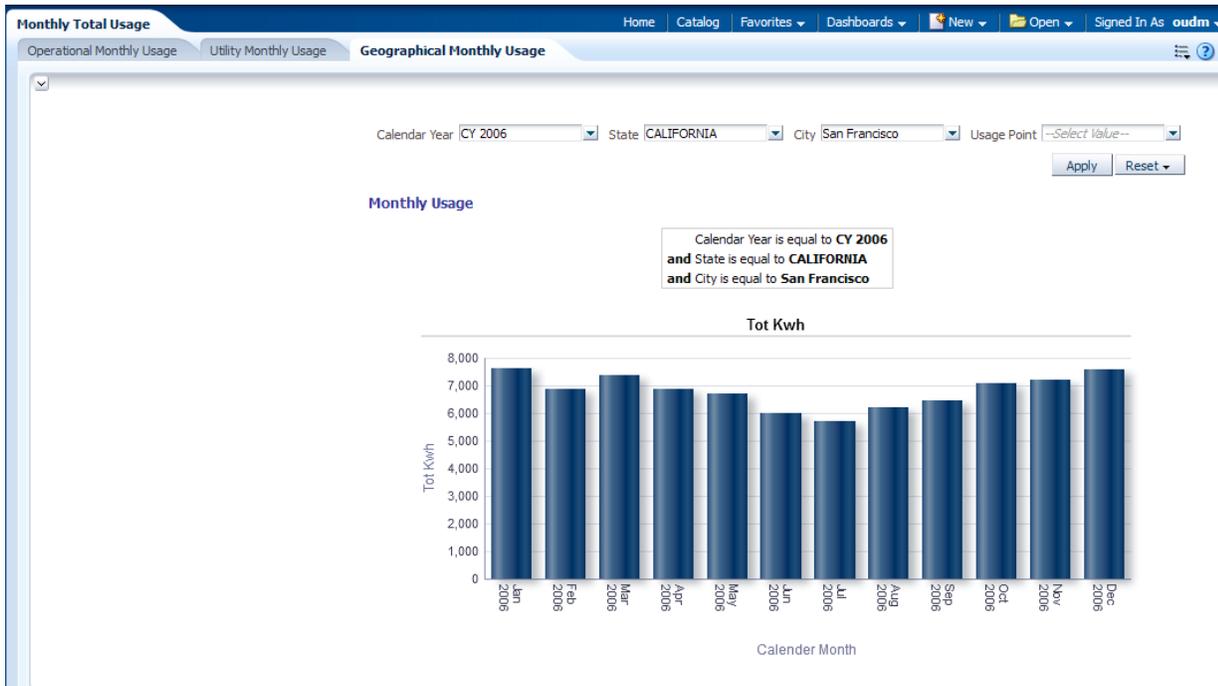
### 12.3.4.3 Geographical Monthly Usage

This as shown in [Figure 12-11](#) (page 12-12) provides geographical monthly usage.

Report dimensions are:

- Calendar Month
- Geographical Zones
  - Usage Point
  - City
  - State

Figure 12-11 Meter Data Analysis: Daily Usage Season Profile by Geographical Zones Report



## 12.3.5 Low Usage by Usage Point

- [Low Usage by Usage Point](#) (page 12-12)

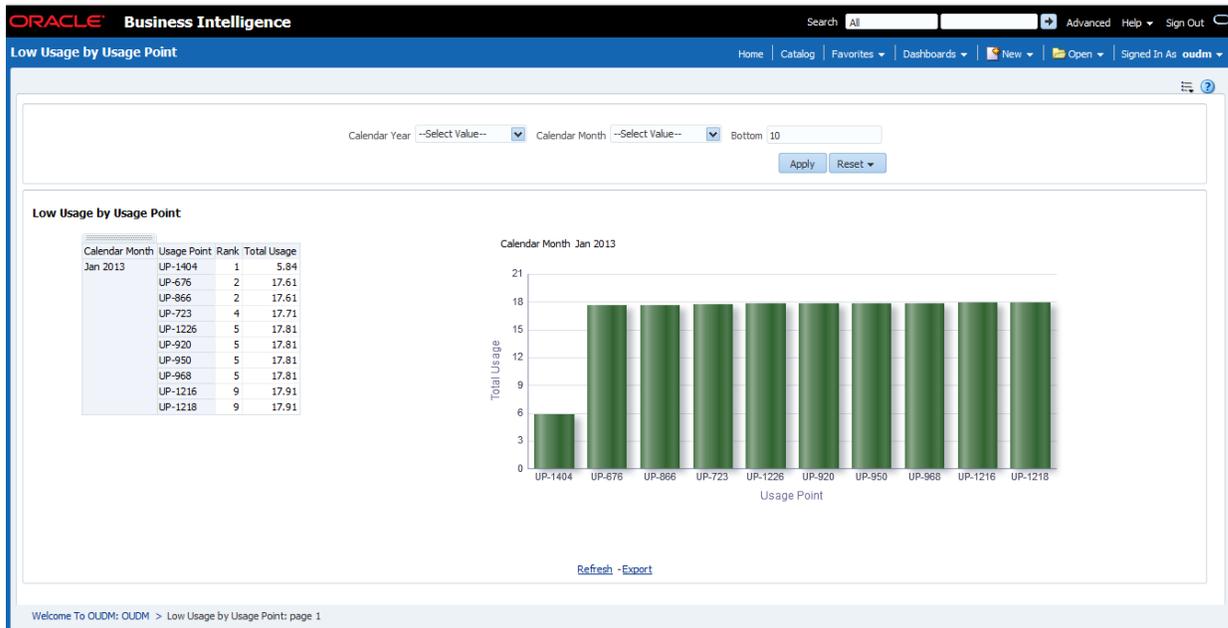
### 12.3.5.1 Low Usage by Usage Point

This report, as shown in [Figure 12-12](#) (page 12-13) identifies service points with lowest consumption for the selected month.

Report dimensions are:

- Calendar Month
- Usage Point

**Figure 12-12 Meter Data Analysis: Low Usage by Usage Point**



## 12.3.6 Time of Use Usage Profile

- [Time of Use Usage Profile](#) (page 12-13)

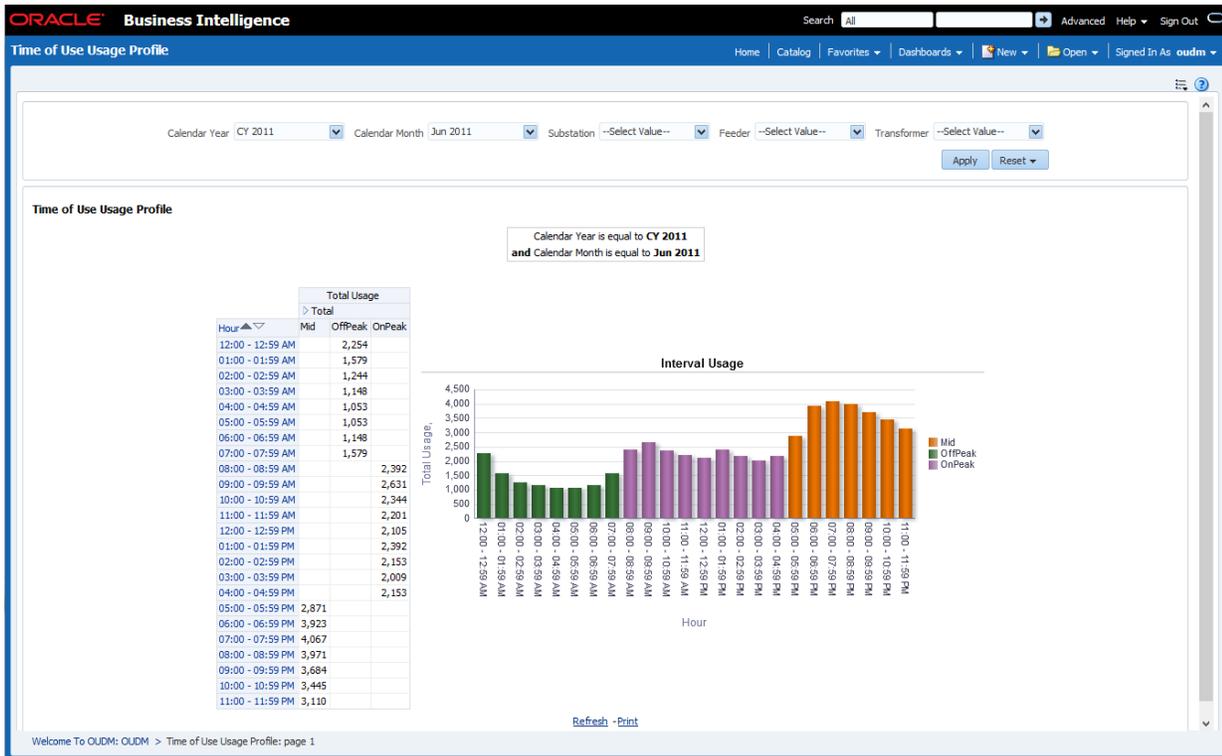
### 12.3.6.1 Time of Use Usage Profile

This report, as shown in [Figure 12-13](#) (page 12-14) provides Time of Use (TOU) mapped measurement quantities over a given period at interval detail level (Hour).

Report dimensions are:

- Calendar Month
- Day
- Hour
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation
- Time of Use

Figure 12-13 Meter Data Analysis: Time of Use Usage Profile



### 12.3.7 TOU Usage Trend

- [Time of Use Usage Trend](#) (page 12-14)

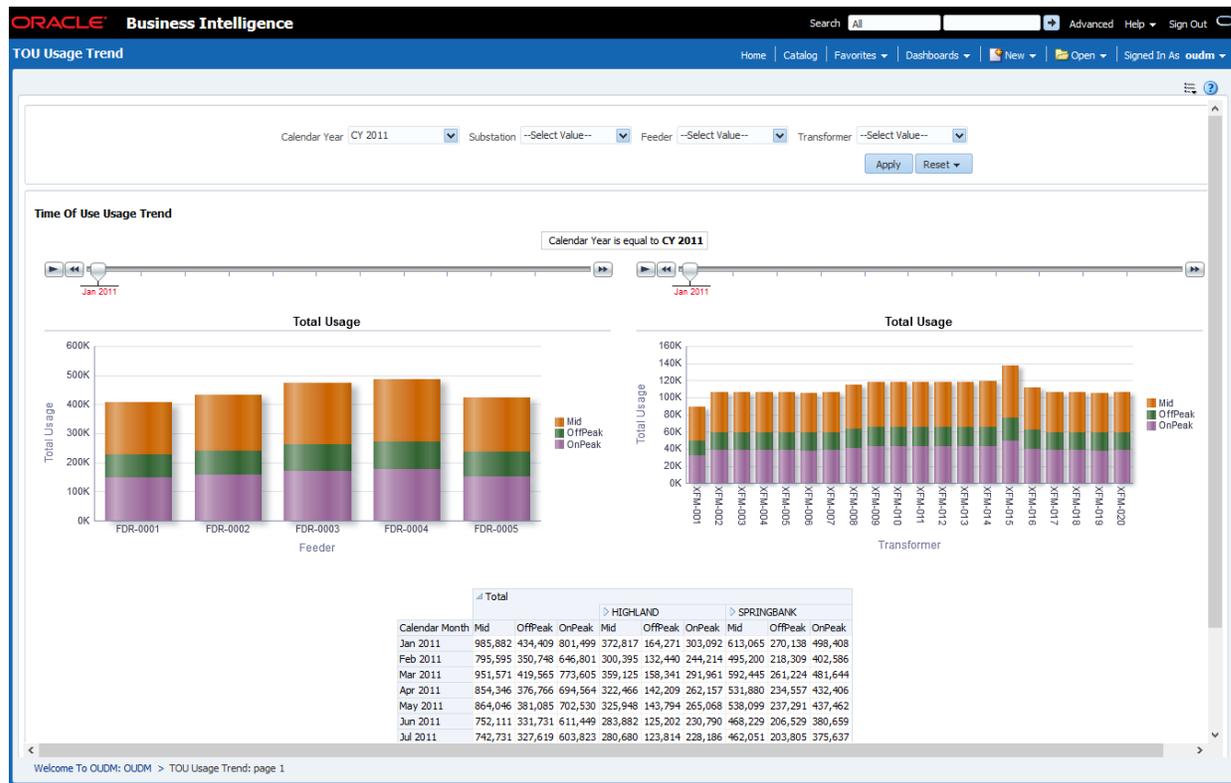
#### 12.3.7.1 Time of Use Usage Trend

This report, as shown in [Figure 12-14](#) (page 12-15) month usage trend by TOU period.

Report dimensions are:

- Calendar Month
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation
- Time of Use

Figure 12-14 Meter Data Analysis: Time of Use Usage Trend



## 12.3.8 Top N Customer with Usage Change

- [Top N Customer with Usage Change](#) (page 12-15)

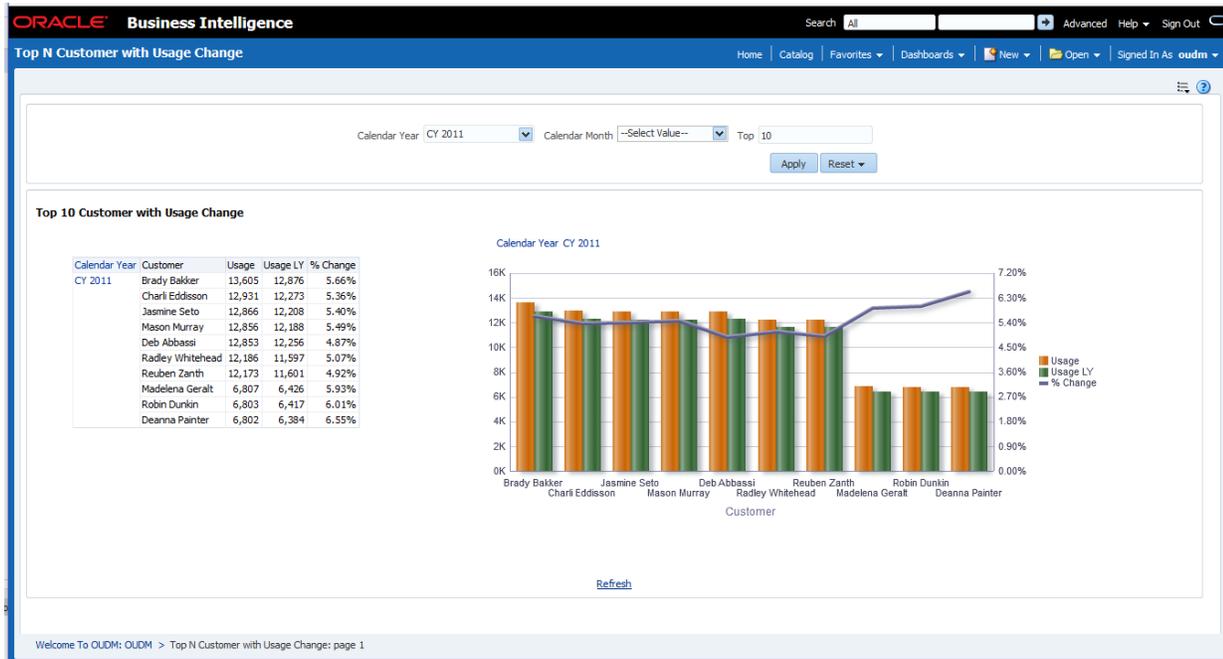
### 12.3.8.1 Top N Customer with Usage Change

This report, as shown in [Figure 12-15](#) (page 12-16) provides the list of top N customers whose year over year, monthly usage has undergone more than 7% change in at least 5 of the 12 months.

Report dimensions are:

- Calendar Month
- Customer

Figure 12-15 Meter Data Analysis: Top N Customer with Usage Change



## 12.3.9 Customer Count by Usage Grouping

- [Customer Count by Usage Grouping](#) (page 12-16)

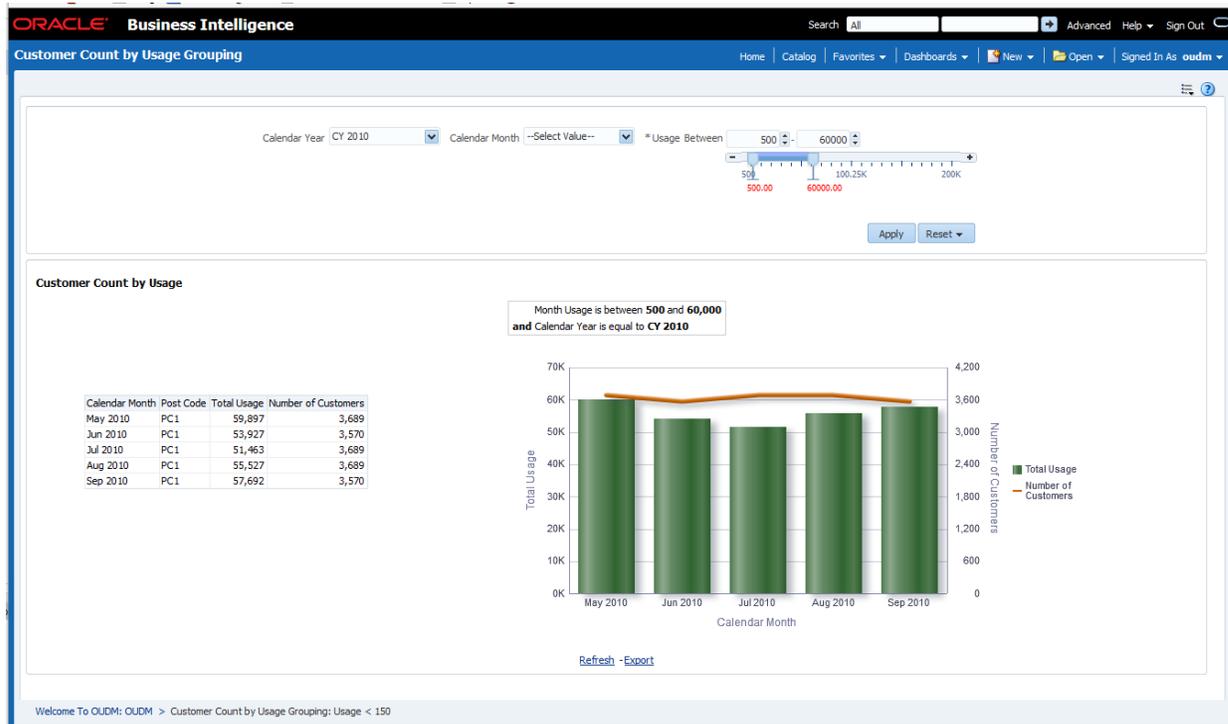
### 12.3.9.1 Customer Count by Usage Grouping

This report, as shown in [Figure 12-16](#) (page 12-17) provides the number of customers in a zip code with a specified average monthly usage aggregated usage over three years for the selected time period.

Report dimensions are:

- Calendar Month
- Customer
- Service Location

Figure 12-16 Meter Data Analysis: Customer Count by Usage Grouping



## 12.4 Outage Analysis Sample Reports

The outage analysis area sample reports include the following:

Table 12-1 Reliability Selections for Reports

Reliability Metric Name	Description
ASAI	Ratio of the total number of customer hours that service was available during a given time period to the total customer.
CAIDI	Customer average interruption duration in a given period (selected customer).
CAIFI	Customer average interruption frequency in a given period (selected customers).
CIII	Average number of customers interrupted during an outage.
CMI	Customer Minutes Interrupted.
MAIFI	Average number of momentary interruptions that a customer experiences in a given period.
SAIDI	System average interruption duration in a given period (on total customers).
SAIFI	System average interruption frequency in a given period (on total customers).

- [Reliability by City](#) (page 12-18)
- [Worst Performing Feeder](#) (page 12-19)
- [Top N Customers by Customer Minutes Interrupted \(CMI\)](#) (page 12-19)
- [Top N Customers by Number of Outages](#) (page 12-20)

- [Top N Feeders by Outage Count](#) (page 12-21)
- [Top N Feeders by Total Minutes Lost](#) (page 12-22)
- [Top N Feeders by Reliability Indices](#) (page 12-23)
- [Top N City by Outage Count](#) (page 12-24)
- [Top N City by Total Minutes Lost](#) (page 12-25)
- [Top N City by Reliability Indices](#) (page 12-26)
- [Top N Region by Outage Count](#) (page 12-27)
- [Top N Region by Total Minutes Lost](#) (page 12-28)
- [Top N Region by Reliability Indices](#) (page 12-29)

## 12.4.1 Reliability by City

- [Reliability by City](#) (page 12-18)

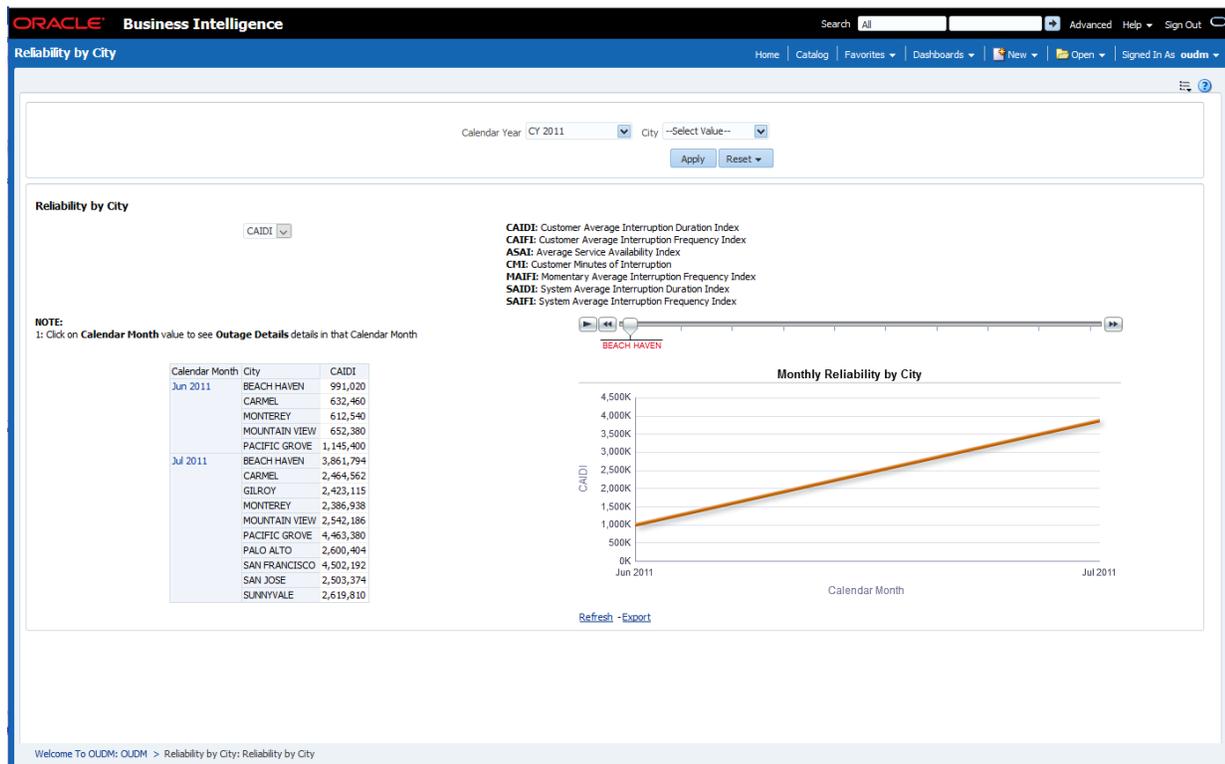
### 12.4.1.1 Reliability by City

This report, as shown in [Figure 12-17](#) (page 12-18) provides reliability by city. For more details, see [Table 12-1](#) (page 12-17).

Report dimensions are:

- Calendar Month
- City

**Figure 12-17** Outage Analysis: Reliability by City Report



## 12.4.2 Worst Performing Feeder

- [Worst Performing Feeder](#) (page 12-19)

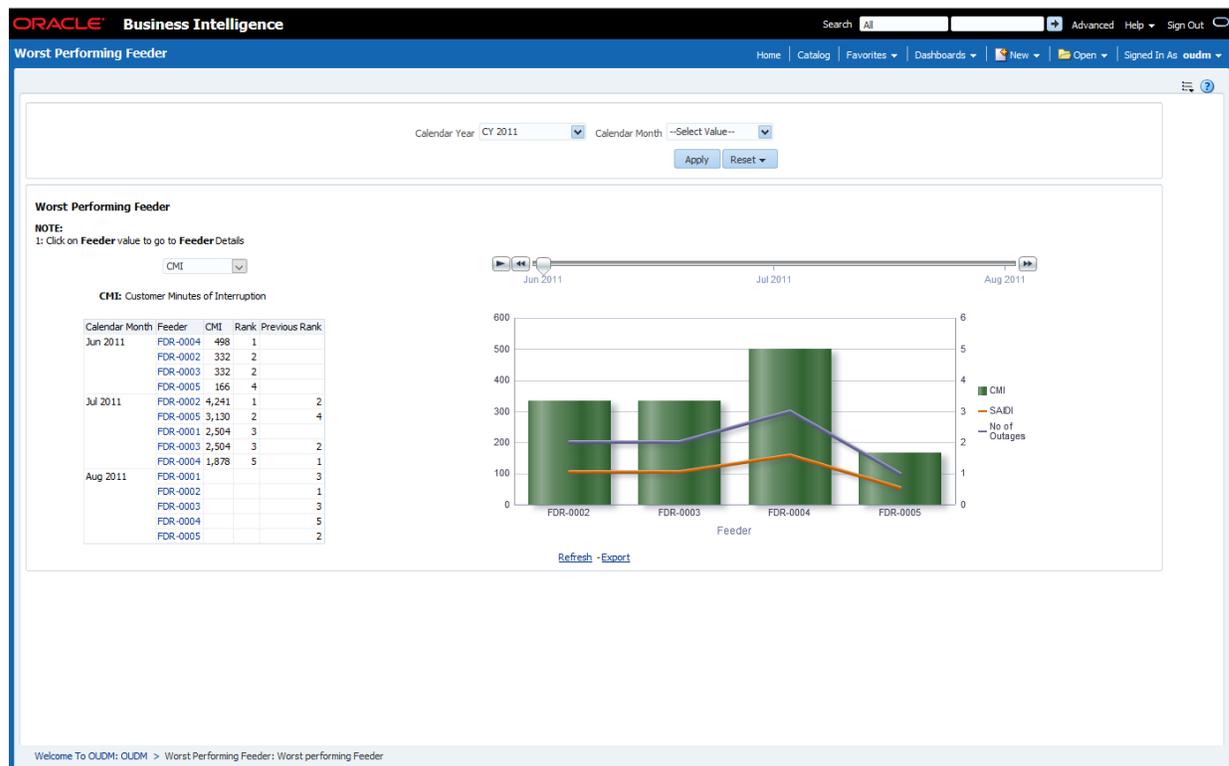
### 12.4.2.1 Worst Performing Feeder

This report, as shown in [Figure 12-18](#) (page 12-19) provides feeder CMI for selected period.

Report dimensions are:

- Calendar Month
- Feeder

**Figure 12-18** Outage Analysis: Worst Performing Feeder



## 12.4.3 Top N Customers by Customer Minutes Interrupted (CMI)

- [Top N Usage Points by CMI](#) (page 12-19)

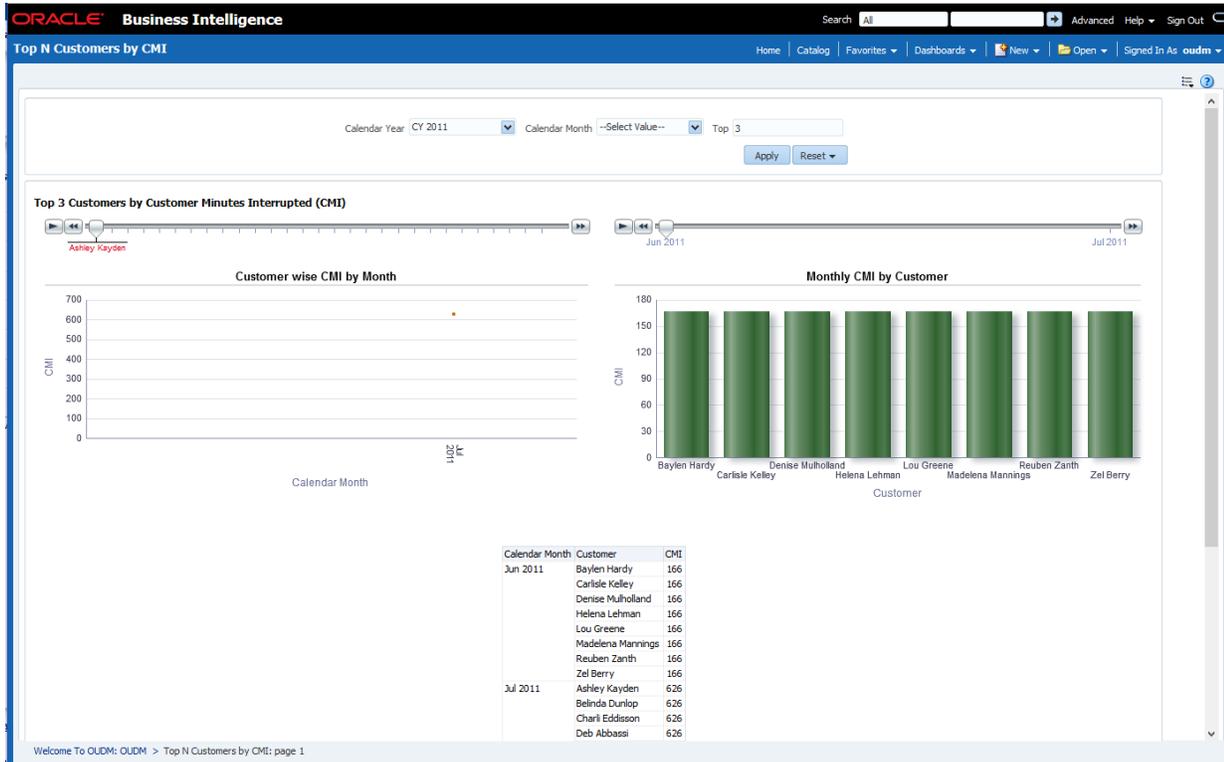
### 12.4.3.1 Top N Usage Points by CMI

This report, as shown in [Figure 12-19](#) (page 12-20) provides feeder CMI for selected period.

Report dimensions are:

- Calendar Month
- Customer

Figure 12-19 Outage Analysis: Top N Usage Points by CMI



## 12.4.4 Top N Customers by Number of Outages

- [Top N Customers by Number of Outages](#) (page 12-20)

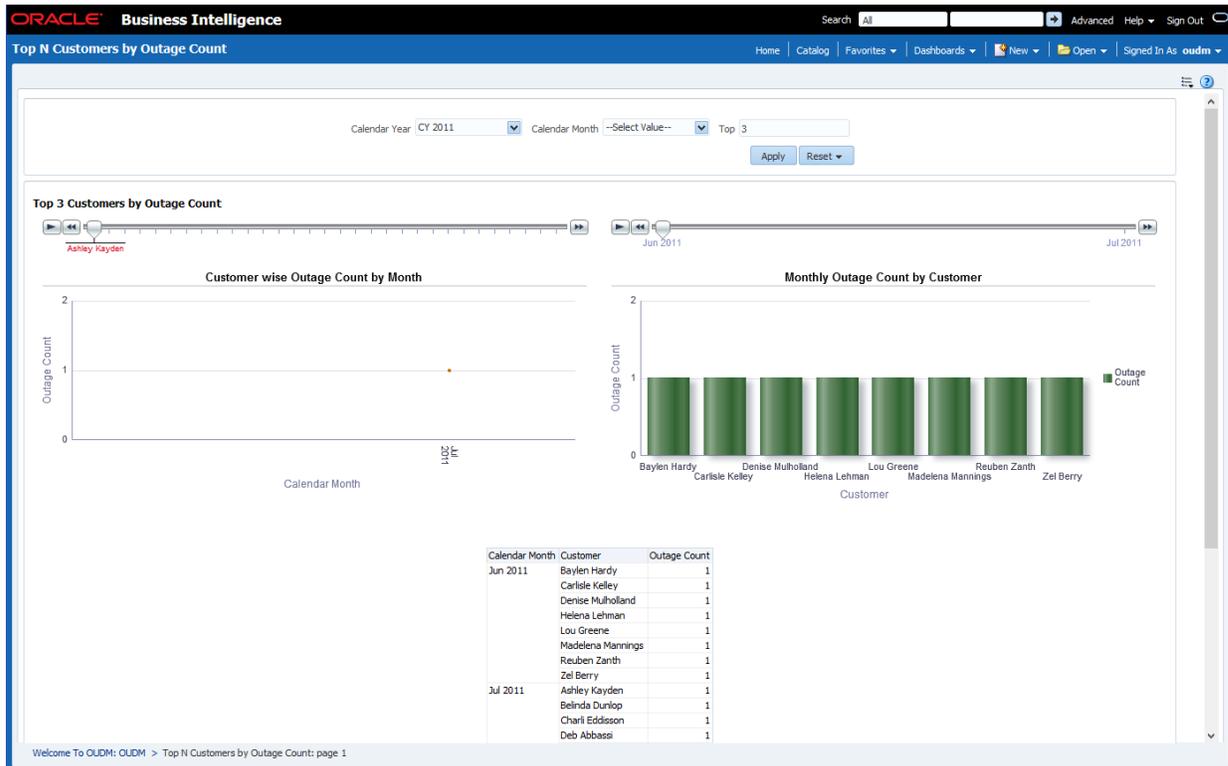
### 12.4.4.1 Top N Customers by Number of Outages

This report, as shown in [Figure 12-20](#) (page 12-21) provides the top 50 customers based on number of outages in a given period.

Report dimensions are:

- Calendar Month
- Customer

Figure 12-20 Outage Analysis: Top N Customers by Number of Outages



## 12.4.5 Top N Feeders by Outage Count

- [Top N Feeders by Outage Count](#) (page 12-21)

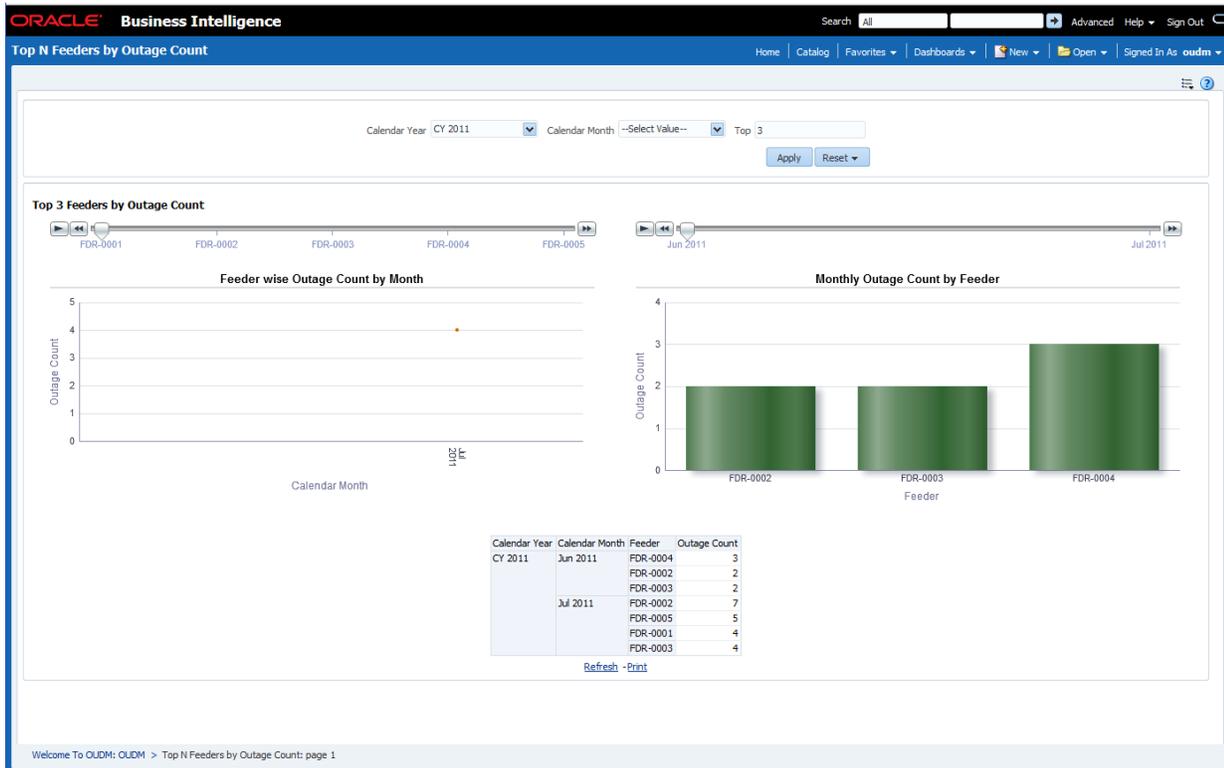
### 12.4.5.1 Top N Feeders by Outage Count

This report, as shown in [Figure 12-21](#) (page 12-22) provides top 10 feeder that experienced the greatest number outages.

Report dimensions are:

- Calendar Month
- Feeder

Figure 12-21 Outage Analysis: Top N Feeders by Outage Count



## 12.4.6 Top N Feeders by Total Minutes Lost

- [Top N Feeders by Total Minutes Lost](#) (page 12-22)

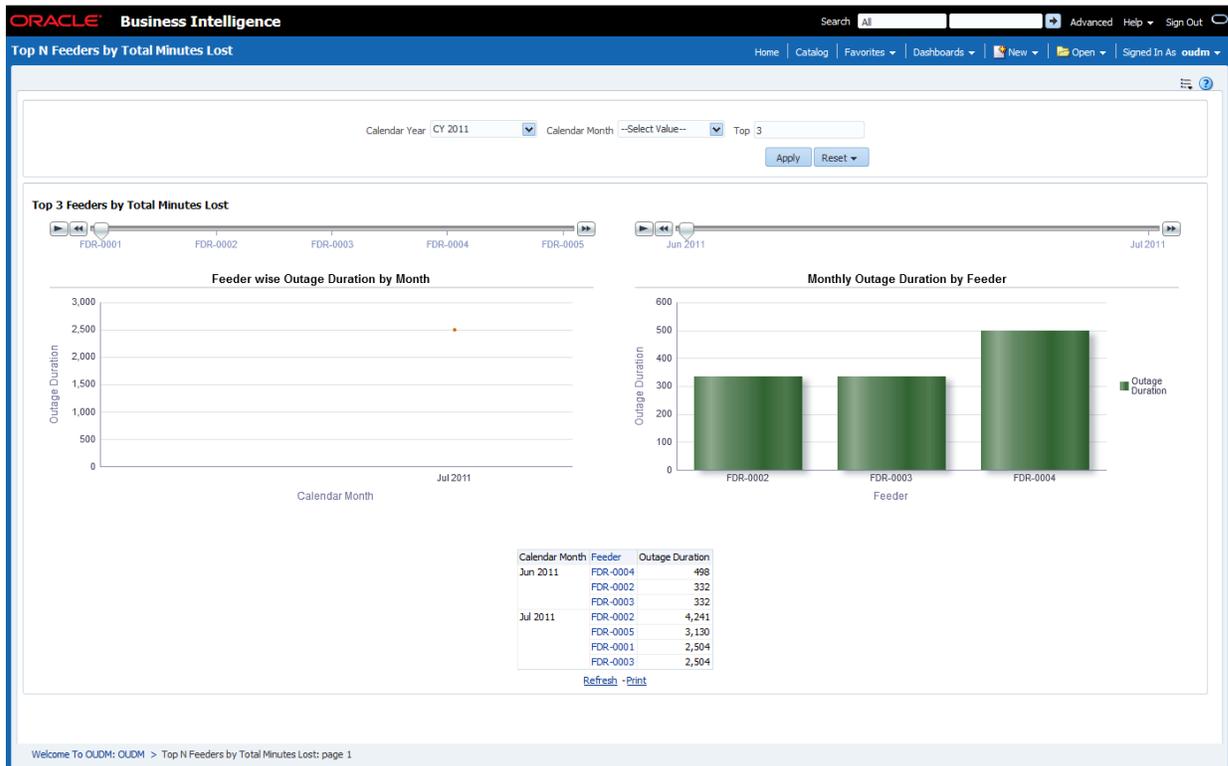
### 12.4.6.1 Top N Feeders by Total Minutes Lost

This report, as shown in [Figure 12-22](#) (page 12-23) provides the top 100 feeders that experienced the longest outage duration.

Report dimensions are:

- Calendar Year
- Feeder

Figure 12-22 Outage Analysis: Top N Feeders by Total Minutes Lost



## 12.4.7 Top N Feeders by Reliability Indices

- [Top N Feeders by Reliability Indices](#) (page 12-23)

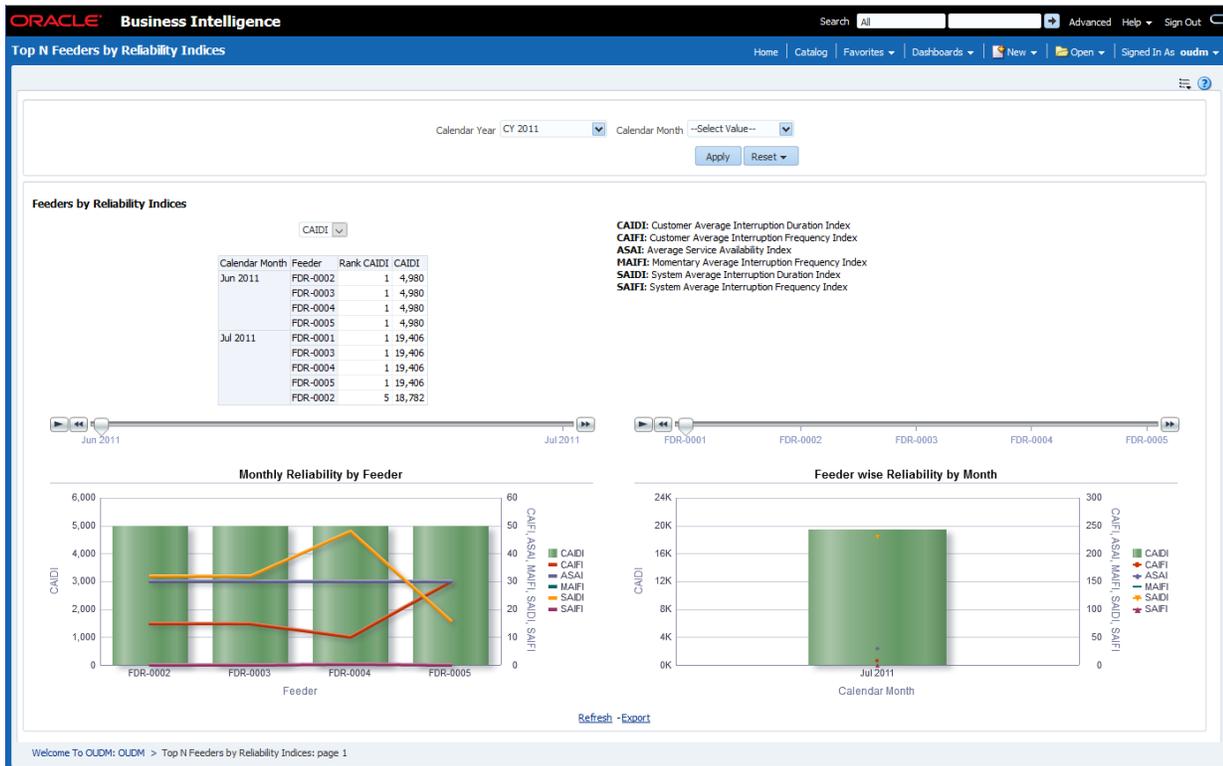
### 12.4.7.1 Top N Feeders by Reliability Indices

This report, as shown in [Figure 12-23](#) (page 12-24) provides reliability by feeder. For more details, see [Table 12-1](#) (page 12-17).

Report dimensions are:

- Calendar Month
- Feeder

Figure 12-23 Outage Analysis: Top N Feeders by Reliability Indices



## 12.4.8 Top N City by Outage Count

- [Top N City by Outage Count](#) (page 12-24)

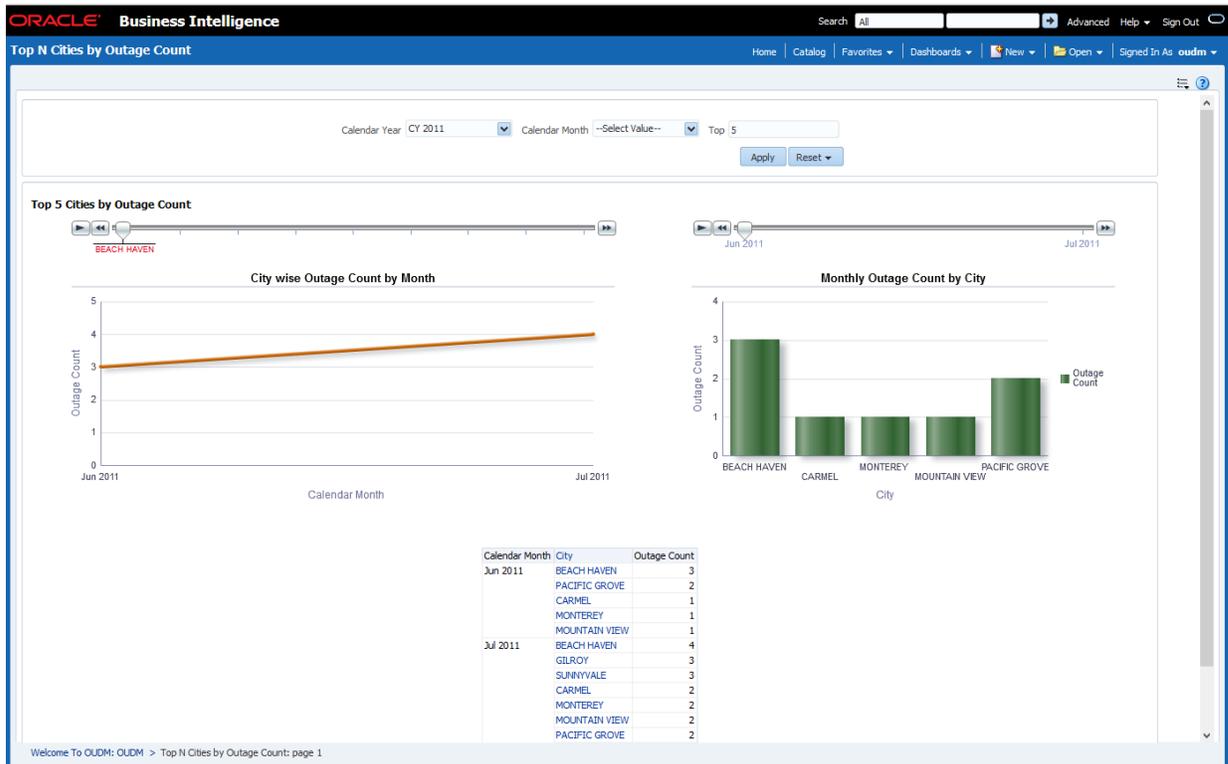
### 12.4.8.1 Top N City by Outage Count

This report, as shown in [Figure 12-24](#) (page 12-25) provides the top N feeders that experienced the greatest number outages by city.

Report dimensions are:

- Calendar Year
- City

Figure 12-24 Outage Analysis: Top N City by Outage Count



## 12.4.9 Top N City by Total Minutes Lost

- [Top N City by Total Minutes Lost](#) (page 12-25)

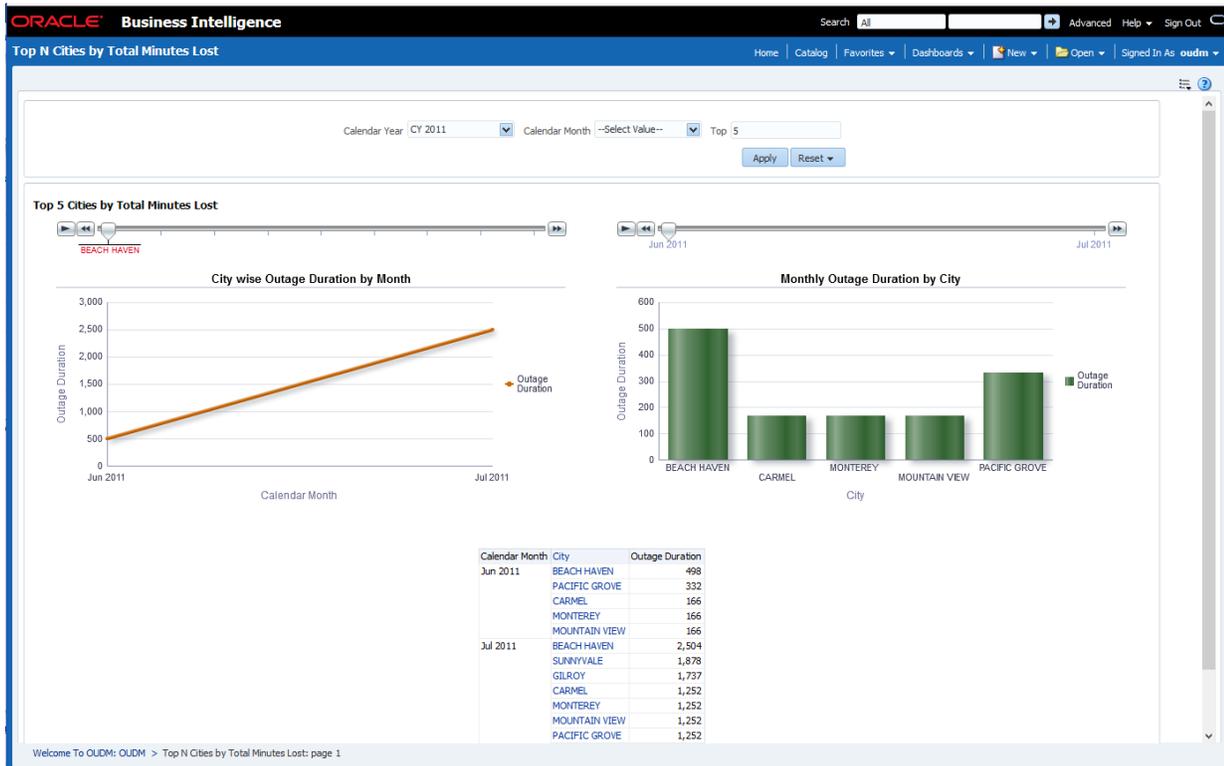
### 12.4.9.1 Top N City by Total Minutes Lost

This report, as shown in [Figure 12-25](#) (page 12-26) provides the top 10 cities that experienced the longest outage duration.

Report dimensions are:

- Calendar Month
- City

Figure 12-25 Outage Analysis: Top N City by Total Minutes Lost



## 12.4.10 Top N City by Reliability Indices

- [Top N City by Reliability Indices](#) (page 12-26)

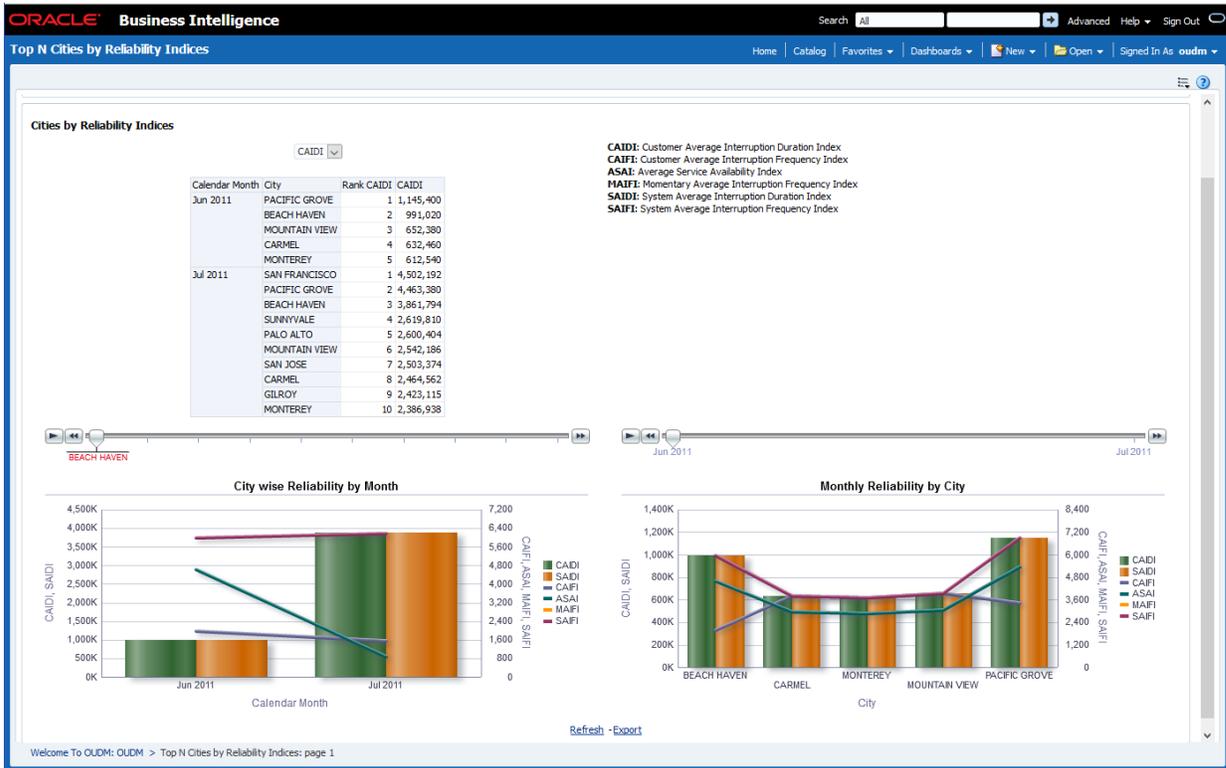
### 12.4.10.1 Top N City by Reliability Indices

This report, as shown in [Figure 12-26](#) (page 12-27) provides reliability by city. For more details, see [Table 12-1](#) (page 12-17).

Report dimensions are:

- Calendar Month
- City

Figure 12-26 Outage Analysis: Top N City by Reliability Indices



## 12.4.11 Top N Region by Outage Count

- [Top N Region by Outage Count](#) (page 12-27)

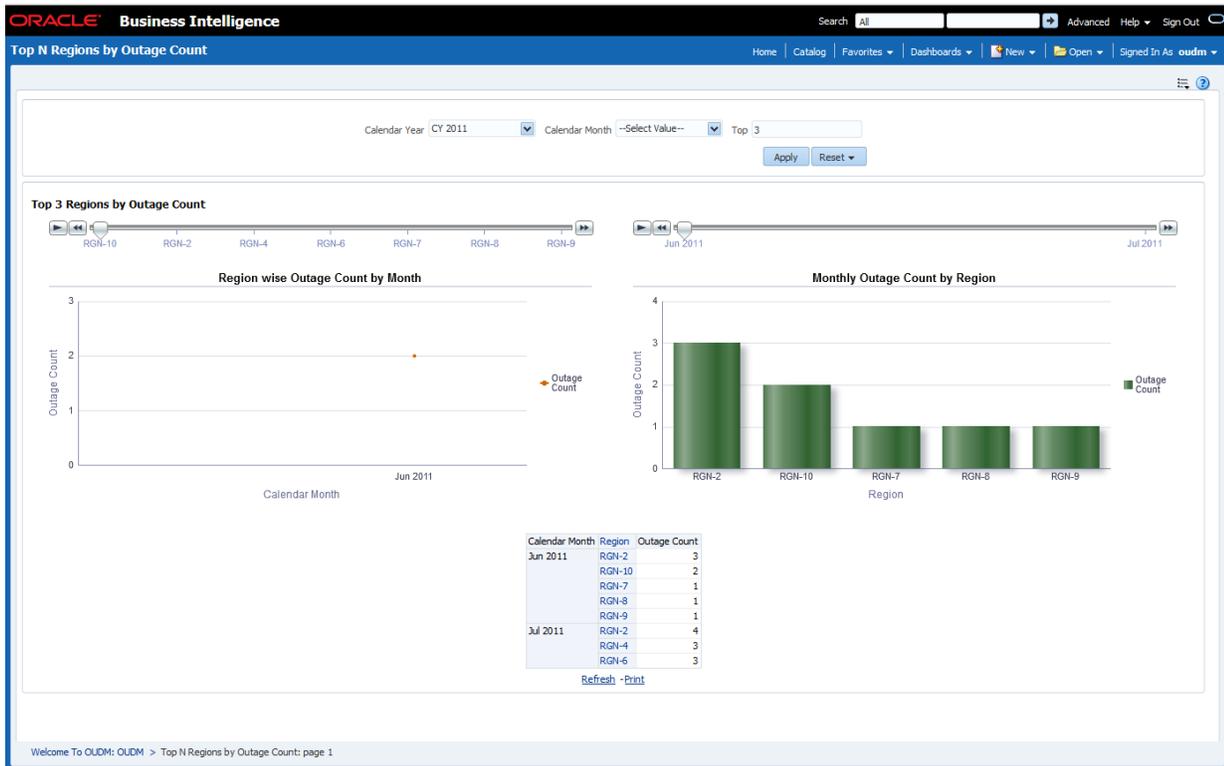
### 12.4.11.1 Top N Region by Outage Count

This report, as shown in [Figure 12-27](#) (page 12-28) provides the top N feeder that experienced the greatest number outages by region.

Report dimensions are:

- Calendar Month
- Regional Zones
  - Usage Point
  - Region
  - Subregion

Figure 12-27 Outage Analysis: Top N Region by Outage Count



## 12.4.12 Top N Region by Total Minutes Lost

- [Top N Region by Total Minutes Lost](#) (page 12-28)

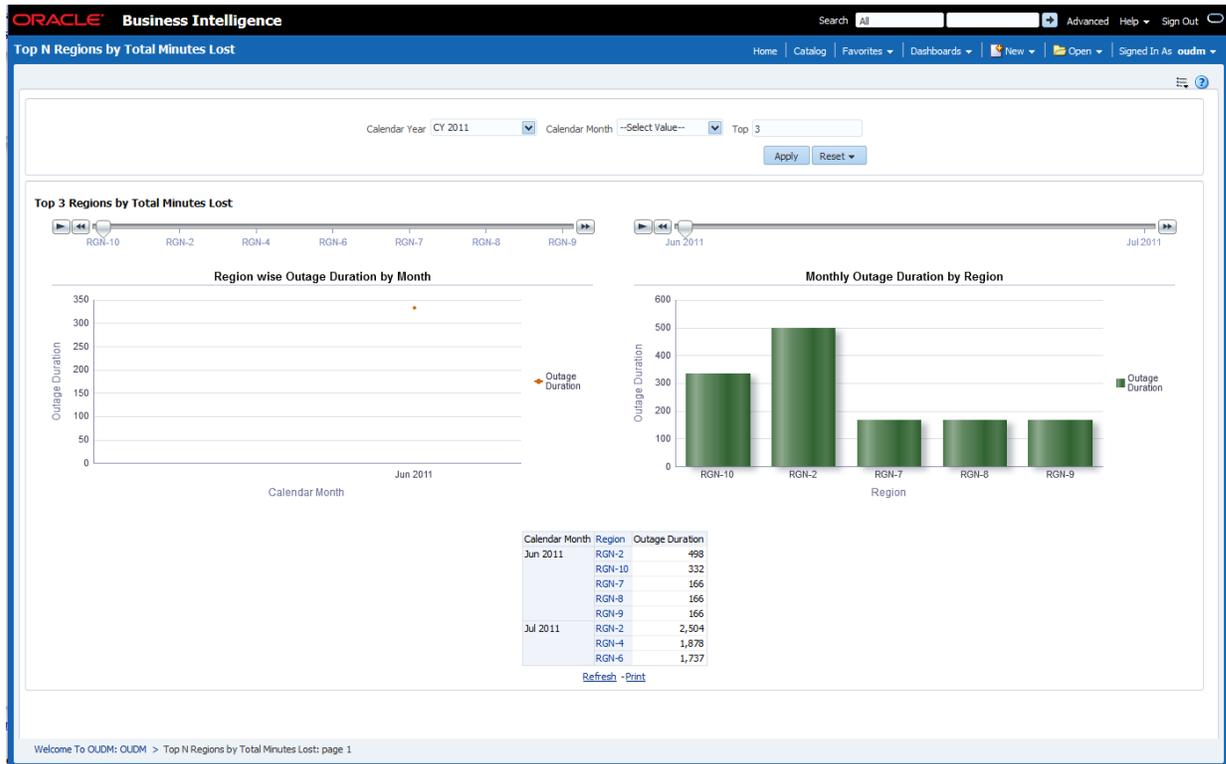
### 12.4.12.1 Top N Region by Total Minutes Lost

This report, as shown in [Figure 12-28](#) (page 12-29) provides the region that experienced the longest outage duration.

Report dimensions are:

- Calendar Year
- Regional Zones
  - Usage Point
  - Subregion
  - Region

**Figure 12-28 Outage Analysis: Top N Region by Total Minutes Lost**



## 12.4.13 Top N Region by Reliability Indices

- [Top N Region by Reliability Indices](#) (page 12-29)

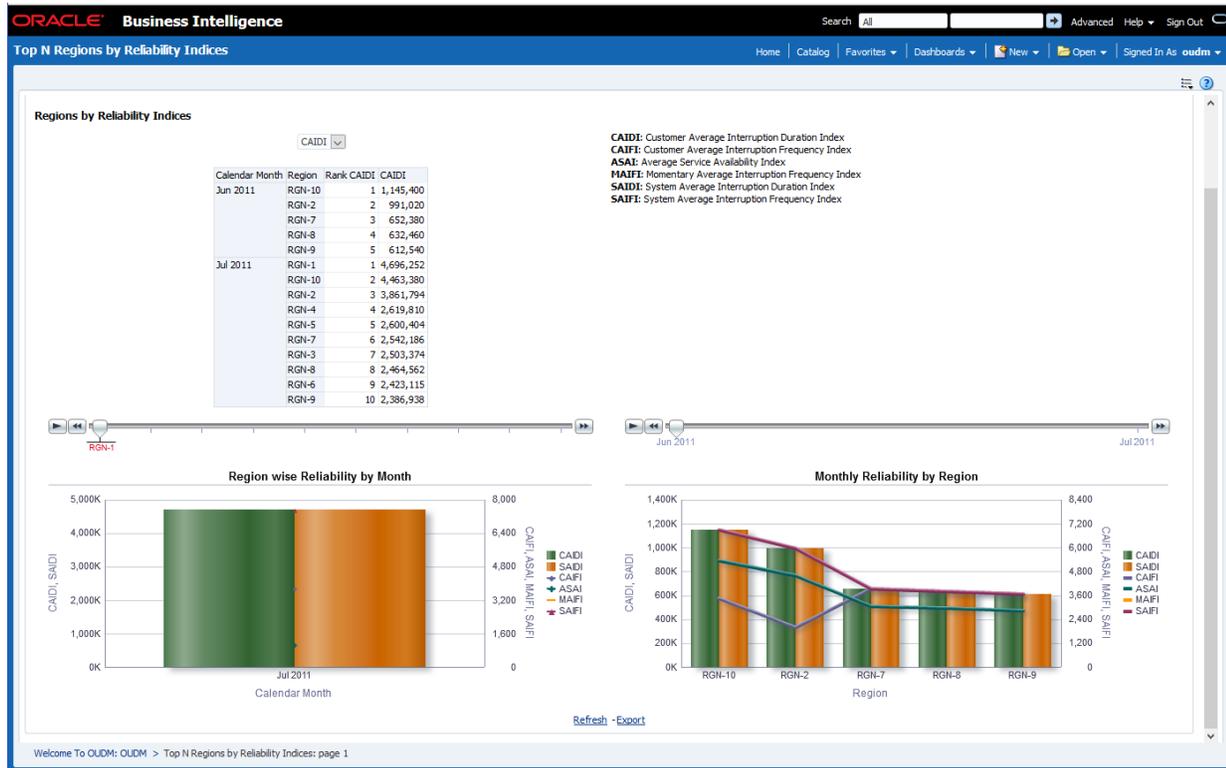
### 12.4.13.1 Top N Region by Reliability Indices

This report, as shown in [Figure 12-29](#) (page 12-30) provides reliability by region. For more details, see [Table 12-1](#) (page 12-17).

Report dimensions are:

- Calendar Month
- Regional Zones
  - Usage Point
  - Region
  - Subregion

Figure 12-29 Outage Analysis: Top N Region by Reliability Indices



## 12.5 Revenue Protection Sample Reports

The revenue protection sample reports show the following areas:

- [Meter Tamper Event](#) (page 12-30)
- [Meter Stopped Event](#) (page 12-33)
- [Meter Reversed Event](#) (page 12-36)
- [Missing Meter Read](#) (page 12-39)
- [Event Analysis](#) (page 12-40)

### 12.5.1 Meter Tamper Event

This area includes the reports:

- [Meter Tamper Event: Region](#) (page 12-30)
- [Meter Tamper Event: Geography](#) (page 12-31)
- [Meter Tamper Event: Operational](#) (page 12-32)

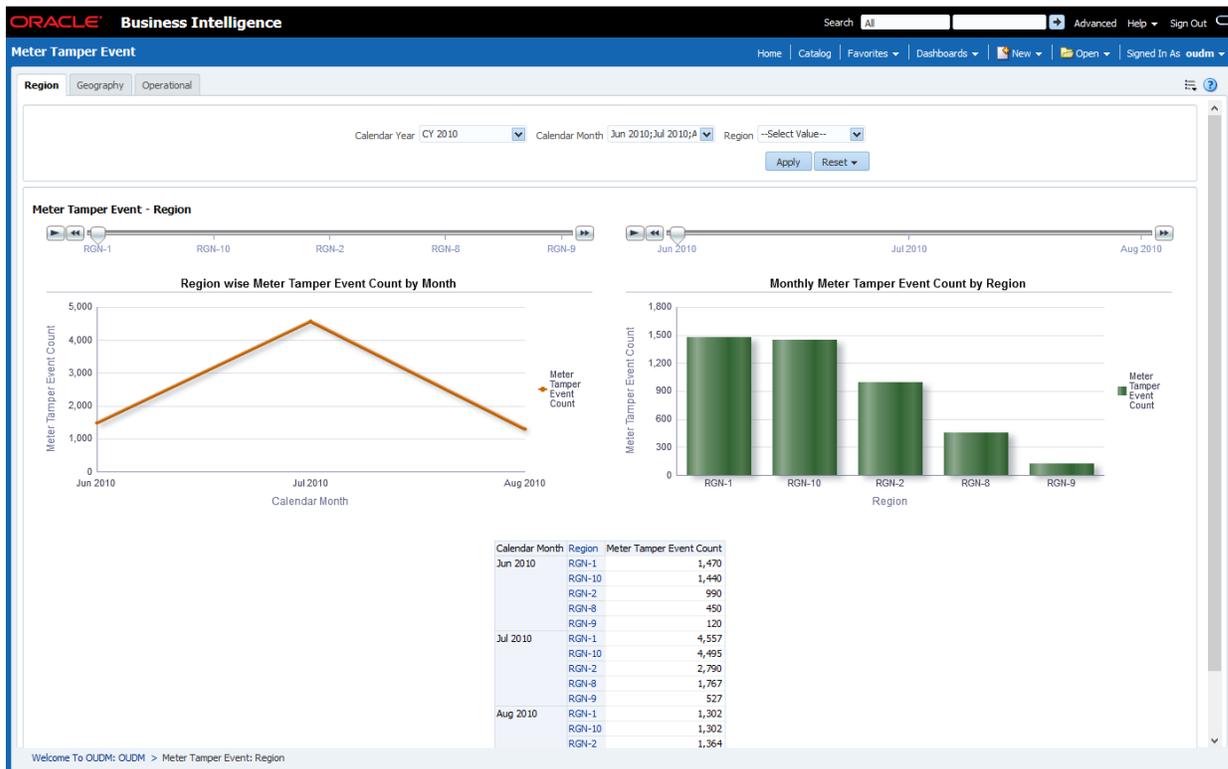
#### 12.5.1.1 Meter Tamper Event: Region

This report, as shown in [Figure 12-30](#) (page 12-31) provides the number of meter tamper events based on region in a given period.

Report dimensions are:

- Calendar Month
- Regional Zones
  - Usage Point
  - Region
  - Subregion

**Figure 12-30 Revenue Protection: Meter Tamper Event Region**



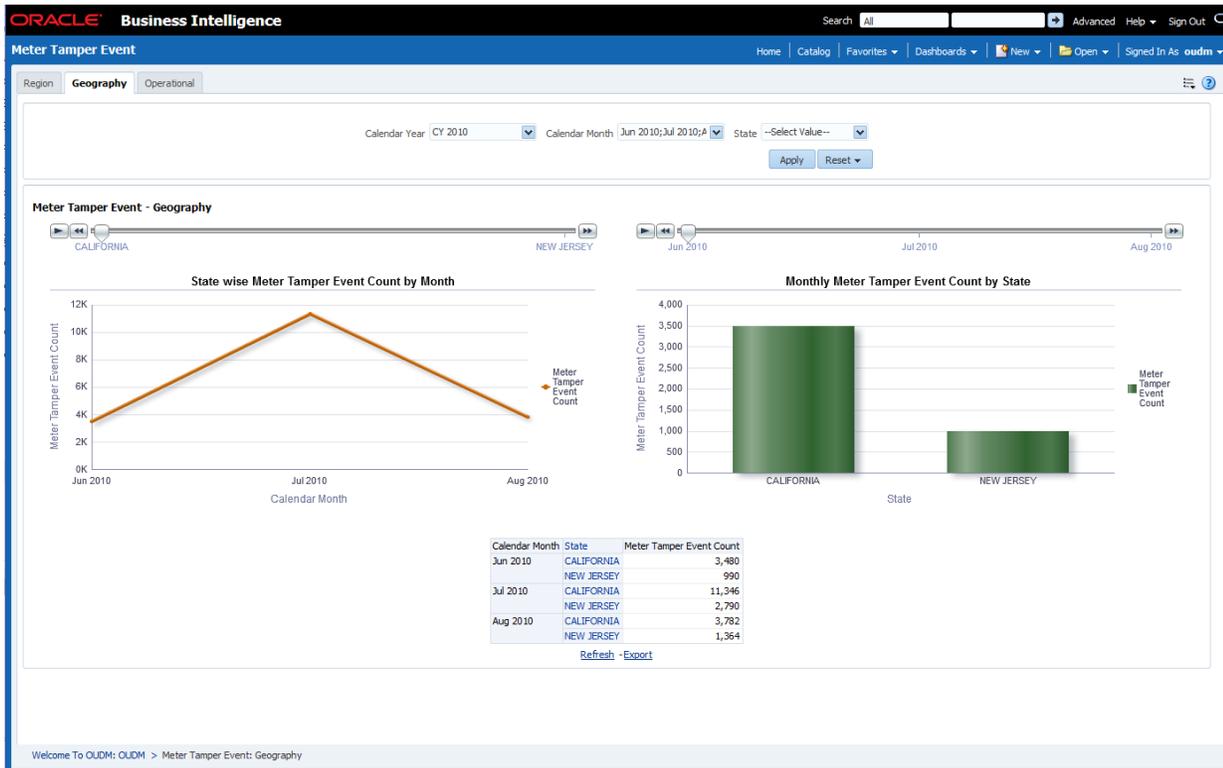
### 12.5.1.2 Meter Tamper Event: Geography

This report, as shown in [Figure 12-31](#) (page 12-32) provides the number of meter tamper events based on geography in a given period.

Report dimensions are:

- Calendar Month
- Geographical Zones
  - Usage Point
  - City
  - State

Figure 12-31 Revenue Protection: Meter Tamper Event Geography



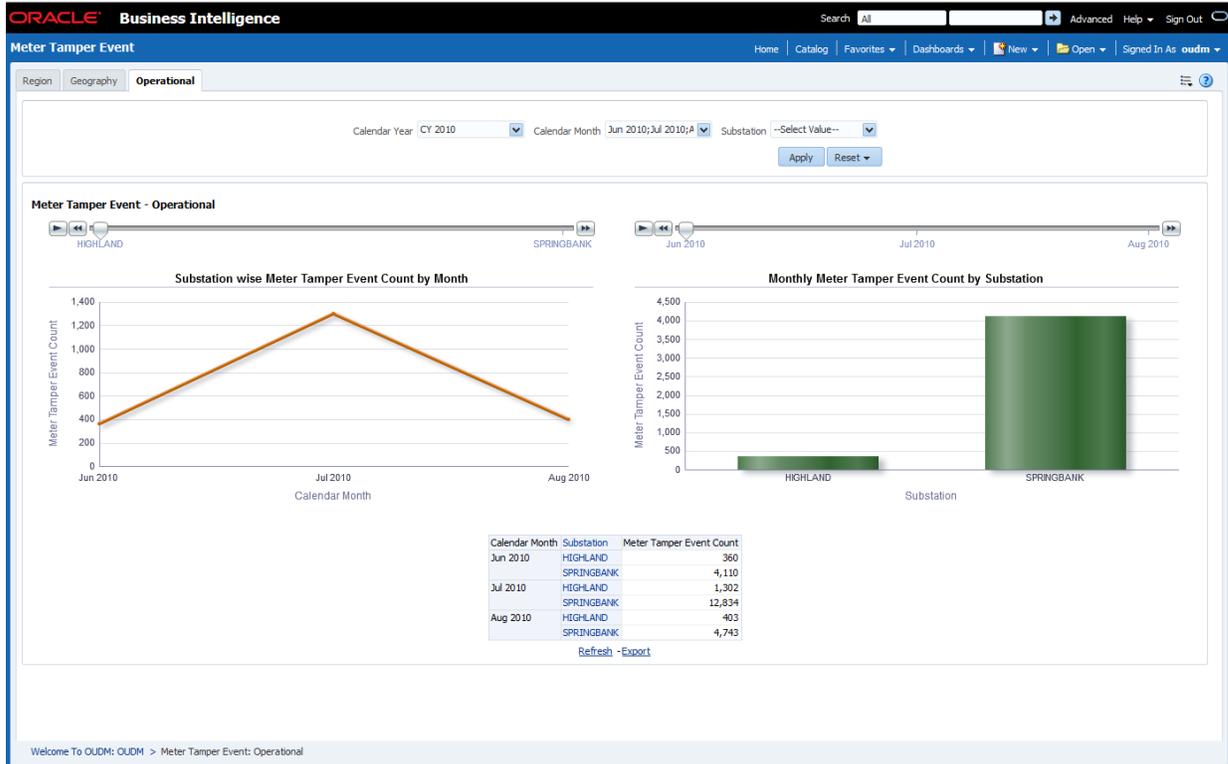
### 12.5.1.3 Meter Tamper Event: Operational

This report, as shown in Figure 12-32 (page 12-33) provides the number of meter tamper events based on operation in a given period.

Report dimensions are:

- Calendar Month
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-32 Revenue Protection: Meter Tamper Event Operational



## 12.5.2 Meter Stopped Event

This area includes the reports:

- [Meter Stopped Event: Region](#) (page 12-33)
- [Meter Stopped Event: Geography](#) (page 12-34)
- [Meter Stopped Event: Operational](#) (page 12-35)

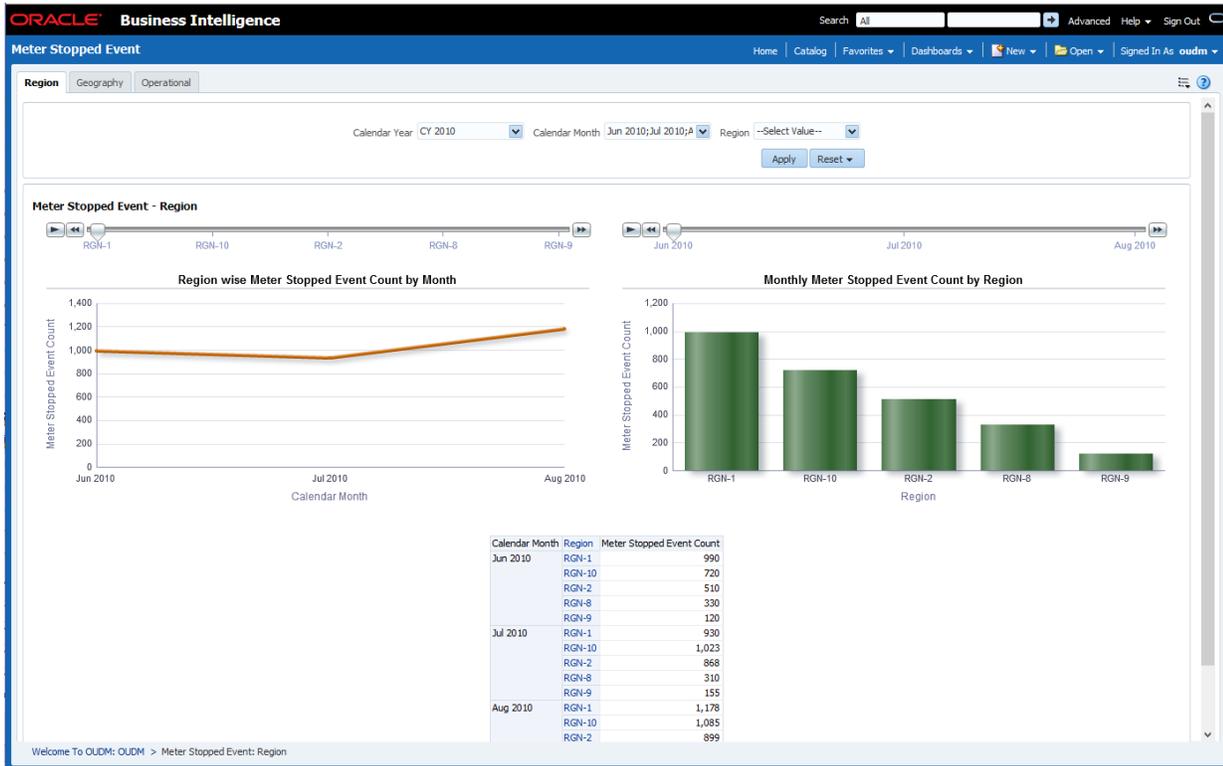
### 12.5.2.1 Meter Stopped Event: Region

This report, as shown in [Figure 12-33](#) (page 12-34) identifies devices that were sending measurements and then stopped for some reason. View details by region.

Report dimensions are:

- Calendar Month
- Regional Zones
  - Usage Point
  - Region
  - Subregion

Figure 12-33 Revenue Protection: Meter Stopped Event Region



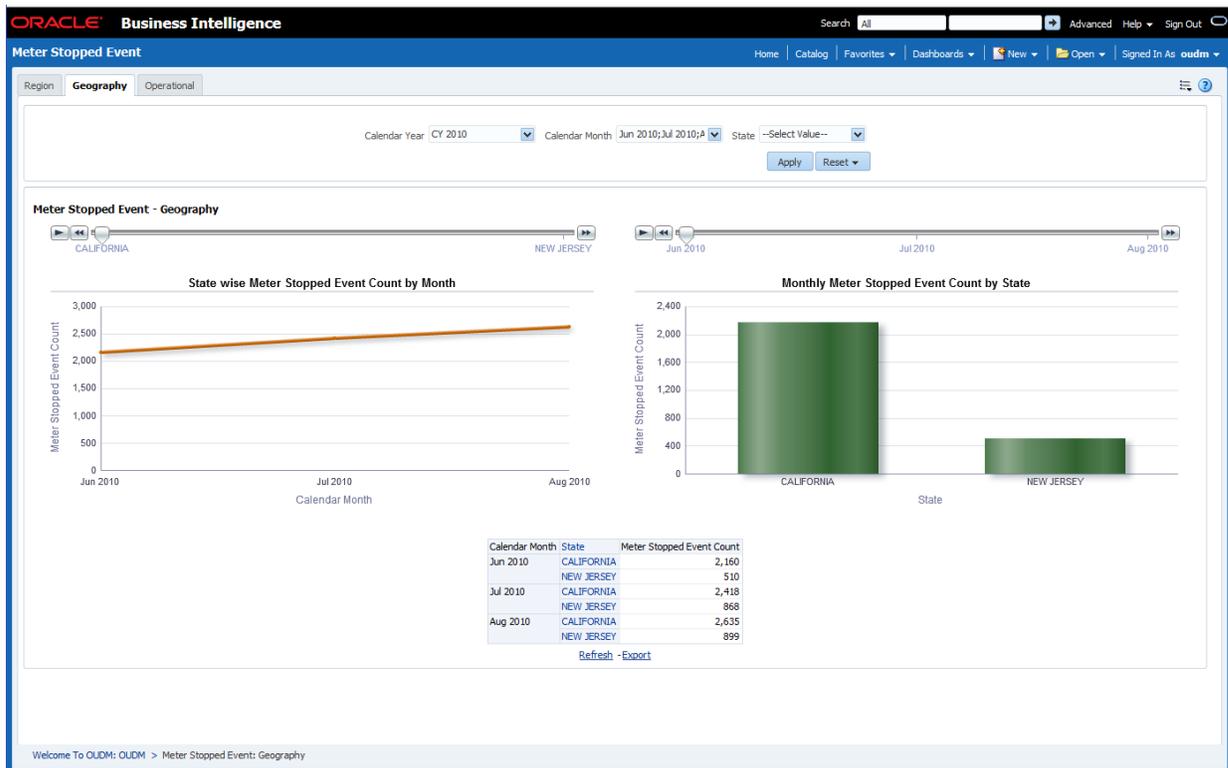
### 12.5.2.2 Meter Stopped Event: Geography

This report, as shown in [Figure 12-34](#) (page 12-35) identifies devices that were sending measurements and then stopped for some reason. View details by geography.

Report dimensions are:

- Calendar Month
- Geographical Zones
  - Usage Point
  - City
  - State

Figure 12-34 Revenue Protection: Meter Stopped Event Geography



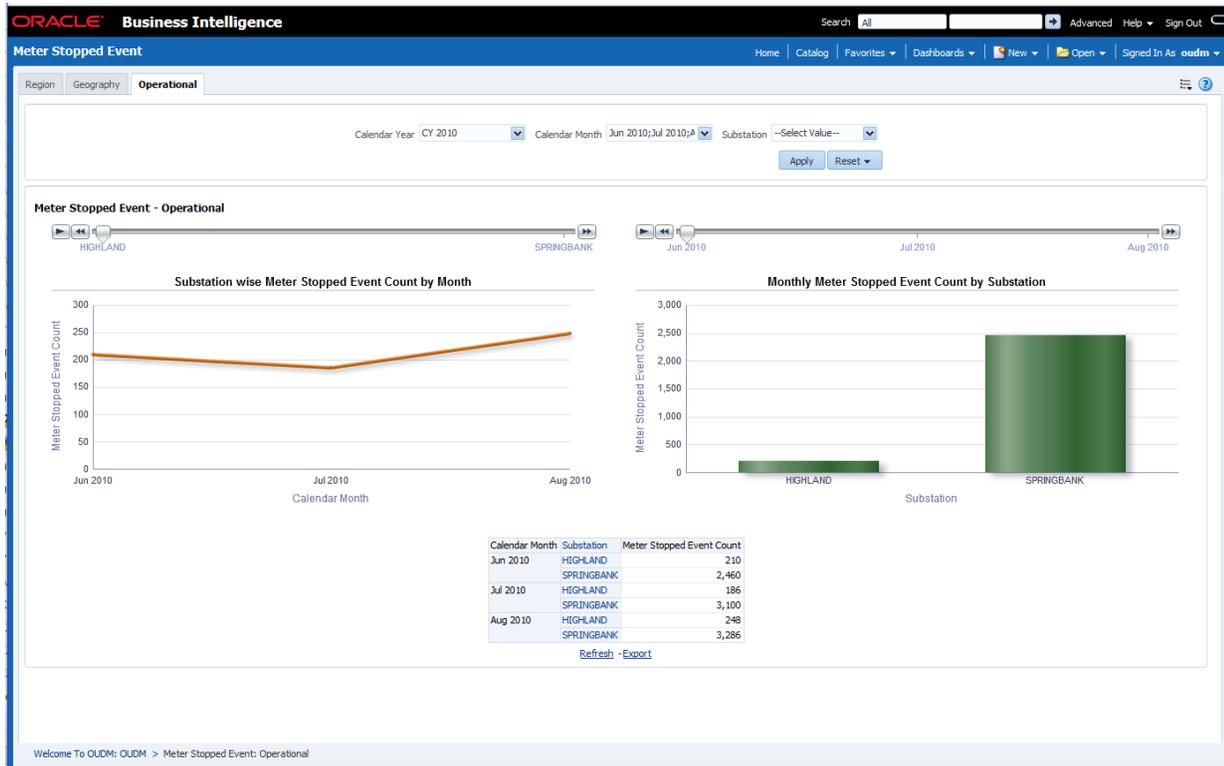
### 12.5.2.3 Meter Stopped Event: Operational

This report, as shown in Figure 12-35 (page 12-36) identifies devices that were sending measurements and then stopped for some reason. View details by substation and operational zone.

Report dimensions are:

- Calendar Month
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-35 Revenue Protection: Meter Stopped Event Operational



## 12.5.3 Meter Reversed Event

This area includes the reports:

- [Meter Reversed Event: Region](#) (page 12-36)
- [Meter Reversed Event: Geography](#) (page 12-37)
- [Meter Reversed Event: Operational](#) (page 12-38)

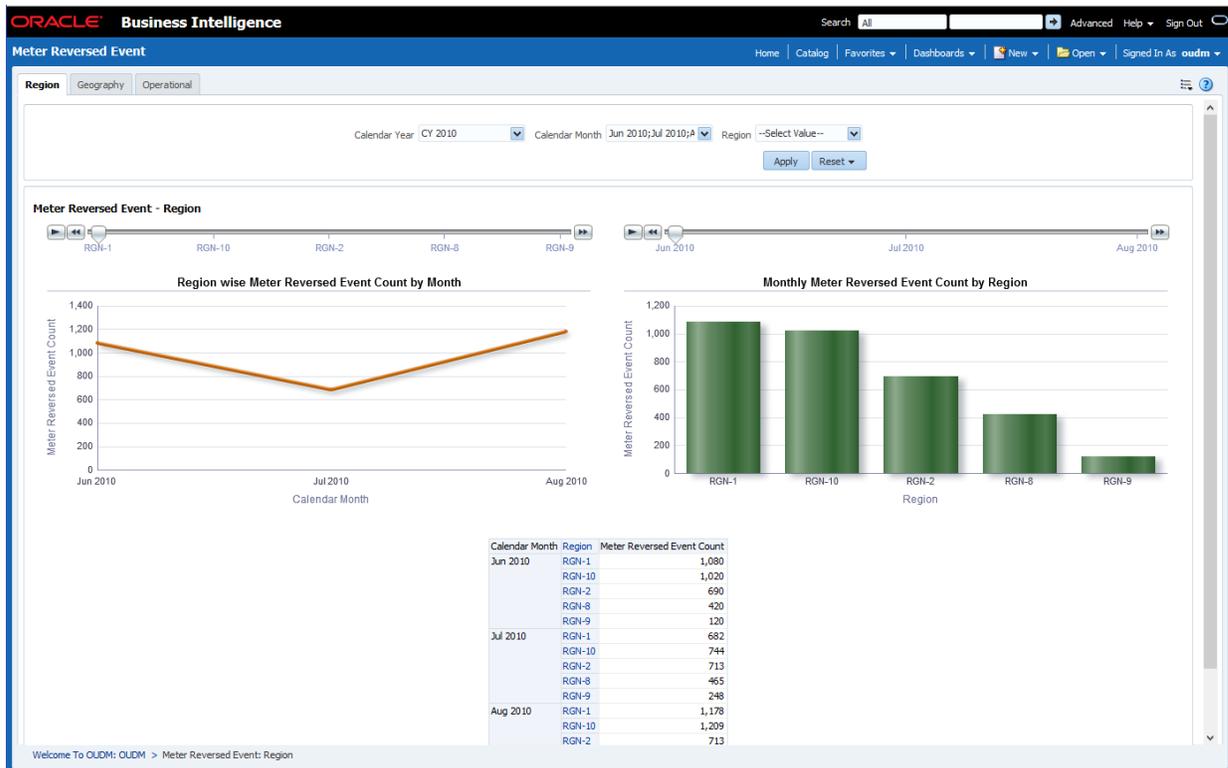
### 12.5.3.1 Meter Reversed Event: Region

This report, as shown in [Figure 12-36](#) (page 12-37) identifies reversed meters for a region in a given period.

Report dimensions are:

- Calendar Month
- Regional Zones
  - Usage Point
  - Region
  - Subregion

Figure 12-36 Revenue Protection: Meter Reversed Event Region



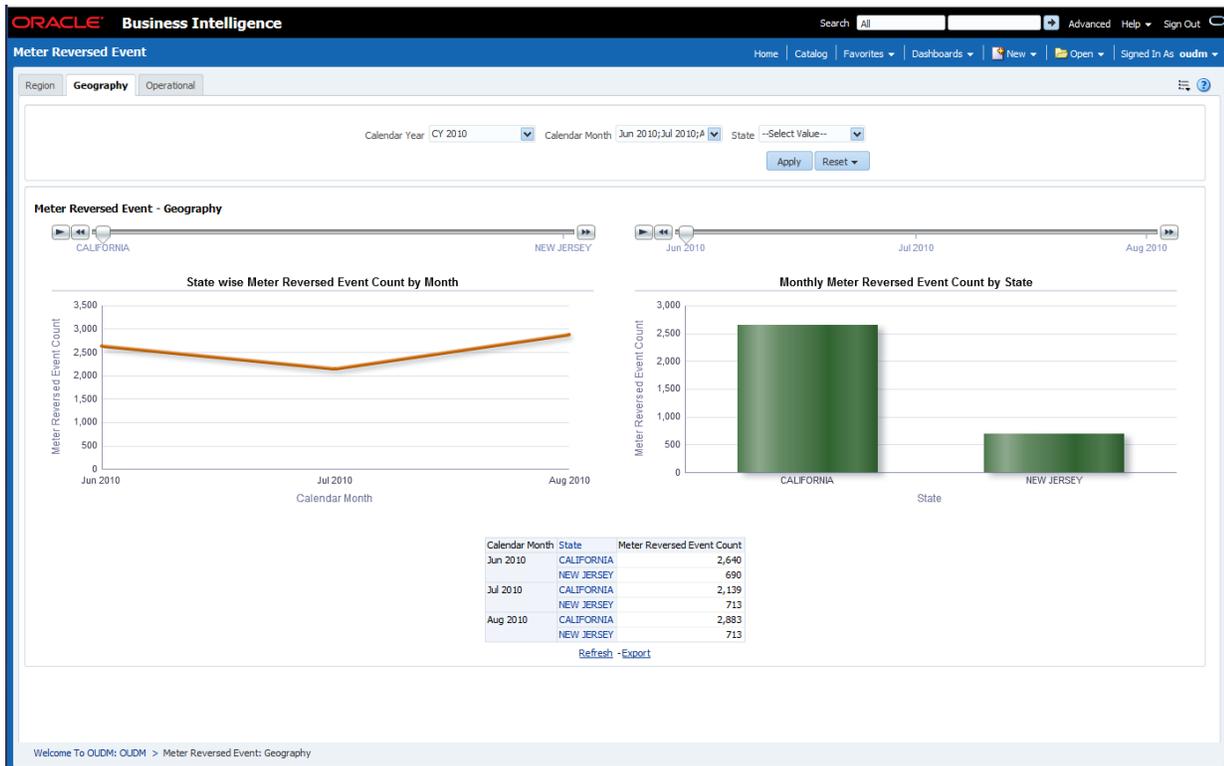
### 12.5.3.2 Meter Reversed Event: Geography

This report, as shown in [Figure 12-37](#) (page 12-38) identifies reversed meters for a geography in a given period.

Report dimensions are:

- Calendar Month
- Geographical Zones:
  - Usage Point
  - City
  - State

Figure 12-37 Revenue Protection: Meter Reversed Event Geography



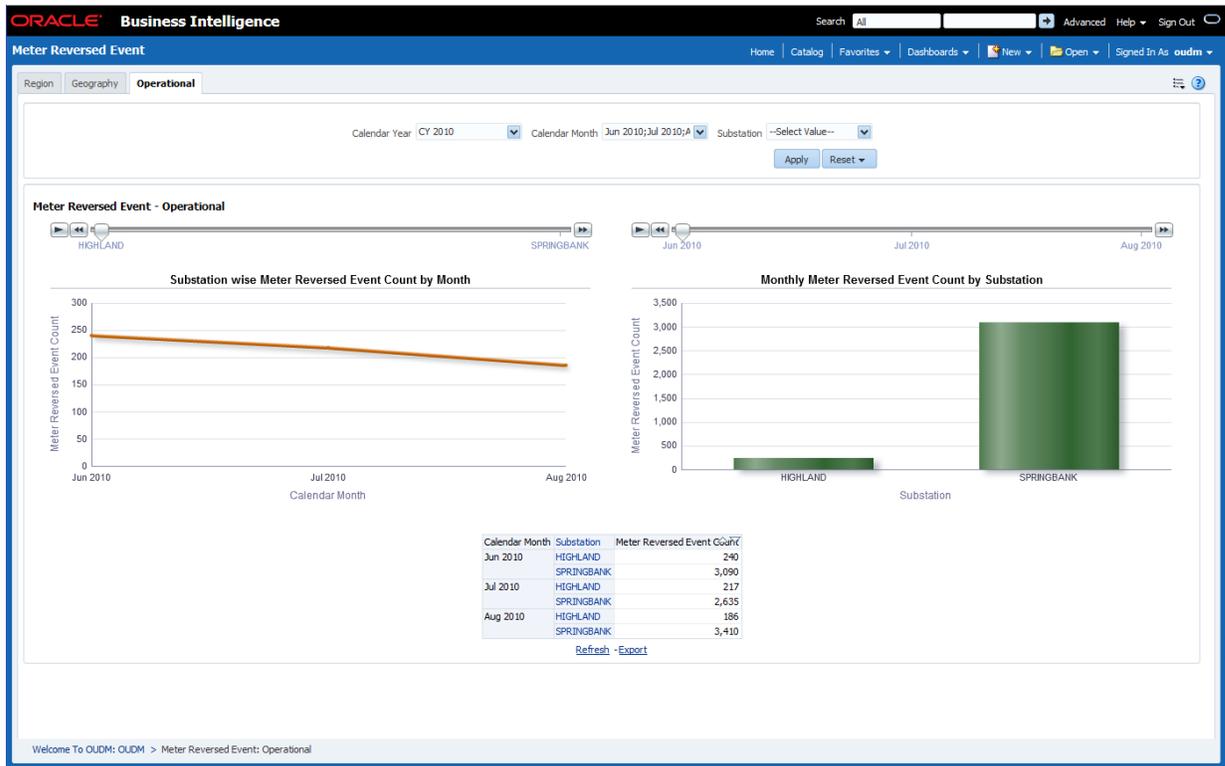
### 12.5.3.3 Meter Reversed Event: Operational

This report, as shown in Figure 12-38 (page 12-39) identifies reversed meters for a substation in a given period.

Report dimensions are:

- Calendar Month
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-38 Revenue Protection: Meter Reversed Event Operational



## 12.5.4 Missing Meter Read

This area includes the report

- [Missing Meter Read](#) (page 12-39)

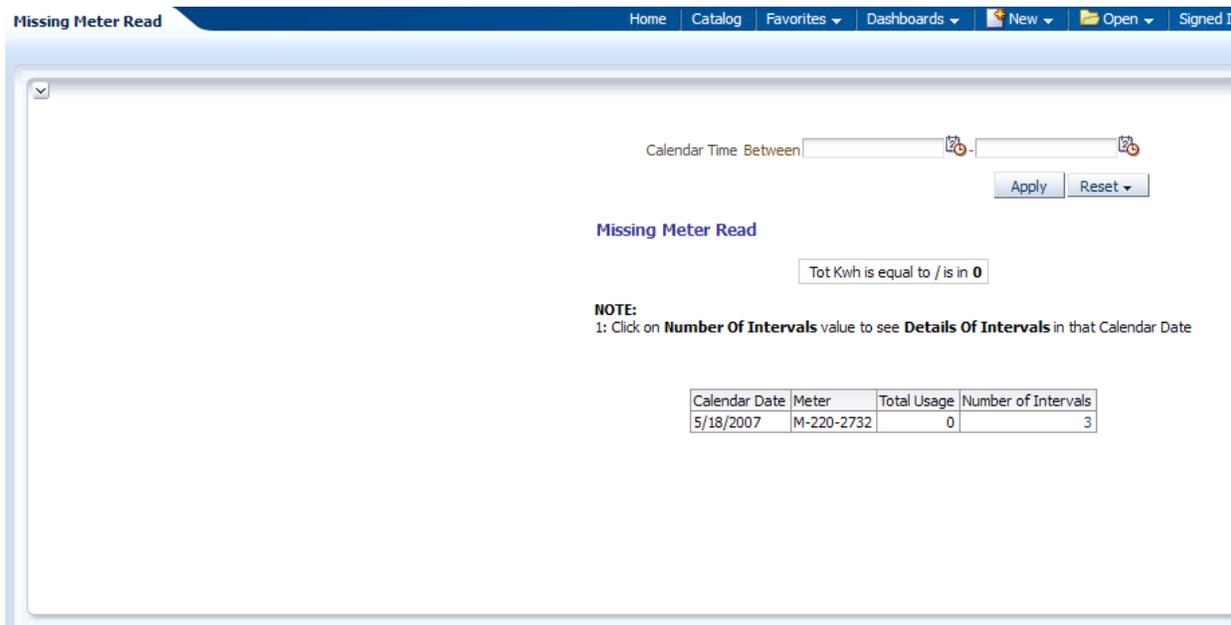
### 12.5.4.1 Missing Meter Read

This report, as shown in [Figure 12-39](#) (page 12-40) identifies meters with no interval reads in the specified time period.

Report dimensions are:

- Day
- Meter

**Figure 12-39 Revenue Protection: Missing Meter Read**



## 12.5.5 Event Analysis

This area includes the report:

- [Event Analysis](#) (page 12-40)

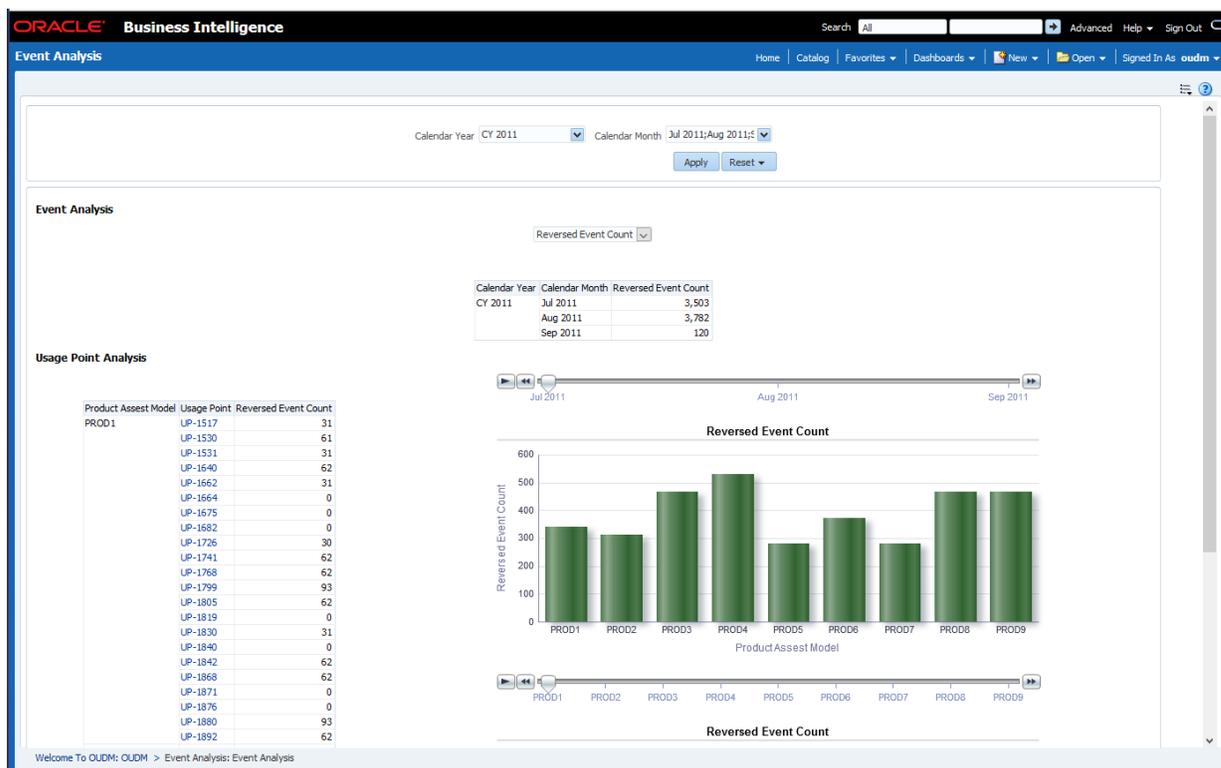
### 12.5.5.1 Event Analysis

This report, as shown in [Figure 12-40](#) (page 12-41) provides information on meter events.

Report dimensions are:

- Calendar Month
- Meter
- Product Asset Model
- Regional Zones
  - Usage Point
  - Region
  - Subregion

Figure 12-40 Revenue Protection: Event Analysis



## 12.6 Load Analysis Sample Reports

The load analysis sample reports include the following areas:

- [Daily Load Profile](#) (page 12-41)

### 12.6.1 Daily Load Profile

This area includes the reports:

- [Daily Load Profile](#) (page 12-41)
- [Daily Load Profile by Geography](#) (page 12-43)

#### 12.6.1.1 Daily Load Profile

This report, as shown in [Figure 12-41](#) (page 12-42) and [Figure 12-42](#) (page 12-43) provides the daily average loading status for a selected operational area over a given time period.

Report dimensions are:

- Calendar Month
- Day
- Hour

- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-41 Daily Load Profile (Top)

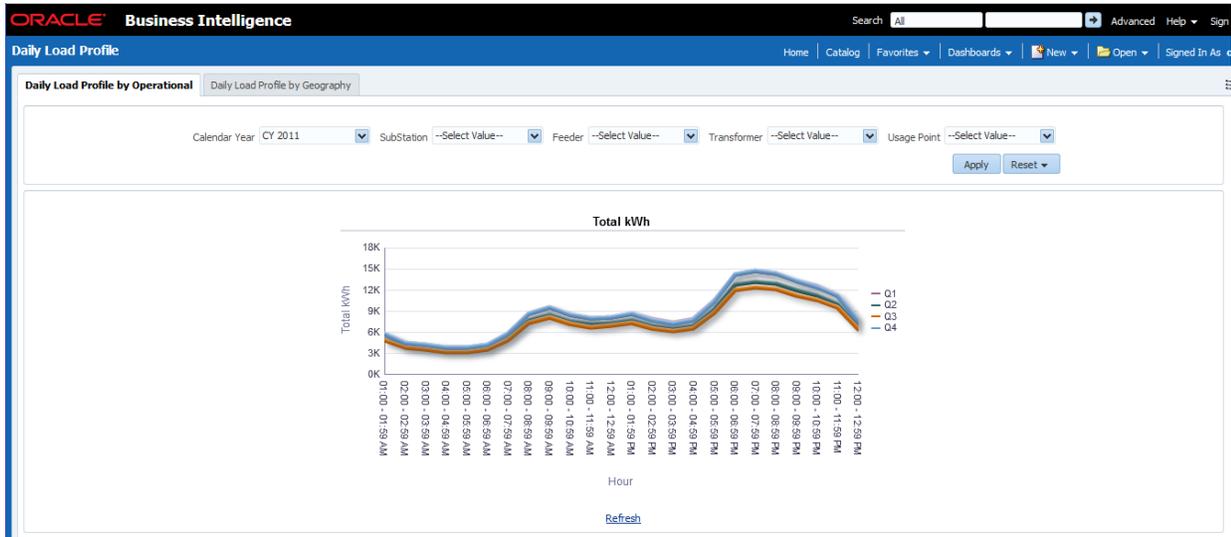
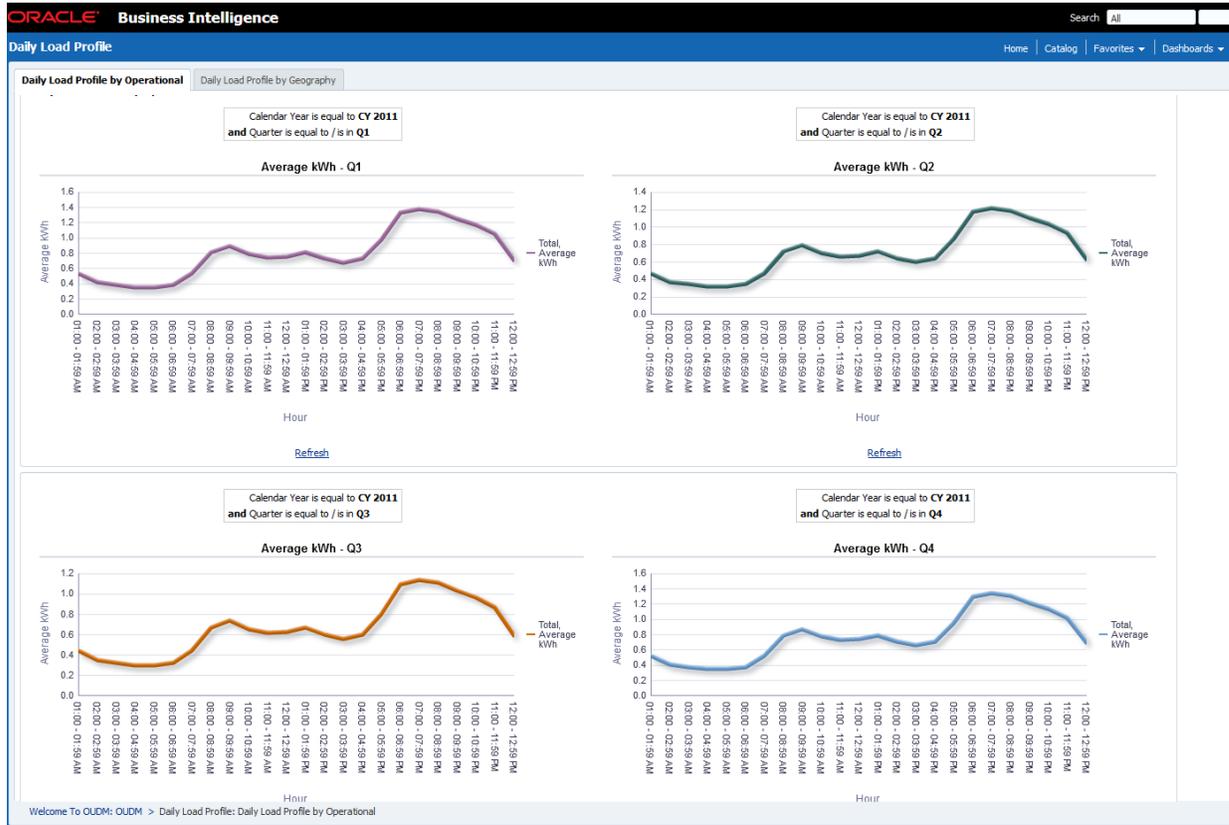


Figure 12-42 Daily Load Profile (Q1, Q2, Q3, and Q4)



### 12.6.1.2 Daily Load Profile by Geography

This report, as shown in Figure 12-43 (page 12-44) provides the daily average loading status for a selected geography over a given time period.

Report dimensions are:

- Calendar Month
- Day
- Hour
- Geographical Zones
  - Usage Point
  - City
  - State

Figure 12-43 Daily Load Profile by Geography (Top)

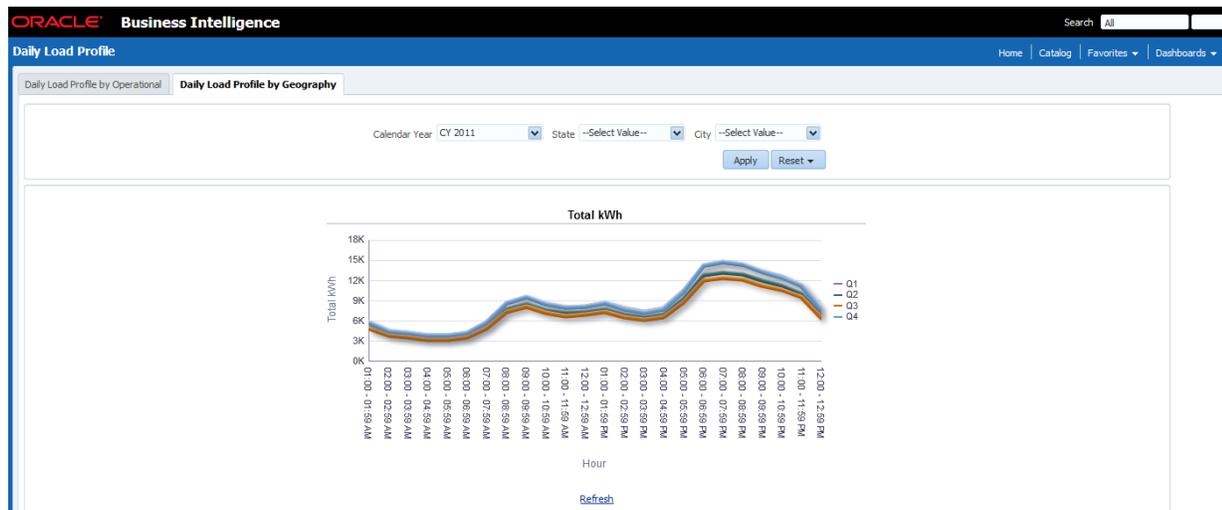
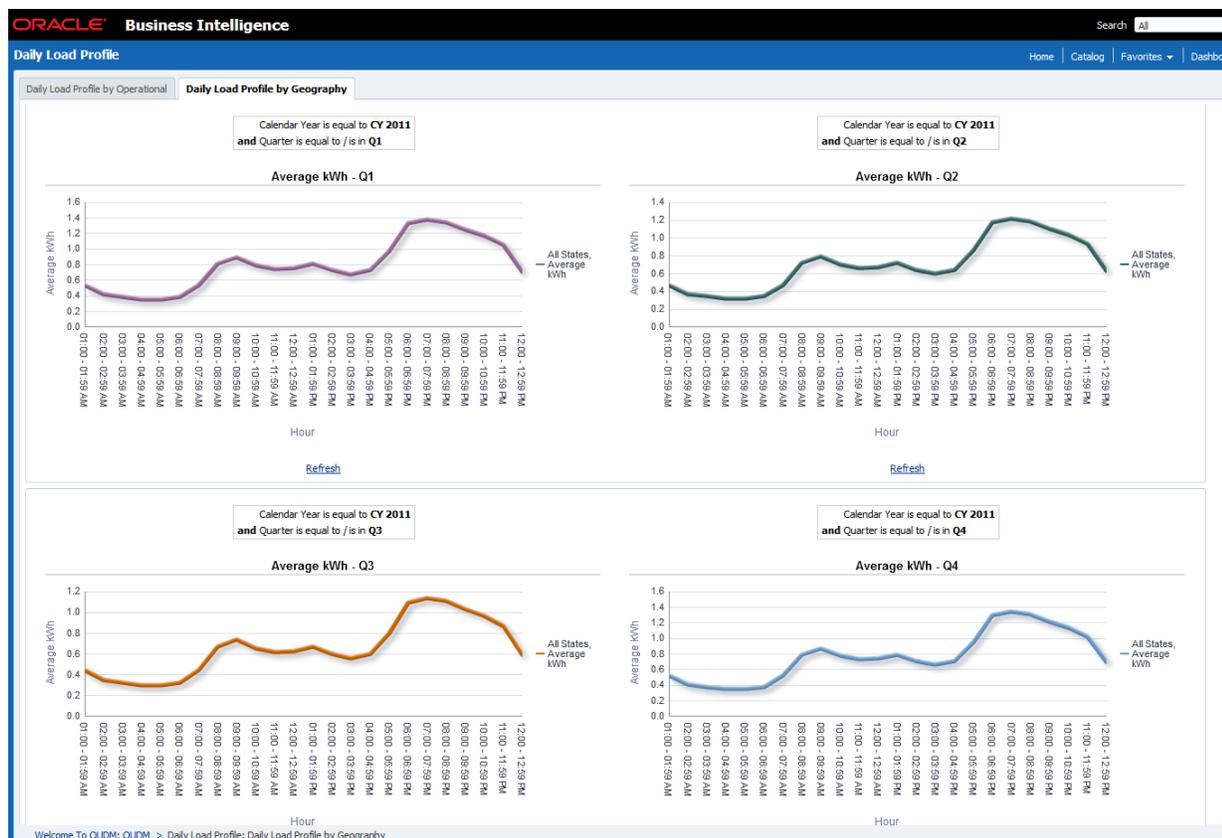


Figure 12-44 Daily Load Profile by Geography (Q1, Q2, Q3, and Q4)



## 12.7 OLAP Sample Reports

The OLAP sample reports include the following areas:

- [Monthly Total Usage Operational](#) (page 12-45)
- [Monthly Total Usage \(Utility\)](#) (page 12-45)
- [Monthly Total Usage Geography](#) (page 12-46)
- [Event Analysis](#) (page 12-47)
- [Usage Point Analysis](#) (page 12-48)

## 12.7.1 Monthly Total Usage Operational

This report provides the monthly total usage over a given time period.

Report dimensions are:

- Calendar Month
- Day
- Hour
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

**Figure 12-45 Monthly Total Usage (Operational)**



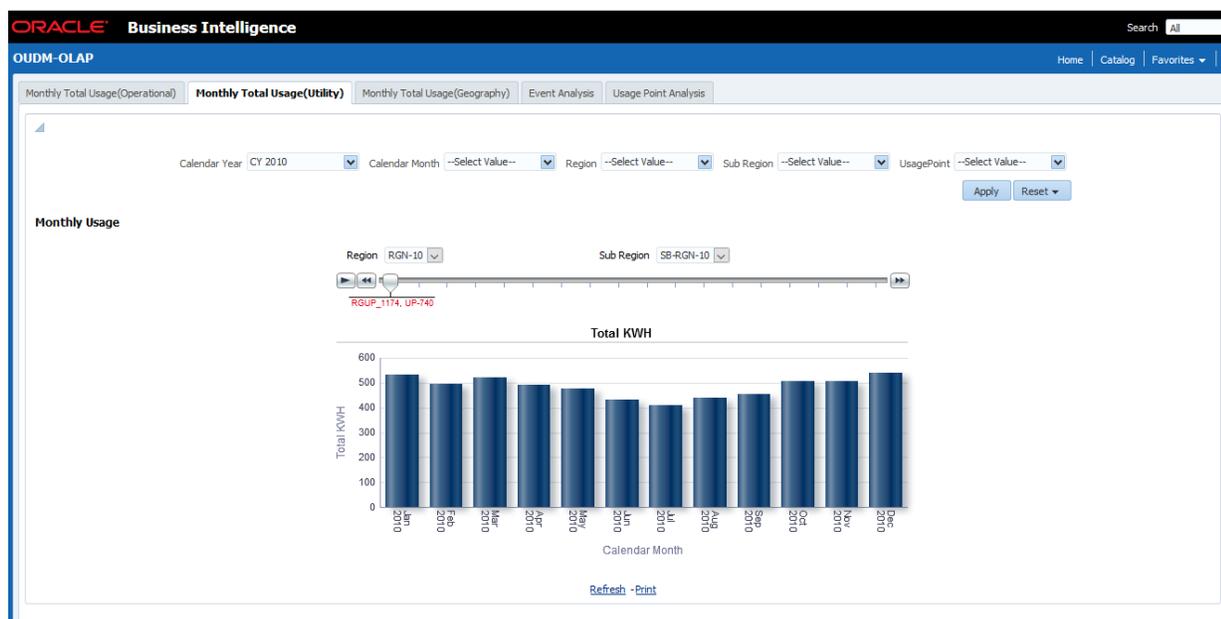
## 12.7.2 Monthly Total Usage (Utility)

This report provides the monthly total usage by region and subregion over a given time period.

Report dimensions are:

- Calendar Month
- Day
- Hour
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

**Figure 12-46 Monthly Total Usage (Utility)**



### 12.7.3 Monthly Total Usage Geography

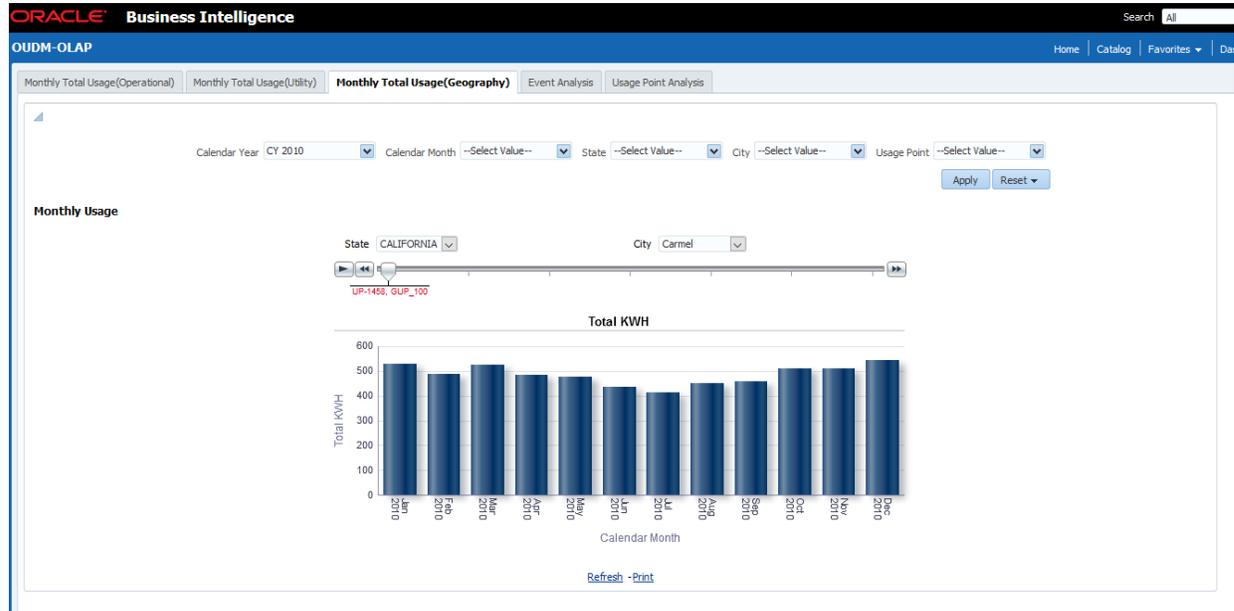
This report provides the monthly total usage by geographic area.

Report dimensions are:

- Calendar Month
- Day
- Hour
- Operational
  - Usage Point
  - Transformer
  - Feeder

– Substation

**Figure 12-47 Monthly Total Usage Geography**



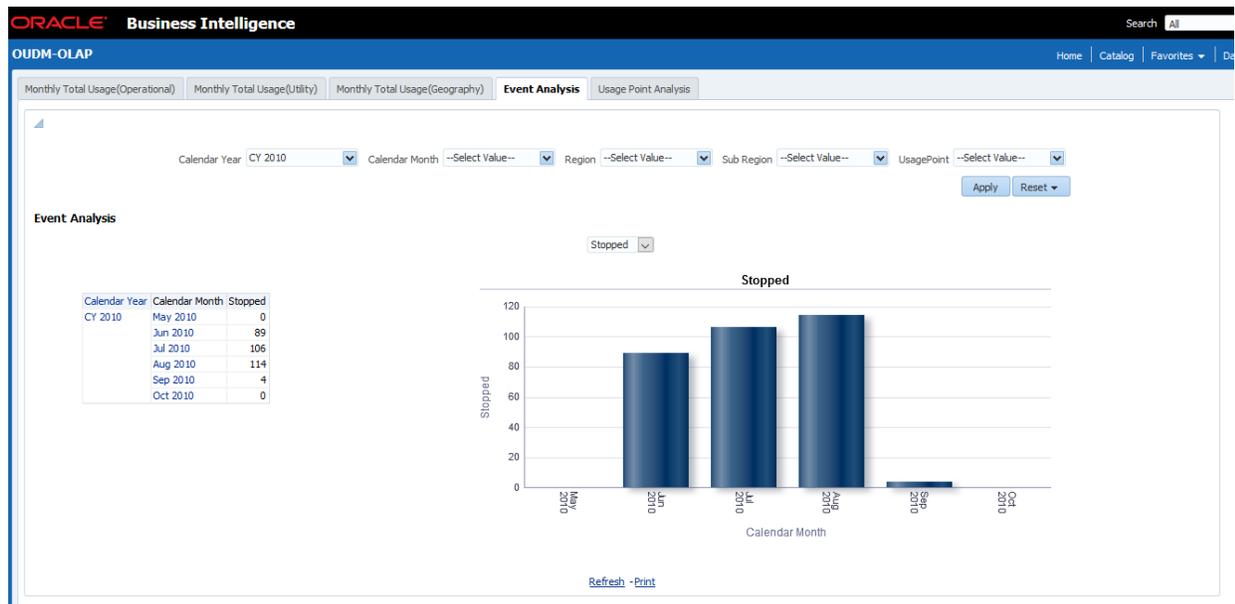
## 12.7.4 Event Analysis

This report provides the event analysis by selected event type over a given time period.

Report dimensions are:

- Calendar Month
- Day
- Hour
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-48 Event Analysis



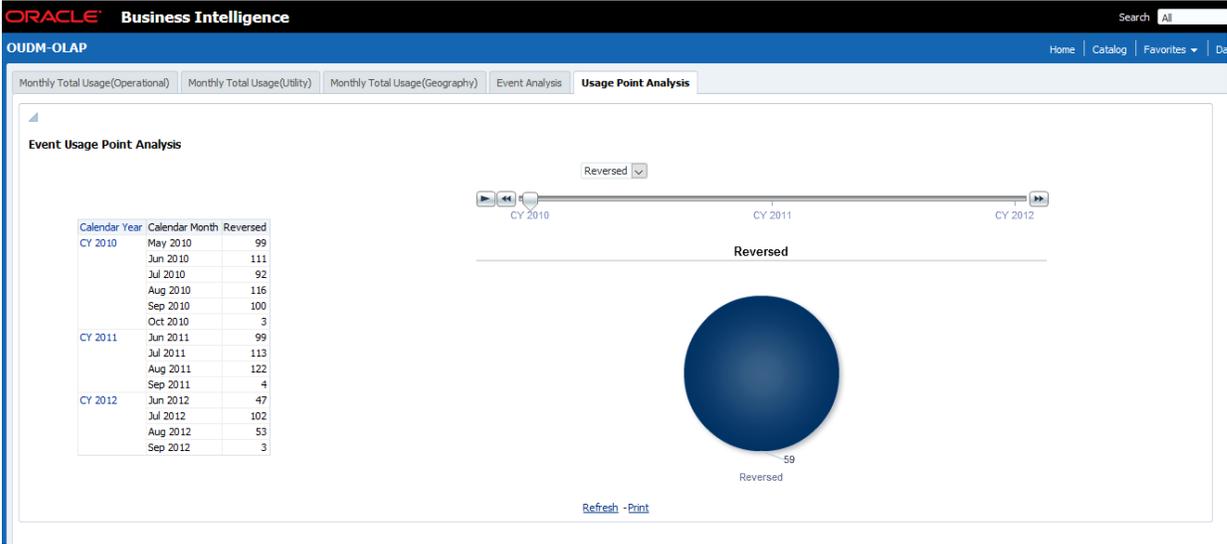
## 12.7.5 Usage Point Analysis

This report provides the usage point analysis by usage type over a given time period.

Report dimensions are:

- Calendar Month
- Day
- Hour
- Operational
  - Usage Point
  - Transformer
  - Feeder
  - Substation

Figure 12-49 Usage Point Analysis



# 13

## Oracle Utilities Data Model Users and Application Roles

This chapter provides the creation steps for Oracle Utilities Data Model Users and Application Roles.

This chapter includes the following sections:

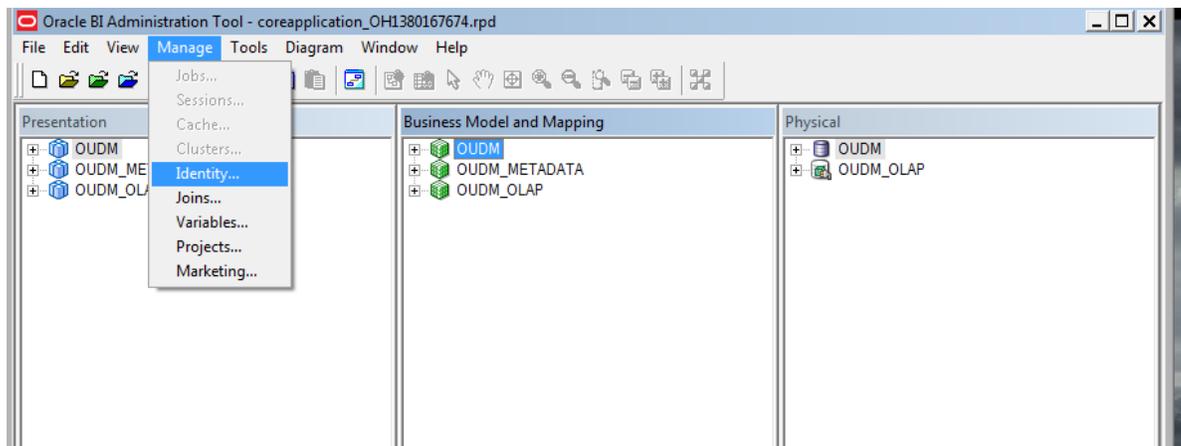
- [Creating Oracle Utilities Data Model Application Roles](#) (page 13-1)
- [Creating Oracle Utilities Data Model Users](#) (page 13-4)

### 13.1 Creating Oracle Utilities Data Model Application Roles

To create the Oracle Utilities Data Model Application Roles, perform the following steps:

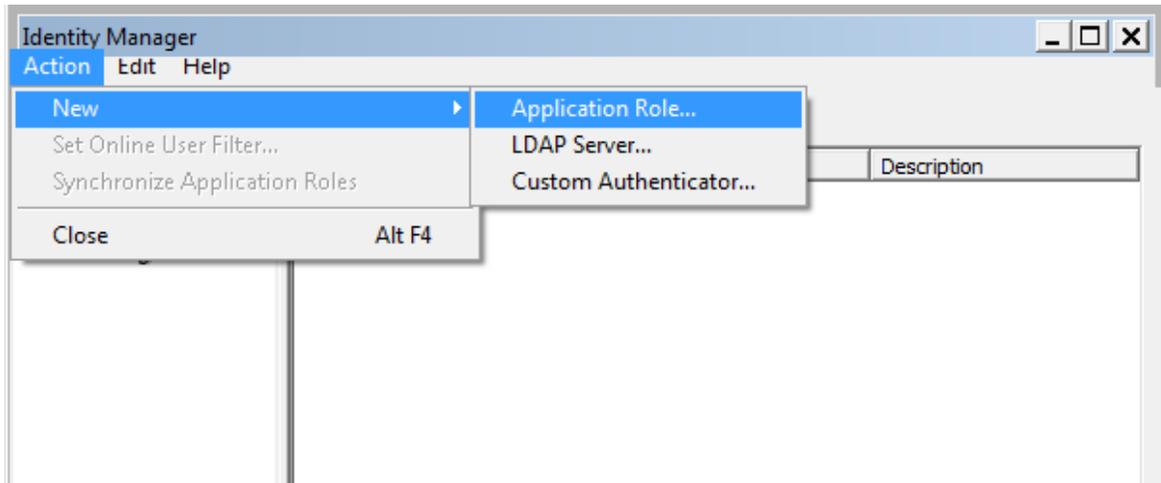
1. Start the Oracle BI Administration Tool. Start RPD in the offline mode. Select the Manage menu and click **Identity**.

**Figure 13-1 Oracle BI Administration Tool Manage Menu**



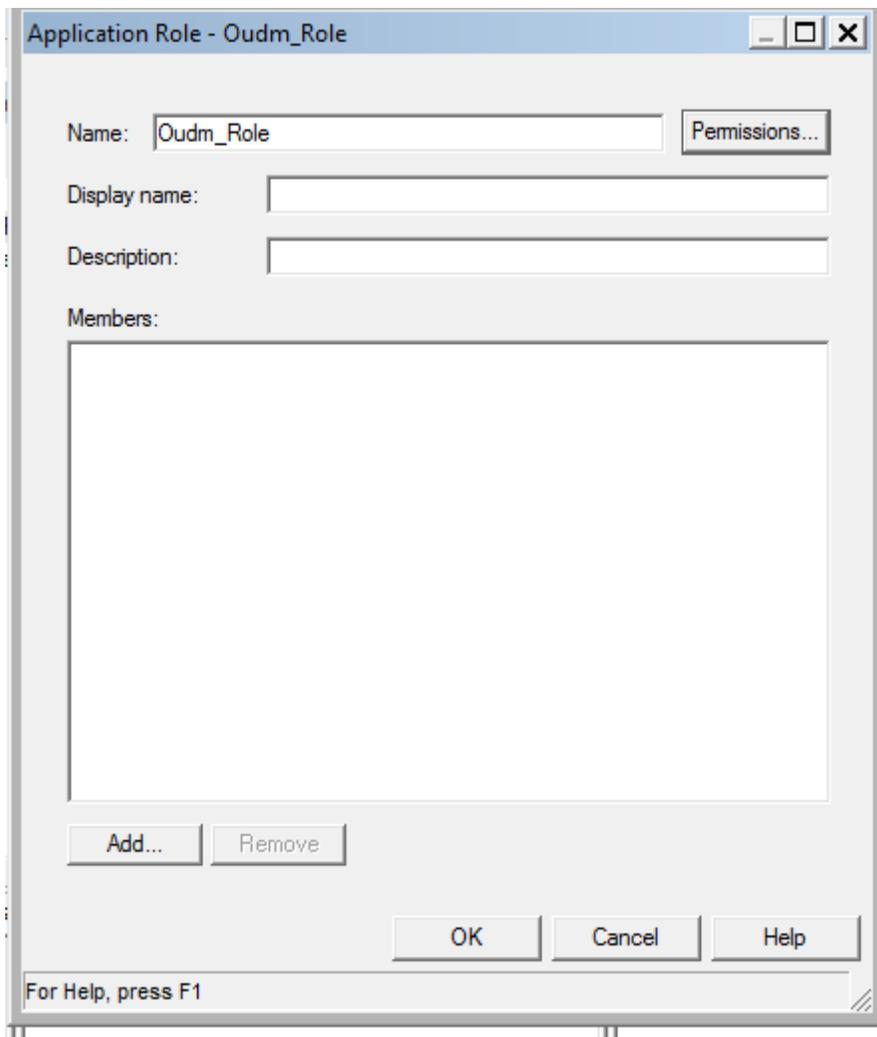
2. In the Identity Manager screen, select Action, then select New, and click **Application Role**.

Figure 13-2 Oracle BI Administration Tool Identity Manager Page



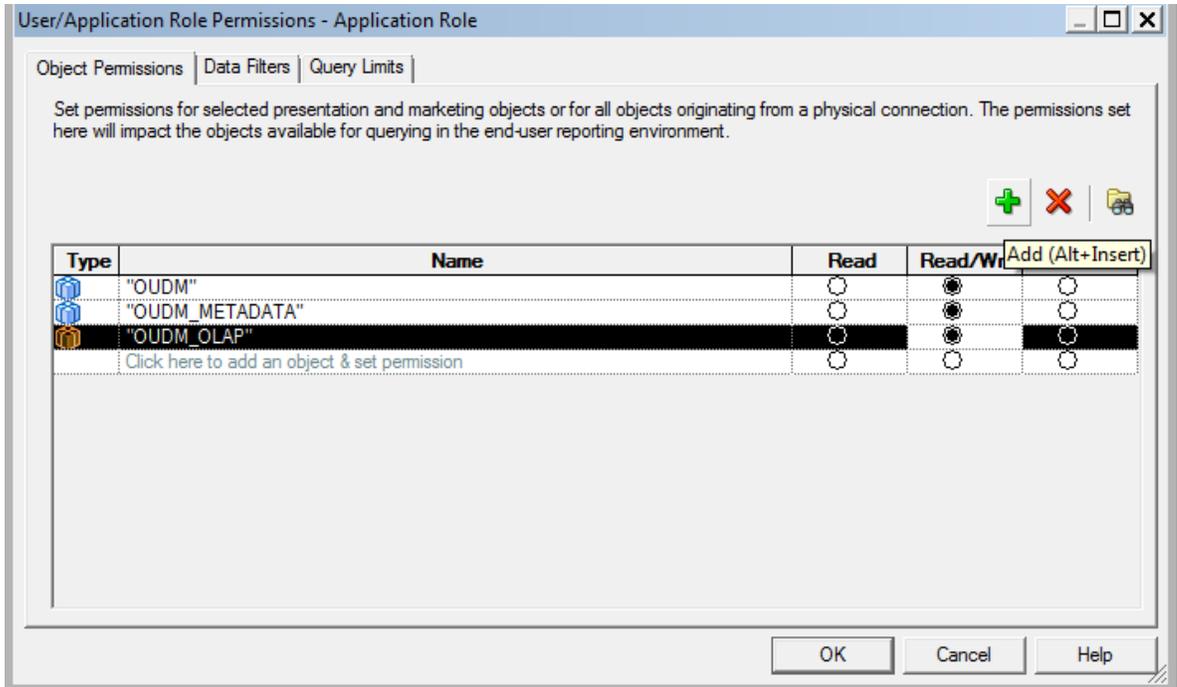
3. Enter *Oudm\_Role* in the Name field and click **Permissions**.

Figure 13-3 Oracle BI Administration Tool Application Role - Oudm\_Role Page



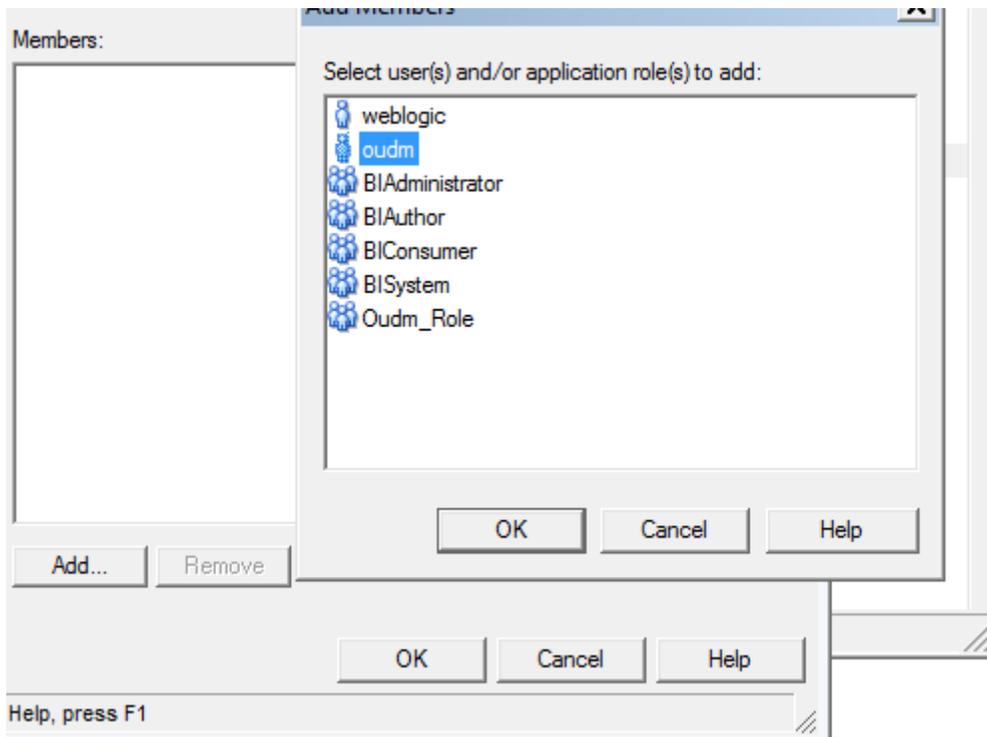
4. In the Object Permissions option, provide the appropriate permissions for the Application Role.

**Figure 13-4 User/Application Role Permissions - Application Role Page**



5. Click **Add** and select the appropriate users. Click **OK**, and then click **Close**.

**Figure 13-5 Oracle BI Administration Tool Users and Application Roles List**

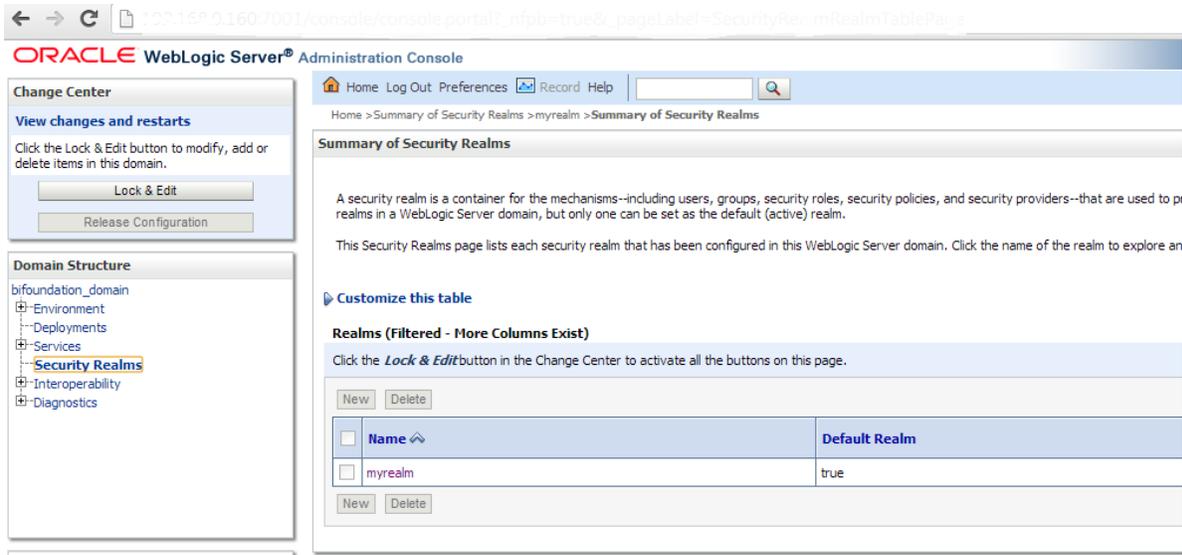


## 13.2 Creating Oracle Utilities Data Model Users

To create the Oracle Utilities Data Model Users, perform the following steps:

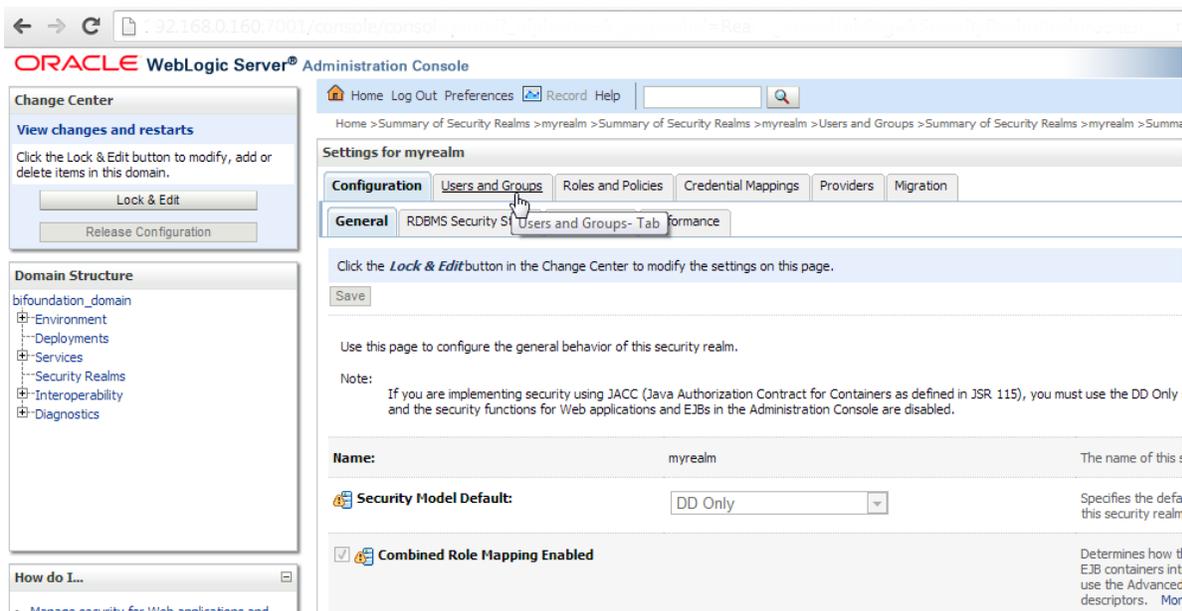
1. Login to Oracle Weblogic Server Administration Console. Select Security Realms option in the Domain Structure and click **my realm**.

**Figure 13-6 Weblogic Server Administration Console for Data Model Users**



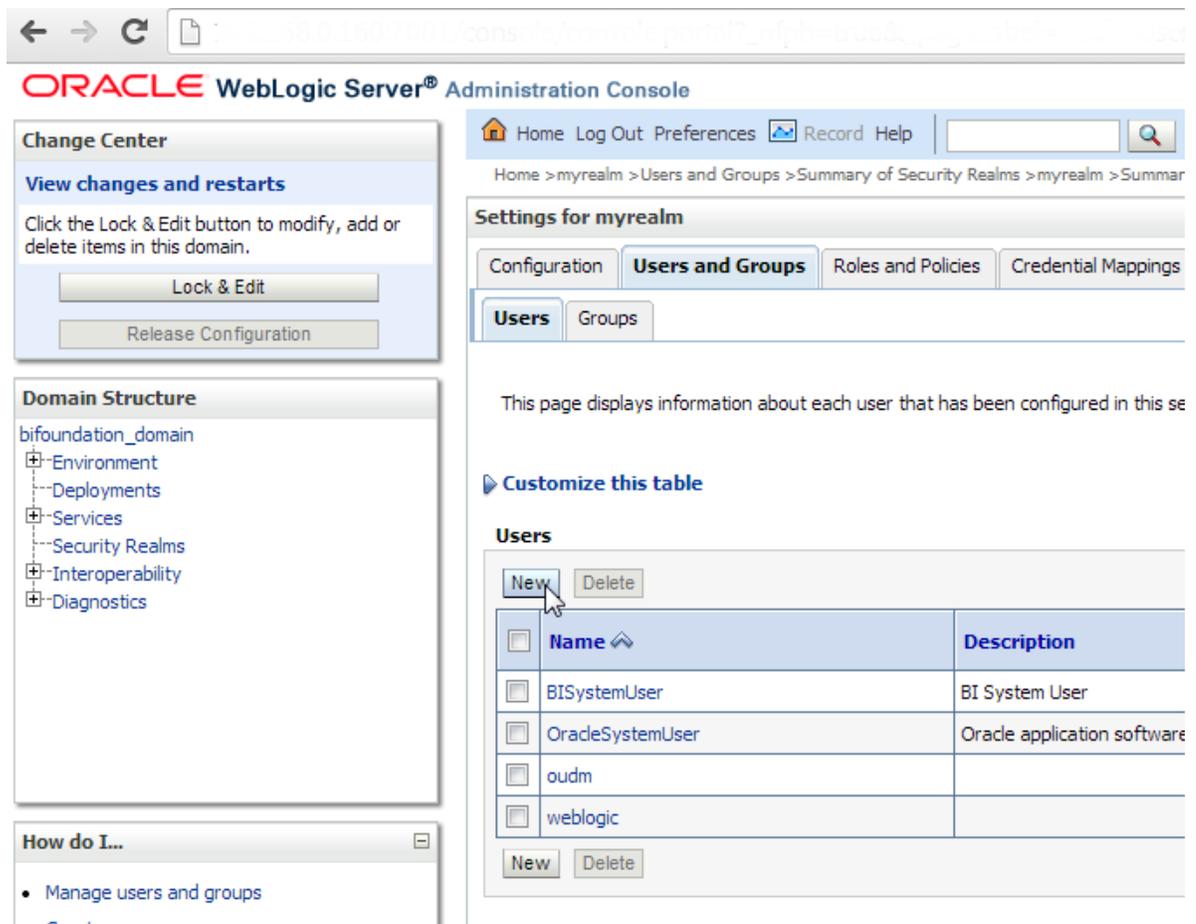
2. Click **Users and Groups**.

**Figure 13-7 Weblogic Server Administration Console for Data Model Users**



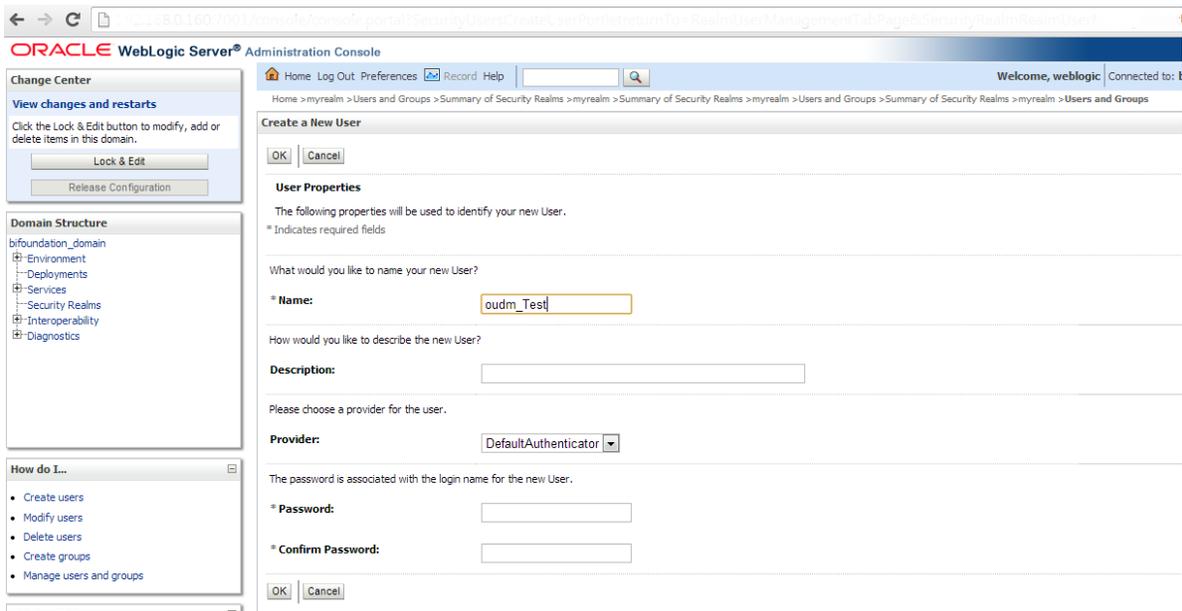
Click **New**.

**Figure 13-8 Weblogic Server Administration Console for Data Model Users**



3. Enter the appropriate details in the User Properties section, as described in Table 13-1 (page 13-6).

**Figure 13-9 Weblogic Server Administration Console for Data Model Users**



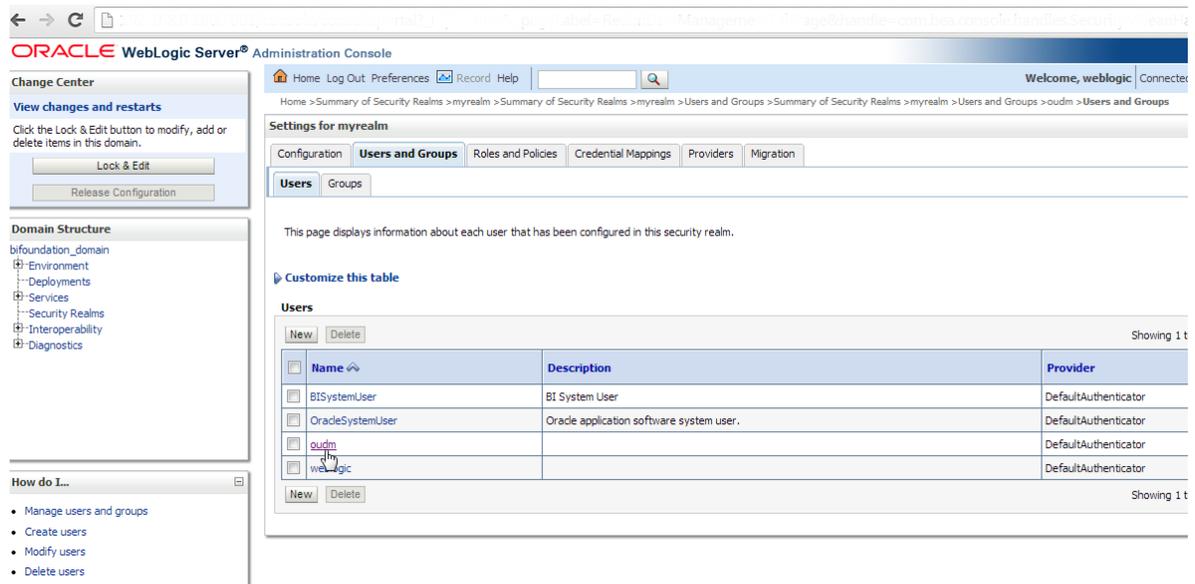
**Table 13-1 Fields in Console Page to Create Data Model Users**

Field	Description
Name	Enter the <i>User Name</i> . For example, <i>oudm_Test</i>
Description	Retain the blank field
Provider	Retain the default option
Password	Specify a <i>password</i>
Confirm Password	Specify the same <i>password</i>

Click OK.

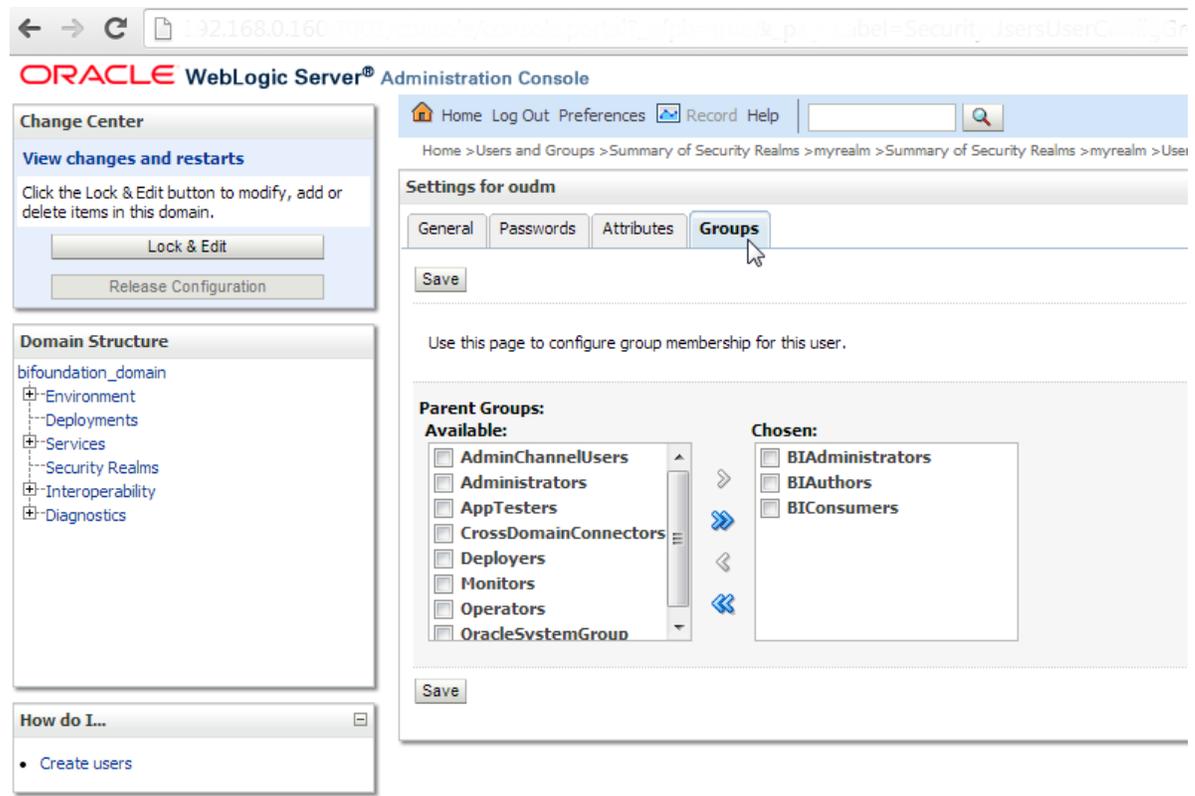
4. Double-click **oudm** in the Users tab.

**Figure 13-10 Weblogic Server Administration Console Users Tab**



Click **Groups** and then click **Save**.

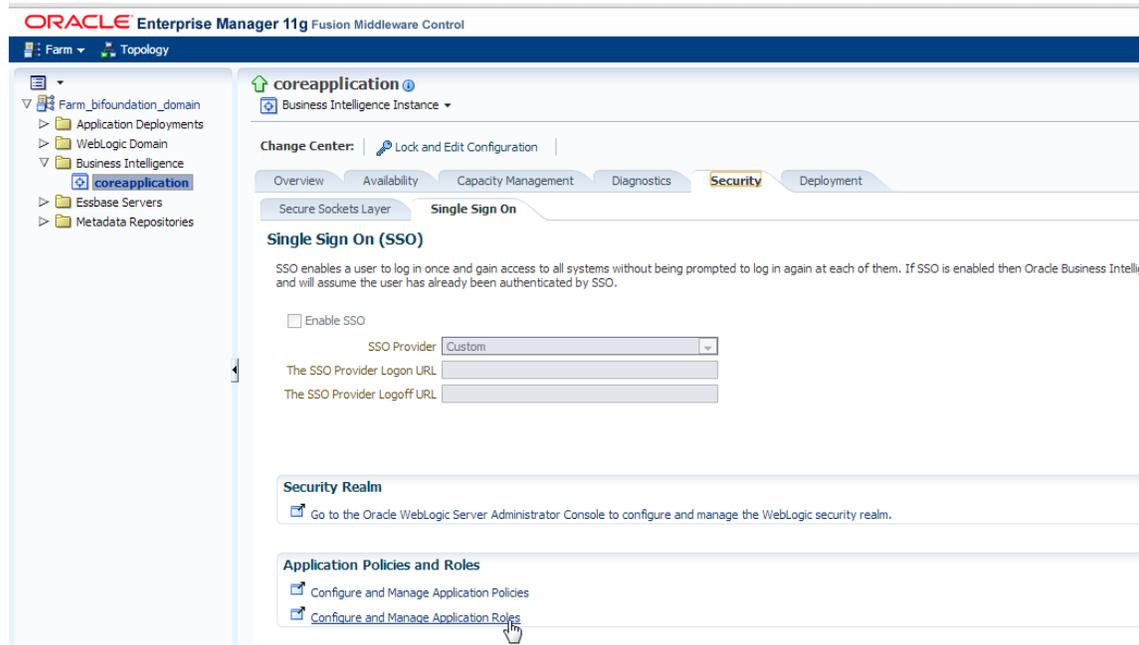
**Figure 13-11 Weblogic Server Administration Console Groups Tab**



5. Login to Enterprise Manager 11g and perform the following steps:

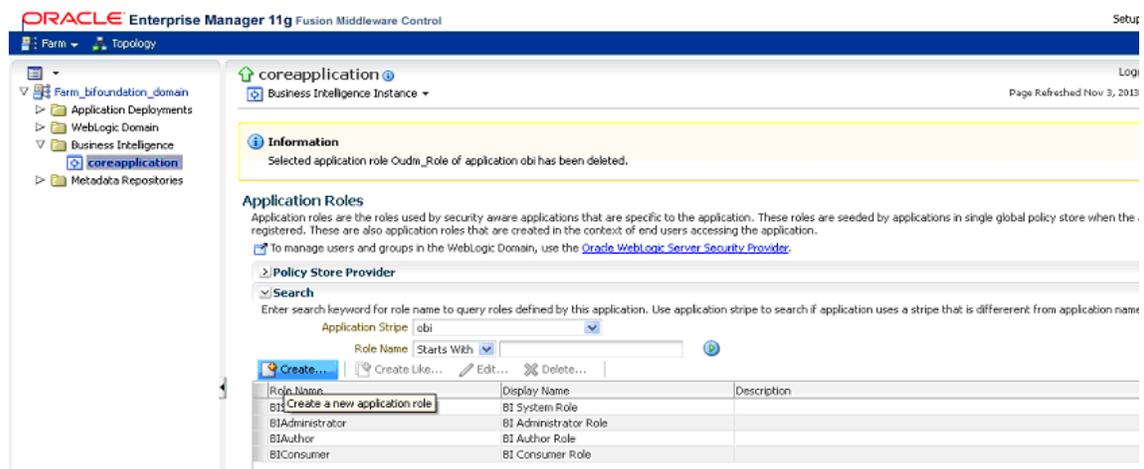
- a. Expand the Business Intelligence tab and click **coreapplication**.
- b. Select the Security tab and click **Configure and Manage Application Roles**.

**Figure 13-12 Enterprise Manager 11g Configure and Manage Application Roles Link**



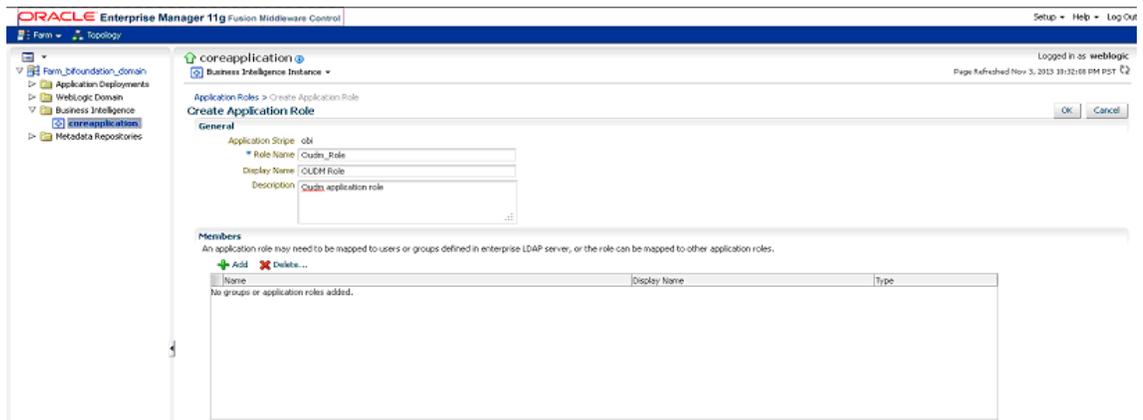
- c. Click **Create...** to create application role.

**Figure 13-13 Enterprise Manager 11g Create Application Role**



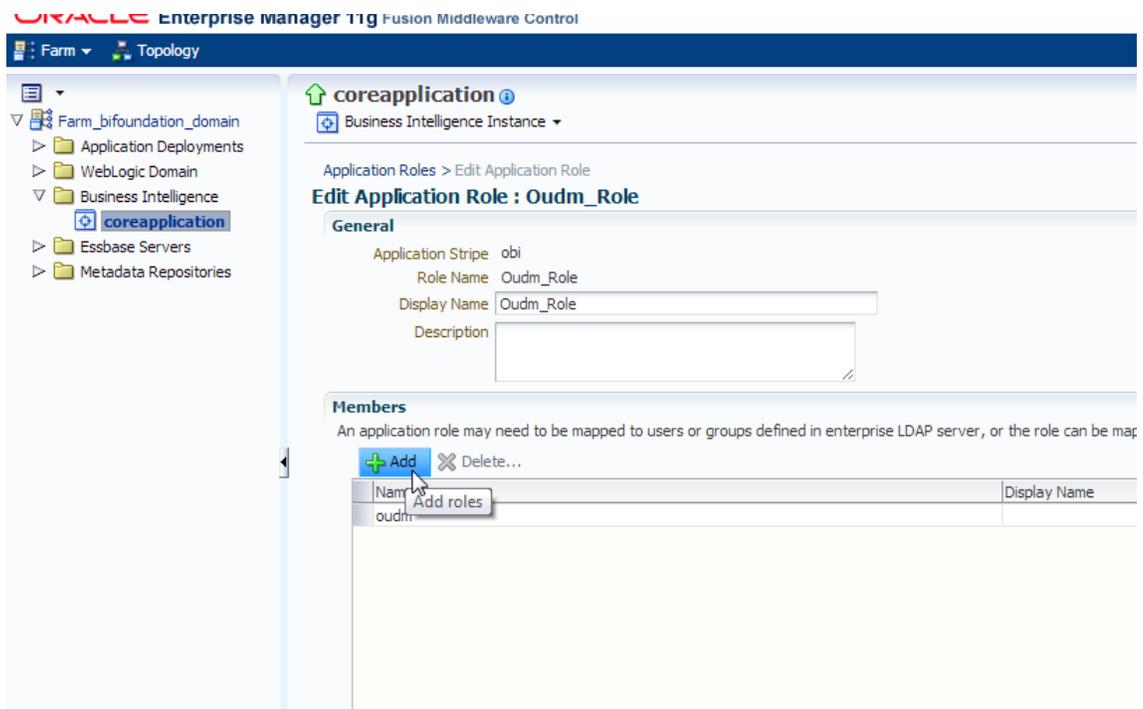
- d. Enter "Oudm\_Role" for application role name and display name fields.

**Figure 13-14 Enterprise Manager 11g Coreapplication Create Oudm\_Role**



- e. Click **Add** in the Members section to add new users to the application role.

**Figure 13-15 Enterprise Manager 11g Coreapplication Section**



- f. Click **OK**.
- 6. Refresh the User Globally Unique Identifiers (GUIDs) and restart the services.
  - [Refreshing the GUID](#) (page 13-9)

## 13.2.1 Refreshing the GUID

If you change the directory server used as the identity store for the authentication provider, then you must refresh the user GUIDs. If you do not refresh the GUIDs, and the same user name exists in both the original and new directory servers, then the

original user GUID shows a conflict with the user GUID contained in new directory server, resulting in authentication errors.

For more information on these steps, see *Oracle Fusion Middleware Security Guide for Oracle Business Intelligence Enterprise Edition*.

To refresh the User GUIDs, perform the following steps:

 **Note:**

You must manually edit the configuration files in Oracle BI Server and Oracle BI Presentation Server and refresh the GUIDs after the restart. Edit these files to remove the changes after the refresh is complete.

1. Update the `FMW_UPDATE_ROLE_AND_USER_REF_GUIDS` parameter in `NQSConfig.INI`: at the following path:

```
\MiddlewareHome\instances\instance2\config\OracleBIServerComponent
\coreapplication_obis1 \NQSConfig.INI
```

Open and locate the `FMW_UPDATE_ROLE_AND_USER_REF_GUIDS` parameter and set it to YES, as shown:

```
FMW_UPDATE_ROLE_AND_USER_REF_GUIDS = YES;
```

Save the file.

2. Update the `ps:Catalog` element in `instanceconfig.xml`: at the following path:

```
\MiddlewareHome\instances\instance2\config
\OracleBIPresentationServicesComponent
\coreapplication_obips1\Instanceconfig.xml
```

Locate the `ps:Catalog` element and update it, as shown:

```
<ps:UpgradeAndExit>false</ps:UpgradeAndExit>
```

Paste the command, as shown:

```
< UpdateAccountGUIDs>UpdateAndExit</ UpdateAccountGUIDs>
```

Save the file.

3. In Enterprise Manager 11g, restart BI server.
4. Update the `FMW_UPDATE_ROLE_AND_USER_REF_GUIDS` parameter in `NQSConfig.INI`: at the following path:

```
\MiddlewareHome\instances\instance2\config\OracleBIServerComponent
\coreapplication_obis1 \NQSConfig.INI
```

Open and locate the `FMW_UPDATE_ROLE_AND_USER_REF_GUIDS` parameter and set it to NO, as shown:

```
FMW_UPDATE_ROLE_AND_USER_REF_GUIDS = NO;
```

Save the file.

5. Update the `ps:Catalog` element in `instanceconfig.xml`: at the following path:

```
\MiddlewareHome\instances\instance2\config
\OracleBIPresentationServicesComponent
\coreapplication_obips1\Instanceconfig.xml
```

Locate the `ps:Catalog` element and update, as shown:

```
<ps:UpgradeAndExit>>false</ps:UpgradeAndExit>
```

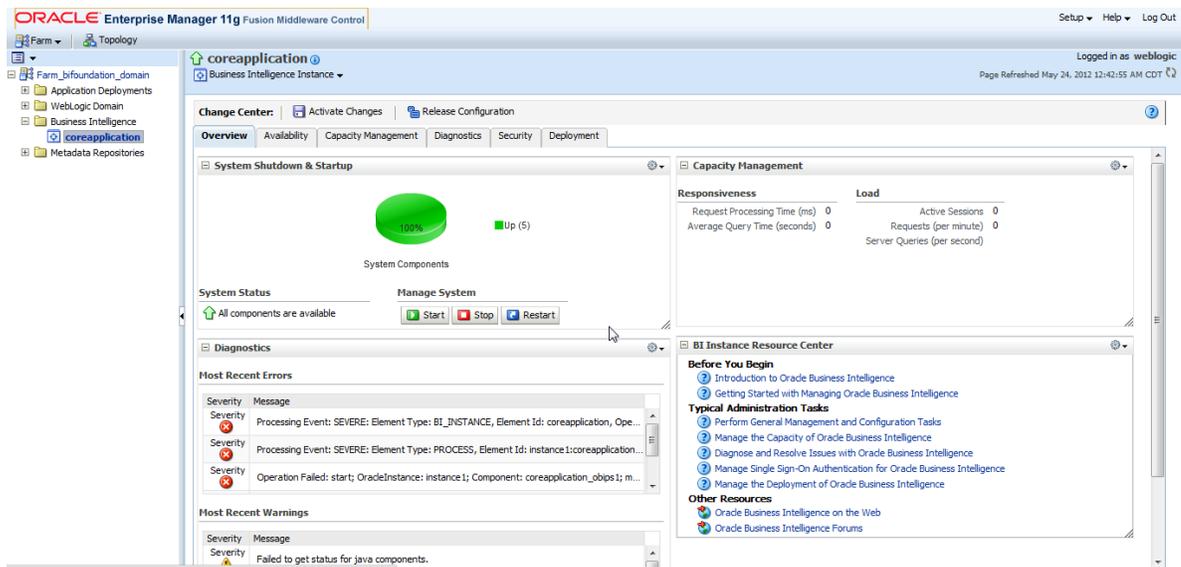
Remove the following command:

```
<ps: UpdateAccountGUIDs>UpdateAndExit<ps: UpdateAccountGUIDs>
```

Save the file.

6. In Enterprise Manager 11g, restart BI server.

**Figure 13-16 Enterprise Manager 11g Coreapplication Overview Tab**



**Note:**

Ensure that Oracle Web Logic Server and the system components are running. If they are not running, restart the server and the components.

# 14

## Metadata Collection and Reports

This chapter includes the following sections:

- [Overview of Managing Metadata for Oracle Utilities Data Model](#) (page 14-1)
- [Browsing Metadata Reports and Dashboard](#) (page 14-3)
- [Collecting and Populating Metadata](#) (page 14-5)

### 14.1 Overview of Managing Metadata for Oracle Utilities Data Model

Metadata is any data about data and, as such, is an important aspect of the data warehouse environment. Metadata allows the end user and the business analyst to navigate through the possibilities at a higher business object level.

Metadata management is a comprehensive, ongoing process of overseeing and actively managing metadata in a central environment which helps an enterprise to identify how data is constructed, what data exists, and what the data means. It is particularly helpful to have good metadata management when customizing Oracle Utilities Data Model so that you can do impact analysis to ensure that changes do not adversely impact data integrity anywhere in your data warehouse.

- [Metadata Categories and Standards](#) (page 14-1)
- [Working with a Metadata Repository](#) (page 14-2)

#### 14.1.1 Metadata Categories and Standards

Metadata is organized into three major categories:

- **Business metadata** describes the meaning of data in a business sense. The business interpretation of data elements in the data warehouse is based on the actual table and column names in the database. Business metadata gathers this mapping information, business definitions, and rules information.
- **Technical metadata** represents the technical aspects of data, including attributes such as data types, lengths, lineage, results from data profiling, and so on.
- **Process execution metadata** presents statistics on the results of running the ETL process itself, including measures such as rows loaded successfully, rows rejected, amount of time to load, and so on.

Since metadata is so important in information management, many organizations attempt to standardize metadata at various levels, such as:

- **Metadata Encoding and Transmission Standard (METS)**. A standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library.

- American National Standards Institute (ANSI). The organization that coordinates the U.S. voluntary standardization and conformity-assessment systems.
- International Organization for Standardization (ISO). The body that establishes, develops, and promotes standards for international exchange.
- Common Warehouse Metamodel (CWM). A specification, released and owned by the Object Management Group, for modeling metadata for relational, non-relational, multi-dimensional, and most other objects found in a data warehousing environment.

When you implement your metadata management solution, reference your data warehouse infrastructure environment and make the decision which standard to follow.

## 14.1.2 Working with a Metadata Repository

You manage metadata using a Metadata Repository. At the highest level, a Metadata Repository includes three layers of information. The layers are defined in the following order:

1. Physical layer: this metadata layer identifies the source data.
2. Business Model and Mapping layer: this metadata layer organizes the physical layer into logical categories and records the appropriate metadata for access to the source data.
3. Presentation layer: this metadata layer exposes the business model entities for end-user access.

The first step in creating a Metadata Repository is to scope your metadata management needs by:

- Identifying the metadata consumers. Typically, there are business consumers and technical consumers.
- Determine the business and technical metadata requirements.
- Aligning metadata requirements to specific data elements and logical data flows.

Then:

- Decide how important each part is.
- Assign responsibility to someone for each piece.
- Decide what constitutes a consistent and working set of metadata
- Where to store, backup, and recover the metadata.
- Ensure that each piece of metadata is available only to those people who need it.
- Quality-assure the metadata and ensure that it is complete and up to date.
- Identify the Metadata Repository to use and how to control that repository from one place

After creating the metadata definitions, review your data architecture to ensure you can acquire, integrate, and maintain the metadata.

As the data keeps on changing in your data warehouse day by day, update the Metadata Repository. When you want to change business rules, definitions, formulas or process (especially when customizing the Oracle Utilities Data Model), your first step is to survey the metadata and do an impact analysis to list all of the attributes in the data warehouse environment that would be affected by a proposed change.

## 14.2 Browsing Metadata Reports and Dashboard

To customize the Oracle Utilities Data Model model, you must understand the dependencies among Oracle Utilities Data Model components, especially how the report KPIs are mapped to the physical tables and columns. Oracle Utilities Data Model provides a tool, the OCDM Metadata browser that helps you discover these dependencies. When you install Oracle Utilities Data Model with its sample reports, the metadata browser is delivered as a sample Dashboard in the webcat.

There are four tabs (reports) in the Oracle Utilities Data Model Metadata browser. To browse the metadata repository:

1. In the browser, open the login page at `http://servername:9704/analytics` where `servername` is the server on which the webcat is installed.
  2. Login with username of `ocdm`, and provide the password.
  3. Select the Metadata Browser dashboard.
  4. Use the tabs in the Metadata browser to explore the metadata.
    - **Measure-Entity tab**

On the Measure-Entity tab you can see the business areas (relational, OLAP, mining), the measures description, corresponding formula, responsible entities, and attributes for the measure.
    - **Entity-Measure tab**

Using the Entity-Measure tab, you can discover the mappings between entities, attributes, supported measures, and calculations of the measures. You can discover information about particular entities and attributes.
    - **Program-Table tab**

Using the Program-Table tab you can browse for information on the intra-ETL mappings and report information. Take the following steps:
    - **Table-Program tab**

By default when you go to the Table-Program tab you see all of the tables used for all the reports.

To discover what reports use a particular table, you must move a particular table from the right pane to the left (Selected) pane.
- [Using the Measure-Entity Tab Business Areas and Measures Attributes and Entities](#) (page 14-4)
  - [Using the Entity-Measure Tab Entity to Attribute Measures](#) (page 14-4)
  - [Using the Program-Table Tab](#) (page 14-4)

The **Program-Table** tab displays the input and output tables used in the selected programs.
  - [Using the Table-Program Tab](#) (page 14-4)

The **Table-Program** tab lists the Programs used by a given table and whether that table is an input or output, or both, of that program.

## 14.2.1 Using the Measure-Entity Tab Business Areas and Measures Attributes and Entities

The **Measure-Entity** tab provides information on the measure descriptions, computational formulas with physical columns, physical tables, and corresponding entities by Business Area.

To browse the **Measure-Entity** data, select the business area and measure description that you are interested in.

## 14.2.2 Using the Entity-Measure Tab Entity to Attribute Measures

The **Entity-Measure** tab displays the measures supported by the entities and how they are calculated. You can discover information about particular entities and attributes.

To view the **Entity-Measure** tab perform the following steps to learn more about an entity:

1. Select the entity.
2. Click **GO**.

## 14.2.3 Using the Program-Table Tab

The **Program-Table** tab displays the input and output tables used in the selected programs.

To use the Program-Table tab, perform the following steps to learn more about intra-ETL mappings:

1. Select the program type (that is, intra-ETL or report) and program name for showing particular report or intra-ETL information.
2. Select **GO**.

## 14.2.4 Using the Table-Program Tab

The **Table-Program** tab lists the Programs used by a given table and whether that table is an input or output, or both, of that program.

To discover what reports use a particular table, move a particular table from the right pane to the left (Selected) pane.

To see the reports that use a particular table, perform the following steps:

1. In the right pane of the **Table-Program** tab, select the table.
2. Move the table to the Selected list on the left by clicking on < (left arrow), and click **OK**.
3. Select **GO**.

The reports for the selected table are displayed.

## 14.3 Collecting and Populating Metadata

The Oracle Utilities Data Model metadata browser generation packages generate and update the Oracle Utilities Data Model metadata. The metadata generation package contains four main tables and several staging tables and views. The metadata generation tables are:

- MD\_ENTY
- MD\_PRG
- MD\_KPI
- MD\_REF\_ENTY\_KPI

Use the following steps to collect and populate the metadata.

1. Collect LDM Metadata:

Extract the Logical Data Model repository metadata from Oracle SQL Developer Data Modeler (OSDM) into a database schema. Use manual steps to generate Logical Data Model repository tables in the database with Oracle SQL Developer Data Modeler.

- a. Start Oracle SQL Developer Data Modeler
- b. Open Logical Data Model
- c. Select **File**.
- d. Select **Export**.
- e. Select **To Reporting Schema**.

2. Collect Sample Dashboard Metadata:

Extract the BIEE dashboard metadata from webcat to csv file.

Using OBIEE catalog manager open the SQL Developer sample report webcat:

Tools -> create Report -> Select type to report on -> select dashboard

Select columns one by one as shown in the `md_dashboard.ldr` specified in the `meta_data` folder, then save as a csv format file, `md_dashboard.csv`.

Put this file in the `meta_data` folder.

Column Sequence:

- a. Name
- b. Description
- c. Path
- d. Folder
- e. Analysis Path
- f. Analysis Name
- g. Analysis Description
- h. Dashboard Page Description
- i. Dashboard Page Name

- j. Dashboard Page Path
- k. Owner

3. Collect Sample Report Metadata:

Extract BIEE report metadata from webcat to csv file. Use OBIEE catalog manager to open Oracle Utilities Data Model sample report webcat.

- Tools -> create Report -> Select type to report on -> select Analysis -> select columns one by one as shown in the md\_dashboard.ldr specified in the meta\_data folder.
- Save the file as csv format, md\_dashboard.csv. Put the file under meta\_data folder

Column Sequence:

- a. NAME
- b. DESCRIPTION
- c. TABLE\_NAME
- d. COLUMN\_NAME
- e. FOLDER
- f. PATH
- g. SUBJECT\_AREA
- h. FORMULA

4. Collect Sample RPD Metadata:

Extract BIEE RPD metadata from RPD to csv file. Use Administrator Tool to open Oracle Utilities Data Model sample report RPD:

- Tools -> Utilities -> Repository Documentation -> Execute -> select location -> set xls file name as md\_rpd.
- Save as csv format md\_rpd.csv and put under meta\_data folder.

5. Load Naming Convention Information:

Load Oracle Utilities Data Model Physical Data Model naming convention information from csv into a staging table. Use sqlloader to load data from name\_conversion.csv into MD\_NAME\_CONVERSION table. The sqlloader format file: Name\_conversion.ldr

```
Name_conversion.ldr:
OPTIONS (SKIP=1)
LOAD DATA
INFILE      'name_conversion.csv'
BADFILE     'name_conversion.csv.bad'
DISCARDFILE 'name_conversion.csv.dsc'
truncate
INTO TABLE MD_NAME_CONVERSION
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '"'
TRAILING NULLCOLS
(
  ABBREVIATION      ,
  FULL_NAME
)
```

6. Load Sample Dashboard Metadata:

Load sample dashboard metadata from csv into a staging table. Use `sqlloader` to load data from `md_dashboard.csv` into `MD_DASHBOARD` table. The `sqlloader` format file: `md_dashboard.ldr`.

```
Md_dashboard.ldr:

OPTIONS (SKIP=1)
LOAD DATA
INFILE      'md_dashboard.csv'
BADFILE     'md_dashboard.csv.bad'
DISCARDFILE 'md_dashboard.csv.dsc'
truncate
INTO TABLE MD_DASHBOARD
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '"'
TRAILING NULLCOLS
(
NAME char(2000),
DESCRIPTION char(2000),
PATH char(2000),
FOLDER char(2000),
ANALYSIS_PATH char(2000),
ANALYSIS_NAME char(2000),
ANALYSIS_DESCRIPTION char(2000),
DASHBOARD_PAGE_DESCRIPTION char(2000),
DASHBOARD_PAGE_NAME char(2000),
DASHBOARD_PAGE_PATH char(2000),
OWNER char(2000)
)
```

## 7. Load Sample Report Metadata

Load sample report metadata from csv into a staging table. Use `sqlloader` to load data from `md_report.csv` into `MD_REPORT` table. The `sqlloader` format file:

```
md_report.ldr.

Md_dashboard.ldr:

OPTIONS (SKIP=1)
LOAD DATA
INFILE      'md_dashboard.csv'
BADFILE     'md_dashboard.csv.bad'
DISCARDFILE 'md_dashboard.csv.dsc'
truncate
INTO TABLE MD_DASHBOARD
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '"'
TRAILING NULLCOLS
(
NAME char(2000),
DESCRIPTION char(2000),
PATH char(2000),
FOLDER char(2000),
ANALYSIS_PATH char(2000),
ANALYSIS_NAME char(2000),
ANALYSIS_DESCRIPTION char(2000),
DASHBOARD_PAGE_DESCRIPTION char(2000),
DASHBOARD_PAGE_NAME char(2000),
DASHBOARD_PAGE_PATH char(2000),
OWNER char(2000)
)
```

## 8. Load Sample RPD Metadata:

Load sample RPD metadata from csv into a staging table.

 **Note:**

If the OLAP part of the RPD is populated by the BIEE native OLAP import. Then the metadata of this part will not be shown in `md_rpd.csv`. You need to manually populate this part of metadata from the RPD.

Use `sqlloader` to load data from `md_rpd.csv` into `MD_RPD` table. The `sqlloader` format file: `md_rpd.ldr`.

`Md_rpd.ldr`:

```

OPTIONS (SKIP=0)
LOAD DATA
INFILE      'md_rpd.csv'
BADFILE     'md_rpd.csv.bad'
DISCARDFILE 'md_rpd.csv.dsc'
truncate
INTO TABLE MD_RPD
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '"'
TRAILING NULLCOLS
(
  SUBJECT_AREA
,PRESENTATION_TABLE
,PRESENTATION_COLUMN char(500)
,DESC_PRESENTATION_COLUMN
,BUSINESS_MODEL
,DERIVED_LOGICAL_TABLE
,DERIVED_LOGICAL_COLUMN
,DESC_DERIVED_LOGICAL_COLUMN
,EXPRESSION char(1000)
,LOGICAL_TABLE
,LOGICAL_COLUMN
,DESC_LOGICAL_COLUMN
,LOGICAL_TABLE_SOURCE
,EXPRESSION_1 char(1000)
,INITIALIZATION_BLOCK
,VARIABLE
,DATABASE
,PHYSICAL_CATALOG
,PHYSICAL_SCHEMA
,PHYSICAL_TABLE
,ALIAS
,PHYSICAL_COLUMN
,DESC_PHYSICAL_COLUMN
)

```

**9.** Load LDM/PDM Metadata (Table `MD_ENTY`):

Load LDM/PDM mapping and related information into table `MD_ENTY`. For information on this step, see "[Load LDM/PDM Metadata \(Table `MD\_ENTY`\) \(page 14-9\)](#)".

**10.** Load Program (Intra-ETL) Metadata (Table `MD_PRG`):

Load Intra-ETL program input/output and related information into table `MD_PRG`. For information on this step, see "[Load Program \(Intra-ETL\) Metadata \(Table `MD\_PRG`\) \(page 14-11\)](#)".

**11.** Load Reports and KPI Metadata (Table - `MD_KPI` and `MD_REF_ENTY_KPI`)

Load sample report metadata into MD\_KPI and load report/PDM/LDM mapping related information into table MD\_REF\_ENTY\_KPI.

For information on this step see "[Load Reports and KPI Metadata \(Table MD\\_KPI and MD\\_REF\\_ENTY\\_KPI\)](#)": (page 14-12)".

- [Load LDM/PDM Metadata \(Table MD\\_ENTY\)](#) (page 14-9)
- [Load Program \(Intra-ETL\) Metadata \(Table MD\\_PRG\)](#) (page 14-11)
- [Load Reports and KPI Metadata \(Table MD\\_KPI and MD\\_REF\\_ENTY\\_KPI\)](#): (page 14-12)

### 14.3.1 Load LDM/PDM Metadata (Table MD\_ENTY)

If you want to get the mapping between a business area and an entity, you have to manually populate this information. You can only get this information from the metadata report for those entities which are used in the report, for those entities which are not used in report, you have to manually map them to the correct business area.

#### Source Tables Required

Source Table Name	Description
DMRS_ATTRIBUTES	Containing attributes of the particular entity
DMRS_ENTITIES	Containing entity name with unique id
MD_NAME_CONVERSION	Containing full name and abbreviation of the distinct word used in the LDM

#### Staging Tables/Views

Staging Table/View Name	Description
MD_OIDM_ATTR_COL_NAME_MAP	Used to store abbreviate the column names based on the standard abbreviation used in the project.
MD_DM_ALL_ENT_ATTR	Used to generate and keep the entity description.

#### Loading MD\_ENTY (MD\_ENTY\_POP.SQL)

- [GIVE\\_ABBRV](#) (page 14-9)
- [MD\\_DM\\_ALL\\_ENT\\_ATTR](#) (page 14-10)
- [PL/SQL Program to Update Column Name](#) (page 14-10)
- [PL/SQL program to insert initial data into MD\\_OIDM\\_ATTR\\_COL\\_NAME\\_MAP](#) (page 14-10)
- [PL/SQL program to load data into MD\\_ENTY](#) (page 14-10)

#### 14.3.1.1 GIVE\_ABBRV

Type: Function

This database function GIVE\_ABBRV provides the abbreviation for a named token from the table MD\_NAME\_CONVERSION.

Source Table

MD\_NAME\_CONVERSION

**Columns:** ABBREVIATION

Target

**Table:** MD\_OIDM\_ATTR\_COL\_NAME\_MAP

**Columns:** column\_name\_abbr

### 14.3.1.2 MD\_DM\_ALL\_ENT\_ATTR

Type: View

This database view provides the description of each entity.

Source Table	Target View
DMRS_ENTITIES	MD_DM_ALL_ENT_ATTR

### 14.3.1.3 PL/SQL Program to Update Column Name

Type: PL/SQL Program

This program updates the column name based on the result of function GIVE\_ABBRV.

Source Tables	Target Table
MD_OIDM_ATTR_COL_NAME_MAP	MD_OIDM_ATTR_COL_NAME_MAP
DMRS_ATTRIBUTES	Column: column_name_abbr

### 14.3.1.4 PL/SQL program to insert initial data into MD\_OIDM\_ATTR\_COL\_NAM

Type: PL/SQL Program

Provides initial loading for table MD\_OIDM\_ATTR\_COL\_NAME\_MAP

Source Tables	Target Table
MD_DM_ALL_ENT_ATTR	MD_OIDM_ATTR_COL_NAME_MAP
DMRS_ENTITIES	

### 14.3.1.5 PL/SQL program to load data into MD\_ENTY

Type: PL/SQL Program

Loads data into MD\_ENTY from all the staging tables.

Source Table	Target Table
MD_OIDM_ATTR_COL_NAME_MAP	MD_ENTY

## 14.3.2 Load Program (Intra-ETL) Metadata (Table MD\_PRG)

### Source Tables Required

Source Table Name	Description
USER_DEPENDENCIES	This database view describes dependencies between procedures, packages, functions, package bodies, and triggers owned by the current user, including dependencies on views created without any database links.
MD_RPD_RPT	This table contains the sample report related information.

### Staging Tables/Views

Staging Table/View Name	Description
MD_INTRA_ETL	Used to generate and keep the relational/OLAP ETL program metadata information.
MD_MINING	Used to generate and keep the data mining ETL program metadata information.

### Loading MD\_PRG (MD\_PRG\_POP.SQL, MD\_MIN\_PRG\_POP.SQL)

Program: MD\_INTRA\_ETL

Type: View

This view extracts information for relational and OLAP Intra-ETL packages. The structure is the same as MD\_PRG.

Source View	Target View
USER_DEPENDENCIES	MD_INTRA_ETL

Program: MD\_MINING

Type: View

This view extracts information for the data mining Intra-ETL packages. The structure of the view same as MD\_PRG.

Source View	Target View
USER_DEPENDENCIES	MD_MINING

Program: PL/SQL program to load ETL mapping data into MD\_PRG.

Type: PL/SQL Program

Load ETL program data into MD\_PRG from all the staging views

Source Views	Target Table
MD_INTRA_ETL	MD_PRG
MD_MINING	

Program: PL/SQL program insert report data into MD\_PRG

Type: PL/SQL Program

Load report data into MD\_PRG from report staging table.

Source Table	Target Table
MD_RPD_RPT	MD_PRG

### 14.3.3 Load Reports and KPI Metadata (Table MD\_KPI and MD\_REF\_ENTY\_KPI):

#### Source Tables Required

Source Table Name	Description
MD_RPD	This tables stores all the RPD metadata information, it is directly loaded from md_rpd.csv
MD_REPORT	This tables stores all the report (analysis) metadata information, it is directly loaded from md_report.csv
MD_DASHBOARD	This tables stores all the sample report dashboard metadata information, it's directly loaded from md_dashboard.csv

#### Staging Tables/Views

Staging Table/View Name	Description
MD_RPD_CALC_PHY	Stores the missing physical tables and columns for derived measures. Wrote a query to find out missing Physical tables and columns for derived measures.
MD_REPORT1	MD_REPORT1 has the same structure of MD_RPT, it is used to store comma separated tables and columns to the new row, by that it can directly join with physical tables and columns from MD_RPD_CALC_PHY.
MD_RPT_DASH	Contains all mappings information between RPD and reports.
MD_RPD_RPT_DASH	Stores all the mappings information of Report, RPD and Dashboard.

#### Loading MD\_KPI and MD\_REF\_ENTY\_KPI (SAMPLE\_REP\_POP.SQL)

Program: PL/SQL program Insert non calculated columns Data Into MD\_RPD\_CALC\_PHY

Type: PL/SQL Program

This program extracts those base KPIs or non calculated column information and inserts into MD\_RPD\_CALC\_PHY.

Source Table	Target Table
MD_RPD	MD_RPD_CALC_PHY

Program: PROCEDURE Proc\_DelmValuePopulate2

Type: Procedure

This procedure loads comma separated data to new row of the MD\_REPORT1 table.

Source Table	Target Table
MD_REPORT	MD_REPORT1

Program: PL/SQL program to create and perform initial load of data into MD\_RPD\_RPT

Type: PL/SQL Program

This program creates and performs initial load of data for the table MD\_RPD\_RPT.

Source Tables	Target Table
MD_RPD_CALC_PHY	MD_RPD_RPT
MD_REPORT1	

Program: PL/SQL program to create and initial load data into MD\_RPD\_RPT\_DASH.

Type: PL/SQL Program

This program creates and performs initial load of data for table MD\_RPD\_RPT\_DASH.

Source Tables	Target Table
MD_RPD_CALC_PHY	MD_RPD_RPT_DASH
MD_RPT_DASH	
MD_RPD_RPT_DASH	

Program: PL/SQL program to create and initial load data into MD\_RPD\_RPT.

Type: PL/SQL Program

This program creates performs initial load of data for table MD\_RPD\_RPT.

Source Tables	Target Table
MD_RPD_CALC_PHY	MD_RPD_RPT
MD_REPORT1	

Program: MD\_DRVD\_KP

Type: View

This view extracts and keeps the information for all the calculated KPIs.

Source Table	Target Table
MD_RPD_RPT_DASH	MD_DRVD_KPI

Program: PL/SQL program to create and performs initial load of data into MD\_KPI.

Type: PL/SQL Program

This program creates and performs initial load of data for table MD\_KPI.

Source Table	Target Table
MD_RPD_RPT_DASH	MD_KPI

Program: PL/SQL program to create and initial load data into MD\_REF\_ENTY\_KPI.

Type: PL/SQL Program

This program creates and performs the initial load of data for table MD\_REF\_ENTY\_KPI.

Source Table	Target Table
MD_RPD_RPT_DASHI	MD_REF_ENTY_KPI

# A

## Control Tables

Some tables are defined in the `oudm_sys` schema and use a `DWC_` prefix, but are not part of Oracle Utilities Data Model.

You use the `DWC_` control tables when processing the model. For example when loading data or when monitoring errors.

This appendix includes the following sections:

- [Intra-ETL Load Parameters Control Table](#) (page A-1)
- [Intra-ETL OLAP Mapping Control Table](#) (page A-2)
- [Intra-ETL Monitoring Process Control Tables](#) (page A-3)

### A.1 Intra-ETL Load Parameters Control Table

Use the `oudm_execute_wf.sh` program to manually execute the Intra-ETL. Before you run the Intra-ETL, for an incremental load, you must update the Oracle Utilities Data Model Relational ETL parameters in `DWC_ETL_PARAMETER` table so that this information can be used when loading the relational data. This program prompts for several environment parameter values. And reads ETL parameters from `DWC_ETL_PARAMETER` table, as shown in [Table A-1](#) (page A-1), and `DWC_OLAP_ETL_PARAMETER` table, as shown in [Table A-2](#) (page A-2).

The `PKG_DWD_*_MAP` loads data from Oracle Utilities Data Model base tables into the Oracle Utilities Data Model derived tables. These packages read relational ETL parameters from the `DWC_ETL_PARAMETER` table.

You update the parameters in `DWC_ETL_PARAMETER` control table in the `oudm_sys` schema so that this information can be used when loading the derived and aggregate tables and views.

[Table A-1](#) (page A-1) describes the valid values for the `DWC_ETL_PARAMETER` table.

**Table A-1** `DWC_ETL_PARAMETER` Table

Column	Description
<code>Process_name</code>	OUDM-INTRA-ETL
<code>from_date_etl</code>	The start date of ETL period.
<code>to_date_etl</code>	The end date of ETL period.
<code>load_dt</code>	The date when this record are populated.
<code>last_updt_dt</code>	The date when this record are last updated
<code>last_updt_by</code>	The user who last updated this record

## A.2 Intra-ETL OLAP Mapping Control Table

The OLAP MAP mapping that loads OLAP cube data invokes the analytic workspace build function from the `PKG_OUDM_OLAP_ETL_AW_LOAD` package. This package loads data from Oracle Utilities Data Model aggregate materialized views into the Oracle Utilities Data Model analytical workspace and calculates the forecast data. The `PKG_OUDM_OLAP_ETL_AW_LOAD` reads OLAP ETL parameters from the `DWC_OLAP_ETL_PARAMETER` table.

You update the Oracle Utilities Data Model OLAP ETL parameters in `DWC_OLAP_ETL_PARAMETER` control table in the `oudm_sys` schema so that this information can be used when loading the OLAP cube data.

[Table A-2](#) (page A-2) describes the valid values for the `DWC_OLAP_ETL_PARAMETER` table. For more information on the values to specify when performing an initial load of OLAP cube data or when refreshing the OLAP cubes after an initial load, see *Oracle Utilities Data Model Implementation and Operations Guide*.

**Table A-2 ETL Parameters in the `DWC_OLAP_ETL_PARAMETER` Table**

Column Name	Description
PROCESS_NAME	OUDM_OLAP_ETL
BUILD_METHOD	Cube build/refresh method specified by one of the following values: <ul style="list-style-type: none"> <li>• <code>C</code> specifies a complete refresh which clears all dimension values before loading.</li> <li>• <code>?</code> specifies a fast refresh if possible; otherwise, a complete refresh. (Default)</li> <li>• <code>P</code> specifies recomputation of rows in a cube materialized view that are affected by changed partitions in the detail tables.</li> <li>• <code>S</code> specifies a fast solve of a compressed cube. A fast solve reloads all the detail data and re-aggregates only the changed values.</li> </ul>
CUBENAME	Specifies the cubes you want to build: <code>ALL</code> builds all of the cubes in the Oracle Utilities Data Model analytic workspace. <code>cubename[[ cubename]...]</code> specifies one or more cubes, as specified with <code>cubename</code> , to build.
MAXJOBQUEUES	A decimal value that specifies the number of parallel processes to allocate to this job. (Default value is 4.) The number of parallel processes actually allocated by a build is controlled by the smallest of these factors: <ul style="list-style-type: none"> <li>• Number of cubes in the build and the number of partitions in each cube.</li> <li>• Setting of the <code>MAXJOBQUEUES</code> argument.</li> <li>• Setting of the <code>JOB_QUEUE_PROCESSES</code> database initialization parameter.</li> </ul>
CALC_FCST	Whether or not to calculate forecast cubes: <ul style="list-style-type: none"> <li>• <code>Y</code> specifies calculate forecast cubes.</li> <li>• <code>N</code> specifies do not calculate forecast cubes.</li> </ul>
NO_FCST_YRS	A decimal value that specifies how many years forecast data you want to calculate. (This parameter takes effect only if you set <code>CALC_FCST</code> to 'Y')
FCST_MTHD	<code>AUTO</code> which invokes the Geneva forecasting expert system which tests all of possible forecasting methods and options for these methods and chooses and uses the method that best fits the data.

**Table A-2 (Cont.) ETL Parameters in the DWC\_OLAP\_ETL\_PARAMETER Table**

Column Name	Description
FCST_ST_YR	A value specified as <i>yyyy</i> which is the "start business year" of a historical period. Forecast program will calculate the forecast data based on the historical data in this period.
FCST_END_YR	A value specified as <i>yyyy</i> which is the "end business year" of a historical period. Forecast program will calculate the forecast data based on the historical data in this period.
OTHER1	Reserved for future use. (Default value is NULL.)
OTHER2	Reserved for future use. (Default value is NULL.)

## A.3 Intra-ETL Monitoring Process Control Tables

The two control table in the `oudm_sys` schema, `DWC_INTRA_ETL_PROCESS` and `DWC_INTRA_ETL_ACTIVITY`, monitor the execution of the Intra-ETL process.

[Table A-3](#) (page A-3) contains column name information for `DWC_INTRA_ETL_PROCESS`.

[Table A-4](#) (page A-4) contains column name information for `DWC_INTRA_ETL_ACTIVITY`.

**Table A-3 DWC\_INTRA\_ETL\_PROCESS Columns**

Columns Name	Data Type	Not Null	Remarks
PROCESS_KEY	NUMBER(30)	Yes	Primary Key, System Generated Unique Identifier
PROCESS_START_TIME	DATE	Yes	ETL Process Start Date and Time
PROCESS_END_TIME	DATE		ETL Process End Date and Time No value
PROCESS_STATUS	VARCHAR2(30)	Yes	Current status of the process
FROM_DATE_ETL	DATE		Start Date (ETL) - From Date of the ETL date range No value
TO_DATE_ETL	DATE		End Date (ETL) - To Date of the ETL date range No value
LOAD_DT	DATE		Record Load Date - Audit Field No value
LAST_UPDT_DT	NUMBER(30)		Last Update Date and Time - Audit Field No value
LAST_UPDT_BY	VARCHAR(30)		Last Update By - Audit Field No value

**Table A-4 DWC\_INTRA\_ETL\_ACTIVITY Columns**

Columns Name	Data Type	Not Null	Remarks
ACTIVITY_KEY	NUMBER(30)	Yes	Primary Key, System Generated Unique Identifier
PROCESS_KEY	NUMBER(30)	Yes	Process Key. FK to DWC_INTRA_ETL_PROCESS table
ACTIVITY_NAME	VARCHAR2(50)	Yes	Activity Name or Intra ETL Program Name
ACTIVITY_DESC	VARCHAR2(500)	Activity description	No value
ACTIVITY_START_TIME	DATE	Yes	Intra ETL Program Start Date and Time
ACTIVITY_END_TIME	DATE	Intra ETL Program End Date and Time	No value
ACTIVITY_STATUS	VARCHAR2(30)	Yes	Current status of the process
ERROR_DTL	VARCHAR2(2000)	Error details if any	No value
LOAD_DT	DATE	Record Load Date - Audit Field	No value
LAST_UPDT_DT	NUMBER(30)	Last Update Date and Time - Audit Field	No value
LAST_PDT_BY	VARCHAR(30)	Last Update By - Audit Field	No value

# Index

## A

---

access method logical dimension, [3-2](#), [3-4](#), [3-9](#),  
[3-10](#), [3-13–3-17](#), [3-20](#), [3-24](#), [3-25](#), [3-27](#),  
[3-28](#), [3-31–3-33](#), [3-40](#), [3-45](#), [3-46](#), [3-48](#),  
[3-49](#), [3-55](#), [3-57](#), [3-62](#), [3-63](#), [3-65](#),  
[3-69–3-71](#), [3-74](#), [3-77](#), [3-78](#)

aggregate population scripts for intra-ETL, [7-1](#)

aggregate tables  
physical data model, [4-28](#)

## B

---

base tables  
physical data model, [4-23](#)

## C

---

calendar population  
utility scripts, [11-1](#)

CIM, [1-12](#)

CIM Users Group Conformance, [1-12](#)

compressed tables  
physical data model, [4-29](#)

cost and contribution sample reports, [12-1](#), [13-1](#)

customer management sample reports, [12-3](#)

## D

---

data mining in Oracle Utilities Data Model  
models. See data mining models, Oracle  
Utilities Data Model, [10-1](#)

database sequences  
physical data model, [4-29](#)

derived population scripts for intra-ETL, [7-1](#)

dimensions  
Oracle Utilities Data Model, [3-1](#)

## E

---

entities, Oracle Utilities Data Model  
logical, [2-1](#)

entity dictionary, [2-32](#)

## I

---

intra-ETL, [7-1](#)  
DWC\_OLAP\_ETL\_PARAMETER table, [A-2](#)  
source and target mapping, [7-2](#)

Intra-ETL introduction, [7-1](#)

Intra-ETL scripts  
aggregate population, [7-1](#)  
derived population, [7-1](#)

## L

---

logical data model, [2-32](#)  
business area entities, [2-29](#)  
dimensions, [3-1](#)  
reference entities, [2-1](#)

logical data model, Oracle Utilities Data Model,  
[2-1](#)

logical dimension  
access method dimension, [3-2](#), [3-4](#), [3-9](#),  
[3-10](#), [3-13–3-17](#), [3-20](#), [3-24](#), [3-25](#),  
[3-27](#), [3-28](#), [3-31–3-33](#), [3-40](#), [3-45](#),  
[3-46](#), [3-48](#), [3-49](#), [3-55](#), [3-57](#), [3-62](#),  
[3-63](#), [3-65](#), [3-69–3-71](#), [3-74](#), [3-77](#),  
[3-78](#)

logical dimensions, Oracle Utilities Data Model,  
[3-1](#)

logical entities, Oracle Utilities Data Model, [2-1](#)

logical to physical mapping  
Oracle Utilities Data Model, [5-1](#)

lookup tables  
physical data model, [4-17](#)

## M

---

marketing sample reports, [12-3](#)

metadata management  
repository, [14-2](#), [14-3](#)  
with Oracle Utilities Data Model, [14-1](#)

metadata repository, [14-2](#)  
browsing, [14-3](#)  
with Oracle Utilities Data Model, [14-3](#)

---

## N

network sample reports, [12-17](#)

---

## O

### OLAP

populating the OLAP module, [8-1](#)

OLAP cube materialized views, [4-31](#)

#### OLAP cube views

from oudm\_sys schema, [4-32](#)

#### OLAP dimension

CUST, [8-3](#)

customer, [8-3](#)

time, [8-7](#)

OLAP dimensions, [8-2](#)

#### OLAP model cubes

Oracle Utilities Data Model, [9-1](#)

#### OLAP model dimensions

Oracle Utilities Data Model, [8-1](#)

Oracle Utilities Data Model, [4-1](#), [7-1](#)

components summary, [1-2](#)

intra-ETL, [7-1](#)

logical data model, [2-1](#), [4-1](#)

logical data model dimensions, [3-1](#)

logical to physical mapping, [5-1](#)

metadata management, [14-1](#)

metadata repository, [14-2](#), [14-3](#)

OLAP dimensions, [8-2](#)

OLAP model cubes, [9-1](#)

OLAP model dimensions, [8-1](#)

physical data model partitioning, [6-1](#)

sample reports, [12-1](#), [13-1](#)

utility scripts, [11-1](#)

---

## P

physical data model, [4-1](#)

aggregate tables, [4-28](#)

base tables, [4-23](#)

physical data model (*continued*)

compressed tables, [4-29](#)

database sequences, [4-29](#)

lookup tables, [4-17](#)

OLAP cube materialized views, [4-31](#)

partitioning, [6-1](#)

reference tables, [4-2](#)

physical data model, Oracle Utilities Data Model, [4-1](#)

physical entities, Oracle Utilities Data Model

physical, [4-1](#)

---

## Q

query rewrite for cube materialized views, [8-2](#)

---

## R

### reference tables

physical data model, [4-2](#)

revenue protection sample reports, [12-30](#)

---

## S

### sample reports

cost and contribution, [12-1](#), [13-1](#)

customer management, [12-3](#)

marketing, [12-3](#)

network, [12-17](#)

Oracle Utilities Data Model, [12-1](#), [13-1](#)

revenue protection, [12-30](#)

source and target mapping for intra-ETL, [7-2](#)

### standards support

CIM, [1-12](#)

---

## U

### utility scripts

calendar population, [11-1](#)

Oracle Utilities Data Model, [11-1](#)